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COMMONWEALTH OF PUERTO RICO
PUBLIC SERVICE REGULATORY BOARD
PUERTO RICO ENERGY BUREAU

IN RE: REVIEW OF PUERTO RICO ELECTRIC SYSTEM REMEDIATION PLAN	**CASE NO. NEPR-MI-2020-0019** **SUBJECT:** Responses to April 6th Resolution and Order and to Requests for Information on System Remediation Plan.

MOTION IN COMPLIANCE WITH RESOLUTION AND ORDER OF APRIL 6, 2021 AND SUBMITTING RESPONSES TO REQUESTS FOR INFORMATION

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COME now **LUMA Energy, LLC** ("ManagementCo"), and **LUMA Energy ServCo, LLC** ("ServCo"), (jointly referred to as "LUMA"), and respectfully state and request the following:

1. On February 24, 2021, LUMA filed before this Honorable Puerto Rico Energy Bureau ("Energy Bureau") a Request for Approval of the System Remediation Plan ("SRP Petition"), pursuant to LUMA's obligations under Section 4.1 (d) of the Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement dated as of June 22, 2020, executed by and among LUMA, the Puerto Rico Electric Power Authority ("PREPA") and the Puerto Rico Public-Private Partnerships Authority ("P3 Authority") ("OMA").

2. On April 6, 2021, this honorable Energy Bureau issued a Resolution and Order on "Completeness" of LUMA's System Remediation Plan ("SRP") ("April 6th SRP Order"). This honorable Energy Bureau stated that additional discussion on "key matters, supporting data, analysis, and assessments [is] necessary for the Energy Bureau[] [to conduct an] adequate evaluation [of the System Remediation Plan]." *See* April 6th SRP Order at page 2.

3. In the April 6th Order this Energy Bureau directed LUMA to, within ten days that are set to expire on April 16, 2021, provide information and responses to the requests for information that are included in Attachment A ("Requests for Information") and modify the SRP Petition accordingly. *Id.*

4. With this Motion, LUMA is submitting its responses to the seventeen Requests for Information that are included in Attachment A to the April 6th SRP Order. *See* Exhibit 1 ("Responses to Requests for Information"). The Responses to Requests for Information include the documents and attachments that are identified in the table below and that will be filed for the record using the Bureau's electronic platform and/or sent via email as explained in the table below. The table below also identifies the attachments that contain confidential information and that are being submitted today under seal of confidentiality.

System Remediation Plan Request Number	**Documents Filed with the Energy Bureau**	**Format of Documents and mode of submission**
001	Response	PDF document filed using the Bureau's electronic filing system
001	Attachment 1	Partially redacted PDF to protect confidential information to be filed using the Bureau's electronic filing system, and unredacted confidential version to be filed electronically
001	Attachment 2	Fully confidential PDF to be filed electronically under seal of confidentiality, as this document contains handwritten notes that do not allow for correct redaction.[1]
001	Attachment 3	Excel table, to be sent via email (confidential)[2]
001	Attachment 4	Fully confidential PDF to be filed electronically under seal of confidentiality, as this document

[1] It is impractical or not feasible to redact these documents due to their formatting and/or because their entire contents are confidential. It is requested that the Bureau accept the confidential unredacted version of these documents and that the same are kept confidentially.
[2] *Id.*

		contains handwritten notes that do not allow for correct redaction.[3]
001	Attachment 5	Excel table, to be sent via email (confidential)[4]
001	Attachment 6	Excel table, to be sent via email (confidential)[5]
002	Response	PDF document filed using the Bureau's electronic filing system
002	Attachment 1	Redacted PDF to be filed using the Bureau's electronic filing system to protect confidentiality and unredacted confidential version to be filed electronically under seal of confidentiality
002	Attachment 2	Redacted PDF to be filed using the Bureau's electronic filing system to protect confidentiality and unredacted confidential version to be filed electronically under seal of confidentiality
003	Response	PDF document filed using the Bureau's electronic filing system
003	Attachment 1	Excel table, submitted via email (confidential)[6]
003	Attachment 2	PDF filed using the Bureau's electronic filing system
004	Response	PDF document filed using the Bureau's electronic filing system
005	Response	PDF document filed using the Bureau's electronic filing system
006	Response	PDF document filed using the Bureau's electronic filing system
006	Attachment 1	Excel table, submitted via email
007	Response	PDF document filed using the Bureau's electronic filing system
008	Response	PDF document filed using the Bureau's electronic filing system
009	Response	PDF document filed using the Bureau's electronic filing system
010	Response	PDF document filed using the Bureau's electronic filing system
011	Response	PDF document filed using the Bureau's electronic filing system

[3] *Id.*
[4] *Id.*
[5] *Id.*
[6] *Id.*

012	Response	PDF document filed using the Bureau's electronic filing system
012	Attachment 1	PDF document filed using the Bureau's electronic filing system
012	Attachment 2	Excel table, submitted via email (confidential)[7]
012	Attachment 3	PDF document filed using the Bureau's electronic filing system
013	Response	PDF document filed using the Bureau's electronic filing system
014	Response	PDF document filed using the Bureau's electronic filing system
015	Response	PDF document filed using the Bureau's electronic filing system
016	Response	PDF document filed using the Bureau's electronic filing system
017	Response	PDF document filed using the Bureau's electronic filing system
017	Attachment 1	PDF document filed using the Bureau's electronic filing system

5. Under separate cover and expediently, within the next ten days, as allowed by Section A.2 of the Energy Bureau's Policy on Management of Confidential Information," CEPR-MI-2016-0009, of August 31, 2016 as amended by the Resolution dated September 16, 2016, LUMA will be submitting a separate memorandum of law in support of its requests to file some of the aforementioned attachments under seal of confidentiality.[8]

[7] *Id.*

[8] As will be explained the legal memorandum, several attachments, or portions thereof, of the Responses to Requests for Information, include confidential information in the form of critical energy infrastructure information or critical electric infrastructure information ("CEII") that garners protection from public disclosures pursuant to federal statutes and regulations, see e.g., 6 U.S.C. §§ 671-674; 18 C.F.R. §388.113 (2020), and the Bureau's policy on management of confidential information, *see* the Energy Bureau's Policy on Management of Confidential Information," CEPR-MI-2016-0009, issued on August 31, 2016 and amended on September 20, 2016. The CEII involves information on safety systems and vulnerabilities of critical system infrastructure that, if disclosed, would expose the electric power grid to attacks to the detriment of the public interest. Secondly, several attachments, or portions thereof, of the Responses to Requests for Information, include sensitive commercial information on the resource needs, details on future expenses, LUMA's original supporting work papers and work product with estimations, methods and assumptions on future acquisitions, and detailed information on expenditure categories by year, that may provide unfair advantages to suppliers or proponents and could harm the public interest. This information

6. In compliance with the Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009, LUMA submitted today for the public record, "redacted" or "public" versions of the confidential attachments to the Responses to Requests for Information. Some of the attachments are confidential in their entirety and/or due to formatting, they cannot be redacted. Thus, public or redacted versions of some attachments cannot be generated for submission. A "non-Redacted" or "confidential" version of the attachments will be sent vie e-email message to the Bureau's, as allowed by the Bureau's Policy on Management of Confidential Information.

7. It is respectfully submitted that with this Motion, LUMA does not require to modify the SRP Petition and is not submitting additional revisions to the SRP.

8. As the records of this honorable Energy Bureau show, *see In re Review of LUMA's Initial Budgets*, Case No. NEPR-MI-2021-004 ("Initial Budgets") and *In re Review of T&D Operator's System Operation Principles,* Case No. NEPR-MI-2021-0001 ("System Operation Principles"), with this submission LUMA concludes compliance with the three orders issued by the Energy Bureau requesting additional information and supporting data on three of LUMA's key regulatory submissions under the OMA and applicable law. *See* April 5th Order and LUMA's Response of April 12, 2021 in Case No. NEPR-MI-2021-0004 and April 6th Order and LUMA's Response of April 15, 2021 in Case No. NEPR-MI-2021-0001.

9. LUMA's commitment to provide safe, reliable, resilient, efficient and customer-centric electric power services in Puerto Rico is intertwined with its commitment to comply with the orders and requests issued by this Bureau pursuant to its statutory authority under Act 57-2014 and Act 17-2019. LUMA's filings on regulatory deliverables, including Initial Budgets, SOP and

should be protected from public disclosure to secure the orderly conduct of proceedings for competitive acquisition of goods and services.

SRP, have been developed to aid the Bureau in its consideration and approval of LUMA's proposed plans that are key for LUMA to commence operations and necessary tools for LUMA to comply with its obligations under the OMA and applicable law, and to meet public policy goals to the benefit of all Puerto Ricans.

10. LUMA is also committed to allow for expedient and thorough consideration by the Energy Bureau of LUMA's Initial Budgets, SOP and SRP. These filings and the Bureau' consideration of the same, pave the way for Service Commencement on June 1, 2021.

11. LUMA is available to participate in technical conferences in the coming days at dates set by the Bureau in its discretion and to cooperate in procedural scheduling to reach the goal beneficial to the public interest of commencing operations on June 1, 2021.

12. LUMA's Initial Budgets, the SRP, SOP, and Vegetation Management Plan, *see* Case No. NEPR-MI-2019-0005, are cornerstones of LUMA's long-term operations and set the stage for LUMA's active participation during the next fifteen years in the recovery and transformation of Puerto Rico's electric system. LUMA's commitment to Puerto Rico is also evidenced in its current active role, prior to Service Commencement, in Bureau proceedings such as: (1) the Optimization Proceeding, *In re Optimization Proceeding of Minigrid Transmission and Distribution Investments*, Case No. NEPR-MI-2020-0016, where LUMA has collaboratively engaged with this Bureau and stakeholders in discussions on the Minigrid optimization roadmap, distribution investments alternatives, and sustainable energy transformation; and (2) *In re Process for the Adoption of Regulation for Distribution Resource Planning*, NEPR-MI-2019-0011, where LUMA, in coordination with PREPA, is currently complying with several orders by this Bureau to develop voltage level maps, preliminary maps of interconnection capacity, and an inventory of Puerto Rico's power system.

13. LUMA looks forward to expanding its collaborative participation in Bureau proceedings and with stakeholders and PREPA, to benefit the public interest. LUMA is ready and eager to translate the carefully crafted plans that have been filed with the Bureau into concrete actions that will transform Puerto Rico's electricity grid and foster social and economic development in Puerto Rico.

WHEREFORE, LUMA respectfully requests that the Bureau **take notice** of aforementioned, **accept** LUMA's Responses to the Requests for Information that are being submitted today, **accept** the attachments that are being submitted confidentially, and **deem** that LUMA complied with the April 6th SRP Order.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 16th day of April 2021.

I hereby certify that I filed this motion using the electronic filing system of this Energy Bureau and that I will send an electronic copy of this motion to the attorneys for PREPA, Joannely Marrero-Cruz, jmarrero@diazvaz.law; and Katiuska Bolaños-Lugo, kbolanos@diazvaz.law.

DLA Piper (Puerto Rico) LLC
500 Calle de la Tanca, Suite 401
San Juan, PR 00901-1969
Tel. 787-945-9107
Fax 939-697-6147

/s/ Margarita Mercado Echegaray
Margarita Mercado Echegaray
RUA NÚM. 16,266
margarita.mercado@us.dlapiper.com

NEPR-MI-2020-0019

System Remediation Plan Response to April 6, 2021 RFI

List of Response Attachments

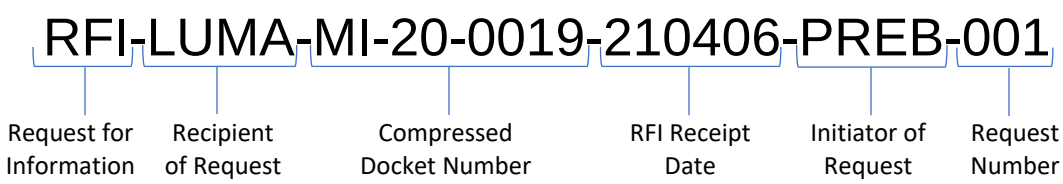
Response ID	Attachment Name	Description
RFI-LUMA-MI-21-0004-210405-PREB-001	Attachment 1*	Gap Assessments
	Attachment 2	Distribution Line Inspections (Paper Copies)
	Attachment 3*	Distribution Line Inspections Data
	Attachment 4	Substation Inspections (Paper Copies)
	Attachment 5*	Transmission Substation Inspections Data
	Attachment 6*	Distribution Substations Inspections Data
RFI-LUMA-MI-21-0004-210405-PREB-002	Attachment 1	Component Business Model
	Attachment 2	Mapping of the Component Business Model to System Remediation Plan Program
RFI-LUMA-MI-21-0004-210405-PREB-003	Attachment 1*	Capital Supporting Workpapers
	Attachment 2	Program Brief Template
RFI-LUMA-MI-21-0004-210405-PREB-006	Attachment 1*	SRP Program Data
RFI-LUMA-MI-21-0004-210405-PREB-012	Attachment 1	System Performance Information
	Attachment 2*	PREPA System Performance Data
	Attachment 3	SRP Program Briefs: OMA Provisions, Applicable Laws and Public Policy Goals
RFI-LUMA-MI-21-0004-210405-PREB-017	Attachment 1	SRP Compliance with Principles Beneficial to the Public Interest in PREB SRP Order

*Note: * Denotes attachments that have been provided in Microsoft Excel format.*

Request Naming Convention

Please note that LUMA proposes to use the following naming convention to categorize and reference any requests made in this process and future processes.

Example:



System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-001

Request:

Provide a summary and supporting workpapers and documentation for the LUMA preliminary assessment ("gap assessment") of the condition of the utility physical assets and management practices.

Response:

The Gap Assessments in their entirety are a comprehensive document that includes LUMA's preliminary assessment of the management practices and all associated supporting workpapers and documentation. For the Gap Assessments, please refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 1. Attachment 1 of this response was previously filed on April 12th in Initial Budgets (NEPR-MI-2021-0004) as RFI-LUMA-MI-21-0004-210405-PREB-005a Attachment 1.

For any asset inspection data regarding the condition of utility physical assets, please refer to the following attachments for all asset inspection workpapers and supporting documentation:

i. For paper copies of distribution line inspections, please refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 2.

ii. For all distribution line inspection data, please refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 3.

iii. For paper copies of all substation inspections, please refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 4.

iv. For all transmission substation inspections data, please refer RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 5.

v. For all distribution substation inspections data, please refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 6.

Attachments 2 – 6 of this response were previously filed on April 12th in Initial Budgets (NEPR-MI-2021-0004) as RFI-LUMA-MI-21-0004-210405-PREB-005b Attachments 1 - 5.

LUMA

Gap Assessments

LUMA Energy

Gap Assessment

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Gap Assessment

I. Introduction

The following gap assessments represent LUMA's initial efforts to assess the condition of the business, deploying a qualitative rating process (i.e., maturity scale) that reflects a review of major departmental functions, records observations, and identifies gaps. The majority of the work to conduct these gap assessments was performed between July and September 2020. These assessments reflect the information provided at that time while working within the access limitations imposed by COVID-19 restrictions. As such, the following information represents a "snapshot in time" and this information has not been updated to include further gaps identified after September 2020. Yet, by melding our collective knowledge of the industry, Prudent Utility Practice, applicable codes and standards and the OMA requirements with information obtained from "virtual" workshops, interviews with a limited cross-section of PREPA's staff, review of PREPA-supplied data, visits to facilities, observations of field activities, and third-party studies, we were able to establish a "directionally accurate" view of the current state of work practices, procedures, and processes in use at PREPA given the realities of a compressed timeframe, limited access to data, PREPA staff and information, and use of communication mediums other than direct face-to-face meetings and interviews.

- The observations noted within each reviewed area are consistent with any similarly designed information collection process. They note statements made / information extracted throughout the discovery phase, the intent of which was to paint an overall picture and facilitate the identification of emerging patterns and trends. They are not necessarily precise nor subject to evidentiary type scrutiny.

- The identification of major gaps reflects the distillation of these observations into statements that infer comparisons to industry practices, regulatory or legal mandates, or general standards of performance. A three-tier prioritization was used to assist in the anticipated next step of the process: The development of transition and takeover plans. They should not be viewed literally (e.g., a gap identified as "SRP" reflects a high priority among all identified gaps but may not have been directly addressed in the SRP filing), but rather used to place identified gaps in prioritization buckets.

The maturity rating, reflective of the number and severity of the noted gaps, indicates the reviewed organization's / function's position on a scale ranging from "unfocused" to "excellent," based on criteria established prior to the review. These ratings formed the initial bases for communicating the "health of the organization," which combined with the Asset Condition Assessment, served as input to the Recovery and Transformation Framework prioritization as well as the System Remediation Plan and Initial Budgets filings.

II. Operations

Gap Assessment

Operations

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Gap Assessment

Gap Assessment

General Approach

The Operations gap assessment includes the following main areas of focus, as shown in the tables below. Operations covers all aspects of Transmission and Distribution (T&D).

- **General Management:** There are nine management focus areas that generally apply to all departments.
- **Core Business:** There are 13 core business focus areas specifically relating to Operations, nine of which Operations assessed directly, and four where Operations provided input to other Departments.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting & Cost Performance
III	Leadership Management
IV	Process Efficiency & Effectiveness
V	Employee Training & Development
VI	Workforce Management
VII	Management Systems & Technology
VIII	Performance Metrics & Continuous Improvement
IX	PREPA Culture & Momentum

Core Business Focus Areas		Responsibility
XI	Asset Management	Shared with Utility Transformation
XII	Project/Work Planning & Execution	Operations
XIII	Technical Services	Operations
XIV	Risk Management	Input to Risk Management
XV	Safety	Input to Safety
XVI	Reliability	Shared with Utility Transformation
XVII	Major Event Management	Operations
XVIII	System Performance Management	Operations
XIX	Fleet	Operations
XX	Warehouse Operations	Operations
XXI	System Operations	Input to Utility Transformation
XXII	Ancillary Critical Support	Operations
XXIII	Operations & Physical Security	Input to Security

Note: Focus areas shown in blue font indicate that the Operations department has provided key observations and contributors during the gap assessment process but did not identify gaps or assign maturity rating scores. Instead, these observations and contributors were shared with other functions.

We applied the following standard methodology to both the General Management and Core Business Assessments, thus forming the bases for identifying gaps.

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus & Sub-Focus Areas

The nine **General Management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas	
I	**Organization Design Effectiveness**	I-1 Span of Control I-2 Clarity on Management & Supervisory Roles	I-3 Ratio of Administrative to Direct Workers I-4 Impact of Protected Patronage Workers
II	**Budgeting & Cost Performance**	II-1 Actual Expenditures as Percentage of Budgeted II-2 Impact of Emergent Issues on Budgets II-3 Unit Cost/Productivity Management	II-4 Overtime & Contractors Management II-5 Direct and Allocated Indirect Cost Management
III	**Leadership Management**	III-1 Qualifications & Experience III-2 Accountability	III-3 Ability to Deliver Results III-4 Inter- & Intra-Organization Collaboration
IV	**Process Efficiency & Effectiveness**	IV-1 Potential Risks to Post-Commencement IV-2 Process Familiarity by all Stakeholders	IV-3 Process Compliance Management IV-4 Efficiency of Overall Process Flow
V	**Employee Training & Development**	V-1 Training Budgets & Program Effectiveness V-2 Ability to Cross-Train as Personnel Development Path	V-3 Skills Assessment & Personnel Training Plans V-4 Demographics & Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1 Effectiveness of Current Workforce Management Processes	VI-2 Time Charging & Productivity Tracking & Reporting
VII	**Management Systems & Technology**	VII-1 Process Automation VII-2 Adaptability to New Systems & Technology	VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics & Continuous Improvement**	VIII-1 Recognition of Critical Performance Metrics VIII-2 Performance Metric Collection, Validation & Reporting VIII-3 Root Cause & Trend Analysis	VIII-4 Instances (or Lack) of Data-Driven Management Initiatives VIII-5 Recent Performance Trends
IX	**PREPA Culture & Momentum**	IX-1 Resistance (Active or Passive) to LUMA Management IX-2 Employee Morale/Excitement about LUMA	IX-3 Employee Empowerment / Action Orientation IX-4 Timeframe to Improve Performance IX-5 Impact of Organization Silos

I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Effectiveness focus area consists of four sub-focus areas that define an effective organization design:

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Key observations and contributors, identified gaps, and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	▪ Following are some key points regarding span of control considered for this analysis: o The analysis outcome could point to a need for organizational redesign (based on recently performed benchmarks with other electric utilities, this typically applies no more than 40 percent of the time). o Variances where the ratios are high could be indicative of 1) a disincentivized group of individuals to assume non-union positions or 2) resource pools from which individuals are matrixed to specific projects / programs on a routine basis. o Variances where the ratios are low could represent a specific area/competence that falls under an organization's responsibilities that are not easily assimilated into another portion of the business. ▪ Upon review of the organization charts and the span of control, the supervisor / subordinate ratios do not appear to be properly coordinated with the duties of direct reports. Exceptions will be addressed as LUMA T&D Operations reconsiders the current overall structure of T&D Operations and the field services function currently located in the Customer Services department.
I-2 Clarity on Management & Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	▪ The issues around management and supervisory roles are less about clarity of roles and responsibilities and more about the abdication to or forced acceptance of the role of the union in managing the day-to-day operations of the business. ▪ A general lack of accountability for results exists. ▪ Organizational alignment offers a great opportunity for improvement. Currently lacking in practice, alignment requires organizational commitment to a declared direction over time (i.e., is an ongoing process rather than a condition) to produce and maintain unity of action, which is different than "agreement." ▪ Some management and supervisory roles within Customer Services and T&D Operations positions include tasks that could be done by lower-cost resources, thereby freeing higher-cost resources for higher priority work.
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	▪ The disparity regarding the ratio of administrative support (totaling 139) compared to direct workers (totaling 1,200 line workers and total T&D staffing of 2,300) include: There are too many higher-priced workers performing roles that could be more appropriately assigned to lower-salaried positions. The current job classifications do not comport to those used in North America (e.g., the Lineman 1, 2, 3 and 4 designations can be combined into one and other classifications can be established to provide greater differentiation regarding duties, responsibilities, and performance expectations). ▪ A complete review of the PREPA T&D organizational structure will address many of the gaps identified in the sub-focus areas concerning Span of Control, Clarity of Management and Supervisory Roles, and Ratio of Administrative to Direct Workers.

Gap Assessment

Sub-Focus Area	Observations & Contributors

- The current organization consists of the following six operating entities:

1. Electrical Distribution division, responsible for the following:
- Procedures, rules, and communications
- Project evaluations over power capacity, material / tools specifications and conservation programs, which provides guidance to technical operations - Operations and Maintenance (O&M) and construction with respect to standards, material testing requirements and regulations
- Evaluation and endorsement of the interconnection of special projects performed by external contractors
- Interfacing with the following departments:
  - Costs Control and Interventions office for applicable OPEX and non-federally funded capital projects
  - Warehouse Division to ensure materials and equipment used by T&D meet specifications and testing requirements

2. Transmission Engineering, Construction and Substation division, responsible for:
- Transmission outages
- Formulation of transmission and substation projects
- Construction and fleet self-maintenance
- Interfacing with the following roles, departments, and divisions:
  - Electrical System Protection and Conservation to specify substation test and commissioning requirements
  - Aerial Operations for line inspection and construction
  - Transportation for complex vegetation management challenges
  - Technical Operations Chief for O&M and Construction during transmission and major outage restoration activities
  - Cost Control and Interventions office for applicable Operational Expenditures (OPEX) and non-federally funded capital projects

3. Electrical System Protection and Conservation, responsible for:
- Maintenance and replacement of high voltage breakers and T&D transformers
- Testing and commissioning of new high voltage equipment and high voltage equipment conservation programs
- Interface with the following roles, departments, and divisions:
  - Transmission, Engineering, Construction and Substations (regarding substations testing and commissioning)
  - Costs Control and Interventions office for budget and cost control of OPEX and non-federally funded capital projects dealing with transformers, system protection and breaker procurement
  - Engineering Control Center for issues regarding protection and substation devices
  - Technical Operations Chief for O&M and Construction for issues around protection and substation devices or planning revisions or new equipment for protection schemes

4. Aerial Operations, responsible for:
- Requirements of Federal Aviation Authority (FAA) parts 91 and 133
- Interface with the following roles, departments, and divisions:
  - Energy Control Center in matters pertaining to line inspection and patrol
  - Transmission Engineering, Construction and Substation for line inspection and construction
  - Transportation for complex vegetation management challenges
  - Technical Operations Chief for O&M and Construction for line inspection and construction and costs control
  - Interventions Office for budget and cost control of applicable OPEX and non-federally funded capital projects.

5. Costs Control and Interventions Office, responsible for:
- Interface with various departments on OPEX and non-federally funded capital projects
- Project budget compilation
- Processing and providing overview of operational costs
- Developing / facilitating review of budget reports

6. Technical Operations Chief for O&M and Construction, responsible for:

Sub-Focus Area	Observations & Contributors
	• Management of the seven regions of Puerto Rico; these regional centers perform distribution, construction, and any O&M work • Support of Transmission, Engineering, Construction and Substation divisions during transmission and major outage restoration • Management of holland (bare hand transmission work) and vegetation management activities in the Northwest and Southeast of Puerto Rico **Notes**: • The regional division (i.e., seven regions) managed under the Technical Operations Chief for O&M and Construction, are split based on historical practice rather than the number / category of customers, electric system demographics, geographical considerations, or the locations of existing technical offices. • Following are the job classifications from the field execution portion of Customer Services to be transferred to T&D Operations at Commencement, all of which are PREPA trained: **Meter Tester 1:** Tests non-AMR (Automatic Meter Reading) meters in the field. Does not inspect for tampering but creates new ticket for the vendor (ICEE Metering Solutions). Does not remove or replace devices / infrastructure even though they have the necessary skills to do so. Collective bargaining agreements with unions have work rules that limit their activities. Reports to the Customer Services Representative (CSR) Supervisor. **Collector:** Performs disconnects and reconnects and reads meters. Does not remove or replace. Reports to the CSR Supervisor. **Meter Reader:** Reads meters only. Irregularities are reported to the office and new tickets are created. Does not change or replace. (Previously, read primary wholesale meters but resulted in too many errors.) Does not inspect for tampering but creates new ticket for ICEE. Reports to the CSR Supervisor. **Investigator:** Investigates billing complaints in the field. Performs consumption analysis. Determines medical consumption subsidy for customers. Interfaces with back office to rectify billing errors. Can read meters but does not test or remove. Does not inspect for tampering but creates new ticket for ICEE. Reports to the CSR Supervisor. **Lineman 1:** Makes customer repairs on secondary lines 600 volts and under. Performs connects, disconnects and meter reads. Is the only position to remove and replace. Supports T&D in emergency situations in some locations. Reports to the Technical Services Supervisor. **Technical Services Supervisor:** Master electrician (a PREPA requirement with annual certification). Only direct reports are Linemen 1. • **Regional Customer Services:** Like T&D Operations, Regional Customer Services is comprised of six regional areas: Metro, Bayamon, Ponce, Arecibo, Caguas, and Mayaguez. There are a total of 21 regional offices, and each Regional Customer Services Management team is comprised of a Commercial Operation Administrator who leads six Regional Administrators. Each Regional Administrator oversees supervisors and office support staff.
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	▪ Instances of protected patronage workers (termed “Trust Positions”) within the T&D organization have been uncovered. Such positions add cost to the business with little benefit and should be addressed during the organizational restructure.

T&D OPERATIONS

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	▪ Supervisor/subordinate ratio not ideal, inappropriate, or extraneous in some cases. ▪ ▪ .	Department level gap
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	▪ Current regional and district structure for T&D Operations or Customer Services and location of technical centers are not conducive to achieving an optimum mix of skills and competencies within the workforce. May also not match customer expectations to provide safe and reliable service or improve the customer experience.	Department level gap
	▪ Job classifications and related responsibilities are inconsistent with the anticipated roles of a revitalized LUMA workforce.	Department level gap
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes, or computer technology.*	▪ Administrative to direct workers ratio not ideal in all cases. Some tasks need to be realigned or improved by technology. ▪ ▪ To be addressed in conjunction with organization redesign and development of new job classifications.	Department level gap
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	▪ Patronage positions need to be eliminated. ▪ ▪ (This gap should be addressed with organization redesign and development of new job classifications.)	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*		X			
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	X				

T&D OPERATIONS

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes, or computer technology.*	X				
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	X				

II. Budgeting & Cost Performance

Evaluation Framework

The Budgeting & Cost Performance focus area consists of five sub-focus areas that define effective budgeting and cost performance:

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost/Productivity Management
- II-4 Overtime & Contractors Management
- II-5 Direct & Allocated Indirect Cost Management

Key observations and contributors identified gaps and a scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
II-1 Actual Expenditures as Percentage of Budgeted *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	▪ The FY2021 capital budget of $83M for 99 projects includes: o 8 substation projects totaling $6.3M o 4 transmission line projects totaling $8.5M o 3 electric system and conservation projects totaling $8.3M o 13 blankets totaling $35.8M ▪ There is an approved 2019-2020 Operation and Maintenance (O&M) budget of $271M vs. the projected spend of $206M. ▪ The approved 2020-2021 O&M Budget of $289M ($109M of which is assigned to Vegetation Management and $15M is assigned to upgrading streetlights to light-emitting diodes (LEDs)). ▪ The T&D cost control reports budget vs. actual performance down to the region and equivalent across the T&D organization. In general, the T&D organization appears to operate within established budgets. ▪ There are challenges to complete capital projects and O&M programs on schedule or within budget. ▪ There is room for improvement in establishing priorities and coordinating activities among operations, maintenance, contractors, and support areas. ▪ Contingencies are managed by individual project managers with limited visibility to senior management.
II-2 Impact of Emergent Issues on Budgets *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	▪ The O&M budget is disproportionately higher than budgets of similar size utility companies. ▪ Except for substation inspections, few budget dollars are assigned for preventive maintenance activities. Meanwhile, the corrective maintenance backlog is increasing. This suggests that a large portion of the O&M budget is assigned to emergent issues related to daily outages and major storm restoration.

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
II-3 Unit Cost/Productivity Management *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	▪ The unit cost and productivity management are non-existent due to the lack of Information Technology (IT) systems and union-imposed constraints. ▪ A disparity exists between productivity of outside contractors and in-house staff.
II-4 Overtime & Contractors Management *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	▪ The ratio of overtime to straight time labor costs is 36 percent vs. a plan of 29 percent. Both costs are higher than industry norms ranging between 20 and 25 percent. ▪ Contractors are managed by the Project Management Office (PMO) (outside of the T&D organization), with the appropriate T&D division providing performance expectations. ▪ Overtime is generally authorized to allow a crew to complete a job within the day, thus avoiding the remobilization and restart of work on a job nearly complete. ▪ Union restrictions preclude an effective contracting strategy for O&M work where scope could be clearly defined and managed, employing an effective Quality Assurance and Quality Control (QA / QC) program.
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ Not Applicable

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	▪ The split between Capital Expenditures (CAPEX) and Operational Expenditures (OPEX) is heavily weighted towards emergency maintenance and outage restoration. (This is consistent with the current reactive focus of the organization.)	Department level gap
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	▪ Despite a disproportionate amount of funding committed to O&M, the current emphasis on outage restoration, asset repair and replacement and meter replacements is inconsistent with an efficient and effective organization. A complete rationalization needs to occur across all groups to transition towards a more prudent allocation of O&M funds to planned maintenance.	SRP candidate
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	▪ The lack of unit cost and productivity management inhibits visibility of current performance, thus preventing continued incremental improvement in workforce efficiency.	SRP candidate
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	▪ Overtime rates much higher than straight time (36% vs. industry norms of 20 to 25%). ▪ Contributing factors include ineffective work and asset management programs, poor system reliability and reduced staff in critical areas.	Department level gap

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ Not Applicable.	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*			X		
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	X				
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	X				
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	X				
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	N/A				

III. Leadership Management

Evaluation Framework

The Leadership Management focus area consists of four sub-areas that define an effective leadership management process:

- III-1 Qualifications & Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter– & Intra-Organization Collaboration

Key observations and contributors identified gaps and a scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
III-1 Qualifications & Experience *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ There appears to be a lack of true leadership (i.e., the ability to influence). To the extent leadership does exist, competency is at the lower levels – that is, "positional" where people follow because they must, security is based on title, the position is gained by appointment (not necessarily ability), and the individual operates within the boundaries limited by his/her authority. ▪ Current leadership structure, which has a strong political influence, appears to be centered around authority, technical training and following proper protocols. Leadership should instead be concerned with developing skills and competencies that encourage others to confidently follow.
III-2 Accountability *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company's mission, values, and goals. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ The PREPA T&D organization's leadership management team appears ineffective for the following reasons: o Unions affect much of the day-to-day management of field activities. o There is a lack of an actionable, accountability framework, in which expectations are clearly communicated and agreed upon, action is taken, and results presented and accepted. This establishes accountability as a foundational element for advancement and employment. o Actions and decisions appear to be focused on urgent issues of the day. Such a tendency reflects an inability to strike a balance between short- and long-range goals and consequences. It points to an inability to gather necessary data and information for improved planning purposes. It points to a lack of consideration of all viable options in decision-making processes.
III-3 Ability to Deliver Results *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	▪ The leadership management team appears to focus more on matching work to available personnel, material, and equipment than on achieving targeted results. ▪ Asset decision-making criteria and frameworks have not been set by executive leadership. This leaves work performance to the discretion of engineering and planning areas and/or regions. Outcomes are largely dependent on the more tactically focused subject matter experts (asset-related decisions appear primarily driven by the "needs of the day" and more focused on repairing failed equipment than on broader long-term needs such as maintenance).
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ Collaboration between organizations or across regions appears limited. There is little evidence that individuals in senior management consider the "bigger picture" when making decisions and assigning priorities. Rather, decisions tend to focus on their own narrow sphere of influence, which leads to suboptimal company outcomes. ▪ Regions appear to operate independently, each utilizing their resources and budget to move toward their specific goals. Two overarching goals are reliability and customer

Gap Assessment

Sub-Focus Area	Observations & Contributors
	service. However, each region has its own unique challenges, including IT issues, customer wait times, reliable fleet vehicles and overall workforce management. ▪ There appears to be a lack of communication between Customer Services and T&D Operations regarding customer work completed in the field. Customer Services cannot obtain real time information about service order schedules or upcoming jobs. The district or local office usually becomes aware of an issue when it is brought forward by a customer. ▪ There appears to be difficulty working cross departmentally with little coordination and collaboration between major departments, including Human Resources (HR), T&D, IT, Procurement, the PMO and Building Renovations. ▪ There is a lack of focus on customers: Targeted customer feedback initiatives are limited and are not used to make organizational improvements. ▪ The intra-communication network in PREPA appears inadequate. There is no process in place to deliver information throughout all levels of the organization. The absence of unified direction from senior leadership to middle management has resulted in departments operating independently and developing individual strategies. Employees often receive information at the same time as the public, allowing no opportunity to prepare for customer inquiries. ▪ PREPA utilizes social media applications (e.g., Twitter) to communicate with the public. Customer Services employees are not briefed on communications prior to release, again allowing no opportunity to prepare for customer inquiries. Further, Corporate Communications does not prioritize customer information initiatives (e.g., outage info, billing info).

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ There are noticeable deficits in leadership competencies (more so in T&D Operations than Regional Customer Services). This results in suboptimal decision making within rigid silos and managing more to short term needs rather than effecting transformative change for the better.	Improvement opportunity
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ Refer to III-3, "Ability to Deliver Results"	
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	▪ Leaders allow problems (e.g., union involvement in managing the workforce) to continue without resolution. This example also points to an inability to establish a common set of operating protocols to achieve defined company goals.	Department level gap
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ Gaps related to organizational silos and their impact on the business are identified in other sections of this report.	

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	X				
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	X				
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	X				
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	X				

IV. Process Efficiency & Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness focus area consists of four sub-focus areas that define quality process efficiency and effectiveness:

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IV-1 Potential Risks to Post-Commencement *Identifies risks to post-commencement and steps needed to mitigate the risks.*	▪ There appears to be suboptimal execution of basic processes impacted by counter-productive behaviors (e.g., lack of trust, and siloed thinking), undefined and often conflicted performance expectations and related accountability to meeting these expectations, and incomplete (if any) process design. ▪ Ineffective workforce management affects efficiency in the field. Examples include lack of proactive initiatives to bundle work, minimal preventive maintenance, and lengthy maintenance backlogs. These inefficiencies cause substantial reactive and unplanned work and have significant effects on the timely execution of test, inspection, and planned maintenance processes. ▪ The organization's processes, policies and procedures are inadequately documented, stored and maintained. Many policies and procedures are inaccurate and/or irrelevant in today's operating environment. Multiple versions of policies and procedures are used in different areas of T&D Operations and Customer Services. While a centralized storage location (PREPA's intranet) exists, it is not commonly used as a resource by employees.
IV-2 Process Familiarity by all Stakeholders *Examines operational processes to ensure they are defined and understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.*	▪ The basic component of process design is not fully evident in practice. Missing elements include a clear understanding of the objective of the processes, assigned and trained resources to execute the processes, required inputs received and outputs delivered per specifications, a feedback loop to assure proper delivery, and continuous improvement. ▪ Process ownership and accountability needs refinement. Process owners sometimes are not clearly defined. When two workgroups collaborate on a process, each group appears to own their individual tasks; each group focuses on completing them rather than focusing on the overall process or considering the impact to customers. ▪ Process training is not uniform. Rather, it is communicated through word of mouth and is experience-based. ▪ Some processes may be out of date, inefficient and/or not compliant with current regulations. ▪ The identification of investment opportunities or solutions appears more historically based and reactive rather than a component of an overall lifecycle management process. ▪ There are inconsistencies in completing "as built" drawings and reviewing "lessons learned" after completing capital projects. ▪ There is a lack of procedures in place to apply risk-based lifecycle processes that drive optimum maintenance or asset replacement strategies.

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	▪ The process for identifying, prioritizing, categorizing (e.g., repair vs. replace) and assigning responsibilities for the work appears ill-defined across the organization. The process is largely decentralized. Unofficial information indicates work crews can change or influence work scope and priority at discretion without regard for pre-established centralized priorities. ▪ The work closeout process is informal and mostly undocumented. The process also lacks an enterprise-wide work management system. Such work completion data and information are necessary for future planning. ▪ Post field execution document control and configuration management activities during the project closeout process are often delayed and possibly not performed. ▪ There is a lack of standard operating procedures and checklists which provide detailed step-by-step processes to standardize restoration activities. As a result, regions or areas within a region use different approaches to restore service. This sometimes occurs despite receiving proper direction from the District Administrator. ▪ There is a lack of end-to-end processes for warehousing and logistic activities. ▪ Within Customer Services, employees deviate from standard processes as they feel is needed to manage customer interactions. There is also a lack of process review. For example, it appears that when employees are in training, they reference some training documentation, but once on the job for a while, they rely on their experience and guidance of coworkers. This has caused processes to evolve based on the office or location. Employees do not receive regular process coaching or feedback on completed work. Therefore, a manual process error may not be immediately identified owing to the lack of process review. Employees may continue to execute work the same way and develop negative habits until the issue is ultimately identified, generally by the customer. ▪ In the past, the PREPA Customer Services team has expressed a desire to move to technology-based processes, particularly for its field employees. Some efforts have been initiated but failed to fully implement due to IT and HR constraints. ▪ Key processes needing improvement noted by the PREPA Customer Services team, include the contact center, theft, emergency response, credit/collections, and customer escalation.
IV-3 **Process Compliance Management** *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	▪ There does not appear to be an incentive for process compliance. Rather, the autonomous nature of the existing work environment enables individual approaches with varying levels of consistency and established, pre-approved processes. ▪ The PREPA T&D organization struggles with finding the right balance to formalize work performance. Although an excess of formalization is not productive and could result in an administrative overburden. There does however appear to be a preponderance of missed commitments, delays, and misunderstandings among involved parties. As such, processes could be simplified and made easier to arrange (affected in large part by technological challenges related to communications and an inability to drive consistent practices and processes across the organization). ▪ The lack of formalized processes and procedures, ad hoc on-the-job training and regional differences contribute to the difficulty of monitoring process compliance. ▪ This adds to the complexity of standardizing work practices across PREPA making it difficult (if not nearly impossible) to effectively cross-staff across PREPA. ▪ In general, whether switching and lockout / tag out procedures exist or not is also an issue. Even if they do exist and can be made available, individuals often opt not to follow them (e.g., wearing proper personal protective equipment); this combined with an on-the-job training approach and the lack of standardization and consistency inherent to that approach, result in an ever present and significant safety issue.

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
IV-4 Efficiency of Overall Process Flow *Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.*	▪ The PREPA T&D organization has a strong vertically functional orientation (both relative to the Company and within the organization itself) that inhibits the smooth and efficient execution of processes (note that an effective process management approach is foundational to achieving systemic and sustainable performance improvement). Organizational structures, rather than support the execution of processes, pose barriers. ▪ Some processes are not automated. Rather, they depend on manual effort, which reduces efficiency, increases cost, and adds the potential for greater error. ▪ T&D Operations and Regional Customer Services lack an efficient, well documented process for employees to bring forward process improvements. This is a missed opportunity for achieving better results.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IV-1 Potential Risks to Post-Commencement *Risks to post-commencement and steps to mitigate those risks are identified.*	Refer to observations under IV-3, "Process Compliance Management," and Core Business Focus Areas: Asset Management, Project/Work Planning and Execution, Reliability and Major Event Management.	
IV-2 Process Familiarity by all Stakeholders *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*	Core business processes, often undocumented, are inefficient and inconsistently applied. Main contributors include organizational barriers (silos), undefined performance expectations, lack of enforced compliance by management, and ineffective coordination (e.g., risk and safety management). Such inconsistencies affect the ability to shift resources across and within regions and districts.	Department level gap
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	Refer to observations under IV-3, "Process Compliance Management"	
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	Refer to observations under IV-3, "Process Compliance Management"	

T&D OPERATIONS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IV-1 Potential Risks to Post-Commencement *Risks to post-commencement and steps to mitigate those risks are identified.*	X				
IV-2 Process Familiarity by all Stakeholders *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*		X			
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	X				
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	X				

V. Employee Training & Development

Evaluation Framework

The Employee Training & Development focus area consists of four sub-focus areas that define an effective employee training and development process:

- **V-1** Training Budgets & Program Effectiveness
- **V-2** Ability to Cross-Train as Personnel Development Path
- **V-3** Skills Assessment & Personnel Training Plans
- **V-4** Demographics & Profile of Personnel by Skill Level

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
V-1 Training Budgets & Program Effectiveness *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	▪ When queried, managers and supervisors recall a time when proactive training and personal development had priority focus in PREPA. However, over the past decade, other than initial Linemen 1 training and a brief course for new supervisors, there has been a noted absence of training initiatives. ▪ The current training approach does not reflect some basic elements that define an effective training program – namely, a comprehensive needs assessment, requirements and objectives based on skills needed to conduct the actual work, a comprehensive and recurring training plan, implementation of the training plan with the full support of all levels of the organization, and an evaluation / continual addressment of any deficiencies in the training program. ▪ In particular, basic training for switching operations appears lacking: o The training department CADE trains to the switching process but written documentation is not available to supervisors or switchmen. Switching procedure training has not been available to employees for 10+ years o A two-week training program for switching is purportedly available (some deny its existence). However, the organization does not demonstrate a sense that this is required. Every indication in previous interviews is that except for training of new Linemen 1 and new supervisor training (where depending on the instructor, switching may or may not be covered), all other previously conducted training has been deferred. Cited reasons include workload and reduced staffing. o Training follow up is not conducted to determine if employees have the necessary switching qualifications. Rather, it is presumed that supervisors who direct switching activities are qualified to do so, although supervisors are not necessarily as knowledgeable as the personnel they are supervising.
V-2 Ability to Cross-Train as Personnel Development Path *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	▪ There is a general absence of a competency / skill development processes. It is not uncommon for an individual to be placed in a specific position, doing the same job over an extended period, with little or no access to other functions and no ability to learn new skills from more experienced personnel. For example, a new Linemen 1 is assigned to a streetlight repair truck operating through the night. This provides no exposure to other activities or experienced crew. It is not uncommon for such an assignment to continue for years. ▪ When held, training for Linemen 1 (6 months in duration and paid for by the government and PREPA) consists of a combination of PowerPoint and hands on training. Old tools are used with lots of climbing (up and down). ▪ There is a disincentive built into the compensation structure for supervisors, as the supervisor pay is less than that for a Lineman 4. With no motivation to take the position,

Gap Assessment

Sub-Focus Area	Observations & Contributors
	roles are often filled by under-qualified individuals since all that is required for advancement is a basic training course. ▪ Most follow-up training is conducted on the job, the quality of which varies by the knowledge and competence of the supervisor in charge. There is widespread initial discomfort about performing work on live lines. ▪ PREPA's different training centers post a calendar with training offerings four times a year. This calendar is posted through email. The employees fulfill a training application that must be signed by their supervisor. Then, the application is sent to the Training Center via email or fax. ▪ While a total of 5 different training centers serves the different directorates, 3 apply to T&D: o CADE (Electrical Distribution Training Center) – Serves employees from the Transmission and Distribution directorate o CDCA (Administrative Development Training Center) – Serves employees from all directorates o CECI (Educational Training in Computer Science Center) – Serves employees from all directorates ▪ While cross training is essential to expand employees' ability to do more than a single job, in some cases, the job description limits what the employee can do (e.g., switching, or testing relays).
V-3 **Skills Assessment & Personnel Training Plans** *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	▪ There is no formal process in place to evaluate individual employee performance. Pay increases and promotions are not merit-based. Typically, a flat percentage is applied across the portion of the workforce authorized to receive a pay adjustment. ▪ The progression from Lineman 1 to Lineman 2 requires 2 years of experience as a Lineman 1 and is then initiated by bidding on an open position posting. Seniority, which is based on the number of years employed at PREPA and not necessarily as a lineman, dictates the successful candidate. ▪ Senior management and leadership positions tend to be politically assigned. This leaves the Company in a constant state of flux as the political leadership structure changes every four years. ▪ The IT system used to track employee training is Oracle, which has 2 main applications: Employee Training and Training Description. Service Coordinators register completed training in employee records upon completion. ▪ There are varying perceived levels of competence among supervisors. Some are viewed as unqualified for their positions. ▪ Training on the proper use of tools and equipment is perceived as inadequate.
V-4 **Demographics & Profile of Personnel by Skill Level** *Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.*	▪ A proactive plan to ensure the transfer of knowledge and skills from more experienced (and possibly aging workers) to less experienced (and possibly younger) workers does not appear to be a priority. There are no expectations that such a transfer of knowledge is an important part of an experienced worker's job. ▪ There are no proactive measures in place to identify potential skill gaps or areas where there will be critical capability shortfalls. ▪ There is a high percentage of employees approaching retirement.

T&D OPERATIONS

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
V-1 Training Budgets & Program Effectiveness *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	▪ Refer to gaps identified in V-2, "Ability to Cross-Train as Personnel Development Path," and V-3, "Skills Assessment and Development of Personnel Plans."	
V-2 Ability to Cross-Train as Personnel Development Path *Pursuit of cross training initiatives to improve development path for personnel.*	▪ Except for initial training for Linemen 1 and a brief training introduction for new supervisors, the PREPA T&D and Regional Customer Services organizations have no formal training programs. Currently, training is managed by the HR Department with most training conducted on the job and subject to varied supervisory experience, focus and orientation. Little thought is given to a structured succession plan.	SRP candidate
V-3 Skills Assessment & Personnel Training Plans *Process to map existing and future employee skill sets relative to company needs.*	▪ There are no formal / deliberate individual development plans for employees. This is evidenced by the absence of individual performance reviews, a promotion framework based on seniority versus job performance, and a pay scale that does not motivate upward advancement (e.g., Linemen 4 paid more than Supervisors). Further, individuals are often pigeon-holed into one position for years with few opportunities to gain exposure to the variety of tasks expected of experienced linemen. There is no competency training or observation, no goal setting, and no periodic performance reviews.	Department level gap
V-4 Demographics & Profile of Personnel by Skill Level *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	▪ Refer to gaps identified in V-2, "Ability to Cross-Train as Personnel Development Path," and V-3, "Skills Assessment and Development of Personnel Plans."	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
V-1 Training Budgets & Program Effectiveness *Emphasis placed on employee training is evidenced by training budget and program effectiveness.*		X			
V-2 Ability to Cross-Train as Personnel Development Path *Pursuit of cross-training initiatives to improve development path for personnel.*		X			

T&D OPERATIONS

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets.*	X				
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	X				

VI. Workforce Management

Evaluation Framework

The Workforce Management focus area consists of two sub-focus areas that define effective workforce management:

- **VI-1** Effectiveness of Current Workforce Management Systems & Processes
- **VI-2** Time Charging, Productivity Tracking & Reporting

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	▪ It is difficult to assess the effectiveness of workforce planning, scheduling and optimization given that PREPA's T&D organization currently operates in a more reactive manner. Typically, urgent issues overtake 50 percent of all daily scheduled work. Individuals and crews are not held accountable to a properly prioritized and directed schedule. Accountability for performance is also lacking. ▪ The PREPA T&D organization reports the following: o Crew productive time is estimated at 3 to 4 hours per shift o Vehicle and stock in truck or a single sick day can sideline a crew for a day o Line crews are one size fits all, so a three-person crew may be assigned to work what a two-person crew could handle o Line crews are often assigned to outage or service issues in situations where a one- or two-person outage crew would suffice o The work assignment process does not account for bundling opportunities o Fleet availability is a critical resource constraint ▪ There are key missing elements in the work management system, including the following: o Work planning regiment that establishes "day ahead" and "week ahead" schedules, coupled with a strong commitment to protect the schedule o Crew productivity measurement against pre-established performance targets o Standard job performance expectations (description of work and estimated resources and hours to complete) o Performance dashboard tracking key metrics at all levels of the organization o Resource leveling across the system ▪ Systems to support the following are also lacking: o Mobile work tracking to allow crews to receive outage tickets remotely, generate repair tickets on site and push up to STORMS system, and track crew location o Inspection data capture that simplifies processes through drop down menus ▪ PREPA is lacking an integrated resource loaded schedule for all planned work, appropriately constructed to account for the current state versus unplanned work. Due to "break-in" work, 15 percent of the annually scheduled work is accomplished on time. ▪ The training program is overseen by the HR department — external to T&D. As a result, the focus on training and developing frontline staff has lessened, and there is no process in place to identify and address shortfalls in the skills and competencies of critical staff. Most training efforts rely on on-the-job training, leaving the depth, breadth and focus of any training subject to the orientation and capabilities of the supervisors (i.e., this process is inconsistent and non-scalable). It generally takes 4–5 years before an individual can work independently. ▪ Inability to secure staff contributes to high vacancy rate (i.e., difficult to get new positions approved) results in excessive overtime and fatigue. Frontline supervisors spend significant time supporting gaps left by frontline vacant positions or union employees on strike, taking their focus away from leading their teams.

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
VI-2 Time Charging & Productivity Tracking & Reporting *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line, and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	▪ Worker productivity is not tracked either on a unit cost basis or using "wrench time" benchmarks during the normal 7.5-hour shift. ▪ Time charging and reporting using the Kronos time clock (directly for those with immediate access or as two-step process in which crews complete a daily log for later entry into Kronos) is inaccurate

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Defined processes and work rules to ensure efficient labor utilization.*	▪ The workforce management systems and processes are not conducive to productivity measurement or continuous quality improvement. Rigid crew sizes, inability to easily bundle related work, lack of a planning regimen that "protects the schedule," and limited availability of appropriate technology causes significant waste across the organization.	Department level gap
VI-2 Time Charging & Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line, and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	▪ Specific Gaps related to QA/QC steps are addressed in the Core Business Focus Area, "Project/Work Planning and Execution."	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Defined processes and work rules to ensure efficient labor utilization.*	X				
VI-2 Time Charging & Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line, and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*		X			

VII. Management Systems & Technology

Evaluation Framework

The Management Systems & Technology focus area consists of four sub-focus areas that define effective management systems and technology:

- VII-1 Process Automation
- VII-2 Adaptability to New Systems & Technology
- VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VII-1 Process Automation *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
VII-2 Adaptability to New Systems & Technology *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	[redacted]
VII-3 Interaction or Linkage with Other Functional Areas, IT Plans or Systems *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VII-1 Process Automation *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	[redacted]	[redacted]
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes, and technology to make quality improvements.*	[redacted]	[redacted]
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*	[redacted]	
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	[redacted]	[redacted]

T&D OPERATIONS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VII-1 Process Automation *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	[redacted]				
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes, and technology to make quality improvements.*					
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*					
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*					

VIII. Performance Metrics & Continuous Improvement

Evaluation Framework

The Performance Metrics & Continuous Improvement focus area consists of five sub-focus areas that define performance metrics and continuous improvement processes:

- VIII-1 Recognition of Critical Performance Metrics
- VIII-2 Performance Metric Collection, Validation & Reporting
- VIII-3 Root Cause & Trend Analysis
- VIII-4 Instances (or Lack) of Data-Driven Management Initiatives
- VIII-5 Recent Performance Trends

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VIII-1 Recognition of Critical Performance Metrics *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	▪ There appears to be few, if any, identified KPIs or metrics among key participants in the work management process, which includes Operations, Stores, Asset Management, and System Planning. The lack of identified critical performance metrics inhibits the effective coordination of resources during planning and scheduling, the availability of materials during execution, and the potential for process improvement. ▪ Periodic performance reporting (not necessarily presented as a consolidated package) includes reliability performance (e.g., SAIFI, SAIDI, and CAIDI as well as average size and duration of an outage), safety, and general budget performance down to the division and manager level (prepared and issued by the Costs Control and Interventions Office). ▪ Within Customer Services, there is a lack of integrated performance targets at a regional level, and there seems to be little connection between other departments. There is no real ownership of customer satisfaction. ▪ Worst performing feeders are reported, but action is not taken to correct the problem. Reports appear to be more of an administrative requirement than a “call to action.” ▪ Measuring workforce productivity does not seem to be a critical priority across the organization (as evidenced by an inability to link costs to quantities and unawareness of historical unit costs by asset or program). ▪ It does not appear that information generated by the PREPA reliability performance tracking system is used to establish staffing strategies (e.g., swing, or alternate shifts, day of week or time of day adjustments). However, the capability to do so exists.
VIII-2 Performance Metric Collection, Validation & Reporting *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	▪ The current performance metric collection systems are inadequate, meaning that there is not enough data collected to plan, adjust, or monitor the appropriateness of actions. Instead, actions are undertaken with little attention to upfront analyses of performance data. Current processes make limited use of problem-solving tools / root cause analyses without quality control. ▪ Reporting within PREPA is regionally based. Reports do not sum up to the system level. Such regional reporting creates a lack of clarity at a system level, meaning that the system cannot be compared to industry norms. For example, SAIFI values are extraordinarily high, but without a system-wide value, they cannot be compared to industry norms. ▪ Any attempt to manage / compare workload and productivity between regions is anecdotal (not backed by reliably scrubbed data).

Gap Assessment

Sub-Focus Area	Observations & Contributors
	▪ Metrics specific to the Asset Management department are heavily weighted towards evaluation with some focus on real-time information. Leading indicators, however, are not incorporated into the planning process. ▪ There has been no meaningful attempt to measure / manage performance since 2017. ▪ KPIs / metrics to measure productivity are not readily available to front line supervision or management. ▪ Management reporting tends to focus on high level performance metrics without the identification of root causes and underlying trends. For example, 31 percent of service interruptions are caused by defective or deteriorating equipment. The root cause of these interruptions is not captured by high level performance metrics. The SAIDI, SAIFI, CAIDI and CAIFI metrics do not identify which systematic equipment problems are likely contributing factors. The metrics concerning interruptions also lack visibility to time-of-day / day-of-week trends, which could affect staffing decisions.
VIII-3 **Root Cause & Trend Analysis** *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	▪ The items reported on routinely present performance at the system and regional levels but are not easily actionable. SAIFI, SAIDI and CAIDI are certainly well-accepted metrics for reliability, but a second level is required to direct appropriate action. For example, average size of an outage speaks to the need for / adequacy of in-line recloser installation and fuse coordination. Knowing if outages are due to defective or deteriorating equipment is necessary to determine the appropriate action. As such, it would be better to also know common offenders in terms of specific asset classes, their manufacturer, make and model. Further, the metrics do not fully address the customer experience (such as CEMI or tracking of momentary interruptions which can be far more telling). ▪ Performance drivers are not recognized and understood. ▪ The importance of aligning metrics across supporting departments is not recognized. This can lead to different departments working against each other. ▪ Performance based conversations are not prevalent across the organization and no evidence of any formal performance target setting throughout the organization appears non-existent. ▪ There is a lack of root cause analyses for equipment failure. ▪ Appears that PREPA has no root cause analysis program in place to identify failure codes which could be used for targeted maintenance and capital maintenance equipment identification program. ▪ In general, the analytics of scarcely available data do not lead to actionable performance improvement and risk mitigation interventions. This leaves management and supervisory personnel either blind to issues or forced to apply subjective judgement and intuition when making decisions on assets, prioritizing work, or addressing system reliability issues.
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	▪ There does not appear to be any focus on the basic objectives of operational performance management (productivity improvement, improved asset performance and operational excellence). Starting with an absence of line-of-sight performance measurement from employee to the T&D organization's KPIs / Metrics and PREPA corporate, there is no evidence of a drive toward continuous improvement (starting with diagnosing performance gaps relative to industry benchmarks, developing initiatives to close the gaps, implementing these initiatives, and measuring / reporting on their affect). ▪ Low levels of data confidence preclude use of analytics in informing decisions aimed at improving performance. ▪ No process for backend value capture-only focuses on completing an activity and then move onto the next "priority".

Gap Assessment

Sub-Focus Area	Observations & Contributors
VIII-5 Recent Performance Trends *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	▪ Reliability is reported on / trended monthly and seems to hover around the same level of performance (extremely poor when compared across the industry). ▪ O&M actual and budget comparisons are similarly reported and trended; and though PREPA is tracking under budget, its O&M spending levels are significantly higher than industry norms. ▪ The impact of silos: Any successes are likely to be attributable to specific individuals and not systematically replicable across the organization. ▪ Beyond bottom-line financial and associated system performance metrics, there are only limited attempts to overtly post performance results (organization or individual). ▪ In the case of reliability, the data is available to lead to effective corrective action, though on a limited basis. For example: o The data indicates the average size of an outage is between 300 and 350 customers. This data is presented in enough detail to identify those circuits that will benefit from an aggressive program to install in line reclosers and better coordinate fuses (which could reduce SAIFI by a factor of 2 or 3). o Further, the data points to 13kV as an effective leverage point, suggesting that a combination of the above-mentioned sectionalizing approach and enhanced focus on vegetation management could prove fruitful. ▪ In the area of service restoration, the information is available to analyze performance based on time-of-day and day-of-week which could lead to various crew staffing strategies. ▪ Though the above capabilities exist, there is no evidence of these types of metrics being either reported or acted upon (though individuals reviewing this information acknowledged understanding of the above-provided information). ▪ Current state, PREPA does not have the systems or supporting databases to improve performance in the areas of Work Management, Investment and Portfolio Evaluation and Optimization, or Asset Management

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	Performance Metrics are not reflective of all the key aspects of the business and do not lead to actionable performance improvement initiatives (refer to Observations). Further, there are no business plan rollouts nor linkage between Key Performance Indicators and business objectives.	SRP candidate
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	Embedded in gap identified in VIII-1, “Recognition of Critical Performance Metrics.”	
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company’s ability to estimate costs and benefits of improving KPIs*	With few noted exceptions, lacking ambition to drive performance improvement, the organization seems content to routinely report the status of a relatively small set of performance metrics.	Improvement opportunity
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	Embedded in gap identified in VIII-3, “Root Cause and Trend Analysis.”	

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	Embedded in gap identified in VIII-3, "Root Cause and Trend Analysis."	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*		X			
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*		X			
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	X				
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	X				
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*		X			

IX. PREPA Culture & Momentum

Evaluation Framework

The PREPA Culture & Momentum focus area consists of five sub-focus areas that define the PREPA culture and momentum:

- **IX-1** Resistance (Active or Passive) to LUMA Management
- **IX-2** Employee Morale/Excitement About LUMA
- **IX-3** Employee Empowerment/Action Orientation
- **IX-4** Timeframe to Improve Performance
- **IX-5** Impact of Organization Silos

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IX-1 Resistance (Active or Passive) to LUMA Management *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	In general, the PREPA T&D Organization's managers and supervisors seem to be leaning favorably towards LUMA (see this as an opportunity to garner the support necessary to do their jobs). However, there is a move afoot to sabotage the transition. Under threats of fines, both unions (UTIER and the more friendly UTICE) have been directing members to not talk to LUMA personnel during the transition and are spreading a false narrative around the transition. The unions are comparing this privatization to an earlier effort to privatize PR's cellular phone company, a move that was not viewed positively by the public. The public's disdain for PREPA's performance and reputation may well counterbalance this analogy. Signs in the streets stating "oppose electric rate hikes" are indictive of the campaign being waged against the LUMA transition.
IX-2 Employee Morale/ Excitement About LUMA *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	There are several elements necessary for change, the current state of which is summarized below: ▪ Group optimism: Commitment to a successful outcome is high amongst management but at best, mixed among union workers. ▪ Trust and involvement: No alignment towards achieving commonly shared organizational goals. In fact, knowledge of these goals may vary within and across the organization. ▪ Dignity and respect: There appear to be some confusion regarding ability to negotiate to a common vision and whether all parties feel valued/appreciated in the process. ▪ Clarity of direction: Values currently differ and there is confusion around expectations. ▪ Market driven focus: Rather than acknowledging the realities the drove this decision, there is no natural bias towards action. Instead, the organization has a self-focused orientation which is normal in any transformation, particularly one where there will be a noted change in culture. ▪ Performance accountability: Strong bias towards political impacts and less on accountability and meritocracy, along with a strong sense of victimization. ▪ Learning organization: Consumed in addressing the urgent item of the day, no time to reflect on trends, lessons learned, inter-/intra-organization communication and coordination (way too siloed in their interactions) Strong sense of victimization leads to identification of barriers, with no real effort to remove them.
IX-3 Employee Empowerment/ Action Orientation *Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.*	With minor exceptions, there does not seem to be an emergence of individuals focused on driving an organizational transformation; rather, PREPA's organization appears to be looking forward to LUMA's presence and impetus to drive change. There appear to two general postures: ▪ A view of LUMA as the savior, with a plan to embrace whatever is said, or at least hopeful that things will improve ▪ A skeptical "wait and see" posture, expecting things to be worse

Gap Assessment

Sub-Focus Area	Observations & Contributors
	There is no indication of a drive on the part of PREPA to actively build organizational commitment to the transition (rather the more reactive strategy of informing and responding). In classic change management terms, it appears the drive will come from the LUMA transition team, PREPA's management team will need to transition from one of "passive acceptance and endorsement" to proactive advocates, and the rank and file will need to become "active participants." No employee surveys to elicit feedback around current moral, improvement suggestions, etc. Lack of Employee Incentives for progression or performance. Lack of ongoing employee development strategy. No programs exist to identify and leverage top performers. No formal performance improvement recognition program in place to incentivize employees to perform well.
IX-4 **Timeframe to Improve Performance** *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	Recognizing that full cultural transformation can take as long as five years and the entrenchment of the union in all aspects of the business, an extended time frame would be projected. That said, given PREPA's current level of performance, particularly in reliability, we should see a steady improvement profile starting at six to nine months.
IX-5 **Impact of Organization Silos** *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	Strong regional orientation leads to an extremely siloed organization with little sharing of resources across regions. This manifests itself in the assignment of vehicles and equipment, sizing of crews and prioritization of work, all resulting in sub-optimal outcomes. The siloed nature in how PREPA operates poses challenges to PREPA performing the roles and responsibilities of the asset owner, asset manager and service provider. As a result, the roles of AO, AM and SP become somewhat muddled in making day-to-day decisions. Strong regional bias, such that the development and implementation of an Asset Management or Customer Services strategy will not be consistently reflective of the top-down priorities of the business. Organizational silos preclude alignment in establishing priorities / coordinating activities among operations, maintenance, contractors, customer services, and with support functions. PREPA Transmission is dependent on other siloed department work schedules, which leads to entire crews waiting on another department to do one task before they can proceed with their work, e.g., switching is only done by one department.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*	Mixed feelings regarding the transformation from PREPA to LUMA (refer to observations)	Department level gap
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	Key elements that determine success of any organizational transformation need to be bolstered (refer to observations)	Improvement opportunity
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*	Embedded in IX-2, "Employee Morale/ Excitement about LUMA	
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*	Time frame for Conversion of Transformation to Significant and Sustainable Performance Improvement likely to span beyond 24 Months	Department level gap
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*	Addressed across several focus areas within the Core Business Assessment	

T&D OPERATIONS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*		X			
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*			X		
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*		X			
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*		X			
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*		X			

Core Business Assessment

Focus & Sub-Focus Areas

The 13 **Core Business** focus areas are further defined by the following sub-focus areas:

	Focus Area	Sub-Focus Area			
XI	**Asset Management (Shared with UT)**	XI-1 XI-2 XI-3	Organization, Strategy & Vision Processes Information & Technology	XI-4 XI-5	Culture & Competencies Current Practices (Age & Condition of Electric T&D Infrastructure)
XII	**Project/Work Planning & Execution**	XII-1 XII-2 XII-3 XII-4`	Identification Planning Scheduling Execution	XII-5 XII-6 XII-7	Closeout Current Practices (Worker Productivity) Application of Work Rules
XIII	**Technical Services**	XIII-1 XIII-2	Switching Technical Support	XIII-3	Inspection & Maintenance
XIV	**Risk Management**	**Input to Risk Management**			
XV	**Safety**	**Input to Safety**			
XVI	**Reliability (Shared with UT)**	XVI-1 XVI-2	Reliability Performance Data, Systems & Analyses Service Interruptions	XVI-3 XVI-4	Service Restoration Customer Experience
XVII	**Major Event Management**	XVII-1 XVII-2 XVII-3 XVII-4	Outage Planning & Preparation Imminent Event Planning Damage Assessment Tactical Planning	XVII-5 XVII-6 XVII-7 XVII-8	Resource Dispatch Service Restoration External Communication & Customer Service Verification/Confirmation
XVIII	**System Performance Management**	XVIII-1 XVIII-2	Data Collection Analytics	XVIII-3	Corrective Action
XIX	**Fleet**	XIX-1 XIX-2 XIX-3 XIX-4	General Administration Capital Management People Management Parts/Inventory Management	XIX-5 XIX-6 XIX-7	Petroleum Management GPS/Telematics Management Aviation
XX	**Warehouse Operations**	XX-1 XX-2	Inventory Management Warehouse Management	XX-4	Logistics Management
XXI	**System Operations**	**Input to Utility Transformation**			
XXII	**Ancillary Critical Support**	XXII-1	Critical Staff Capabilities	XXII-2	Critical Support Facilities
XXIII	**Operations & Physical Security**	**Input to Security**			

Note: Focus areas shown in blue font indicate that the Operations department has provided key observations and contributors during the gap assessment process but did not identify gaps or assign maturity rating scores. Instead, these observations and contributors were shared with other functions.

XI. Asset Management

Evaluation Framework

The Asset Management Focus Area consists of five sub-focus areas that define an effective asset management system:

- XI-1 Organization, Strategy & Vision
- XI-2 Processes
- XI-3 Information & Technology
- XI-4 Culture & Competencies
- XI-5 Current Practices (Age & Condition of Electric T&D Infrastructure

Key observations and contributors, identified gaps, and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XI-1 **Organization, Strategy & Vision** *The extent to which the Asset Management system aligns with ISO 55000 and / or IAM standards. Specifically, review the organization's implementation of the Asset Owner, Asset Manager and Service Provider functions and evaluate the consistency between overall strategy, the underlying philosophy in managing assets, and the deployment of personnel in capturing the value of installed assets.*	The siloed nature of PREPA operations poses challenges to PREPA in performing the roles and responsibilities of asset owner (AO), asset manager (AM) and service provider (SP). As a result, the roles of AO, AM and SP become somewhat muddled in making day-to-day decisions. Strong regional bias, such that the development and implementation of an asset management strategy will not consistently reflect the top-down priorities of the business. Asset decision-making criteria and frameworks have not been set by Executive Leadership, leaving much of what is done within the engineering and planning areas and/or regions. Outcomes are largely dependent on the more tactically focused subject matter experts (asset-related decisions appear primarily driven by the "needs of the day" and more often focused on repairing failed equipment) No clear understanding of how best to establish an AM strategy and supporting practices (e.g., repair vs. replacement criteria, maintain or "run to failure," time-based vs. condition-based preventive maintenance and capital investment portfolio optimization) Risk management is addressed at the enterprise levels, but absent at the equipment / component level.
XI-2 **Processes** *Consistency of risk analysis methodology and investment planning with AM policy and corporate / business area strategies; Determines the extent to which investments are identified, prioritized and optimized based on overall value, resources, and risk; AM plans, processes and procedures are factored into the planning and execution of capital projects and O&M programs; and strategic objectives, and KPI / measures are aligned and established using industry best practices and credible benchmarking information.*	**INVESTMENT/PROGRAM PORTFOLIO OPTIMIZATION** Identification of investment opportunities or solutions is more historically based and reactive than part of an overall proactive lifecycle management process. Investments are not based on optimizing the tradeoff between value and risk mitigation / elimination. More emphasis is placed on the initial cost of installation than on total lifecycle costs when evaluating proposed capital projects. Limited use of scenario testing for alternative solutions and/or optimizing the investment portfolio based on varying the value and risk evaluation criteria. **INVESTMENT / PROGRAM DELIVERY** There are challenges to completing capital projects and O&M programs on schedule or within established budgets. There is also room for improvement in establishing priorities and coordinating activities among operations, maintenance, contractors, and support areas. Disparity exists between productivity of outside contractors and in-house staff. Inconsistent in completing "as built" drawings or reviewing "lessons learned" after completing a capital project.

Gap Assessment

Sub-Focus Area	Observations & Contributors
	Tendency to match workload to available staff rather than establish a staffing strategy based on clarity regarding system requirements. Contingencies are managed by individual project managers (limited visibility to senior management). No evidence of a continuously learning organization through a structured review of performance on completed projects. Organizational silos preclude alignment in establishing priorities and coordinating activities among operations, maintenance, contractors and with support functions. **PERFORMANCE MANAGEMENT** No evidence of "line of site linkages" between asset health and the condition of specific equipment and components and system performance metrics. Lacking a benefit capture validation process as a follow up to the completion of capital investments or O&M programs. There is no obvious line of sight between employee efforts and the specific plant or system and corporate strategy. Metrics relating to asset management are weighted heavily towards evaluation (of past performance) with some focus on operation (real-time information) but are almost non-existent in anticipation (leading indicators). Beyond bottom-line financial and associated system performance metrics, there are only limited attempts to overtly post performance results (organization or individual). No evidence of performing root cause analyses for equipment failures. **ASSET LIFECYCLE MANAGEMENT** No process in place to apply a risk-based lifecycle process that drives optimum maintenance or asset replacement strategies.
XI-3 **Information & Technology** *The extent to which the AM information management architecture and processes in place are adequate to ensure availability of accurate asset condition and performance information in support of asset-related decisions*	Limited, if any, use of technology to facilitate collection of asset data, recognizing that the massive amount of capital work planned over the next 10 years represents a "perishable" opportunity to improve asset quality, and as a result, operations. Asset condition and performance data for PREPA assets, at best widely dispersed, renders it unlikely that PREPA can retrieve, integrate, and trend equipment performance data into future repair and/or replacement decisions. Field personnel place limited, if any, value on proper disciplines related to updating asset data and information, primarily because it is not used. IT strategy is not yet focused on the need to support an environment focused on asset management. Current maintenance management platforms appear to be lacking in being able to address the needs of an effective asset management system. Data collection is labor intensive with limited automation, leading to "seat of the pants" decisions regarding how to manage assets. Accuracy of asset performance and condition data for PREPA T&D assets is suspect and incomplete. The data is insufficient to support investment and spending portfolio optimization, asset health and condition related decisions, and real time KPI / asset performance tracking. Substations use an access database to keep a basic inventory of critical asset classes, but lack data on asset condition, maintenance, and performance, meaning that this database is only a partial asset register.
XI-4 **Culture & Competencies** *The extent to which the organization has embedded the skills, competencies, and continuous improvement culture necessary to successfully implement an asset management process.*	The role of asset manager appears absent across the organization, meaning that some of the asset manager responsibilities are widely dispersed within the organization, and linked too strongly to the role of service providers. Practical knowledge to develop a more optimum maintenance program appears limited, meaning that maintenance defaults to interval-based maintenance with lower than acceptable completion rates.

Gap Assessment

Sub-Focus Area	Observations & Contributors
	Data and trending analyses skills must be developed to monitor asset performance, project "end-of-life," link asset performance to strategy and identify critical assets will require development. Assets to be installed in the new revitalized T&D system will require expertise beyond that which exists at PREPA. No structured program is in place to certify employees in the areas of asset or investment delivery (project) management.
XI-5 **Current Practices (Age & Condition of Electric T&D Infrastructure)** *The extent to which the utility has a handle on the physical state of its infrastructure, applies analytics to support the repair vs. replace decision and properly prioritize the replacements. To address these issues, the extent to which the utility adopts an integrated view of the future grid vis a vis replacing aging infrastructure as part of an integrated distribution planning process.*	There has not been significant thought around applying asset condition and performance data to a fully integrated asset management model (e.g., health indexing, integration of maintenance and operating data / information, determination of criticality of each specific asset, development and tracking of an optimum maintenance strategy and assignment of risk in the event of failure at the equipment / component level). Management of assets appears to be relegated to a "run-to-failure, fix it when it breaks" strategy, rather than applying AM-related analytics to determine optimum preventive maintenance plans. This means the use of interval vs. condition vs. risk-based approaches, or the conscious choice to run-to-failure as an outcome rather than the result of a proactive strategy. At best, PREPA knows the chronological age of its assets. Lacking any analytical rigor, PREPA does not know the effective age of its assets. Therefore, it is virtually impossible to develop meaningful AM-based replacement plans. Work required to integrate initiatives around aging and deteriorated infrastructure with the utility of the future. There is no program to upgrade major equipment within PREPA. Over the years, this has created a system with old and maintenance-intense major equipment (e.g., electromechanically relays, bulk oil breakers and metal oxide arrestors). Equipment, even critical equipment, and substations, are only replaced when they fail, with no evidence of any proactive replacements.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XI-1 **Organization, Strategy & Vision** *Extent to which asset management system aligns with industry standards.*	Asset management roles (asset owner, asset manager and service provider) are not well-defined. This affects the overall governance regarding Risk Management, deployment and prioritization of resources, work planning and scheduling and development of investment and spending portfolios.	Improvement opportunity
	Organizational structure affects execution of critical processes. The strong regional bias and organizational silos reduce the effectiveness and efficiency of the asset management process as well as overall business operations.	Improvement opportunity
	Lacking asset management frameworks (e.g., business value framework and risk matrix): Leads to inconsistent decisions regarding assets, limits transparency related to risk and performance improvement targets and compromises the ability to maintain line of sight from business strategy to organizational and individual performance.	Improvement opportunity
XI-2 **Processes** *Consistency of risk analysis methodology and investment planning with asset management policy, strategy, and actions.*	Capital investment and O&M spending portfolios are not reflective of a process that optimizes the trade-offs between risk and value: Reduces ability to consider alternatives, adopt a proactive posture to managing assets and demonstrate the veracity of the overall portfolio	Department level gap

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	Inefficient delivery of projects and programs: Precludes realization of benefits, including improved performance or eliminated / mitigated risks	Department level gap
	Lacking line of sight from business strategy to organizational and individual performance: Inhibits organizational alignment, ownership for business results and continuous improvement	Department level gap
	Absence of life cycle planning for critical assets: Prevents development / implementation of long-range asset strategies that can be integrated with overall grid strategies, system planning and affects the ability to make procurement decisions based on total economic lifecycle cost evaluations.	Department level gap
	Resource availability (as opposed to business requirements) drive work: Affects ability to develop an optimum resource strategy and limits initiatives to address any gaps (material availability, identification of critical skills and competencies and allocation of staff across the regions).	Improvement opportunity
	Lacking an optimum maintenance strategy and process: Lack of a holistic approach that includes interval, condition-based, risk-based, and run-to-failure reduces proactivity and efficiency in deploying resources on preventive and corrective maintenance activities.	Department level gap
XI-3 Information & Technology *Extent to which asset management information management architecture and processes are adequate to support asset-related decisions.*	Asset performance and condition records are sparse and incomplete: Precludes ability to fully implement an effective AM system and process.	Department level gap
	Interventions (repair, replacement, monitor, run-to-failure) are not based on asset performance and condition data: Interventions are based largely on the experience level of SMEs (always important), but the lack of quantifiable data leads to decisions which are only partially informed. Further sole reliance on SMEs precludes proactive initiatives to improve availability and accuracy of relevant data.	Department level gap
	Lacking AM IT platform and supporting BI applications: Requires a main frame program to replace locally maintained and decentralized databases and BI applications to support enterprise-wide investment and spending portfolio optimization, asset health and condition informed decisions, and real time KPI / asset performance tracking.	SRP candidate
XI-4 Culture & Competencies *Extent to which organization has skills, competencies, and improvement culture for a success asset management process.*	Asset management is not a predominant function within PREPA: Organizational structure and autonomy of regions, combined with the absence of a clear AM policy and strategy, inhibit the development of AM practices.	Department level gap
	Knowledge, skills, and information to develop optimal capital investment portfolios and effective maintenance strategies: Scarcity of usable asset performance and condition data, combined with limited, if any, competence in data analytics, results in intuitive and experience-based decisions by SMEs (largely tactical with no overt consideration to strategy).	Department level gap
	General lack of AM training and related industry forums: No apparent connection to industry forums (e.g., IAM) to expedite the learning curve and incorporation of AM related practices.	Improvement opportunity
	Limited knowledge of operations analytics on how the relationship between asset condition and performance information relates to future system performance: Reliance on SMEs without the use and benefit of analytics limits the potential for optimal asset performance.	Improvement opportunity
	Limited vision on how to become a “utility of the future”: Lack of knowledge in newer technologies and how they will be integrated with current infrastructure results in operating and safety-related risks.	Improvement opportunity

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XI-5 **Current Practices (Age & Condition of Electric T&D Infrastructure)** *Extent that utility understands its current infrastructure and applies analytics to support and prioritize asset repair and replacement decisions, along with using an integrated approach to upgrades and the planning process.*	Absence of properly conceived maintenance strategy: An improperly conceived maintenance strategy can expose the organization to unacceptable levels of risk or severely impact O&M spending levels. Specifically, the lack of focused effort on the most critical assets allows for only a marginal improvement in asset performance.	SRP candidate
	Capital investment planning is largely reactive: Currently focused on failed assets with little, if any, consideration for projecting equipment failure and applying a risk evaluation framework to determine appropriate asset-specific interventions; the same applies to proactively addressing technical legacy issues (e.g., E-M relays and OCBs)	SRP candidate
	Lacking an executable integrated system plan: Focus on capital investment and O&M spending reflects a proper balance between current system performance mandates (e.g., reliability, safety, and environmental) and the grid of the future.	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XI-1 **Organization, Strategy & Vision** *Extent to which asset management system aligns with industry standards*	X				
XI-2 **Processes** *Consistency of risk analysis methodology and investment planning with asset management policy, strategy, and actions*	X				
XI-3 **Information & Technology** *Extent to which asset management information management architecture and processes are adequate to support asset-related decisions*		X			
XI-4 **Culture & Competencies** *Extent to which organization has skills, competencies, and improvement culture for a success asset management process.*		X			
XI-5 **Current Practices (Age & Condition of Electric T&D Infrastructure)** *Extent that utility understands its current infrastructure and applies analytics to support and prioritize asset repair and replacement decisions, along with using an integrated approach to upgrades and the planning process.*	X				

XII. Project/Work Planning & Execution Evaluation Framework

Evaluation Framework

The Project/Work Planning & Execution focus area consists of six sub-focus areas that define an effective project/work planning and execution process. The practices and disciplines that underlie these sub-focus areas apply to both O&M work and capital projects.

- XII-1 Identification
- XII-2 Planning
- XII-3 Scheduling
- XII-4 Execution
- XII-5 Closeout
- XII-6 Current Practices (Worker Productivity & Overtime)
- XII-7 Application of Work Rules

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XII-1 **Identification** *Extent to which work, and projects are identified as part of asset management and proactive testing and inspection process. Scope of issues is clearly communicated, and issues are prioritized using a risk and value-based assessment framework.*	The process for identifying work (and its subsequent prioritization), determining the type of work required (e.g., repair vs. replace) and assigning who will be tasked with performing the work seems ill defined across the organization (largely decentralized). Work crews within T&D Operations and Regional Customer Services can change or influence work priorities and their associated scopes with little regard for authority or pre-established priorities. Late decisions regarding resources to perform work (largely the result of a significant amount of unplanned work on a weekly basis) impacts the effective integration between system planning and the design, field, construction, and maintenance teams. For substations, asset condition (maintained in an Access Database) is the primary determinant for identifying and prioritizing work. Frequency is the only criterion used to identify work. Use of this criterion may be too extreme meaning that the organization defaults to the manufacturer's recommendations, leading to some equipment being over maintained. For lines, primary sources of information are the OMS (from outage tickets), customer requests, and STORMS (driving planned work). Customer Services work has no workforce management system to assist in this process. District Engineers set the priority for a body of work on a weekly basis for the subsequent week, most of which gets superseded by emergent activities which are normally attributed to faults. Work order issued from Administrative Director to superintendents and supervisors, after which work is communicated informally to the field. This is because there is a lack of technology platforms to receive electronically. The focus of front-line supervision is to keep the crews busy (largely on unplanned work) rather than deploy them in a way that assures an optimal outcome in balancing risk and value. Appears that PREPA has no root cause analysis program in place to identify failure codes which could be used for targeted maintenance and capital maintenance equipment identification program.

Gap Assessment

Sub-Focus Area	Observations & Contributors
XII-2 Planning *Extent to which work is performed based on detailed work plan, including comprehensive and accurate work orders and pre-staging of jobs with sufficient lead time that is incorporated into the scheduling process. Also assesses the use of contingency plans.*	Most work cannot be effectively pre-staged because 67-90 percent of the work is unplanned, despite attempts to create a one to two-week look ahead schedule. Most work, being reactive and emergent, never goes through proper planning (e.g., does not allow sufficient time pre-stage equipment, materials, and tools). A significant amount of work is reactive, meaning that it is driven by faults, failed meters, emergent customer requests, etc. This leaves little to no opportunity for planned (corrective) or preventive (inspection and testing) maintenance. To the extent that planning occurs, it lacks a holistic, integrated view of the resources available and the other constraints that require alleviation to execute work within the desired timeframe. Prioritization of work should be based on the number and type of customer affected (starting with those deemed critical) and duration of the current outage. The Substation division has troubleshooting groups, which represent 25 percent of substation crew resources for unknown break in work. Opportunities to consolidate work from multiple projects at the same worksite are routinely missed. This is due to the "rapid churn" of emergent work and the lack of a holistic view of a developing portfolio of work. Attempts to coordinate distribution with transmission work (i.e., uncover opportunities to create back feeds within Distribution to allow for transmission work) are manual and done while in the process of working on the system. For substations, inspection and testing frequencies are largely driven by the manufacturer's recommendation, some of which are modified based on experience. Crews range between two and four individuals, comporting to industry norms for the tasks at hand. The regions maintain enough extra crews in standby to handle one outage. Within the Substations division, there is some specialization across the assets that can serve to complicate the planning and scheduling processes.
XII-3 Scheduling *Extent to which routine and urgent work is scheduled with sufficient detail to confirm resource availability and assure coordination with other work, along with allowance is made for emergent work. Also assess the role of scheduling in maximizing use and productivity of available resources.*	PREPA lacks an integrated resource loaded schedule for all planned work that is appropriately constructed to account for the current state vis-a-vis unplanned work. Because of "break-in" work, only 15 percent of the annually scheduled work is accomplished on time. Planned preventive maintenance suffers with the unplanned assignment of resources to emergent work. Most jobs for distribution are scheduled one day in advance, supporting a reactive approach focused primarily on equipment failures with little focus on preventing failures. Normal disciplines around work scheduling are not present (e.g., activity and resource integration, critical path management and application of constraints), particularly since any attempt at scheduling conflicts with the rolling wave of emergent activities. Outages are driven by individual project schedules and efforts to drive work to maximize efficiency within an outage or at a specific geographic location are inconsistent. Last minute intrusions into the daily and weekly cadence are the norm rather than exceptions to be managed. The weekly schedule is not "protected", and any perturbations appear to be the norm (rather than handled as management-approved exceptions). PREPA Transmission is dependent on the work schedule of other siloed departments. This leads to entire crews waiting on another department to do one task before they can proceed with their work e.g., switching is only done by one dept. Work bundling is almost nonexistent with PREPA. Bundling maintenance activities amounts all departments would create efficiencies.
XII-4 Execution *Extent of use for project and work plans that incorporate safety requirements, parts, tools, drawings, and training in field work,*	Little, if any, planned maintenance (corrective, predictive or preventive), resulting in an unacceptably high percentage of emergency repairs (by definition, crises) and inefficient utilization of key resources.

Gap Assessment

Sub-Focus Area	Observations & Contributors
along with the quality of manager and supervisor oversight of work activities and how tasks are completed (including clean up) by work crews. Extent to which "Protecting the Schedule" is a core value within the organization, supported by KPI and metrics.	Work is performed based on a verbal communication chain. For Distribution, this chain goes from the District Engineer to the Supervisor who then directs the crews. The STORMS system provides some form of work order control but is only used for planned work, even though over 60% is unplanned. Within the Substations and Regional Customer Services divisions, the work is assigned verbally with established timeframes that are generally adhered to. PREPA would benefit from current design, maintenance, and construction standards. This leads to inconsistencies in work execution based on varying levels of detail, work quality and the resulting increase in costs. Inter-organization communication and coordination appears lacking. Supervisory involvement with field work varies based on experience, personality, and geography. This is an issue to the extent that there is a variation among supervisors' expertise and knowledge. Strong reliance on supervisors to ensure completed work meets existing standards or in the absence of standards and expectations. This represents the last line of defense as opposed to a more proactive and independent QA/QC process. The permitting process is extremely cumbersome and causes significant delays throughout the execution of work. Planned and preventive maintenance has not been performed for years. Key items impeding execution include inadequate age and size of fleet assets, a shortage of people (especially considering the lack of technology), and union factors in structuring crews. Supervisors also have varying levels of competence, with some viewed as unqualified for their positions. Training on the proper use of tools and equipment is found to be lacking. For substations, at the completion of work, the supervisor provides a report documenting what was accomplished and the tests performed to ensure the asset / system is in proper working order. PREPA has little to no standards as to how major equipment should be tested. Need to develop standard test procedures. The tools and testing equipment that PREPA uses are old technology, requiring a significant investment to update. Staff cross training is required to execute more than the limited tasks that a specific PREPA employee can do presently. In many cases, the job description limits what an employee can do (e.g., switching, testing relays).
XII-5 **Closeout** *The extent to which costs and activities are tracked accurately, post performed work is integrated with asset condition and performance records (i.e., the Asset Register), and where appropriate, reflect the pre-execution problem diagnoses and root cause analyses.*	For substations, the Access Database is updated occasionally, but this is often delayed pending completion of the supervisor's job completion report. Field crews often work from prints that are several revisions behind the document of record. The updating of drawings is not a priority. Lessons learned meetings are rarely conducted. In the case of reactive work, there is no attempt to determine root cause or define trends. The work closeout process is extremely informal, with little, if any, documentation. There is no enterprise-wide work management system, within which to provide work completion data and information. Crews rush unemployed and feel there is no time to document completed work. Post-field execution document control and configuration management activities during the project closeout process are, at best, delayed, and normally not performed. IT is working on implementing a Work Management System (Asset Suites) for substation which will be used to track the entire process from work identification through to work closeout.
XII-6 **Current Practices (Worker Productivity & Overtime)**	Current KPIs and metrics are insufficient in measuring the effectiveness of the work management process. In fact, measuring workforce productivity does not seem to be a

Gap Assessment

Sub-Focus Area	Observations & Contributors
Extent to which utility manages activities that detract from worker productivity (e.g., decrease windshield time, remote reporting, apply design and construction standards and address incoherent union work rules). Also related is focus on managing overtime to ensure improvements in worker productivity commensurate with added hours.	critical priority across the organization (as evidenced by an inability to link costs to quantities and an unawareness of historical unit costs by asset or program). There appears to be few, if any, KPIs and metrics among the key participants in the work management process (e.g., Operations, Stores, Asset Management and System Planning). This compromises the effective coordination of resources during planning and scheduling, assuring the availability of material during execution, and inhibiting the potential for process improvement. There has been no meaningful attempt to measure and/or manage performance since 2017. There has been a monthly report (been put on the shelf since Hurricane Maria) reporting high level metrics, but not at sufficient detail to lead to actionable work management process improvements. KPIs and metrics to measure productivity are not readily available to front line supervision employees or management. Any attempt to manage and/or compare workload and productivity between regions is anecdotal rather than backed by reliably scrubbed data. Interviews state that, at best, there are only four hours of real work in a 7.5-hour shift. This estimate is purely anecdotal as there is no data nor metrics to monitor the actual number. Failure to fully use and integrate the plethora of emerging technologies compromises the gains that can be made in automating tasks, receiving real-time customer feedback, machine learning optimization, and real-time data acquisition and visualization. Overtime is generally authorized to allow a crew to complete a job within the day, thus avoiding the remobilization and restart of work on a job nearly completed. No mobile mapping or paper maps are on site or in work trucks. Maps are checked at the operations office, but the crews go to the field to determine the issue. For example, switches can be shown on these maps, but without the number or identification. All switching is managed through the control center. There is no reliable radio communication between crews and Dispatch, or among crews, meaning that they are forced to use personal cell phones. It is often hard to get through to Dispatch (can take hours) and information provided is often inaccurate. Workers have been observed filling holes with native dirt, meaning that no pole tamping was observed. Poles also appear to be set shallower than standard. Guys are measured and installed in the air, with reliance on word of mouth to determine the correct length of guys. Linemen are expected to purchase their own tool. No evidence of in-process or post installation quality control. Transmission crews work with 115kv and 230kv circuits, and there is a blend of Transmission and Distribution crews working the 38kV circuits. Transmission crews support distribution with remote access expertise. Urban areas have 24/7 coverage and rural areas have crews working two shifts (7 AM to 3 PM and 3 PM to 11 PM). Linemen 4 serve as trouble shooters and during off shift hours, the first responder is the supervisor with no callout process. Streetlights can be a high priority item; it is not uncommon for a government official to pressure regions to fix them even before outage calls. Two Linemen 1 can be placed on a streetlight repair truck operating through the night for years, with no other exposure to experienced crews. No mobile mapping or paper maps are on site or in trucks. This means that crews check maps at operations offices, but without switch designations / IDs on maps or SLDs.

Gap Assessment

Sub-Focus Area	Observations & Contributors
XII-7 **Application of Work Rules** *Extent that works rules are formalized and congruent with standard industry practices to support productivity targets and prudence for safety.*	The lack of procedures and regional differences add to the complexity of standardizing work practices across PREPA; this makes it difficult, if not nearly impossible, to effectively cross-staff across PREPA. When queried, employees indicate that safety is important. However, there is no unsolicited indication that a tailgate meeting is an important element of PREPA's safety program. PREPA's TRIF is over 9, which indicates that safety is not a managed process. As such, there is no real accountability or indication that safety is viewed as an "all hands" responsibility. Specific examples include: ▪ Lack of safety snaps on hooks ▪ Phases are lifted on basket with personnel in bucket ▪ Site grounding and bonding is not up to industry standards (grounds installed at mid-span to a ground screw rather than at structure, cranes are grounded to guy wire, no bond on bucket, etc.) ▪ PPE rules not enforced (personnel working in bucket with no hard hat, harness, etc.) ▪ Responsibility for using hand signals is not clear ▪ When bucket trucks could not reach the top of the pole, workers rigged a crane hook safety snap open so that the crane could unhook by lowering the hook ▪ Plywood used to cover excavations ▪ Water bottles refilled from common water jug ▪ Torch used to cut existing guy wire ▪ Questionable rigging practices (use ropes/knots rather than wire grips, lifts Hendrix cable with an uninsulated hook, and H taps as tension splices) ▪ No barricades around work site on public roadways ▪ Rubber gloves and live line tools are out of date ▪ Tagout procedures may exist but are not used in the field ▪ Crew did not use a test weight for pre-flight ▪ Lacking overall Public Safety Program as external organizations operate the system without permission Union stipulations impact workforce effectiveness and efficiency. For example: ▪ Linemen 3 could not drive ▪ Linemen 4 will only work with Linemen 3 ▪ Supervisor pay being less than that for Linemen 4 leads to lesser qualified supervisors ▪ Union issues fines for not complying with its directives Overall standards have been established though somewhat out of date, but the primary issues are around execution, security, and safety (i.e., not followed). For example: ▪ The focus on urgent repairs appears to consume the majority of PREPA's field resources. There is a growing list of cosmetic items that detract from the curbside appeal of PREPA's facilities (an offshoot of failure to properly clean up after a job). ▪ Wood pole installation consists of three steps (setting pole, framing pole, and installing lines) with no assurance that all three will be performed within a reasonable timeframe. ▪ Troubleshoot activities occur without the benefit of updated SLDs, Mapping Documents, relying solely on the memory of supervisors. ▪ Physical security is lacking, making them susceptible to sabotage ▪ Tooling and equipment are not adequate to support safety or productivity in the performance of work. Creates a need for workarounds or rationale for non-performance of assigned tasks. ▪ The return-to-work process is not enforced ▪ Lack of accountability and training ▪ Supervisors have relinquished the authority to enforce work rules

T&D OPERATIONS

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XII-1 Identification *Extent to which work, and projects are identified as part of asset management and proactive testing and inspection process. Scope of issues is clearly communicated, and issues are prioritized using a risk and value-based assessment framework.*	Work identification and notification processes are inconsistent across the T&D Operations and Regional Customer Services organizations: Affects planning and scheduling processes, inter / intra-organizational coordination, and the process for prioritization of work	Department level gap
	Work orders used to administer but not manage and execute work performed in the field: Work orders are generated and provided to individuals above front-line supervision after which any direction to the crews is less formal (verbal, email, etc.). This can lead to inconsistent results and unrealized expectations.	Department level gap
	PREPA lacks a robust work management system: IT has been working on implementation of a system that could manage the entire process and bridge the requirement for separate, yet integrated work, meter data management and asset management systems. Further, work and asset management systems should be seamlessly integrated (i.e., they should talk to each other).	SRP candidate
XII-2 Planning *Extent to which work is performed based on detailed work plan, including comprehensive and accurate work orders and pre-staging of jobs with sufficient lead time that is incorporated into the scheduling process. Also assesses the use of contingency plans.*	Significant amount of unplanned work precludes planning at a meaningful level: 67 to 90 percent of the work performed each week is unplanned. Even with an approach that dictates short-term scheduling (one to two-week windows), the amount of emergent work resulting from failed equipment, emergent customer requests and unplanned outages reduces the opportunity to properly plan, resource and pre-stage.	Department level gap
	Not compliant with preventive maintenance requirements, and planned corrective maintenance is often deferred: This further exacerbates the previous point: as deferral of preventive and planned corrective maintenance often leads to failures and faults.	SRP candidate
XII-3 Scheduling *Extent to which routine and urgent work is scheduled with sufficient detail to confirm resource availability and assure coordination with other work, along with allowance is made for emergent work. Also assess the role of scheduling in maximizing use and productivity of available resources.*	Schedule does not drive work: PREPA is unable to execute scheduling cadence to drive the performance of work. The preponderance of emergent ("break-in") work renders any attempt to "protect the schedule" meaningless; this impacts the effective use of resources and coordination of key support activities across the organization. Further compounding the issue is an overall lack of accountability and poor worker attendance with no discipline administered; this is directly attributable to union interference in the day-to-day management of work.	Department level gap
XII-4 Execution *Extent of use for project and work plans that incorporate safety requirements, parts, tools, drawings, and training in field work, along with the quality of manager and supervisor oversight of work activities and how tasks are completed (including clean up) by work crews. Extent to which "Protecting the Schedule" is a core value within the organization, supported by KPI and metrics.*	*No assurance of quality in work execution*: Informal communication (as opposed to use of well-documented work orders), lack of construction and maintenance standards, varying levels of supervisory expertise, and an ad hoc quality review process increases the likelihood of inconsistent and incomplete outputs.	Department level gap
	Inadequate availability and training on proper tools, equipment, and fleet assets: Lacking state-of-the-art tools and equipment and a revitalized fleet and the associated training impacts crew productivity	SRP candidate
	Poor communication and coordination of crews: Inoperable radio communication results in a reliance on personal cell phones which prove unreliable at times, and from which Dispatch is hard to reach. Crews often wait for hours to get orders and often receive inaccurate information.	SRP candidate
	Service dispatch and meter testing and repair need to be centralized to improve coordination and prioritization of work and improve risk posture regarding safety.	SRP candidate

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	Comprehensive training program required to establish the required work management regimen and practices and reinforce the change management aspects.	SRP candidate
	Inter-organization communication and coordination appears lacking: An offshoot of poor planning and scheduling, the most apparent disconnect involves the permitting and clearance process, along with coordination between T&D Operations and Regional Customer Operations	Department level gap
XII-5 Closeout *Accuracy of cost and activity tracking, along with whether this tracking reflects problem diagnoses and root cause analyses and is incorporated into asset condition and performance records.*	*Applicable design and installation documentation is not updated*: Inhibits optimal performance in the field for subsequent work and negatively impacts any initiative to implement an asset management program.	Department level gap
	No formal review of lessons learned in executing work: Lessens opportunities to institute continuous improvement in the work management process	Improvement opportunity
XII-6 Current Practices (Worker Productivity & Overtime) *Extent to which utility manages activities that detract from worker productivity (e.g., decrease windshield time, remote reporting, apply design and construction standards and address incoherent union work rules). Also related is focus on managing overtime to ensure improvements in worker productivity commensurate with added hours.*	*Performance management in the form of KPIs and metrics is lacking*: Leads to an inability to track worker productivity or view a scorecard to provide leading indicators of impeding challenges to the performance of work, nor conduct comparisons among regions and districts to identify best practices within PREPA. Routine monthly reporting that partially addressed this requirement has been shelved since 2017.	SRP candidate
	Productivity within 7.5-hour shift could improve by 25 percent: At best, there are only four hours of real work performed in a 7.5-hour shift based on anecdotal estimates given the lack of metrics. Issues to address include union interference, lack of materials, procedural compliance, tendency to install “band-aid” fixes, supervisor specific work practices, unnecessary division of work (e.g., pole setting and meter replacements) and delays in getting materials, equipment, or clearances.	Improvement opportunity
XII-7 Application of Work Rules *Extent that works rules are formalized and congruent with standard industry practices to support productivity targets and prudence for safety.*	*Increased attention to public and employee safety and post-work cleanup seems warranted*: Does not appear to be an overt area of focus, further accentuated by the absence of a formal tag out / clearance process, poor application of grounding practices, no fleet and equipment inspections, inconsistent line locating efforts (relying on supervisor / crew memory), lack of proper tools / PPE, patterns of taking short cuts when performing work, no measures for safety accountabilities, and little, if any, training over the last 10 years. Safety metrics would be worse but for large amount of insulated 4kV. With respect to general housekeeping, jobs are often completed without clearing away debris or replaced equipment. The lack of salvage value and any clean up at all have created major safety concerns with multiple congested aerial work areas, not understanding what is currently energized, potential for induction with abandoned line with no grounding and major public safety concerns with unstable falling structures and objects.	Priority/SRP Candidate
	High exposure to sabotage: Locking devices are largely inoperable, exposing critical assets to easy access by the public (also a potential public safety issue).	Priority / SRP candidate

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	Lack of adherence to standard procedures / and absence of design aids: Though updating may be required, standards exist but are not necessarily followed. Key aids such as SLDs and system maps are either nonexistent or out-of-date, increasing dependence on front line supervision to ensure work is performed safely and properly. There are instances where supervisors have hand drawn SLDs of their areas that they maintain to use during work planning.	Priority / SRP candidate
	Lack of tooling and equipment to support performing work safely and efficiently: Forces crews to establish work arounds or leave work unfinished	SRP candidate
	Supervisors and leaders are not trained or empowered to enforce rules: Leadership and performance management training is required for supervisors and leaders, noting that supervisors that try to enforce the rules are often overturned and employees go back to regular work duties with no accountability.	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XII-1 Identification *Extent to which work, and projects are identified as part of asset management and proactive testing and inspection process. Scope of issues is clearly communicated, and issues are prioritized using a risk and value-based assessment framework.*		X			
XII-2 Planning *Extent to which work is performed based on detailed work plan, including comprehensive and accurate work orders and pre-staging of jobs with sufficient lead time that is incorporated into the scheduling process. Also assesses the use of contingency plans.*		X			
XII-3 Scheduling *Extent to which routine and urgent work is scheduled with sufficient detail to confirm resource availability and assure coordination with other work, along with allowance is made for emergent work. Also assess the role of scheduling in maximizing use and productivity of available resources.*		X			

T&D OPERATIONS

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XII-4 Execution *Extent of use for project and work plans that incorporate safety requirements, parts, tools, drawings, and training in field work, along with the quality of manager and supervisor oversight of work activities and how tasks are completed (including clean up) by work crews. Extent to which "Protecting the Schedule" is a core value within the organization, supported by KPI and metrics.*		X			
XII-5 Closeout *Accuracy of cost and activity tracking, along with whether this tracking reflects problem diagnoses and root cause analyses and is incorporated into asset condition and performance records.*		X			
XII-6 Current Practices (Worker Productivity & Overtime) *Extent to which utility manages activities that detract from worker productivity (e.g., decrease windshield time, remote reporting, apply design and construction standards and address incoherent union work rules). Also related is focus on managing overtime to ensure improvements in worker productivity commensurate with added hours.*	X				
XII-7 Application of Work Rules *Extent that works rules are formalized and congruent with standard industry practices to support productivity targets and prudence for safety.*	X				

XIII. Technical Services Evaluation Framework

Evaluation Framework

The Technical Services Focus Area consists of three sub-focus areas that define an effective technical services process:

- XIII-1 Switching
- XIII-2 Technical Support
- XIII-3 Inspections & Maintenance

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XIII-1 Switching *Extent to which utility performs safe, efficient, and effective measures (planned or unplanned) in connecting and disconnecting lines or substation assets to and from the system.*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
XIII-2 Technical Support *The extent to which the utility maintains operability of its assets, focusing primarily on applying / changing settings and acquiring data.*	[redacted]
XIII-7 Inspections & Maintenance *The extent to which the utility performs inspections and maintenance on substations and key line assets. Includes condition assessments, maintenance and the management of inspection data and maintenance records.*	[redacted]

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIII-1 Switching *Extent to which utility performs safe, efficient, and effective measures (planned or unplanned) in connecting and disconnecting lines or substation assets to and from the system.*	[redacted]	[redacted]
XIII-2 Technical Support *The extent to which the utility maintains operability of its assets, focusing primarily on applying / changing settings and acquiring data.*	[redacted]	[redacted]
XIII-7 Inspections & Maintenance *The extent to which the utility performs inspections and maintenance on substations and key line assets. Includes condition assessments, maintenance and the management of inspection data and maintenance records.*	[redacted]	[redacted]

T&D OPERATIONS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XIII-1 Switching *Extent to which utility performs safe, efficient, and effective measures (planned or unplanned) in connecting and disconnecting lines or substation assets to and from the system.*	[redacted]				
XII-2 Technical Support *The extent to which the utility maintains operability of its assets, focusing primarily on applying / changing settings and acquiring data.*					
XII-7 Inspections & Maintenance *The extent to which the utility performs inspections and maintenance on substations and key line assets. Includes condition assessments, maintenance and the management of inspection data and maintenance records.*					

XVI. Reliability Evaluation Framework

Evaluation Framework

The Reliability focus area consists of three sub-focus areas that define an effective reliability process:

- XVI-1 Reliability Performance Data, Systems & Analyses
- XVI-2 Service Interruptions
- XVI-3 Service Restoration
- XVI-4 Customer Experience

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XVI-1 **Reliability Performance Data, Systems & Analyses** *Extent to which utility applies OMS to trend outage history and frame issues around reliability. Focus of management attention on levers to reduce service interruptions and restoration. Activities include determining what delivery stage (Transmission, Substation and Distribution) contribute most to customer interruptions, defining areas of improvement (e.g., size, lockouts, voltage, and worst performing circuits), outage cause analysis and addressing variables that affect outage duration (e.g., number of outages per event, actual timing of outages).*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
XVI-2 Service Interruptions *Extent to which utility can integrate information gleaned from review of electric infrastructure, insights from performance data, systems and analyses, and SME knowledge and experience. Define and implement actions to reduce service interruptions (programs and initiatives for consideration are incorporated in list of interview questions).*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
XVI-3 Service Restoration *Extent to which utility can integrate insights from data, systems and analyses and SME knowledge and experience to define and implement actions to improve service restoration. Begins with review of restoration process from*	[redacted]

Gap Assessment

Sub-Focus Area	Observations & Contributors
initial detection and analysis to repair and restoration, with key areas to address including mobilization restoration practices and communication.	[redacted]

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Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
XVI-4 Customer Experience *Extent to which utility is focused on customer experience in developing reliability strategies (e.g., metrics, customers experiencing multiple interruptions). Also, extent of communication and customer service during major events.*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVI-1 Reliability Performance Data, Systems & Analyses *Extent to which utility applies OMS to trend outage history and frame issues around reliability. Focus of management attention on levers to reduce service interruptions and restoration. Activities include determining what delivery stage (Transmission, Substation and Distribution) contribute most to customer interruptions, defining areas of improvement (e.g., size, lockouts, voltage, and worst performing circuits), outage cause analysis and addressing variables that affect outage duration (e.g., number of outages per event, actual timing of outages).*	[redacted]	[redacted]
XVI-2 Service Interruptions *Extent to which utility can integrate information gleaned from review of electric infrastructure, insights from performance data, systems and analyses, and SME knowledge and experience. Define and implement actions to reduce service interruptions (programs and initiatives for consideration are incorporated in list of interview questions).*	[redacted]	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
XVI-3 Service Restoration *Extent to which utility can integrate insights from data, systems and analyses and SME knowledge and experience to define and implement actions to improve service restoration. Begins with review of restoration process from initial detection and analysis to repair and restoration, with key areas to address including mobilization restoration practices and communication.*	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	[redacted]	[redacted]
XVI-4 Customer Experience *Extent to which utility is focused on customer experience in developing reliability strategies (e.g., metrics, customers experiencing multiple interruptions). Also, extent of communication and customer service during major events.*	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVI-1 Reliability Performance Data, Systems & Analyses *Extent to which utility applies OMS to trend outage history and frame issues around reliability. Focus of management attention on levers to reduce service interruptions and restoration. Activities include determining what delivery stage (Transmission, Substation and Distribution) contribute most to customer interruptions, defining areas of improvement (e.g., size, lockouts, voltage, and worst performing circuits), outage cause analysis and addressing variables that affect outage duration (e.g., number of outages per event, actual timing of outages).*	[redacted]				
XVI-2 Service Interruptions *Extent to which utility can integrate information gleaned from review of electric infrastructure, insights from performance data, systems and analyses, and SME knowledge and experience. Define and implement actions to reduce service interruptions (programs and initiatives for consideration are incorporated in list of interview questions).*					

T&D OPERATIONS

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVI-3 Service Restoration *Extent to which utility can integrate insights from data, systems and analyses and SME knowledge and experience to define and implement actions to improve service restoration. Begins with review of restoration process from initial detection and analysis to repair and restoration, with key areas to address including mobilization restoration practices and communication.*	[redacted]				
XVI-4 Customer Experience *Extent to which utility is focused on customer experience in developing reliability strategies (e.g., metrics, customers experiencing multiple interruptions). Also, extent of communication and customer service during major events.*					

XVII. Major Event Management

Evaluation Framework

The Major Event Management focus area consists of eight sub-areas that define an effective major event management process:

- XVII-1 Outage Planning & Preparation
- XVII-2 Imminent Event Planning
- XVII-3 Damage Assessment
- XVII-4 Tactical Planning
- XVII-5 Resource Dispatch
- XVII-6 Service Restoration
- XVII-7 External Communication & Customer Services
- XVII-8 Verification/Confirmation

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XVII-1 **Outage Planning & Preparation** *Extent to which utility has strategy and approach for coordinated restoration effort after major event. Key focus areas include Emergency Response Plan, use of Incident Command System, application of mock exercises, pre-storm system hardening, maintenance regimen, system design, resource flexibility and mutual assistance measures.*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
XVII-2 Imminent Event Planning *Extent to which utility has tailored advanced planning and mobilization with weather prediction approach, including use of forecasting models, clear communications protocols, approved resource deployment plans and practices, event pre-staging and storm predictions.*	[redacted]
XVII-3 Damage Assessment *Ability to assess damage from a major event quickly and accurately (both labor and technology) to compile summary of repair sites, materials, and labor requirements / estimates.*	[redacted]
XVII-4 Tactical Planning *Extent to which utility optimizes restoration efforts, focusing on prioritization, sequencing and deployment of resources and work, along with use of technology to decrease outage duration.*	[redacted]
XVII-5 Resource Dispatch *Extent to which utility effectively dispatches resources and maintains two-way communications in MEM.*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
XVII-6 **Service Restoration** *Extent to which utility provides optimal deployment coordination between EOC, restoration teams and operations base staff, and scalability / flexibility of restoration and repair.*	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	[redacted]
XVII-7 External Communication & Customer Service *Utility's ability to communicate with customers before, during and after major events, address business community needs and keep government informed. Includes use of communications tools such as TV, radio, print and social networking, along with call center operation.*	[redacted]
XVII-8 Verification/Confirmation *Extent to which utility verifies service restoration, especially "nested outages."*	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVII-1 Outage Planning & Preparation *Extent to which utility has strategy and approach for coordinated restoration effort after major event. Key focus areas include Emergency Response Plan, use of Incident Command System, application of mock exercises, pre-storm system hardening, maintenance regimen, system design,*	[redacted]	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
resource flexibility and mutual assistance measures.	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
XVII-2 Imminent Event Planning *Extent to which utility has tailored advanced planning and mobilization with weather prediction approach, including use of forecasting models, clear communications protocols, approved resource deployment plans and practices, event pre-staging and storm predictions.*	[redacted]	[redacted]
	[redacted]	[redacted]
XVII-3 Damage Assessment *Ability to assess damage from a major event quickly and accurately (both labor and technology) to compile summary of repair sites, materials, and labor requirements / estimates.*	[redacted]	[redacted]
	[redacted]	[redacted]
XVII-4 Tactical Planning *Extent to which utility optimizes restoration efforts, focusing on prioritization, sequencing and deployment of resources and work, along with use of technology to decrease outage duration.*	[redacted]	[redacted]
	[redacted]	[redacted]
XVII-5 Resource Dispatch *Extent to which utility effectively dispatches resources and maintains two-way communications in MEM.*	[redacted]	[redacted]

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	[redacted]	[redacted]
XVII-6 Service Restoration *Extent to which utility provides optimal deployment coordination between EOC, restoration teams and operations base staff, and scalability / flexibility of restoration and repair.*	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
XVII-7 External Communication & Customer Service *Utility's ability to communicate with customers before, during and after major events, address business community needs and keep government informed. Includes use of communications tools such as TV, radio, print and social networking, along with call center operation.*	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
XVII-8 Verification/Confirmation *Extent to which utility verifies service restoration, especially "nested outages."*	[redacted]	[redacted]
	[redacted]	[redacted]

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	[redacted]	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVII-1 Outage Planning & Preparation *Extent to which utility has strategy and approach for coordinated restoration effort after major event. Key focus areas include Emergency Response Plan, use of Incident Command System, application of mock exercises, pre-storm system hardening, maintenance regimen, system design, resource flexibility and mutual assistance measures.*	[redacted]				
XVII-2 Imminent Event Planning *Extent to which utility has tailored advanced planning and mobilization with weather prediction approach, including use of forecasting models, clear communications protocols, approved resource deployment plans and practices, event pre-staging and storm predictions.*					
XVII-3 Damage Assessment *Ability to assess damage from a major event quickly and accurately (both labor and technology) to compile summary of repair sites, materials, and labor requirements / estimates.*					
XVII-4 Tactical Planning *Extent to which utility optimizes restoration efforts, focusing on prioritization, sequencing and deployment of resources and work, along with use of technology to decrease outage duration.*					
XVII-5 Resource Dispatch *Extent to which utility effectively dispatches resources and maintains two-way communications in MEM.*					
XVII-6 Service Restoration *Extent to which utility provides optimal deployment coordination between EOC, restoration teams and operations base staff, and scalability / flexibility of restoration and repair.*					

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVII-7 **External Communication & Customer Service** *Utility's ability to communicate with customers before, during and after major events, address business community needs and keep government informed. Includes use of communications tools such as TV, radio, print and social networking, along with call center operation.*	[redacted]				
XVII-8 **Verification/Confirmation** *Extent to which utility verifies service restoration, especially "nested outages."*					

XVIII. System Performance Management

Evaluation Framework

The System Performance Management Focus Area consists of three sub-focus areas that define an effective system performance management process:

- **XVIII-1** Data Collection
- **XVIII-2** Analytics
- **XVIII-3** Corrective Action

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Note: Specific metrics / KPIs and related industry comparisons are addressed via another work stream. Further, many of the more traditional T&D metrics are addressed in the previous T&D Core Business Focus Areas. This Focus Area addresses the T&D organization's maturity in using metrics / KPIs to drive business decisions and actions to improve performance (i.e., a more strategic focus).

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XVIII-1 Data Collection *Extent to which utility exercises proper data governance, systems facilitate data conversion to actionable information, and that data present comprehensive view of cost and service level performance.*	PREPA has varying levels of capabilities to collect, store and ultimately process data: ▪ A file used to measure reliability compensates for the lack of actionable data in OMS (compromised by challenges related to connectivity). This is maintained manually and does not include circuit performance information for transmission or sub-transmission. ▪ There is not an integrated resource loaded scheduling system and supporting database to allow for development of an enterprise-wide schedule to drive work across T&D. ▪ The Asset Management database for substations (access database) represents a partial asset register. This lists the asset along with some basic demographic information, but it does not serve as a repository for asset health and condition, maintenance and operating history, or performance. GIS acts as a repository for line-based information but is not used to track basic Asset Management interventions (i.e., test and inspection activities and results). ▪ Similarly, for Regional Customer Services, PREPA lacks a meter data management (MDM) system. ▪ There is no data repository to substantiate the evaluation of capital investments or spending programs from a cost-benefit perspective. Basic performance management data is available, but not collected at a level that will assist in defining overall performance improvement initiatives.
XVIII-2 Analytics *Extent to which utility has skills and competencies to convert data to information and metrics.*	In the area of *Asset Management*, the availability of meaningful asset condition and performance data is sparse, rendering marginal (if not impossible) any meaningful analytics to support key repair vs. replacement decisions. *Capital investment and spending* decisions are not supported by a holistic portfolio optimization process. This appears to be entirely reactive to addressing failed equipment and restoring service on a day-to-day basis. There is no use of data to evolve into a condition or risk-based maintenance regimen. *Reliability performance* metrics originate from the previously mentioned PREPA-based file, from which various analytics have been developed using Microsoft BI. The outputs suggest a lack of analytical prowess and/or appetite for truly digging into the data and producing analytics that drive action. For example, SAIFI is a system-wide measure that by itself, provides an overall diagnosis of system performance. SAIFI does not, however, lead to a specific action to define remedial action to improve performance. An outage causal analysis provides a bit more information, but once equipment failures and degradations are noted as a primary cause, one still needs to understand which type of equipment (and perhaps manufacturer / make / model) is the primary offender. In both instances, the information is

Gap Assessment

Sub-Focus Area	Observations & Contributors
	there, but not used to generate the transparency necessary to identify improvement initiatives. *Work management* is largely driven by the STORMS program, which is used to generate work orders but not to manage work. There does not appear to be any way to effectively report on schedule adherence or budgetary performance in a way that provides management with virtual real time feedback in time to effect corrective action. Unit costs, wrench time, schedule stability and metrics around rework are not readily available. *Performance Management* occurs at the highest level in the organization with no initiatives underway to segment, analyze and initiate corrective action across the performance domains that define most utilities' performance. Performance areas include safety, reliability, asset health and condition, test and inspection performance and results, and project delivery.
XVIII-3 Corrective Action *Extent to which utility converts insights from metrics into action, and that these metrics represent comprehensive view of business performance.*	In general, analytics of scarcely available data do not lead to actionable performance improvement and risk mitigation interventions. This leaves management and supervisory personnel either blind to an issue or forced to apply subjective judgement and intuition when making decisions on assets, prioritizing work, or addressing system reliability issues. In the case of reliability, the data is available to lead to effective corrective action, though on a limited basis. For example: ▪ Data indicates average size of an outage is between 300 and 350 customers. Presented in enough detail this can be used to identify circuits that will benefit from an aggressive program to install inline reclosers and better coordinate fuses, which could reduce SAIFI by a factor of 2 or 3. ▪ Further, data points to 13kV as an effective point of leverage point, suggesting that a combination of the above-mentioned sectional approach and enhanced focus on vegetation management could prove fruitful. ▪ In the area of service restoration, the information is available to analyze performance based on time of day and day of week which could lead to various crew staffing strategies. ▪ Though the above capabilities exist, there is no evidence of these types of metrics being either reported or acted upon, although individuals reviewing this information acknowledged understanding of the above-provided information. In the current state, PREPA does not have the systems or supporting databases to improve performance in the areas of work management, investment and portfolio evaluation and optimization, or asset management.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVIII-1 Data Collection *Extent to which utility exercises proper data governance, systems facilitate data conversion to actionable information, and that data present comprehensive view of cost and service level performance.*	Limited ability to collect, store and ultimately use data: Lacking basic systems to manage key programs (e.g., asset management, work management, meter data management and investment and spending portfolio optimization) and databases prevalent in the industry to support these systems are disparate, incomplete, or non-existent.	SRP candidate
	Disciplines around data governance and maintenance are weak: Driven primarily by the lack of systems and disciplines regarding effective performance management.	Improvement opportunity
XVIII-2 Analytics *Extent to which utility has skills and competencies to convert data to information and metrics.*	Analytics are too high level to direct and prioritize targeted actions. This reflects a combination of staff and system capabilities (or lack thereof), along with an overall lack of accountability and the absence of a drive for continuous improvement.	Department level gap
XVIII-3 Corrective Action *Extent to which utility converts insights from metrics into action, and that these metrics represent comprehensive view of business performance.*	Current approach to work is reactive, bouncing between outages or other emergencies; this precludes using data to effect sustainable improvement: Even if the performance management infrastructure were in place, resources are otherwise assigned and would not be able to act on analytical information. A cultural / behavioral shift will be required.	Improvement opportunity

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	Level of analytical rigor is not sufficient to identify targeted actions with quantifiable projected improvements: Specific individuals acknowledge the benefits to be derived from a deeper dive into the metrics that track and can be used to manage performance.	Improvement opportunity
	Presuming a commitment to improve analytical rigor with few exceptions, the systems and databases are not sufficient to effectively manage performance: This will require some detailed process development work followed by an in-depth review of current systems and databases to define (1) how best to improve current systems / capabilities, and (2) what investments are necessary to reach a level of competence in this area.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVIII-1 Data Collection *Extent to which utility exercises proper data governance, systems facilitate data conversion to actionable information, and that data present comprehensive view of cost and service level performance.*	X				
XVIII-2 Analytics *Extent to which utility has skills and competencies to convert data to information and metrics.*		X			
XVIII-3 Corrective Action *Extent to which utility converts insights from metrics into action, and that these metrics represent comprehensive view of business performance.*	X				

XIX. Fleet

Evaluation Framework

The Fleet focus area consists of seven sub-focus areas that define effective fleet management:

- XIX-1 General Administration
- XIX-2 Capital Management
- XIX-3 People Management
- XIX-4 Parts/Inventory Management
- XIX-5 Petroleum Management
- XIX-6 GPS/Telematics Management
- XIX-7 Aviation

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XIX-1 **General Administration** *Extent that utility effectively manages fleet assets, including vehicle assignment policy, budgetary performance, preventative maintenance, etc.*	There is not an effective Fleet Management Information System (FMIS) system in place. ▪ PREPA uses "fleet focus" but it only tracks open and closed service tickets. ▪ It has a Fleet Register, but it does not include everything as some areas are not controlled by fleet management. ▪ It does not track PM schedules, work completed, labor, the cost of parts, or costs of service per unit, annual inspections, equipment life and health tracking, mileage, hours, etc. ▪ This makes the organization noncompliant from a DOT perspective due to a lack of maintenance records. Financial tracking of a complete and accurate asset list is not in place. No active PM program: ▪ Operations only brings the trucks in for maintenance when they are broken. Basic maintenance is performed on the specific deficiency, but no further inspections are performed to determine additional requirements for maintenance. Maintenance cost tracking: There is no detailed fleet cost tracking system in place. ▪ Dry rates are calculated based on a historically informed estimate allocating total fleet costs into each equipment category. Actual tracked costs are not considered in making this calculation.
XIX-2 **Capital Management** *Effectiveness of utility's capital management, including lease vs. buy, choice of manufacturer, pricing strategy, asset lifecycle and replacement planning, etc.*	Leases are not used due to history of bad financial performance and banks not willing to extend credit. Capital budgets have been significantly lower than needed to support an effective fleet replacement program. ▪ 2020-21 capital replacement budget is 2.8M ▪ 2020-21 facility repair budget is 300K ▪ 2020-21 Fleet Operations budget is ~32M (this includes fuel, labor, parts, rental, 3rd party repair, etc.) Procurement practices are a significant hinderance. ▪ Purchasing goes through an extensive RFP process that often takes 3-12+ months. This occurs for all capital purchases on an annual basis. ▪ Purchasing of parts over $5K go through the same process. Third party repairs over $5K go through a similar process of providing an estimate, approving the estimate, and then taking between two and twelve weeks (sometimes over 12 months)

Gap Assessment

Sub-Focus Area	Observations & Contributors
	for repair and payment. This results in a significant number of units sitting in repair for months on end.
XIX-3 **People Management** *Effectiveness of fleet management organization based on personnel structure, staffing levels and bargaining agreements.*	The organization is supervisor and management heavy, resulting in excess work for the actual work force. ▪ Supervisors are senior mechanics that cannot work on equipment due to union agreements (collective bargaining agreements). ▪ There is not enough administrative staff to effectively keep up with maintaining current FMIS data, so nothing is entered. Maintenance records are not logged. ▪ There are 52 of an estimated 100 needed working mechanics to perform work in-house. ▪ Laborer and mechanics helpers cannot perform mechanics tasks per current collective bargaining agreements. Safety culture is nonexistent. Not following basic OSHA & EPA Standards for shop equipment and hazmat storage.
XIX-4 **Parts/Inventory Management** *Effectiveness of utility's parts and inventory management practices.*	Lack of any clear inventory management system or plan: ▪ Small fleet inventory is purchased in less than $5K increments and not tracked in any program to know what is on hand and where it is located ▪ Improper disposal of old and obsolete inventory ▪ Tires, lubricants, batteries are purchased in bulk by warehousing, but tires and batteries are the cheapest on the market, significantly lacking in quality. Replaced tires in shops are rarely worn out but often are the result of blow outs or deteriorating treads. Similarly, only half of the new batteries are working due to poor quality and improper storage. ▪ Need new vendor contracts to allow utilization of multiple vendors and to allow minimal inventory on hand, free delivery, and monitoring of minimum stocking levels. Rental Vendor management: Rental vendor options are needed to fill peak equipment needs and gaps during repair without oversupplying needs with excess owned equipment.
XIX-5 **Petroleum Management** *Extent to which utility's petroleum management programs promote efficiency in consumption and cost of fuel.*	PREPA has a program and are not short on lubricants or fuel. ▪ Lubricants are purchased by warehousing in bulk ▪ For fuel, PREPA utilizes the PR government's program ▪ Fuel card program needs improvement to ensure all theft and waste is removed ▪ Bulk fuel tank utilization and general use needs improvement ▪ Most facilities lack proper storage containers for petroleum and other hazmat items. Local Government Total program seems good but needs to be reviewed for improved control of fleet fuel spend to eliminate waste and fraudulent purchases. Assign cards to units, determine specific fuel types per vehicle, purchase limits based on tank size and block all nonfuel spend.
XIX-6 **GPS/Telematics Management** *Assessment of current technological capabilities and organizational receptiveness to technologies for deploying fleet assets effectively and safely.*	PREPA uses an ineffective GPS / telematics program: ▪ Anecdotally this program is on ~750 of 3600 units and only used for GPS locating in 400 of those. ▪ These are also not assigned to specific types but randomly assigned to different types of vehicles. ▪ No reports are provided for utilization, driver behavior, mileage / hours for PM planning. ▪ Routing assistance is not used for service calls, customer service routing, safe driving behavior improvements or fuel consumption. Pricing is also higher per month than other large telematics providers.
XIX-7 **Aviation** *Extent to which utility deploys aviation assets to improve efficiency and effectiveness.*	All four helicopters are operational and have passed their recent FAA inspections with no findings. PREPA has an FMIS for Aviation to track all completed and due maintenance. It is also used for keeping stock of the inventory room which is set up with climate control and bin located shelving.

T&D OPERATIONS

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIX-1 General Administration *Extent that utility effectively manages fleet assets, including vehicle assignment policy, budgetary performance, preventative maintenance, etc.*	Maintenance records are non-existent: FMIS not used nor does PREPA update physical truck folders of maintenance completed, parts used or costs. This is a DOT Violation.	SRP candidate
	Lack of a basic maintenance PM program	Priority / SRP candidate
	Lack of proper inspection and testing process: PREPA does not meet standard OSHA/ANSI for non-destructive testing	Priority / SRP candidate
	Lack of equipment lifecycle planning / execution or health tracking. No integration with PREPA work management system from original purchase to actual disposal. There are several used trucks that do not operate, taking up space in the yards. Plans for vehicle retirements need to be in place for public auction or to a wrecking yard.	SRP candidate
XIX-2 Capital Management *Effectiveness of utility's capital management, including lease vs. buy, choice of manufacturer, pricing strategy, asset lifecycle and replacement planning, etc.*	No lifecycle-based replacement forecast, or capital plan exist: One year by unit, two to five years quarterly by class and five to 10 Years by class estimates	Department level gap
	Procurement processes take too long and are cumbersome: Standard truck specifications are in place, yet the methods for purchasing trucks, parts, rentals, and third-party services are cumbersome and take too long. PREPA needs to focus on annual pricing agreements and accounts to expedite the process and achieve a better outcome. Fleet procurement decisions seem to be based on the least expensive purchase cost, with priority on maintaining the same type of vehicle / equipment across the business. Given the vast types of terrain in Puerto Rico, the styles, types, and sizes of equipment need to be assessed individually with field input. A "one size fits all" approach will not work. .	SRP candidate
	Time required for new purchases, repairs and rentals is excessive: Need proactive pricing agreements for new equipment, parts, service, and rentals with vendors to reduce downtime of the fleet from a maintenance and CAPEX perspective.	SRP candidate
XIX-3 People Management *Effectiveness of fleet management organization based on personnel structure, staffing levels and bargaining agreements.*	Current organization chart does not reflect vacancies (empty slots are not filled)	Department level gap
	PREPA requires a training and development program for Fleet Management personnel: There are not enough certified mechanics within fleet to keep it up and running properly, and the employees need a driver training program. PREPA has no manual transmission trucks because no one knows how to drive them.	SRP candidate
XIX-4 Parts/Inventory Management *Effectiveness of utility's parts and inventory management practices.*	PREPA lacks a formal small inventory management process: Each shop has an inventory room, but no tracking method to keep stock of inventory on hand. Also, some high turn items are handled by warehousing with the rest being purchased in small quantities from local suppliers. There are no formal pricing agreements in place with local suppliers for small purchase parts.	SRP candidate
XIX-5 Petroleum Management *Extent to which utility's petroleum management programs promote efficiency in consumption and cost of fuel.*	Risk that facility storage could pose an environmental hazard: Lubricants are purchased by Warehousing and kept in drums or other large containers.	SRP candidate
	Potential for fraud or waste in the purchase of fuel: Individual fuel cards are used for the purchase of fuel for trucks and bulk tanks for facility equipment with no process in place to track its actual use.	SRP candidate

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XIX-6 **GPS/Telematics Management** *Assessment of current technological capabilities and organizational receptiveness to technologies for deploying fleet assets effectively and safely.*	Telematics is not used to its full potential: Installed on only approximately 750 units and only used for GPS location on approximately 400 units. PREPA should implement a rationalization approach to standardize the types of equipment to utilize telematics, data reporting, safe operations monitoring and useful routing tools.	SRP candidate
XIX-7 **Aviation** *Extent to which utility deploys aviation assets to improve efficiency and effectiveness.*	None identified	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XIX-1 **General Administration** *Extent that utility effectively manages fleet assets, including vehicle assignment policy, budgetary performance, preventative maintenance, etc.*	X				
XIX-2 **Capital Management** *Effectiveness of utility's capital management, including lease vs. buy, choice of manufacturer, pricing strategy, asset lifecycle and replacement planning, etc.*	X				
XIX-3 **People Management** *Effectiveness of fleet management organization based on personnel structure, staffing levels and bargaining agreements.*	X				
XIX-4 **Parts/Inventory Management** *Effectiveness of utility's parts and inventory management practices.*	X				
XIX-5 **Petroleum Management** *Extent to which utility's petroleum management programs promote efficiency in consumption and cost of fuel.*		X			
XIX-6 **GPS/Telematics Management** *Assessment of current technological capabilities and organizational receptiveness to technologies for deploying fleet assets effectively and safely.*	X				
XIX-7 **Aviation** *Extent to which utility deploys aviation assets to improve efficiency and effectiveness.*				X	

XX. Warehouse Operations

Evaluation Framework

The Warehouse Operations focus area consists of three sub-focus areas that define effective warehouse operations:

- XX-1 Inventory Management
- XX-2 Warehouse Management
- XX-3 Logistics Management

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XX-1 Inventory Management *Effectiveness of inventory processes and methodologies, system applications, procurement and impact on field productivity and financial performance.*	**Material** ▪ Poles: No consistent standard on which type of poles are used, i.e., steel, concrete, or wood ▪ USACE material (54M) is mostly off-spec, present in many locations, and not able to be included automatically in the planning process. This means it takes up space and dollars. ▪ Fleet material is held in most locations, using optimal space, not core to PREPA operation. ▪ MRO/Office items held in all locations, time consuming and not core to PREPA operations. ▪ Significant hoarding of material by T&D Operations is present in all locations. There is a high risk due to old standard material being put into the system. This material is not visible to the organization and requires a significant capital investment to remedy. **Standards** ▪ Many standards are applied across the system. ▪ Standards changes do not account for the existing inventory. ▪ Standards changes are not a transition, and do not include field representation. **Sparing/Asset Management** ▪ No process for spare tracking and management ▪ PREPA does not seem to spare equipment for customers. ▪ No documented process for maintenance of spares **Asset Recovery** ▪ No formal asset recovery process ▪ Scrap metal management is an issue everywhere; existing contracts are unreliable. ▪ Scrap metal piles are present outside of each warehouse location along with salvaged structures. ▪ Use of designated bins is an issue at most locations **Personnel** ▪ Only one supervisor, no employee item creation, blanket agreements, and min-max replenishment to Palo Seco are the only items being completed **Process** ▪ Inventory is not a functioning organization, not given the power to manage inventory effectively ▪ Forecasting and communication with other groups is non-existent, with no visibility of upcoming demand. ▪ Bill of Materials is created from STORMS tool, but item numbers are all out of date. ▪ Requisitions are not used by most of the end users, manual requests are the norm in most warehouses. ▪ New item numbers are created for ALL purchases - even one-time purchases. ▪ Non-stock requisition flows through Warehouse manager to audit for inventory items being ordered nonstock.

Gap Assessment

Sub-Focus Area	Observations & Contributors
	▪ Project demand is not loaded into the system, min-max planning is based on historical usage with significant excess on all items to prepare for a potential hurricane. ▪ Material requirements are not submitted in advance of the project need; even with excessive min-max shortages and stockout levels are common in field locations, forcing staff to drive to distant locations to source the required material. ▪ USACE material presents significant challenges to implementing efficiencies due to accounting complexities and traceability requirements by FEMA. **Training** ▪ No job specific training of any kind **Audit/Segregation of Duties/System Access** ▪ No clear segregation of duties within the system ▪ Access is role based, but due to staff shortages and union interference, the warehouse manager role is given to many people including in-scope personnel in the regions. ▪ With the warehouse manager role, warehouses have access to make changes to other locations for all functionality within the inventory system.
XX-2 **Warehouse Management** *Extent to which utility effectively manages warehouse practices and processes to improve field productivity and financial performance.*	**Materials Handling Equipment** ▪ Forklift pre-inspections not completed consistently across locations, with no tracking method ▪ Equipment not maintained on a regular schedule ▪ Equipment is visibly damaged in many locations (e.g., bald/broken tires, missing propane straps, damaged seats, missing nameplates) ▪ Equipment quantity and capability is insufficient in some locations, more than sufficient in others ▪ Improper equipment at Palo Seco for handling poles **Racking/Storage** ▪ Pallets are not used for transformers in many locations and are broken/rotten when used in most. Polymer pallets found in some locations. ▪ Racking is not bolted to the floors in many locations. ▪ Racking load limits are not marked in most locations. ▪ Racking leg guards are not present in most locations. ▪ Racking is loaded to be top heavy in many locations. ▪ Reels of cable are stored on their side instead of rolling edge. ▪ Wood reels of cable are stored outside, and rotting is a problem. ▪ Pole bunks are not present in some locations. ▪ Covered storage is insufficient at most locations and essential to keep most goods in usable shape, even over short timeframes. **Warehouse Buildings** ▪ Roofing and walls are damaged in some locations. ▪ Black mold, rust and rotting in some locations ▪ Outbuildings are aged/damaged/destroyed in some locations. ▪ Lighting is inconsistently applied; some locations have LED ballasts, others use HPS streetlights or fluorescent ballasts. Some locations have no lighting at all (not working). ▪ Many locations are not right sized for the Ops demand and inventory requirements. ▪ Loading docks are not available in some locations (portable docks in some location) ▪ Some locations are prone to flooding, even with medium summer storms due to proximity to local water sources (rivers, etc.) * ▪ Exposed mercury vapor bulbs at head height are present in some locations ▪ Most locations do not have proper loading docks, they use portable ramps that increase loading/unloading risk. **Personnel** ▪ There are many layers of out-of-scope staff in the warehousing organization structure, without many ground level workers. When there are job actions, the out-of-scope staff step in (i.e., front line supervisors). ▪ Short staffed in some locations ▪ Aging workforce ▪ Overeducated workforce (flight risk to higher paying opportunities) **Environment** ▪ Spill kits are not available at most sites ▪ Oil containment is not available at most sites

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Observations & Contributors
	▪ There is no spill management process ▪ Mobile spill containment (trays, pallets, etc.) are not available ▪ No process for burnout storage, handling, and transportation ▪ Current contract for management of scrap transformers (testing, hauling, etc.) **Safety** ▪ PPE is not consistently used, with no standards on gear required ▪ Eyewash stations - not at all sites, seen in hard to access locations ▪ No training on safe lifting, managing suspended loads or rigging techniques ▪ Equipment inspections are not completed consistently ▪ Equipment is in poor shape; some may need to be retired ▪ No lockout or tagout processes implemented for warehouses ▪ Refresher training required for forklifts ▪ No process for yard or facility inspections and incident/hazard reporting ▪ MSDS not consistently available ▪ Dangerous goods storage is not visible in all locations ▪ No near mis-process/reporting **Process** ▪ End to end processes are not clearly documented for warehousing activities ▪ Excessive steps and bureaucracy in all standard processes (signatures, contacts, etc.) ▪ There is an inherent safety risk in not having documented processes for high risk moves and items ▪ Job briefings are completed when something "new" is undertaken - no clarity on when it is used, approved, etc. ▪ Backorder management is not a part of standard material pick process (i.e., First-in First out [FIFO]) ▪ FEMA processes present significant challenges in executing improvements to facilities, procuring equipment, etc. due to bureaucratic processes and lengthy timelines to gain approval and inspection. **Training** ▪ Forklift training is not consistently provided, with no refresher required ▪ No performance management process
XX-3 **Logistics Management** *Efficiency and effectiveness of logistics management processes and impact on field productivity and financial management.*	**Equipment** ▪ Much of the equipment is aged/damaged/non-functional (e.g., flat deck trailers, tractors) **Personnel** ▪ There are only five "drivers," but they are not dedicated to their positions, they are designated as "equipment operators" and spend their time driving forklift or picking material at regional and distribution locations.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XX-1 **Inventory Management** *Effectiveness of inventory processes and methodologies, system applications, procurement and impact on field productivity and financial performance.*	Suboptimal material inventory practices and Asset Suite solution result in inventories not reflective of current specifications, nor located in a manner that optimizes the tradeoffs between cost, quick accessibility, and efficient use of space (noted deficiency in available meters to replace 60,000+ meters damaged during Hurricane Maria).	SRP candidate
	Absence or poor implementation of standard inventory management processes, including strategic spares, asset recovery, ordering and requisition, min-max and related criteria, disposal and return, auditing and intra-group communication and coordination.	SRP candidate
	Deficient in HR applications: No training and roles and responsibilities are not clearly defined or consistently applied.	SRP candidate
XX-2 **Warehouse Management** *Extent to which utility effectively manages warehouse practices and processes to*	Material handling equipment is not properly maintained, in poor operating condition and not matched in terms of capabilities or quantity to specific locations.	SRP candidate

T&D OPERATIONS

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
improve field productivity and financial performance.	Use of pallets, racking, storage and protection of material and assets does not comport to industry standards.	SRP candidate
	Warehouse buildings are poorly maintained, and not properly sized or fit for purpose.	SRP candidate
	Aging workforce is improperly configured and poorly trained for normal day-to-day activities.	Department level gap
	No evidence of environmental or safety management practices	SRP candidate
	Significant redesign required for the end-to-end warehousing process	SRP candidate
XX-3 Logistics Management *Efficiency and effectiveness of logistics management processes and impact on field productivity and financial management.*	Lack of proper management of resources: Poorly maintained and damaged equipment and diverse focus for equipment operators	SRP candidate
	Significant shortfalls in core logistics management processes and supporting IT platform: i.e., material delivery/pickup, transportation, tracking, load optimization, travel management and mail/shipment	SRP candidate
	No evidence of operator training to support safety in rigging and tie down practices or safe driving	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XX-1 Inventory Management *Effectiveness of inventory processes and methodologies, system applications, procurement and impact on field productivity and financial performance.*		X			
XX-2 Warehouse Management *Extent to which utility effectively manages warehouse practices and processes to improve field productivity and financial performance.*		X			
XX-3 Logistics Management *Efficiency and effectiveness of logistics management processes and impact on field productivity and financial management.*	X				

XXII. Ancillary Critical Support Evaluation Framework

Evaluation Framework

The Ancillary Critical Support focus area consists of two sub-focus areas that define effective ancillary critical support:

- **XXII-1** Critical Staff Capabilities
- **XXII-2** Support Facilities

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XXII-1 Critical Staff Capabilities *Extent to which T&D organization understands and plans to address shortages in critical skills and competencies.*	There are approximately 1200 employees across the seven regions that define PREPA's electric distribution service territory. Employees disagree as to whether this is sufficient. However, presuming effective Asset and Work Management practices and expected improved productivity, current staffing levels are sufficient to handle the anticipated workload. As reliability improves, thus reducing the amount of unplanned work, required staffing levels should decrease, particularly given the initiative to alter the current regional structure and plans to reinstitute a training program. The training program is overseen by the HR department—external to T&D. As a result, the focus on training and developing frontline staff has lessened and there is no process in place to identify and address shortfalls in the skills and competencies of critical staff. In fact, most of this type of training employs OJT, leaving the depth, breadth and focus of any training subject to the orientation and capabilities of the supervisors. This is inconsistent and non-scalable as a process; it takes 4-5 years until an individual can work independently. In canvassing the PREPA T&D organization, the following areas were highlighted regarding critical positions / areas of knowledge: ▪ Relay technicians ▪ Field supervisors (counter incentive to accept promotion from Lineman 4) ▪ Commissioning expertise ▪ Instrument transformers ▪ Power transformers ▪ Oil-filled and SF6 breakers ▪ Underground linemen ▪ Bare hand activity ▪ Telecon technicians ▪ Experienced district engineers Difficult to get people to accept positions in the southern part of Puerto Rico. The northern part has significantly more assets, with 500+ transformers and over 1400 distribution breakers. Current staffing levels not able to handle PM requirements. In-house staff are not able to perform maintenance on tap changers or overhaul breakers.
XXII-2 Support Facilities *Extent to which support facilities management strategy supports requirements of the T&D organization.*	Technical offices currently used to support field personnel are in poor condition, as are the tooling and equipment required to perform routine maintenance and testing activities. Often the right tools are not even available, requiring the crews to use tools not intended for a specific task. The location of technical offices is not reflective of the workload distribution across and within regions.

Gap Assessment

Sub-Focus Area	Observations & Contributors
	Oftentimes, the appropriate tool required for a job is not available; as a result, frontline personnel employ tools for a function where it was not intended. Regional Customer Services has various owned and leased office and storage facilities, some that have been closed for several years, some used solely for document and equipment storage, with virtually all requiring interior and exterior improvements. In short, there has been no review of these facilities to determine if they are underutilized or could be repurposed.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XXII-1 Critical Staff Capabilities *Extent to which T&D organization understands and plans to address shortages in critical skills and competencies.*	Lack of formal training programs: Training programs are not in place to support the internal promotion of frontline personnel to more "technically demanding" positions. In fact, promotions are currently based on time served, rather than performance or skills.	SRP candidate
	No process to capture and disseminate knowledge: There is a wealth of knowledge and practical "know how" among the more experienced workers. However, there has been no effort to build a repository or process to disseminate the information to the organization.	Improvement opportunity
	Staffing shortfalls in key areas: This includes substations, underground network, district engineers, commissioning activities and field supervision. No capability to perform maintenance on tap changers or overhaul breakers.	Department level gap
XXII-2 Support Facilities *Extent to which support facilities management strategy supports requirements of the T&D organization.*	Physical state of existing facilities is poor (including district offices, control centers, warehouses, Regional Customer Services offices, and Fleet). Lacks necessary maintenance to create an environment that is conducive to productivity and high morale and convey a positive image to the community. Further, there has been no comprehensive review of these facilities to determine the extent to which they might be underutilized or could be repurposed. Some facilities are 70-80 years old and in poor condition. Several are not properly sized for their function, and others are condemned for issues like asbestos, but still in use.	SRP candidate
	Location of technical offices not aligned to workload: Mismatch between location of specific technical offices and where most work is performed.	Department level gap
	Shortage of tooling and equipment in Fleet, meter testing and repair and technical office facilities: Fleet, meter testing and repair and technical offices are not equipped with sufficient tools and equipment for crews to perform work efficiently and effectively within their respective locales.	SRP candidate
	Panel and meter shop is needed: There is no pre-fabrication capability (facility nor practices / procedures).	SRP candidate

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XXII-1 Critical Staff Capabilities *Extent to which T&D organization understands and plans to address shortages in critical skills and competencies.*	X				
XXII-2 Support Facilities *Extent to which support facilities management strategy supports requirements of the T&D organization.*	X				

III. Utility Transformation

LUMA

Gap Assessment

Utility Transformation

Contents

General Approach

The Utility Transformation gap assessment includes the following main areas of focus, as shown in the tables below:

General Management: There are nine management focus areas that apply to all departments.

Core Business: There are 11 core business focus areas specifically relating to Utility Transformation's operations.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting and Cost Performance
III	Leadership Management
IV	Process Efficiency and Effectiveness
V	Employee Training and Development
VI	Workforce Management
VII	Management Systems and Technology
VIII	Performance Metrics and Continuous Improvement
IX	PREPA Culture and Momentum
Core Business Focus Areas	
XI	System Operations
XII	Business Transformation
XIII	Asset Management
XIV	Transmission and Substations
XV	Distribution
XVI	Metering
XVII	Telecommunications
XVIII	Facilities
XIX	Materials Management
XX	Central Shops
XXI	Operations and Physical Security

We applied the following standard methodology to both the General Management and Core Business Assessments, thus forming the bases for identifying gaps.

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus and Sub-Focus Areas

The nine **General Management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-focus Areas			
I	**Organization Design Effectiveness**	I-1	Span of Control	I-3	Ratio of Administrative to Direct Workers
		I-2	Clarity on Management and Supervisory Roles	I-4	Impact of Protected Patronage Workers
II	**Budgeting and Cost Performance**	II-1	Actual Expenditures as Percentage of Budgeted	II-4	Overtime and Contractors Management
		II-2	Impact of Emergent Issues on Budgets	II-5	Direct and Allocated Indirect Cost Management
		II-3	Unit Cost/Productivity Management		
III	**Leadership Management**	III-1	Qualifications and Experience	III-3	Ability to Deliver Results
		III-2	Accountability	III-4	Inter- and Intra-Organization Collaboration
IV	**Process Efficiency and Effectiveness**	IV-1	Potential Risks to Post-Commencement	IV-3	Process Compliance Management
		IV-2	Process Familiarity by all Stakeholders	IV-4	Efficiency of Overall Process Flow
V	**Employee Training and Development**	V-1	Training Budgets and Program Effectiveness	V-3	Skills Assessment and Personnel Training Plans
		V-2	Ability to Cross-Train as Personnel Development Path	V-4	Demographics and Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1	Effectiveness of Current Workforce Management Processes	VI-2	Time Charging and Productivity Tracking and Reporting
VII	**Management Systems and Technology**	VII-1	Process Automation	VII-3	Interaction or Linkage with Other Functional Areas IT Plans or Systems
		VII-2	Adaptability to New Systems and Technology	VII-4	Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics and Continuous Improvement**	VIII-1	Recognition of Critical Performance Metrics	VIII-4	Instances (or Lack) of Data-Driven Management Initiatives
		VIII-2	Performance Metric Collection, Validation and Reporting	VIII-5	Recent Performance Trends
		VIII-3	Root Cause and Trend Analysis		
IX	**PREPA Culture and Momentum**	IX-1	Resistance (Active or Passive) to LUMA Management	IX-3	Employee Empowerment/Action Orientation
		IX-2	Employee Morale/Excitement about LUMA	IX-4	Timeframe to Improve Performance
				IX-5	Impact of Organization Silos

I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Focus Area consists of four sub-focus areas (core and enabling areas that define an effective organization design):

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Observations and Contributors

Sub-Focus Area	Observations and Contributors
I-1 **Span of Control** *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	▪ The span of control fluctuates from team to team. Lack of structure and responsibilities in the organizations was noted. It was also noted that management organizations' span of control is lower than non-management, likely due to understaffing.
I-2 **Clarity on Management and Supervisory Roles** *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	▪ A separation of two to three layers between lower-level employees and organizational heads is commonly seen, primarily in management organizations. This is due to understaffing, lack of career development opportunities, strict/infrequent promotion process, recent retirements and employees leaving the company.
I-3 ***Ratio of Administrative to Direct Workers*** *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	▪ There are administrative personnel present in all the PREPA departments. A portion of these administrative personnel could be needed due to the lack of process automation and technology. Different role titles for administrative personnel were noted and the differences between them are unclear.
I-4 **Impact of Protected Patronage Workers** *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	▪ Protected patronage exists at the senior leadership level. These positions are referred to as “trusted positions” and are politically driven. These positions are subject to change every four years depending on election results. It is also not uncommon to find employees at lower levels that are hired as political favors.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	▪ Understaffing	Department level gap
I-2 Clarity on Management and Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	▪ Clear organizational structures	Department level gap
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*	▪ Sufficient but would need to be re-evaluated as organizations are re-defined	Improvement opportunity
I-4 Impact of Protected Patronage Workers	▪ Elimination of "trust positions"	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	X				
I-2 Clarity on Management and Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*		X			
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*			X		

UTILITY TRANSFORMATION

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
I-4 **Impact of Protected Patronage Workers** *Existence and economic impact of patronage positions to the organization.*	X				

II. Budgeting and Cost Performance

Evaluation Framework

The Budgeting and Cost Performance focus area consists of five sub-focus areas that define effective budgeting and cost performance:

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost/Productivity Management
- II-4 Overtime and Contractors Management
- II-5 Direct and Allocated Indirect Cost Management

Observations and Contributors

Sub-Focus Area	Observations and Contributors
II-1 **Actual Expenditures as Percentage of Budgeted** *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	▪ PREPA develops and submits the Annual Fiscal Year budget each year. It seems that PREPA operates within the established budgets. There are no tools used for forecasting and tracking expenditures. Most of the budget goes into corrective maintenance work to restore customers' power. The only two large capital projects being executed are vegetation management and streetlights.
II-2 **Impact of Emergent Issues on Budgets** *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	▪ Based on the discussions held with PREPA funding for emergent issues is estimated. This funding is often allocated as a risk under the different on-going projects or blanket funds. Working on emergent issues takes the most resources and the majority of available yearly funding. This is a result of the lack of proper preventive maintenance and capital investment.
II-3 **Unit Cost/Productivity Management** *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	▪ Unit Cost/Productivity Management is non-existent due to the lack of technology/tools and union imposed constraints. There are no capital projects except vegetation management and the streetlights project. These are being performed by contractors without sufficient oversight.
II-4 **Overtime (OT) and Contractors Management** *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	▪ Most of the work at PREPA is being contracted out. This includes construction and commissioning, engineering, field supervision, monitoring and reporting. Overtime (OT) is managed daily and generally approved to keep work progression. The Project Management Office (PMO) manages the contractors and their work. It appears that OT is flexible with little to no mechanisms of control in place. There is a risk that OT could be abused without detection. There is also no process or expectation set regarding OT allocation through the annual budgeting process.
II-5 **Direct and Allocated Indirect Cost Management** *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ PREPA fiscal planning/budgeting is undertaken yearly. There is no information on indirect charges being allocated to different groups and departments and what work/value these departments get in return. There is no consistent process followed to set annual budgets, programs or initiatives.

UTILITY TRANSFORMATION

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	▪ Budgeting strategy for splits between capital and expense budgets. Lack of proper financial tools to track project actuals costs based on work in progress and forecasting.	SRP candidate
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	▪ Lack of proper risk management, identification, and analysis to manage the budget.	Department level gap
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	▪ Lack of tools to track unit cost and productivity.	Improvement opportunity
II-4 Overtime (OT) and Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	▪ Lack of established processes for overtime. Underdeveloped process for contract management.	Improvement opportunity
II-5 Direct and Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ No evidence of cost allocation across departments, budget decisions made at upper levels of management.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*		X			
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*		X			
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	X				

UTILITY TRANSFORMATION

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
II-4 Overtime (OT) and Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*		X			
II-5 Direct and Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*		X			

III. Leadership Management

Evaluation Framework

The Leadership Management focus area consists of four sub-focus areas (core and enabling areas that define an effective leadership process):

- III-1 Qualifications and Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter- and Intra-organization Collaboration

Observations and Contributors

Sub-Focus Area	Observations and Contributors
III-1 **Qualifications and Experience** *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ Senior leadership roles at PREPA that are appointed by government officials and are subject to change every four years are known as “trusted positions”. These roles are frequently filled with people with little to no experience in the industry. ▪ Separately, there is no official on-boarding, limited training and no career development program/process for those in PREPA to further advance in leadership roles or expand their experience laterally across the company.
III-2 **Accountability** *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company’s mission, values and goals. Leaders adopt a culture of identifying and applying “lessons learned” wherever possible.*	▪ Overall lack of accountability and performance improvement opportunities were noted during the discussions with PREPA. Accountability for field crews in the day-to-day activities is affected by the role the unions play. Lessons learned are not captured and/or investigated from project closeout activities and operations events.
III-3 **Ability to Deliver Results** *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	▪ Due to poor system maintenance, work is focused on emergent issues to restore customers' power (corrective maintenance). Management efforts are on optimizing work to available personnel and material/equipment. New initiatives and capital work are of lower priority and not actively pursued due to lack of personnel and funding.
III-4 **Inter- & Intra-Organization Collaboration** *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ Collaboration between organizations or across regions appears limited. There was no evidence that individuals in senior management positions had a strategy in their decision making and assigning of priorities. Regions appear to operate independently, each with its own set of goals and challenges. ▪ Very little coordination and collaboration between major departments such as HR, T&D, IT, Procurement and PMO. ▪ Collaboration intra-department and within regions was noted but it was limited due to the amount of work and personnel available.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
III-1 Qualifications and Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ A noticeable deficit in leadership competencies due to political influence.	Department level gap
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ Lack of accountability as there are no processes and tools in place to enforce, track and monitor.	Improvement opportunity
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	▪ Poor organizational structure to communicate and enforce expectations. Unions influence the decision-making power on work management.	Department level gap
III-4 Inter- & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ Organizational and departmental silos.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
III-1 Qualifications and Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	X				
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*		X			
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*		X			
III-4 Inter- & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*		X			

IV. Process Efficiency and Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness focus area consists of four sub-focus areas (core and enabling areas that define effective process efficiency and effectiveness):

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Observations and Contributors

Sub-Focus Area	Observations and Contributors
IV-1 **Potential Risks to Post-Commencement** *Identifies risks to post-commencement and steps needed to mitigate the risks.*	▪ PREPA has a lack of written processes across the organization. Existing processes are not consistently followed, or are interpreted differently, across regions and functions. Expectations regarding processes have not been consistently set. Alignment between existing PREPA processes (i.e., engineering and construction standards) and new LUMA processes need to be understood and harmonized to prevent possible issues.
IV-2 **Process Familiarity by All Stakeholders** *Examines operational processes to ensure they are defined and understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.*	▪ There is a lack of defined process ownership and clear accountability at PREPA. There is no procedure for communication and tracking of training on new or updated processes- resulting in a lack of change management. There are no tools or consequences from leadership to ensure new or updated procedures are being followed. Communication regarding processes and practices is not effective. Each group seems to have its own set of processes that are not communicated, shared and followed with others.
IV-3 **Process Compliance Management** *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	▪ There are not as many documented processes compared to well established utilities in the United States. However, for those processes and procedures that are in place, there do not appear to be impetuses to ensure adherence. Individuals seem to approach these processes with varying levels of consistency. Different regions interpret and approach these processes differently based on experience and regional variances.
IV-4 **Efficiency of Overall Process Flow** *Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.*	▪ The lack of process automation is a major reason for inefficiency. Most processes are manual and document management is also manual. Communication about processes and changes to processes are not formalized, which further affects the issue.

UTILITY TRANSFORMATION

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IV-1 Potential Risks to Post-Commencement *Extent to which risks are recognized and adequate risk mitigation measures are in place or are recognized by management.*	▪ Lack of documented processes. ▪ Existing processes are not set up to manage the work that will be performed by LUMA.	SRP candidate
IV-2 Process Familiarity by All Stakeholders *Primary processes are generally mapped out and process flow is well understood by most stakeholders. Very few if any, "black boxes" where process stalls and participants do not understand why.*	▪ Existing processes are inefficient and inconsistently applied. ▪ No change management practices are place.	Department level gap
IV-3 Process Compliance Management *Primary processes are routinely monitored, deviations addressed, and impacts recognized. Periodic spot audits conducted to ensure compliance.*	▪ Existing processes are inconsistently applied by the different regions. ▪ Lack of process enforcement tools.	Improvement opportunity
IV-4 Efficiency of Overall Process Flow *Highly automated process, with near real-time status awareness, responsibilities grouped to increase efficiencies, hand-offs or back-and-forth process flows are minimized.*	▪ Automation of processes. ▪ Communication plan for new or revised processes.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IV-1 Potential Risks to Post-Commencement *Extent to which risks are recognized and adequate risk mitigation measures are in place or are recognized by management.*	X				
IV-2 Process Familiarity by all Stakeholders *Primary processes are generally mapped out and process flow is well understood by most stakeholders. Very few if any, "black boxes" where process stalls and participants do not understand why.*		X			
IV-3 Process Compliance Management *Primary processes are routinely monitored, deviations addressed, and impacts recognized. Periodic spot audits conducted to ensure compliance.*	X				
IV-4 Efficiency of Overall Process Flow *Highly automated process, with near real-time status awareness, responsibilities grouped to increase efficiencies, hand-offs or back-and-forth process flows are minimized.*	X				

V. Employee Training and Development

Evaluation Framework

The Employee Training and Development focus area consists of four sub-focus areas (core and enabling areas that define an effective employee training and development process):

- V-1 Training Budgets and Program Effectiveness
- V-2 Ability to Cross-Train as Personnel Development Path
- V-3 Skills Assessment and Personnel Training Plans
- V-4 Demographics and Profile of Personnel by Skill Level

Observations and Contributors

Sub-Focus Area	Observations and Contributors
V-1 **Training Budgets & Program Effectiveness** *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	▪ Training is limited for PREPA employees. In some areas, employees are encouraged to learn from each other (which is uncommon due to the workload and understaffing), seek free training outside the organization or pay for training themselves. PREPA's different training centers post a calendar with training offerings four times a year. This calendar is sent through email. The employees fill a training application that must be signed by their supervisor. Then, the application is sent to the Training Center via email or fax.
V-2 **Ability to Cross-Train as Personnel Development Path** *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	▪ Cross-training is recommended by management. However, due to a lack of resources and a heavy workload, it is rarely possible. There is no defined process or clear documentation for personnel development.
V-3 **Skills Assessment & Personnel Training Plans** *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	▪ There is no formal process for evaluating employee performance. During the discussions, it was noted that pay increases and promotions are not merit based. Typically, a flat percentage is applied across the portion of the workforce authorized to receive a pay adjustment. ▪ Senior management positions are unduly influenced by politics. This has resulted in some leaders lacking the knowledge and expertise in the industry to effectively lead.
V-4 **Demographics & Profile of Personnel by Skill Level** *Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.*	▪ PREPA has lost valuable resources due to the multiple challenges that it is facing. In some departments, the experience and skills in performing departmental specific tasks are lacking. Knowledge transfer is not a focus or expectation set for personnel. There are no formal training plans for new hires and the guidance provided is very minimal.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	▪ Limited training and budget. ▪ Lack of a Learning Management System (LMS) platform.	Department level gap

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	▪ Limited cross-training, mainly occurring intra-department.	Department level gap
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	▪ No formal/deliberate individual development program.	Improvement opportunity
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	▪ Skills and experience in certain areas are limited due to a lack of resources. ▪ Some teams have dissolved, and personnel has moved to different organizations in which they have no experience, training or the required skills to efficiently perform their tasks.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training is evidenced by training budget and program effectiveness.*		X			
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross-training initiatives to improve development path for personnel*		X			
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets.*		X			
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	X				

VI. Workforce Management

Evaluation Framework

The Workforce Management focus area consists of two sub-focus areas (core and enabling areas that define effective work management):

- **VI-1** Effectiveness of Current Workforce Management Systems and Processes
- **VI-2** Time Charging, Productivity Tracking and Reporting

Observations and Contributors

Sub-Focus Area	Observations and Contributors
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	▪ During the discussions with PREPA, it was noted that there are no centralized workforce management tools. Resources needed to efficiently manage scheduled and emergent work are not planned as part of a yearly resources loading activity. Resources are matched to corrective maintenance work daily, maintenance work takes priority over project/scheduled work. ▪ Outdated processes are used to track hours. This includes manually filling out time cards and entering the data into spreadsheets.
VI-2 Time Charging & Productivity Tracking & Reporting *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	▪ Worker productivity is not analyzed. Time tracking and reporting are done manually by filling out timesheets and electronic entries. There are very few training requirements and no employee performance management processes (i.e., tracking and reviews).

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Defined processes and work rules to ensure efficient labor utilization.*	▪ Lack of productivity management tools, processes and systems.	Department-level Gap
VI-2 Time Charging & Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	▪ The way time is charged is inconsistent. There is a lack of processes for time reporting and no clear expectations for personnel to follow. ▪ Lack of performance management tools.	Department-level Gap

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements that define this sub-area and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/ starting to apply them.	The organization has identified the means to address the major elements that define this sub-area, and work is progressing on implementation.	All elements that define this sub-area are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches that go beyond the basic requirements, driving to achieve maximum value in this sub-area.
Sub-Focus Area					
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Defined processes and work rules to ensure efficient labor utilization.*		X			
VI-2 **Time Charging & Productivity Tracking & Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*		X			

VII. Management Systems and Technology

Evaluation Framework

The Management Systems and Technology focus area consists of four sub-focus areas (core and enabling areas that define effective management systems and technology):

- **VII-1** Process Automation
- **VII-2** Adaptability to New Systems and Technology
- **VII-3** Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- **VII-4** Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations and Contributors

Sub-Focus Area	Observations and Contributors
VII-1 Process Automation *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	▪ Technology and automation are below the industry standard across PREPA. There is some automation developed by PREPA employees on some specific processes. Process automation needs to be developed and deployed across all organizations. Roll out plans for training and change management would need to be established to ensure successful implementation.
VII-2 Adaptability to New Systems & Technology *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	▪ The most recent technology implementation was MS Office 365. However, it seems that the capabilities are limited (due to software functionality and employee skills). ▪ New systems and technologies are limited due to funding constraints.
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	▪ There seem to be minimal interface between established systems and the inconsistent manner these are being used across multiple organizations.
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ Lack of applications to manage and process cross-departmental requests. ▪ Lack of tools and processes to capture and resolve field personnel performance and field issues.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VII-1 Process Automation *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	▪ There is a lack of process automation in the majority of business areas.	Department level gap
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes and technology to make quality improvements.*	▪ PREPA's application of data analytics is limited. ▪ More trainingis needed for personnel on how to use these tools.	Improvement opportunity

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*	▪ Limited interaction between departments/functions in coordinating IT system implementation and use.	Improvement opportunity
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ Using MS Office 365 to its full potential and training the users to develop useful tools.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	X				
VII-2 **Adaptability to New Systems & Technology** *Ability to adjust attitudes, processes and technology to make quality improvements.*		X			
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*	X				
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*		X			

VIII. Performance Metrics and Continuous Improvement

Evaluation Framework

The Performance Metrics and Continuous Improvement focus area consist of five sub-focus areas (core and enabling areas that define performance metrics and continuous improvement process):

- **VIII-1** Recognition of Critical Performance Metrics
- **VIII-2** Performance Metric Collection, Validation and Reporting
- **VIII-3** Root Cause and Trend Analysis
- **VIII-4** Instances (or Lack) of Data-Driven Management Initiatives
- **VIII-5** Recent Performance Trends

Observations and Contributors

Sub-Focus Area	Observations and Contributors
VIII-1 Recognition of Critical Performance Metrics *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	▪ Periodic performance reporting includes: reliability performance (SAIFI, SAIDI and CAIDI as well as average size and duration of an outage), and safety and budget performance down to the Division Manager level (prepared and issued by the Costs Control and Interventions Office). ▪ Worst performing feeders are reported but there does not appear to be any focus on addressing repeat offenders. ▪ There appear to be few, if any, KPIs/metrics among the entities that participate in the work management process. Their work performance is not adequately measured. Current KPIs are insufficient to measure work performance. ▪ There are no indications that PREPA's reliability performance tracking system has generated information that is used to establish staffing strategies (e.g., swing or alternate shifts, day of week or time of day adjustments). The information provided has not led to actionable initiatives, though the capability to do so does exist.
VIII-2 Performance Metric Collection, Validation & Reporting *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	▪ Not all industry-standard KPIs are being collected, validated and reported. Those KPIs that are being collected and reported are not trusted by the organization given that regional KPIs do not add up to system-wide reported KPIs. There is no effective way to collect, validate and report KPIs.
VIII-3 Root Cause & Trend Analysis *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	▪ Reliability metrics and other data previously identified are reported on a routine basis at the system and regional levels but are not easily actionable. Performance discussions are not common across the organization and there is no evidence of formal performance target setting. ▪ There is no root cause analysis program in place.

Gap Assessment

Sub-Focus Area	Observations and Contributors
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	▪ The analytics of the limited available data do not lead to actionable performance improvement/risk mitigation interventions. ▪ Low levels of data confidence preclude the use of analytics in informing decisions aimed at improving performance.
VIII-5 **Recent Performance Trends** *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	▪ Reliability is reported on and trended monthly. It indicates a consistently low level of performance (at the lower end when compared across the industry).

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VIII-1 **Recognition of Critical Performance Metrics** *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	▪ Performance metrics are not reflective of all the key aspects of the business and do not lead to actionable performance improvement initiatives.	SRP candidate
VIII-2 **Performance Metric Collection, Validation & Reporting** *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	▪ Not tracking all industry-standard metrics. ▪ Lack of trust in the accuracy of the metrics.	SRP candidate
VIII-3 **Root Cause & Trend Analysis** *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs.*	▪ Not using available performance data and metrics to drive performance improvement.	Improvement opportunity
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	▪ Not being performed.	Department level gap
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	▪ KPIs and performance metrics analysis and reporting needs to be standardized.	SRP candidate

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*		X			
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*		X			
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	X				
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	X				
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*		X			

IX. PREPA Culture and Momentum

Evaluation Framework

The PREPA (Puerto Rico Electric Power Authority) Culture and Momentum focus area consists of five sub-focus areas (core and enabling areas that define the PREPA culture and momentum):

- **IX-1** Resistance (Active or Passive) to LUMA Management
- **IX-2** Employee Morale/Excitement About LUMA
- **IX-3** Employee Empowerment/Action Orientation
- **IX-4** Timeframe to Improve Performance
- **IX-5** Impact of Organization Silos

Observations and Contributors

Sub-Focus Area	Observations and Contributors
IX-1 Resistance (Active or Passive) to LUMA Management *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	▪ PREPA management team understands the shortfalls of the organization and is looking forward to the change. These employees are supportive of LUMA. On the contrary, there is strong opposition among labour unions, who are campaigning against the contract.
IX-2 Employee Morale/ Excitement About LUMA *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	▪ Management personnel is very optimistic about LUMA and assisting in the transition period. Some of the reasons are more experienced management, FEMA funding, improved processes, tools and opportunity to improve the lives of all Puerto Ricans and helping in the general economic development of the Island. There is more opposition among union workers.
IX-3 Employee Empowerment/ Action Orientation *Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.*	▪ While the initial drive for change will come from the LUMA transition team, PREPA's management team will need to become proactive advocates and the personnel will need to become active participants in the change process.Currently, PREPA's response is more passive, charaterised by acceptance and endorsement.
IX-4 Timeframe to Improve Performance *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	▪ PREPA employees to recognize that full cultural transformation can take as long as five years. Due to the high level of union involvement in all aspects of the business, an extended time frame would be expected. However, given PREPA's current level of performance, particularly in reliability, we should see a steady improvement profile starting at six to nine months.
IX-5 Impact of Organization Silos *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	▪ PREPA's management operates in a decentralized (regional) structure. A strong centralized location and management team needs to be established to drive expectations in the regions. Ensuring proper communication and making training and opportunities available equally to the central and regional offices will aid in breaking down the silos.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*	▪ Mixed feelings regarding the transformation from PREPA to LUMA (management vs union).	Department level gap
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	▪ Similar to the IX-1 Item. There are difficulties stemming from opposition from some of the union workers.	Improvement opportunity
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*	▪ Changing mentality from passive acceptance to proactive advocates.	Improvement opportunity
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*	▪ Timeframe to embrace the transition and transformation to significant and sustainable performance improvement will likely span beyond 24 months.	Department level gap
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*	▪ A strong centralized leadership team.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team*		X			
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment*			X		
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture*		X			
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives*		X			
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*	X				

Core Business Assessment

Focus and Sub-Focus Areas

The 11 **Core Business** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas			
XI	**System Operations**	XI-1	Workforce Management	XI-5	Grid Operations Processes
		XI-2	Control Center Facilities	XI-6	Energy Management Processes
		XI-3	System Information and Data Management	XI-7	System Performance
		XI-4	System Operations Applications		
XII	**Business Transformation**	XII-1	Organization, Strategy and Vision	XII-5	Microgrid Integration
		XII-2	Grid Modernization	XII-6	Innovation
		XII-3	IRP Planning	XII-7	Culture and Competencies
		XII-4	Renewables Integration	XII-8	Performance
XIII	**Asset Management**	XIII-1	Organization, Strategy and Vision	XIII-6	Quality Assurance
		XIII-2	System Planning	XIII-7	Processes
		XIII-3	Protection, Automation and Control	XIII-8	Information and Technology
		XIII-4	Reliability Management	XIII-9	Culture and Competencies
		XIII-5	Asset Management	XIII-10	Performance
XIV	**Transmission and Substations**	XIV-1	Organization, Strategy and Vision	XIV-5	Processes
		XIV-2	Engineering	XIV-6	Information and Technology
		XIV-3	Maintenance	XIV-7	Culture and Competencies
		XIV-4	Compliance and Inspection	XIV-8	Performance
XV	**Distribution**	XV-1	Organization, Strategy and Vision	XV-6	Processes
		XV-2	Engineering	XV-7	Information and Technology
		XV-3	Maintenance	XV-8	Culture and Competencies
		XV-4	Compliance and Inspection	XV-9	Performance
		XV-5	Streetlights		
XVI	**Metering**	XVI-1	Organization, Strategy and Vision	XVI-4	Information and Technology
		XVI-2	Metering Facilities	XVI-5	Culture and Competencies
		XVI-3	Processes	XVI-6	Performance
XVII	**Telecommunications**	XVII-1	Organization, Strategy and Vision	XVII-4	Information and Technology
		XVII-2	Telecommunication Facilities	XVII-5	Culture and Competencies
		XVII-3	Processes	XVII-6	Performance
XVIII	**Facilities**	XVIII-1	Organization, Strategy and Vision	XVIII-4	Information and Technology
		XVIII-2	Building Facilities	XVIII-5	Culture and Competencies
		XVIII-3	Processes	XVIII-6	Performance
XIX	**Materials Management**	XIX-1	Workforce Management	XIX-4	Information and Technology
		XIX-2	Warehouse Facilities	XIX-5	Culture and Competencies
		XIX-3	Processes	XIX-6	Performance
XX	**Central Shops**	XX-1	Organization, Strategy and Vision	XX-4	Information and Technology
		XX-2	Central Shop Facilities	XX-5	Culture and Competencies
		XX-3	Processes	XX-6	Performance
XXI	**Operations and Physical Security**	XXI-1	Human Resources/Skills/Training	XXI-4	Technology and Data
		XXI-2	Physical Security (Facilities)	XXI-5	Processes
		XXI-3	Security Standards	XXI-6	General

XI. System Operations

Evaluation Framework

The Systems Operations focus area consists of seven sub-focus areas that define an effective Systems Operations organization:

- XI-1 Workforce Management
- XI-2 Control Center Facilities
- XI-3 System Information and Data Management
- XI-4 System Operations Applications
- XI-5 Grid Operations Processes
- XI-6 Energy Management Processes
- XI-7 System Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XI-1 **Workforce Management** *The extent to which the utility department effectively and efficiently manages its workforce. Additionally the extent to which it effectively staffs, trains and confirms proficiency to operate the system safely, reliably and effectively.*	[redacted]
XI-2 **Control Center Facilities** *The extent to which control centers and supporting facilities are resilient and secure for the safety, effectiveness and availability of the workforce to meet the customer and physical demands of the operating environment.*	[redacted]
XI-3 **System Information and Data Management** *The extent to which safe, reliable and efficient operations are supported by the existence of*	[redacted]

Gap Assessment

Sub-Focus Area	Observations and Contributors
accurate, timely, accessible and sufficiently granular system information in the forms of maps, diagrams, visual representations and databases.	[redacted]
XI-4 **System Operations Applications** *The effectiveness of redundancy, maintenance and real-time support in assuring the functionality/dependability/security of systems (e.g., SCADA, EMS, DMS, OMS, telecommunications). The extent to which operating personnel are proficient in the technologies, and to which the technologies enable operators with necessary situational awareness.*	[redacted]
XI-5 **Grid Operations Processes** *The existence and effectiveness of key System Operation and Customer Service processes and procedures (e.g., grid operations, outage management, work dispatch and management, and key customer and stakeholder support). The extent to which there are effective controls to comply with: workforce and public safety, preparing and issuing switch orders, and permit classification requirements.*	[redacted]
XI-6 **Energy Management Processes** *Existence and effectiveness of key System Operation and Customer Service processes and procedures (e.g., grid operations, outage management, work dispatch and management, and key customer and stakeholder support). Effective controls to comply with workforce and public safety, preparing and issuing switch orders and permit classification requirements.*	[redacted]
XI-7 **System Performance** *The extent to which: System Operations incorporates meeting key performance metrics into the organization and there is advocacy for necessary system design, systems, and grid infrastructure to enable adequate system flexibility and resilience.*	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XI-1 Workforce Management *The extent to which the utility department effectively and efficiently manages its workforce. Additionally the extent to which it effectively staffs, trains and confirms proficiency to operate the system safely, reliably and effectively.*	[redacted]	[redacted]
XI-2 Control Center Facilities *The extent to which control centers and supporting facilities are resilient and secure for the safety, effectiveness and availability of the workforce to meet the customer and physical demands of the operating environment.*	[redacted]	[redacted]
XI-3 System Information and Data Management *The extent to which safe, reliable and efficient operations are supported by the existence of accurate, timely, accessible and sufficiently granular system information in the forms of maps, diagrams, visual representations and databases.*	[redacted]	[redacted]
XI-4 System Operations Applications *The effectiveness of redundancy, maintenance and real-time support in assuring the functionality/dependability/security of systems (e.g., SCADA, EMS, DMS, OMS, telecommunications). The extent to which operating personnel are proficient in the technologies, and to which the technologies enable operators with necessary situational awareness.*	[redacted]	[redacted]
XI-5 Grid Operations Processes *The existence and effectiveness of key System Operation and Customer Service processes and procedures (e.g., grid operations, outage management, work dispatch and management, and key customer and stakeholder support). The extent to which there are effective controls to comply with: workforce and public safety, preparing and issuing switch orders, and permit classification requirements.*	[redacted]	[redacted]

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Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XI-6 Energy Management Processes *Existence and effectiveness of key System Operation and Customer Service processes and procedures (e.g., grid operations, outage management, work dispatch and management, and key customer and stakeholder support). Effective controls to comply with workforce and public safety, preparing and issuing switch orders and permit classification requirements.*	[redacted]	[redacted]
XI-7 System Performance *The extent to which: System Operations incorporates meeting key performance metrics into the organization and there is advocacy for necessary system design, systems, and grid infrastructure to enable adequate system flexibility and resilience.*	[redacted]	[redacted]

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XI-1 Workforce Management *The extent to which the utility department effectively and efficiently manages its workforce. Additionally the extent to which it effectively staffs, trains and confirms proficiency to operate the system safely, reliably and effectively.*	[redacted]				
XI-2 Control Center Facilities *The extent to which control centers and supporting facilities are resilient and secure for the safety, effectiveness and availability of the workforce to meet the customer and physical demands of the operating environment.*					
XI-3 System Information and Data Management *The extent to which safe, reliable and efficient operations are supported by the existence of accurate, timely, accessible and sufficiently granular system information in the forms of maps, diagrams, visual representations and databases.*					

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XI-4 System Operations Applications *The effectiveness of redundancy, maintenance and real-time support in assuring the functionality/dependability/security of systems (e.g., SCADA, EMS, DMS, OMS, telecommunications). The extent to which operating personnel are proficient in the technologies, and to which the technologies enable operators with necessary situational awareness.*	[redacted]				
XI-5 Grid Operations Processes *The existence and effectiveness of key System Operation and Customer Service processes and procedures (e.g., grid operations, outage management, work dispatch and management, and key customer and stakeholder support). The extent to which there are effective controls to comply with: workforce and public safety, preparing and issuing switch orders, and permit classification requirements.*					
XI-6 Energy Management Processes					
XI-7 System Performance *The extent to which: System Operations incorporates meeting key performance metrics into the organization and there is advocacy for necessary system design, systems, and grid infrastructure to enable adequate system flexibility and resilience.*					

XII. Business Transformation

Evaluation Framework

The Business Transformation focus area consists of eight sub-focus areas that define an effective Business Transformation organization:

- XII-1 Organization, Strategy and Vision
- XII-2 Grid Modernization
- XII-3 IRP Planning
- XII-4 Renewables Integration
- XII-5 Microgrid Integration
- XII-6 Innovation
- XII-7 Culture and Competencies
- XII-8 Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XII-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for the identified Business Transformation sub-focus areas are efficient and effective (applying industry-standard practices) and are aligned to achieving the utility's business strategies and vision for the future.*	▪ The utility does not have organizational functions related dedicated to most of the identified Business Transformation sub-focus areas. The activities in these functional areas are largely conducted by external consultants as PREPA does not have sufficient internal resources. These resource challenges also limit the organizational effectiveness, as activities are conducted piecemeal, in reaction to external drivers. There is a need for dedicated resources to proactively develop strategy, vision and organizationl processes.
XII-2 **Grid Modernization** *The extent to which the utility has a defined grid modernization program, the status of the program in terms of progress and future funding commitments, and how the modernization plan is coordinated and/or integrated into business plans. Evaluaion of the the scope and objectives of grid modernization programs relative to similarly situated industry utilities. Evaluation of the consistency between overall business strategy, the underlying philosophy in grid modernization and the deployment of personnel in performing the necessary functions.*	▪ The utility does not have a coordinated, dedicated grid modernization program. Limited activities in this area are currently handled by other groups or by consultants. Some effort has been conducted to define and plan for grid modernization, largely by external consultants and/or stakeholders. However, these plans have not been well integrated into internal activities or plans. A dedicated group is needed to proactively drive the development of program strategies, in coordination with other interrelated functions like engineering, asset management and IT/OT. ▪ ▪

Gap Assessment

Sub-Focus Area	Observations and Contributors
XII-3 **IRP Planning** *The extent to which the utility has implemented IRP practices and processes aligned with utilities of similar scope, conditions and policy objectives. Evaluation of the extent to which the processes are coordinated across the various departments including regulatory and external affairs and the stakeholder engagement processes.*	▪ Processes, practices and programs required to comply with IRP (integrated resource plan) requirements are underdeveloped or non-existent. ▪ Cross-departmental coordination is minimal. ▪ Engagement with regulators and external stakeholders is limited by competing requirements for resources.
XII-4 **Renewables Integration** *The extent to which the utility has a strategy and processes for integrating renewable resources in a safe, reliable and efficient manner consistent with applicable energy policy requirements. Evaluation of how accountability for renewable integration is assigned within the organization and the effectiveness of cross-department coordination in the process. Evaluation of the effectiveness and efficiency of the renewable resource interconnection process in meeting operational and regulatory requirements.*	▪ PREPA relies on the mandates contained in A-17-2019, but does not have an effective internal process to handle the integration of DGs/DERs (distributed generation/distributed energy resources). ▪ The integration process is currently conducted through a piecemeal approach in regional offices, each of which have different processes, systems and resource capacities. This inconcistent, inefficient process has resulted in a backlog of several thousand projects, numerous customer complaints and inability to meet regulator ▪ Very few interconnections were studied by the Distribution System Plan department due to limited resources, which poses technical and safety risks.
XII-5 **Microgrid Integration** *The extent to which the utility has a defined microgrid integration strategy and approach, the status of microgrid development and plans or commitments for future microgrid development. Evaluation of the consistency between overall business strategy, the underlying philosophy in microgrid integration and the deployment of personnel in performing the necessary functions.*	▪ PREPA does not have provisions, methods, or processes for microgrid development.
XII-6 **Innovation** *The extent to which the utility facilitates and supports innovation in the T&D business. Evaluation of the organizational responsibilities, facilities (e.g., laboratories, centers-of-excellence) and processes for encouraging and capturing the benefits of the innovation taking place. Evaluate the effectiveness of migrating innovation from idea to operation in the T&D business.*	▪ The organization does not have a business unit responsible for formal innovation policies, procedures, programs or initiatives.

Gap Assessment

Sub-Focus Area	Observations and Contributors
XII-7 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement business transformation processes.*	▪ PREPA employees lack the internal respources and skills necessary to successfully implement business transformation processes, programs and initiatives
XII-8 **Performance** *The extent to which the Utility understands the performance of Business Transformation functions to achieve the desired results, provides visibility to performance across the organization, and utilizes performance data to make informed decisions consistent with an integrated view of the current assets and future grid functions.*	▪ PREPA does not have dedicated Business Transformation functional area so does not track performance.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XII-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for the identified Business Transformation sub-focus areas are efficient and effective (applying industry-standard practices) and are aligned to achieving the utility's business strategies and vision for the future.*	▪ The utility does not have organizational functions related to most of the identified Business Transformation sub-focus areas.	Department level gap
XII-2 **Grid Modernization** *The extent to which the utility has a defined grid modernization program, the status of the program in terms of progress and future funding commitments, and how the modernization plan is coordinated and/or integrated into business plans. Evaluaion of the the scope and objectives of grid modernization programs relative to similarly situated industry utilities. Evaluation of the consistency between overall business strategy, the underlying philosophy in grid modernization and the deployment of personnel in performing the necessary functions.*	▪ Lack of a grid modernization program.	Improvement opportunity
XII-3 **IRP Planning** *The extent to which the utility has implemented IRP practices and processes aligned with utilities of similar scope, conditions and policy objectives. Evaluation of the extent to which the processes are coordinated across the various departments including regulatory and external affairs and the stakeholder engagement processes.*	▪ Lack of internal IRP practices and processes and programs.	Department level gap
XII-4 **Renewables Integration** *The extent to which the utility has a strategy and processes for integrating renewable resources in a safe, reliable and efficient manner consistent with applicable energy policy requirements. Evaluation of how accountability for renewable integration is assigned within the organization and the effectiveness of cross-department coordination in the process. Evaluation of the effectiveness and efficiency of the renewable resource interconnection process in meeting operational and regulatory requirements.*	▪ There is no internal consistent, coordinated process to be followed when integrating DGs/DERs. PREPA requires customers to follow regulations and meet IEEE Standard 1547, but only studies very few systems. Their Hosting Capacity map was created by a consultant about 5 years ago and has never been updated. In response, a DG/DER interconnection process must be developed to properly assess and approve interconnections.	Department level gap

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XII-5 Microgrid Integration *The extent to which the utility has a defined microgrid integration strategy and approach, the status of microgrid development and plans or commitments for future microgrid development. Evaluation of the consistency between overall business strategy, the underlying philosophy in microgrid integration and the deployment of personnel in performing the necessary functions.*	▪ PREPA has not taken any proactive measure in identifying the scope for microgrid development, which is in the IRP. A business driven process that considers reliability improvement must be developed to identify potential microgrids and their energy sources.	Improvement opportunity
XII-6 Innovation *The extent to which the utility has a defined microgrid integration strategy and approach, the status of microgrid development and plans or commitments for future microgrid development. Evaluation of the consistency between overall business strategy, the underlying philosophy in microgrid integration and the deployment of personnel in performing the necessary functions.*	▪ PREPA does not have a formal business unit responsible for Innovation.	Improvement opportunity
XII-7 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement business transformation processes.*	▪ The organization has not previously undertaken significant, large-scale business transformation programs, so the skills, competencies and culture for it have not been developed.	Department level gap
XII-8 Performance *The extent to which the utility understands the performance of business transformation functions to achieve the desired results. This means providing visibility to performance across the organization and utilizing performance data to make informed decisions consistent with an integrated view of the current assets and future grid functions.*	▪ The utility does not track performance.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XII-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for the identified Business Transformation sub-focus areas are efficient and effective (applying industry-standard practices) and are aligned to achieving the utility's business strategies and vision for the future*			X		

UTILITY TRANSFORMATION

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XII-2 Grid Modernization *The extent to which the utility has a defined grid modernization program, the status of the program in terms of progress and future funding commitments, and how the modernization plan is coordinated and/or integrated into business plans. Evaluaion of the the scope and objectives of grid modernization programs relative to similarly situated industry utilities. Evaluation of the consistency between overall business strategy, the underlying philosophy in grid modernization and the deployment of personnel in performing the necessary functions.*	X				
XII-3 IRP Planning *The extent to which the utility has implemented IRP practices and processes aligned with utilities of similar scope, conditions and policy objectives. Evaluation of the extent to which the processes are coordinated across the various departments including regulatory and external affairs and the stakeholder engagement processes.*	X				
XII-4 Renewables Integration *The extent to which the utility has a strategy and processes for integrating renewable resources in a safe, reliable and efficient manner consistent with applicable energy policy requirements. Evaluation of how accountability for renewable integration is assigned within the organization and the effectiveness of cross-department coordination in the process. Evaluation of the effectiveness and efficiency of the renewable resource interconnection process in meeting operational and regulatory requirements.*		X			
XII-5 Microgrid Integration *The extent to which the utility has a defined microgrid integration strategy and approach, the status of microgrid development and plans or commitments for future microgrid development. Evaluation of the consistency between overall business strategy, the underlying philosophy in microgrid integration and the deployment of personnel in performing the necessary functions.*	X				
XII-6 Innovation *The extent to which the utility has a defined microgrid integration strategy and approach, the status of microgrid development and plans or commitments for future microgrid development. Evaluation of the consistency between overall business strategy, the underlying philosophy in microgrid integration and the deployment of personnel in performing the necessary functions.*	X				

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XII-7 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement business transformation processes.*	X				
XII-8 Performance *The extent to which the utility understands the performance of business transformation functions to achieve the desired results. This means providing visibility to performance across the organization and utilizing performance data to make informed decisions consistent with an integrated view of the current assets and future grid functions.*	X				

XIII. Asset Management

Evaluation Framework

The Asset Management focus area consists of ten sub-focus areas that define an effective Asset Management organization:

- XIII-1 Organization, Strategy and Vision
- XIII-2 System Planning
- XIII-3 Protection, Automation and Control
- XIII-4 Reliability Management
- XIII-5 Asset Management
- XIII-6 Quality Assurance
- XIII-7 Processes
- XIII-8 Information and Technology
- XIII-9 Culture and Competencies
- XIII-10 Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XIII-1 **Organization, Strategy and Vision** *The extent to which the Utility organizations with responsibility for the identified Asset Management sub-areas are efficient and effective, applying industry-standard practices and are aligned to achieving the utility's business strategies and vision for the future.*	▪ PREPA is currently utilizing a time-based approach to its basic asset management responsibilities. They have not yet adopted a risk-based approach dependent upon the health indices of the asset. Moreover, they have either a rudimentary electronic-based system (Access database) or a paper-based system to maintain their asset records. This does not allow them to easily make decisions on prioritization of PM activities and capital maintenance expenditures. Additionally, PREPA has maintained electric assets poorly. Basic housekeeping items are not undertaken: garbage is often observed around work sites, salvaged or unusable items are not disposed of, and basic electrical items are not properly cared for (e.g., electrical covers not put back on, which allows for rodent or lizard entry).
XIII-2 **System Planning** *The extent to which the system planning process aligns with NERC transmission planning standards and IEEE distribution system planning standards or other relevant requirements. Evaluate the consistency between overall business strategy, the underlying philosophy in system planning and the deployment of personnel in performing the necessary functions.*	▪ In distribution, PREPA is aware of IEEE (Institute of Electrical and Electronics Engineers) standards and their requirements, but there is no compliance verification. This is also the case for Transmission NERC (North American Electric Reliability Corporation) standards. PREPA is also aware that while many of these standards do not apply to Puerto Rico because it is not connected to the BES (bulk electric system), best efforts should be employed to attempt operation as close to compliance as possible. Modeling and monitoring are far behind in achieving this. For example, transmission models are not current, and, for the most part, distribution models are nonexistent and where present, they are inaccurate. This makes it difficult to ensure compliance with planning guidelines. Similarly, compliance to standards such as 519 and 1547 is not checked where they could be, due to lack of resources that enable monitoring (such as personnel and equipment).
XIII-3 **Protection, Automation and Control** *The extent to which the protection, automation, and control processes align with NERC, IEEE, IEC, and other relevant standards. Evaluate the extent to which the processes are coordinated across the technologies and equipment and there is a modernization roadmap*	**Protection and Control**: ▪ Aged/obsolete protection relays (electromechanical) have been identified for most of the substations as main protection schemes. Some relays have been upgraded with digital microprocessor-based relays following new standards. However, the global relay proportion is about 75% of electromechanical and 25% of digital relays. There is currently a plan to retrofit or upgrade line protection relays. ▪ The lack of standard compliance to IEEE or NERC rules regarding documentation, process and procedures are noticeable. Maintenance and relay calibrations are performed on a time-based basis.

Sub-Focus Area	Observations and Contributors
in place guiding the management of legacy and new equipment installations.	▪ Organization resources are limited. One engineer is responsible for all of the relay settings. The maintenance group also indicated some challenges related to available resources for performing their activities. ▪ Based on site visits, several deficiencies have been noticed related to the protection panels that might be identified as safety concerns. **SCADA** (supervisory control and data acquisition): ▪ Obsolete technology is in use for the majority of substations. ▪ RTU (remote terminal unit) serial connections are at a low baud rate, which limits the transfer of SCADA data to the Control Centers. ▪ Upgrade or retrofit projects are not coordinated with P&C upgrade projects. For that reason, the integration of new relays using communication links and a standard protocol for SCADA data collection is not implemented. The retrofit program scope only includes the hardware replacement without any impact on the system architecture. ▪ From an organizational perspective, there are several departments/functions involved in various activities related to RTUs and they perform those activities as silos without much communication or coordination between them.
XIII-4 **Reliability Management** *The extent to which the utility has an integrated strategy and process for system reliability management through coordinated investments and procedures involving engineering, operations, maintenance, construction, vegetation management, customer service, and the functions within Asset management as described here. Evaluate how accountability for reliability management is assigned within the organization and that the reliability management focus is both short- and longer-term to meet customer and stakeholder expectations.*	▪ **Distribution**: Outage data recording and reliability indices reporting process are working. ▪ **Transmission**: Outage information scattered in many different spreadsheets/databases, with lots of data inconsistencies and incompleteness. ▪ Focuses mainly on restoring services or fixing broken equipment (Corrective Maintenance)—not much focus on preventive maintenance and reliability improvement. ▪ Risk assessment and work prioritization are based on SME's personal knowledge (subjective). ▪ Reliability improvement works are sporadic. ▪ Lack of communications to customers on outage notifications.
XIII-5 **Asset Management** *The extent to which the Asset Management processes and systems align with ISO 55000 and/or IAM standards. Specifically, review the organization's implementation of risk management, and the asset owner, asset manager and service provider functions. Evaluate the consistency between overall asset management strategy, asset management plans, and organizational roles and responsibilities in optimizing asset value.*	▪ No group accountable to lead the asset management and risk management initiative and implementation. ▪ Asset information (inventory, maintenance, deficiency, transmission lines vs. substations vs. distribution lines) is either not available or kept on a segregated database. Test results are only available on paper at the site. ▪ PREPA does not have a group to focus on asset management and asset management risk. ▪ Risk assessment and work prioritization (for O&M and capital maintenance work) are based on SME's personal knowledge (subjective). ▪ Minimal preventive maintenance (PM) completion, no outlook to future maintenance work. Focus resources on reactive response to immediate CM and EM (corrective and emergency maintenance). ▪ Capital maintenance timeline gets second priority after operational/restoration effort.

Gap Assessment

Sub-Focus Area	Observations and Contributors
XIII-6 **Quality Assurance** *The extent to which the utility has quality assurance oversight that evaluates the overall effectiveness of key processes across the T&D organization in achieving the targeted business results and complying with legal and regulatory requirements. The extent to which quality assurance processes are independent, objective and actionable to drive improvements wherever needed in the organization.*	▪ Outside of the PMO, there is no evidence of evaluation for continually improving processes. ▪ Within the PMO, this has been identified and recommendations have been made to implement ISO9001-based quality management system (QMS); some draft documents have been developed, but it is not clear how far they have moved with implementation.
XIII-7 **Processes** *The extent to which asset management processes as defined here are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data and apply standard data analysis approaches. Determine the extent to which the processes enable investments and implementation of O&M programs that are identified, prioritized and optimized based on overall value, resources and risk.*	▪ The PMO has defined a documentation hierarchy and roles and responsibilities for managing processes, but outside of the PMO, there is no evidence that these have been adopted. ▪ Transmission system maintenance is frequency-based and asset condition and criticality are not considered. ▪ Major maintenance programs (NME) have limited central planning a budget is provided, and local supervisors prioritize work from that budget based on their local knowledge and experience. ▪ Based on the site visits, there are significant legacy issues.
XIII-8 **Information and Technology** *The extent to which the asset management data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure the availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	▪ **Transmission**: Asset nameplate data for breakers, transformers, and batteries is captured in an MS Access database. A cursory examination of this database shows that information is not always complete. The process is rudimentary, as asset data is forwarded and entered into the database by a single person. Architecture is limited to the tables in the database, structured basically like a spreadsheet. This database is not integrated with other systems. ▪ This database supports rudimentary time-based planned maintenance. The primary user appears to be very proficient in its use. ▪ **Distribution**: Need a demo/more info on STORMS to assess.
XIII-9 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement asset management processes.*	▪ For the past 15 years, most positions vacated by retirement, leave or other reasons were never re-filled. In many cases, the present complement is less than 50% of the level expected in 2005. Furthermore, the assessment of work activities indicates there is a need for additional resources although it is uncertain whether it needs to be brought up to 2005 levels. ▪ There is no succession planning to deal with retirements or employees leaving the company. Furthermore, there is little to no knowledge transfer from the older generation to the younger generation; the reason given for the ceasing of some activities was person retired or left the company.

Sub-Focus Area	Observations and Contributors
XIII-10 Performance *The extent to which the Utility understands the performance of assets and systems to achieve the desired results provides visibility to asset performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current assets and future grid functions.*	▪ In distribution, performance is calculated or measured through reliability indices reporting (SAIFI, CAIDI), but it is not tied to the cost of service. In transmission, PREPA is not aware of any performance metrics. They have subjective opinions on worse performing assets but this is not tied to data and they would not be able to do any comparisons to the cost of service. ▪ Performance measures or targets were not observed in our conversations with PREPA. Even basic project requirements such as ISD for projects (O&M, capital) are not followed or adhered to.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIII-1 Organization, Strategy and Vision *The extent to which the Utility organizations with responsibility for the identified Asset Management sub-areas are efficient and effective, applying industry-standard practices and are aligned to achieving the utility's business strategies and vision for the future.*	▪ The implementation of an asset management system (or maintenance management system) such as Maximo or SAP. Beyond this, some fundamental gaps or improvements to be made include the development of maintenance standards/practices, an asset strategy that focuses on contingency analysis, clear prioritization of capital and O&M expenditures will be a priority.	Priority
XIII-2 System Planning *The extent to which the system planning process aligns with NERC transmission planning standards and IEEE distribution system planning standards or other relevant requirements. Evaluate the consistency between overall business strategy, the underlying philosophy in system planning and the deployment of personnel in performing the necessary functions.*	▪ This is not consistent with the Incidence Response Plan (IRP). Processes, technical criteria, and study methods need to be developed to adhere to these standards. These include the development of planning guidelines, study methods and commissioning standards. Another important step is to improve the accuracy of transmission models and the creation, fine-tuning, and upkeep of distribution models, which require modules such as Synergi Middlelink and coordination with other departments (GIS and CIS). Monitoring practices and compliance checks need to be implemented too.	Department level gap
XIII-3 Protection, Automation and Control *The extent to which the protection, automation, and control processes align with NERC, IEEE, IEC, and other relevant standards. Evaluate the extent to which the processes are coordinated across the technologies and equipment and there is a modernization roadmap in place guiding the management of legacy and new equipment installations.*	**Protection and Control**: ▪ There is not a centralized and standard system or database for relay settings (control version) and grid modeling. ▪ The use of obsolete technology prevents the application of better analytic and more efficient tools and consumes too many resources on maintenance activities. ▪ Deficient process and procedures. ▪ Lack of remote access capabilities for event collection directly from the relays. ▪ Lack of local time synchronization makes it very difficult to analyze the sequence of events (SOE) **SCADA**: ▪ Obsolete technology. ▪ Deficient organizational structure to support the responsibilities of the different activities. ▪ Lack of coordination among the different groups. ▪ Lack of remote access and time synchronization. ▪ Deficient document control practices and policies.	Department level gap

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XIII-4 Reliability Management *The extent to which the utility has an integrated strategy and process for system reliability management through coordinated investments and procedures involving engineering, operations, maintenance, construction, vegetation management, customer service, and the functions within asset management as described here. Evaluate how accountability for reliability management is assigned within the organization and that the reliability management focus is both short- and longer-term to meet customer and stakeholder expectations.*	▪ No centralized location for all transmission line (Tx) outage-related information. Lack of outage data consistency. Outage investigation findings are not recorded/uploaded into the outage database; there is no Tx outage data validation process. ▪ No Tx reliability indices reporting process. ▪ No in-depth analysis of reliability data to understand systemic problem/real root-cause. ▪ No medium and long-term reliability plan. ▪ No consistent reliability-related (O&M or capital) work prioritization ▪ No Tx lines and substation contingency plan.	Department level gap
XIII-5 Asset Management *The extent to which the asset management processes and systems align with ISO 55000 and/or IAM standards. Specifically, review the organization's implementation of risk management, and the asset owner, asset manager and service provider functions. Evaluate the consistency between overall asset management strategy, asset management plans, and organizational roles and responsibilities in optimizing asset value.*	▪ No asset management plan, objective, strategy, policy, process and procedures. No defined roles and responsibilities on asset management. ▪ No risk management strategy, policy, process or procedures. No defined roles and responsibilities on risk management. ▪ No consolidated computerized maintenance management system (CMMS) program to keep asset information (inventory, maintenance, deficiency, Tx lines vs. substations vs. district lines). No centralized online test data location. ▪ No process/tool to assess asset condition, criticality and risk level. Data, if any, are scattered at multiple locations. ▪ No consistent work prioritization for O&M and capital work. ▪ No annual preventive maintenance plan and periodic review, no maintenance standards, no sparing management review. ▪ No comprehensive CM program (including needs identification process, business case development, program scope and program management). ▪ No program to comply with environment and compliance (based on local jurisdiction requirement).	Department level gap
XIII-6 Quality Assurance *The extent to which the utility has quality assurance oversight that evaluates the overall effectiveness of key processes across the T&D organization in achieving the targeted business results and complying with legal and regulatory requirements. The extent to which quality assurance processes are independent, objective and actionable to drive improvements wherever needed in the organization.*	▪ Standardized processes have either not been established, are not enforced or have not been maintained. ▪ Objective oversight of process performance cannot be established until key processes are standardized. ▪ Continual improvement of processes also requires standardized processes to be established.	Improvement opportunity
XIII-7 Processes *The extent to which asset management processes as defined here are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data and apply standard data analysis approaches. Determine the extent to which the processes enable investments and implementation of O&M programs that are identified, prioritized and optimized based on overall value, resources and risk.*	▪ Process governance principles have not been applied throughout the organization. ▪ Condition data that is collected is not centralized for analysis. ▪ Data is not reliably updated in asset databases.	Department level gap
XIII-8 Information and Technology *The extent to which the asset management data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure the availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	**Transmission**: ▪ No computerized maintenance management system linked to asset database. ▪ Data not complete. ▪ Condition or performance information is not stored in a database. ▪ A single person as the gatekeeper, with no evidence of backup or succession planning. ▪ Manual work assignment processes, and no ability to track work.	Priority

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XIII-9 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement asset management processes.*	▪ Lack of a formal training and development program (technical based). ▪ Lack of a mentorship program (pass knowledge from one generation to the next). ▪ Lack of succession planning.	Department level gap
XIII-10 Performance *The extent to which the Utility understands the performance of assets and systems to achieve the desired results provides visibility to asset performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current assets and future grid functions.*	▪ Lack of any link with system performance to cost of service or linkages to capital and operational improvement programs. ▪ Limited analyzing and categorizing Transmission outage data (only four months out of the last year). There are no processes, practices or procedures that help support this work activity. ▪ There are no overall Asset Health performance indicators or targets that drive Asset Strategy or Asset replacement activities.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XIII-1 Organization, Strategy and Vision *The extent to which the Utility organizations with responsibility for the identified Asset Management sub-areas are efficient and effective, applying industry-standard practices and are aligned to achieving the utility's business strategies and vision for the future.*		X			
XIII-2 System Planning *The extent to which the system planning process aligns with NERC transmission planning standards and IEEE distribution system planning standards or other relevant requirements. Evaluate the consistency between overall business strategy, the underlying philosophy in system planning and the deployment of personnel in performing the necessary functions.*			X		
XIII-3 Protection, Automation and Control *The extent to which the protection, automation, and control processes align with NERC, IEEE, IEC, and other relevant standards. Evaluate the extent to which the processes are coordinated across the technologies and equipment and there is a modernization roadmap in place guiding the management of legacy and new equipment installations.*		X			

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIII-4 Reliability Management *The extent to which the utility has an integrated strategy and process for system reliability management through coordinated investments and procedures involving engineering, operations, maintenance, construction, vegetation management, customer service, and the functions within asset management as described here. Evaluate how accountability for reliability management is assigned within the organization and that the reliability management focus is both short- and longer-term to meet customer and stakeholder expectations.*	X				
XIII-5 Asset Management *The extent to which the asset management processes and systems align with ISO 55000 and/or IAM standards. Specifically, review the organization's implementation of risk management, and the asset owner, asset manager and service provider functions. Evaluate the consistency between overall asset management strategy, asset management plans, and organizational roles and responsibilities in optimizing asset value.*	X				
XIII-6 Quality Assurance *The extent to which the utility has quality assurance oversight that evaluates the overall effectiveness of key processes across the T&D organization in achieving the targeted business results and complying with legal and regulatory requirements. The extent to which quality assurance processes are independent, objective and actionable to drive improvements wherever needed in the organization.*	X				
XIII-7 Processes *The extent to which asset management processes as defined here are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data and apply standard data analysis approaches. Determine the extent to which the processes enable investments and implementation of O&M programs that are identified, prioritized and optimized based on overall value, resources and risk.*	X				

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIII-8 Information and Technology *The extent to which the asset management data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure the availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	X				
XIII-9 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement asset management processes.*	X				
XIII-10 Performance *The extent to which the Utility understands the performance of assets and systems to achieve the desired results provides visibility to asset performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current assets and future grid functions.*	X				

XIV. Transmission and Substations

Evaluation Framework

The Transmission and Substations focus area consists of eight sub-focus areas that define an effective Transmission and Substations organization:

- XIV-1 Organization, Strategy and Vision
- XIV-2 Engineering
- XIV-3 Maintenance
- XIV-4 Compliance and Inspection
- XIV-5 Processes
- XIV-6 Information and Technology
- XIV-7 Culture and Competencies
- XIV-8 Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XIV-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for the identified transmission and substation (T&S) sub-areas are efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ At this time, the transmission and substation (T&S) group focus is to respond to the immediate needs identified by system operations or other groups. PREPA personnel are waiting for the FEMA-10-year plan approval to understand the vision for the future. This strategy is led by consulting companies.
XIV-2 **Engineering** *The extent to which T&S engineering standards and material specifications align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness of the engineering organization to interact with, support, and oversee regional and contractor design, construction, and O&M activities consistent with engineering standards and specifications. Evaluate the consistency between overall business strategy, the underlying engineering philosophy, and the deployment of personnel in performing the necessary functions.*	▪ PREPA's engineering standards do not align with applicable standards; they have too many materials specially designed for them. The PREPA T&S group reorganized early in the year and moved the Engineering Design section to PREPA's system planning group. Currently, the T&S group depends on consultants to update their standards. ▪ The engineering department is supporting the different internal organizations, as is requested. At this time, PREPA is not overseeing project work as this organization has suffered a loss of personnel. PREPA subcontracts the inspections to contractors. ▪ The engineering department has limited resources to perform the necessary functions to support the business.

Gap Assessment

Sub-Focus Area	Observations and Contributors
XIV-3 Maintenance *The extent to which T&S maintenance standards and procedures align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness and efficiency of maintenance plans and execution by the performing organizations. Evaluate the consistency between overall business strategy, maintenance philosophy and the deployment of personnel in performing the necessary functions.*	▪ Existing maintenance practices only address corrective maintenance and not the performance and predictive maintenance. ▪ Personnel are deployed on an as-needed basis and have not been retrained in the last few years.
XIV-4 Compliance and Inspection *The extent to which the Utility has compliance and inspection oversight of T&S system design, construction and O&M activities to evaluate compliance with legal and regulatory requirements, internal standards and quality expectations. The extent to which the compliance and inspection processes are independent, objective and actionable to drive improvements in the organization.*	▪ Before Hurricane Maria, PREPA standards and procedures were reviewed annually but this has not continued since. ▪ There is no compliance and inspection process to achieve the goals provided in the description.
XIV-5 Processes *The extent to which T&S processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective T&S infrastructure development and maintenance program implementation.*	▪ PREPA has limited documentation of its processes to measure business results. ▪ No process to evaluate their effectiveness for infrastructure development or to have a maintenance program.
XIV-6 Information and Technology *The extent to which the T&S data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure availability of as-built, condition and performance information in support of engineering and maintenance related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	▪ PREPA does not have a data information system to manage as-built drawings and documents, and neither does it have performance field records to use on engineering and maintenance improvements. ▪ Limited or nonexistent technology solutions to support the current process.

Gap Assessment

Sub-Focus Area	Observations and Contributors
XIV-7 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement T&S processes.*	▪ Limited skills depth, alongside other factors, have contributed to this situation, including loss of personnel. ▪ There is no continuous improvement culture as the personnel do not have a clear vision of the future of their organization. Individuals have no clear understanding of the future of the organization and that affects their motivation for an improvement culture.
XIV-8 **Performance** *The extent to which the utility understands the performance of the T&S system to achieve the desired results, provides visibility of T&S performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current T&S assets and future grid functions.*	▪ The utility understands that the T&S system is essential to achieve stated goals. ▪ In recent years, the utility has not measured the T&S performance against KPIs to provide visibility of the organization, nor has it used performance data to make decisions for the grid of the future. They have been focused on the reaction to the day-to-day needs.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIV-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for the identified transmission and substation (T&S) sub-areas are efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ Need to define and roll out the vision of the future. ▪ Roll out the vision once it is defined. ▪ Define the T&S organization's role in this vision.	Department level gap
XIV-2 **Engineering** *The extent to which T&S engineering standards and material specifications align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness of the engineering organization to interact with, support, and oversee regional and contractor design, construction, and O&M activities consistent with engineering standards and specifications. Evaluate the consistency between overall business strategy, the underlying engineering philosophy, and the deployment of personnel in performing the necessary functions.*	▪ Use of market available products rather than specials. ▪ Need of an engineering department with the capacity to support the overall business strategy while qualifying personnel for the different roles. ▪ Need to set up a quality control field organization to supervise self-performance of contracted engineering, construction and O&M activities.	Department level gap
XIV-3 **Maintenance** *The extent to which T&S maintenance standards and procedures align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness and efficiency of maintenance plans and execution by the performing organizations. Evaluate the consistency between overall business strategy, maintenance philosophy and the deployment of personnel in performing the necessary functions.*	▪ Need to develop an overall yearly maintenance plan to be updated quarterly. ▪ Need to update test plans and procedures. ▪ Need to set up a testing and maintenance organization in-house and include contractor personnel to properly attend to the needs of the system. ▪ Need to develop a training program to improve the skills of personnel. ▪ Need to update their testing equipment and tools.	Department level gap

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XIV-4 Compliance and Inspection *The extent to which the Utility has compliance and inspection oversight of T&S system design, construction and O&M activities to evaluate compliance with legal and regulatory requirements, internal standards and quality expectations. The extent to which the compliance and inspection processes are independent, objective and actionable to drive improvements in the organization.*	▪ Need to develop a Q&C process for compliance and inspection oversight. ▪ Need to develop an organization or an engineering responsibility to verify compliance and inspections to drive improvements in the organization.	Department level gap
XIV-5 Processes *The extent to which T&S processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective T&S infrastructure development and maintenance program implementation.*	▪ Need to develop defined processes to measure defined KPIs. ▪ Need to develop processes that aim to establish an infrastructure development and maintenance program implementation for data analysis.	Department level gap
XIV-6 Information and Technology *The extent to which the T&S data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure availability of as-built, condition and performance information in support of engineering and maintenance related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	▪ Need to implement an engineering data management system to store and control versions of design criteria, standards, specifications, bill of materials, as-built drawings, relay settings, system studies, maintenance and test records. ▪ Need to implement an Asset Management System to store maintenance and testing records of assets. ▪ Systems to be online accessible for analysis of data to identify engineering improvements and define an asset management strategy.	Department level gap
XIV-7 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement T&S processes.*	▪ Need to reorganize the group to develop an improvement driven organization. ▪ Need to establish an individual development plan to improve the skills of the organization in making the proper improvement decisions.	Department level gap
XIV-8 Performance *The extent to which the utility understands the performance of the T&S system to achieve the desired results, provides visibility of T&S performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current T&S assets and future grid functions.*	▪ Need visibility into the T&S system. ▪ To achieve this visibility, need to implement transmission line monitoring systems and substation automation. ▪ Needs to use the data from monitoring and automation systems to understand system performance and achieve the established goals of the future utility grid.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XIV-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for the identified transmission and substation (T&S) sub-areas are efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	X				
XIV-2 Engineering *The extent to which T&S engineering standards and material specifications align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness of the engineering organization to interact with, support, and oversee regional and contractor design, construction, and O&M activities consistent with engineering standards and specifications. Evaluate the consistency between overall business strategy, the underlying engineering philosophy, and the deployment of personnel in performing the necessary functions.*	X				
XIV-3 Maintenance *The extent to which T&S maintenance standards and procedures align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness and efficiency of maintenance plans and execution by the performing organizations. Evaluate the consistency between overall business strategy, maintenance philosophy and the deployment of personnel in performing the necessary functions.*	X				
XIV-4 Compliance and Inspection *The extent to which the Utility has compliance and inspection oversight of T&S system design, construction and O&M activities to evaluate compliance with legal and regulatory requirements, internal standards and quality expectations. The extent to which the compliance and inspection processes are independent, objective and actionable to drive improvements in the organization.*	X				

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIV-5 Processes *The extent to which T&S processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective T&S infrastructure development and maintenance program implementation.*	X				
XIV-6 Information and Technology *The extent to which the T&S data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure availability of as-built, condition and performance information in support of engineering and maintenance related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	X				
XIV-7 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement T&S processes.*	X				
XIV-8 Performance *The extent to which the utility understands the performance of the T&S system to achieve the desired results, provides visibility of T&S performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current T&S assets and future grid functions.*	X				

XV. Distribution

Evaluation Framework

The Distribution focus area consists of nine sub-focus areas that define an effective Distribution organization:

- XV-1 Organization, Strategy and Vision
- XV-2 Engineering
- XV-3 Maintenance
- XV-4 Compliance and Inspection
- XV-5 Streetlights
- XV-6 Processes
- XV-7 Information and Technology
- XV-8 Culture and Competencies
- XV-9 Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XV-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for the identified distribution sub-areas are efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ The Engineering Distribution department applies the company's standards and is aligned to PREPA's strategy to maintain the system. ▪ The Distribution department has not updated its standards in several years due to the lack of resources. Their standards are based on previous practices.
XV-2 **Engineering** *The extent to which distribution engineering standards and material specifications align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness of the engineering organization to interact with, support and oversee regional and contractor design, construction and O&M activities consistent with engineering standards and specifications. Evaluate the consistency between overall business strategy, the underlying engineering philosophy and the deployment of personnel in performing the necessary functions.*	▪ PREPA's engineering standards for distribution align with applicable standards—they do have materials specially designed for them. ▪ The Engineering department is supporting new projects and the different internal organizations on an as-requested basis. At this time the Engineering department is not overseeing project works as this organization has suffered a loss of personnel. PREPA subcontracts the inspections to contractors. ▪ The Engineering department has limited resources to perform the necessary functions to support the business.

Gap Assessment

Sub-Focus Area	Observations and Contributors
XV-3 **Maintenance** *The extent to which distribution maintenance standards and procedures align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness and efficiency of maintenance plans and execution by the performing organizations. Evaluate the consistency between overall business strategy, maintenance philosophy and the deployment of personnel in performing the necessary functions.*	▪ The maintenance standards have not been updated in several years to efficiency. There is not a defined business strategy or an asset management plan. Need retraining of personnel to meet the goals of the utility.
XV-4 **Compliance and Inspection** *The extent to which the utility has compliance and inspection oversight of distribution system design, construction and O&M activities to evaluate compliance with legal and regulatory requirements, internal standards and quality expectations. The extent to which the compliance and inspection processes are independent, objective and actionable to drive improvements in the organization.*	▪ There is no consistent process for field verification of maintenance and construction work. The inspections are managed by the regions and in most cases, they are only archived in the regional offices. Due to the decentralization, an improvement initiative is not achieved.
XV-5 **Streetlights** *The extent to which StreetLight engineering standards and material specifications align with applicable industry standards for utilities with similar conditions and system performance requirements. Evaluate the effectiveness of the Streetlight organization to interact with, support, and oversee regional and contractor design, construction, and O&M activities consistent with StreetLight standards and specifications. Evaluate the consistency between overall business strategy, the underlying StreetLight philosophy and the deployment of personnel in performing the necessary functions.*	▪ The existing standards have not been updated with current utility best practices. There is no StreetLight organization; the responsibilities are divided between the Engineering and PMO departments. The utility has knowledgeable personnel on street lighting in the different organizations.

Gap Assessment

Sub-Focus Area	Observations and Contributors
XV-6 **Processes** *The extent to which Distribution processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective Distribution infrastructure development and maintenance program implementation.*	▪ PREPA does not have its processes documented. Their processes are not oriented to collect data in an organized manner for later analysis. The processes do not focus on infrastructure development or a maintenance program implementation.
XV-7 **Information and Technology** *The extent to which the distribution data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure availability of as-built, condition and performance information in support of engineering and maintenance related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	▪ PREPA does not have an information technology- (IT) based system to store or manage the processes, maintenance and test records, as-built drawings. The documentation is saved on hard drives.
XV-8 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement distribution processes.*	▪ The departments have personnel with appropriate skills depth, competence. They have a continuous improvement culture but feel limited that they cannot implement their findings and improvements.
XV-9 **Performance** *The extent to which the utility understands the performance of the distribution system to achieve the desired results, provides visibility of distribution performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current distribution assets and future system functions.*	▪ At this time the utility works on an as-needed basis to maintain the system. Performance data is not used as an input to improve future system functionality.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XV-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for the identified distribution sub-areas are efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ Need to define and roll out the vision of the future. ▪ Need to define the role of the T&S Organization in this vision. ▪ Need to properly staff the department to achieve the goals of the vision of the future.	Department level gap
XV-2 Engineering *The extent to which distribution engineering standards and material specifications align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness of the engineering organization to interact with, support and oversee regional and contractor design, construction and O&M activities consistent with engineering standards and specifications. Evaluate the consistency between overall business strategy, the underlying engineering philosophy and the deployment of personnel in performing the necessary functions.*	▪ Need to review engineering standards to bring them in line with best practices for the future grid. ▪ Need to review the organization for a proper structure and staffing. ▪ The organization needs a charter on their role with the rest of the organization. ▪ Need to define the business strategy for the department to make adjustments.	Department level gap
XV-3 Maintenance *The extent to which distribution maintenance standards and procedures align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness and efficiency of maintenance plans and execution by the performing organizations. Evaluate the consistency between overall business strategy, maintenance philosophy and the deployment of personnel in performing the necessary functions.*	▪ Need to update existing maintenance plans with improved methods. ▪ Need to develop an asset management strategy. ▪ Need to retrain the personnel with the improved maintenance plans.	Department level gap
XV-4 Compliance and Inspection *The extent to which the utility has compliance and inspection oversight of distribution system design, construction and O&M activities to evaluate compliance with legal and regulatory requirements, internal standards and quality expectations. The extent to which the compliance and inspection processes are independent, objective and actionable to drive improvements in the organization.*	▪ Need to develop a Q&C process for compliance and inspection oversights. ▪ Need to develop an organization or include as an engineering responsibility to verify compliance and inspections to drive improvements in the organization.	Department level gap
XV-5 Streetlights *The extent to which StreetLight engineering standards and material specifications align with applicable industry standards for utilities with similar conditions and system performance requirements. Evaluate the effectiveness of the Streetlight organization to interact with, support, and oversee regional and contractor design, construction, and O&M activities consistent with StreetLight standards and specifications. Evaluate the consistency between overall business strategy, the underlying StreetLight philosophy and the deployment of personnel in performing the necessary functions.*	▪ Standards do not currently include Smart Lighting. ▪ Need to develop an implementation plan for StreetLighting. ▪ Need to create a StreetLighting organization for Engineering and manage the plan. ▪ Need to align the Smart Lighting implementation to the business strategy.	Department level gap
XV-6 Processes *The extent to which Distribution processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective Distribution infrastructure development and maintenance program implementation.*	▪ Nedd to develop a distribution process with KPIs to achieve the corporate goals. ▪ Need to implement data collection into processes. ▪ Need to develop an asset management plan. ▪ Need to develop an asset performance analysis process.	Department level gap

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XV-7 Information and Technology *The extent to which the distribution data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure availability of as-built, condition and performance information in support of engineering and maintenance related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	▪ Need to implement an engineering data management system to store and control versions of design criteria, standards, specifications, bill of materials, as-built drawings, relay settings, maintenance and test records. ▪ Need to implement an asset management system to store maintenance and testing records of assets. ▪ Need for systems to be accessible online for analysis of data to identify engineering improvements and define an asset management strategy.	Department level gap
XV-8 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement distribution processes.*	▪ Need to reorganize the group to develop an improvement driven organization. ▪ Need to establish an individual development plan to improve the skills of the organization to be able to make the proper improvement decisions.	Department level gap
XV-9 Performance *The extent to which the utility understands the performance of the distribution system to achieve the desired results, provides visibility of distribution performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current distribution assets and future system functions.*	▪ Need visibility of the distribution system. ▪ To achieve this visibility, there is a need to implement distribution monitoring systems and automation. ▪ Need to use data from monitoring and automation systems to understand the system performance and achieve the established goals to drive to the utility of future grid.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XV-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for the identified distribution sub-areas are efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*			X		
XV-2 Engineering *The extent to which distribution engineering standards and material specifications align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness of the engineering organization to interact with, support and oversee regional and contractor design, construction and O&M activities consistent with engineering standards and specifications. Evaluate the consistency between overall business strategy, the underlying engineering philosophy and the deployment of personnel in performing the necessary functions.*			X		

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XV-3 Maintenance *The extent to which distribution maintenance standards and procedures align with applicable industry standards for utilities with similar scope, conditions and system performance requirements. Evaluate the effectiveness and efficiency of maintenance plans and execution by the performing organizations. Evaluate the consistency between overall business strategy, maintenance philosophy and the deployment of personnel in performing the necessary functions.*	X				
XV-4 Compliance and Inspection *The extent to which the utility has compliance and inspection oversight of distribution system design, construction and O&M activities to evaluate compliance with legal and regulatory requirements, internal standards and quality expectations. The extent to which the compliance and inspection processes are independent, objective and actionable to drive improvements in the organization.*	X				
XV-5 Streetlights *The extent to which StreetLight engineering standards and material specifications align with applicable industry standards for utilities with similar conditions and system performance requirements. Evaluate the effectiveness of the Streetlight organization to interact with, support, and oversee regional and contractor design, construction, and O&M activities consistent with StreetLight standards and specifications. Evaluate the consistency between overall business strategy, the underlying StreetLight philosophy and the deployment of personnel in performing the necessary functions.*	X				
XV-6 Processes *The extent to which Distribution processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective Distribution infrastructure development and maintenance program implementation.*	X				

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XV-7 Information and Technology *The extent to which the distribution data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure availability of as-built, condition and performance information in support of engineering and maintenance related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	X				
XV-8 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement distribution processes.*	X				
XV-9 Performance *The extent to which the utility understands the performance of the distribution system to achieve the desired results, provides visibility of distribution performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current distribution assets and future system functions.*	X				

XVI. Metering

Evaluation Framework

The Metering focus area consists of six sub-focus areas that define an effective Metering organization:

- **XVI-1** Organization, Strategy and Vision
- **XVI-2** Metering Facilities
- **XVI-3** Processes
- **XVI-4** Information and Technology
- **XVI-5** Culture and Competencies
- **XVI-6** Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XVI-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for meter management and meter reading are safe, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ The metering organization attempts to adhere to good practices; however, the lack of well-documented processes and extreme shortages of personnel make this difficult. With the LUMA transition, they do not see a clear business strategy or vision for the future.
XVI-2 Metering Facilities *The extent metering facilities and supporting shops are resilient and secure for the safety, effectiveness and availability of the workforce to meet the customer and physical demands of the operating environment.*	▪ Metering facilities and test equipment are inadequate. There is no longer a meter shop to occupy, and the seven WECO (Watthour Engineering Company) test sets are dispersed to regional facilities. As such, no sample testing is possible to help identify issues such as old, slow electrical mechanical meters (570,000 meters). An AMI system implementation that might peak at installation levels of 1500 meters a day or more would be impossible without an adequate central meter shop and staging areas. Note that 1500 meters a day would be 16 complete palates a day. Staging, inventory control and loading trucks at this level daily would be impossible without additional capacity.
XVI-3 Processes *The extent to which metering processes are documented, managed, and measured to achieve the targeted corporate/business results including non-technical loss reduction. The extent to which processes are customer-centric, data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective metering infrastructure development and meter reading and meter maintenance program implementation.*	▪ Properly documented meter processes including all facets of the meter program are needed to provide clarity and improve efficiency. ▪ Properly documented rules relating to meter shop activities and handling of meters are needed.

Gap Assessment

Sub-Focus Area	Observations and Contributors
XVI-4 **Information and Technology** *The extent to which metering data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure metering and meter reading accuracy, and availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	▪ PREPA does not have an AMI system. ▪ They have a fully implemented TWACS system that is essentially an AMR system reading ~1.5M meters. They have done some AMI piloting as noted below. But these systems have been poorly implemented in that they did not take an inclusive project team approach, consider overall PREPA business needs in related areas such as outage management and get buy-in. As a result, the pilots were partially executed, and some were abandoned. **AMI Pilots**: ▪ Echelon: This was a pilot started in 2015. It was started via the IT organization. It has never been integrated into the CC&B billing system, still runs as a pilot and has not been turned over operationally to metering. The system can collect data beyond monthly reads, but these other data are not used. IT provides a file of monthly reads to Customer Service for import to CC&B for billing. ▪ Echelon: PREPA has implemented ~20K residential Echelon meters (2S) and has another ~20K in stock waiting for resources to deploy. These meters and concentrators have been in inventory for 2 years. This is unfortunate as Echelon is not a long-term viable supplier (as discussed below). ▪ Echelon is a high-frequency PLC implementation. Because this higher frequency cannot get through service transformers, there is a requirement that each service transfer has a concentrator installed to communicate with the meters on that transformer. These concentrators then communicate back to the Echelon headend system via AT&T cellular. This system got some traction in Europe where the number of residences per service transformer is quite high with a resulting lower per-meter cost for the concentrator that must be installed per transformer. There are no Echelon implementations in North America. This technology is not considered viable for Puerto Rico. ▪ PREPA did a very small pilot with the L+G grid stream system from 2015 to 2017. This is a 900 MHz ISM band RF system. This pilot involved <50 meters, some transformer monitors and in-home displays. The pilot ended with no further action taken. This was another pilot that was not well thought out and did not have a project team nor well-defined objectives for the business. ▪ **S&C:** Another pilot was done with S&C Electric Company (year unknown). This system is also an RF-based system in the 900 MHz band range and included approximately 60 meters deployed. No details on this pilot are available but it did not move forward. S&C is not considered a player in the North American AMI market. **MDM**: PREPA is in the process of implementing the AclaraONE MDM. This system will be marginally helpful for 3 reasons: 1. It is a limited MDM that does not have the analytics capabilities needed by PREPA to identify issues like theft detection. It only has basic reposts and graphing. The main functions added are essentially additional operational interface support that improves on operational capabilities of the TNS interface – Alternate paths on-demand reads, tamper reports. 2. The meter data available to input into this MDM is limited. Mostly monthly reads. PREPA has plans to move more meters to daily reads in the future. This will help (the time frame is indeterminate). They do have 30-minute reads from their Echelon meters (~20K) that they hope to input to the MDM. 3. Lack of resources: The use of MDM capabilities to obtain information is very limited. ▪ While data from the Echelon and MV90 system are planned to be imported into AclaraONE, the billing function will continue to occur via the existing flat file imports to CC&B. Overall, integration has not been well planned. ▪ While there is a VEE function in the modules being added via AclaraONE, PREPA has indicated they cannot use VEE until approved by their regulators. There appears to be no activity planned in this area. ▪ During a demonstration of the existing implementation, several errors occurred (e.g., pages that errored, meters that would not read). There also seemed to be a very slow response. However, they are still testing AclaraONE. During a demonstration of the existing implementation, several errors occurred (e.g., pages that errored and meters that would not read). There also seemed to have been very slow response. However, testing was still underway and PREPA has since signed off on acceptance in October of 2020 ▪ PREPA has no one to monitor all the errors that are thrown from the system daily. They did no resource planning to make use of this system.

Gap Assessment

Sub-Focus Area	Observations and Contributors
XVI-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies, and continuous improvement culture necessary to successfully implement metering processes.*	▪ To the extent limited resources are available, the metering organization does its best to manage. Metering has a very limited ability to respond to the high number of requests for metering activities due to their capacity constraints.
XVI-6 Performance *The extent to which the utility understands the performance of the metering system to achieve the desired results, provides visibility of metering performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current metering assets and future technology.*	▪ To the extent limited resources are available, the metering organization does its best to manage. There is no unified dashboard providing a view into their metering systems and related system performance.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVI-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for meter management and meter reading are safe, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ Lack of personnel. ▪ Lack of facilities and test equipment. ▪ Lack of well-document processes. ▪ Organizational confusion with LUMA.	Priority (Recommend the selection of a LUMA Director of Metering to drive improvement in this area before and after commencement.)
XVI-2 Metering Facilities *The extent metering facilities and supporting shops are resilient and secure for the safety, effectiveness and availability of the workforce to meet the customer and physical demands of the operating environment.*	▪ Meter shop needs to be set up so that meters can be received, cleaned, tested, sealed and stored, allowing for efficient operations. ▪ Need to develop a sample program or 100% verification of meters in service to ensure accuracy. This requires an asset management system to be able to put meters into homogeneous groups for identification if a group fails.	SRP candidate
XVI-3 Processes *The extent to which metering processes are documented, managed, and measured to achieve the targeted corporate/business results including non-technical loss reduction. The extent to which processes are customer-centric, data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective metering infrastructure development and meter reading and meter maintenance program implementation.*	▪ Processes and procedures are non-existent. ▪ Currently using vendor (Aclara) provided AMR functionality. The vendor solution is marginal and will not suffice for distribution switching levels seen in San Juan and Ponce. The currently deployed TWACS modules (less than full UMT saturation) exacerbate this scenario. ▪ Poor documentation.	SRP candidate
XVI-4 Information and Technology *The extent to which metering data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure metering and meter reading accuracy, and availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	▪ Inadequate systems in many areas. ▪ TWACS System needs some improvements to support billing and theft detection until AMI can be implemented. ▪ A meter asset management system is desperately needed for inventory control and test tracking. ▪ AMI system implementation should start quickly since it will take time to put a contract in place and five years to roll out. ▪ A prepay type of system should be implemented to drive down non-payments losses.	SRP candidate

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XVI-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies, and continuous improvement culture necessary to successfully implement metering processes.*	▪ Extreme personnel shortage.	Priority (Recommend the selection of a LUMA Director of Metering to drive improvement in this area before and after commencement.)
XVI-6 Performance *The extent to which the utility understands the performance of the metering system to achieve the desired results, provides visibility of metering performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current metering assets and future technology.*	▪ The metering organization does its best to manage despite the limited resources available. The major gap is the lack of an MDM system that is integrated with all their metering systems to allow the needed overall view of performance and tools to support investigating field device health and to efficiently recognize theft.	Priority (Recommend the selection of a LUMA Director of Metering to drive improvement in this area before and after commencement. MDM implementation in XVI-4 will greatly help.)

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVI-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for meter management and meter reading are safe, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*		X			
XVI-2 Metering Facilities *The extent metering facilities and supporting shops are resilient and secure for the safety, effectiveness and availability of the workforce to meet the customer and physical demands of the operating environment.*		X			
XVI-3 Processes *The extent to which metering processes are documented, managed, and measured to achieve the targeted corporate/business results including non-technical loss reduction. The extent to which processes are customer-centric, data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective metering infrastructure development and meter reading and meter maintenance program implementation.*		X			

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVI-4 Information and Technology *The extent to which metering data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure metering and meter reading accuracy, and availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	X				
XVI-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies, and continuous improvement culture necessary to successfully implement metering processes.*	X				
XVI-6 Performance *The extent to which the utility understands the performance of the metering system to achieve the desired results, provides visibility of metering performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current metering assets and future technology.*	X				

XVII. Telecommunications

Evaluation Framework

The Telecommunications focus area consists of six sub-focus areas that define an effective Telecommunications organization:

- **XVII-1** Organization, Strategy and Vision
- **XVII-2** Telecommunication Facilities
- **XVII-3** Processes
- **XVII-4** Information and Technology
- **XVII-5** Culture and Competencies
- **XVII-6** Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XVII-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for telecommunications are safe, secure, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	[redacted]
XVII-2 Telecommunications Facilities *The extent telecommunications facilities and infrastructure are resilient and secure for the safe, reliable and resilient operation of the telecommunications network consistent with addressing the customer and physical demands of the operating environment.*	[redacted]
XVII-3 Processes *The extent to which telecommunications processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective telecommunications infrastructure development and O&M program implementation.*	[redacted]

Gap Assessment

Sub-Focus Area	Observations and Contributors
XVII-4 **Information and Technology** *The extent to which telecommunications infrastructure data is managed, maintained and representative of actual operating and field conditions. Information Management architecture and processes in place are adequate to ensure secure communications and availability of infrastructure condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	[redacted]
XVII-5 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*	[redacted]
XVII-6 **Performance** *The extent to which the utility understands the performance of the telecommunications system in real-time and over time to achieve the desired results, provides visibility of telecommunications system performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current telecommunications assets and future technology.*	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVII-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for telecommunications are safe, secure, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	[redacted]	[redacted]

UTILITY TRANSFORMATION

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XVII-2 Telecommunications Facilities *The extent telecommunications facilities and infrastructure are resilient and secure for the safe, reliable and resilient operation of the telecommunications network consistent with addressing the customer and physical demands of the operating environment.*	[redacted]	[redacted]
XVII-3 Processes *The extent to which telecommunications processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective telecommunications infrastructure development and O&M program implementation.*	[redacted]	[redacted]
XVII-4 Information and Technology *The extent to which telecommunications infrastructure data is managed, maintained and representative of actual operating and field conditions. Information Management architecture and processes in place are adequate to ensure secure communications and availability of infrastructure condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*	[redacted]	[redacted]
XVII-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*	[redacted]	[redacted]
XVII-6 Performance *The extent to which the utility understands the performance of the telecommunications system in real-time and over time to achieve the desired results, provides visibility of telecommunications system performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current telecommunications assets and future technology.*	[redacted]	[redacted]

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVII-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for telecommunications are safe, secure, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	[redacted]				
XVII-2 Telecommunications Facilities *The extent telecommunications facilities and infrastructure are resilient and secure for the safe, reliable and resilient operation of the telecommunications network consistent with addressing the customer and physical demands of the operating environment.*					
XVII-3 Processes *The extent to which telecommunications processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective telecommunications infrastructure development and O&M program implementation.*					
XVII-4 Information and Technology *The extent to which telecommunications infrastructure data is managed, maintained and representative of actual operating and field conditions. Information Management architecture and processes in place are adequate to ensure secure communications and availability of infrastructure condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting the processes and users are proficient in their use.*					
XVII-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*					

UTILITY TRANSFORMATION

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVII-6 Performance *The extent to which the utility understands the performance of the telecommunications system in real-time and over time to achieve the desired results, provides visibility of telecommunications system performance across the organization and utilizes performance data to make informed decisions consistent with an integrated view of the current telecommunications assets and future technology.*	[redacted]				

XVIII. Facilities

Evaluation Framework

The Facilities focus area consists of six sub-focus areas that define an effective Facilities organization:

- XVIII-1 Organization, Strategy and Vision
- XVIII-2 Building Facilities
- XVIII-3 Processes
- XVIII-4 Information and Technology
- XVIII-5 Culture and Competencies
- XVIII-6 Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XVIII-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for facilities management are safe, efficient and effective, are applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ Refer to financial management gap real estate and facilities focus area. ▪ The facilities team is decentralized and only manages two primary locations: Santurce and Monacillos. The facilities structure below supervisors is unclear. There is a lack of understanding of roles and responsibilities and inadequate processes. If there are processes, they are not documented and cannot be well described.
XVIII-2 **Building Facilities** *The extent building facilities are resilient and secure for the safety, effectiveness and availability of the workforce to meet the physical demands of the operating environment.*	▪ Refer to financial management gap real estate and facilities focus area. ▪ Overall conditions of facilities are subpar. Structures are not maintained and are deteriorated. Janitorial services are lacking, and when present, the quality of service is poor. HVAC systems and other facilities-related equipment need repairs and replacement. Some buildings have been closed by OSHA as they pose a safety risk to employees. Facilities deemed unhabitable need to be demolished. Lack of off-site storage for documents and files, historical documents are taking prime real estate. ▪ Deficiencies with the card access system. Upgrades and redeployment of card readers, CCTVs, heighten intrusion detection. Security access request forms are a manual paper process and should be digitalized and electronic request-based system for proper tracking and management of access control.
XVIII-3 **Processes** *The extent to which facility management processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are people-centric, data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective use of building facilities and building maintenance program implementation.*	▪ Refer to financial management gap real estate and facilities focus area. ▪ There are no documented processes or strategies behind the development of budgets, programs or initiatives. All requests are submitted to the department administrator who assigns work duties or tasks. ▪ Lack of auditing and inspections after any form of work is completed. No strategy around bulk order purchases, standardization, or maximizing efficiencies through the supply chain. No monthly reviews of seating and space layout to confirm drawings are accurate. Lack of processes, procedures, and workflows. Lack of clear process and timelines for procurement of materials, goods and services.

Sub-Focus Area	Observations and Contributors
XVIII-4 **Information and Technology** *The extent to which building facility data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure effective management and prioritization of occupant feedback, modification requests and construction activity; ensures availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting and the processes and users are proficient in their use.*	▪ Refer to financial management gap real estate and facilities focus area. ▪ There is a lack of technology within the group and a lack of software to perform daily tasks and functions.
XVIII-5 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement metering processes.*	▪ The fiber network is operational and functional but is very dated (> 15 years old SONET). This causes maintenance and inventory challenges. It also creates extended outages due to splicing 96 cores on some major backbone links during major events.
XVIII-6 **Performance** *The extent to which the utility understands the performance of the building facilities to achieve the desired results, provides visibility of building facility data to appropriate organizations to drive business decisions and utilizes performance data to make informed investment decisions consistent with an integrated view of the current building assets and future plans.*	▪ Refer to financial management gap real estate and facilities focus area. ▪ Training is not provided to employees and there is a concern for the safety of internal employees and external contractors. The quality of work done by internal services workers such as painters and drywallers is subpar. Business units are unable to focus on core business as they manage the facilities services, which is only when they can. Facilities services completely cease all operational activities and services whenever storm preparation is required.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVIII-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for facilities management are safe, efficient and effective, are applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ Completed under financial management gap analysis.	Refer to financial management gap
XVIII-2 **Building Facilities** *The extent building facilities are resilient and secure for the safety, effectiveness and availability of the workforce to meet the physical demands of the operating environment.*	▪ Completed under financial management gap analysis.	Refer to financial management gap

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XVIII-3 Processes *The extent to which facility management processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are people-centric, data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective use of building facilities and building maintenance program implementation.*	▪ Completed under financial management gap analysis.	Refer to financial management gap
XVIII-4 Information and Technology *The extent to which building facility data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure effective management and prioritization of occupant feedback, modification requests and construction activity; ensures availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting and the processes and users are proficient in their use.*	▪ Completed under financial management gap analysis.	Refer to financial management gap
XVIII-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement metering processes.*	▪ Completed under financial management gap analysis.	Refer to financial management gap
XVIII-6 Performance *The extent to which the utility understands the performance of the building facilities to achieve the desired results, provides visibility of building facility data to appropriate organizations to drive business decisions and utilizes performance data to make informed investment decisions consistent with an integrated view of the current building assets and future plans.*	▪ Completed under financial management gap analysis.	Refer to financial management gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVIII-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for facilities management are safe, efficient and effective, are applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	Refer to financial management gap.				

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVIII-2 Building Facilities *The extent building facilities are resilient and secure for the safety, effectiveness and availability of the workforce to meet the physical demands of the operating environment.*	Refer to financial management gap.				
XVIII-3 Processes *The extent to which facility management processes are documented, managed and measured to achieve the targeted corporate/business results. The extent to which processes are people-centric, data-driven, utilize timely and accurate data, and apply standard data analysis approaches. Determine the extent to which the processes enable efficient and effective use of building facilities and building maintenance program implementation.*	Refer to financial management gap.				
XVIII-4 Information and Technology *The extent to which building facility data is managed, maintained and representative of actual operating and field conditions. Information management architecture and processes in place are adequate to ensure effective management and prioritization of occupant feedback, modification requests and construction activity; ensures availability of condition and performance information in support of asset-related decisions. The extent to which technology solutions and tools are effectively supporting and the processes and users are proficient in their use.*	Refer to financial management gap.				
XVIII-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement metering processes.*	Refer to financial management gap.				
XVIII-6 Performance *The extent to which the utility understands the performance of the building facilities to achieve the desired results, provides visibility of building facility data to appropriate organizations to drive business decisions and utilizes performance data to make informed investment decisions consistent with an integrated view of the current building assets and future plans.*	Refer to Financial Management gap assessment.				

XIX. Materials Management

Evaluation Framework

The Materials Management focus area consists of six sub-focus areas that define an effective Materials Management organization:

- **XIX-1** Workforce Management
- **XIX-2** Warehouse Facilities
- **XIX-3** Processes
- **XIX-4** Information and Technology
- **XIX-5** Culture and Competencies
- **XIX-6** Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XIX-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for central materials management and warehousing are safe, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ No clear segregation of duties within the system. ▪ Significant hoarding of material by T&D Operations is present in all locations; high risk of old-standard material put into the system, the material is not visible to the organization, significant capital investment needed. ▪ Fleet material held in most locations, using optimal space, is not core to the PREPA operation. ▪ A substantial amount of USACE (US Army Corp of Engineers) surplus material was identified and that needs to be assessed/evaluated for potential re-use in the system. ▪ PPE is not consistently used, no standards are in place for the gear required. ▪ Eyewash stations not at all sites, seen in hard to access locations. ▪ No training on safe lifting, managing suspended loads or rigging techniques. ▪ Equipment inspections aren't completed consistently. ▪ Equipment is in poor shape; some may need to be retired. ▪ Refresher training required for forklifts. ▪ No process for yard/facility inspections/incident/hazard reporting. ▪ MSDS not consistently available. ▪ Dangerous goods storage is not visible in all locations. ▪ No near-miss process/reporting.
XIX-2 Warehouse Facilities *The extent to which warehouse facilities and supporting infrastructure are safe, resilient, compliant and secure for the reliable and efficient operation of the materials management processes consistent with the physical demands of the operating environment.*	▪ Roofing and walls are damaged in some locations. ▪ Black mold, rust and rotting in some locations. ▪ Outbuildings are aged/damaged/destroyed in some locations. ▪ Lighting is inconsistently applied; some locations have LED ballasts, others are using HPS streetlights or fluorescent ballasts. Some locations have no lighting at all (not working). ▪ Many locations are not right-sized for ops demand/inventory requirements. ▪ Loading docks are not available in some locations (portable docks in some locations). ▪ Some locations are prone to flooding, even with medium summer storms due to proximity to local water sources (rivers)*. ▪ Exposed mercury vapor bulbs at head height are present in some locations. ▪ Most locations do not have proper loading docks; they use portable ramps that increase loading/unloading risk. ▪ Pallets are not used for transformers in many locations; most broken/rotten when used. Polymer pallets are found in some locations. ▪ Racking is not bolted to the floors in many locations. ▪ Racking load limits are not marked in most locations. ▪ Racking leg guards are not present in most locations. ▪ Racking is loaded to be top-heavy in many locations. ▪ Reels of cable are stored on their side instead of the rolling edge. ▪ Wood reels of cable are stored outside therefore rotting is a problem. ▪ Pole bunks are not present in some locations.

Gap Assessment

Sub-Focus Area	Observations and Contributors
	▪ Covered storage is insufficient at most locations and essential to keep most goods in usable shape, even over short timeframes.
XIX-3 **Processes** *The extent to which materials management processes are documented, managed and measured to achieve the targeted corporate/business results. Evaluate the ability of the organization to provide the requisite support in the form of tools, equipment, spares and parts; efficient receiving and routing; maintaining and managing an optimum inventory to efficiently enable the work planning and execution process.*	▪ End-to-end processes are not documented for warehousing activities. ▪ Excessive steps/bureaucracy in all standard processes (signatures, contacts). ▪ There is an inherent safety risk in not having documented processes for high-risk moves/items. ▪ Job briefings are completed when something new is undertaken – no clarity on when it is used or approved. ▪ Backorder management is not a part of the standard material pick process (first in, first out [FIFO]). ▪ FEMA processes present significant challenges in executing improvements to facilities and procuring equipment (due to bureaucratic processes and lengthy timelines to gain approval/inspection). ▪ Inventory is not a functioning organization; it is not given the power to manage the inventory effectively. ▪ Forecasting/communication with other groups is non-existent, with no visibility of upcoming demand. ▪ Bill of materials created from STORMS tool, item numbers are all out of date. ▪ Requisitions are not used by most of the end-users, manual requests are the norm in most warehouses. ▪ New item numbers are created for **all** purchases, even one-time purchases. ▪ Non-stock requisition goes through the warehouse manager to audit for inventory items being ordered nonstock.
XIX-4 **Information and Technology** *The extent to which the materials management process is supported by effective and efficient technology solutions and tools. Evaluate user proficiency and adherence to the controls in the technology solutions.*	▪ No process for spare tracking/management. ▪ There is no formalized process to identify and manage critical spares within the system. ▪ No formal asset recovery process. ▪ Tools to manage inventory are not consistently used and are outdated.
XIX-5 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*	▪ Only one supervisor, no staff. ▪ Item creation, blanket agreements and min-max replenishment to Palo Seco are the only items being completed. ▪ Access is role-based, but due to staff shortages and union interference, the warehouse manager role is given to many people including in-scope staff in the regions.
XIX-6 **Performance** *The extent to which the utility understands the performance of the materials management process in real-time and overtime to achieve the desired results, provides visibility of performance across the organization.*	▪ No training. ▪ Project demand is not loaded into the system, min-max planning is based on historical usage with significant excess on all items to prepare for a potential hurricane. ▪ Material requirements are not submitted in advance of the project need; even with excessive min-max levels shortages/stockouts are common in field locations forcing staff to drive to distant locations to source the required material. ▪ Fleet material is held in most locations, using optimal space, not core to PREPA operation. ▪ MRO/office items held in all locations, time-consuming and not core to PREPA operation. ▪ USACE material (54M) is mostly off-spec, present in many locations, not included automatically in the planning process. Taking up space and dollars. ▪ Scrap metal management is an issue everywhere; existing contracts are unreliable. ▪ Scrap metal piles are present outside of each warehouse location along with salvaged structures. ▪ The use of designated bins is an issue at most locations.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIX-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for central materials management and warehousing are safe, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ Completed as warehouse operations under operations gap analysis.	Refer to operations gap
XIX-2 Warehouse Facilities *The extent to which warehouse facilities and supporting infrastructure are safe, resilient, compliant and secure for the reliable and efficient operation of the materials management processes consistent with the physical demands of the operating environment.*	▪ Completed as warehouse operations under operations gap analysis.	Refer to operations gap
XIX-3 Processes *The extent to which materials management processes are documented, managed and measured to achieve the targeted corporate/business results. Evaluate the ability of the organization to provide the requisite support in the form of tools, equipment, spares and parts; efficient receiving and routing; maintaining and managing an optimum inventory to efficiently enable the work planning and execution process.*	▪ Completed as warehouse operations under operations gap analysis.	Refer to operations gap
XIX-4 Information and Technology *The extent to which the materials management process is supported by effective and efficient technology solutions and tools. Evaluate user proficiency and adherence to the controls in the technology solutions.*	▪ Completed as warehouse operations under operations gap analysis.	Refer to operations gap
XIX-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*	▪ Completed as warehouse operations under operations gap analysis.	Refer to operations gap
XIX-6 Performance *The extent to which the utility understands the performance of the materials management process in real-time and overtime to achieve the desired results, provides visibility of performance across the organization.*	▪ Completed as warehouse operations under operations gap analysis.	Refer to operations gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XIX-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for central materials management and warehousing are safe, efficient and effective, applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	Refer to operations gap.				
XIX-2 Warehouse Facilities *The extent to which warehouse facilities and supporting infrastructure are safe, resilient, compliant and secure for the reliable and efficient operation of the materials management processes consistent with the physical demands of the operating environment.*	Refer to operations gap.				
XIX-3 Processes *The extent to which materials management processes are documented, managed and measured to achieve the targeted corporate/business results. Evaluate the ability of the organization to provide the requisite support in the form of tools, equipment, spares and parts; efficient receiving and routing; maintaining and managing an optimum inventory to efficiently enable the work planning and execution process.*	Refer to operations gap.				
XIX-4 Information and Technology *The extent to which the materials management process is supported by effective and efficient technology solutions and tools. Evaluate user proficiency and adherence to the controls in the technology solutions.*	Refer to operations gap.				
XIX-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*	Refer to operations gap.				

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIX-6 Performance *The extent to which the utility understands the performance of the materials management process in real-time and overtime to achieve the desired results, provides visibility of performance across the organization.*	Refer to operations gap.				

XX. Central Shops

Evaluation Framework

The Central Shops focus area consists of six sub-focus areas that define an effective Central Shops organization:

- XX-1 Organization, Strategy and Vision
- XX-2 Central Shop Facilities
- XX-3 Processes
- XX-4 Information and Technology
- XX-5 Culture and Competencies
- XX-6 Performance

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XX-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for central shop functions are safe, efficient and effective, are applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ The organization does not track PM schedules, work completed, labor, parts costs, costs of service per unit, annual inspections, equipment life/health tracking, mileage, or hours. ▪ This makes the organization non-compliant from a DOT perspective due to a lack of maintenance records. ▪ The organization has a fleet register, but it does not include everything as some areas are not controlled by fleet management. ▪ Financial tracking of a complete/accurate asset list is not in place.
XX-2 **Central Shop Facilities** *The extent to which central shop facilities and supporting infrastructure are safe, resilient, compliant and secure for the reliable and efficient operation of the central shop processes consistent with the physical demands of the operating environment.*	▪ Lack of any clear inventory management system or plan. ▪ Small fleet inventory is purchased in less than $5K increments and not tracked in any program to know what is on hand and where it is located. ▪ Old and obsolete inventory is not properly disposed of. ▪ Tires, lubricants, batteries are purchased in bulk by warehousing, but it is clear tires and batteries are the cheapest on the market, significantly lacking in quality. Replaced tires in shops are rarely worn out but are often the result of blowouts or deteriorating treads. Similarly, only one out of every three new batteries is working.
XX-3 **Processes** *The extent to which central shop processes are documented, managed and measured to achieve the targeted corporate/business results. Evaluate the ability of the organization to provide the requisite support in the form of repair services, tools, equipment, certifications and parts to efficiently enable the work planning and execution process.*	▪ Procurement practices are a significant hindrance. ▪ The technical offices that are currently used to support field personnel are rundown and in very poor condition. ▪ The technical offices are not distributed in a manner that reflects the quantity of work and resources required within existing Regional Districts.
XX-4 **Information and Technology** *The extent to which the central shop process is supported by effective and efficient technology solutions and tools. Evaluate user proficiency and adherence to the*	▪ PREPA uses an ineffective GPS/telematics program. ▪ Anecdotally, it is on ~1,000 of 3600 units and only used for GPS locating. ▪ No reports are provided for utilization, driver behavior, mileage/hours for PM planning, and routing assistance for service calls is not used. ▪ There is no effective FMIS system in place. ▪ PREPA uses Fleet Focus but it only tracks open/closed service tickets.

Sub-Focus Area	Observations and Contributors
controls in the technology solutions.	
XX-5 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*	▪ The organization is management heavy, resulting in excess work for the employees. ▪ Supervisors are senior mechanics that cannot work on equipment due to union agreements. ▪ There are not enough administrative staff to effectively keep up with keeping FMIS data current, so nothing is entered. ▪ There are 52 working mechanics of an estimated 100 required to perform the work. ▪ Laborer/mechanics helpers cannot perform mechanics tasks per current bargaining agreements.
XX-6 **Performance** *The extent to which the utility understands the performance of the central shop processes to achieve the desired results, provides visibility of performance to the appropriate organizations.*	▪ There is no active PM program. OPS only bring the trucks in for maintenance when they need repair. Basic maintenance is performed on the specific deficiency, but no further inspections are performed to determine additional requirements for maintenance. ▪ Maintenance costs tracking: there is no detailed fleet costs tracking system in place. ▪ Dry rates are calculated based on a historically informed estimate allocating total fleet costs into each category. Actual tracked costs are not considered in making this calculation.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XX-1 **Organization, Strategy and Vision** *The extent to which the utility organizations with responsibility for central shop functions are safe, efficient and effective, are applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	▪ Completed as fleet under operations gap analysis.	Refer to Operations gap
XX-2 **Central Shop Facilities** *The extent to which central shop facilities and supporting infrastructure are safe, resilient, compliant and secure for the reliable and efficient operation of the central shop processes consistent with the physical demands of the operating environment.*	▪ Completed as fleet under operations gap analysis.	Refer to Operations gap
XX-3 **Processes** *The extent to which central shop processes are documented, managed and measured to achieve the targeted corporate/business results. Evaluate the ability of the organization to provide the requisite support in the form of repair services, tools, equipment, certifications and parts to efficiently enable the work planning and execution process.*	▪ Completed as fleet under operations gap analysis.	Refer to Operations gap
XX-4 **Information and Technology** *The extent to which the central shop process is supported by effective and efficient technology solutions and tools. Evaluate user proficiency and adherence to the controls in the technology solutions.*	▪ Completed as fleet under operations gap analysis.	Refer to Operations gap
XX-5 **Culture and Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*	▪ Completed as fleet under operations gap analysis.	Refer to Operations gap

UTILITY TRANSFORMATION

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XX-6 Performance *The extent to which the utility understands the performance of the central shop processes to achieve the desired results, provides visibility of performance to the appropriate organizations.*	▪ Completed as fleet under operations gap analysis.	Refer to Operations gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XX-1 Organization, Strategy and Vision *The extent to which the utility organizations with responsibility for central shop functions are safe, efficient and effective, are applying industry-standard practices, and are aligned to achieving the utility's business strategies and vision for the future.*	Refer to Operations gap				
XX-2 Central Shop Facilities *The extent to which central shop facilities and supporting infrastructure are safe, resilient, compliant and secure for the reliable and efficient operation of the central shop processes consistent with the physical demands of the operating environment.*	Refer to Operations gap				
XX-3 Processes *The extent to which central shop processes are documented, managed and measured to achieve the targeted corporate/business results. Evaluate the ability of the organization to provide the requisite support in the form of repair services, tools, equipment, certifications and parts to efficiently enable the work planning and execution process.*	Refer to Operations gap				
XX-4 Information and Technology *The extent to which the central shop process is supported by effective and efficient technology solutions and tools. Evaluate user proficiency and adherence to the controls in the technology solutions.*	Refer to Operations gap				
XX-5 Culture and Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement telecommunications processes.*	Refer to Operations gap				

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XX-6 Performance *The extent to which the utility understands the performance of the central shop processes to achieve the desired results, provides visibility of performance to the appropriate organizations.*	Refer to Operations gap				

XXI. Operations and Physical Security

Evaluation Framework

The Operations and Physical Security focus area consist of six sub-focus areas that define an effective Operations and Physical Security organization:

- **XXI-1** Human Resources/Skills/Training
- **XXI-2** Physical Security (Facilities)
- **XXI-3** Security Standards
- **XXI-4** Technology and Data
- **XXI-5** Processes
- **XXI-6** General

Observations and Contributors

Sub-Focus Area	Observations and Contributors
XXI-1 Human Resources/Skills/Training *The extent to which the utility effectively manages its internal security staff and contract security resources (e.g., guards, vendors, integrators), trains and assures the necessary skillsets to meet workforce and public safety and protection of critical assets.*	[redacted]
XXI-2 Physical Security (Facilities) *The extent to which the utility provides physical security and protection for general use and operations facilities for the operations and physical department (e.g., physical barriers, locks, fences, lighting, signage).*	[redacted]

Gap Assessment

Sub-Focus Area	Observations and Contributors
	[redacted]
XXI-3 Security Standards *Existence of information about facility uses and critical infrastructure as defined in NERC CIP or other applicable standards requiring security management.*	[redacted]
XXI-4 Technology and Data *Effectiveness, adequacy, redundancy, functionality, dependability, the security of systems (e.g., card access, CCTV, intrusion detection, alarms, incident reporting) to support and enable the security functions.*	[redacted]
XXI-5 Processes *Existence, maturity, and effectiveness of key security processes/procedures (e.g., workforce and public safety, access control, critical infrastructure protection).*	[redacted]
XXI-6 General *Organization awareness, assessment, and in-place mitigations (controls) for key operations and physical security risks across the enterprise.*	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XXI-1 Human Resources/Skills/Training *The extent to which the utility effectively manages its internal security staff and contract security resources (e.g., guards, vendors, integrators), trains and assures the necessary skillsets to meet workforce and public safety and protection of critical assets.*	[redacted]	[redacted]
XXI-2 Physical Security (Facilities) *The extent to which the utility provides physical security and protection for general use and operations facilities for the operations and physical department (e.g., physical barriers, locks, fences, lighting, signage).*	[redacted]	[redacted]

UTILITY TRANSFORMATION

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XXI-3 Security Standards *Existence of information about facility uses and critical infrastructure as defined in NERC CIP or other applicable standards requiring security management.*	[redacted]	[redacted]

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XXI-4 Technology and Data *Effectiveness, adequacy, redundancy, functionality, dependability, the security of systems (e.g., card access, CCTV, intrusion detection, alarms, incident reporting) to support and enable the security functions.*	[redacted]	[redacted]
XXI-5 Processes *Existence, maturity, and effectiveness of key security processes/procedures (e.g., workforce and public safety, access control, critical infrastructure protection).*	[redacted]	[redacted]
XXI-6 General *Organization awareness, assessment, and in-place mitigations (controls) for key operations and physical security risks across the enterprise.*	[redacted]	[redacted]

UTILITY TRANSFORMATION

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XXI-1 Human Resources/Skills/Training *The extent to which the utility effectively manages its internal security staff and contract security resources (e.g., guards, vendors, integrators), trains and assures the necessary skillsets to meet workforce and public safety and protection of critical assets.*	[redacted]				
XXI-2 Physical Security (Facilities) *The extent to which the utility provides physical security and protection for general use and operations facilities for the operations and physical department (e.g., physical barriers, locks, fences, lighting, signage).*					
XXI-3 Security Standards *Existence of information about facility uses and critical infrastructure as defined in NERC CIP or other applicable standards requiring security management.*					
XXI-4 Technology and Data *Effectiveness, adequacy, redundancy, functionality, dependability, the security of systems (e.g., card access, CCTV, intrusion detection, alarms, incident reporting) to support and enable the security functions.*					
XXI-5 Processes *Existence, maturity, and effectiveness of key security processes/procedures (e.g., workforce and public safety, access control, critical infrastructure protection).*					
XXI-6 General *Organization awareness, assessment, and in-place mitigations (controls) for key operations and physical security risks across the enterprise.*					

LUMA

Gap Assessment

Capital Programs

Contents

Gap Assessment

General Approach

The Capital Programs gap assessment includes the following main areas of focus, as shown in the tables below:

General Management: There are nine management focus areas that apply to all departments.

Core Business: There are 10 core business focus areas specifically relating to Capital Programs' operations.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting & Cost Performance
III	Leadership Management
IV	Process Efficiency & Effectiveness
V	Employee Training & Development
VI	Workforce Management
VII	Management Systems & Technology
VIII	Performance Metrics & Continuous Improvement
IX	PREPA Culture & Momentum
Core Business Focus Areas	
XI	Project Management Office (PMO)
XII	Transmission Project Management
XIII	Distribution Project Management
XIV	Project Controls (Scheduling, Cost, Scope & Estimating)
XV	Change Management
XVI	Construction Management
XVII	Risk Management
XVIII	Contract Administration
XIX	Project Reporting
XX	Project Data Binders

We applied the following standard methodology to both the General Management and Capital Programs Core Business Assessments, thus forming the bases for identifying gaps.

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus & Sub-Focus Areas

The **general management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas			
I	**Organization Design Effectiveness**	I-1	Span of Control	I-3	Ratio of Administrative to Direct Workers
		I-2	Clarity on Management & Supervisory Roles	I-4	Impact of Protected Patronage Workers
II	**Budgeting & Cost Performance**	II-1	Actual Expenditures as a Percentage of Budgeted	II-4	Overtime & Contractors Management
		II-2	Impact of Emergent Issues on Budgets	II-5	Direct and Allocated Indirect Cost Management
		II-3	Unit Cost/Productivity Management		
III	**Leadership Management**	III-1	Qualifications & Experience	III-3	Ability to Deliver Results
		III-2	Accountability	III-4	Inter- & Intra-Organization Collaboration
IV	**Process Efficiency & Effectiveness**	IV-1	Potential Risks to Post-Commencement	IV-3	Process Compliance Management
		IV-2	Process Familiarity by all Stakeholders	IV-4	Efficiency of Overall Process Flow
V	**Employee Training & Development**	V-1	Training Budgets & Program Effectiveness	V-3	Skills Assessment & Personnel Training Plans
		V-2	Ability to Cross-Train as Personnel Development Path	V-4	Demographics & Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1	Effectiveness of Current Workforce Management Processes	VI-2	Time Charging & Productivity Tracking & Reporting
VII	**Management Systems & Technology**	VII-1	Process Automation	VII-3	Interaction or Linkage with Other Functional Areas' IT Plans or Systems
		VII-2	Adaptability to New Systems & Technology	VII-4	Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics & Continuous Improvement**	VIII-1	Recognition of Critical Performance Metrics	VIII-4	Instances (or Lack) of Data-Driven Management Initiatives
		VIII-2	Performance Metric Collection, Validation & Reporting	VIII-5	Recent Performance Trends
		VIII-3	Root Cause & Trend Analysis		
IX	**PREPA Culture & Momentum**	IX-1	Resistance (Active or Passive) to LUMA Management	IX-3	Employee Empowerment / Action Orientation
		IX-2	Employee Morale/Excitement about LUMA	IX-4	Timeframe to Improve Performance
				IX-5	Impact of Organization Silos

I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Focus Area consists of four sub-focus areas (core and enabling areas that define an effective organization design):

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	The following observations are based on the PREPA PMO organization chart. The span of control needs to be adjusted for better management of work and effective control of resources. L1 span of control for Director PMO is six. L2 span-of-control ranges from two to four. T&D Sr PM has a current span of control of 10 which would increase to 20 if Capital Projects' PMs also report in the same way. We see spans of control deteriorating for the front-line employees PREPA provided their organization chart and indicate that they need more resources at the PMs level which would increase/deteriorate the span of control making it difficult to manage and does not provide sufficient support for direct reports.
I-2 Clarity on Management & Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	The Senior Project Manager is assigned project management, estimating, fiscal controls, project control duties, etc. There is no one else assigned to manage these duties. Currently PMs are assigned to vegetation management and streetlight repair work. Some supervisory personnel are assigned to monitor contractors during execution. There are no clear T&D specific assignments within Capital Programs. The supervisory role for monitoring execution contractors is tendered out to third party consultants. There are very few positions that have a job description and the level of detail is not up to industry standards. The Senior Project Manager within PREPA PMO is accountable for the project budget. Procurement is also managed by the PREPA PMO. Contracts are evaluated and awarded by a committee within PREPA PMO. Financial authority levels (for decision making are not available for each subfunction under PMO. Senior Project Manager must refer any issues and changes to a change committee for review thus adding time delays. There are not many layers of control within PREPA, and the PREPA PMO is currently managing many different functions – project management, PMO, project control, contract administration, regulatory compliance, internal communication, external communication, PPOAs and contract renegotiation, organizational restructuring, procurement and generation work. Risk management is not addressed within the current structure.
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	Administrative employees are assigned to support multiple departments thus reducing costs, but not at each individual level within the organization. PREPA managers are responsible for creating and sending their own communications. All the PMs are proficient in IT and MS Teams software tools. There is an Administrative Supervisor who is responsible for managing all the administrative services, including employee training responsibilities. Administrative personnel support large groups to allow more coverage and flexibility. on an as-needed basis.
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	Haven't come across any evidence of patronage positions within our review.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	The PREPA organization chart indicates that the organization as is would be unsuitable for managing large capital programs as there is a high span of control (20) reporting directly to Senior PM. This would be difficult to manage for the Sr. PM as it would be difficult for each of the 20 to engage on 1:1 with their Sr. PM.	SRP candidate (Priority)
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	A dedicated project management department is missing. This team should have a well-defined organizational chart, functional duties, job descriptions, and roles and responsibilities for carrying out projects for the Transmission & Distribution (T&D) infrastructure.	Department level gap
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*	Currently, there are insufficient administrative employees to manage Capital Programs. The optimal size of the Capital Programs group will be known in due course of time. Acceptable administrative personnel ratio would be about 10% to support the Capital Programs department at the expected full workload.	Improvement opportunity
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	None	None

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*		X			
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*		X			
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*			X		

CAPITAL PROGRAMS

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
I-4 **Impact of Protected Patronage Workers** *Existence and economic impact of patronage positions to the organization.*			X		

II. Budgeting & Cost Performance

Evaluation Framework

The Budgeting & Cost Performance Focus Area consists of five sub-focus areas (core and enabling areas that define effective budgeting and cost performance):

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost/Productivity Management
- II-4 Overtime & Contractors Management
- II-5 Direct & Allocated Indirect Cost Management

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
II-1 **Actual Expenditures as Percentage of Budgeted** *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	PREPA develops and submits a budget (Annual Fiscal Year Plan) for approval each year. PREPA PMO has been tasked with budget and fiscal prudence which has affected budgets and internal resources. Most work is being contracted out including supervising work. PREPA PMO collects data on actual costs from contractor invoices received. This is then used to develop actuals used in budget cost reports. No forecasting tools are being used for cost management. Costs are not tracked based on Work in Progress (WIP). There is a lack of real time cost data from Finance or Accounting and such systems may not be in place within PREPA currently. There is a focus on vegetation and streetlight management. However, departmental PM governance, PM tools (e.g., MS Project Online), processes and standards are still being explored for future implementation.
II-2 **Impact of Emergent Issues on Budgets** *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	PREPA has some level of corporate risk management, however, a risk management group is non-existent at the project/PMO level and it is left to Sr. PMs to manage risks as they arise and by the time risks become issues, it is a much larger problem. This often results in increased project costs. Capital Programs' work has suffered because of financial issues due to multiple weather incidents, restructuring and budget cuts.
II-3 **Unit Cost/Productivity Management** *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	Currently, this is not a concern as there is very little projects to manage. No metrics are available as there are only vegetation and streetlight repair work in progress. PREPA looks to implement these in the future with capital projects. No other information is available. However, it is expected that there will be a productivity increase resulting in the ability for employees to handle more projects with fewer resources.
II-4 **Overtime & Contractors Management** *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	In the absence of adequate internal resources, PREPA is using external contractors for their construction and commissioning work. PREPA PMO, due to lack of supervision resources, also then hires external consultants to manage supervision, monitoring and reporting of these construction contractors. With a lack of internal field personnel, engineering, and supervision this work is mostly contracted out. At this time, in the absence of internal resources, and given the current economic situation in Puerto Rico because of COVID and the lack of opportunities/projects the contractor availability may be reduced. Weather related risks and increased mainland work opportunity increase the costs on the island.

CAPITAL PROGRAMS

Gap Assessment

Sub-Focus Areas	Observations & Contributors
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	PREPA fiscal planning and budgeting is undertaken annually. There is no information about indirect charges being allocated to different departments and what value these departments get in return.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	There is a lack of tools to track project costs based on work in progress (WIP). Forecasting tools are not in place either. PREPA tracks work progress by contractor invoicing which is not an accepted project practice. Physical verification of the percentage of completion of deliverables is missing.	Improvement Opportunity
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	A risk management function is not in place for project execution and management. PREPA applies a standard contingency of five to10 percent on project costs and expects to manage risks and issues within that allowance. There is no objective risk identification, analysis, and contingency allocation to manage the budget.	Improvement Opportuni ty
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	There is no unit cost or productivity management as most of the work is done by external contractors. There was no process to identify or analyze the major cost drivers affecting standard costs. Also, there is no ongoing programs or initiatives to measure and report productivity and identify potential improvements.	Department level gap
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	Overtime is utilized only when necessary for urgent remediation work to return the system to normal. Lack of internal resources to manage construction and commissioning contractors. PREPA hires external consultants to supervise and monitor the main contractors. PREPA does not have internal construction management employees.	Department level gap
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	No information is available.	Department level gap

CAPITAL PROGRAMS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	X				
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	X				
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	X				
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*		X			
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	X				

III. Leadership Management

Evaluation Framework

The leadership management focus area consists of four sub-focus areas (core and enabling areas that define an effective leadership management process):

- III-1 Qualifications & Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter– & Intra-Organization Collaboration

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
III-1 Qualifications & Experience *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	Some PREPA information was received. Most personnel are well experienced in PREPA related roles. PREPA's financial troubles, migration from the island, lack of growth, old infrastructure, lack of training opportunities and PREPA's reputation with the local community has caused potential employees to look for jobs elsewhere. Skilled project managers may be difficult to find on the island.
III-2 Accountability *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company's mission, values and goals. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	PREPA PMO Senior Managers and Directors are managing by setting direction, gaining cooperation, and keeping focus on objectives and goals required to be met in the near term. It is not clear how PREPA PMO assigns accountability to managers and supervisors for their goals and objectives e.g., is it linked to their performance evaluations
III-3 Ability to Deliver Results *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	PREPA is not positioned to identify and quickly address problems as they arise. This indicates they will not be able to take on the large capital T&D infrastructure projects. Current PREPA PMO organization chart indicates that there is only one Senior PM to look after all programs and projects and there is lack of well-developed projectized organized structure, and manpower within PMO to be able to manage large project workload.
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	PREPA PMO has different departments working under one umbrella including Restructuring, Projects, PPOAs, Procurement, Governance and Standards, Document Management, Generation, etc. This requires teamwork as it would not work otherwise. PREPA PMO has been very encouraging and collaborative as they want to help in the change that they see coming. The same cannot be verified about the field personnel. The PREPA senior management is very committed and aligned as one team. Directorates exist at PREPA however they all work together to manage emergent issues to maintain electricity to the island. In times of crisis, they are effectively coordinating as one team.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	The current project management team has adequate knowledge and skills within the PREPA environment; however, the lack of project management qualified and trained staff has probably resulted in engineering resources being moved to PREPA PMO. It will be a very challenging task to manage Capital Programs with a billion-dollar spend by PREPA PMO using the current structure and functions. Capital Programs need project management experience and qualifications in a heavy utility sector environment.	Department level gap
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	In PREPA there is no sense of accountability to own projects, success, risks, objectives, and goals. There is no link between performance evaluation and project performance or accountability.	Department level gap
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	The ability to plan, execute, manage, monitor, control and completely deliver a billion-dollar per year capital projects program in T&D infrastructure for PREPA PMO is insufficient. PREPA does not currently have the organization, staffing, resources, or materials to deliver.	Department level gap
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	Interdepartmental personnel engaging for general awareness of the process and procedures, etc. is required. This should be done under the aegis of the training requirements of LUMA PMO.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*			X		
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*			X		

CAPITAL PROGRAMS

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*			X		
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*		X			

IV. Process Efficiency & Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness Focus Area consists of four sub-focus areas (core and enabling areas that define effective process efficiency and effectiveness):

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
IV-1 Potential Risks to Post-Commencement *Identifies risks to post-commencement and steps needed to mitigate the risks.*	PREPA has some basic processes and procedures currently applying to stakeholder related deliverables. However, PREPA has also embarked on a plan to improve PMO governance standards, processes, procedures, templates, forms, checklists, etc. for more efficient and better execution of project management. Modern process implementation is still in the planning stage and PREPA is undertaking this with the help of a PM consulting agency (Scott Madden). The risk is that LUMA processes developed will need to be accurately aligned with PREPA specific processes by the commencement date.
IV-2 Process Familiarity by all Stakeholders *Examines operational processes to ensure they are defined and understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.*	PREPA has recently embarked on a plan to modernize their old processes. PREPA has hired an external consultant to guide and implement these improvements but it will take significant time. The project management related processes are most critical and will need to be in place before capital programs begin to be executed.
IV-3 Process Compliance Management *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	There is no information for process compliance QA/QC audits. There is a corporate quality team, but it is not clear if they would be monitoring departmental processes for compliance.
IV-4 Efficiency of Overall Process Flow *Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.*	PREPA has faced challenges to improve and at the same time manage costs. When costs are the single most important factor for survival, other important things get affected. PREPA does not have the staff to redesign the processes, so they have hired an external consultant. Some basic processes exist and are automated over an IT platform to meet external stakeholder requirements (e.g., for reporting purposes). Current PREPA processes feature several closely monitored handoffs and review stages, all within PMO. Ultimately, the Senior PM is responsible for most decisions affecting cost, which could cause substantial delays.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
IV-1 Potential Risks to Post-Commencement *Risks to post-commencement and steps to mitigate those risks are identified.*	Currently, PREPA processes are not set up to manage billions of dollars a year of capital spending on projects. LUMA will have such systems in place and has previous experience to manage such a large program, assuming all systems are up and running and hiring of required staff as of commencement date.	Department level gap
IV-2 Process Familiarity by all Stakeholders *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*	PREPA PMO does not have the project management processes to manage the billion-dollar capital program projects.	Improvement opportunity
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	There is no one assigned to carry out compliance audits of project management process compliance by the project team.	SRP candidate
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	PREPA does not have all the processes needed for capital program management and automate them for tracking and approvals.	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
IV-1 Potential Risks to Post-Commencement *Risks to post-commencement and steps to mitigate those risks are identified.*		X			
IV-2 Process Familiarity by all Stakeholders *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*		X			
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	X				
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*		X			

V. Employee Training & Development

Evaluation Framework

The Employee Training & Development Focus Area consists of four sub-focus areas (core and enabling areas that define an effective employee training and development process):

- **V-1** Training Budgets & Program Effectiveness
- **V-2** Ability to Cross Train as Personnel Development Path
- **V-3** Skills Assessment & Personnel Training Plans
- **V-4** Demographics & Profile of Personnel by Skill Level

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
V-1 Training Budgets & Program Effectiveness *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	Currently there is no information available. PREPA does not have any major capital projects. The only projects they have in T&D are vegetation management and streetlight repair as a necessary maintenance expenditure. It will be challenging to assign a training budget unless something new is being implemented. It is difficult to visualize personnel training targets and development plans when austerity measures dictate otherwise.
V-2 Ability to Cross Train as Personnel Development Path *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	About two years back the PREPA T&D Engineering department was dissolved and some of its staff was moved to various positions within PREPA PMO. They are now handling projects and project management. It is unclear if any training was imparted then, however tasks are learned through on the job training. In the current situation the employee can discuss their plans for future development with their supervisor, however there is no process to provide training opportunities to support employee's development.
V-3 Skills Assessment & Personnel Training Plans *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	There is no information available.
V-4 Demographics & Profile of Personnel by Skill Level *Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.*	Currently within PREPA the PMO staff is experienced in PREPA work processes, stakeholder needs, etc. The Senior Managers do not have very large T&D capital program management experience. They are currently managing small projects. Numbers of employees have been reduced and resources are tight. The department has lost various resources due to a multitude of challenges on different fronts. This has led to a general deterioration in many areas. PREPA PMO was recently set up on directions of P3A under the control of the CEO and staffed by some employees from the former Engineering department.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gap	Categorization
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	PMO related training will need to be imparted to the new capital programs team. Ideally, this would be delivered in a central training facility.	SRP Candidate
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	The training and development program needs complete revamping and must include record keeping. Every employee needs basic training and developmental training. Those who are moving to other departments will need cross training to succeed.	Improvement Opportunity
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	No information is available.	Department level gap
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	The job positions will have to match the job descriptions in terms of qualifications, skills and experience needed to perform large projects.	Improvement Opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training is evidenced by training budget and program effectiveness.*	X				
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross-training initiatives to improve development path for personnel.*	X				
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets.*	X				
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	X				

VI. Workforce Management

Evaluation Framework

The Workforce Management Focus Area consists of two sub-focus areas (core and enabling areas that define effective work management):

- VI-1 Effectiveness of Current Workforce Management Systems & Processes
- VI-2 Time Charging & Productivity Tracking & Reporting

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	Currently, PREPA PMO is managing project design and project work using external contractors. Then, to supervise their work PREPA hires a consultant. There are some internal resources but not enough to oversee all the work. For example, some contractors are managed through Contract Managers and Senior Project Managers.
VI-2 Time Charging & Productivity Tracking & Reporting *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	Currently PREPA PMO has only two NME projects (i.e., vegetation management and streetlight repair). It is not appropriate for all employees in PMO to charge their time to these two projects. There must be a general overhead and expense category to properly document hours. PREPA does not have a detailed WBS. OT is used when emergency maintenance activities need to be carried out to restore power. Also, because of attrition, resources are tight in some areas. PREPA PMO sets the tone for the year through the Fiscal Year Budget and needs to achieve what is stated in that plan. PREPA has been using outside contractors to keep their costs low and to overcome the challenges of reduced staffing.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Defined processes and work rules to ensure efficient labor utilization.*	Workforce management systems are manual and need to be automated to reduce response time and increase productivity. This may not be required if all projects are managed the EPC way.	SRP Candidate (Priority)
VI-2 Time Charging & Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	The staffing levels are low and there is no information about productivity targets or goals.	SRP Candidate

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Defined processes and work rules to ensure efficient labor utilization.*		X			
VI-2 **Time Charging & Productivity Tracking & Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*		X			

VII. Management Systems & Technology

Evaluation Framework

The Management Systems & Technology Focus Area consists of four sub-focus areas (core and enabling areas that define effective management systems and technology):

- VII-1 Process Automation
- VII-2 Adaptability to New Systems & Technology
- VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
VII-1 Process Automation *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	PREPA PMO has some basic processes to manage the work which is automated only for those specific tasks (related to the available PREPA process). These are tracked through Asset Suite software. This system cannot handle the process automation workload that would be required to manage the capital program projects. Most of the automation and logs are maintained in Excel. PREPA recognizes the fact that they need to modernize. PREPA PMO indicated that they do have a Knowledgebase store however they indicated that the top two IT platforms they wish to utilize would be full functionality SharePoint (on Cloud) and the MS Project Online (on Cloud). Project management data (i.e., scheduling, cost control, risk management and reports) is manually input using Excel worksheets. Manual processes are time consuming, error prone and inefficient, reducing the time to focus on critical work.
VII-2 Adaptability to New Systems & Technology *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	As per information provided by PREPA in workshops they currently have a less functional MS Project online which is used for managing IT projects. They do not have any recent experience in implementing project management software. PREPA did present their vision of using a full functionality version of MS Project Online integrated with Power BI Tool for reporting and the SharePoint 2013 web design tool to interface internal users for managing enterprise-wide projects in the future.
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	Do not currently exist.
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	No information is available.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
VII-1 Process Automation *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	PREPA has not kept current with Project Management processes redesign and additions primarily because there are no T&D projects for Capital Programs being executed. Automation has fallen behind and is required in a modern utility to improve efficiency, productivity, monitoring and tracking. This needs to be added to the PMO functions.	SRP candidate (Priority)
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes and technology to make quality improvements.*	PREPA currently does not have the Project Portfolio Management IT platform and tool to manage the Capital Programs' projects.	Department level gap
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*	Do not exist currently, these tasks may be only manually completed.	Improvement opportunity
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	Processes, Procedures and Plans; Work Breakdown Structure (WBS), Project Life Cycle, Organization Chart	Department Level Gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VII-1 Process Automation *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*		X			
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes and technology to make quality improvements.*	X				
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*	X				

CAPITAL PROGRAMS

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	X				

VIII. Performance Metrics & Continuous Improvement

Evaluation Framework

The Performance Metrics & Continuous Improvement Focus Area consists of five sub-focus areas (core and enabling areas that define performance metrics and a continuous improvement process):

- VIII-1 Recognition of Critical Performance Metrics
- VIII-2 Performance Metric Collection, Validation & Reporting
- VIII-3 Root Cause & Trend Analysis
- VIII-4 Instances (or Lack) of Data-Driven Management Initiatives
- VIII-5 Recent Performance Trends

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
VIII-1 **Recognition of Critical Performance Metrics** *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	PREPA measures actuals against budgets, labor hours and headcount, overtime, System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI). Anything that is required to be reported to external stakeholders at weekly, monthly or quarterly cycles is done. However, for project management, they do not currently have systems or processes in place to manage metrics for capital programs. PREPA has acknowledged the need for an enterprise-wide portfolio project management tool.
VIII-2 **Performance Metric Collection, Validation & Reporting** *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	Performance metric data collection is manual and based on the input from contractors, consultants, and subcontractors. It is difficult to verify without direct supervision. It is assumed that PREPA must review and update the data and reports before its acceptance by external stakeholders.
VIII-3 **Root Cause & Trend Analysis** *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	PREPA provided the Grid Mod Plan, an Integrated Resource Plan, the PREPA Annual Fiscal Year Budget Plan and Build Back Better Report, etc. These documents by third parties detail the reasons for PREPA's current condition, the condition that the current grid is in and details what would be required and the general direction to follow in improving the Puerto Rico electrical system and its renewable resource integration plan.
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	PREPA has been focused on vegetation management and streetlight repair, which are necessary maintenance projects. It has been identified previously that a lack of vegetation management has caused roughly 35% - 40% of power interruptions and hence it is expected that this metric will improve. PREPA used to have their customer care call center with wait times in the order of 20-30 minutes. This is in the process of being outsourced to achieve wait times less than 10 minutes.

Gap Assessment

Sub-Focus Areas	Observations & Contributors
VIII-5 **Recent Performance Trends** *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	PREPA continues with vegetation and streetlight repair work. Fiscal constraints do not allow PREPA to perform capital programs for grid maintenance or modernization. Metrics of project performance are not maintained.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
VIII-1 **Recognition of Critical Performance Metrics** *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	PREPA has metrics as required for current fiscal reporting to external stakeholders. However, they don't have the project management related metrics in place to manage a large capital program.	SRP candidate (Priority)
VIII-2 **Performance Metric Collection, Validation & Reporting** *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	Performance data collection is manual and needs to be digitized using IT based tools and reporting.	SRP candidate
VIII-3 **Root Cause & Trend Analysis** *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	The extent and scope of PREPA's current projects (vegetation management and streetlight repair) do not require this analysis ability, so it will need to be established to manage the larger capital program.	Improvement opportunity
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	New performance metrics will be required to monitor the performance and progress of capital programs. Metric trends will flow into a program and project performance KPI dashboard for analysis.	Improvement opportunity
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	PREPA does not have industry standard project management related KPIs, e.g., Schedule Performance Index (SPI), CPI (Cost Performance Index), CV (Cost Variance), SV (Schedule Variance), PV (Planned Value), EV (Earned Value), BAC (Budget at Completion), ETC (Estimate to Complete), EAC (Estimate at Completion), etc.	Improvement opportunity

CAPITAL PROGRAMS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*		X			
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*		X			
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*		X			
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*		X			
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	X				

IX. PREPA Culture & Momentum

Evaluation Framework

The PREPA Culture & Momentum Focus Area consists of five sub-focus areas (core and enabling areas that define the PREPA culture and momentum):

- IX-1 Resistance (Active or Passive) to LUMA Management
- IX-2 Employee Morale/Excitement About LUMA
- IX-3 Employee Empowerment/Action Orientation
- IX-4 Timeframe to Improve Performance
- IX-5 Impact of Organization Silos

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	PREPA has hired external consultants and contractors to conduct studies and provide plans for grid modernization, PMO governance standards, processes and monitoring of project work. PREPA is wholeheartedly supporting the LUMA transition and providing whatever information is available with them. However, some of the employees who may lack information about LUMA may express their concerns.
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	PREPA is supporting the presence of LUMA and assisting in the transition period. Employees recognize the opportunity to participate in the economic development of the island. However, this change, including factors such as new management, FEMA funding, new processes and tools, raises some concerns for employees. Some employees have communicated their issues and concerns during workshops and RFI responses.
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.*	PREPA PMO staff is well experienced with external stakeholders. However, for capital program execution in the billion dollars per year range, providing greater decision making authority to them is risky because they are likely to lack experience in handling multiple projects each worth $50 -100M, or successfully handle risks and issues that, without proper handling, could cause cost overruns or derail projects. The current PMs do not have adequate large project experience. The current decision-making process at PREPA (due to their need for maintaining tight control over costs and funds) is top-down and hierarchical, thus a slow process.
IX-4 **Timeframe to Improve Performance** *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	PREPA intends to improve project management governance, standards, processes, templates, checklists, etc. They also plan to implement SharePoint and other IT tools to automate project oversight. Process improvements timelines may be longer depending on how this change is funded. PREPA PMO discussed the need for implementing MS Project Online as an enterprise project portfolio management tool. The timeframe to implement this tool is unknown but it is required if capital projects are to be properly managed.
IX-5 **Impact of Organization Silos** *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	PREPA PMO manages nine different Directorates. PREPA PMO was created at the direction of external stakeholders to manage the restructuring, organizational change, control costs, manage key projects and report to stakeholders. The LUMA Capital Programs Organization in comparison will be Project Oriented and organized on the lines of managing, executing and controlling Capital Programs.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*	Resistance to change is natural. PREPA and LUMA need to work together to provide the right information so it is clear why LUMA is here.	Improvement Opportunity
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	PREPA employee morale in PMO has been good, they are looking forward to joining LUMA; however, there may be many concerns brought later. Some PREPA employees are worried about losing their pensions if they find work with LUMA and they don't have clarity on this.	Improvement Opportunity
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*	PREPA employees look forward to working with LUMA. Concerns can be addressed as they arise.	Improvement Opportunity
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*	PREPA PMO is aware of its shortcomings and is planning on improving its governance, standards, process, procedures however the timeline of starting and completing that is unknown	Improvement Opportunity
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*	The gap assessment of the PREPA PMO indicates that the PREPA PMO itself is not siloed. The PREPA PMO functions with Procurement, Generation, Contract Agreements, Fuel Contracts, Change Management, and Project Management all under the control of the same authority within the PMO. Where the PMO needs to engage with other groups outside the PMO, organizational silos impact the PMO's ability to effectively and efficiently manage projects.	Improvement Opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*			X		
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*			X		
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*		X			

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*		X			
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*			X		

Core Business Assessment

Gap Assessment

Focus & Sub-Focus Areas

	Focus Areas	Sub-Focus Areas			
XI	**Project Management Office**	XI-1 XI-2 XI-3	PMO Organization & Vision Processes Information & Technology	XI-4 XI-5	Training Lessons Learned
XII	**Transmission Project Management**	XII-1 XII-2 XII-3	Identification Planning Scheduling	XII-4 XII-5	Execution Closeout
XIII	**Distribution Project Management**	XIII-1 XIII-2 XIII-3	Identification Planning Scheduling	XIII-4 XIII-5	Execution Closeout
XIV	**Project Controls**	XIV-1 XIV-2	Document Control Scope, Cost & Scheduling Control	XIV-3 XIV-4	Estimating Project Forecasting & Reporting
XV	**Change Management**	XV-1 XV-2	Identification Change Process	XV-3 XV-4	Issue Logs Decision Registers
XVI	**Construction Management**	XVI-1 XVI-2 XVI-3	Organization Resourcing & Scheduling Process	XVI-4 XVI-5	Culture & Competencies Current Practices (Worker Productivity & Overtime)
XVII	**Risk Management**	XVII-1 XVII-2	Strategy & Risk Alignment Processes	XVII-3 XVII-4	Information & Technology Culture & Competencies
XVIII	**Contract Administration**	XVIII-1 XVIII-2	Processes Contract Change Control	XVIII-3 XVIII-4	Project Completion Certification Contract Closeout
XIX	**Project Reporting**	XIX-1 XIX-2	Process Data Collection & Analysis	XIX-3	Communication
XX	**Project Data Binder**	XX-1 XX-2	Critical Project Information Project Decision Registers	XIX-3	Final Project Completion Reports

XI. Project Management Office

Evaluation Framework

The Project Management Office Focus Area consists of five sub-focus areas (core and enabling that define an effective PMO).

- XI-1 PMO Organization & Vision
- XI-2 Processes
- XI-3 Information & Technology
- XI-4 Training
- XI-5 Lessons Learned

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XI-1 PMO Organization & Vision *The extent to which the utility has a PMO with a clear strategy and vision. Specifically, review the PMO's maturity in implementing capital programs.*	The PREPA PMO was formed as result of extensive project management requirements from FEMA and FOMB directive. It is currently responsible for fiscal year planning, Power Purchase and Operating Agreements (PPOA), accounts, invoicing, procurement, contracts, project execution, project control, stakeholder management and reporting, etc. There is no dedicated PMO for projects and project management which would focus on establishing project management standards, processes, procedures, guides, project management software tools, KPIs, PM metric dashboards, progress reports, etc. The PREPA PMO reports to the PREPA CEO and is responsible for project control, organizational re-structuring, and fiscal prudence in PREPA.
XI-2 Processes *Availability of PMO defined project management processes, procedures, forms, checklists, templates and approval mechanisms.* *The extent to which there is an established mechanism for identifying the need for a new process or initiating a change in the current process.* *Are strategic objectives and KPI metrics established and available to employees? Are they aligned with industry best practices and credible benchmarking methods?*	There are some basic project management processes, forms, templates, and checklists that are being used by PREPA. New ones are also being developed under PREPA PMO as needed. KPI dashboards are simple and are manually developed in Excel worksheets (using cut and paste methodology) from available cost and progress information from PMs, contractors, and secondary supervisory contractors. PREPA has hired a consultant to guide them through the creation of Project Management Life Cycle stages and industry standard project management processes.
XI-3 Information & Technology *The extent to which the PMO information management architecture and processes are in place and are adequate to ensure the availability of accurate documentation and information.*	PREPA PMO PM's tools for project management are all Excel based. They are too basic to support the full functionality needed i.e., scheduling, cost control, cost forecasting, etc. It is reported that PREPA IT/OT has MS Project Online and Primavera IT tools (~100-300 licenses each) but it appears that these are not being utilized by the current PREPA PMO PMs. In addition, these software tools may be outdated.
XI-4 Training *The extent to which the organization has embedded the skills, competencies and continuous improvement culture*	Within PREPA PMO there is a Senior Manager role to implement PMO governance, ensure standards are met and processes are followed. This is still in a preliminary stage as PREPA has recently started to modernize project management oversight.

Gap Assessment

Sub-Focus Areas	Observations & Contributors
necessary to successfully implement a PMO.	
XI-5 Lessons Learned *The extent to which the utility has a system of recording lessons learned at each phase in a project. The extent to which the utility has a modern system of retrieving information based on project type, regional area or other various criteria. This would be to enable new projects to review lessons learned from past projects during the project planning phase.*	The PM within PREPA PMO is assigned to collect lessons learned. There is a need for a PMO driven and managed lessons learned process. Ideally, lessons learned would be documented at each stage of the project life cycle. There is a knowledge base within PREPA PMO to retrieve past information however it is not easily accessible due to a lack of standardized data collection and distribution processes.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XI-1 PMO Organization & Vision *The extent to which the utility has a PMO with a clear strategy and vision. Specifically, review the PMO's maturity in implementing capital programs.*	A dedicated PMO focused on project management governance, project management standards and process support alone are missing.	SRP Candidate (Priority)
XI-2 Processes *Availability of PMO defined project management processes, procedures, forms, checklists, templates and approval mechanisms.* *The extent to which there is an established mechanism for identifying the need for a new process or initiating a change in the current process.* *Are strategic objectives and KPI metrics established and available to employees? Are they aligned with industry best practices and credible benchmarking methods?*	A dedicated PMO is required to focus on project management governance, tools, standards, procedures, KPI dashboards and PM training to enable PM teams to plan, execute and control projects. It will also be responsible to impart training to the project team.	SRP Candidate (Priority)
XI-3 Information & Technology *The extent to which the PMO information management architecture and processes are in place and are adequate to ensure the availability of accurate documentation and information.*	There is an existing PREPA PMO knowledge base, however it is outdated and does not meet the needs of an organization to handle capital programs as intended. This needs to move to a customer centric SharePoint IT tool with access to processes, procedures, flowcharts, forms, templates, training, checklists, and change control functionality, etc.	SRP Candidate (Priority)
XI-4 Training *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement a PMO.*	A dedicated PMO dedicated to project management is required. Although PREPA has a PMO, it is not dedicated to project management alone. Apart from managing projects, it is also responsible for restructuring, accounts, invoicing, procurement, contracts, PPOAs, stakeholders and the CEO's requirements. PREPA PMO reports to the CEO and was established on the Direction of COR3.	SRP Candidate
XI-5 Lessons Learned *The extent to which the utility has a system of recording lessons learned at each phase in a project. The extent to which the utility has a modern system of retrieving information based on project type, regional area or other various criteria. This would be to enable new projects to review lessons learned from past projects during the project planning phase*	There is no established process for lessons learned collection at each project life cycle phase. There is no modern system for saving and retrieving lessons learned by intuitive classifications. There is only one Sr PM who may collect any lessons learned (if any).	Department level gap

CAPITAL PROGRAMS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XI-1 PMO Organization & Vision *The extent to which the utility has a PMO with a clear strategy and vision. Specifically, review the PMO's maturity in implementing capital programs.*	X				
XI-2 Processes *Availability of PMO defined project management processes, procedures, forms, checklists, templates and approval mechanisms.* *The extent to which there is an established mechanism for identifying the need for a new process or initiating a change in the current process.* *Are strategic objectives and KPI metrics established and available to employees? Are they aligned with industry best practices and credible benchmarking methods?*		X			
XI-3 Information & Technology *The extent to which the PMO information management architecture and processes are in place and are adequate to ensure the availability of accurate documentation and information.*		X			
XI-4 Training *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement a PMO.*		X			
XI-5 Lessons Learned *The extent to which the utility has a system of recording lessons learned at each phase in a project. The extent to which the utility has a modern system of retrieving information based on project type, regional area or other various criteria. This would be to enable new projects to review lessons learned from past projects during the project planning phase*	X				

XII. Transmission Project Management

Evaluation Framework

The Transmission Project Management Focus Area consists of five sub-focus areas that define an effective project planning and execution process. The practices and disciplines that underlie these sub-focus areas apply generally to capital projects.

- **XII-1** Identification
- **XII-2** Planning
- **XII-3** Scheduling
- **XII-4** Execution
- **XII-5** Closeout

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
CXII-1 Identification *The extent to which a project is initiated and identified as part of an effective business plan and in terms of scope, and prioritized applying a risk and value-based assessment framework.*	Projects are prioritized and planned per emergent need and business plans. Project funding sources are Necessary Maintenance Expenditure (NME), Planning, DFMO, and PMO sources. PREPA uses basic risk and value-based assessment at the corporate level. Since capital upgrade projects are not funded, they are not included in the process.
XII-2 Planning *The extent to which work is performed using a detailed step-by-step execution plan, project management plans, stakeholder engagement plan, scope management plan, and the extent to which they are integrated with the project scheduling process. Also, assessment of the use of risk management and contingency plans.* *The extent of the use of the schedule and cost baselines in the project approval process.*	The PREPA Project Management Plan is a basic document and does not include all the industry standard components of project plans. This is prepared by the PM. Risk management and contingency plans at the project level are unknown. Currently, projects are executed by external contractors due to a lack of internal resources in the PMO department. There is a planning function within the PMO however it does not conduct detailed studies and analysis. The project's priority is driven by the need to minimize power interruptions. PREPA does not have sufficient PM management, scheduling, and cost tracking tools for project management. The PREPA Project Manager is the main estimator using Excel worksheets. There is no separate estimating team.
XII-3 Scheduling *The extent to which the project is scheduled in sufficient detail to confirm resource availability and assure coordination with other work activities. Further, assessment of the role scheduling plays in maximizing the use and productivity of available resources. In short, confirming the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization.*	PREPA does not have an integrated scheduling tool linked to resources, materials, and the Work Breakdown Structure (WBS). Scheduling is done using an Excel template at the planning stage within PREPA with only high-level milestones defined. More detailed schedules are requested from EPC contractors once contracts are awarded. There is no proper PM scheduling software. PREPA uses Excel that does not meet the requirements for proper project scheduling, tracking, and forecasting.
XII-4 Execution	There are resource constraints as highlighted in PREPA documents and contractors need to report any delays and risks. PREPA has oversight in place for a few contractors however this

Gap Assessment

Sub-Focus Areas	Observations & Contributors
The extent to which project execution is planned to include safety requirements, environmental constraints, permits requirements, execution plans and outage requirements. *Assessment of the extent to which "protecting the schedule" is a core value within the organization and the extent to which KPIs/Metrics (by their existence and measured results) support that claim.* *The extent to which project quality is monitored and product quality delivered is monitored. What quality management plan is in place?*	may not work for actively monitoring and tracking every contractor. PREPA hires an external agency to monitor the work of the Main Construction Contractor. Quality management for project processes and deliverables is done through the PMO. Governance. The QMS Senior Manager also has oversight, along with contractor oversight, by PREPA PMO and PM. Project delays are calculated based on contractor input. PREPA collects schedule progress reports in design and execution phases from the contractors. Earned value/WBS based work scope completion with comparison to the cost baseline for schedule progress is not in use.
XII-5 Closeout *The extent to which project costs and activities are tracked accurately, costs capitalized against assets, asset records updated, and contracts closed out. Assessment of any established process of certifying substantial and final project completion, and whether documented punch list closeout and detailed project completion report are consistently used.*	There are rules and requirements to be met by PREPA when closing a project. PREPA is meeting those requirements as per RFI44 PREPA response: 'At the end of the project, the Accounting Office documents the capitalizable assets and reports to PREPA's Finance Directorate for filing.' As-Built information is completed by the contractors. If there is any subsequent modification by PREPA internal field personnel (i.e., lines and substation work) then those may not be captured on as-Built documents. So, the information with PREPA may not be accurate.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XII-1 Identification *The extent to which a project is initiated and identified as part of an effective business plan and in terms of scope, and prioritized applying a risk and value-based assessment framework.*	T&D capital upgrade projects to improve reliability, system expansion, upgrade and extend the life of the T&D assets are needed. A system remediation plan will be required.	Department level gap
XII-2 Planning *The extent to which work is performed using a detailed step-by-step execution plan, project management plans, stakeholder engagement plan, scope management plan, and the extent to which they are integrated with the project scheduling process. Also, assessment of the use of risk management and contingency plans.* *The extent of the use of the schedule and cost baselines in the project approval process.*	A complete and detailed project management plan and its subcomponent plans, e.g., schedule management, cost management, scope management, QHSE plan, communication plan, risk management plan, procurement plan, contract management plan, construction plans, commissioning plans, etc., is needed.	SRP Candidate (Priority)
XII-3 Scheduling *The extent to which the project is scheduled in sufficient detail to confirm resource availability and assure coordination with other work activities. Further, assessment of the role scheduling plays in maximizing the use and productivity of available resources. In short, confirming the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization.*	An industry standard project management software tool would provide a scheduling software tool integrated with WBS scope, durations, resources, materials, data gathering and KPIs dashboard, etc. PMs need this tool to track worker productivity, worker availability and other resource planning.	SRP Candidate (Priority)

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XII-4 Execution *The extent to which project execution is planned to include safety requirements, environmental constraints, permits requirements, execution plans and outage requirements.* *Assessment of the extent to which "protecting the schedule" is a core value within the organization and the extent to which KPIs/Metrics (by their existence and measured results) support that claim.* *The extent to which project quality is monitored and product quality delivered is monitored. What quality management plan is in place?*	PREPA does not have an internal construction execution planning function as this is left to the external contractors doing the construction work. PREPA resource constraint forces hiring of construction monitoring contractors. Construction risks and issues are highlighted after the fact. Schedule control is non-existent by not managing the risks actively until it is too late and become issues which then must be escalated and managed at a higher level. PREPA QMS functions strictly within PREPA PMO and is not independent. Construction and contractor supervision need to be internally and more closely monitored to be effective Construction supervision needs to be assigned individually to coordinate with each contractor on major T&D capital programs.	Department level gap
XII-5 Closeout *The extent to which project costs and activities are tracked accurately, costs capitalized against assets, asset records updated, and contracts closed out. Assessment of any established process of certifying substantial and final project completion, and whether documented punch list closeout and detailed project completion report are consistently used.*	Project costs are tracked and monitored by contractor invoicing, not by work in progress (WIP). It is not clear how detailed a Project Completion Report is required to be and this is prepared by PMO-PMs. There is no Regulatory and Finance interface to these reports. A clearly defined project closeout process, procedures, templates and requirements, reports, etc. is needed.	Department level gap

CAPITAL PROGRAMS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XII-1 Identification *The extent to which a project is initiated and identified as part of an effective business plan and in terms of scope and prioritized applying risk and value-based assessment framework.*			X		
XII-2 Planning *The extent to which work is performed using a detailed step-by-step execution plan, project management plans, stakeholder engagement plan, scope management plan, and the extent to which they are integrated with the project scheduling process. Also, assessment of the use of risk management and contingency plans.* *The extent of the use of the schedule and cost baselines in the project approval process.*		X			
XII-3 Scheduling *The extent to which the project is scheduled in sufficient detail to confirm resource availability and assure coordination with other work activities. Further, assessment of the role scheduling plays in maximizing the use and productivity of available resources. In short, confirming the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization.*	X				
XII-4 Execution *The extent to which project execution is planned to include safety requirements, environmental constraints, permits requirements, execution plans and outage requirements.* *Assessment of the extent to which "protecting the schedule" is a core value within the organization and the extent to which KPIs/Metrics (by their existence and measured results) support that claim.* *The extent to which project quality is monitored and product quality delivered is monitored. What quality management plan is in place?*		X			
XII-5 Closeout *The extent to which project costs and activities are tracked accurately, costs capitalized against assets, asset records updated, and contracts closed out. Assessment of any established process of certifying substantial and final project completion, and whether documented punch list closeout and detailed project completion report are consistently used.*		X			

XIII. Distribution Project Management

Evaluation Framework

The Distribution Project Management Focus Area consists of five sub-focus areas that define an effective project planning and execution process. The practices and disciplines that underlie these sub-focus areas apply generally to capital projects.

- XIII-1 Identification
- XIII-2 Planning
- XIII-3 Scheduling
- XIII-4 Execution
- XIII-5 Closeout

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XIII-1 **Identification** *The extent to which a project is initiated and identified as part of an effective business plan and in terms of scope and prioritized applying risk and value-based assessment framework.*	Projects are prioritized and planned per emergent need and business plans. Project funding sources are Necessary Maintenance Expenditure (NME), Planning, DFMO, and PMO sources. PREPA uses basic risk and value-based assessment at the corporate level. Since capital upgrade projects are not funded, they are not included in the process. .
XIII-2 **Planning** *The extent to which work is performed using a detailed step-by-step execution plan, project management plans, stakeholder engagement plan, scope management plan, and the extent to which they are integrated with the project scheduling process. Also, assessment of the use of risk management and contingency plans.* *The extent of the use of the schedule and cost baselines in the project approval process.*	The PREPA Project Management Plan is a basic document and does not include all the industry standard components of project plans. This is prepared by the PM. Risk management and contingency plans at the project level are unknown. Currently, projects are executed by external contractors due to a lack of internal resources in the Construction department. There is a planning function within the PMO however it does not conduct detailed studies and analysis. The project's priority is driven by the need to minimize power interruptions. PREPA does not have sufficient PM management, scheduling and cost tracking tools for project management. The PREPA Project Manager is the main estimator using Excel worksheets. There is no separate estimating team.
XIII-3 **Scheduling** *The extent to which the project is scheduled in sufficient detail to confirm resource availability and assure coordination with other work activities. Further, assessment of the role scheduling plays in maximizing the use and productivity of available resources. In short, confirming the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization.*	PREPA does not have an integrated scheduling tool linked to resources, materials and the Work Breakdown Structure (WBS). Scheduling is done using an Excel template at the planning stage within PREPA with only high-level milestones defined. More detailed schedules are requested from EPC contractors once contracts are awarded. There is no proper PM scheduling software. Excel does not meet the requirements needed for proper project scheduling, tracking, and forecasting.
XIII-4 **Execution**	There are resource constraints as highlighted in PREPA documents and contractors need to report any delays and risks. PREPA has oversight in place for a few contractors however this

Gap Assessment

Sub-Focus Areas	Observations & Contributors
The extent to which project execution is planned to include safety requirements, environmental constraints, permits requirements, execution plans and outage requirements. *Assessment of the extent to which "protecting the schedule" is a core value within the organization and the extent to which KPIs/Metrics (by their existence and measured results) support that claim.* *The extent to which project quality is monitored and product quality delivered is monitored. What quality management plan is in place?*	may not work for actively monitoring and tracking every contractor. PREPA hires an external agency to monitor the work of the Main Construction Contractor. Quality management for project processes and deliverables is done through the PMO. Governance, QMS Senior Manager also has oversight, along with contractor oversight, by PREPA PMO and PM. Project delays are calculated based on contractor input. PREPA collects schedule progress reports in design and execution phases from the contractors. Earned value/WBS based work scope completion with comparison to the cost baseline for schedule progress is not in use.
XIII-5 Closeout *The extent to which project costs and activities are tracked accurately, costs capitalized against assets, asset records updated, and contracts closed out. Assessment of any established process of certifying substantial and final project completion, and whether documented punch list closeout and detailed project completion report are consistently used.*	There are rules and requirements to be met by PREPA when closing a project. PREPA is meeting those requirements as per RFI44 PREPA response: 'At the end of the project, the Accounting Office documents the capitalizable assets and reports to PREPA's Finance Directorate for filing.' As-Built information is completed by the contractors. If there is any subsequent modification by PREPA internal field personnel (i.e., lines and substation work) then those may not be captured on As-Built documents. So, the As-Built information with PREPA may not be accurate.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XIII-1 Identification *The extent to which a project is initiated and identified as part of an effective business plan and in terms of scope and prioritized applying risk and value-based assessment framework.*	T&D capital upgrade projects to improve reliability, system expansion, upgrade and extend the life of the T&D assets are needed. A system remediation plan will be required.	Department level gap
XIII-2 Planning *The extent to which work is performed using a detailed step-by-step execution plan, project management plans, stakeholder engagement plan, scope management plan, and the extent to which they are integrated with the project scheduling process. Also, assessment of the use of risk management and contingency plans.* *The extent of the use of the schedule and cost baselines in the project approval process.*	A complete and detailed project management plan and its subcomponent plans, e.g., schedule management, cost management, scope management, QHSE plan, communication plan, risk management plan, procurement plan, contract management plan, construction plans, commissioning plans, etc., is needed.	SRP Candidate (Priority)
XIII-3 Scheduling *The extent to which the project is scheduled in sufficient detail to confirm resource availability and assure coordination with other work activities. Further, assessment of the role scheduling plays in maximizing the use and productivity of available resources. In short, confirming the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization.*	An industry standard project management software tool would provide a scheduling software tool integrated with WBS scope, durations, resources, materials, data gathering and KPIs dashboard, etc. PMs need this tool to track worker productivity, worker availability and other resource planning.	SRP Candidate (Priority)

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XIII-4 Execution *The extent to which project execution is planned to include safety requirements, environmental constraints, permits requirements, execution plans and outage requirements.* *Assessment of the extent to which "protecting the schedule" is a core value within the organization and the extent to which KPIs/Metrics (by their existence and measured results) support that claim.* *The extent to which project quality is monitored and product quality delivered is monitored. What quality management plan is in place?*	PREPA does not have an internal construction execution planning function as this is left to the external contractors doing the construction work. PREPA resource constraint forces hiring of construction monitoring contractors. Construction risks and issues are highlighted after the fact. Schedule control is non-existent by not managing the risks actively until it is too late and become issues which then must be escalated and managed at a higher level. PREPA QMS functions strictly within PREPA PMO and is not independent. Construction and contractor supervision need to be internally and more closely monitored to be effective Construction supervision needs to be assigned individually to coordinate with each contractor on major T&D capital programs.	Department level gap
XIII-5 Closeout *The extent to which project costs and activities are tracked accurately, costs capitalized against assets, asset records updated, and contracts closed out. Assessment of any established process of certifying substantial and final project completion, and whether documented punch list closeout and detailed project completion report are consistently used.*	Project costs are tracked and monitored by contractor invoicing, not by work in progress (WIP). It is not clear how detailed a Project Completion Report is required to be and this is prepared by PMO-PMs. There is no Regulatory and Finance interface to these reports. A clearly defined project closeout process, procedures, templates and requirements, reports, etc. is needed.	Department level gap

CAPITAL PROGRAMS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIII-1 Identification *The extent to which a project is initiated and identified as part of an effective business plan and in terms of scope and prioritized applying risk and value-based assessment framework.*			X		
XIII-2 Planning *The extent to which work is performed using a detailed step-by-step execution plan, project management plans, stakeholder engagement plan, scope management plan, and the extent to which they are integrated with the project scheduling process. Also, assessment of the use of risk management and contingency plans.* *The extent of the use of the schedule and cost baselines in the project approval process.*		X			
XIII-3 Scheduling *The extent to which the project is scheduled in sufficient detail to confirm resource availability and assure coordination with other work activities. Further, assessment of the role scheduling plays in maximizing the use and productivity of available resources. In short, confirming the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization.*	X				
XIII-4 Execution *The extent to which project execution is planned to include safety requirements, environmental constraints, permits requirements, execution plans and outage requirements.* *Assessment of the extent to which "protecting the schedule" is a core value within the organization and the extent to which KPIs/Metrics (by their existence and measured results) support that claim.* *The extent to which project quality is monitored and product quality delivered is monitored. What quality management plan is in place?*			X		
XIII-5 Closeout *The extent to which project costs and activities are tracked accurately, costs capitalized against assets, asset records updated, and contracts closed out. Assessment of any established process of certifying substantial and final project completion, and whether documented punch list closeout and detailed project completion report are consistently used.*			X		

CAPITAL PROGRAMS

Gap Assessment

XIV. Project Controls

Evaluation Framework

The Project Controls Focus Area consists of four sub-focus areas that define an effective project control process. The practices and disciplines that underlie these sub-focus areas apply generally to capital projects.

- XIV-1 Document Control
- XIV-2 Scope, Cost & Scheduling Control
- XIV-3 Estimating
- XIV-4 Project Forecasting & Reporting

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XIV-1 **Document Control** *The extent to which a computer-based project document management system exists for saving, managing and retrieving project documents. The use of an IT system for document generation, tracking and monitoring of approvals.*	During the project planning phase, the PM develops a communication plan to document key objectives, messages, delivery methods, contact frequency, owner, etc. During the execution and monitoring phase, the PM logs communication with each respective stakeholder within the Stakeholder Registry. Each PM is required to digitally store the communication records between internal and external stakeholders. The Engineering & Technical Services Division holds meetings every 60 days with all internal stakeholders. PREPA has provided some examples of internal and external reports in their RFI attachments. PREPA does have some IT system document control under PREPA PMO however, this is not a fully developed system.
XIV-2 **Scope, Cost & Scheduling Control** *The extent to which a project control function exists for: tracking and monitoring scope changes and preventing scope creep, monitoring project cost spend against planned budget, monitoring project schedule against project schedule baseline, using Earned Value Management or similar tools for managing the project baseline, and using scheduling and resource management tools.*	PREPA is using Asset Suite software to manage their contracts. Some form of scope monitoring and control with different authority levels is in place to review scope changes. There is no evidence of PREPA using a WBS/CBS to breakdown the overall project scope into components for tracking and monitoring. Cost management is done using Excel by comparing actuals to budget and is done by PMO. Progress actuals are collected monthly through contractor monthly progress and invoicing documents. There is no physical work progress monitoring as indicated by PREPA. There is no cost baselining vis-a-vis the schedule in the absence of proper project scheduling software. Project cost monitoring is done by financial specialists and the data is provided to the PM about the remaining balance. Cashflow curves are provided by the contractor. A contingency is included in the budget. Cost reports are in Excel. For very large and complex projects, this method will be too slow and not in real time. Scheduling is done using an Excel template at the planning stage within PREPA for high level milestones. More detailed schedules are requested from EPC contractors once they are awarded the contract. There is no proper PM scheduling software. Excel does not lend itself to the rigor and requirements for proper project scheduling, tracking, and forecasting. Excel is used as the primary software tool. Resource management and control are done by the contractors for their work. PREPA manages resource oversight via cost control. PMs are managing internal resources only.
XIV-3 **Estimating** *The extent to which project controls can conduct project task materials and other expense estimating, so that various classes of project estimates can be developed. Availability of historical estimates.*	PREPA does Class 1 (+/-10%), Class 2 and Class 3 estimates which are done by the PM based on their previous experience. Cost baselines are not linked to the schedules. Cost estimates are done by the PM and may take a few hours to up to three weeks. PREPA's criteria are that cost estimates must be reasonable, based on previous historical records and competitive with the market rate. The PM prepares the executive summary, based on the estimates. Construction estimates are a basic one-page summary and are done by the PM. A project estimate example binder was requested from PREPA and has not yet been received.
XIV-4 **Project Forecasting & Reporting** *The extent to which project costs and timelines are tracked and monitored. This includes project*	PREPA uses internally developed PM KPI dashboards that are prepared in Excel worksheets and use copy and paste methodology for data collection. There is no IT system forecasting tool in use. Excel is used with manually calculated Remaining to Spend (RTS) as the forecasting method. Schedule and cost variances are also reported to management.

Gap Assessment

Sub-Focus Areas	Observations & Contributors
forecasts that are developed to reflect the current project status. Preparation of project progress and analysis, cost and schedule reports for management review and information.	

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XIV-1 Document Control *The extent to which a computer-based project document management system exists for saving, managing and retrieving project documents. The use of an IT system for document generation, tracking and monitoring of approvals.*	A proper Capital Programs document control system is required that manages regulatory communications, external stakeholder communications, internal stakeholder communications, internal approvals, funding approvals, libraries of communications, reports, and records.	Department level gap
XIV-2 Scope, Cost & Scheduling Control *The extent to which a project control function exists for: tracking and monitoring scope changes and preventing scope creep, monitoring project cost spend against planned budget, monitoring project schedule against project schedule baseline, using Earned Value Management or similar tools for managing the project baseline, and using scheduling and resource management tools.*	A complete project management software suite consisting of scheduling, cost baselining, scope, WBS, cost tracking and forecasting functions is missing as PREPA does these activities using an Excel based tool.	SRP Candidate (Priority)
XIV-3 Estimating *The extent to which project controls can conduct project task materials and other expense estimating, so that various classes of project estimates can be developed. Availability of historical estimates.*	PREPA does not have a proper estimating team within PMO as estimating is being managed by the PMs. A proper estimating team is required. Estimates cannot be prepared by the Project Manager alone. There may not be any regulatory oversight on PMO estimates unless this function resides within PREPA PMO itself.	SRP Candidate
XIV-4 Project Forecasting & Reporting *The extent to which project costs and timelines are tracked and monitored. This includes project forecasts that are developed to reflect the current project status.* *Preparation of project progress and analysis, cost and schedule reports for management review and information.*	A proper IT based project cost monitoring and forecasting tool is missing. A complete project management software suite consisting of scheduling, cost baselining, scope, WBS, cost tracking and forecasting is missing as PREPA does these activities using an Excel tool.	Department level gap

CAPITAL PROGRAMS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIV-1 Document Control *The extent to which a computer-based project document management system exists for saving, managing and retrieving project documents. The use of an IT system for document generation, tracking and monitoring of approvals.*		X			
XIV-2 Scope, Cost & Scheduling Control *The extent to which a project control function exists for: tracking and monitoring scope changes and preventing scope creep, monitoring project cost spend against planned budget, monitoring project schedule against project schedule baseline, using Earned Value Management or similar tools for managing the project baseline, and using scheduling and resource management tools.*		X			
XIV-3 Estimating *The extent to which project controls can conduct project task materials and other expense estimating, so that various classes of project estimates can be developed. Availability of historical estimates.*	X				
XIV-4 Project Forecasting & Reporting *The extent to which project costs and timelines are tracked and monitored. This includes project forecasts that are developed to reflect the current project status. Preparation of project progress and analysis, cost and schedule reports for management review and information*		X			

Gap Assessment

XV. Change Management

Evaluation Framework

The Change Management Focus Area consists of four sub-focus areas that define an effective change management process. The practices and disciplines that underlie these sub-focus areas apply generally to capital projects.

- XV-1 Identification
- XV-2 Change Process
- XV-3 Issue Logs
- XV-4 Decision Registers

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XV-1 Identification *Who and how is a change to a project identified? What constitutes the classification as a change (e.g., scope, cost, time, quality)? Who receives the notification of change?*	Changes to the schedule, cost and scope are communicated to the PM by external contractors or others. Changes are discussed with the Contracts Manager and then go up to higher levels of authority for review and approval. Changes are identified by the contractor or by PREPA and communicated to PREPA PMO for processing.
XV-2 Change Process *How is the notification of a change handled?* *The extent to which the utility establishes a clear process to manage the change by identifying, analyzing, evaluating and accepting or rejecting changes.* *Is there a PMO process on how to manage project changes? Who is authorized to approve the changes to a project? Are changes managed electronically?*	There is a change management process in PREPA PMO, and it is tracked using Excel, Oracle or Asset Suite depending on the type of change. It is not clear what authority is granted for change management at different management levels. For PMO, changes go through the PMO Project Change Procedure promptly. The financial authorities are documented in PREPA's Rules for Approval Levels of Documents. Cost changes of projects approved by the governing board go back for their authorization, projects with changes in cost and time over 20% require the authorization of the CEO. All changes must comply with the authorization process as defined in the procedure for the Procurement of Goods and Services.
XV-3 Issue Logs *The extent to which the utility maintains an effective electronic system of issue logs and a record of changes linked to the issue logs.*	The PMO tracks issues and changes within the PMO Project Change Log. Each PM records the changes in spreadsheet tools and all documentation is digitally saved. The PM is responsible for managing and tracking all project changes. PREPA uses Asset Suite to issue, approve and record the purchase orders, contracts and changes. The user or the Project Engineer are the originators. PREPA PM and PMO log all changes manually.
XV-4 Decision Registers *Extent to which the utility maintains a log of all issues, changes and the decisions linked to them.*	All project changes including their approvals or rejections are tracked within the project's change log. Additionally, all changes meeting the threshold of the PMO Project Change Procedure will require formal change requests with the documented change, risks, issues, notifications, and approvals/rejections. The Decision Register is part of the Asset Suite approval process. It is done electronically but currently requires memos and documents that are done manually. All decisions are subject to internal and external audits. Most of the external reporting, when required, requires PREPA's CEO approval and submission to Legal.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XV-1 Identification *Who and how is a change to a project identified? What constitutes the classification as a change (e.g., scope, cost, time, quality)? Who receives the notification of change?*	PREPA has a Change Control Process which needs to be rationalized per decision making/financial authority. Changes that impact the project schedule and KPIs within +/-10% should be within PMs authority in order to drive and control the project. Changes beyond +/-10% range should require higher authority approvals.	Department level gap
XV-2 Change Process *How is the notification of a change handled?* *The extent to which the utility establishes a clear process to manage the change by identifying, analyzing, evaluating and accepting or rejecting changes.* *Is there a PMO process on how to manage project changes? Who is authorized to approve the changes to a project? Are changes managed electronically?*	A change management authorization and approval matrix need to be redefined if the T&D projects are to meet their scope, time and cost targets.	Department level gap
XV-3 Issue Logs *The extent to which the utility maintains an effective electronic system of issue logs and a record of changes linked to the issue logs.*	No project specific issue logs were observed. Issues are brought up for addressing and managed by the Senior Project Manager as a whole.	Department level gap
XV-4 Decision Registers *Extent to which the utility maintains a log of all issues, changes and the decisions linked to them.*	No project specific decision registers are maintained. Decisions are recorded and logged at a combined level, but project specific decision registers are not maintained.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XV-1 Identification *Who and how is a change to a project identified? What constitutes the classification as a change (e.g., scope, cost, time, quality)? Who receives the notification of change?*			X		
XV-2 Change Process *How is the notification of a change handled?* *The extent to which the utility establishes a clear process to manage the change by identifying, analyzing, evaluating and accepting or rejecting changes.* *Is there a PMO process on how to manage project changes? Who is authorized to approve the changes to a project? Are changes managed electronically?*		X			

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XV-3 Issue Logs *The extent to which the utility maintains an effective electronic system of issue logs and a record of changes linked to the issue logs.*			X		
XV-4 Decision Registers *Extent to which the utility maintains a log of all issues, changes and the decisions linked to them.*			X		

XVI. Construction Management

Evaluation Framework

The Construction Management Focus Area consists of five sub-focus areas that define an effective construction management process.

- **XVI-1** Organization
- **XVI-2** Resourcing & Scheduling
- **XVI-3** Process
- **XVI-4** Culture & Competencies
- **XVI-5** Current Practices (Worker Productivity & Overtime)

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XVI-1 Organization *The extent to which the utility has a: Construction Management department, strategy and vision to manage the construction and commissioning portion of the Capital Program. Specifically, review the organization's construction management maturity in the execution of the Capital Programs' projects.*	PREPA does not have a Construction Management department. Construction is done by a main external contractor. Construction oversight is within the PMO group through PMs; however, Construction Management supervision and monitoring is done by another contractor hired to supervise the work of the main contractor. Site quality assurance is basic and is managed through the Senior Manager Quality inside PREPA PMO. Contractor oversight is by the PMs within PMO. Construction and commissioning are also done by external contractors. PREPA does have some internal field personnel. However, when and where they are used is unknown.
XVI-2 Resourcing & Scheduling *The extent to which the utility establishes a clear resource planning and scheduling system for assigning resources to manage the construction and commissioning of Capital Programs.*	PREPA does not do this, as major work is performed externally. Internal employees may be scheduled when required, however details are unknown. It is unknown what work internal personnel perform on T&D infrastructure. Currently, PREPA PMO does not have this function.
XVI-3 Process *The extent to which the utility maintains an effective construction and commissioning management process including electronic platforms, forms, procedures, templates, checklists, etc.*	Since construction is by external contractors, they are responsible for developing their respective processes to manage their work. PMO is working on developing project governance, process, procedures, etc. For this they have hired an external consultant for guidance and direction. PREPA does not have any design or construction standards. The certification of completion of construction deliverables is managed by the PM and Contract Manager and they certify substantial and final completion based on progress reports and invoicing and feedback received from the main contractor and the construction monitoring contractor. PREPA does not lead the execution of work and only monitors progress through the external contractors assigned to do so.
XVI-4 Culture & Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully perform construction and commissioning management. The extent to which Information Technology is used in managing this work.*	PREPA does not have construction management resources as is evident using external consultants to manage construction supervision. There is a shortage of resources resulting in PREPA managing construction and commissioning work through external contractors. Skillsets to manage construction and commissioning may be in short supply in PREPA now. There is also a lack of IT tools to manage construction projects in the field.

CAPITAL PROGRAMS

Gap Assessment

Sub-Focus Areas	Observations & Contributors
XVI-5 Current Practices (Worker Productivity & Overtime) *The extent to which the utility actively manages the activities that detract from worker productivity (e.g., decreasing windshield time, remote reporting, applying design and construction standards, and addressing incoherent union work rules). Related to this is the focus on managing overtime, ensuring worker productivity is improved, commensurate to the added hours expended.*	Low morale may be impacting worker productivity. There is no data on construction worker productivity and efficiencies within PREPA PMO. There appears to be no metrics available within PREPA to measure productivity. There may be logistical challenges to improving productivity. Overtime (OT) depends on the necessity of the electrical system in maintaining the service and is reported every 14 days. OT requires prior authorization by the mid- and senior management level. The OT targets are defined for each fiscal year and are included in monthly productivity index reports.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XVI-1 Organization *The extent to which the utility has a: Construction Management department, strategy and vision to manage the construction and commissioning portion of the Capital Program. Specifically, review the organization's construction management maturity in the execution of the Capital Programs' projects.*	An internal construction and commissioning team and management staff is required. No clear supervision, monitoring and control directly by PREPA of construction work.	SRP Candidate (Priority)
XVI-2 Resourcing & Scheduling *The extent to which the utility establishes a clear resource planning and scheduling system for assigning resources to manage the construction and commissioning of Capital Programs.*	PREPA manages projects through external contractors, so there is no need within PREPA for resourcing and scheduling within project controls for internal execution crews about construction and commissioning work.	SRP Candidate (Priority)
XVI-3 Process *The extent to which the utility maintains an effective construction and commissioning management process including electronic platforms, forms, procedures, templates, checklists, etc.*	Construction and commissioning management processes need to be developed.	SRP Candidate (Priority)
XVI-4 Culture & Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully perform construction and commissioning management. The extent to which Information Technology is used in managing this work.*	PREPA does not have an internal construction and commissioning management team for T&D projects. An IT system to support this function is also needed.	Department level gap
XVI-5 Current Practices (Worker Productivity & Overtime) *The extent to which the utility actively manages the activities that detract from worker productivity (e.g., decreasing windshield time, remote reporting, applying design and construction standards, and addressing incoherent union work rules). Related to this is the focus on managing overtime, ensuring worker productivity is improved, commensurate to the added hours expended.*	There are no worker productivity standards, metrics or data monitoring. There are no systems in place to analyze and improve worker productivity.	Improvement Opportunity

CAPITAL PROGRAMS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVI-1 Organization *The extent to which the utility has a: Construction Management department, strategy and vision to manage the construction and commissioning portion of the Capital Program. Specifically, review the organization's construction management maturity in the execution of the Capital Programs' projects.*	X				
XVI-2 Resourcing & Scheduling *The extent to which the utility establishes a clear resource planning and scheduling system for assigning resources to manage the construction and commissioning of Capital Programs.*	X				
XVI-3 Process *The extent to which the utility maintains an effective construction and commissioning management process including electronic platforms, forms, procedures, templates, checklists, etc.*	X				
XVI-4 Culture & Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully perform construction and commissioning management. The extent to which Information Technology is used in managing this work.*	X				
XVI-5 Current Practices (Worker Productivity & Overtime) *The extent to which the utility actively manages the activities that detract from worker productivity (e.g., decreasing windshield time, remote reporting, applying design and construction standards, and addressing incoherent union work rules). Related to this is the focus on managing overtime, ensuring worker productivity is improved, commensurate to the added hours expended.*	X				

XVII. Risk Management

Evaluation Framework

The Risk Management Focus Area consists of four sub-focus areas that define an effective risk management process.

- XVII-1 Strategy & Risk Alignment
- XVII-2 Processes
- XVII-3 Information & Technology
- XVII-4 Culture & Competencies

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XVII-1 Strategy & Risk Alignment *The extent to which the utility maintains alignment between its business strategy and categorization prioritization of risk, clarifies roles, responsibilities and accountabilities of risk management, achieves consistency across the organization in assessing risk, establishes risk as a primary driver of day-to-day decisions.*	No risk management processes are in place for projects. It is left to the PMs to manage on their own. There appears to be a risk section at a corporate level however their role in managing project risk is unknown. Risk management roles (e.g., owner, analyst, and end user) do not exist or are not well defined. This has an impact on overall governance regarding risk management, deployment and prioritization of resources, work planning and scheduling, and development of investment and spending portfolios in the strategic sense. This results in a lack of line-of-sight from strategy to project performance improvement. An improperly conceived risk strategy can expose the project to unacceptable levels of risk (e.g., a lack of focused effort on the most critical tasks). There is an overall Risk Management team. See RFI response #8. There are Excel based risk analysis tools. It appears that a general contingency in the 5-10% range is applied on estimates to cover any risks.
XVII-2 Processes *The extent to which the utility establishes a clear linkage between its strategy and risk management strategy/policies, achieves consistency across the organization in identifying, analyzing, evaluating and treating risks, and establishes congruence between documented methodologies and risk-related activities in the field.*	Risk management is addressed at the enterprise level but absent at the PREPA PMO level. Investments are not based on optimizing the trade-off between value and risk mitigation or elimination. Limited use of scenario testing for alternative solutions and/or optimizing the investment portfolio based on varying the value and risk evaluation criteria is done. There is no process in place to apply a risk-based lifecycle process that drives optimum maintenance or asset replacement strategies. Capital investment and O&M spending portfolios are not reflective of a process that optimizes the trade-offs between risk and value. Capital investment and spending decisions are not supported by a holistic portfolio optimization process. Rather, it appears to be entirely reactive to addressing failed equipment and restoring service on a day-to-day basis. There is no use of data to evolve into a condition or risk-based maintenance regimen. Also, there is no procedure for risk identification, management, and mitigation. The PREPA PM is responsible for risk management.
XVII-3 Information & Technology *The extent to which the utility maintains an effective risk management system (i.e., a risk data repository), uses it to track and report inherent and residual risk and puts in place systems and processes to improve risk management data quality.*	Lack of knowledge in newer technologies and their integration with current infrastructure presents operating and safety related risks. There is also a lack of risk identification, risk analysis and contingency analysis tools. There is no centralized risk identification and realized data. It is for the PM to manage the risk in whatever way they can manage. A contingency allowance of 5-10% is available for the project for risk management however the PM does not have any authority for its use. It needs upper management approval which defeats the purpose of risk management for effectively keeping the project on schedule. There is an absence of useful risk related data translated into risk strategies and mitigation through Capital Programs.
XVII-4 Culture & Competencies *The extent to which the skills required to execute the risk management processes are embedded in the organization and a training program exists to ensure sustainability. Further, the extent to which risk management is part of*	There is no focus on risk management. Issues are resolved as they arise. There is lack of a risk identification and mitigation strategy within PREPA, PMO and Project Management. Staffing is scarce for risk management work. Not many risk projects in action. It appears that planning and strategy on actively mitigating risks are not on PREPA's radar.

Gap Assessment

Sub-Focus Areas	Observations & Contributors
the business culture as evidenced by its representation on balanced corporate scorecards, use in making spending and investment decisions, and representation that risk management is an "all-hands" responsibility.	

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XVII-1 Strategy & Risk Alignment *The extent to which the utility maintains alignment between its business strategy and categorization prioritization of risk, clarifies roles, responsibilities and accountabilities of risk management, achieves consistency across the organization in assessing risk, establishes risk as a primary driver of day-to-day decisions.*	Absence of a risk related and value assessment-based Capital Programs strategy which should reduce risk to assets and improve their useful life.	SRP candidate (Priority)
XVII-2 Processes *The extent to which the utility establishes a clear linkage between its strategy and risk management strategy/policies, achieves consistency across the organization in identifying, analyzing, evaluating and treating risks, and establishes congruence between documented methodologies and risk-related activities in the field.*	No proper risk identification, management, processes, procedures, strategies, mitigation, historical records, or analysis tools. PREPA PM is responsible for handling all risk.	SRP candidate (Priority)
XVII-3 Information & Technology *The extent to which the utility maintains an effective risk management system (i.e., a risk data repository) uses it to track and report inherent and residual risk and puts in place systems and processes to improve risk management data quality.*	There is absence of risk data collected from past projects, identified risks and issues, and converting these into Capital Programs to mitigate T&D infrastructure risk. There is an absence of IT risk management and analysis/simulation tools.	Department level gap
XVII-4 Culture & Competencies *The extent to which the skills required to execute the risk management processes are embedded in the organization and a training program exists to ensure sustainability. Further, the extent to which risk management is part of the business culture as evidenced by its representation on balanced corporate scorecards, use in making spending and investment decisions, and representation that risk management is an "all-hands" responsibility.*	There may be a lack of skills and training for risk management for PMs. There is also a lack of experience in managing risk with PMs at the lower level. There is a lack of understanding of risk and its importance in managing projects successfully.	Department level gap

CAPITAL PROGRAMS

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVII-1 Strategy & Risk Alignment *The extent to which the utility maintains alignment between its business strategy and categorization prioritization of risk, clarifies roles, responsibilities and accountabilities of risk management, achieves consistency across the organization in assessing risk, establishes risk as a primary driver of day-to-day decisions.*	X				
XVII-2 Processes *The extent to which the utility establishes a clear linkage between its strategy and risk management strategy/policies, achieves consistency across the organization in identifying, analyzing, evaluating and treating risks, and establishes congruence between documented methodologies and risk-related activities in the field.*	X				
XVII-3 Information & Technology *The extent to which the utility maintains an effective risk management system (i.e., a risk data repository) uses it to track and report inherent and residual risk and puts in place systems and processes to improve risk management data quality.*	X				
XVII-4 Culture & Competencies *The extent to which the skills required to execute the risk management processes are embedded in the organization and a training program exists to ensure sustainability. Further, the extent to which risk management is part of the business culture as evidenced by its representation on balanced corporate scorecards, use in making spending and investment decisions, and representation that risk management is an "all-hands" responsibility.*	X				

XVIII. Contract Administration

Evaluation Framework

The Contract Administration Focus Area consists of four sub-focus areas that define an effective contract administration process.

- XVIII-1 Processes
- XVIII-2 Contract Change Control
- XVIII-3 Project Completion Certification
- XVIII-4 Contract Closeout

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XVIII-1 **Processes** *The extent to which the utility establishes clear processes to administer contracts, changes, contract orders, issue payments, monitor status and certify project deliverables.*	This function resides within the PREPA PMO. These need to be segregated and independently reported to a function outside of the PMO control. There are currently some processes and templates being used, however PREPA is in the process of developing modern and additional governance, processes, procedures, standards, and templates. Compliance to deliverables, reports and timeline commitments is tracked and monitored manually or IT based through Oracle Asset Suite. There is a simple and basic process available within PMO group to manage contract changes. PREPA has different types of contracts available per government rules and funding requirements which govern what type of contracts can be utilized. The duration for the contract process is highly variable. There needs to be benchmarking and set timelines from request to award to manage the schedule properly and meet in-service commitments.
XVIII-2 **Contract Change Control** *The extent to which the utility maintains an effective contract change control mechanism with a database and tracking of why are changes accepted or rejected and who makes those decisions.*	PREPA PMO has basic contract change control set up. Procurement, contracting, and invoice management are controlled within the PREPA PMO. Changes are referred to a committee/PREPA Review Board which reviews and decides.
XVIII-3 **Project Completion Certification** *The extent to which a process is available to monitor and verify substantial completion, monitor any punch list items and certify final project completion.*	PREPA does not have an established process in place to manage and administer the certification of project construction or material/services for certifying contract completion. There are no construction management processes, procedures, templates, checklists or agendas to manage the construction completion certification process. PREPA receives feedback from construction contractors and supervising consultants whether work is completed and invoiced and issues substantial and then final completion. PREPA does not actively monitor work during construction.
XVIII-4 **Contract Closeout** *The extent to which a process is available to monitor and verify all contract purchase orders have been completed, paid and closed out as part of project closeout activities.*	There is a process in place to close out projects and contracts. This is also required as part of the Project Closeout and Final Project Reports processes under PREPA PMO. PREPA is in the process of developing new processes and this should be addressed there.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XVIII-1 Processes *The extent to which the utility establishes clear processes to administer contracts, changes, contract orders, issue payments, monitor status and certify project deliverables.*	PREPA PMO is doing procurement and contract administration on projects through the PMs. There are no independent procurement and contract administration functions.	Improvement Opportunity
XVIII-2 Contract Change Control *The extent to which the utility maintains an effective contract change control mechanism with a database and tracking of why changes are accepted or rejected and who makes those decisions.*	This process is currently managed closely within PREPA PMO. This should be a separate and independent function.	Improvement Opportunity
XVIII-3 Project Completion Certification *The extent to which a process is available to monitor and verify substantial completion, monitor any punch list items and certify final project completion.*	A project completion verification process, including checklists, punch lists, signoffs, and progress reports, is required.	Improvement Opportunity
XVIII-4 Contract Closeout *The extent to which a process is available to monitor and verify all contract purchase orders have been completed, paid and closed out as part of project closeout activities.*	Currently PREPA PMO executes these functions and develops processes to match the function. The processes need to be developed independently by Procurement & Contracting.	Improvement Opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVIII-1 Processes *The extent to which the utility establishes clear processes to administer contracts, changes, contract orders, issue payments, monitor status and certify project deliverables.*		X			
XVIII-2 Contract Change Control *The extent to which the utility maintains an effective contract change control mechanism with a database and tracking of why are changes accepted or rejected and who makes those decisions.*		X			
XVIII-3 Project Completion Certification *The extent to which a process is available to monitor and verify substantial completion, monitor any punch list items and certify final project completion.*		X			
XVIII-4 Contract Closeout *The extent to which a process is available to monitor and verify all contract purchase orders have been completed, paid and closed out as part of project closeout activities.*		X			

XIX. Project Reporting

Evaluation Framework

The Project Reporting Focus Area consists of three sub-focus areas that define an effective system of preparing and delivery project performance reports.

- **XIX-1** Process
- **XIX-2** Data Collection & Analysis
- **XIX-3** Communication

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XIX-1 Process *The extent to which the utility has an established process for data collection and reporting of progress and performance in order to schedule, cost and scope baselines for projects.*	PREPA PMO has a process in place to develop project reports at a very basic level of detail as are required by different funding source authorities. PREPA is using a combination of Excel, Oracle, and Asset Suite to pull data for these reports. Reports are developed in Excel primarily using copy and paste techniques. There is a lack of an IT software platform available for direct project reporting linked to the project management software suite.
XIX-2 Data Collection & Analysis *The extent to which the utility exercises proper data governance, has systems to facilitate the conversion of data to actionable information, and enables the data and resulting performance metrics and KPIs present a comprehensive view of project performance.* *The extent to which the utility has the skills and competencies necessary to convert the data to information and subsequent actionable metrics or KPIs.*	This is based on the collection of progress reports from contractors' progress updates and invoicing actuals combined to report actuals vs budget. This is done by the monitoring contractor to monitor the work and progress of main contractor. Today, the PMO tracks project status through a project status update log and meetings. The sources are the PM, team members and end user for scope and schedule. The sources are the financial system and invoice tracker for the budget reports. As part of the PMO, the assistance of PMP consultants to measure project progress and performance and presenting the results monthly in a dashboard to the stakeholders is currently being incorporated. TheKPI dashboard is based on a collection of progress update from internal as well as contractor sources. This does not reflect real time data inputs but is Excel based using manual collection and input of data to create the KPI report. The utility does understand where they want to be and have started looking at implementing MS Project online. They are currently at a very basic level, given the absence of any scheduling software tool with such functionality embedded. They do use different scenarios to define the baseline schedule and there are recovery schedules in case of delay or situations where the project is needed in a shorter time.
XIX-3 Communication *The extent to which the utility has identified internal and external customers for the dissemination of project performance and progress reports.*	Project progress reports are communicated to the Project Manager, Project Director, PREPA Board and the contractors. Reports are issued bi-monthly and monthly. Reports are generally weekly, semi-monthly, monthly, quarterly to FOMB, PREB, P3 and are generally approved by the PMO. PMO also engages frequently with external stakeholders, as needed. External reporting is by PREPA PMO and this pertains to projects, Finance B2A, restructuring, reorganizations, etc.

CAPITAL PROGRAMS

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XIX-1 Process *The extent to which the utility has an established process for data collection and reporting of progress and performance in order to schedule, cost and scope baselines for projects.*	Project reporting to external stakeholders should be through Regulatory and Finance only and not through the PMO.	Department level gap
XIX-2 Data Collection & Analysis *The extent to which the utility exercises proper data governance, has systems to facilitate the conversion of data to actionable information, and enables the data and resulting performance metrics and KPIs present a comprehensive view of project performance.* *The extent to which the utility has the skills and competencies necessary to convert the data to information and subsequent actionable metrics or KPIs.*	PREPA has a manual system for data collection through external contractors for progress reporting purposes. Data collection and processing are not automated.	SRP Candidate
XIX-3 Communication *The extent to which the utility has identified internal and external customers for the dissemination of project performance and progress reports.*	PREPA has already established lines of communication with stakeholders through PMO but this should be restricted to go through Regulatory and Finance only.	Improvement Opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIX-1 Process *The extent to which the utility has an established process for data collection and reporting of progress and performance in order to schedule, cost and scope baselines for projects.*			X		
XIX-2 Data Collection & Analysis *The extent to which the utility exercises proper data governance, has systems to facilitate the conversion of data to actionable information, and enables the data and resulting performance metrics and KPIs present a comprehensive view of project performance.* *The extent to which the utility has the skills and competencies necessary to convert the data to information and subsequent actionable metrics or KPIs.*	X				
XIX-3 Communication *The extent to which the utility has identified internal and external customers for the dissemination of project performance and progress reports.*			X		

XX. Project Data Binder

Evaluation Framework

The Project Data Binder Focus Area consists of three sub-focus areas that define an effective project data management system.

- **XIX-1** Critical Project Information
- **XIX-2** Project Decision Registers
- **XIX-3** Final Project Completion Reports

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XIX-1 Critical Project Information *The extent to which the utility has an established process for data collection and reporting of critical information in a project which have a direct bearing on success or failure of a project to meet its cost, schedule and scope baselines. Critical information would include lessons learned, risks, issues, events, natural calamities, emergencies, approvals, rejections, decisions, stakeholders, etc.*	The PMO has a knowledge management site and folder structure. The PMO houses relevant project documents and artifacts in its knowledge management site. Subjects in a project file, such as bid process, contract, RFIs and RFI logs, submittals, and submittal logs, amendments, schedules, invoices, reports, meeting minutes, etc., are also digitally saved separately for ease of access. Microsoft Online and SharePoint are available to house project information. All information is permanently stored in PREPA's servers. Within PREPA PMO this responsibility falls to the Sr PMs and the document control personnel.
XIX-2 Project Decision Registers *The extent to which the utility records each issue requiring a management decision for approval/rejection along with timelines that has a direct bearing on project success or failure.*	PREPA does not have a system of recording all project specific decisions (approval or rejection) coming from risks, issues, contracts, management, directions, stakeholder needs, etc.
XIX-3 Final Project Completion Reports *The extent to which the utility has identified and developed a single reference document/report at the completion of the project containing all relevant and pertinent information for the project at the completion of the project.*	PREPA PMO develops all Final Project Reports.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XIX-1 Critical Project Information *The extent to which the utility has an established process for data collection and reporting of critical information in a project which have a direct bearing on success or failure of a project to meet its cost, schedule and scope baselines. Critical information would include lessons learned, risks, issues, events, natural calamities, emergencies, approvals, rejections, decisions, stakeholders, etc.*	PREPA PM is responsible for these activities to be completed at the end of the project. There is a need to clearly define the standards, expectations and the minimum data and information that must be part of the project closeout binders.	Department level gap

CAPITAL PROGRAMS

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XIX-2 Project Decision Registers *The extent to which the utility records each issue requiring a management decision for approval/rejection along with timelines that has a direct bearing on project success or failure.*	There are no project specific decision records.	Improvement Opportunity
XIX-3 Final Project Completion Reports *The extent to which the utility has identified and developed a single reference document/report at the completion of the project containing all relevant and pertinent information for the project at the completion of the project.*	Develop final project reports in coordination with Regulatory and Finance for external stakeholders and this is missing currently as PREPA PMO produces these reports.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIX-1 Critical Project Information *The extent to which the utility has an established process for data collection and reporting of critical information in a project which have a direct bearing on success or failure of a project to meet its cost, schedule and scope baselines. Critical information would include lessons learned, risks, issues, events, natural calamities, emergencies, approvals, rejections, decisions, stakeholders, etc.*		X			
XIX-2 Project Decision Registers *The extent to which the Utility records each issue requiring a management decision for approval/rejection along with timelines that has a direct bearing on project success or failure.*	X				
XIX-3 Final Project Completion Reports *The extent to which the utility has identified and developed a single reference document/report at the completion of the project containing all relevant and pertinent information for the project at the completion of the project.*			X		

IV. Customer Service

Gap Assessment

Customer Service

Contents

Gap Assessment

General Approach

The Customer Service gap assessment includes the following main areas of focus, as shown in the tables below:

General Management: There are ten management focus areas that generally apply to all departments.

Core Business: There are nine core business focus areas specifically relating to Customer Service.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting & Cost Performance
III	Leadership Management
IV	Process Efficiency & Effectiveness
V	Employee Training & Development
VI	Workforce Management
VII	Management Systems & Technology
VIII	Performance Metrics & Continuous Improvement
IX	PREPA Culture & Momentum
Core Business Focus Areas	
XI	Asset Management
XII	Program/Project Planning & Execution
XIII	Technology Operations
XIV	Technology Operations Practices
XV	Risk & Compliance Management
XVI	Service Solution Development & Deployment
XVII	Crisis Management
XVIII	Ancillary Support
XIX	Enterprise Technology

We applied the following standard methodology to the Customer Service General Management and Core Business Assessments, thus forming the bases for identifying gaps.

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus & Sub-Focus Areas

The ten **General Management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas	
I	**Organization Design Effectiveness**	I-1 Span of Control I-2 Clarity on Management & Supervisory Roles	I-3 Ratio of Administrative to Direct Workers I-4 Impact of Protected Patronage Workers
II	**Budgeting & Cost Performance**	II-1 Actual Expenditures as Percentage of Budgeted II-2 Impact of Emergent Issues on Budgets II-3 Unit Cost/Productivity Management	II-4 Overtime & Contractors Management II-5 Direct and Allocated Indirect Cost Management
III	**Leadership Management**	III-1 Qualifications & Experience III-2 Accountability	III-3 Ability to Deliver Results III-4 Inter- & Intra-Organization Collaboration
IV	**Process Efficiency & Effectiveness**	IV-1 Potential Risks to Post-Commencement IV-2 Process Familiarity by all Stakeholders	IV-3 Process Compliance Management IV-4 Efficiency of Overall Process Flow
V	**Employee Training & Development**	V-1 Training Budgets & Program Effectiveness V-2 Ability to Cross-Train as Personnel Development Path	V-3 Skills Assessment & Personnel Training Plans V-4 Demographics & Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1 Effectiveness of Current Workforce Management Processes	VI-2 Time Charging & Productivity Tracking & Reporting
VII	**Management Systems & Technology**	VII-1 Process Automation VII-2 Adaptability to New Systems & Technology	VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics & Continuous Improvement**	VIII-1 Recognition of Critical Performance Metrics VIII-2 Performance Metric Collection, Validation & Reporting VIII-3 Root Cause & Trend Analysis	VIII-4 Instances (or Lack) of Data-Driven Management Initiatives VIII-5 Recent Performance Trends
IX	**PREPA Culture & Momentum**	IX-1 Resistance (Active or Passive) to LUMA Management IX-2 Employee Morale/Excitement about LUMA	IX-3 Employee Empowerment/Action Orientation IX-4 Timeframe to Improve Performance IX-5 Impact of Organization Silos
X	**Legal & Regulatory**	TBD	

I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Focus Area consists of four sub-areas (core and enabling areas that define an effective organization design):

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Observations & Contributors

Sub-Topic Areas	Observations & Contributors
I-1 **Span of Control** *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	▪ **Span of control:** The Customer Service department is organized in into four divisions (Customer Service, Metering and Wholesale, Commercial Operations/Regional Offices, and Theft) plus an administrative team. The spans of control within the department are well recognized within each division and between management levels. PREPA employees and management do not often deviate from their roles and thus spans are not likely to deteriorate. Team members are clear on activities and functions and adhere to the duties that are covered within a specific area of the Customer Service (CS) department. ▪ **Average span of control:** The average span of control in the CS department is five (for each both the director level and manager level). This span is not mandated or regulated. It appears to be coincidental and correlated with the duties of their direct reports. Span breakdown: Department-5, CS division-5, Metering division-4, Commercial division -6 and Theft-5. ▪ **Appropriate responsibilities:** Span numbers are correlated to the duties of each manager and appear to be correct in the current structure. There is agreement that there is an opportunity for reorganization. Growth of span (increased managerial duties) would be overwhelming in current structure. Clarity of roles is also needed. ▪ **Potential for reorganization:** There is a potential to move or reclassify midlevel managers. In some cases, managers are doing additional duties outside of their specific job description or above the specific position. This needs to be evaluated to determine if positions are appropriately level set. Administrative (admin) positions are particularly conducive to reorganization as they are not well utilized for the whole department. Most admin only work for their direct manger and not the department or division as a whole. ▪ **1-on-1 reporting:** There are very few 1-on-1 reporting arrangements in the CS division (outside of admin positions).

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Gap Assessment

Sub-Topic Areas	Observations & Contributors
I-2 **Clarity on Management & Supervisory Roles** *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	▪ **Manager interface:** Management personnel of each division have formal weekly meetings with their direct reports which is consistent across the department and lays a foundation for communication. In addition, there are daily informal interactions between the managers and direct reports. It is not common for there to be interactions two or three levels down. Based on interviews with division heads, there appears to be an effective communication and feedback loop in the CS department, though cross-divisional communication could be improved. ▪ **Opportunities for reorganization:** The CS department (and its four divisions) has a history of reorganization. Under the current director there has been a reorganization; based on interviews both the director and division heads see a need to reevaluate and possibly reorganize the whole directorate or at least some of the departments. Human Resources (HR) and union policies make reorganization very difficult. ▪ **Union job classifications:** Union positions have very specific rules and structures that restrict how the organizations can utilize, manage and compensate union employees. Union employees are in all levels of the organization, but mobility from one department to another is complicated. Current union rules do not allow for 1-on-1 performance evaluation which has created a difficult managerial environment for supervisors. ▪ **Assignment and promotion rational:** Job assignments and promotions are highly structured based on HR and union rules. All positions must be publicized internally, and all qualified candidates can apply. Promotions are only allowed for certain positions that have levels (grades). Employees have one of three classifications: Union, Career (Tenured) and Patronage (empleados de confianza).
I-3 **Ratio of Administrative to Direct Workers** *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	▪ **Assignment of roles:** Administrative roles are selected directly by a manager or assigned. These are patronage ("at-will" and confianza) or tenured employees. Review of the organizational charts indicates that there are significant administrative roles, however most are vacant and will not be filled due to hiring freeze. Although vacant positions place a burden on current staff, interviews suggest that many of the positions are unnecessary. ▪ **Utilization of admin:** Administrative staff are expected to handle many tasks which can include emails, calls, reporting and communications. Some admins are asked to represent managers at meetings and to handle the significant reporting burden to the government. Many admin roles are poorly defined and "squishy." Admins work directly for their managers and are often underutilized at the department level. There is a potential to pool resources and provide reinforcement to the managers. ▪ **Manager's ability:** Ability of managers to handle their own email and reporting varies significantly. Some admins do manage emails and reporting for their supervisors, and there is agreement that some tasks could be reduced with increased technology and better reporting systems. ▪ **Training:** There is no formal training, so admin staff members are mostly trained by their managers. Several admins have mentioned that training on software, processes and licensing is available, though the extent of these options is still unclear.
I-4 **Impact of Protected Patronage Workers** *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	▪ Patronage employees are a significant part of the CS workforce, particularly at the Executive and Executive assistant level. These ***empleados de confianza*** exist at the executive level and some division levels. Most patronage employees have direct reporting responsibilities to the government. More investigation on specific regulations for empleados de confianza is needed. ▪ **Post-election changes:** CEO was the most significant patronage change after the last election. It does not appear that the election had significant effect on the CS department. Although the director is a patronage employee, she was not replaced, and her duties were not affected. Most employees know that the government can make changes at any time and that builds an environment of instability and mistrust. ▪ **Treatment of patronage:** The department does not differentiate patronage vs. non-patronage employees. It is currently unclear how patronage positions are added or removed from the department, though it does appear that there is some discretion by the director to add patronage admin staff at will. ▪ **Dismissal for cause:** We have not been able to discern a dismissal for cause in the department — more investigation is necessary.

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Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	▪ **Appropriate responsibilities:** The organization and its spans of controls in this department are correlated to the duties under each division. However, there is a need to reevaluate the roles and positions and determine a more effective reporting structure. For example, budgeting, which is currently under the CS division should probably move up to budgeting for the entire department, not just one division. ▪ **Evaluation of current positions/roles:** There is a need to evaluate lower and midlevel supervisory positions and administrative positions. Many managers are doing additional duties or working extra hours to fill in for vacant positions, and many vacant potions are not necessary or are redundant. Review positions to ensure they are appropriately level set.	Department level gap Department level gap
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	▪ **Cross division communications:** Communication and reporting practices within each division are well established, understood and followed. There is a structure of both formal and informal meetings that provides effective communication and a feedback loop. However, there is a lack of communication between divisions. A formal communications protocol will provide cross divisional communication that increases the overall effectiveness of the CS department. ▪ **Need for reorganization:** There is a clear need for revaluation of the department as a whole and within each division. Although the department is functional as is, efficiencies are not optimized. Job descriptions need to be evaluated, changed or created to ensure each position is well defined and appropriate to the organizational structure. ▪ **Adjustment of union performance monitoring:** There currently are significant performance issues that cannot be addressed due to union rules under collective bargaining agreements (CBAs). Supervisors need the ability to track performance and train against performance issues. Changes in the CBA agreement(s) to allow for performance reviews are necessary to ensure and maintain quality standards.	Department level gap Priority Priority
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*	▪ **Increase utility of administrative staff:** Administrative staff currently work directly for a manager or supervisor, with few cross managerial, division or department duties. Therefore, there is no redundancy or backup when an admin is out of the office. Restructuring administrative roles to ensure better redundancy would mitigate the burden on managers to cover reporting and administrative duties and increase the overall efficiency of the department.	Improvement opportunity
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	▪ **Removal of patronage classification:** Patronage positions should (and will) be removed from the employee structure of the new company, as it will no longer be a government entity.	Priority

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Areas					
I-1 **Span of Control** *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*		X			
I-2 **Clarity on Management & Supervisory Roles** *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*			X		
I-3 **Ratio of Administrative to Direct Workers** *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*		X			
I-4 **Impact of Protected Patronage Workers** *Existence and economic impact of patronage positions to the organization.*	X				

II. Budgeting & Cost Performance

Evaluation Framework

The Budgeting & Cost Performance Focus Area consists of five sub-areas that define effective budgeting and cost performance:

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost/Productivity Management
- II-4 Overtime & Contractors Management
- II-5 Direct & Allocated Indirect Cost Management

Key observations and contributors, identified gaps and scorecard for each sub-focus area follows:

Observations & Contributors

Sub-Focus Area	Observations & Contributors
II-1 **Actual Expenditures as Percentage of Budgeted** *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	▪ **Budget snapshot:** Over the last four years, the operating expense budget has been in the range of $103–$105.5M. Prior to that, the 2015–16 budget was ~$117M. The CS department has been operating under budget for O&M (operations & management) over the last 5 years with variances ranging from 1.49% to 43.74%. Emergency funds were applied in 2017–18. Tracking for O&M is monthly but lagging and lacking detail needed to manage effectively without request to finance for additional details. The Capital Budget is now Necessary Maintenance Expense (NME) due to PREPA's current financial position. This budget is not tracked closely but is available upon request. The department's practice has been to begin requesting and reviewing around midpoint of the budget year (Jan–Feb). Threshold for justification of variances is not clearly defined or governed; it appears to be discretionary. ~15% appears to be trigger point. ▪ **Annual budget process**: The Cost Control Supervisor coordinates the Operational Expense Budget and Capital Investment Budget for the CS department. ▪ **Operational Expense budget:** Prepared annually, usually by February, and gets sent to the Finance Department for review and approval, then is passed on to the FOMB for review and approval. FOMB has oversight of all PREPA budgets. Either the Finance department or FOMB (financial oversight & management board) can adjust the CS proposed budget. Budget is based on previous year's fiscal expenses, meaning that each division head, supervisor and admin work from their 725 report (i.e., historical budgeting and expenses report – actual vs. budget) to prepare the next fiscal year's budget. ▪ **Budget/contract trends** – Call Center contracts ($5M total; 2 contracts) are budgeted at the corporate level (not included in the Customer Service budget). Salary expenses and budgets have decreased due to retirements/resignation, and overtime budgets have seen a significant increase due to retirements and the inability to backfill or hire to fill vacancies. While there is budget for these vacancies, there are ongoing government restrictions on hiring from outside.
II-2 **Impact of Emergent Issues on Budgets** *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	▪ **Unexpected and emerging (i.e., hard to plan) budget items:** e.g., pandemic, storms, strikes and labor disputes. When strikes displace the normal workforce or when natural disasters create more work, contracted workers must often be hired. One lesson includes building contracted workers into the budget (e.g., Maria contracted additional meter readers); however, this leads to an inherent risk of unused budgets. The CS budget reflects traditional CS operations, but if there are extraordinary circumstances such as a natural disaster, PREPA can draw on emergency funds outside of the normal budget to address needs (e.g., overtime and equipment). Emergency accounts can only be tapped if a national emergency is declared; other significant storms may create increased needs without the budget to support it.

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Gap Assessment

Sub-Focus Area	Observations & Contributors
II-3 **Unit Cost/Productivity Management** *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	▪ **Unit cost management:** There is little to no evidence of unit cost and productivity management to support budgeting decisions. Instead, budgeting decisions rely heavily on prior budgets with some input and assessment of upcoming needs. These decisions generally do not examine unit cost expenses and productivity data points.

II-4 **Overtime (OT) & Contractors Management**
Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.
	▪ **Rates**: Admin and supervisor overtime rates differ.
	  ▪ Admins charge at 1.5 times straight time.
	  ▪ Supervisors charge at 1.0 straight time rate.
	▪ There has been a significant increase in overtime hours due to an inability to replace resources that have retired or resigned. This issue may be offset in part by decreases in the salary budget. However, the budget for overtime has been difficult to determine as evidenced by high variances versus actuals for that category.
	▪ There is an imbalance between what is budgeted for overtime as a stop gap to fill salaried vacancies and what is needed to get work done. For example, ICEE only budgeted $2k per employee and a single special assignment could wipe out the budget for the year.

II-5 **Direct & Allocated Indirect Cost Management** *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ **Capital investment**: The Capital Investment Budget consists of NMEs due to current financial standing. Overhead and holding charges related to capital expenditures are in the 25–30% range (no matter the length of time in warehouse) and seem exorbitant to support operations of storage.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
II-1 **Actual Expenditures as Percentage of Budgeted** *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	▪ **Increased detail and visibility, along with tighter controls and variance governance**: In order to more effectively manage budgets and improve and increase detail for O&M reporting, more consistent capital budget reporting is needed. Also, governance for variances needs to be established and enforced. Consideration also needs to be given for tighter thresholds for justification of variances.	Department level gap
II-2 **Impact of Emergent Issues on Budgets** *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	▪ **Monthly report lag time improvement**: Tracking period and YTD actuals versus budget is the primary tool used for managing budgets. Receipt of this information is often delayed by 1.5 months, meaning that July's actuals won't be received until approximately mid-September. These delays appear to be resource related rather than policy or technical limitations. ▪ **Budget transfer/prioritization**: There is no specific process in place for prioritizing projects and budgets so that when funds become available, they are allocated optimally.	SRP candidate Improvement opportunity
II-3 **Unit Cost/Productivity Management** *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	▪ **Lack of unit cost and productivity tracking**: Performance is measured in terms of total budget but there are few if any unit cost and productivity measures in place to determine efficiencies and trends. For example, the average cost to close a customer claim or resolve a billing exception is not fully understood.	Department level gap
II-4 **Overtime & Contractors Management** *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	▪ **Improved budget coordination**: While it is understood that there is a stop gap measure in place to use overtime hours to support current vacancies due to the hiring freeze, budgets do not reflect that approach. Variances are higher for those specific line items. This could be corrected with improved coordination between CS, Finance and Human Resources.	Improvement opportunity

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Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ **Negotiate warehouse costs**: Costs charged to CS for warehousing seem higher than normal to support warehouse operations. There appears to be an unfair practice of charging a percentage of cost in full on Day 1, no matter how long the item is held, the full amount gets charged to the department. For example, $2.3M Meter Purchase and $20M Counters and Secondary Line costs in the 2020 Customer Service budget represent the opportunity to reduce overall costs with more optimal associated warehouse costs.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Area					
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*		X			
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*		X			
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	X				
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*		X			
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*		X			

III. Leadership Management

Evaluation Framework

The Leadership Management Focus Area consists of four sub-areas (core and enabling areas that define an effective leadership management process):

- III-1 Qualifications & Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter- & Intra-Organization Collaboration

Observations & Contributors

Sub-Focus Area	Observations & Contributors
III-1 **Qualifications & Experience** *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ **Background, experience and qualifications:** All positions at PREPA require a minimum qualification of years, experience and education (university degree, at least 5 years' experience). As such, most, if not all, of the managers, supervisors and division heads have many years of experience at PREPA (20+ years), at least a bachelor's degree and a deep understanding of their department and/or role. All advancement positions require a significant experience component, although there are exceptions with some patronage positions that are appointed. ▪ **Needed skills:** According to interviewed division heads, there is a significant need to build leadership skills amongst their direct reports. The current employee pipeline for leadership is lacking due to the hiring freeze and rigid HR rules. There is also a lack of job experience caused by resistance of union employees to move to supervisory or managerial roles; this is because pay is often lower and expectations are higher. Additionally, there is an apparent deficiency of employees with adequate customer service skills. This may be due to an absence of training, a poor employment environment, and/or current negative customer expectations and satisfaction.
III-2 **Accountability** *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company's mission, values and goals. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ **Leadership style:** The CS department director is generally considered a strong leader who provides a sense of trust and freedom to her reports and allows them the space to make their own decisions while still holding them accountable. She will engage and push her employees when needed and does require regular updates and reporting. It appears that division heads follow her lead and mentorship when managing their own teams, but more observation is necessary. ▪ **Accountability at lower levels:** Accountability is a problem at lower levels due to current restrictions on performance monitoring and QA with CSRs and other union staff. Although some CSRs do provide adequate service, many do not. Increased supervision and accountability must be achieved and can be done through a review of account histories and other tools, but those are limited in scope and effectiveness. More investigation into reaction and follow through on prior audits or constraints would be beneficial.
III-3 **Ability to Deliver Results** *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	▪ **Delivered services:** The CS Department has implemented various initiatives in the past 3 years. Most notably was the outsourcing of a portion of its call center to two local firms (Insight and TeleContacto). These projects were driven primarily by the CS Division head, and upon completion, immediately decreased customer call times from over an hour to approximately 10 minutes. As CS performance is tied directly to customer satisfaction this change was essential, although there are issues that still need addressing. The creation of the Theft Division was also implemented recently. ▪ **Areas of improvement:** Interviews with CS division heads indicated a general agreement that the billing, theft (deterrence and mitigation), and customer contact and satisfaction areas needed the most improvement. Focus on these areas, coupled with improved IT and work force management systems, HR policies, and coordination with other directorates would dramatically increase the performance of the department and the overall satisfaction of customers and staff.
III-4 **Inter- & Intra-Organization Collaboration** *Collaborates with other departments to meet company*	▪ **Team communication:** Intra-department collaboration and communication is adequate, though admittedly could be improved. The individual divisions appear to have strong communication that flows up to the director level, but not horizontally through the department. Improvement of that communication could prove beneficial. This is even

Gap Assessment

Sub-Focus Area	Observations & Contributors
goals (versus operating as an organizational silo).	more evident in communications and collaboration outside of the department. Although there are admitted strong relationships with other departments, particularly Operations, those are due to personal relationships and are not a result of standard structure or practice. ▪ **PREPA senior management:** As of yet, there has been little discussion of PREPA's senior management practice, though indications are that there is executive communication and collaboration. There's no continuation of this practice at the division level, where it appears that each department is siloed (focus within themselves). Again, there is some exception with the T&D department where communication with customer service and the call center are required. ▪ **Cross-directorate team:** There has been no indication of an established cross-directorate team; more information/investigation on this is needed.

Major Gaps

Sub-Topic Areas	Major Gaps	Categorization
III-1 **Qualifications & Experience** *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ **Improved pipeline:** Current leadership qualifications and experience is strong but the pipeline for equally qualified employees is weak. Developing a mentoring or training program that can increase the skills and leadership abilities of lower level staff would significantly benefit the future growth of the department. ▪ **Improved hiring and promotion practices:** There is a need to remove barriers for advancement and disincentives for promotion. Current HR policies and union restrictions make it difficult to drive growth, performance and leadership within the department and company. An overhaul of these policies and restriction is needed to mitigate the issue.	Department level gap Priority
III-2 **Accountability** *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ **Motivation building:** There is currently no incentive to drive accountability and performance. Lack of formal performance reviews or achievement rewards lower motivation and accountability. Implementation of a formal review and reward structure is needed. ▪ **Gamification:** Additional strategies to increase accountability and performance would be beneficial. Friendly competitions that encourage exceptional behaviors may assist in driving increased performance and employee satisfaction.	Priority SRP candidate (core gap)
III-3 **Ability to Deliver Results** *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	▪ **Improve systems for divisions:** There is a general consensus that the Customer Service department needs large improvements especially in the areas of billing, theft (deterrence and mitigation) and customer contact and satisfaction. ▪ **IT improvements and work force management (WFM) tools:** Improvement in the IT systems is the initial step to improving the CS department's ability of to deliver results. This should include a robust WFM system that facilitates better task management, performance tracking, and program status reports will provide improved guidance and accountability.	SRP candidate (core gap) SRP candidate (core gap)
III-4 **Inter- & Intra-Organization Collaboration** *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ **WFM tools:** Proper work force management tools deployed to all departments will increase transparency and communication throughout the organization. These WFM tools will need to provide outage management and response, community addressing, customer communication and company initiative status that promotes inter- and intra-organizational collaboration. ▪ **Organization-wide restructuring:** To improve overall collaboration, communications and success, the organization must restructure its standard practices, policies and culture. This initiative needs to be driven by management and supported through each department and division.	SRP candidate (core gap) Priority

CUSTOMER SERVICE

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Area					
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	X				
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible..*		X			
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*		X			
III-4 Inter- & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	X				

IV. Process Efficiency & Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness Focus Area consists of four sub-areas (core and enabling areas that define effective process efficiency and effectiveness):

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Observations & Contributors

Sub-Topic Areas	Observations & Contributors
IV-1 **Potential Risks to Post-Commencement** *Identifies risks to post-commencement and steps needed to mitigate the risks.*	▪ **PREPA intranet:** In April 2018, a catalogue of policies and procedures was uploaded to PREPA's intranet website. Access to PREPA's intranet has been granted to CS department employees. Initial analysis of PREPA's intranet indicates PREPA has ~90 CS-related policies and procedures in place organized into 8 department-level folders. There are no processes uploaded to the intranet. It is suspected that the intranet does not contain all policies and procedures which are required from a utilities business management perspective. One example: ATCO has several hundred documents on its intranet, whereas initial indications of PREPA's intranet points toward not nearly as many documents in place. ▪ **Process maps:** While leaders within PREPA have indicated there are key processes critical to their departments and acknowledge that process maps are beneficial to the organization, initial review of documents show eight process maps were provided within a Request for Information to PREPA from LUMA (RFI 0006). In addition, initial conversations indicate that staffing constraints are limiting development of additional process maps/documents currently. PREPA's intranet does not contain any process maps, and process maps developed on an ad hoc basis by PREPA do not follow a standardized format (i.e., there is no current process map standard at PREPA). It is noted that no information has been provided by PREPA regarding any work which has been completed in terms of estimating the costs and benefits of a process redesign. ▪ **Centralized Information:** Based upon analysis and interviews completed to date, it is evident that risks are present regarding the storage and maintenance of processes, policies and procedures. Although a centralized storage location is being utilized (PREPA's intranet), it is not clear to what extent it is used as a resource by employees. It is also unclear if the policies and procedures are still accurate and/or relevant in today's operating environment, given the average age of documents of ~12 years. Furthermore, due to inconsistent documentation provided to the LUMA customer service team (RFI #0006), compared to documents stored on the intranet, it is suspected there are multiple versions of policies and procedures being utilized within different areas of PREPA's Customer Service. This is a risk, potentially driving incongruencies in the implementation of policies and procedures and the execution of work.

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Areas	Observations & Contributors
IV-2 **Process Familiarity by All Stakeholders** *Examines operational processes to ensure they are defined and understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.*	▪ **Process redesign:** Conversations to date with PREPA leaders have indicated that processes are in place. Although processes may not be formally documented or mapped, employees are aware of them and do follow them. The CS department has expressed a desire to document or redesign and modernize many of these processes; many processes are paper based, manual in nature and do not utilize modern technology or software. Although current stakeholders appear to be familiar with key operational processes, without adequate documentation, it is unlikely that stakeholders outside of the group of frequent users are familiar with details of the processes. This is viewed as a risk and a gap within the realm of processes, policies and procedures. In the past, the PREPA CS team has expressed a desire to move to technology-based processes, particularly for field employees. These efforts have been started in some cases but have failed to launch due to IT and HR constraints. ▪ Key processes have been identified as requiring improvement throughout the PREPA CS team. The Contact Center (CC), Theft, Emergency Response, and Credit and Collections departments have expressed particular interest in improving their processes in order to provide better support to their staff and better service to PREPA customers.
IV-3 **Process Compliance Management** *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	▪ **Governance:** PREPA has a corporate policy governance structure in place. That said, little information has been provided beyond that; therefore, it is unclear to what degree this governance structure is effective in maintaining policies and procedures. Through ongoing interviews and conversations, it does not appear that the department has a dedicated staff member in place to ensure policies and procedures are updated and/or in place. PREPA's intranet catalogue indicates that the most recent overview was made when the files were uploaded in April 2018. As mentioned, the average age of the files on the intranet is ~12 years old, warranting a review and potential revision, redesign or overhaul. PREPA does have a standard in place for policy, procedure or process documents. Although translation of these documents from Spanish to English is an ongoing effort, standardized formatting indicates that a diligent approach to developing and documenting procedures has been made in the past. ▪ An improved document governance structure is required to ensure effective maintenance and organization of policies, procedures and processes and to minimize PREPA's risk exposure from both CS and greater business operations points of view.
IV-4 **Efficiency of Overall Process Flow** *Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.*	▪ **Process inefficiency:** All completed conversations indicate low efficiency of overall process flows within PREPA's CS department. Many processes are not automated and therefore, lack efficiency. In many cases, processes are dependent upon manual employee-led efforts and therefore, are less efficient, more costly and likely at risk for greater error. Leaders and employees have expressed great interest in improving these processes to improve their efficiency and the customer experience, but PREPA has shown no evidence of committing to address these concerns (as evidenced by a lack of process documentation in the form of process maps). ▪ **Hand-offs** of hardcopy documents is currently standard protocol for many CS teams. Additionally, redundant process flows are also evident, particularly in various field-based roles. For example, this is especially evident in the collections team, where some employees can complete some, but not all, tasks assigned to them, often waiting on other teams to complete related tasks. Frequently, outstanding issues are delayed until the next round of service orders is disseminated, and in some cases, it can be weeks or months later. Implementing the use of tablets and field accessible cloud-based software would drastically improve process flow and efficiency.

CUSTOMER SERVICE

Gap Assessment

Major Gaps

Sub-Topic Area	Major Gaps	Categorization
IV-1 Potential Risks to Post-Commencement *Extent to which risks are recognized and adequate risk mitigation measures are in place or are recognized by management.*	▪ **Comprehensive policy, procedure and process database (PREPA intranet):** Although there is a catalogue of policies and procedures on PREPA's intranet, it is unclear if the intranet contains all policies, procedures and processes required to support utility operations from a business management perspective. Developing a comprehensive, organized and centralized sole source database is a critical gap which needs to be filled in order to reduce post-commencement risk. ▪ **Document redesign & overhaul:** Averaging ~12 years in age, most of the policy and procedure documents on PREPA's intranet are outdated and need to be redesigned or overhauled. In addition, PREPA does not appear to have policy or procedure documents for many core business functions (e.g., meter-to-cash, audit process and bill preparation). These documents need to be created as they are critical to ensuring proper CS governance standards are in place. Not having core business policies and procedures to provide direction for managing business and/or relying on outdated governing documents pose significant operational, business and regulatory risks to post-commencement operations. Therefore, this has been identified as a gap within the Billing Services functional area.	SRP candidate (reassigned to Training team)
IV-2 Process Familiarity by All Stakeholders *Primary processes are generally mapped out and process flow is well understood by most stakeholders. Very few if any, "black boxes" where process stalls and participants do not understand why.*	▪ **Process mapping:** Process maps are not in place for many core CS business functions (e.g., Contact Center, Theft, Emergency Response and the Credit and Collections departments), creating a post-commencement risk for many key functional areas. It has been noted that PREPA's intranet does not contain any process maps, and process maps developed on an ad hoc basis within PREPA do not follow any type of standard format. A lack of documented processes points to a lack of robust, well-defined processes to support collaboration between departments and support non-CS team members in learning CS processes. LUMA's CS team intends to develop and implement a standard for process mapping going forward, along with targeting high priority process maps for development or revision. ▪ **Modernization of processes:** The overwhelming majority of processes are not documented. In addition, key processes are frequently paper based, manual in nature, and have not yet been digitized using modern technology applications or software. Furthermore, a consistent approach to the development and implementation of processes is lacking. Improved process governance (including standards), process training and selective use of advanced technologies or software can help PREPA to close this gap. ▪ **Continuity of processes:** Current stakeholders appear to be familiar with processes which are operationally utilized, without adequate (necessary) documentation (e.g., ICEE's theft process including case documentation and legal processes). Despite this, LUMA does not believe PREPA can systematically identify process gaps or develop process improvement plans that are often helpful in improving operations, financial and customer satisfaction performance levels. As such, a significant risk is posed to stakeholders in other groups supporting CS, as they are likely to be unfamiliar with process details. During times of high employee turnover or emergencies, this gap is expected to cause challenges and risks to operational efficiency.	SRP candidate (reassigned to Training team)
IV-3 Process Compliance Management *Primary processes are routinely monitored, deviations addressed, and impacts recognized. Periodic spot audits conducted to ensure compliance.*	▪ **Dedicated governance personnel:** Effective creation, maintenance and storage of policies, procedures and processes is currently lacking and has been identified as a gap within the CS department. It does not appear that departments have dedicated resources in place to ensure policies, procedures and/or processes are maintained and updated on a regular and systematic basis to drive value. Putting a dedicated roster of personnel in place to manage the creation, organization, storage and maintenance of policies, procedures and processes will greatly improve process governance, ensure compliance to process standards and reduce potential risks associated with outdated, non-compliance documentation.	SRP candidate (reassigned to Training team)

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
IV-4 Efficiency of Overall Process Flow *Highly automated process, with near real-time status awareness, responsibilities grouped to increase efficiencies, hand-offs or back-and-forth process flows are minimized.*	▪ **Process Inefficiency:** Efficiency of overall process flows within PREPA's Customer Services functional area is lacking. Processes have not been reviewed for improvement using a systematic and strong governance approach, and as such, are less robust and efficient than processes at leading electric utilities. The result is that processes have not yet been digitized/automated and are dependent upon employees' manual efforts (and are still frequently paper-based). Employees have expressed great interest in increasing process efficiency and improving the customer experience. Multiple handoffs of physical documents are currently standard protocol for many processes used by CS teams (e.g., collections field and office teams, theft field and office teams). To improve process flow efficiency, PREPA should have a dedicated team of process analysts to ensure processes are being created, documented and analyzed for gaps, while making improvements to eliminate unnecessary process steps, redesign processes and utilize modern technology applications and systems to close gaps.	SRP candidate (reassigned to Training team)

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Area					
IV-1 Potential Risks to Post-Commencement *Extent to which risks are recognized and adequate risk mitigation measures are in place or are recognized by management.*	X				
IV-2 Process Familiarity by all Stakeholders *Primary processes are generally mapped out and process flow is well understood by most stakeholders. Very few if any, "black boxes" where process stalls and participants do not understand why.*		X			
IV-3 Process Compliance Management *Primary processes are routinely monitored, deviations addressed, and impacts recognized. Periodic spot audits conducted to ensure compliance.*		X			
IV-4 Efficiency of Overall Process Flow *Highly automated process, with near real-time status awareness, responsibilities grouped to increase efficiencies, hand-offs or back-and-forth process flows are minimized.*	X				

V. Employee Training & Development

Evaluation Framework

The Employee Training & Development Focus Area consists of four sub-areas (core and enabling areas that define an effective employee training and development process):

- V-1 Training Budgets & Program Effectiveness
- V-2 Ability to Cross-Train as Personnel Development Path
- V-3 Skills Assessment & Personnel Training Plans
- V-4 Demographics & Profile of Personnel by Skill Level

Observations & Contributors

Sub-Topic Area	Observations & Contributors
V-1 **Training Budgets & Program Effectiveness** *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	▪ **PREPA training budget:** The HR department maintains the PREPA training budget. Within the HR budget, a Customer Service account is debited a general dollar amount when PREPA training occurs. Customer Service creates an operational expense account for training and submits it to HR to process these transactions. ▪ **Outsourced contact center accounts:** Both Insight and Telecontacto also have accounts within the HR budget from which their operational expenses and salaries are paid. PREPA manages the budget to pay invoices for these outsourced centers, while the outsourced contact centers are responsible for itemized expenses (including training) that occurs within their budget. ▪ **Training budget effectiveness:** The Customer Service budget process seems less than optimal because it is administered by HR rather than the Customer Service team. This process may create redundancies since expenses are submitted and reviewed by an external business unit (HR) after they are reviewed by the owner of the expenses (Customer Service). ▪ It is unknown if PREPA has memberships in learning and development organizations *(see Major Gaps V-1)*. These memberships may offer access to best practices, discounts to training and conferences and other benefits to its members.
V-2 **Ability to Cross-Train as Personnel Development Path** *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	▪ **Limited cross-training opportunities:** There are few cross training paths in place for CS employees to learn about other PREPA business units. One example is a high level introduction to electricity and T&D fundamentals presented to CSR during their first days onboard. As this training is not meant to be comprehensive, it does not lend to cross training and development path mapping for future PREPA and outsourced contact center roles. ▪ **No apparent development path for supervisors:** PREPA and outsourced contact center supervisors are generally promoted from high performing CSR positions. Their promotions are generally not part of a development path, as neither PREPA nor outsourced contact centers have paths from which to map performance. ▪ **Customer service employee development/HR PREPA development:** The HR department administers the CS budget but is separate from developing PREPA CS employees' skills. HR development was primarily the general onboarding of PREPA employees with follow-up on outdated and reoccurring regulatory training co-administered/filtered through HR and the CS Training Center. It has been two years since a PREPA CS New Hire course has been delivered, and no new CS employee development training has occurred. ▪ **Outsourced contact centers' employee development:** The outsourced centers have CS employee training delivered to new hires from a PREPA SME. Their HR development is administered internally.

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Area	Observations & Contributors
V-3 **Skills Assessment & Personnel Training Plans** *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	▪ **Random call sampling:** PREPA supervisors perform random call sampling for quality control and plug in when signaled by a CSR for potential call escalation issues. PREPA does not record calls, yet Insight and Telecontacto record and review calls (sometimes including the PREPA trainer) to assess call quality. ▪ **No formal skills assessments:** With few performance metrics visible as a barometer, PREPA uses a union directed job classification system *(see Observations and Contributors V-4)* to assess and develop CSRs. Generally, internal decision makers at outsourced contact centers, with additional input from the PREPA trainer, promote high-performing CSRs (with a raise in hourly rates) to team lead and supervisor roles. This process is informal, however, and lacks development plans and formal assessment metrics. ▪ **Pre-hire English competency assessments at outsourced contact centers**: Both Insight and Telecontacto perform pre-hire English proficiency assessments to potential CSRs. Insight assesses both oral and written competencies while Telecontacto assesses oral but not written competencies.

V-4 **Demographics & Profile of Personnel by Skill Level**
Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.
	▪ **PREPA Contact Center CSR demographics and profile:**
	  ▪ **Diverse Team:** The PREPA CSR team is a mix of Gen Z (1997 to 2012), millennials (1981 to 1996), Generation X (1965 to 1980), and baby boomers (1946 to 1964). The team is approximately split between female and male (gender non-conforming not identified).
	  ▪ **Low Turnover Rate:** At the local PREPA Contact Center, many CSRs have a tenure of several years.
	  ▪ **Advanced education and bilingual:** PREPA CSR job requirements include having completed at least 60 college credits and being bilingual. Many CSRs have bachelor and master degrees.
	▪ **Knowledge retention and aging workforce:** With a low turnover rate at PREPA Contact Centers, there is likely a knowledge retention issue where CSRs with experience will retire soon without passing on their knowledge and skills to junior CSRs; there is no system in place to document the knowledge and skills of the retiring workforce.
	▪ **Three CSR job classifications:**
	  ▪ **Level 1** – Newly hired CSRs remain in this classification until reaching the end of six months of employment as a CSR and passing a PREPA administered competency exam.
	  ▪ **Level 2** – Once promoted to a CSR, employees remain in this classification for two years.
	  ▪ **Level 3** – After two years as a Level 2, CSRs move to a Group Nine (Level 3) classification. Group Nine is the same level as District Office Customer Service positions for which the union designates classifications and requirements.
	Outsourced contact centers CSR demographics and profile:
	▪ **Younger staff:** At outsourced contact centers, most CSRs are a mix of Gen Z and millennials (far fewer Generation X and baby boomers compared to PREPA team). Also, there are currently more female CSRs than male (gender nonconforming not identified).
	▪ **High turnover rate:** The CSR positions at Insight and Telecontacto compete with other minimum wage jobs and lack benefits, so employees have less incentive to stay compared with PREPA CSRs.
	▪ **Degreed with less bilingual skills:** Neither Insight nor Telecontacto have a minimum college credit requirement, yet many of their CSRs have college degrees. While outsourced CSRs are required to have bilingual language skills, they are generally not as fluent as at the PREPA Contact Center CSRs.

CUSTOMER SERVICE

Gap Assessment

Major Gaps

Sub-Topic Area	Major Gaps	Categorization
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	▪ The PREPA CS Training Center has been dissolved and the training budget is administered by HR. Administration of the CS training budget by HR may not impact the decision making process as to how CS training dollars are spent, yet it does seem less than optimal. This is because there is another business unit (HR) involved in the CS training budget process. This may slow down effectiveness of matching CS training budget dollars to associated expenses. ▪ It is unknown whether PREPA is a member of professional learning and development organizations. Having memberships with organizations such as ATD and SHRM offers knowledge, networking and discounts to training and learning conferences.	Priority Improvement opportunity
V-2 **Ability to Cross Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	▪ In addition to providing CS training opportunities to all Luma employees, versions of operational and technical training subjects need to be adapted to best fit the performance and development needs of CS roles. Such trainings could perhaps be delivered or formatted as microlearning lessons that can be easily accessed as part of a structured development path.	SRP candidate
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	▪ Skills assessment does not appear to be formally measured in the CS Contact Centers. Outsourced centers are challenged to balance high turnover rates with keeping up with call queues and workloads. PREPA administered an exam to CSRs after six months. This exam has not been used since PREPA's last onboarding session, which occurred some time ago; the content of the exam is not widely known. There does not appear to be a foundation for development of personnel plans and individual goals within either outsourced or PREPA contact centers.	Significant department gap
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	▪ Training does not appear to address different demographics and profile details (e.g., English fluency, time in position) within common roles. A role -based curriculum that further segments learning audiences by relevant profile details (e.g., newly hired, outsourced and tenured PREPA employees) will allow for more relevant and effective learning experiences.	Priority

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Areas					
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training is evidenced by training budget and program effectiveness.*		X			
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross-training initiatives to improve development path for personnel*	X				
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets.*	X				
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	X				

VI. Workforce Management

Evaluation Framework

The Workforce Management Focus Area consists of two sub-areas (core and enabling areas that define effective work management):

- VI-1 Effectiveness of Current Workforce Management Systems & Processes
- VI-2 Time Charging, Productivity Tracking & Reporting

Observations & Contributors

Sub-Topic Areas	Observations & Contributors
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	▪ **Process:** Generally speaking, workforce management occurs with minimal tools and manual assignment and tracking. System generated field work: Customer order information is extracted from CCB daily and assigned by the supervisors at the district offices by work type (e.g., meter testing, new service, meter investigation, collections, and meter reader). Back office initiated field work: Non-customer initiated investigative work (e.g., account type challenges – residential vs. commercial, understanding household size) can be more unpredictable and is uncovered during back office review Meter reading: Strategic area schedules are monthly to coincide with billing cycles (20), with more consistent volumes Internal goal (i.e., not mandated) to complete work order within 3 labor days. Number of work orders handled varies by type of work and region (e.g., lineman doing new services may work 15–35 orders per day). Work order tickets are paper-based, and information collected in the field is handwritten: Information lost in a re-routing scenario requires starting over and increasing the turnaround time. Rework happens frequently because of the nature of work orders. ▪ **Union role**: Because of union rules, specific jobs must be performed by specific job descriptions even though a person may have the ability to complete the task. This can limit workforce efficiency.
VI-2 **Time Charging, Productivity Tracking & Reporting** *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	▪ **Productivity and performance:** In the field and at commercial offices, there are no tools to measure performance other than manual reports based off CCB data. Instead, performance is evaluated mostly around the number of work orders completed. Other incremental things like downtime are not evaluated. The alignment of staffing with work volume is not tracked because currently, the volume of work far exceeds the workforce size/capacity to perform it. Overtime (weekend work) is often necessary to meet work order demand, especially in areas where there are high number of “moves”. Overtime is also necessary to try to meet a 3-day turnaround for customer generated work, which can stretch to 1 week. Although there is a biometric time management system (Kronos), it records times for entering, leaving and breaks, but does not analyze or track productivity for specific tasks.

CUSTOMER SERVICE

Gap Assessment

Major Gaps

Sub-Topic Areas	Major Gaps	Categorization
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Defined processes and work rules to ensure efficient labor utilization.*	▪ **Workforce management (WFM) system**: There are no true system-based workforce management tools. Instead, there is heavy reliance on extracting information from the system of record, Oracle's Customer Care and Billing Solution (CCB). Upon extraction, work is then manually scheduled and assigned (e.g., field work, centralized office work) with little to no ability to intervene or evaluate throughout the life of a task. For field work, implementing a workforce management system that could integrate with CCB would provide significant productivity improvements (e.g., estimated 25% increase for ICEE) by moving from a paper-based to a digital workflow. It could help improve the scheduling process, decrease windshield time, provide real time workflow updates and customer touchpoint opportunities, secure important information, enhance field data collection and enable more granular productivity measures /tracking as well as the ability to address emerging work. For back office and district offices, it is unclear what the impact on productivity would be (discovery in process) as much of their work is done directly in CCB and they are getting some lift out of new reporting and dashboard capabilities via TrueNorth, but certainly offices would benefit downstream from improved field work productivity and real time visibility for completed tasks as well as enhanced productivity measures, reporting and accountability. ▪ **Tablets/communication devices for field workers:** This is the hardware needed to receive and transmit information from the field as part of the WFM solution. ▪ **Contact center (CC) workforce management:** Gap but being addressed through an RFP for new contact center platform that will have a WFM component. CC functional team will ensure it gets listed in SRP and will get listed in RFP.	SRP candidate SRP candidate N/A
VI-2 **Time Charging, Productivity Tracking & Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	▪ **Interval productivity measurements and tracking**: Productivity is measured primarily at the job completion level with little analysis around job intervals or circumstantial data. With the implementation of WFM system, productivity measurements and tracking should also be implemented to understand and act on operational improvement opportunities.	Department level gap

CUSTOMER SERVICE

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements that define this sub-area and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/ starting to apply them.	The organization has identified the means to address the major elements that define this sub-area, and work is progressing on implementation.	All elements that define this sub-area are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches that go beyond the basic requirements, driving to achieve maximum value in this sub-area.
Sub-Topic Area					
VI-1 **Effectiveness of Current Workforce Management Systems & Processes**. *Defined processes and work rules to ensure efficient labor utilization.*		X			
VI-2 **Time Charging, Productivity Tracking & Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	X				

VII. Management Systems & Technology

Evaluation Framework

The Management Systems & Technology Focus Area consists of four sub-areas (core and enabling areas that define effective management systems and technology):

- VII-1 Process Automation
- VII-2 Adaptability to New Systems & Technology
- VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations & Contributors

Sub-Topic Area	Observations & Contributors
VII-1 **Process Automation** *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	▪ Many processes in the Customer Service department are currently managed on paper or through MS Excel. We will continue to learn more through the policy and process review in the coming months, but already we have identified many areas for improvement. Examples include QA processes for agent evaluations, WFM and scheduling processes, PREB complaint management, and field service order management. See SRP for detailed list of projects to correct.
VII-2 **Adaptability to New Systems & Technology** *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	▪ The organization has not made many changes or rolled new systems or training in the past three years since Hurricane Maria. Business teams often understand their needs but haven't implemented changes due to lack of resources, union issues and uncertainty around the upcoming transition to LUMA. One exception is the move to outsource a significant number of calls through Insight and Telecontacto (outsourced call centers). New system training has largely gone well but much could be done to improve training materials and practices. PREPA teams seem eager for change, but a great deal of guidance will be required.
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	▪ Very limited system integration or visibility across departments. The Contact Center has no visibility into OMS/T&D operations status. Teams communicate between departments through Outlook, WhatsApp, and phone with no tracking of interactions. Avaya (call center system) has limited integration with Oracle Utilities Customer Care and Billing (CC&B) to present account balance in the IVR. No screen pop capability to auto-present data from CC&B to agents. Call Center Express acts as a bit of a unified desktop to allow agents to create work orders and push reported outages to the Call Taker and STORMS systems.
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ We will identify additional process improvements that don't require system changes as we dig into the process and policy review. To date, we have uncovered a few process recommendations like offering payment arrangements earlier in the process when a customer has a high bill or unexpected charges associated with reconciling from past estimated bills.

Major Gaps

Sub-Topic Area	Major Gaps	Categorization
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	▪ See list of specific IT gaps for each business unit (Billing Services, Customer Contact, Regional Customer Service and Training) in the core area gap assessments and SRP initiatives.	See Core Business Assessment (CBA)

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
VII-2 **Adaptability to New Systems & Technology** *Ability to adjust attitudes, processes and technology to make quality improvements.*	▪ See list of specific IT gaps for each business unit (Billing Services, Customer Contact, Regional Customer Service and Training) in the core area gap assessments and SRP initiatives.	See CBA
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*	▪ See list of specific IT gaps for each business unit (Billing Services, Customer Contact, Regional Customer Service and Training) in the core area gap assessments and SRP initiatives.	See CBA
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ See list of specific IT gaps for each business unit (Billing Services, Customer Contact, Regional Customer Service and Training) in the core area gap assessments and SRP initiatives.	See CBA

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Areas					
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	X				
VII-2 **Adaptability to New Systems & Technology** *Ability to adjust attitudes, processes and technology to make quality improvements.*	X				
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*		X			
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*			X – some potential process changes, but most require system improvements		

VIII. Performance Metrics & Continuous Improvement

Evaluation Framework

The Performance Metrics & Continuous Improvement Focus Area consists of five sub-areas (core and enabling areas that define performance metrics and continuous improvement process):

- VIII-1 Recognition of Critical Performance Metrics
- VIII-2 Performance Metric Collection, Validation & Reporting
- VIII-3 Root Cause & Trend Analysis
- VIII-4 Instances (or Lack) of Data-Driven Management Initiatives
- VIII-5 Recent Performance Trends

Observations & Contributors

Sub-Topic Area	Observations & Contributors
VIII-1 **Recognition of Critical Performance Metrics** *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	▪ **Recognition of performance metrics:** There is a general understanding of the critical performance metrics; senior management plays lip service to driving those metrics; however, there is a well-stated need for a work force management (WFM) system. The only prioritized metric used (in terms of consumption) is the performance of the top 20 clients. ▪ **Employee level metrics:** Metric tracking at the employee level is critically underutilized. This may be due to issues in providing performance feedback to union employees. Interviews included anecdotes of employees walking off the job when presented with performance metrics and being supported by the union to do so. ▪ **Current systems:** PREPA CS currently uses a variety of metric tracking systems, including Oracle CC&B, Avaya (Call Center), Call Center Express, Call Taker (Horizon Intergraph), STORMS, Web Application (Mi Cuenta Admin Tool), MS Outlook and Mi Cuenta for customers. They also use QMatic and Turnos for appointment setting at district offices. KPI manuals are available but rarely used. ▪ All department heads argue for a WFM, which they believe is much needed. Used to have a system (Radix), which assisted in KPI tracking, but it did not stick. ▪ **Ideal metrics:** Department managers would like a workforce management system that can track workflow, time at job and that will provide more accurate job completion times. There is currently a large variation in employee claims of completion time. District offices need to improve customer wait time in office and would like to better track behavior for each office and streamline systems and processes.
VIII-2 **Performance Metric Collection, Validation & Reporting** *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	▪ **Adequate systems:** PREPA Customer Service does have systems in place to measure performance and is beginning collaboration with a third party reporting and data visualization vendor (True North) to develop Customer Service dashboards to assist CS leadership in managing its operations and to drive value. However, past practice suggests that this system will not be utilized appropriately to validate performance. ▪ **Situational awareness:** There are no KPIs or metrics tracked for CS training and district offices do record statistics but currently lack performance goals. Regional offices can report and compare performance (for limited metrics), but no real time statistics are available. Data accessibility is always behind; there is no employee dashboard.
VIII-3 **Root Cause & Trend Analysis** *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	▪ **Collection of performance data:** As mentioned above, there are some methods to collect performance data and to validate its accuracy, but the company does not utilize these systems appropriately. Moreover, there are so many distinct systems that it is difficult to get a full performance snapshot of the division.

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Gap Assessment

Sub-Topic Area	Observations & Contributors
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	▪ **Performance driven initiatives:** There is currently no formal process for data driven initiatives to be suggested or undertaken. If initiatives are to move forward, then management must push them directly. There is no mechanism for initiatives to be created by employees who may see a need. ▪ **Current data driven initiatives:** The outsourcing of the CS call center to two vendors is the only instance of a data driven initiative in the recent past. Poor performance in call center metrics, including Average Speed of Answer (ASA), Abandon Rate, Average Handle Time (AHT) and others motivated the CS Division Head to push for much needed assistance to support and augment the internal call center. This initiative, completed in a very quick 8 months, was a unique performance driven initiative for the department. ▪ **Recognition of success or failure of past initiatives:** It is unclear if there is any recognition of causes for success and failure of past initiatives. More discovery will be needed to adequately answer this question.
VIII-5 **Recent Performance Trends** *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	▪ **Recent trends:** KPI levels have not trended. Compared to other industry benchmarks, it is difficult to gauge performance because metrics are not tracked adequately. For KPIs that are tracked (call center KPIs), PREPA is performing well below industry averages. ▪ Performance metrics from the LUMA O&M Agreement (OMA), including approximately 20 metrics across four broad areas (e.g., public and workforce safety; customer service; financial performance; and reliability), this could be a starting point for a foundational performance management system. To drive effective cash management, the Days Sales Outstanding (DSO) metric a Financial Performance metric, will be managed from an operational standpoint.

Major Gaps

Sub-Topic Area	Major Gaps	Categorization
VIII-1 **Recognition of Critical Performance Metrics** *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	Fair understanding of critical performance metrics, even if they are not often acted upon. Increased understanding of KPIs and use of the WFM system will help streamline processes and increase productivity.	
VIII-2 **Performance Metric Collection, Validation & Reporting** *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	▪ **Billing services metrics PI book**: The Billing Services functional area lacks a well-defined KPI/metrics book to manage performance effectively across key operational areas, including billing, credit & collections, theft, payments and back office. This billing services gap is a component of the overall customer services metrics/KPI gap which has been identified in the VIII Performance Metrics and Continuous Improvement sub-area from the General Management Assessment (GMA) of the Customer Services Gap Assessment. ▪ The KPI/metrics book may include establishment of area-wide metrics with prioritization of metrics (e.g., Tiers I, II, III) with clear metric definition, timing of reporting (e.g., monthly, quarterly, annually), assigned owners, and targeted goals. Please note the Tier I metric for Billing Services is DSO with Tiers 2–4 to be established. ▪ **Metrics dashboard:** (Pending Review of True North Dashboard). The Customer Service dashboard (in-progress with PREPA CS Team and True North) lacks well-defined metrics for the Billing Services functional area including key metrics for billing (accuracy, estimations, unbilled), credit collections (e.g., DSO, A/R>60days, total A/R, A/R by customer segment), theft/ revenue protection and payments. Enhancing the dashboard with metrics for these areas would provide transparency into performance (e.g., YTD actuals vs. monthly/annual targets) and drive focus on identified gaps for development of performance improvement plans (e.g., based on prioritized initiatives with defined scope, timing, cost and responsible parties). **Regional office gaps** ▪ **Employee dashboard:** Regional Customer Service is lacking the ability to obtain real time employee statistics as required. There is no application/tool in place that an employee can access to view current performance statistics. PREPA does use Power BI, but there is approximately a 30-day delay when receiving monthly performance reports and real time statistics.	SRP candidate (end of Year 1) SRP candidate

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Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
	▪ **Utilization of performance metrics:** Performance metrics are not communicated to all levels of the organization. Statistics are captured for the district or local office but not for each employee. Metrics are not used to set performance goals or measure progress. There is opportunity to obtain real time data and use it to plan yearly strategies and set unified goals. Recommendation**:** Implement a metric system focused on improving performance.	
VIII-3 **Root Cause & Trend Analysis** *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs.*	See list of specific gaps for each business unit (Billing, Regional CS, and CC) in the core area gap assessments and SRP initiatives.	
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	See list of specific gaps for each business unit (Billing, Regional CS, and CC) in the core area gap assessments and SRP initiatives.	
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	See list of specific gaps for each business unit (Billing, Regional CS, and CC) in the core area gap assessments and SRP initiatives.	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Area					
VIII-1 **Recognition of Critical Performance Metrics** *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	X				
VIII-2 **Performance Metric Collection, Validation & Reporting** *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	X				
VIII-3 **Root Cause & Trend Analysis** *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	X				

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	X				
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	X				

IX. PREPA Culture & Momentum

Evaluation Framework

The PREPA (Puerto Rico Electric Power Authority) Culture & Momentum Focus Area consists of five sub-areas (core and enabling areas that define the PREPA culture and momentum):

- IX-1 Resistance (Active or Passive) to LUMA Management
- IX-2 Employee Morale/Excitement About LUMA
- IX-3 Employee Empowerment/Action Orientation
- IX-4 Timeframe to Improve Performance
- IX-5 Impact of Organization Silos

Observations & Contributors

Sub-Topic Area	Observations & Contributors
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	▪ **Senior management:** The CS management team has shown little to no resistance to new LUMA management. They have indicated excitement and have been extremely cooperative with LUMA management and consultants, even though their history with consultants is not particularly positive and has been repetitive with little or no follow-through or action. Led by the Director, the CS management team have made themselves and their staff available for interviews, document sharing and follow-up questions. Division heads have been very generous with their time and candid in their responses to inquiries. There has been some concern expressed about their individual futures, but they have not let that affect the interaction they have had with LUMA management. ▪ **Union employees:** Union employees are actively resistant to LUMA, particularly in the CS offices. On more than one occasion, office staff has walked out of the offices when LUMA representatives have arrived on site. This has caused difficulty related to both the investigation of how these offices function and observation of the employees' day-to-day actions. This resistance is led by union leadership who are actively trying to undermine the transition to LUMA. ▪ **Probability of opposition:** The probability of resistance to LUMA is high, most notably from the union and its members. This can be mitigated in part if LUMA and its management show immediate action leading to positive change.
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	▪ **Senior management:** Again, we see generally positive morale and excitement about LUMA from senior CS management. While there are concerns about how the transition will affect individual positions, most understand the opportunity to improve the performance and customer service of the utility. If, instead of the current PREPA culture where progress is unacceptably slow or non-existent, LUMA fosters a new culture that they can be truly proud of, then there will be even more excitement. This positivity is being led by Noriette, the head of the CS directorate. It is imperative, however, that LUMA communicate the specifics of employee transition (interviews, timing, salaries) as soon as possible or risk negatively affecting the current positive morale. ▪ **Employees:** We have been unable to observe or interview CS employees who are associated with the union, as they have been instructed not to talk to LUMA. Due to union leadership resistance, employee morale must not be very high. LUMA needs to address this issue as soon as possible. ▪ **Satisfaction surveys:** There have been no employee satisfaction surveys in the last five years.
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.*	▪ **Ability to increase decision-making:** The director and division heads make most of the major decisions. There is however an indication that decisions at the supervisory and managerial level are allowed and encouraged, provided they communicate up to the division heads for collaboration and approval. ▪ **Middle manager decision making:** In most cases, the middle manager's decision-making experience is hierarchical, top down and directed. There has been little opportunity for middle managers to drive their own initiatives or make decisions without authority from the division heads or the directorate. Still, there needs to be better follow-up after decisions, i.e., a better understanding of the success and/or response to recent decisions and actions.

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Gap Assessment

Sub-Topic Area	Observations & Contributors
IX-4 **Timeframe to Improve Performance** *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	▪ **Recent initiative:** We interviewed Manuel Tristani on a current initiative example. He provided details on the contracting and rollout of the outsourced contact centers (Telecontacto and Insight). This was an initiative that was conceptualized and realized by Tristani. As there was approval from the directorate and an urgent need, Tristani was able to complete the scoping and implementation of this project in a relatively short timeframe. This shows that, with the proper business case and motivation, initiatives can be undertaken and completed in a reasonable time. ▪ **Work force management (WFM) tool:** It is clear from interviews that a robust WFM tool would greatly assist the CS directorate in planning, organizing and implementing initiatives for the department. All division heads agreed that a WFM tool would significantly increase productivity and improve planning and management of daily activities and/or projects. ▪ **Time frame score of 3–4:** We predict the CS directorate will fully embrace changes and align behind LUMA proposed initiatives quickly (6–12 months after commencement). Because there is excitement about the improvements LUMA can make to overall customer service, there will be a quick embrace if LUMA can show a rapid turnaround on initiatives.
IX-5 **Impact of Organization Silos** *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	▪ **Existing silos:** It appears that PREPA directorates in general are very siloed — they do not work collaboratively with each other in a productive manner. Too many bureaucratic layers negatively impact productivity. Communication between the directorates is weak, and there is little motivation to change. The CS director does meet with other directors on a regular basis, but these meetings do not appear to advance cooperation or productivity. ▪ **Cooperative relationships:** Customer Service works directly with T&D and for this reason some cooperation and processes exist between these two operational silos; however, much of this cooperation and associated processes are built on personal relationships and quid-pro-quo favors.

Major Gaps

Sub-Topic Area	Major Gaps	Categorization

IX-1 **Resistance (Active or Passive) to LUMA Management**
Extent employees will resist new LUMA team.
	▪ **Reduce Resistance:** Resistance is minimal with senior management in the Customer Service department but strong amongst union employees and individual performers. To reduce resistance, LUMA must:
	  ▪ Address PREPA union issues
	  ▪ Determine status of PREPA pensions for current employees and retirees
	  ▪ Communicate timing and procedure for transition of current employees
	  ▪ Show immediate improvement in customer and employee satisfaction
		Priority

IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	▪ **Increase morale:** Same actions as above. ▪ **Employee survey:** Develop and distribute employee satisfaction survey to measure overall morale, engagement and resistance.	Priority SRP candidate
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*	▪ **Employee empowerment:** Build a culture of employee empowerment through strong engagement with middle management and lower level staff. Provide training and guidance on decision-making strategies, and drive opportunities for staff to participate in decision-making processes and lead department initiatives.	Improvement opportunity
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*	▪ **WFM tools:** Proper WFM tools deployed to all departments will increase performance and communication throughout the organization. These WFM tools need to provide outage management and response, community addressing, customer communication and company initiative status that promotes inter- and intra-organizational collaboration.	SRP candidate
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*	▪ **Organization-wide restructuring:** To improve overall collaboration between departments, the organization must restructure its standard practices, policies and culture. Management needs to drive this initiative; each directorate, division and department needs to support and follow through.	Priority

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Area					
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team*			X		
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment*			X		
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture*		X			
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives*	X				
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge*	X				

Core Business Assessment

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Gap Assessment

Focus & Sub-Focus Areas

	Focus Area	Sub-Topic Area	
XI	**Billing Services**	XI-1 Vision & Strategy XI-2 Processes XI-3 Customer Meter Data XI-4 Billing Issuance & Exceptions XI-5 Credit & Collections	XI-6 Payments & Financial Controls XI-7 Theft XI-8 Performance Management (KPIs) XI-9 Information & Technology
XII	**Contact Center**	XII-1 Vision & Strategy XII-2 Processes XII-3 Customer Service XII-4` Quality Assurance	XII-5 Call Handling – Emergency & Facilities XII-6 Performance Management XII-7 Information & Technology
XIII	**Regional Customer Service**	XIII-1 Organization & Strategy XIII-2 Processes XIII-3 Key Accounts Management	XIII-4 T&D Operations Integration Plan XIII-5 Community Investment XIII-6 Performance Management (KPIs)
XIV	**Training**	XIV-1 Vision & Strategy XIV-2 Processes XIV-3 Training Materials XIV-4 Training Delivery	XIV-5 Governing Documents – Policies, Procedures, Standards & Process Maps XIV-6 Performance Management XIV-7 Information & Technology

XI. Billing Services

Evaluation Framework

The Asset Management (AM) Focus Area consists of nine sub-areas that define an effective asset management systems.

- XI-1 Vision & Strategy
- XI-2 Processes
- XI-3 Customer Meter Data
- XI-4 Billing Issuance & Exceptions
- XI-5 Credit & Collections
- XI-6 Payments & Financial Controls
- XI-7 Theft
- XI-8 Performance Management
- XI-9 Information & Technology

Observations & Contributors

Billing Services Sub-Areas	Observations & Contributors
XI-1 **Vision & Strategy** *Extent to which system aligns to a well-structured operating model and/or industry standards (e.g., meter-to-cash operating model, PCI compliance standards). Review functional area's operating model and use of industry standards and evaluate consistency between Billing Services strategy, work execution and personnel deployment.*	**Background:** Within the Customer Service department, the assessment of Billing Services functions provides insight into PREPAs vision and strategy for these functions. Billing Services functions include the following key processes: ▪ ***Billing****:* Billing calendar, standard billing, complex billing (e.g., streetlight billing, joint use assets, high-low moves), billing exceptions management (e.g., unbilled accounts, estimated accounts, delayed bills), claims management, bill print & delivery (BP&D), returned mail, CILT review & update and net metering applications ▪ ***Credit & collections****:* Credit process (including deposits and return deposits), collections processes and bankruptcy ▪ ***Payments****:* Payment management, payment reconciliations, payment arrangement plans and audit & controls ▪ ***Theft****:* Theft investigation processes, theft payment plans and other meter reading irregularities ▪ ***Legal/regulatory requirements****:* With respect to these areas, PREPA must comply with many key legal and regulatory requirements governed by Puerto Rican law and PREB/other regulatory body requirements including Act-57, Act-17, Law-83, Regulation 8863 and the Puerto Rico Penal Code. **Objectives:** Billing Services functions as mature, high-performance electric utility, objectives including: ▪ **Billing:** Provide a well-designed, transparent bill that enables customers to understand their charges and demonstrates the value customers receive for services provided (while meeting regulatory requirements). Issue customer bills (invoices) using actual usage data on a timely and accurate basis. ▪ **Credit & collections:** Effectively and efficiently perform cash management by minimizing accounts receivable risk and operating efficient collection operations that make optimal use of resources and improve customer payment behaviors. ▪ **Payments:** Process customer payments quickly and accurately, and have the funds deposited into the organization's bank accounts. Offer a wide range of payment methods and channels to facilitate timely payments by diverse customers. ▪ **Theft:** Develop a proactive, intentional theft deterrence program that drives appropriate customer mindsets and behaviors that ultimately limit theft and reduce non-technical losses. **Operating results:** Observations of PREPA's current operating results provide an understanding of performance as well as PREPA's vision & strategy with respect to Billing Services functions: ▪ **Billing:** PREPA currently manages the design and printing of its bills in house (i.e., printing conducted at the NEOS building). PREPA's current bill meets basic regulatory requirements (i.e., Act-57), but does not provide an exceptional customer

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Gap Assessment

Billing Services Sub-Areas	Observations & Contributors
	experience. PREPA's bill print & delivery (BP&D) function incurs greater risk than necessary by conducting BP&D in house (e.g., use of outdated printers, unsupported software and lack of current emergency backup plan). In addition, PREPA also likely incurs greater than average costs by printing in house (i.e., ~$8.5M annual budget). 1. PREPA is not billing a significant number of customers on a timely basis (unbilled accounts totaling ~9K). Beyond traditional customer accounts, it is believed that PREPA has a significant number of streetlights and joint use assets that are not being tracked in the asset management system and therefore remain unbilled. PREPA bills ~10% (~143K) of its customer base with estimated usage (vs. actual usage) due to a significant number of broken meters (and other root cause drivers). ▪ ***Credit & collections****:* PREPA currently has $2.3B in accounts receivable (May 2020) with an uncollectible reserve of $1.4B resulting in a DSO metric of 102/254 days (with uncollectibles reserve and without uncollectibles reserve, respectively). 1. PREPA's processes and approach toward collections are not driving effective cash management — as a result, total account receivables and DSO are higher than they should be. It should be noted that a portion of Accounts Receivable is driven by the Covid-19 pandemic and a PREB-mandated moratorium on cutoff for non-payment (similar to other North America utilities); there is no anticipated end date for the moratorium. ▪ ***Payments****:* PREPA is not currently PCI compliant.
XI-2 Processes *Consistency of Billing Services processes with vision and strategy. Extent to which high priority processes are identified, defined, prioritized and supported with appropriate governing documents (e.g., process maps, policies, procedures, standards). Extent to which Billing Services processes are factored into planning and execution of work, and align with company strategic objectives. Extent to which KPIs and metrics are aligned and established based on industry best practices and credible benchmarking.*	▪ **Governance:** It has been communicated to the LUMA Customer Service team that PREPA does have a corporate policy governance structure in place. With that said, little information has been provided beyond that; therefore it is unclear to what degree this governance structure is effective in maintaining policies and procedures. Through ongoing interviews and conversations, it does not appear that the departments have a dedicated staff member in place to ensure policies and procedures are updated and/or in place. PREPA's intranet catalogue indicates the most recent overview was made when the files were uploaded in April of 2018. The average age of the files within the catalogue is 12 years old, warranting a review, potential revision, redesign or overhaul. It has been noted that PREPA does have standardized formatting in place for most of their procedures which are located on the intranet. Although translation of these documents from Spanish to English is an ongoing effort, it is believed that the standardized formatting indicates a diligent approach to developing and documenting procedures has been made in the past. Without having a structure in place to ensure the ongoing maintenance and organization of policies, procedures and processes, PREPA is exposed to multiple risks from a Billing Services point of view, and from a greater business operations point of view. ▪ **Process inefficiency:** Interviews conducted for this gap assessment currently point to there being little efficiency of overall process flow within PREPA's Customer Services department. Processes are not automated and lack efficiency. In nearly all cases, processes are dependent upon employees' manual efforts and lack any type of automation. Leaders and employees have expressed great interest in improving these processes to improve their efficiency and the customer experience, but PREPA has shown no evidence of committing to addressing these concerns. ▪ **Current standard protocol for many teams involves hardcopy document hand-offs.** Redundant process flows are also evident, particularly in various field-based roles. This is especially evident in the collections and CONP teams, where some tasks assigned to employees cannot be completed due to dependencies on other teams to complete tasks in a prior step in the process. Often issues must be delayed until the next round of service orders is disseminated — in some cases, it can take weeks or months. Implementing the use of tablets and field accessible cloud-based software would drastically improve process flow and efficiency.
XI-3 Customer Meter Data *Extent to which customer meter data (e.g., usage data) can be read on a timely, actual (i.e., not estimated) and accurate (without meter reading irregularities) basis in line with official billing calendar. Extent to which meter data is*	▪ **Background:** PREPA currently uses Oracle CC&B (V2.73; upgraded from 2.701 in Q2/Q3 2020) for the long-term storage of its customer usage data in place of a traditional meter data management (MDM) software platform. PREPA relies primarily on AMR meters to collect customer usage data but is considering AMI meter technology. In addition, PREPA is assessing potential implementation of an MDM system from Aclara, which is viewed as a short- to medium-term solution to meet its needs, but a longer-term solution may be needed (e.g., an Oracle MDM solution, which may be more robust). At this point, PREPA uses mostly AMR meters for most of its customers

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Billing Services Sub-Areas	Observations & Contributors
collected, cleansed, controlled for quality and stored for use in billing and other purposes. Extent that information management architecture and processes are adequate to ensure availability of accurate usage and billing. Extent that meter reading plan supports billing processes and billing calendar.	▪ **Objectives:** In moving to a traditional MDM platform, PREPA would gain the benefits of long-term data storage and management for the vast quantities of meter reading data (e.g., usage (kWh), events) delivered by current AMR meters from head end servers. MDM systems will typically import the data, then validate, cleanse and process before making it available for billing and analysis. In addition, MDM systems may provide improved reporting capabilities for load and demand forecasting, management reports and customer service metrics. ▪ **Operational results – data/data quality:** Due to many broken meters, estimated billing data is now available for ~143k meters to produce bills (at least ~60k; note – there is a preliminary plan to replace these meters with 24k targeted for replacement this FY2021, but overall plan, timing and resources appears to be lacking) and other root causes to be determined (further investigation required). It is believed a significant number of streetlights are not currently tracked appropriately within the asset management system; therefore, billing is not being performed for these assets (resulting in non-technical losses and unbilled revenue). In PREPA stakeholder discussions, poor quality streetlight billing/usage data was mentioned as a driver of some inaccurate billing. Wholesale accounts are currently reading 50KVA and above due to many errors from Regional CS meter readers. For example, as a result, these errors drive billing errors according to CS team stakeholder leadership. Limited discussion called into question the timely and accurate billing related to net metering customers. This area requires further investigation. ▪ **Process:** Meter reading systems (AMR, RDX and NES) are relied upon to read meters on an automated basis; manual meter reading processes are in place to read meters when necessary. The meter reading process is currently overseen by Manuel Tristani and Jannette Colon. Manual processes are used currently for wholesale (large industrial) customers to read meters. ▪ **Technology:** PREPA currently utilizes Oracle CC&B V2.73 and again, is considering the implementation of an Aclara MDM system. Meter reading systems at PREPA include AMR, RDX and NES. ▪ **Regulation:** Act No. 114-2007 created the net metering program to allow the interconnection of residential, commercial and industrial customers with renewable energy generation systems to the electric power grid of the Electric Power Authority (PREPA) and the supply of electric power generated in excess of that used by customers to the grid. In addition, Act-17 (2019) also provides guidance on net metering policies.
XI-4 **Billing Issuance & Exceptions** *Extent to which Billing Services oversees, manages and executes volume of bills on a timely basis. Extent to which organization understands and is managing billing exception work (e.g., driven by meter reading and other irregularities) in an organized, prioritized and value-driven fashion to support business objectives and KPIs. Extent to which org operates from a strategic perspective to manage and drive processes and work with appropriate use of supporting technology.*	▪ **Overview/background:** PREPA issues ~1.4M bills to its customers on a monthly basis across 20 billing cycles. 75% printed & delivered via US Postal Service (USPS) 25% eBill sent as email notifications. Note: ~260k accounts receive both printed bills and eBill notifications. ▪ **Bill format & design:** Currently, PREPA issues Spanish & English bill versions with adjustments made for the specific needs of its four major customer segments (e.g., residential, commercial, industrial and government) and for key operational scenarios (e.g., customers that have been suspended for nonpayment, customers with solar [net metering], customers on payment arrangement plans). PREPA recently completed a bill redesign effort (~ 3 years ago) with a main goal to comply with regulatory requirements related to implementation of a new rate structure vs. to improve the customer experience. PREPA billing stakeholders believe there are bill redesign opportunities to improve the customer experience and communicate greater value to customers. ▪ **Bill print & delivery (BP&D) function:** For hard copy bills, PREPA currently generates and prints customer bills using an in-house BP&D function, located at its main office building (NEOS). Most bills are issued automatically using the Oracle CC&B platform (v2.7) along with other key IT systems (e.g., Control M, Doc1, Streamweaver). As part of this in-house function, PREPA manages the process for handling any returned mail (i.e., marked as undeliverable by USPS). Although operating well, the BP&D function is costly to operate (~$8.5M/yr.) and exposes PREPA to unnecessary risk as it relies on outdated bill printing and enveloping machinery (InfoPrint 4000), utilizes unsupported IT software (Doc1). PREPA has no current BP&D emergency backup plan in place (in event of a major disaster at NEOS). PREPA billing stakeholders believe there is opportunity to outsource the BP&D function, thereby reducing cost and risk (note: PREPA is currently engaged in an RFP process to identify outsourced BP&D options). ▪ **Billing exception management function:** *Billing exceptions* are defined as customer bills that are unable to be automatically issued/printed via Oracle CC&B due to a breakdown or error in the process (or a bill objected to by customers known as a

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Billing Services Sub-Areas	Observations & Contributors
	claim). PREPA manages several types of billing exceptions including the following (backlog amount listed in parentheses): Unbilled accounts (~9k) Estimated bills (~143k) Billing error (TBD request for backlog made) Consumption on active meter without account (~5k) Claims (no backlog; ~12k claims/yr) In addition, it is believed that there are a significant number of streetlights and joint use assets which are not accurately tracked in the asset management system and therefore, are not being billed appropriately. ▪ **Billing exception workforce management:** Billing exception work (unbilled accounts, estimated bills) is managed on a somewhat manual basis by extracting information from CC&B and inserting into reports (Excel or within the True North Dashboard). ▪ **Backoffice consolidation:** Billing exception work (aka back-office work) is performed at PREPA's main office building (NEOS) and at the Regional Customer Service district offices (21 district offices). All claims and some unbilled accounts work are managed by a backoffice team located at NEOS (team led by D. Fuentes). This work has already been centralized at NEOS. Agents located at district offices manage some unbilled accounts and all estimated bill work. The partially centralized/decentralized structure of backoffice work has several disadvantages including: Increasing work complexity Decreasing ease/comprehensiveness of work oversight Inhibiting productivity/work efficiency due to likely lack of work and process standardization driven by decentralization across many locations ▪ **Technology:** The BP&D function relies on key assets including bill print & enveloping machinery as well as key technology and software platforms. Machinery includes two bill printing machines (InfoPrint 4000 machines) and three enveloping machines (FPS14, RD3W, RD3N). This machinery is older and near end of productive life. The base software platform storing customer billing and usage data is Oracle's CC&B platform (V2.7; recently upgraded in Q2/Q3 2020). The following software is also used to control the BP&D function: Control-M (batch scheduling), Doc1 (bill composition/rendering), Streamweaver (bill file separation), E2Vault (indexes/ prepares files for rendering), Linux SMTP servers (eBill notifications). Note: The Doc1 platform is currently unsupported by the vendor which creates risk for PREPA BP&D function. ▪ **Regulatory requirements:** PREPA must comply with key legal and regulatory requirements for the design of the bill as well as the bill claims/objection processes, notably: For bill design, PREPA must comply with the CEPAR-AP-2016-002 *New Transparent Bill* Final Resolution and Order, Article 6.25 of Act 57-2014 and Sections 6A(c)/6B(c) of Act No. 83. For the bill claims process, PREPA must comply with Regulation 8863, Regulation on the Procedure for Bill Review and Suspension of Electric Service (and key sections of Act 57-2014, Act No. 83, and Law No. 170).
XI-5 **Credit & Collections** *Extent to which organization manages outstanding arrears in an organized, prioritized and value-driven fashion for company objectives and KPIs, in particular DSO metric. Extent to which organization effectively uses CC&B to track and store customer arrears info. Effectiveness of credit collections management system, including partnership with field and meter teams. Extent of partnership with Finance teams to manage bad debt in line with company and regulatory policy.*	▪ **Overview:** Initial investigation into collections processes revealed material variations or omissions from standard collections efforts including lack of dunning processes, inadequate customer notification processes when an account is eligible to be cut off for non-pay, lack of outbound collections calling, and inconsistent termination of accounts when eligible to be cut off for non-pay. Current collections efforts have poor results in comparison to other utilities. For example, the published DSO figure is 102 days or roughly $300 of accounts receivable per citizen (per the May 2020 report to the governing board). Utilizing a more industry standard approach to calculating DSO yields a DSO of 251 days as of July 2020. July CC&B reports stated that ~150K accounts were eligible for CONP, which represents roughly 10% of the total account base. Via CC&B, customer service provides Accounts Receivables (A/R) and aging data to Finance, which then calculates DSO and bad debt. LUMA will likely want to take a more Financial Accounting Standards Board (FASB) accounting (versus Governmental Accounting Standards Board [GASB]) approach for DSO and bad debt calculations to increase transparency of operational metrics. For residential customers to government clients, PREPA does not seem to yield a credible threat to terminate service based on non-payment. LUMA will likely need to spend significant resources and attention during the

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	transition period and through commencement to evaluate and manage collections efforts and change cultural perspectives regarding tolerance of non-payment. ▪ **Organization:** There does not seem to be one person or group that is singularly accountable for the execution and effectiveness of collection efforts. Lack of a centralized collections focus seems to have driven fragmented collections efforts and reporting. General acceptance of non-payment seems to be structural and will need to be addressed to impact material collections improvements. The collections department leverages CC&B to generate accounts that are eligible to be cut off for non-pay (CONP) and assigns that work to field collections agents that will attempt make a collection before executing the CONP. Due to manual job assignment, if a collections agent does not complete all assigned CONPs for a day, that account will not be CONP until the next month. LUMA will implement performance targets and priorities on all service orders including CONP orders. . ▪ **Technology:** Initial investigations have revealed that there is uneven deployment of technology such as smart meters across all customer segments. PREPA employees that execute collections efforts work largely with manual processes and would benefit from greater technology adoption. Business analytical and reporting capabilities appear limited. Customer accounts receivable and aging information do seem to be effectively stored within CC&B, but timely and accurate operational reporting on that data does not seem to be available. The gap assessment team struggled to obtain financial and operational data that would typically be readily available. ▪ **Process:** There are many manual field processes that could potentially be eliminated through changes in policy, technology and centralization. For example, there is a team of field agents in the Customer Service department that are assigned to cut accounts daily. That team attempts to collect from the customer and then performs a manual disconnect if the customer is unavailable or cannot pay the outstanding balance. Government account relationship managers actively engage with their client base to negotiate payments. With changes in process and technology such as cutting remotely via a smart meter, these manual efforts could be rendered unnecessary. There is no current dunning process in place. The only notification customers receive that they could be CONP is in their monthly statement. An industry standard dunning process involving scheduled automated reminder calls, text messages, messages through a mobile app, and outbound calls should be implemented to improve collections and customer experience. Improved customer data such as phone (mobile, home) and email addresses will be required to effectively implement a dunning process. Adoption of a mobile app would also improve dunning process effectiveness as well.
XI-6 **Payments & Financial Controls** *Effectiveness and efficiency of payment operations to ensure timely and accurate payment processing. Extent to which organization manages payment collection through variety of channels (e.g., IVR, website, US Mail, in person) and payment types (e.g., cash, check, credit / debit) in organized, prioritized and value driven manner. Extent of partnerships with other organizations to collect payment (e.g., call center, district offices and third party payment centers [e.g., Walmart]). Extent that org understands its role in meeting DSO performance metrics targets and is organized to support this.*	▪ **Overview:** Based on research conducted to date, PREPA payment and financial controls are in line with industry standards. Customers are billed in a standard and consistent way—they can choose to pay their bills through standard and expected options. No risk areas were identified in the initial gap assessment efforts, but more detailed financial controls investigations are warranted to confirm initial findings. ▪ **Payment options:** PREPA customers can pay their bills through all industry standard expected payment methods (automated clearing house [ACH], credit / debit card, cash) and through multiple channels (IVR, call center, internet, ~600 retail and banking locations and PREPA district offices). Customers are also able to establish recurring ACH payments; although this is not very common with only roughly 3,000 customers leveraging this payment option (about 0.2% of the account base). Therefore, no major gap for payment methodologies have been identified at this time. ▪ **Cash-based payments:** There seems to be a segment of the customer base that prefers to pay in cash or check at a retail or banking location. Through third party payment agreements, there are hundreds of locations where customers can make payments. All payment options are currently offered to customers across all segments. Some large commercial and government accounts pay via check; for example the water authority has one bill that they pay via check for roughly 1,000 premises. ▪ **Payment processing:** Payments from payment partners (banks and retail locations) are typically received daily via electronic files. Some of the lower volume banks files are received less frequently. Some manual intervention is required to process these files into CC&B. CC&B payment verification and reconciliation processes exist, though reporting on volumes of payments and cost per payment are not readily available. Payment processing should be more automated with stronger reporting and verification capabilities. Payment processing automation could improve payment application timing to near real time for electronic payments and accelerate payment posting for cash, check and money order payments. In addition, improving timeliness of payment processing should improve the customer experience and reduce call volumes. Future

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	negotiations of contracts with payment partners (IVR, banks and retail locations) should yield lower per payment costs. Cost per payment should be reported as an operational KPI to enable more effective cost controls and partner management. ▪ **Financial controls and compliance:** Documentation regarding financial controls and processes was not readily available nor were recent audits of financial controls either for PREPA or their financial partners (banks and retail payment centers). Given revenues in excess of $3B, lack of thorough documentation and regular audits is a significant gap. KPMG is currently executing a project around financial controls, but the scope is currently unknown. Similarly, payments being taken through all channels have not been confirmed to be PCI or PII compliant. PREPA does not store credit card information, which reduces PCI risk but also negatively impacts the customer experience. Documentation of recurring payments processes was not readily available nor were audits for PCI and PII compliance. ▪ **Operational:** Roughly one quarter (25%) of customers pay their bills through electronic methods. The current COVID pandemic has driven more customers to pay PREPA electronically. Ongoing efforts to convert customers to electronic payments will help reduce PREPA costs and demands for operational resources. Current payment options and channels seem to sufficiently provide for a satisfactory customer experience; however, customer satisfaction surveys were not available to validate this perspective. Given the abundance of payment partner facilities (more than 600 retail locations), being able to pay in a PREPA district office seems redundant and unnecessary. Customer research will be necessary to confirm this observation.
XI-7 **Theft** *Extent that ICEE has a robust theft and revenue protection approach, along with people and processes in place to understand total unidentified consumption (non-technical system, line loss, theft). Includes well-developed prioritized plan to reduce level of unidentified consumption (theft). Extent that approach accounts for legal and regulatory requirements and obstacles to drive ongoing improvement. Extent that metrics are used to measure actuals vs. targeted performance to drive development of gap closure plans. Extent that metrics are in place and aligned to high priority processes (e.g., usage data, billing exceptions, credit collection, payments and financial controls).*	▪ **Background:** Theft deterrence at PREPA is managed by the Irregularities in Electric Consumption (ICEE) team that is comprised of ~110 FTEs dispersed across 7 ICEE offices. Approximately 50% of ICEE staff is office based, while the other 50% is field based (2-person team comprises an investigator and a meter tester). Field teams rely on ~30 vehicles to perform work (avg. age = ~12 yrs.; ~45% are not working due to vehicle age and a lack of well-defined service level agreements with PREPA centralized repair shop). ICEE budget is ~$4.5M. ▪ **Objectives:** ICEE's goal is to deter theft and reduce non-technical losses (e.g., customer theft, consumption on active meters without registered accounts) by conducting field investigations that identify theft and other meter irregularities. ▪ **Operational results:** Non-technical losses at PREPA are in the ~4-10% range (depending on source) vs. industry benchmarks of ~1-2% for North American electric utilities. Residential and commercial customers appear to conduct most thefts at PREPA. On average, ICEE conducts ~30k investigations/year with a success rate of ~22% (or ~1 of every 5 investigations). ▪ As a result, ICEE has identified $182M in unbilled amounts of which ~1/3 has been paid ($64M) and the other ~2/3 remains unpaid ($118M – consisting of cases in legal proceedings, cases in process, accounts with unresolved irregularities and bankruptcies). In 2019, each ICEE field investigation yielded a net value of $733 in recovered losses on average ($845 in recoveries minus $112 in cost = $733 net recoveries per investigation). It is unclear whether ICEE work is prioritized using potential money to be recovered as one prioritization criteria. ▪ **Process:** ICEE identifies theft leads using data analytics (AI-enabled) via anonymous customer reporting channels (phone [787.521.1212] or web [aeepr.com/en-us/Pages/Hurto%20de%20Energ%C3%ADa/Theft.aspx]), and through PREPA's own field-based workforce. ICEE's field order generation and summary reporting processes are overly manual and could benefit from digitization to increase field crew productivity and reduce level of effort / cost. ▪ When theft is identified, ICEE requires the customer to pay all unbilled amounts as well as penalties and administrative charges immediately (or alternatively agree to a theft payment plan). In many cases, customers legally contest theft cases, resulting in unbilled amounts remaining unpaid (one consulting report identified that PREPA is only able to collect on 11% of identified thefts $ amounts). The ICEE division has facilities and contracts in place to administer the legal process to prosecute theft. In Q3 2020, ICEE signed a new contract for legal resources to prosecute theft cases which should lead to improved collections on theft cases. ▪ **Technology:** ICEE analytics are conducted using CC&B to identify theft leads. ICEE uses CUCOH to register theft cases (vs. CC&B to maintain customer confidentiality). The SIMCE system is leveraged by the legal department to store theft cases and other sensitive information. There are several technology and equipment issues that make it more difficult to prevent or detect theft including: keys for the current Yale padlock key utilized for wholesale accounts and the locking meter ring are readily available for purchase. Some meters and other customer equipment are not accessible

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	for inspection for potential theft or tampering (such as equipment located inside a building or on a fenced property). ▪ PREPA currently has a mixture of remote-capable and non-remote capable AMR meters. With the implementation of AMI meters, PREPA will have increased transparency and real time awareness and insight into likely theft cases.
XI-8 **Performance Management** *Quality of Billing Services performance metrics management system. Includes system robustness, tiered metrics with supporting governance and oversight (e.g., monthly performance management meeting). Extent that metrics system is set up to measure actual vs. targeted performance, and gap is used to drive development of gap closure plans. Extent that metrics are in place and aligned to high priority processes e.g., usage data, billing exceptions, credit collection, payments & financial controls*).	▪ **Objectives:** Objective of performance management is to track, monitor and manage utility performance using a holistic set of performance metrics linked to business objectives and management meetings which tracks actual performance against performance targets. As part of formal and informal performance management meetings, performance gaps should be identified, and corrective action plans developed to correct performance and realize targeted goals. ▪ **Operational results:** As part of the review of documents shared by PREPA and through key stakeholder interviews conducted in the functional areas of billing, payments, credit & collections and theft, the team has not identified a set of holistic performance metrics and management meetings designed to drive performance at PREPA. PREPA does have limited metrics scattered across many documents. In addition, there are limited performance management meetings, but it is unclear how effective they are in driving performance and no corrective action plans were identified to drive performance (although on a case-by-case basis, one-off initiatives were identified). ▪ No fully developed standardized approach or metrics templates for performance management were identified during the front-end transition assessment. There does not appear to be any centralized organization providing governance or oversight for performance management at PREPA. Therefore, most operational areas conduct performance management on an ad-hoc, decentralized basis, leading to a wide variety of metrics, KPIs and reporting. In addition, there does not appear to be any prioritization of metrics (Tiers 1, 2, 3) linked to overall business objectives, and importantly, most data is not available on a real time basis. Therefore, it is difficult to see how PREPA can manage performance, drive continuous improvement and achieve operational excellence. ▪ Two notable efforts were identified. The Customer Service department is collaborating with a third party reporting and data visualization vendor (True North) to develop Customer Service dashboards to manage operations and to drive performance. For those dashboards to be completed, beginning and end of month totals were included as well as monthly inflows and completed work. In addition, the ICEE department does have an annual plan which includes descriptions of identified initiatives, but it fell short of being a well-structured gap closure plan (with owners, timing, level of impact, cost to achieve not included in the plan). ▪ **Key performance metrics:** The following list identifies assessment of performance metrics and data including notable strengths and weaknesses of those metrics (where possible). It should be noted, at a high level, that performance metrics were frequently not readily available in an analysis-ready format (to generate insights on level of performance). *Billing:* PREPA's billing team did provide sufficient detail for bills printed vs. eBill notifications sent (in total and by customer type) as well as the backlog associated with consumption on active meters without registered accounts. However, the team did not have other key billing data readily available around number of unbilled accounts, estimated bills, delayed bills, inaccurate bills and claims (note – some details on backlogs for these billing exceptions was readily available, but detailed account level information has yet to be received). *Payments:* PREPA provided a significant amount of payment data, but the data provided was not within a readily available summary format to generate key insights around number of payments and total $ payments by payment method (e.g., cash, check, credit card) and payment channel (e.g., web, IVR, call center agent, regional district office). The front-end transition team in in progress of developing a preliminary summary analysis. *Credit & Collections:* PREPA's finance team does track accounts receivables ($2.3B – May 2020) and DSO (109/254 days with/without uncollectibles – May 2020) on a monthly basis. This monthly report enables tracking and trending of this data on a monthly basis (e.g., note – significant amounts of uncollectibles have been estimated (contra-A/R account) and government and municipal government accounts have been removed from the DSO metric which obscures performance at some level). *Theft:* PREPA's ICEE team did have sufficient data on number of investigations conducted (~30k per year, 5-year avg.) and the success rate of investigations (~22%) as well as high level $ amounts associated with identified thefts ($118M). However, the ICEE team has not been able to provide detailed breakdowns of theft $ amounts

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	owed at the account level and importantly, the aging of identified theft $ amounts (which would provide insights into the collectability of the identified theft amounts). ▪ Within the customer service team, however, it has been very difficult to obtain detailed accounts receivable data by customer type and at the account level which reconciles to the data provided in the finance team's monthly report. Therefore, there is little confidence that the customer service team is organized around this detailed data (tying to the monthly report) that would ensure customer service's ability to drive effective and efficient cash management.
XI-9 **Information & Technology** *Extent that meter data management architecture and processes are adequate to ensure availability of accurate customer usage data and performance information to support bill issuance and decisions. Extent that CC&B architecture and processes are in place to support bill issuance, credit collections and payment processes. Extent that CC&B or other systems are in place to support management and processing of billing exceptions for all customer types. Extent that payment technology is in place and ensures accurate and timely payment processing. Extent that IVR, website and other technology channels are in place and adequately support Billing Services processes (e.g., bill view).*	▪ **Overview:** Variances from industry standard technology capabilities have been broadly surfaced across numerous discovery discussions. Field based teams across the customer service group are scheduled through and leverage largely paper based manual processes. Managers lack reporting that would yield insight into employee productivity. Customer facing employees lack real time visibility into system operating status. Consistent customer self service capabilities are below industry standards. PREPA and LUMA will need to invest significant time and resources to elevate customer service department information technology capabilities to be on par with industry standards. ▪ **Inventory of systems:** The following IT programs/systems have been identified as currently being utilized within PREPA's Customer Service department (to varying and inconsistent degrees): ▪ CS team-wide: Oracle CC&B, MS Office ▪ Bill Print & Delivery: Control M, Streamweaver, Doc1, E-Vault, InfoPrint, Pitney Bowes Direct Connect ▪ Theft: Cucoh, Simce, internally-used analytics software to determine irregularities (name unknown) ▪ Legal & Bankruptcy: Simce ▪ Back office: True North ▪ Call Center: Call Taker, STORMS, Avaya

Major Gaps

Sub-Topic Area	Major Gaps	Categorization
XI-2 **Processes** *Consistency of Billing Services processes with vision and strategy. Extent to which high priority processes are identified, defined, prioritized and supported with appropriate governing documents (e.g., process maps, policies, procedures, standards). Extent to which Billing Services processes are factored into planning and execution of work, and align with company strategic objectives. Extent to which KPIs and metrics are aligned and established based on industry best practices and credible benchmarking.*	**Comprehensive database:** Although there is a catalogue of policies and procedures on PREPA's intranet, it is unclear if the intranet contains all policies and procedures which are required from a utilities business management perspective. Developing a comprehensive central sole-source database is a critical gap which needs to be filled in order to reduce post-commencement risk. **Document redesign & overhaul:** Many of the policy and procedure documents are outdated and in need of redesign or a complete overhaul. The average age of the documents is 12 years; notably, 20% of all documents are >15 years old. Relying on outdated governing documents poses a significant risk, including regulatory risk, to post-commencement operations and therefore has been identified as gap within the billing services functional area. **Process mapping:** Process maps are not in place for most of the policies and procedures, creating a post-commencement risk for many key functional areas. It has been noted that PREPA's intranet does not contain any process maps. Process maps developed on an ad-hoc basis within PREPA also do not follow any type of standard format. LUMA's CS team intends to develop and implement a standard for process mapping going forward. **Modernization of processes:** The overwhelming majority of processes are paper based, manual in nature, and do not utilize any type of modern technology or software. Furthermore, a consistent approach to the development and implementation of	SRP candidate (reassigned to Training team) SRP candidate (reassigned to Training team)

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	processes is lacking. Moving to a technology/software-based approach will help to close this gap.	
	Continuity of processes: Although current stakeholders appear to be familiar with processes which are operationally utilized, without adequate documentation, significant risk is posed to stakeholders in any other group which may support Billing Services, as they are likely to be unfamiliar with the details of the processes. During times of high employee turnover or emergencies, this gap is expected to cause challenges and risks to operational efficiency.	SRP candidate (reassigned to Training team)
	Dedicated governance personnel: Effective creation, maintenance and storage of policies, procedures and processes is currently lacking and has been identified as a gap within the billing services functional area. It does not appear that the departments have a dedicated staff member in place to ensure policies, procedures and/or processes are updated or in place. Implementing a dedicated roster of personnel to manage the creation, storage and maintenance of policies, procedures and processes would greatly improve the level of governance and reduce potential risks associated with outdated or missing documentation.	SRP candidate (reassigned to Training team)
	Process inefficiency: Efficiency of overall process flow within PREPA's billing services functional area is lacking. Processes are not automated and are dependent upon employees' manual efforts. Employees have expressed great interest in improving these processes to improve their efficiency and the customer experience. Handoff of physical documents is currently standard protocol for many of the teams. Additionally, back and forth process flows are also evident, particularly in various field-based roles. In order to improve the process flow, having a dedicated team to ensure accurate processes are being created and documented, while integrating modern technology systems, will help to close this gap.	
XI-3 **Customer Meter Data** *Extent to which customer meter data (e.g., usage data) can be read on a timely, actual (i.e., not estimated) and accurate (without meter reading irregularities) basis in line with official billing calendar. Extent to which meter data is collected, cleansed, controlled for quality and stored for use in billing and other purposes. Extent that information management architecture and processes are adequate to ensure availability of accurate usage and billing. Extent that meter reading plan supports billing processes and billing calendar.*	**Broken meters:** PREPA currently has at least ~60k damaged meters from 2017 hurricanes (e.g., Hurricane Maria). This is a major gap that drives estimated data usage and estimated bills. PREPA is working to fix these meters with a contract in place to purchase up to $10M of meters and a targeted goal of replacing up to 24k meters during FY20-21.	SRP candidate (reassigned to Metering)
	AMI meters: PREPA would benefit from a transition from AMR to AMI meters which could reduce or eliminate gaps in billing, meter reading, start/stop service processes, cut-off for non-payment processes and otherwise provide additional customer value including: 1. Enable PREPA to reduce estimated bills (e.g., improved billing accuracy, reduced calls, and reduced visits to district offices). 2. Reduce PREPA's need to manually read meters with a secure, wireless, remote meter reading. 3. Enable PREPA to remotely turn-on/turn-off meters and improve PREPA's start/stop/transfer service processes as well as PREPA's cut-off for non-payment processes.	SRP candidate (reassigned to Metering)
	4. Provide customers an opportunity to better control their energy usage with real time data (e.g., 15-min. reads; TOU rates) and to take advantage of demand response technologies.	SRP candidate (reassigned to Metering)
	MDM system: Lack of a current MDM system inhibits capabilities to promote robust data integrity and accuracy gained from: 1. Importing usage data, then validating, cleansing and processing data before making it available for billing and analysis	SRP candidate (reassigned to Metering)

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	2. Providing reporting capabilities for load and demand forecasting, management reports, and customer service metrics **Data governance:** With the implementation of an MDM system, a more well-defined and established data governance program could be simultaneously implemented to drive improved data accountability, governance and oversight, and ultimately generate insights and resulting gap closure plans. **Data analytics:** Similarly, with the implementation of an MDM, a more well-defined and established data analytics program and governance could be established to further generate actionable insights and corrective action plans (including the selection of needed data analytics tools made available to key PREPA departments [e.g., Customer Service]).	
XI-4 **Billing Issuance & Exceptions** *Extent to which Billing Services oversees, manages and executes volume of bills on a timely basis. Extent to which organization understands and is managing billing exception work (e.g., driven by meter reading and other irregularities) in an organized, prioritized and value-driven fashion to support business objectives and KPIs. Extent to which org operates from a strategic perspective to manage and drive processes and work with appropriate use of supporting technology.*	**Estimated bill backlog:** Estimated bill backlog is ~143k or ~10% of 1.47M PREPA customers (for estimated bills with read and without reads). Typical estimated bills as a percentage of total customers at well-functioning North American utilities range from 1-2% (therefore, a gap of 8-9% exists to be closed). To close the gap and bring the backlog in line with well-functioning utilities, additional contracted resources may be needed to understand root cause drivers, revise and develop key processes and manually work down the backlog. **Unbilled accounts backlog:** The unbilled accounts backlog is ~9k. Some of the unbilled accounts are explainable; however, per billing stakeholder interviews, most unbilled accounts cannot be explained (their root cause is not understood). Typical unbilled accounts at well-functioning North American utilities range are in the 0-1k range (or do not otherwise exist for more >24 hours). To close the gap and bring the backlog in line with well-functioning utilities, additional contracted resources may be needed to understand root cause drivers, revise and develop key processes and manually work down the backlog. **Unbilled accounts, streetlights:** Based on discussion with PREPA stakeholders, there is anecdotal evidence that a significant number of streetlights owned by PREPA are not being accurately tracked in the asset management system. Therefore, PREPA is not able to send bills to streetlight customers, resulting in unaccounted-for energy usage and lost revenue. This gap can partially be addressed through a planned streetlight audit to occur over a 2-year time period: once the streetlight asset is confirmed and included in the asset management system, the billing team can work to calculate the amount due and issue a bill. It should be noted that a similar gap exists in the tracking of joint use assets. **Billing exception workforce management solution:** Currently, billing exceptions (estimates, unbilled accounts) are managed by extracting information from CC&B into reports (some reports are in Excel, Power BI or within the True North Dashboard). While the current reports provide insights into monthly totals and trends, they do not provide visibility into intra-day/month volumes for more effective management of backlogs. PREPA lacks an automated work distribution and/or productivity tracking tool to enable long-term, sustained productivity gains. A workforce management solution for back office work could enable improved work management and increase productivity. **Back office consolidation:** As mentioned previously, some back office work is performed centrally (at NEOS); other work is performed on a decentralized basis (at district offices). The structure of this work increases executional work complexity, reduces work productivity and efficiency, likely results in gaps in quality (as a result of dispersed groups adhering to processes/standards to varying degrees), and decreases ability to oversee work comprehensively. Therefore, the lack of	SRP candidate SRP candidate SRP candidate SRP candidate SRP candidate

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	centralization is a key gap that could be addressed by fully centralizing billing exception work at NEOS; centralization would require needed facilities space and IT resources for staff. **Back office processing of service order paperwork & manual data entry:** Currently, most (if not all) service order field work is distributed manually (using paper) to PREPA's field teams. Upon completion of service orders, field teams return completed paperwork to physical locations to be manually entered into systems of record (e.g., CC&B, CUCOH). Examples of service order work include: Cut-off for non-payment order (current PREPA past due and eligible for cut-off accounts customers >100k) Claims-related field work (12–15k meter investigations/exchanges per year) Consumption on active meters without an account (~5K backlog) Theft orders (~30K meter investigations conducted per year). The lack of a digital workforce management solution is a major gap for the effective, efficient and quality completion of work and, also inhibits the timely and accurate recording of work for PREPA (due to manually data entry errors). Short- and long-term solutions may be needed to achieve gains in efficiency, quality and cost savings that drive long-term value for PREPA and its customers. Solutions may include process redesign, contracted labor, use of technology (scanners, fax) and/or other digital solutions to minimize paper processing and manual data entry. **Accounts receiving both printed bills & eBill notifications:** Based on discussions with billing stakeholders, ~260k accounts receive both a printed bill and an eBill notification. This unnecessary duplication of bills is considered a gap. Upon commencement, this gap could be closed by implementing a project to opt-out these accounts from receiving a printed bill (e.g., customers could be notified of the automatic "opt-out" process while being provided an option to request continued delivery of both printed bill and eBill notification). By doing so, it is estimated that 70–90% of these accounts would be opted out from receiving printed bills (thereby, achieving cost savings). It is noted however that some percentage of customers desire to have both electronic and paper bills. This percentage is unknown at this time. **Bill redesign:** PREPA's current bill design was developed to comply with regulatory requirements as mentioned previously. Therefore, the bill design lacks customer experience and design best practices (e.g., it does not communicate customer value, is difficult to navigate and does not exemplify many of the best practices for utility bill design). During front-end transition, a new, customer-focused bill design, will be developed and is expected to be implemented upon commencement. **BP&D function:** PREPA is considering outsourcing its in-house BP&D function to a third party vendor and is pursuing an RFP process. It is expected that the outsourced vendor would provide a comprehensive solution to print, batch, render, sort (hard copy print vs. eBill), store images, enable bill image access. In addition, the vendor would also be expected to provide address standardization and returned mail services. Finally, it is expected the vendor would have a disaster mitigation and disaster recovery plan to manage disaster-related risk and to provide the ability to rapidly recover from large-scale disasters. **Outsource BP&D function (RFP):** PREPA-led project to issue the RFP to outsource its BP&D function is underway (completion timing is TBD).	Improvement opportunity Priority program Priority program Priority SRP candidate SRP candidate

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Sub-Topic Area	Major Gaps	Categorization
	Outsource BP&D function (contract): If the decision is made to hire an outsourced BP&D vendor, budget for awarded contract(s) will need to be secured. Ultimately, an outsourced contract is expected to generate cost savings relative to the current in-house solution (note: the cost to outsource has been included as a project within SRP). **Redundant bill printing & enveloping equipment:** If the decision is made to outsource the BP&D function, budget will be needed to decommission the redundant bill printing and enveloping machines and to remediate the current space (NEOS, 1st floor).	
XI-5 **Credit & Collections** *Extent to which organization manages outstanding arrears in an organized, prioritized and value-driven fashion for company objectives and KPIs, in particular DSO metric. Extent to which organization effectively uses CC&B to track and store customer arrears info. Effectiveness of credit collections management system, including partnership with field and meter teams. Extent of partnership with Finance teams to manage bad debt in line with company and regulatory policy.*	▪ **Deploy smart meters across customer base:** Broad scale deployment of smart meters would reduce the amount of employee activity supporting collections. ▪ **Develop customer lifecycle (start/shut off) short-, intermediate- & long-term operational processes (Dunning):** PREPA and Luma need to evolve the broad set of collections processes to achieve current industry standards. Pragmatic operational plans need to be implemented to account for evolving collections capabilities such as smart meter deployment across customer segments. Dunning processes need to be prioritized by outstanding balance and customer segment. ▪ **Streamline Customer Service initiation processes:** Review and evolve processes associated with initiating service and making payments including paper based and in-office customer activities with the objective of making it easier for the customer. Automate collections processes to improve collections rates. ▪ **Reorganize reporting structure for aligned collections responsibility:** Restructure the customer service organization such that one manager is responsible for all past due collection efforts. ▪ **Improve collections operational reporting:** Improve reporting and visibility of financial metrics related to collections such as Days Sales Outstanding and Accounts Receivable by customer segment. ▪ **Consistently enforce collections policies:** If a customer (residential, commercial, government) is past due and qualifies to have service terminated for non-payment, they should be cut off for non-pay (CONP). ▪ **Create or strengthen low-income customer assistance programs:** Dedicate PREPA and Luma resources to helping customers understand, apply, and qualify for low income assistance programs that would both help customers and reduce outstanding collections balances. ▪ **Address collections technology gaps:** As PREPA and Luma evolve the overall system technology (such as smart meter deployment) and collections effectiveness programs (such as outreach), incremental technology efforts will likely be required for areas like workforce management and smart devices to enable field agents. Implement an outbound dialing capability to enable outbound collections calling to prioritized accounts. ▪ **Expand outreach programs:** Like gap assessment suggestions regarding theft, PREPA and Luma will likely need to leverage external sources such as newspapers and social media communicate the idea that paying your electric bill in full every month is mandatory.	SRP candidate (reassigned to Metering) Department level gap Department level gap Department level gap Department level gap Department level gap Department level gap (ex. smart meters & outbound dialer [in SRP]) Improvement opportunity
XI-6 **Payments & Financial Controls** *Effectiveness and efficiency of payment operations to ensure timely and accurate payment processing. Extent to which organization manages*	▪ **Execute payment controls audit:** Analyze all current payment methods and processes to ensure they meet industry accounting and operational standards (potentially utilizing third-party resources). Based on findings, modify processes to meet standards.	Department level gap Department level gap

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Sub-Topic Area	Major Gaps	Categorization
payment collection through variety of channels (e.g., IVR, website, US Mail, in person) and payment types (e.g., cash, check, credit / debit) in organized, prioritized and value driven manner. Extent of partnerships with other organizations to collect payment (e.g., call center, district offices and third party payment centers [e.g., Walmart]). Extent that org understands its role in meeting DSO performance metrics targets and is organized to support this.	▪ **Improve self-service payment options**: Investigate opportunities to make it easier for customers to pay electronically and preferably on an automated recurring basis. It is noted that in the near term, due to PREPA's high bill issues, customers may resist enrolling in automated billing at levels comparable to other North American utilities. ▪ **Optimize payment costs for consumers and PREPA:** Conduct an analysis (potentially through a third-party organization) to understand costs for both consumers and PREPA of payment processing across all the available channels and payment centers (i.e., PREPA offices, local banks and other retail payment centers, online, IVR). Optimize payment options and contracts based on these analyses. ▪ **Consider phasing out PREPA payment centers:** After exhausting all opportunities to streamline customer payment options, consider eliminating PREPA-branded payment centers. Given the abundance of payment methods, channels, and third-party retail locations available to pay a bill, having dedicated PREPA offices that can accept payments seems like an unnecessary cost and liability. PREPA and LUMA should conduct a cost benefit analysis of closing local PREPA payment locations provided it is allowed within legal requirements. Customer research (Voice of Customer) should also inform this analysis. ▪ **Mandate electronic payments for non-residential accounts:** PREPA should consider mandating all non-residential customers pay via electronic methods, which will reduce cost, risk, labor and rework. ▪ **Initiate outreach program to communicate payment options to customers:** Utilize all available communications channels (physical bill, website, local media) to communicate all payment methods available to consumers with an objective of driving more consumers to electronic and recurring payments options.	Department level gap Department level gap Improvement opportunity Improvement opportunity
XI-7 Theft *Extent that ICEE has a robust theft and revenue protection approach, along with people and processes in place to understand total unidentified consumption (non-technical system, line loss, theft). Includes well-developed prioritized plan to reduce level of unidentified consumption (theft). Extent that approach accounts for legal and regulatory requirements and obstacles to drive ongoing improvement. Extent that metrics are used to measure actuals vs. targeted performance to drive development of gap closure plans. Extent that metrics are in place and aligned to high priority processes (e.g., usage data, billing exceptions, credit collection, payments and financial controls).*	▪ **Lack of deterrence:** PREPA's overall theft management system does not yet drive significant customer theft deterrence to drive down the rate of theft (e.g., per ICEE leadership). Improving PREPA's overall theft deterrence program and approach (including appropriate use of theft deterrence technologies) can lead to the desired flattening of theft rate curve (and eventual decrease in theft cases). ▪ **ICEE vehicle/fleet up-time:** With ~45% of ICEE vehicles not working, ICEE's fleet up-time percentage is abnormally low (~55%) — this is a major gap. With the purchase of new vehicles (combined with well-defined service level agreements with PREPA's centralized repair shop), ICEE should be able to reduce field team idle time (due to lack of available vehicles) and significantly increase field team productivity (number of completed investigations). ▪ **Field & office team productivity:** ICEE productivity is significantly inhibited due to a lack of a digital workforce management solution (e.g., service order dispatch software with smart forms enabled for data capture using tablets and smart phones). As a result, PREPA's ICEE teams rely on manual/paper-based processes, which is a major gap. ICEE team productivity is reduced by: *Excess windshield time:* At the start of work, ICEE field teams must pick up paper service orders at theft offices; at the end of day, completed paper orders must be returned to offices. *Manual data entry:* At the end of the day, ICEE office teams must manually enter completed service order data into appropriate systems of record; this is a non-value-	SRP candidate (reassigned to Ops) SRP candidate (reassigned to Ops) SRP candidate (reassigned to IT OT) SRP candidate (reassigned to Metering) Department level gap Department level gap

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Sub-Topic Area	Major Gaps	Categorization
	added, double-entry of data process (unnecessary level of effort which may impact quality as well). *Office resources:* Office teams must prepare service orders for field teams and prioritize work on a manual basis which requires more resources vs. a digital process (and may result in sub-optimal service order dispatch). Digitizing process could increase ICEE field team productivity by ~10-20%.	Department level gap
	▪ **AMI meters**: Lack of AMI meters hampers ICEE's ability to instantly recognize and respond to theft on a facilitated basis (especially valuable for "problem" neighborhoods). Given an average expected loss recovery of $845 per ICEE investigation, improvements in operational efficiency yield a highly positive ROI.	Department level gap
	▪ **Theft communications strategy:** Customer communications to deter theft, and to improve customer awareness of theft programs and anonymous reporting channels, are a gap. There are opportunities to partner with the Communications team to ensure a holistic communications strategy to drive theft deterrence, thereby reducing theft incidents (e.g., on bill, via bill inserts, on website main page, via newsletter, press releases).	Improvement opportunity Improvement opportunity
	▪ **Value-based work prioritization**: Although it is unclear whether PREPA prioritizes work theft detection or collections work based on economic value (e.g., potential dollar amounts), it is worth examining further to update the theft program to prioritize work (e.g., investigations sent to the field based on expected recovery value will help improve performance with daily route grouping and optimization for investigation crews; a similar methodology could be applied to office-based collections work).	SRP candidate (reassigned to Ops) SRP candidate (reassigned to Ops) SRP candidate (reassigned to Ops)
	▪ **Theft detection rate:** PREPA's current detection rate of ~22% (1 of every 5 investigations), can be increased to improve the quality of theft "leads" and ultimately, achieve higher detection rates. PREPA can achieve a higher detection rate by improving data analytics execution, hiring analytical resource and increasing the marketing of PREPA's anonymous theft reporting channels (via website main page, on bill inserts).	SRP candidate (reassigned to Ops)
	▪ **Theft collection rate:** As mentioned previously, only 11% of PREPA identified theft dollar amounts are collected (per one consulting report), due in part to a lack of legal resources. However, ICEE has signed a new contract for legal resources to prosecute theft cases, which should lead to improved collections. To ensure this collection rate gap is improved, a new contract must be implemented, overseen and managed to drive the desired collections rate improvement.	
	▪ **Unnecessary/burdensome regulation:** Unnecessary and burdensome regulation (e.g., sections of Regulation 7982) inhibits ICEE's work, creates unnecessary LOE, reduces identification of unbilled revenue and increases the cost of detecting and prosecuting theft. Future collaborations with PREB and other regulatory bodies to streamline and align regulation with theft operational realities can improve ICEE productivity.	
	▪ **CC&B adjust table:** Key CC&B Table(s) used for HH/NHH charges are not set up correctly to enable easy updates by ICEE team members; as a result, ICEE's level of effort (LOE) is greater than necessary (a gap).	
	▪ **Wholesale accounts meter box keys:** Current padlocks (Yale Master 502) are outdated with many copies duplicated on the black market and as a result, do not drive theft deterrence. Replacing current solutions with the "BEST" brand locks/keys for all commercial/industrial primary	

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Sub-Topic Area	Major Gaps	Categorization
	accounts with meter boxes would improve theft deterrence. Note: keys to be held by Wholesale team. ▪ **Special meter key rings:** Outdated, patent-lapsed, special meter key rings used by PREPA are being duplicated and sold on the black market; ICEE has a current proposal with DEWALCH Company to replace existing solutions with digitally encrypted keys to improve theft deterrence. ▪ **Other gaps – theft deterrence technology:** To drive incremental theft deterrence gains, ICEE will work to improve the current use (or pilot) of the following technologies: Baroscopic inspection devices (secondary meters) Integrated-meter transformers IoT accelerometer meter device (camera-enabled for enhanced prosecution) Voltage trackers Energy sub-meters Auxiliary metering equipment ▪ **Hard-to-reach locations**: Hard-to-reach locations (e.g., behind-the-fence meters, backyard aerial outlets, rural areas) prevent effective identification and monitoring of theft; use of drones (pilot already conducted) could help extend ICEE's reach and effectiveness.	
XI-8 **Performance Management (KPIs)** *Quality of Billing Services performance metrics management system. Includes system robustness, tiered metrics with supporting governance and oversight (e.g., monthly performance management meeting). Extent that metrics system is set up to measure actual vs. targeted performance, and gap is used to drive development of gap closure plans. Extent that metrics are in place and aligned to high priority processes e.g., usage data, billing exceptions, credit collection, payments & financial controls).*	▪ **Metrics dashboard:** The Customer Service dashboard (in-progress with PREPA CS team and True North) is in progress. It is unclear whether the future state dashboard will deliver a complete set of metrics prioritized and linked to business objectives. Also unclear whether the dashboard will ultimately drive effective performance management at PREPA for these functional areas. Enhancing the dashboard with metrics for these areas would provide transparency into performance (e.g., YTD actuals vs. monthly/annual targets) and drive focus on identified gaps for development of performance improvement plans (based on prioritized initiatives with defined scope, timing, cost and responsible parties). ▪ **Metrics/KPI book:** As described in the Observation & Contributors section, the billing, payments, credit & collections and theft teams lack a well-defined "Metrics/KPI book" to manage performance effectively across these key operational areas. This significant gap inhibits the effective management of performant in these areas. A future state metrics/KPI book may include the establishment of area-wide set of metrics prioritized (e.g., Tiers 1, 2, 3) and linked to business objectives. In addition, this metrics book would include clear metric definition, report timing (by month, quarter, and year), assigned owners, and targets.	SRP candidate (reassigned to IT OT) Department level gap
XI-9 **Information & Technology** *Extent that meter data management architecture and processes are adequate to ensure availability of accurate customer usage data and performance information to support bill issuance and decisions. Extent that CC&B architecture and processes are in place to support bill issuance, credit collections and payment processes. Extent that CC&B or other systems are in place to support management and processing of billing exceptions for all customer types. Extent that payment technology is in place and*	▪ **Deploy system-wide smart meters**: Implement industry standard smart meters across all customers. Benefits should include improved customer satisfaction (better estimated time to restoration and other customer notifications), increased effectiveness in collections efforts — reduced errors in meter reading for wholesale customers among many other benefits. ▪ **Improve customer facing technologies:** Offer a mobile app to enable customers to manage their accounts, make payments and check service status. Enable automated outbound communications to customers regarding outages, planned outages and upcoming payment due dates via the customer's preferred channel (email, text, outbound automated call). Expand capabilities for external customer website (i.e., enable signing up for autopay through the website). ▪ **Implement workforce management:** There are significant opportunities to leverage technology to drive efficiencies for	SRP candidate (reassigned to Metering) SRP candidate (reassigned to IT/OT) SRP candidate (reassigned to IT/OT)

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Sub-Topic Area	Major Gaps	Categorization
ensures accurate and timely payment processing. Extent that IVR, website and other technology channels are in place and adequately support Billing Services processes (e.g., bill view).	customer service field teams (collections, theft and other departments). These field teams lack basic industry standard technologies such as workforce management to automate, track and manage assignments and intelligent field enabled devises such as smart tablets.	
	▪ **Improve operational real-time reporting:** Deliver improved reporting capabilities for managing field team productivity, outage management, accounts receivable/collection efficacy, billing exception volumes and causality for unbilled accounts. Continue to evolve theft detection reporting analytics to reduce PREPA losses. All reporting needs to be in or near real time.	SRP candidate (reassigned to IT/OT)
	▪ **Utilize technology to enable collaboration between departments:** PREPA seems to operate in a very silo-driven departmental method today. There are technology capabilities available (such as social media-enabled knowledge management platforms) that can begin to break down barriers of communication between departments — this will likely ultimately improve customer service.	Improvement opportunity
	▪ **Manage compliance of adoption of process and technology changes/change management:** Many processes and technologies will change during and after the transition to Luma. Employees will need to be trained on new technologies, and adoption and compliance across regions will need to be measured and managed to ensure consistent adoption of new processes and technology.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Area					
XI-1 Vision & Strategy *Extent to which system aligns to a well-structured operating model and/or industry standards*	X				
XI-2 Processes *Consistency of Billing Services processes with vision and strategy.*		X			
XI-3 Customer Meter Data *Extent to which customer meter data (e.g., usage data) can be read on a timely, actual (i.e., not estimated) and accurate (without meter reading irregularities) basis.*		X			
XI-4 Billing Issuance & Exceptions *Extent to which Billing Services oversees, manages and executes volume of bills and exceptions on a timely basis.*		X			

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Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XI-5 Credit & Collections *Extent to which organization manages outstanding arrears in an organized, prioritized and value-driven fashion.*	X				
XI-6 Payments & Financial Controls *Effectiveness and efficiency of payment operations to ensure timely and accurate payment processing.*			X		
XI-7 Theft/Revenue Protection *Extent that ICEE has a robust theft and revenue protection approach, along with people and processes in place to understand total unidentified consumption.*			X		
XI-8 Performance Management (KPIs) *Quality of Billing Services performance metrics management system.*		X			
XI-9 Information & Technology *Extent that meter data management architecture, technology and processes are adequate to ensure availability of accurate customer usage data and performance information to support bill issuance and decisions.*		X			

XII. Contact Center

Evaluation Framework

The Program/Project Planning & Execution Focus Area consists of seven sub-areas that define an effective program/project planning and execution process. The practices and disciplines that underlie these sub-areas apply to both O&M work and capital projects.

- XII-1 Vision & Strategy
- XII-2 Processes
- XII-3 Customer Service
- XII-4 Quality Assurance
- XII-5 Call Handling – Emergency & Facilities
- XII-6 Performance Management (KPIs)
- XII-7 Information & Technology

Observations & Contributors

Contact Center Sub-Areas	Observations & Contributors
XII-1 **Vision & Strategy** *Strategy: To build a contact center organization that supports customers by handling more types of interactions than phone calls.* *Vision: To allow customers to communicate using their method of choice.* *Extent to which current contact center operations support this vision and strategy. Includes ability to determine and have in place appropriate communication methods to respond to customers via phone, mail, email, chat, and social media.* *Providing a positive customer experience is critical to future contact center operations along with optimizing key performance metrics (e.g., ASA, customer complaint rate, first call resolution (FCR), abandonment rate, and customer satisfaction (CSAT).*	▪ **Vision:** While a formal vision is not defined for the Contact Center, management highlights the goal to provide excellent service. Management notes the importance of this goal is due to the Contact Center likely being the customer's first touchpoint with PREPA. ▪ However, no specific objectives, goals or roadmaps currently exist to evolve the Contact Center operation in the direction of this loosely defined vision. This is largely due to under-resourcing, including large numbers of employee vacancies, which leads management to only be able to focus on day-to-day operations (i.e., fire fighting mode). ▪ The physical Contact Center is a below average facility with a more traditional office layout and agent cubicles, preventing effective management of the CSR team and the operation. This facility and associated minimal amenities are also a contributor to low CSR morale, further impacting customer service *(per PREPA management; validation pending).* ▪ **Contact channels:** Currently the Contact Center offers two primary inbound channels, voice and email. The email channel is particularly challenged at this time having a massive queue of thousands of unanswered emails and no service level management, due to a minimal set of defined processes and a lack of email response management technology. ▪ Since Hurricane Maria, the operation has been severely stressed in terms of performance due to under-staffing and under-investment in basic contact center processes and technologies (e.g., no training, no QA monitoring, no agent performance management). ▪ In the summer of 2019, the Contact Center outsourced ~60-70% of the inbound call volume to two San Juan-based vendors, including the overnight support. Thus today, the Contact Center is three different operations, creating a challenge to deliver a consistent Customer Service. Difficulties in working with unions and their work rules were cited as the primary reason for outsourcing. This includes the inability to do CSR performance management (example**:** The Contact Center manager requested a review of calls/day with the CSR team. Upon this request, the CSR team walked out on the manager and the operation in the middle of day, claiming it was not appropriate for the manager to manage their productivity/performance.) ▪ **Performance management KPIs:** The Contact Center relies on two KPIs primarily: wait time (in queue) and abandonment. The calculations for wait time are problematic because of the three disparate ACDs and because the metric must be manually calculated. In addition, calls that wait in queue for the internal PREPA call center will overflow to one of the two outsourced centers after waiting in queue for 10 minutes. That 10-minute additional time in queue does not appear to be included in the current wait time calculation, and does not appear to be currently measured. Abandonment is a standard KPI, but also has some measurement challenges. The Contact Center does not utilize other industry standard KPI's such as service level, ASA, first contact resolution (FCR), AHT, average talk time (ATT), average after call work (ACW), QA Score, schedule adherence, or any measure of Customer Satisfaction. ▪ In May 2020, for the PREPA Contact Center, the average wait time in queue for callers was just over 8 min. This long wait time likely leads to a level of dissatisfaction with Contact Center access. Abandonment for the PREPA center in May 2020 was 58%, another

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Contact Center Sub-Areas	Observations & Contributors
	metric likely highlighting a level of frustration and dissatisfaction caused by customers' inability to reach the Contact Center. ▪ The outsourcers (Telecontacto and Insight) performed much better with an average Wait Time of under 2 minutes (Telecontacto: 1:57 and Insight: 1:49) with ~10% average abandonment. However, these metrics need to consider the up to 10 minutes of wait time that an unknown number of callers/customers experienced before being overflowed to the outsourcer. The issue here is that with three disparate contact center platforms, the routing and call handling processes are inefficient and difficult to optimize.
XII-2 **Processes** *Extent to which high priority Contact Center processes are identified, defined, documented, monitored, analyzed, and supported by governing documents (e.g., process maps, policies, procedures, standards, metrics, reporting). Determine how industry best practices and benchmarks are incorporated into planning and execution of current activities.*	▪ **Process documentation:** Documentation, including for critical or high priority processes, is largely non-existent or extremely dated. In many cases, processes have been changed since Hurricane Maria and again since COVID without a new update to the documentation where it exists. Process documentation that does exist is in many cases for training aides and job aides. There is also significant variation in how processes are performed in the Contact Center (for example, some reps will send a PREPA contract [yellow index card] for the customer to sign after they've initiated service, while other reps may completely ignore this part of the process). While the PREPA RFI process resulted in the receipt of ~140 process documents, in many cases, these were partial processes, varying formats and types, and even some blank forms that may or may not be used in a given process. ▪ Examples of process opportunities include: 1. **Establish service process:** New customers are required to provide identification and complete a paper contract in the district office (DO) to establish service. This extra step of requiring a physical visit to a DO is extremely inefficient and inconvenient for customers (see PREPA intranet > Frequently Used Forms). 2. **Outage reporting:** CSRs report outages through the CallTaker system, part of the Intergraph OMS. When outage reporting hits a high enough threshold, CallTaker is shut down by T&D. At this point, reps no longer record outage notifications from customers. 3. **Emergencies & maintenance orders:** CSRs report emergencies and maintenance orders, including tree trimming and streetlight issues, directly into the STORMS system. The level of integration into CC&B and overall customer history will require additional assessment. 4. **Confirm IVR payment:** The PREPA CSR has to log in to Oriental Bank website; due to batch processing of IVR payments, they cannot simply check CC&B. When a payment is made through the Oriental Bank IVR, those payments are all batch-processed by PREPA at 5:00 pm the following business day. This delay generates additional calls from customers. 5. **Supervisory practices:** In some cases, current management and supervisory teams, lack in foundational Contact Center management practices. Investment in a Contact Center management training program would be beneficial (customized or even standardized training, such as ICMI). 6. **Feedback & coaching:** Performance coaching of Contact Center CSRs is extremely problematic. Union rules allow a CSR to have a union representative at any one-on-one meeting with PREPA management. In most cases, the union president himself will attend these sessions, which is very intimidating. In addition, CSRs have openly protested and walked out when performance was discussed (specifically number of calls handled/hour on average). The union book or collective bargaining agreement contract is vague, and the union has interpreted the language to mean PREPA cannot measure productivity. ▪ An additional challenge is the reduced number of supervisors within the PREPA Contact Center. Currently, there are 11 supervisor positions vacant, as well as two QA positions. Thus, there are three floor supervisors in addition to the Contact Center manager. This makes it difficult to cover all shifts, as well as for illnesses/vacations. It is also noteworthy that these supervisors are temporary and are borrowed from other departments at PREPA. ▪ PREPA management/supervisors walk the floor to perform supervisory oversight. They often check in on long calls (<15min) to see if the CSR needs assistance or to help the CSR control/close the call. It is common for lengthy small talk conversations to lead to long calls. ▪ **Rewards & recognition:** The Customer Service Contact Center organization has minimal to no rewards & recognition programs for employees. ▪ PREPA HR does operate a program for Employee of the Month, but this has not been developed, customized and/or implemented for Customer Service Contact Center. ▪ The lack of Reward & Recognition (among other root causes) leads to lower motivation by PREPA employees. Currently, the level of an employee's motivation is dependent on their own morals and work ethic. That is, currently, employees must be motivated intrinsically and not necessarily be dependent on being recognized or being motivated by management (e.g., certification, recognition on the website) Source: General Business Session, Day 1 **Workforce management**

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Contact Center Sub-Areas	Observations & Contributors
	▪ **Forecasting:** While call volumes are tracked for reporting to leadership and the PREB, they are not used in combination with AHT to determine the proper number of representatives required. These volumes today are tracked in excel spreadsheets, and no software solution for workforce management (WFM) is in place at PREPA today (the use of WFM systems is standard across the contact center industry). There are no forecasts of expected call volume – either long-term, short-term (less than six weeks out), or during special events such as hurricanes and major storms. Because of this, there is no information currently available that helps determine the appropriate level of staffing needed to meet service objectives and goals. ▪ The outsourced call centers do not rely on PREPA for planning information – they forecast and assign staff per need, with only the dollar amount of the contract used for guidance. ▪ **Scheduling:** No software solution is in place to track and manage representative schedules for the internal Contact Center. Third party outsourcers use their own software tools. Third party outsourcers are responsible for scheduling their own agents to meet their contractual obligations. All PREPA internal representatives are hired with a set schedule, and that schedule does not change after they are hired. There are no variable schedules currently in place for the internal Contact Center, and the determination for when to hire additional representatives and for what shift is at management discretion. ▪ Internal Contact Center representatives are members of a union, and the union has indicated they do not believe individual schedules can be changed by the management team to meet business needs. ▪ **Intraday management & real time adherence:** Because there is no WFM software solution in place today, all monitoring of current state for representatives is done via Avaya CMS screens, which show call volumes, performance and agent current state. The Contact Center management team does not manage any real time adherence to schedules, where representatives would be tracked against expected lunch, break and meeting times, compared to the time during which they are expected to be assisting customers on the phone. ▪ **Shrinkage management and exception tracking:** Shrinkage in the contact center, defined as paid time during which a representative is not logged in and available to take customer calls, or unpaid time in the middle of a workday, is not being managed today. This time includes items such as paid breaks, unpaid lunches, training, meetings, coaching sessions or offline work. Any exceptions to schedules, whether positive or negative, are not being tracked nor managed. ▪ **Time off management:** The Contact Center management team does not utilize a WFM software solution to track requests for time-off, including paid time off/vacation days, unpaid time off and sick time. While this is information is being tracked today, it is not known if this is done outside of a human resources management system. ▪ **Overtime/voluntary time off management:** Both the internal Contact Center and third party outsourcers have high levels of overtime, due to incorrect staffing levels, spikes in call volumes or representatives being unavailable. There is no system in place used to track whether overtime offerings are made according to union contractual guidelines. ▪ The increased level of overtime has the potential of increasing job burnout for those representatives who work overtime often.

XII-3 **Customer Service**
 	
Extent that standard contact center performance metrics are measured, actions taken to improve these metrics and evaluation of these actions. Understand process for handling, resolving and measuring customer complaints, including communication channels and registration with PREB.
	▪ **Customer service:** There are currently no measurement processes or technologies/tools to measure end-to-end customer satisfaction, much less Contact Center specific customer service. Specifically:
	  ▪ No regular customer satisfaction survey, nor transactional customer satisfaction surveys (i.e., post-call, post-email, post-district office visit)
	  ▪ Currently no management resources focused on process improvement or improving customer service.
	  ▪ Based on self-admitted anecdotal data from PREPA Contact Center management, quality is a concern.
	▪ The ability for the Contact Center to deliver an excellent Customer Service (CX) is hampered by several factors, including:
	Lack of visibility, communication and collaboration with field processes
	Lack of investment in training curriculum or ability to schedule CSR training (due to under-staffing).
	Low employee motivation and morale
	Lack of trust in T&D processes/systems, leading CSRs to have to lie to customers, such as informing them service will be established in 2–3 days, when the CSR knows this not to be true.
	Note: Puerto Rican culture values long, neighborly chats with service providers. This unique trait should be balanced by a desire to implement a more traditional efficiency-focused contact center operation.
	▪ **Formal complaint handling:** The Contact Center does not have formal processes for intake of safety, service or other customer complaints, including to PREB. A CSR may escalate a

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Contact Center Sub-Areas	Observations & Contributors
	customer issue to a supervisor or manager who will attempt to resolve the situation, but this contact is not documented beyond standard call notes and dispositioning.
XII-4 Quality Assurance *Understand if there is a dedicated quality assurance team (QA Team) or others, such as supervisors, who are responsible for evaluating Contact Center performance (both phone calls and off-the-phone work) against a list of defined processes, policies, procedures, skills, behaviors and performance metrics. Understand if QA monitoring technology is used to record and listen to calls along with providing call data for specific call types (e.g., general inquiries, service requests, payments, billing). Identify how QA observations, evaluations, and corrective actions are measured to determine the impact on the customer service and performance metrics.*	**PREPA Contact Center** ▪ **QA program:** In the past, the Contact Center had a QA program and performed live QA monitoring. Today, however, due to reduced supervisory staff and union conflict, there is no QA monitoring, scoring or coaching being performed. The QA program was largely abandoned after Hurricane Maria (Sept 2017). This fact persists despite the Contact Center having big quality concerns. Note: The two outsourced contact center operations (Insight and Telecontacto) do have some level of quality assurance program and associated monitoring, but these are not driven by contractual requirements, and vary for each outsourcer. Elements of these may be leverageable in the LUMA Quality program. ▪ **QA organization:** Organizationally, a QA team is intended to be in place, but it is not staffed. There are specific job descriptions/role profiles outlined by PREPA for a QA analyst role. ▪ Ideally, PREPA QA analysts are some of the most experienced and talented CSRs. One challenge has been that the salary for the QA analyst (and supervisor) roles are not high enough to entice a CSR to desire the job. It is also a challenge to get CSRs to join management as the perception exists that they will no longer then be part of the CSR team and lose that camaraderie. This is exacerbated by the union issues with PREPA management. ▪ **QA training:** No specific QA coaching training is developed or in use today. Training overall is a significant deficiency in the operation today. ▪ **QA scorecards:** Multiple Excel-based manual scorecards are developed, but as noted are not in use today. Additional refinement will be needed to align the Scorecard with specific quality criteria, expectations and desired outcomes for voice and digital interactions. **PREPA Contact Center** ▪ **Monitoring & related processes:** No quality monitoring is performed today. No recording technology exists today. Note: Avaya recording functionality was quoted by Cortelco to PREPA but was never purchased. ▪ QA scoring calibration processes are not performed today (as they are not needed without actual scoring being performed). ▪ No QA coaching/evaluation presentation to CSRs exists today (see Feedback & Coaching for additional observations on performance management and coaching). ▪ No ongoing training exists for CSRs to improve quality. Due to under-staffing, there is literally no time for any amount of CSR training. In fact, CSRs are upset by the lack of training they are provided. Due to this lack of training, some contact types have to be transferred to the district office to be completed, negatively impacting the customer service. **The only exception is the live monitoring that is performed manually for some temporary employees. These are non-union employees. In general, the only feedback that is shared with these CSRs is when they have done something erroneous or unprofessional.*
XII-5 Call Handling – Emergency & Facilities *Understand how Emergency, 911 and Outage Calls are currently handled by T&D offices, including how calls are received, actions that are taken within operations and also externally (e.g., police, firemen, public works), and the documentation that is created and maintained within CC&B, other databases and paper repositories. Understand facility management calls that are to be handled in the future by the Contact Center along with the systems and documents to be utilized, processes to be followed, actions to be taken and*	▪ **Payments and billing calls:** Customers calling to make a payment today have two options: 1. Call the dedicated payment IVR (Telepago) hosted by Oriental Bank (787.521.2121) 2. Select the payments option in the PREPA IVR (787.521.3434) If a caller calls Telepago, there is no option to transfer to a representative in the Contact Center. If the customer calls the PREPA IVR, when they select option #1 for payments, they are routed directly to a rep and not connected with any automated payment options. These calls are routed directly to outsourcers (50 percent Insight and 50 percent Telecontacto). Note: When a customer makes a payment via Telepago, the payment is not posted to the account until 5 p.m. the following business day. This delay results in additional calls from customers requesting the status of their payment. (Customers of Banco Popular can use the BP service, also named Telepago, to make payments to PREPA, including scheduling recurring or in-advance payments. That service is not paid for by PREPA (other than processing fees), but it takes approximately the same payment volume as the PREPA Telepago service.) ▪ **Account status and service orders:** When a customer calls the PREPA IVR and selects option #2, there are two sub-options: **1) Account information**, which provides current status on the account, including balance due and payment date. A caller can then select to speak with a representative after hearing the automated information. **2) Service orders** route directly to a representative. Both sub-options are routed first to the internal Contact Center. If a call waits in queue for 10 minutes, the call then overflows to one of the two outsourcers (50 percent Insight/50 percent Telecontacto). ▪ **Outage calls:** Customers calling to report an outage select option #3 on the PREPA IVR. Before routing to the Contact Centers, callers hear a recorded announcement that lists all

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documentation to be created and maintained.	outages across all of Puerto Rico. That announcement is updated every day by the Contact Center management team. Outage calls are routed directly to outsourcers (50 percent Insight/50 percent Telecontacto). Telecontacto provides after-hour support 24/7. Calls for outages are reported in the Call Taker app, which is often shut down by T&D in the case of large-scale outages (due to volumes overloading the system or inability of the team to support additional reports). When T&D shuts down Call Taker, there is no additional reporting or tracking of outages by the Contact Center. ▪ Regular outage calls can be related to a generation plant issue, substation issue, feeder issue, planned outages or pocket outages (issues in small subsets of an area). Agents in the Contact Center access a T&D report via Call Center Express to verify that it has been reported, then apologize to the customer, inform them that the outage is a known issue, and may provide them with a reference or event number in case they need to report it to insurance. They do not update the CallTaker application when the issue is a known issue. ▪ **Emergency calls and 911:** Customers calling the Contact Center select PREPA IVR option #4 for emergencies, yet they currently do not define an emergency, so it's difficult for customers to differentiate between emergencies and another outage. Emergency calls are routed the same as other outage calls, with no prioritization. Emergency calls are also routed directly to outsourcers (50 percent Insight/50 percent Telecontacto), with Telecontacto providing after-hour support 24/7. Emergency issues are reported into the STORMS application instead of the CallTaker application. Representatives differentiate situations where the power is out as an outage, while emergencies are generally cases where the customer can visually see an issue (e.g., wires down, transformer issues, sparks, pole down) or where there is danger to life and limb. ▪ There is no coordination with 911, fire, police, emergency services, public works or other public services in cases of emergencies. ▪ Emergencies are not differentiated in routing from other outages. Both IVR options and call types are sent into the same queue, with no prioritization of emergencies over other non-emergency outages. ▪ **Maintenance, tree trimming, streetlights, and voltage changes:** Customer calls for these issues select option #5 in the PREPA IVR. Representatives enter these requests into the STORMS application. These calls are routed to the internal Contact Center. If a call waits in queue for 10 minutes, the call then overflows to one of the two outsourcers (50 percent Insight/50 percent Telecontacto). ▪ **New service requests:** Callers who select option #6 in the PREPA IVR are provided with sub-menu options for: 1. Residential 2. Commercial 3. Wholesale 4. Use Permit Requirements 5. Certifications There are specific skills for commercial and wholesale that are different from general customer service, but all other options are routed into the single skill for the internal Contact Center. If a call waits in queue for 10 minutes, the call then overflows to one of the two outsourcers (50 percent Insight/50 percent Telecontacto). ▪ **Title III information:** There is an option #7 on the PREPA IVR for Title III Information, but when that option is selected, the call errors out and is disconnected (in both Spanish & English). This was reported on 8/12, and as of 10/9, this error is still in place in the IVR. ▪ **Hours of operation:** PREPA's internal Contact Center is open from 6:30 a.m. until 10:30 p.m., with Insight and Telecontacto matching those hours. Telecontacto also supports after-hour and overnight calls for 24/7 operations. ▪ **Contact enter representative skills (for routing calls):** ▪ **Internal Contact Center:** All agents are equally skilled, so all calls are routed into a single ACD skill (all calls are treated equally, and all agents can answer all calls). ▪ **Outsourced contact centers:** Agent skills are tiered based on training, with agents learning the following skills in order: 1. Payments 2. Outages and emergencies 3. Maintenance requests (separate skill, although training is at the same time as outages and emergencies) 4. Service orders and new service requests Note: Each of these skills are replicated for English language callers, Spanish being the default. ▪ **Network delays:** Issues with latency in the data network creates timeout issues and errors for both the IVR and the Call Center Express application on representatives' desktops. ▪ **Facilities management calls:** The Contact Center does not currently answer these calls, and they do not know what type of services or applications that would be used.

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XII-6 Performance Management (KPIs) *Determine if the current Contact Center organization utilizes a performance metric management system, strategy and/or methodology that includes tracking, reporting, analysis, reviews and meetings, action plans for improvement and an evaluation of performance improvements. Understand if there are metrics in place to measure performance within Contact Center processes and also across handoffs to other interfacing organizations such as Operations. Understand the extent to which actual vs. targeted performance goals are established and measured along with the identification of gaps and the implementation of gap closure plans.*	▪ **Recognition of critical performance metrics:** The PREPA Contact Center management team has limited visibility into critical and key performance indicators (KPIs). Performance management and KPIs are very limited in what is being tracked and reported on, and management does not have clearly defined action plans to improve on performance. KPIs tracked right now include calls answered, waiting time (or ASA), abandoned calls (tracked as efficiency percentage, measuring the percentage of calls answered) and escalations (tracked erroneously as first call resolution). ▪ **Performance metric collection, validation and reporting:** All performance metrics are compiled for either submission to PREB or for internal tracking. No apparent validation is performed on the data and reports are not shared within the broader organization. ▪ **Lack of data-driven management initiatives:** Because of the contentious relationship with the union, supervisors and management teams do not attempt to create any initiatives or use data-driven management decisions for managing the organization per stakeholder interviews. ▪ **Recent performance trends:** Since May 2019, when two additional outsourced third-party vendors (Insight Communications & Telecontacto) came on, performance trends have improved due to the expansion of additional agents handling calls at the outsourced contact centers. There are still high levels of abandoned calls (20% abandoned calls in May 2020). ▪ **Use of performance metric management system:** The Contact Center organization does not have a performance metric management system, primarily using Microsoft Excel, Microsoft PowerPoint and Microsoft Word for reporting. There are no clearly defined analysis processes, meetings, evaluations or action plans to improve on performance. ▪ **Performance metrics measured, tracked, and reported on:** KPIs tracked right now include calls answered, waiting time (or ASA), abandoned calls (tracked as efficiency percentage, measuring the percentage of calls answered), and escalations (tracked erroneously as First Call Resolution). Key metrics that are not currently tracked or managed to include: AHT, FCR, service level, occupancy, agent utilization, cost per contact, real time adherence (RTA) to schedules, blockage, backlog (for deferred interactions like email) and IVR self-service rate. ▪ **Oversight, management and governance of third party outsourced Contact Centers:** Oversight of the third party contact centers (Insight Communications & Telecontacto) appears to rest primarily with Manuel Tristani, and to a lesser extent, Carlos Ortiz. The key metrics that are tracked with these outsourcers includes call volumes, ASA, and abandoned calls (tracked erroneously as efficiency). The outsourcers appear to measure AHT and service level (the percentage of calls answered within a desired target threshold) as well, but those appear to only be measured internally. ▪ **Actual vs. targeted goal achievement:** Targeted goals are not presently in place with the exception of ASA and calls abandoned. All other metrics do not appear to have clear targeted goals or objectives, and therefore actual results are not compared to targets. ▪ **First contact resolution:** Current use of FCR is to track the percentage of calls that are escalated and transferred to a supervisor. FCR is different from this – FCR is intended to track the percentage of calls from customers that are not resolved on the first call or contact. PREPA does not currently track this information, and the FCR metric reported to the PREB is the percentage of escalated calls. ▪ **Customer satisfaction (CSAT)**: There are currently no surveys of customers to determine their satisfaction with service from PREPA, either by JD Power surveys or other methods. ▪ **Handoffs between departments:** There are no apparent metrics or KPIs related to interactions with or handoffs to other departments, such as Operations. ▪ **Root cause and trend analysis:** No root cause or trend analysis was observed to be performed by anyone in the Contact Center organization. ▪ **Email management**: Email today is handled via a form on the PREPA website, but those emails are routed using Exchange/Outlook. When an agent responds to the email, their personal email address is exposed, which results in customers replying back to their email address directly. There is only manual tracking of email counts, and no measure of handle times, nor the ability to forecast and schedule resources to support the thousands of emails that are received every month. There is currently a backlog of 8,000 to 10,000 emails, many of which are customers following up to check on previous emails that have not yet been responded to. ▪ **Other performance metrics monitored:** Monthly results that are reported to PREB and senior leadership are the only metrics monitored or measured, specifically including waiting time (ASA), calls answered and calls abandoned. The waiting time calculation does not include the 10 minutes of time many callers spent waiting in queue at the PREPA Call Center before overflowing to one of the two outsourcers. ▪ **Data collection & verification process:** Call data related to ASA, abandoned calls, and escalations (transfers) is collected from Avaya 6.2, which routes incoming calls. Reason for the call is tracked using agent-filled data captured via the Call Center Express app. All other metrics are tracked manually using Excel spreadsheets.

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	▪ **Performance data trends and analyses:** No root cause analysis has been completed on KPIs within the contact centers. Reason for the call is tracked using data from Call Center Express. ▪ **Historical data models:** The only historical data identified was that provided to PREB in a month-over-month analysis, with some daily results from Insight (one of the outsourced contact centers), as well as interval-level results from 2015 and 2016. ▪ **Major initiatives to improve performance metrics:** No major initiatives or plans have been identified that focus on improving performance metrics, except for adding third party outsourced contact centers in September 2019.
XII-7 **Current Practices (Gating, Project Success Rates)** *Determine what technology is currently used within Contact Center operations including CC&B, front end screens, IVR – touch tones & voice recognition, computer-telephone integration (CTI), soft phone functionality, outbound/predictive dialer, call routing, call management, quality monitoring - call recording & observations, contact management, non-phone communication management (e.g., mail, email, social media, website, chat), scheduling/workforce management, reporting, and other. Evaluate how current contact center technology is used to support a positive customer service and solid performance metrics. Identify other technology that is needed to support an efficient and effective future state Contact Center organization.*	**What technology is used within the Contact Center today?** ▪ CRM - Oracle CC&B (v2.703): This is the primary customer care and billing platform that maintains all customer account information including billing and payments. Application was recently upgraded to v2.703 and seems to adequately meet business needs. Future-state: Integration between Oracle CC&B and the IVR, web and mobile applications will be needed to support effective and self-service functions with real-time updates. ▪ Horizon Intergraph - outage management system (OMS) This platform is used to report outages and track the status of restoration efforts. Additionally, the Contact Center uses an intergraph application called Call Taker to support call entry and outage event creation. ▪ CC Express has a connection to the OMS and displays some information on outages. The PREPA agent must be careful with how much information to provide customers about a given outage. In general, reps are experienced enough to be able to manage this issue. ▪ STORMS Maintenance Orders (for emergencies, streetlights, trees, voltage issues) are entered into STORMS. This work order is then routed to the district office to be completed by the T&D crew designated for the given area. ▪ Agent desktop - Call Center Express (CCE) ▪ Agents use Oracle CC&B, OMS and STORMS for day-to-day work. To make agent interactions more manageable, PREPA has developed a unified desktop application called Call Center Express which provides a centralized user interface into each of these systems. CCE is written in a proprietary outdated technology called APEX – it will need to be replaced with a more current unified desktop application at some point. ▪ **IVR/ACD (call routing) – Avaya (v6.2)** The IVR main menu offers basic call segmentation (7 options in the main menu) with limited self-service functionality providing account balance to callers. The Avaya platform is past end-of-life and is no longer supported. This platform will need to be upgraded or replaced. It was noted that currently option 7 in the main menu resulted in an error: your selection is not valid (Aug 2020). (See Gaps for additional details.) A limitation of the Avaya platform is that there is no ability to extend the system to the outsourcers to provide virtual contact center functionality that would allow routing to any available and skilled agent across the operation; this leads to excessive wait times and abandoned calls. The Avaya platform is supported through a $14K monthly service contract with Cortelco. (This contract is scheduled to terminate 10/31/20 and can be extended). It is not clear exactly what services are covered by this $14K, although it is critical that Avaya be available if/when needed. ▪ **Softphone capability** PREPA currently uses Avaya 9611 hard-phone handsets instead of using softphone capabilities. This reliance on hardware increases costs and limits staffing flexibility (e.g., easily relocating agents to regional offices, work-from-home options). No softphone (computer-based telephony) limits the ability to deliver screen-pop account information to provide the agent key insights about the customer. ▪ **Quality assurance (QA) – call recording and agent performance evaluation** PREPA does not currently have a QA program that includes call monitoring, recording or agent performance evaluation. Live monitoring with MS-Excel based QA Scorecards was performed in the past (before Hurricane Maria), but due to under-staffing and limited supervisory coverage, this is no longer performed today. ▪ **Workforce management (WFM):** PREPA does not utilize a workforce management systems. Excel is currently used to track agent schedules. (See Gaps for additional details.) ▪ **Speech and text analytics:** PREPA does not currently use speech or text analytics applications. ▪ **Inbound email:** A single Exchange email box and MS Outlook are used to handle customer requests that come in through the website. (See Gaps for more information on the issues caused by not using an email routing/management tool.) ▪ **Chat:** PREPA does not currently offer customer service interactions through chat.

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- **Social media monitoring and customer interaction:** The Contact Center does not currently monitor social media or respond to customers through these channels. Corporate communications monitors social media and will sometimes use email to forward customer requests to the Contact Center for resolution.
- **Outbound dialer and proactive notification:** The installed Avaya platform does have outbound dialer functionality, called proactive outreach manager **(POM)** which can provide automated outbound campaign management, which can perform automated voice, email or SMS messaging to allow users to immediately choose a self-service option or interact with a live agent.
  Note: *This functionality is not utilized in the operation today.*
- **Website customer self-service (Mi Cuenta):** The website offers the following self-services features in Mi Cuenta (My Account):

1. Service request and service transfer (new customer vs. previous PREPA customers have a process difference) - These requests route to the Contact Center via a custom app called Web Service.
2. Service Disconnect - same as above
3. Electronic certification (i.e., obtaining an official letter as proof as customer for various other agencies)
4. High bill objections
5. Outage reporting (Call Taker integration)
6. Tree trimming/street light service (STORMS order management integration) (customer gets a WR number from STORMS). The customer may also check work order status.
7. Make Payment: credit card or ACH (the customer must re-enter every time, as no payment data is stored in the system) (Any customer who wants auto recurring payment has to go into DO and sign a form*) (*may have changed rule for COVID)
8. Sign up for E-Bill (348K out of 1148K get E-Bill, 30%)

- **Mobile app customer self-service:** The mobile apps (Android and iOS) are currently in development.
- **Reporting:** Primary Contact Center reporting is available via the Avaya Call Management System (CMS) in real-time, canned historical reports as well as ad-hoc reports. Other reporting analysis may be performed using tools such as MS-Excel.
- A custom dashboarding and reporting tool was developed for PREPA by True North (third-party consultant) and is built in Power BI. This provides configurable customized reporting for key metrics.
- **Third party outsource technologies:** In addition to PREPA's Contact Center technologies, the two outsourcers (Telecontacto and Insight) have separate technology platforms and applications in use.
- For Contact Center platforms:
  - Telecontacto utilizes Genesys Connect (FKA Interactive Intelligence CIC v.4.0)
  - Insight utilizes Approach from TechnoVoz.
  - Telecontacto has custom web-based reporting platforms that are accessible by PREPA management users, whereas Insight can provide access to reporting via the Approach platform.

Are the current systems and applications reliable in terms of uptime/reliability and efficiency of use? Is the technology well supported and by whom (internal, IT, third-party, vendors)

- The current Avaya 6.2 platform is past end-of-life and would need to be upgraded to the current version (8.1) if we choose to move forward with this platform. An IT partner, Cortelco, is providing monthly support. The assessment team uncovered a few concerns around current support through this process. We reported an error in the IVR where option #7 errors out and hangs up on the customer. Cortelco and IT was unaware of the issue and has not corrected the issue since it was reported ~8 weeks ago.

Is there an effective level of integration between systems to allow for efficient sharing of data? Are employees required to enter the same information into multiple systems?

- The Contact Center does not currently use any sort of screen pop to automatically provide agents with customer data upon receiving a new inbound call. Screen pop integration with CC&B is a fairly standard practice that typically saves 30–45 seconds off of each call's total handle time.
- Some integration is available through a unified desktop called Call Center Express. The functionality is helpful for agents, but the custom-built platform is in a dated technology called APEX. PREPA IT is aware that they will want to update the platform to a more robust, supported technology at some point.

Would you consider the data within the systems and applications to accurate? If not, in what areas do you consider the data to be questionable or inaccurate? How are data reliability issues handled?

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	▪ The most significant issue with contact center data currently centers on the fact that data for PREPA, Insight, and Telecontacto performance is gathered in three separate CC platforms: Avaya, Approach, and Genesys Connect respectively. As a result, it is very difficult to manually gather data across the three platforms to determine combined performance. It is also unclear if metrics are calculated the same way across the three platforms. Finally, we understand that many calls wait in queue in the Avaya system before transferring to Insight or Telecontacto. We don't believe that this wait time is accurately captured in any of the three systems. **Do Call Center Employees have easy access to systems and proper training to navigate the systems and effectively resolve customer inquiries and provide a positive Customer Service? If not, please explain what is missing.** ▪ System training has been primarily delivered by Carlos Aponte for Insight and Telecontacto for CC&B and Call Center Express. System training seems to be adequate for these applications, but this is still under investigation. **How has the CC&B upgrade improved processes within the Contact Center? Have there been any issues with handling of phone and non-phone customer inquiries due to the CC&B upgrade?** ▪ No known issues due to the recent upgrade. **Other than the CC&B upgrade, what other technology enhancements have been implemented recently? Were there post-implementation or lessons learned assessments completed?** 1. Few system enhancements have been made recently due to the combination of Hurricane Maria, COVID-19 and the upcoming transition to LUMA. **Identify top five applications the Contact Center would implement if funding was available. Have there been any business cases developed for these recommendations? Have any of these concepts been considered before and if so, what was the outcome?** ▪ Email management, better visibility into outage status and T&D ops, additional customer self-service options, agent productivity and performance management tools, improved reporting. **Which of these recommendations could be implemented in less than 18 months? What would be the primary challenges to implementing any of the quick wins? Are there any suggestions on how to eliminate or minimize these challenges?** ▪ We intend to address all these needs with a new integrated Contact Center (CC) technology platform to be implemented in less than 18 months. **What studies have been completed to evaluate the current manual processes being performed versus the implementation of a new application or upgrade?** ▪ No process reviews have been conducted recently by PREPA. We will undertake a process review and identify opportunities for improvement as part of the FET effort. **What technology is needed to support an efficient and effective future-state Contact Center organization, which includes call taking, off-the-phone work, a voice of the customer program, a QA program, business process analytics, and other activities to support a positive customer service and strong performance metrics?** ▪ The primary need is for the integrated cloud-based CC platform. In addition, we will need improvements to the website and mobile app, new speech analytics tools, and a new unified agent desktop to include integration with OMS and Ops reporting. (See specific gaps and the SRP project listing for details.)

Major Gaps

Sub-Topic Area	Major Gaps	Categorization
XII-1 **Vision &** *Strategy: To build a contact center organization that supports customers by handling more types of interactions than phone calls. Vision: To allow customers to communicate using their method of choice. Extent to which current contact center operations support this vision and strategy. Includes ability to determine and have in place appropriate communication methods to respond to customers via phone, mail, email, chat, and social media.* *Providing a positive customer experience is critical to future contact center operations along with optimizing key performance metrics (e.g., ASA, customer complaint rate, first call resolution (FCR), abandonment rate, and customer satisfaction (CSAT).*	○ **Lack of shared vision for future state Contact Center and customer service:** Facilitate sessions with executive and management to develop vision and customer service characteristics for future state end-to-end LUMA Customer Service (Customer Service and Contact Center). ○ **Lack of clear understanding of end-to-end customer journey:** Develop current state and future state customer Journey Maps, including all touchpoints, listening posts, pain points, opportunities for improvement and moments of truth, based on both customer and internal process owner interviews.	SRP candidate (Year 1)

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Sub-Topic Area	Major Gaps	Categorization
	○ **Undefined organizational strategy and design for key processed, including ownership:** Contact Center, Customer Service (district office), and billing teams own/co-own various aspects of the customer service and internal processes. Develop cross-functional consensus on future state process design, process owners and implement organizational change. ○ **Limited interaction channels are available for customers** including only voice calls and limited email. Additional channels such as chat and social media channels such as WhatsApp, Facebook, and Twitter are available from other companies that customers interact with and should be enabled. ○ **Customers are not provided with updates on reported outages**, including estimated time to restoration, resulting in additional phone calls. Proactive notifications should be enabled for customers to be notified and provide transparency during outages and storms. ○ **Lack of critical metrics in KPI Scorecards:** Define KPIs at all operational levels (within Contact Center and other) and develop automated reporting capabilities to deliver standard and ad-hoc reporting to management via dashboarding and reporting tools. ○ **Sub-standard Contact Center facility and amenities is a contributor to low CSR morale and productivity leading to poor customer service:** Design and implement a new contact center facility in San Juan metro area with space design based on best practice space planning concepts. This main center location should be coupled with three to five regional Contact Center operations. ○ New contact center should include necessary contact center amenities (e.g., training room, QA area, lunch/break room with PC(s). ○ Install white noise and acoustical upgrades to ensure noise levels are manageable. ○ Invest in Contact Center pod furniture to drive productivity and provide for ergonomically beneficial workspace. ○ Ensure team leads and supervisor workstations are embedded near the production floor (while still providing off-the-floor coaching areas).	
XII-2 Processes *Extent to which high priority Contact Center processes are identified, defined, documented, monitored, analyzed, and supported by governing documents (e.g., process maps, policies, procedures, standards, metrics, reporting). Determine how industry best practices and benchmarks are incorporated into planning and execution of current activities. Understand the extent to which high-priority contact center processes are identified, defined, documented, monitored, analyzed and supported by governing documents (e.g., process maps, policies, procedures, standards, metrics, reporting). Determine how industry best practices and benchmarks are incorporated into the planning and execution of current Contact Center activities.*	○ **Workforce management software solution is not used:** There is no full system to manage forecasting, scheduling agent shifts, intraday management, or real time adherence to schedule or overtime/undertime management. Select and implement a WFM software system that will capture details around volumes and handle times to ensure the proper staffing is in place at the right time to support customer interactions. (Note: It is highly likely the WFM system would be a part of the broader contact center as a service (CaaS) system to be selected and implemented.). ○ **Call volumes and AHTs are not tracked to determine proper staffing levels and reduce overtime:** Tracking of call volumes and AHTs at intraday intervals, daily, weekly, and monthly levels allow for more accurate forecasting and scheduling of resources. Implementation of a WFM system will enable this capability. ○ **Variable schedules are not used to meet volume needs**: There are no options for employees to trade or swap schedules. Implementation of a WFM system will allow for agent shifts to be scheduled to best fit call arrival	Priority SRP Candidate

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Sub-Topic Area	Major Gaps	Categorization
	patterns. The use of a WFM system will also enable the ability for agents to swap shifts and better request time off. ○ **Process mapping tools are not available** for agents to easily access an overview or flow chart around processes, including those used often and those used rarely. The use of a process flow application on the agent desktop will assist newer agents get up to speed more quickly, as well as shortening AHT and providing a consistent customer experience. ○ **Process flows, training aids and job aids are not kept up to date**: Many documents being are over 10 years old, and many do not match the current process in use. Documenting and updating these processes will be extremely important as new agents are being brought on to bring staffing up to the correct levels. These process documents will need to be available at high level flows, more detailed flows, and then at detailed job aid levels.	Priority
XII-3 Customer Service *Extent that standard contact center performance metrics are measured, actions taken to improve these metrics and evaluation of these actions. Understand process for handling, resolving and measuring customer complaints, including communication channels and registration with PREB.*	▪ **Lack of Contact Center customer satisfaction measurement:** Design and implement a post-contact (voice and email) survey process and integrate with central reporting platform. ▪ **No linkage of customer satisfaction to Contact Center team and individual performance:** Integrate customer satisfaction metrics into CSR, teams and management performance scorecards. ▪ **No omni-channel customer satisfaction measurement:** As additional channels (chat, self-service knowledgebase, social) are added, ensure customer satisfaction measurement processes are implemented. ▪ **Lack of formal complaint processes (outage, safety, service):** Define formal complaint owner and design/implement processes and complaint tracking system(s) and reporting. ▪ **No regular customer feedback channel:** Implement a Customer Advisory Board (CAB) of key customer personas to meet regularly and assist with feedback loop on new processes and technologies. ▪ **No detailed VOC dataset available to inform and prioritize process and technology design and investments:** Launch qualitative and quantitative research initiatives (survey, interview, focus group-based) to develop insights into most beneficial and desired CX process and technology improvements.	SRP candidates
XII-4 Quality Assurance *Understand if there is a dedicated quality assurance team (QA Team) or others, such as supervisors, who are responsible for evaluating Contact Center performance (both phone calls and off-the-phone work) against a list of defined processes, policies, procedures, skills, behaviors and performance metrics. Understand if QA monitoring technology is used to record and listen to calls along with providing call data for specific call types (e.g., general inquiries, service requests, payments, billing). Identify how QA observations, evaluations, and corrective actions are measured to determine the impact on the customer service and performance metrics.*	▪ **Lack of formal QA program leads to poor call quality and customer service:** Design and implement a QA program, including customized QA scorecards and processes that are fair, objective, consistent and customer focused. ▪ **Lack of dedicated QA resource(s) inhibits ability to measure quality:** Hire dedicated QA resources to assist in design/implementation of all QA program and related processes. ▪ **Lack of QA technology would lead to major inefficiencies in measuring Quality:** Implement CaaS (or other) functionality to support voice/screen recording and email QA processes. ▪ **Contact handling processes not based on best practice/standardized processes:** Leverage the QA program to drive best practice contact handling approaches and tactics into customer service. Hire a training manager/lead with both instructional design and delivery skillsets to be leveraged across all functional areas. Develop a formal interactive classroom training curriculum which that defines the company standards for contact handling. The curriculum should include	

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Sub-Topic Area	Major Gaps	Categorization
	best practice approaches on how to control the call, how to diffuse an irate customer, and other relevant topics. Develop and deliver continuation training (online and/or instructor-led) for existing reps on a regular basis. Leverage technology (i.e., online quizzes to test rep knowledge). ▪ **CSR performance management does not include contact quality:** Integrate QA program results into the Contact Center, team and CSR performance management and KPIs. This data should be made available via center-wide dashboards, management reporting, and agent level dashboards and reports. Develop and implement gamification functionality to further drive CSR performance. ▪ **Internal QA program may be supplemented with third party QA:** Assess value and business case for engaging third party to perform QA process to deliver more unbiased measurement of quality. Note: Program design must be mature before adding third party. ▪ **Poor coaching can be detrimental:** Ensure QA program is not designed like an audit and is viewed by employees as positive, not punitive. Ensure all supervisors and managers have effective coaching training in addition to contact center management training. ▪ **A centralized Knowledge Management System (KMS) is not available** for agents to look up process flows, training aids and job aids. These are housed on an intranet site today but are not updated and maintained and efficiently available to agents. ▪ **Innovative technologies are not part of QA roadmap:** Upon QA program design and maturation, introduce speech and text analytics, sentiment analysis, call data integration to drive quality, contact handling improvements, and the VOC program. Ensure data integration with VOC customer survey results.	
XII-5 **Call Handling – Emergency & Facilities** *Understand how Emergency, 911 and Outage Calls are currently handled by T&D offices, including how calls are received, actions that are taken within operations and also externally (e.g., police, firemen, public works), and the documentation that is created and maintained within CC&B, other databases and paper repositories. Understand facility management calls that are to be handled in the future by the Contact Center along with the systems and documents to be utilized, processes to be followed, actions to be taken and documentation to be created and maintained.*	▪ **No customer identification or verification** is conducted through the IVR, except for account information only. ▪ **No screen pop** with caller ID and verification is passed to CSRs' desktop. ▪ **Real time payment posting** from the 'Telepago' IVR is not available. ▪ Customers cannot report an outage in the IVR. ▪ **The IVR cannot provide outage status updates** specific to individual customers, only a recorded announcement for the entire island. ▪ **Network latency** is causing timeout errors in the IVR. ▪ **No differentiation between an outage and an emergency** in call routing. ▪ **Outage information is not readily available and updated** for customer use on the PREPA website or mobile app. ▪ **Customer complaint and case management** is not available to track justified complaints, including those reported to PREB. ▪ **A unified agent desktop** is needed that provides better access to systems utilized by agents, along with process flows and single sign-on.	SRP candidates
XII-6 **Performance Management (KPIs)** *Determine if the current Contact Center organization utilizes a performance metric management system, strategy and/or methodology that includes tracking, reporting, analysis, reviews and meetings, action plans for improvement and an evaluation of performance improvements. Understand if there are metrics in place to measure performance within Contact Center processes and also across handoffs to other interfacing organizations such as*	▪ **Contact Center infrastructure, including IVR and contact routing capabilities:** The current ACD system (Avaya 6.2) is end-of-life and end-of-support. The system only supports routing of voice calls, not emails or other channels. In addition, the IVR has no self-service options – bill payment is outsourced to a third-party IVR provided by Oriental Bank, which is not connected to the existing PREPA IVR, and account status is the only automated option available beside call routing options. There are no options for outage reporting or status updates in the IVR, with the only exception being	SRP candidates

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Sub-Topic Area	Major Gaps	Categorization
Operations. Understand the extent to which actual vs. targeted performance goals are established and measured along with the identification of gaps and the implementation of gap closure plans.	manually recorded announcements provided by Contact Center management. ▪ **Email management system:** Email today is handled via a form from the PREPA website, but those emails are routed using Exchange/Outlook. The lack of an email management system (with routing like what is done with inbound voice calls) results in the inability to measure, track, and appropriately staff to handle incoming emails. ▪ **WFM) system for real time adherence:** There is no systemic method of forecasting call/interaction volumes, handle times, and staff requirements related to volumes. Agents work a fixed schedule that they receive when hired, and schedules are not adjusted to support the needs of the business. Overtime is constantly used, and the internal center remains understaffed. ▪ **Reporting & BI platform:** Reporting is manually done today via Excel spreadsheets, Word documents, and PowerPoint presentations. There is no consolidated reporting infrastructure, nor performance management structure. All reports are ad hoc, with some metrics being tracked via manual tracking by agents. ▪ **Voice/screen recording and analytics:** Calls and agent screens are not currently recorded, so no automated tracking of agent QA results is available, and QA is not being managed to by the management team in the Contact Center. There are no KPIs for the Contact Center related to quality and agent performance on calls. ▪ **Customer surveys:** Customer surveys are not currently requested, either in post-contact surveys or overall customer satisfaction surveys of any type. KPIs such as CSAT, Net promoter score (NPS), or JD Power survey results are not used by the management team. ▪ **Integration with Outage Management System (for call volume reduction):** The existing OMS does not integrate with the IVR nor the website for customer-facing status or reporting of outages. During heavy volumes, additional outage reports from the Contact Center are disabled, instead of generating new additional tickets from customer contacts. Integration with the OMS in the IVR and website would allow for customers to report new outages and check the status of current outages, reducing incoming call volumes during outage events. ▪ **IVR self-service metrics:** IVR self-service rate is normally used to identify the percentage of inbound calls that are automated by the IVR, as a way of off-loading call volumes that do not require live agent interaction. There is no reporting of IVR volumes, menu item utilization, or self-service capabilities used. While there are IVR options for paying a bill or obtaining current account status, we do not track how many customers are utilizing each of those options. PREPA does, however, have the ability to track the number of payments made to a third party payment IVR (by Oriental Bank), along with the amount collected by that IVR. Callers to that payment IVR must dial a separate number to make a payment and cannot route from that IVR back to speak with an agent. These payment call volumes are not reported on outside of collected amounts. ▪ **Real time displays, and management & agent dashboards:** The only real time display screens in use today are apparently some of the basic Avaya CMS screens that show current agent state and daily call volumes. However, the agent screens are not being used to manage agent performance on a regular basis. The union has informed the management team has been told by their union that they cannot use that information to manage agent performance. ▪ **FCR tracking**: Implementation of an agent desktop that enables asking callers to be asked the question, “Is this your	

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Sub-Topic Area	Major Gaps	Categorization
	first time calling about this issue?" will allow for accurate reporting of this KPI.	
XII-7 Information & Technology *Determine what technology is currently used within Contact Center operations including CC&B, front end screens, Interactive Voice Response (IVR) – touch tones & voice recognition, Computer-telephone Integration (CTI), soft phone functionality, outbound/predictive dialer, call routing, call management, quality monitoring - call recording & observations, contact management, non-phone communication management (e.g., mail, email, social media, website, chat), scheduling/workforce management, reporting, and other. Evaluate how the current Contact Center technology is used to support a positive Customer Service and solid performance metrics. Identify other technology that is needed to support an efficient and effective future-state Contact Center organization.*	▪ **Implement cloud-based Contact Center platform:** PREPA's current Avaya (v6.2) contact center platform is at end-of-life and has many limitations affecting the Customer Service. ▪ **Implement advanced reporting and analytics:** See the Performance Management section for more detail on KPIs and gaps in reporting. The new Contact Center platform will provide consistent data and reporting tools to help address these gaps. ▪ Select and implement a best-in-class cloud-based Contact Center solution to deliver Customer Service, operational, and financial benefits to PREPA/LUMA. ▪ See Additional Initiatives and Related Gaps in the System Remediation Plan.	SRP candidate (Year 1)

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Areas					
XII-1 Vision & Strategy *Extent that contact center operations supports vision and strategy.*	X				
XII-2 Processes *Clear defining and monitoring of contact center processes*	X				
XII-3 Customer Service *Use of standard performance metrics for customer service*	X				
XII-4 Quality Assurance *Quality assurance team, monitoring and technology*	X				
XII-5 Call Handling – Emergency & Facilities *Emergency management through contact center systems*		X			
XII-6 Performance Management (KPIs) *Use of performance metric system to drive operations*	X				
XII-7 Information & Technology *Quality and use of contact center technnology*		X			

XIII. Regional Customer Service

Evaluation Framework

The Regional Customer Service Focus Area consists of six sub-areas that define an effective regional customer service process.

- XIII-1 Organization & Strategy
- XIII-2 Processes
- XIII-3 Key Accounts Management
- XIII-4 T&D Operations Integration Plan
- XIII-5 Community Investment
- XIII-6 Performance Management (KPIs)

Observations & Contributors

Sub-Topic Area	Observations & Contributors

XIII-1 **Organization & Strategy**
 	
Extent to which Regional Customer Service leadership and management systems are articulated and understood. Includes degree of alignment between business strategy and priorities across roles, clarity of responsibilities and accountabilities in day-to-day decisions and risk assessment.
	▪ **Background:** Regional Customer Service comprises six areas plus Wholesale Accounts. Regional areas include Arecibo, Bayamon, Caguas, Carolina, Mayaguez, and Ponce. Wholesale Accounts is based out of San Juan/Metro where its main office is located. There are a total of 21 regional offices, and Regional Customer Service has 845 employees: 51 percent unionized field employees, 31 percent unionized office workers, 17 percent supervisors, and 1 percent executives.
	  ▪ PREPA's Regional Customer Service management team comprises a commercial operation administrator who leads six regional administrators. Each regional administrator oversees supervisors and office support staff. Each supervisor's direct reports consist of front line CSRs, cashiers, back office representatives, meter readers, collectors, meter testers, powerline technicians and clerks.
	  ▪ Regional Customer Service manages 1,467,053 customers with the following breakdown: Caguas (259,969), Mayaguez (220,256), Bayamon (209,631), Ponce (208,514), San Juan/"Metro" (207,142), Carolina (186,631), Arecibo (174,899) and Unassigned (11).
	  ▪ In 2019, Regional Customer Service served the highest number of customers in August (73,047) and lowest number of customers in November (48,137).
	  ▪ Wholesale Accounts has seven regional offices with technical employees throughout the regions to support wholesale customers. Roughly 12,000 wholesale customers with >50KVA accounts make up approximately 45 percent of PREPA's revenue.
	  ▪ The top five Regional Customer Service tasks by volume completed in 2019 were service requests (342,943), orientation (137,444), service certifications (83,047), investigations (51,817) and payment arrangements (38,657).
	▪ **Operational results:** Each region has found a way to use their own resources and budget to operate toward independent objectives. Overall focus is on customer service, but regions appear to operate independently, each with their own set of goals and challenges. This became evident during the regional introduction sessions. Each area has challenges that include IT issues, customer wait times, reliable fleet vehicles and a lack of workforce management technology, all contributing to inefficient processes and under-utilization of resources.
	▪ **Lack of strategic focus:** Regional Customer Service teams focus on emerging issues instead of long-term planning, strategy and root cause analysis. Initiatives that are started struggle to be fully implemented or do not get implemented at all (e.g., meter reading tablets and facility improvements).
	▪ There is an apparent lack of overall strategy that applies all Regional Customer Service resources toward a unified target. One example is customer wait times. Prior to COVID-19, each region had the goal of improving their customer wait times. Some regions had much lower wait times in district and local offices based on each customer served. It appears there is no communication or strategy to leverage best practices or resources to implement a unified approach to reduce wait times overall.
	▪ **Difficulty working cross-departmentally:** Very little coordination and collaboration among major departments such as HR, Operations, IT OT, Procurement, and PMO. Little

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Sub-Topic Area	Observations & Contributors
	communication occurs regarding work completed for customers in the field. Customer Service cannot obtain real time information about service order schedules or upcoming jobs. The district or local office usually becomes aware of an issue when it is brought forward by a customer. ▪ **Labor operations and inadequate staffing:** Position descriptions are outdated and do not include the necessary requirements to adequately staff the Regional Customer Service workforce. There is an opportunity to consolidate duties and functions to enhance employee capability to manage responsibilities. Leaders throughout the different regions expressed concern over their inability to hire staff and the number of currently vacant positions. ▪ When union issues arise that result in employees walking off the job, out-of-scope staff (including leaders and managers) complete employee responsibilities, which includes serving customers and cleaning offices. Working with the union is challenging. The union dictates the hiring process, and strict rules are in place to award positions based on seniority rather than proven performance. PREPA has not hired externally in approximately 7 to 8 years. ▪ **Lack of employee engagement programs:** A notable gap exists in employee engagement to encourage and reward employees for positive performance. There is currently no employee development program. Many leaders and PREPA employees will have the opportunity to retire over the next 3 to 9 years; there is a lack of candidates identified and mentored to backfill positions once vacant due to retirement or movement. PREPA leadership advised that it can be difficult to bring forward employee feedback and improvement opportunities as they do not have a process in place. Also, there are no employee surveys to solicit feedback and give employees an opportunity to voice their opinions and suggestions. ▪ **Facility operations:** Regional Customer Service has various office and storage facilities around Puerto Rico. Some offices have been closed (sometimes for several years) due to damage or due to consolidation. Currently rehabilitation projects occur at the following offices: Vega Baja, Santa Isabel, Monacillo and Culebra local office. Many offices need updating and work to improve facilities. Fleet parking may not be located next to offices because of limited available space. Some offices serving customers need to be updated, and several facilities currently store waste and debris that needs to be removed and properly disposed. ▪ **Fleet vehicle maintenance:** Fleet vehicle uptime can range anywhere from 20 to 50 percent across regions. Technical employees unable to complete field tasks remain in office and likely work on non value add activities, so work scheduling and planning cannot be effectively executed. These two issues were consistently highlighted in regional meetings. Multiple employees travel together in the same vehicle out of necessity, negatively impacting efficiency and costs. Substantial time is lost traveling to and from mechanic shop, as it can take up to a one-hour trip each way, depending on location.
XIII-2 **Processes** *Existence, effectiveness and consistent application of Regional Customer Service processes to the extent that processes are identified, defined, prioritized and supported with appropriate governing documents (i.e., maps, policies, procedures, best practices, standards).* *Extent of clear linkage between business strategy and regional customer service processes focused on payment reconciliation, new service delivery, complaint resolution, increased collections, augmented walk-in queue systems and operational integration with Operations.*	▪ **Background:** Regional Customer Service is responsible to execute process including account and statement review, processing customer payments, back office work, meter reading, meter changes, meter testing, disconnects/reconnects and service initiation. Many customers face processes that impact service, statements and service orders. ▪ **Process ownership:** Process owners are not clearly defined. When two workgroups collaborate on a task, each participant appears to own an individual piece of the process and focuses on completing their steps rather than the overall process or considering the impact to customers. ▪ **Process efficiency:** Regional Customer Service processes are largely paper based and manually completed, including data entry. Processes involve handoffs of hardcopy documents. Many processes are inefficient resulting in non-value-add activities. Employees can only complete certain tasks assigned to them resulting in delays, as additional employees are needed to complete the job. No workforce management or IT support. There is an opportunity to automate process steps. ▪ **Process documentation:** Insufficient documentation to support Regional CCs and no process maps exist. There is a lack of resources to develop and update documentation. Some procedures may be out of date and in non-compliance with current regulations. No structure or document management process to comply with regulations. Existing documents are not well catalogued. ▪ **Process inconsistency:** Regions may not be following the same processes. Process changes may be implemented at the regional level. Service provided to customers may vary from region to region. Employees deviate from standard process as required to manage customer interactions. No formal process review or improvement initiatives. Opportunity to standardize regional customer service processes to ensure consistent service provided.

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Sub-Topic Area	Observations & Contributors
	▪ **Process training:** It appears that much of the process training is passed down through word of mouth and is experience-based. When employees are in training, they reference some documentation, but once on the job, they rely on their experience and the guidance of coworkers. This has resulted in processes evolving based on the office or location. Employees do not receive standardized process coaching or regular feedback on the work they complete work.
XIII-3 **Key Accounts Management** *Extent that management of key accounts ensures proactive quality relationships with government, large industrials and influential customers through regular communication in-person meetings and IT CRM systems, capital and O&M project management, complaint resolution, maximizing growth and cross-functional customer service delivery.*	▪ **Background:** Key Accounts focuses on large consumption accounts and customers who use over 50 KVA. Key Accounts is responsible for collecting approximately 30–40% of revenue each month. Key Accounts also has some of the highest arrears and most outstanding money owed. ▪ **Arrears:** Government accounts make up a substantial amount of overdue arrears. No collection strategy in place. No consequences for non-payment. There is missed opportunity to work with customers to set up payment arrangements to collect some of the overdue money owed. Government and critical facilities including hospitals have closed while holding an outstanding debt for utility service making it very difficult to collect money owed. ▪ **Staffing:** Key Accounts does not have a sufficient staffing plan and is currently managing with minimal resources. Upon review of their staffing model, they require additional employees to maintain operations (e.g., only one technician covers the entire Metropolitan area and is responsible for completing field activities, testing, wiring, checkups and other work as required) causing the business to operate reactively to issues, preventing the ability to efficiently plan ahead. They have a small team to manage approximately 11,500–12,000 accounts and PREPA's biggest customers. PREPA leaders have advised they are limited by some government restrictions dictating how they can operate their staffing model and move employees to fill positions. ▪ **Communication:** There is currently no process or capability that allows employees to document all communications in a single location related to each Key Accounts customer interaction. A Key Accounts customer may speak with employees from different departments but not all conversations are documented or recorded. This causes confusion when managing accounts as Key Accounts representatives are not aware of details provided to a customer or information requested from a customer. Employees have advised that Key Accounts customers have stated it can feel like they are speaking with multiple different companies when dealing with different PREPA departments due to lack of internal communication. ▪ **Customer satisfaction:** Although Key Accounts is responsible for collecting a large portion of revenue each month, they do not have any type of customer satisfaction measurement program in place for these important accounts. A customer satisfaction measurement program would support the collection of valuable feedback that can be used to better understand customer interactions and improve existing processes. ▪ **Funding:** Key Accounts currently operates with insufficient funding, preventing them from hiring employees, utilizing technology, collecting overdue money and efficiently managing large accounts. Key Accounts brings in a large portion of revenue each month, but PREPA leadership advised they have not been provided with adequate funding to manage operations.
XIII-4 **T&D Operations Integration Plan** *Extent that utility has developed comprehensive systems between Customer Service and Operations in the seamless delivery of electricity to customers including focus areas of regular cross-functional meetings, new services, monthly billing reads, outage response and communications (planned, unplanned, major events), outage ETRs, lighting repairs, dispatching service orders and operational reporting.*	▪ **Background:** Regional Customer Service and Operations (also referred to as "T&D") are directly tied to one another. Both departments execute customer processes and interact with individual customers on a daily basis. Overall integration between the two departments can be described as extremely poor. ▪ There are no regular meetings between Regional Customer Service and Operations. Customer Service lacks visibility to T&D real time information, schedule and progress reports. Lack of standardized communication. Employees have developed their own communications process to share information between each other. Formal process integration between Regional CS & T&D is inadequate or nonexistent; this results in limited ways to communicate to customers around status, delays and timelines. ▪ **Workload visibility:** Regional CS has limited to no visibility to service order statuses and cannot communicate back to customers when there are delays. Meter exchange orders make up a large number of outstanding service orders. Customer Service does not have visibility on meter exchange schedules. Not able to prepare for customer inquiries or confirm T&D employees are working in areas. ▪ Delay in service orders. Very reactive process causing changes to daily workload. Results in missed customer appointments and delays in existing work schedule. ▪ **Lack of workforce management system:** T&D does not use a workforce management system or application. They are currently working almost entirely on paper with few exceptions. No consistent use of radios, company phones or other communication tools.

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Sub-Topic Area	Observations & Contributors
	No ongoing updates during work. Written work orders may be recorded incorrectly. How is the work being planned and dispatched? ▪ **Processes:** Formal process integration between Regional CS & Operations is inadequate or non-existent resulting in little or no way to communicate to customers around status, delays and timelines. Major impacted processes include: Customer Outage ETR Communication, Planned Outage Communication, New Service, Upgrades, Salvages, High Load Moves, Underground Locates and Lights Out. ▪ **Reporting:** No access to operational reporting, or operational reporting does not exist. Real time data access is an issue. Metrics in general are limited. ▪ **Net meters:** 16,210 net meters installed, with 3,000 meter applications in process. Application approval process was said to take too long causing issues with customers. Lots of sites with net meters installed that are not programed. Key questions: Why are they out there? Are they installed on sites that don't need them? Or are customers not getting the benefits of the net metering? ▪ **Meter replacement:** 60,000–70,000 meters need to be replaced due to Hurricane Maria. Regional CS teams are struggling to get enough meters and some areas do not have enough technicians. Technicians used to complete meter replacement program are being taken away from performing other CS work. Constantly highlighted in regional meetings. ▪ **Communication:** No regular functional meetings. Regional CS and T&D do not meet regularly to coordinate or collaborate on customer impacted work types. This has created a gap in visibility and prioritization of work on both sides. No formal or established direct line of communication with T&D. Communication lines are relationship based. May be using WhatsApp to communicate. No ability for Customer Service to obtain updates or progress reports on the T&D work being completed. This impacts an employee's ability to provide information to customers. ▪ Lack of visibility to work schedule, progress reports and service order status. Regional CS has limited to no visibility on service order statuses and cannot communicate back to customers when there are delays. Meter exchange orders make up a large number of outstanding service orders. Customer Service does not have visibility on meter exchange schedules. Not able to prepare for customer inquiries to confirm if technical teams are working in the area.. ▪ **Customer impacts:** Service delivery failures: Failure to meet customer timelines due to delays in T&D results in customer requests not being fulfilled on time. No communication back to the customer. Targets and metrics for this area are not enforced. ▪ **Top three customer complaints:** Top three complaints related to T&D activities cause delays in service orders. This is reactive, causing changes to daily workload, resulting in missed customer appointments and delays in existing work schedule.
XIII-5 **Community Investment** *Extent that utility has implemented community investment strategy focused on key areas (safety, education, community, economic development) that is documented and prioritized with the business plan. Extent that strategy maintains communications alignment between Customer Services and Corporate Communications teams focused on targeted business areas while optimizing customer satisfaction and community and customer satisfaction improvement. The strategy incorporates multiple communication methods such as print and media advertising, school presentations, community events, employee volunteerism, corporate donation, utility and employee time and equipment contribution.*	▪ **Background:** Regional Customer Service and Key Accounts operate throughout Puerto Rico. The work they do and their physical presence (offices, vehicles, employees) is visible around Puerto Rico. PREPA leadership has advised their main focus is on managing daily operations and reacting to issues with their available resources, rather than community engagement or investment. These factors have contributed to PREPA being unable to develop initiatives around: **Public safety:** Based on conversations and evidence from recent events including a job site accident, PREPA has experienced its own internal safety issues. Internal and public safety is critical when managing both daily operations and disaster situations. Regional Customer Service currently lacks documented safety information that they can reference internally and share with customers and communities as required. Regional Customer Service lacks documented safety processes and resources that are ready to distribute when working in a community. Focus should be placed on internal safety standards as well as public education. **Communication strategy:** Regional Customer Service lacks a communication process to facilitate distribution of information both internally and externally. Message delivery to customers and Reginal Customer Service is not aligned. Often, Regional Customer Service is unable to address inquiries due to lack of knowledge or training regarding corporate messages. **Economic development:** PREPA currently manages with limited resources and funding. This hinders their ability to focus on the growth and economic development of the community. Opportunity exists to work with communities around the island to help them better understand energy needs in relation to their economic development projects and aspirations. **Charitable giving:** PREPA does not engage in charitable giving initiatives or give employees time or opportunities to volunteer within their communities. There is an opportunity to implement charitable giving and volunteer initiatives. Investing in charities and volunteering will also improve employee morale and customer

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Sub-Topic Area	Observations & Contributors
	satisfaction as employees are able to participate in worthwhile causes in their communities.
XIII-6 **Performance Management (KPIs)** *Extent that Regional Customer Service has a performance metric system that is identified, documented, monitored and contributes to metric-driven improvement initiatives. Metric goals and actuals are easily accessible and are understood across functional teams; strategic and business plans incorporate improved metrics.*	▪ **Background:** Regional CS leaders spoke to various performance metrics including customer wait times, billing statement accuracy, billing frequency and arrears collected. Metric goals exist but they are not consistent across regions. Each region appears to focus independently on performance metric targets they have identified. Therefore, performance metrics vary from region to region and one contributing factor is lack of process consistency. ▪ **Performance targets:** Regions can show how they perform and where they compare in some areas. Statistics are recorded but lack of performance targets exist. Leaders do not have a documented plan or approach to meet any performance targets. Performance targets do not appear to be well communicated to all levels of the organization, which makes it difficult to manage and organize in order to realize targets. There is currently no annual planning session where leaders from the various regions set department performance goals. ▪ **Employee metrics:** No real time employee performance metrics are available. Data accessibility is lacking in that it is not immediately available. Therefore, it is difficult to provide agent coaching given that supervisors and leaders do not have access to current or real time employee performance metrics. There is no current employee dashboard. However, PREPA leadership is working with TrueNorth Corp. to develop and implement a dashboard accessible by employees at all levels of the organization.
XIII-7 **Information & Technology** *Extent that Regional Customer Service information management architecture and processes are in place and are adequate to 1) ensure effective operations and support customer satisfaction in response to customer inquiries using utility's walk-in queue system, 2) access, read and update the CC&B system and 3) integrate with T&D service order delivery system.*	▪ **Background:** Overall Regional Customer Service information technology can be described as inadequate and lacking. Regional Customer Service utilizes Oracle Customer Care & Billing system to manage accounts and document customer interactions but beyond that there is little modern technology. Technology that is deployed is not well integrated from an overall architecture perspective. ▪ There appears to be little support from the IT department when managing Regional CS initiatives. They have many good ideas for improvement but can't seem to get the traction they need to implement due to this barrier. ▪ Regional CS recently implemented a queueing system in June 2020 called Turnos-PR to support management of their customer appointments. Appointments have been used since COVID-19 to support social distancing and control traffic in district and local offices. ▪ **Employee equipment:** PREPA leadership advised there is currently a District Office PC replacement initiative with IT. The computers and supporting equipment are old and need to be replaced. The offices do not have WIFI capabilities and currently use a cable connection for each workstation. Employees do not have access to company phones or tablets to help them communicate or complete work orders electronically. ▪ **Meter reading technology:** Regional CS employees may work with three different meter reading systems: 1. Ram (RADIX): Information entered into RAM (RADIX) is automatically uploaded to CC&B. This system works the best out of the three. 2. REMOTA: This system has experienced problems. Often times there are issues uploading manually entered meter reading data into CC&B from REMOTA. This causes issues with customer statements and ultimately generates more traffic in District offices. 3. 3.) Echelon: This is the third system used. ▪ Meter reading systems do not sync well with CC&B system. There are often issues with uploading reads and a lot of manual intervention is required to ensure customer statements print accurately and on time. ▪ **Process technology:** Many processes still involve paper documents. District and local office staff do not have access to a digital scanner or electronic document library. Customers are required to come into local offices to sign documents that should be available to electronically execute documents such as payment agreements and new service requests. ▪ There is no cross-department workforce management system. Work order (WO) processing is completed manually requiring significant amount of manual data entry. Multiple handoffs also increased the likelihood of errors. Data captured by pen can cause issues when written poorly. No way to check the current status of a WO in real time. ▪ Parameters in CC&B billing system may not be correct and may be causing issues. ▪ Lack of PCI compliance to ensure customer payments are collected in a secured environment.

CUSTOMER SERVICE

Gap Assessment

Major Gaps

Sub-Topic Area	Major Gaps	Categorization
XIII-1 Organization & Strategy *Extent to which Regional Customer Service leadership and management systems are articulated and understood. Includes degree of alignment between business strategy and priorities across roles, clarity of responsibilities and accountabilities in day-to-day decisions and risk assessment.*	▪ **Public communication strategy:** PREPA uses social media applications (Twitter) to communicate with the public, yet Customer Service employees are not briefed on communications prior to release. Corporate Communications does not prioritize customer information initiatives (e.g., outage and billing information).	Priority
	▪ **Fleet vehicle uptime:** Technical employees cannot complete field work without access to safe, reliable vehicles. Fleet vehicle uptime can range anywhere from 20 to 50 percent across regions. There is no ownership or accountability for ongoing care of vehicles. When no vehicle is available, employees remain in office or ride share with a co-worker. Unreliable vehicles jeopardize employee safety. Vehicle priority is given to T&D. Depending on location, it could take an hour to deliver vehicles to the mechanic shop. Substantial time is lost due to the poor condition of existing vehicles. All fleet vehicles need to be inspected to determine if they should remain operational. New vehicles are required to restore fleet to full capacity.	SRP candidate (moved to Fleet SRP)
	▪ **Position descriptions:** Job descriptions for several technical Regional Customer Service positions may include tasks that can be done by lower cost resources, resulting in time spent by these resources on lower priority work. Descriptions need to be reviewed and re-written to ensure required job skills appropriately match day-to-day duties. Several technical roles have very similar skill sets but are prevented from completing certain types of work due to union collective agreements (e.g., meter reader, investigator, meter tester and linemen 1).	Priority
	▪ **Integrated performance targets:** Regional Customer Service currently lacks an overall strategy that utilizes tools and resources throughout the six regions, hindering their ability to work toward unified department goals. An annual goal setting program needs to be implemented and should include assigned process owners, a knowledge sharing strategy, regularly scheduled meetings, and real time progress updates visible throughout all regions.	Priority SRP candidate
	▪ **Centralize back office operations:** Back office work is currently decentralized and dispersed across district offices. This presents an opportunity to consolidate back office work to one central location, as many district offices struggle to keep up with workload. Much of the work that does not require a field work order could be centralized (e.g., billing adjustments, account updates and other non-field investigations).	Priority
	▪ **Staffing challenges:** Inability to secure human resources (HR) contributes to a high vacancy rate. Getting new positions approved is challenging, resulting in employee overtime and fatigue. Working with HR has been described as difficult. Frontline supervisors spend significant time supporting gaps left by vacant frontline positions or union employees on strike – all of which takes their focus away from leading their teams. It's also challenging to hire qualified leaders as compensation at this level is not viewed as attractive. PREPA is unable to hire externally due to financial restrictions related to bankruptcy.	SRP candidate
	▪ **Employee incentive and engagement program:** Employees need to be incentivized and engaged. No employee surveys have been provided to elicit feedback around current morale or improvement suggestions. No incentives are provided for progression or performance. No ongoing employee development strategy is in place, and no programs exist to identify and leverage top performers. No formal performance improvement recognition program is in place to incentivize employees to perform well.	Improvement opportunity
	▪ **Career development:** As there is no career development or mentor program available, employees should have access to job shadowing opportunities and career discussions where they work with their leaders to set personal goals to help guide their career.	Improvement opportunity
	▪ **Leadership retirements:** The Regional Customer Service leadership team members have an approximate average of 23 years working at PREPA. A large percentage of the existing leadership team could potentially retire within the next 5 to 7 years. There is currently no progression program in place to fill these knowledge gaps.	SRP candidate (moved to Facilities SRP)

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
	▪ **Facility management and office consolidation:** Regional Customer Service has various office and storage facilities around Puerto Rico. A percentage of offices are owned by PREPA and some are currently leased. Offices have been closed (some for several years) because of damage or consolidation. Some office buildings are used for storage of documents and equipment. Fleet parking may not be located next to office because of limited available space. Some offices serving customers need to be updated. An opportunity exists to provide better services in some areas by rearranging the current office structure or completing interior and/or exterior improvements. A review of existing facilities (T&D/CS/ICEE/Wholesale) needs to be conducted to determine if offices can be consolidated.	SRP candidate (moved to Materials Management SRP)
	▪ **Waste removal:** Regional Customer Service facilities currently have large piles of garbage located at some sites. A waste management service needs to be brought on to remove garbage and clean facilities.	SRP candidate (moved to Facilities SRP)
	▪ **Centralized meter testing and repair:** An opportunity exists to centralize meter testing and repair. Currently decentralized and dispersed amongst district offices, these facilities are under-maintained, disorganized, and testing equipment appears to be near end-of-life in some locations.	
XIII-2 Processes *Existence, effectiveness and consistent application of Regional Customer Service processes to the extent that processes are identified, defined, prioritized and supported with appropriate governing documents (i.e., maps, policies, procedures, best practices, standards).* *Extent of clear linkage between business strategy and regional customer service processes focused on payment reconciliation, new service delivery, complaint resolution, increased collections, augmented walk-in queue systems and operational integration with Operations.*	▪ **Meter replacement initiative:** Regional CS is responsible for 60,000–70,000 meter replacements due to Hurricane Maria. These meters are damaged and do not allow for an actual read. Estimated meter reads cause billing issues and customer complaints. Regional CS teams struggle to get enough meters deployed to various areas that need them and some areas do not have enough technicians to complete the work. Technicians required to complete meter replacement program are being taken away from performing other CS work. Currently 24,000 meters in stock (not confident these numbers reflect actual stock), aiming for 2,000 replacements per month. Need to develop plan to procure roughly 40,000 additional meters and initiate replacements in a cost efficient and timely manner.	SRP candidate (identified in Metering SRP)
	▪ **Meter reading cycle:** PREPA's current meter reading cycles are scheduled on the same day, creating short deadlines to obtain and enter reads. The cycles should be staggered as the overlap could cause data congestion in a two-way automatic communications system (TWACS) and impact statements. Regional Customer Service manages many statement inquiries as a result of this issue, and this is non-value add work.	Department level gap
	▪ **Major regional CS business process evaluation:** Business processes contain inefficiencies and gaps, increasing costs. Skill sets are not aligned to fulfill work and safety requirements (e.g., a meter investigation resulting in a meter change may require three different trips to resolve). Processes and procedures may be out of date and in non-compliance with current regulations. Opportunity to increase efficiency and reduce non-value-added work in business processes. Recommendation: Evaluate major processes and complete a detailed assessment pertaining to efficiency, cost savings and compliance.	SRP candidate
	▪ **Office materials procurement process:** 4–5 different approvals required to procure administrative materials and basic safety equipment (e.g., safety boots). Approvals go to the regional administrator level for small requests and can sometimes take up to a year to be approved.	Department level gap
	▪ **Customer terms & conditions enforcement:** Several examples of customer terms and conditions not being enforced were observed during regional visits & discussions with PREPA employees (e.g., meter investigations caused by customer request [high bill complaint] — the meter was found to be functioning, but no fee was administered as per the T&Cs.)	Department level gap
	▪ **Training programs:** The training offered to new and advancing employees is often facilitated by their supervisor/manager in the form of on-the-job training. Training is missing the initial knowledge transfer component limiting an employee's ability to obtain standardized background knowledge and position fundamentals. This style of training results in inconsistent service. It is recommended to develop a standardized training component to compliment the on-the-job training to better prepare employees for their roles. Creation of training material and implementation of a region-wide training program will help standardize quality.	SRP candidate

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
	▪ **Process documentation development:** Regional CS lacks sufficient process & procedure documentation. In some cases, process documentation may be out of date and in non-compliance with current regulations. Creation of documents that follow one standard will ensure consistency (including process maps and procedures).	SRP candidate
	▪ **Escalation and complaint management:** Regional CS does not have a customer escalation process or formal process for customers to bring forward suggestions, feedback or service complaints. They lack a system to deal with incidents and problem management. It is recommended to implement an escalation management that supports tracking, monitoring and management of situations that require increased awareness.	Department level gap
	▪ **Formal process improvement channel:** Regional Customer Service lacks an efficient, well documented process for employees to bring forward process improvements. There is an opportunity to create a process review committee/team or a position responsible for looking at process improvements. Employees do not have a formal process they can use to bring forward recommendations. No committees exist where employees can champion ideas and implement changes.	SRP candidate
	▪ **Customer payment process:** Customers who pay by check and do not include a copy of their bills create additional back office work to manually validate and process payment. Was indicated that there are resources dedicated to performing this back office task due to the significant amount of checks received this way.	Improvement opportunity
	▪ **Net metering approvals:** Approvals for net metering applications have been described as taking a very long time. Currently, 3000 customer applications are waiting to be processed and the number continues to grow as this is becoming an increasingly popular customer requested service. Process needs to be reviewed and processing timelines reduced.	SRP candidate
	▪ **Government arrears collection:** Government Account balances are a significant issue and make up the majority of outstanding arrears across regions and are estimated at north of $200 million. Consistently highlighted in regional meetings as a major issue. The current collection process is causing accounts to age further in arrears. It is recommended to develop a new strategy/approach to collecting the overdue balances on government accounts.	SRP
	▪ **Joint use process improvement & billing update:** Current estimates indicate that PREPA has 334,000 distribution power poles. Based on physical LUMA spot checks performed in the field, it is estimated that 75% of distribution poles may have joint use attachments. It is unknown how many underground structures have joint use attachments as this data has not been readily available. The systems and process for tracking and updating joint use attachments are unclear or do not exist, PREPA has stated that they do bill for some joint use attachments today but have not been able provide this information.	SRP candidate
	▪ **Joint use audit:** Tracking of joint use attachments does not reside in a centralized asset management system and there is no way of accurately tracking numbers required for billing or planning activities. Currently PREPA is unable to provide number of attachments on overhead or underground assets. Need to perform an audit of joint use attachments to develop a baseline and create the capability to accurately track the number of attachments on structures in an asset management system as they are added or removed.	SRP candidate (moved to Asset Management SRP)
	▪ **New service process redesign:** Current process for new service instillation has been described as inadequate and inefficient. Difficulty in reaching customer requested deadlines, lack of communication back to customer around project updates, and little in the way of communications between engineering, Regional Customer Service, and T&D operations have been described as major contributing factors.	SRP candidate (moved to Engineering SRP)

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
XIII-3 Key Accounts Management *Extent that management of key accounts ensures proactive quality relationships with government, large industrials and influential customers through regular communication in-person meetings and IT CRM systems, capital and O&M project management, complaint resolution, maximizing growth and cross-functional customer service delivery.*	▪ **Meter read technology:** Meter technology is old making it challenging and inefficient to read meters. This equipment needs to be replaced or updated. Reads that are read manually are also needed to be entered into the system manually, adding another error point. Regional CS back office enters these reads. New technology would help improve efficiency and reduce manual errors.	Department level gap
	▪ **Key Accounts interaction strategy:** Different teams talk to Key Accounts customers but no internal communication or way to capture information shared. No way to capture important customer correspondence or feedback. Employees throughout the organization need to use one system to document these interactions. “It's like various different companies' PREPAs talking to the same customer.”	Department level gap
	▪ **Real time reporting:** Key Accounts has no access to real time information. Data is 30 to 45 days old when it becomes available. Unable to use data to adjust operations based on trends or volumes. Recommend implementation of a real time reporting tool.	SRP candidate (moved to IT/OT SRP)
	▪ **Cross-department initiatives:** Overall lack of collaboration between other divisions and Key Accounts. It appears your priority and level of support may be determined by relationships and status with other departments throughout the organization. There is a lack of processes outlining how collaboration and information sharing should occur. This impacts urgent planning or communication to these important accounts. Recommendation: Implement program to enhance collaboration.	Department level gap
	▪ **Read schedule frequency:** CC&B sends schedule to Wholesale team monthly to read, causing additional ongoing work. Adjusting the schedule and frequency could reduce effort while accomplishing process goal. Recommendation: Implement a yearly communication to reduce overall workload.	Improvement opportunity
	▪ **Work distribution:** Key Accounts is currently responsible to read the meters of PREPA's 600 largest customers. This work should be the responsibility of Regional Customer Service. Responsibility was reassigned to Key Account due to number of errors made by Regional Customer Service. There is opportunity to provide better training to Regional Customer Service employees so they can accurately read these meters and manage this work.	Improvement opportunity
	▪ **Staffing challenges:** There are currently insufficient resources trained to manage AMR. The current supervisor is working in 2 different departments (AMR/Key Accounts). There is opportunity to better align positions and responsibilities to allow for better operational support.	Department level gap
	▪ **Focus on customers:** PREPA lacks an organizational focus on the customer. One example is that Key Accounts is responsible for managing customers who make up 45% of PREPA revenue but do not get the resources they require to do their jobs.	Department level gap
	▪ **Lack of sales focus:** Current focus of wholesale accounts is primarily around operations/collections. Lack of focus on proactively bringing in new business.	Department level gap
	▪ **Collections process:** The collections process is not bringing accounts current. Accounts fall further in arrears each month. There does not appear to be any enforced collection process, consequences or incentives for some of the largest account holders to keep accounts current.	Improvement opportunity
XIII-4 T&D Operations Integration Plan *Extent that utility has developed comprehensive systems between Customer Service and Operations in the seamless delivery of electricity to customers including focus areas of regular cross-functional meetings, new services, monthly billing reads, outage response and communications (planned, unplanned, major events), outage ETRs, lighting repairs, dispatching service orders and operational reporting.*	▪ **Work management:** Regional CS and T&D operations currently rely on manual paper-based work order system to initiate, schedule, dispatch and close work. This system is highly inefficient and provides no visibility to Regional CS on the status of current work orders, ability to schedule or plan customer work.	SRP candidate (moved to IT/OT SRP)
	▪ **Real time reporting tool:** T&D lacks access to real time data. Reporting is 30–45 days behind. Regional CS lacks visibility to T&D work schedules, progress reports and service order status updates. Inability to forecast impacts costs and efficiency. Unable to efficiently share information with Regional CS. Impacting customer interactions. Need real time reporting capabilities with ability to push information to a shared location (e.g., intranet site, SharePoint page), so employees can stay current on progress in their region.	SRP candidate (moved to IT/OT SRP)

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
	▪ **Communication technology:** Regional CS and T&D do not have access to technology including phones, tablets, radios, safety support devices and other communication tools. No way to communicate with customers around status updates, delays or emergencies. Employees have developed private communication channels on publicly available applications. Need to equip employees with communication technology, allowing for elimination of private communication channels and implementation of a standardized communication process.	SRP candidate (moved to IT/OT SRP)
	▪ **Service delivery failures:** There is no process in place to communicate updated service timelines to customers when a deadline is expected to be missed. Regional CS cannot obtain real time information about service order schedule or upcoming jobs. Customers may be waiting on confirmation to proceed with coordinating other work. Lack of notice or attempt to advise about schedule change results in negative interaction managed by customer service. Need to implement process to provide schedule change notifications to customers.	Department level gap
	▪ **Outage communication process:** Process is inefficient due to lengthy approval process, impacting customer notification time. Need to streamline the process to improve customer notification timelines. No ability to provide real time updates around ETR (estimated time of restoration) for unplanned outages.	SRP candidate
	▪ **Load transfers:** Load transfers impact AMR meters. The existing process does not allow for timely communication to AMR team. This delay impacts billing and estimates resulting in customer complaints and delays is payment. Need to implement an improved communication process allowing for instantaneous information sharing.	Improvement opportunity
	▪ **Process integration:** Departments operate individually, each focused on meeting independent targets. Lack of focus on the customer initiatives. Regional CS usually becomes aware of an issue when it is brought forward by a customer, rather than the proper communication channels. Increased support and collaboration would help improve the following processes: Customer outage ETR communication Planned outage communication New service Upgrades Salvages High load moves Underground Locates and Lights Out. Need to change the current structure and realign goals to ensure focus is on the customer and meeting performance metrics.	SRP candidate
	▪ **T&D & regional CS lacking regular meetings:** Regular meetings between departments are non-existent contributing to poor coordination/execution of customer facing processes.	Department level gap
XIII-5 Community Investment *Extent that utility has implemented community investment strategy focused on key areas (safety, education, community, economic development) that is documented and prioritized with the business plan. Extent that strategy maintains communications alignment between Customer Services and Corporate Communications teams focused on targeted business areas while optimizing customer satisfaction and community and customer satisfaction improvement. The strategy incorporates multiple communication methods such as print and media advertising, school presentations, community events, employee volunteerism, corporate donation, utility and employee time and equipment contribution.*	**Community investment initiatives:** Currently no community investment program exists within PREPA. Community relationship building, public engagement and safety awareness is currently not a priority. There is opportunity to implement and fund ongoing community investment programs to improve Puerto Rico and solidify LUMA's presence in the communities around the island. These programs will help build relationships and trust with key influencers and customers. Key areas to focus on include: ▪ **Charitable Giving & Volunteering:** Donating time and resources to deserving charities and providing employees with the opportunity to volunteer in their communities will help strengthen relationships and improve the perception of PREPA**.** ▪ **Education:** Taking the time to educate customers will help build relationships in the community. Opportunity exists to distribute learning materials highlighting PREPA's performance, such as neighborhood support and recovery after a major storm. ▪ **Public Safety:** There is an opportunity for Regional Customer Service to further invest in the safety culture at PREPA and throughout Puerto Rico. Facilitating presentations at schools, communications through social media, updates on PREPA's website and signage at the reginal offices would increase public safety awareness. Educating attendees on electricity safety at events around Puerto Rico will help to build relationships, establish	▪ SRP candidate

CUSTOMER SERVICE

Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
	PREPA's presence and support the well being of communities around the island. ▪ **Economic Development:** There is an opportunity to collaborate with communities to establish economic development strategies and provide an understanding of present and future needs. PREPA does not currently have a leading presence in the communities they live and work in; however, projects to increase economic development are achievable through the understanding of the social challenges and economic investment.	
XIII-6 **Performance Management (KPIs)** *Extent that Regional Customer Service has a performance metric system that is identified, documented, monitored and contributes to metric-driven improvement initiatives. Metric goals and actuals are easily accessible and are understood across functional teams; strategic and business plans incorporate improved metrics.*	▪ **Customer experience metrics dashboard:** Regional Customer Service lacks the ability to obtain real time employee statistics as required. There is no application/tool in place that an employee or management can access to view current performance statistics. PREPA does use Power BI but there is an approximate 30-day delay when receiving monthly performance reports and real time statistics. Due to the lack of real time metric reporting, it is difficult for the leadership team to manage employee performance in real-time. ▪ **Utilization of performance metrics:** Performance metrics are not communicated to all levels of the organization. Data is captured for the district or local office but not down to the task level in most cases. Metrics are not used to set performance goals or measure progress at a level detailed enough to make meaningful decisions.	SRP candidate SRP candidate
XIII-7 **Information & Technology** *Extent that Regional Customer Service information management architecture and processes are in place and are adequate to 1) ensure effective operations and support customer satisfaction in response to customer inquiries using utility's walk-in queue system, 2) access, read and update the CC&B system and 3) integrate with T&D service order delivery system.*	▪ **Support from IT department:** Regional Customer Service currently receives limited support from the IT department. This lack of support has impacted the ability of Regional CS to execute technology projects that could greatly improve efficiency and customer service. ▪ **Cross-departmental workforce management system:** Regional CS does not have a workforce management system. Following current process, it is challenging to manage a number of daily processes and activities, while keeping costs down. Minimal visibility to volumes, schedules, deviations and workload. Opportunity to increase operational efficiency by optimizing labor utilization. Regional CS, Wholesale Accounts, and T&D require a cross-departmental workforce management system that allows for customer focused collaboration. ▪ **Customer feedback solicitation:** Regional Customer Service does not have the ability to solicit or capture customer data electronically. There is opportunity to implement a process that provides customers with the opportunity to give their feedback about interacting with PREPA. ▪ **Electronic document management system:** PREPA currently does not have a process for customers to submit electronic documents. Employees currently photocopy and store customer documentation on site. No structure or document management process to comply with digital regulations. No existing electronic filing system to store and retrieve documents. Regional Customer Service should have a scanner, document management application or SharePoint library that allows them to accept and manage electronic documents from customers. Documents currently stored on site take up significant amounts of space in each Regional CS office. ▪ **Customer self-serve options:** PREPA does not have technology in place to offer customers self-serve options to reduce walk in traffic to district and local offices. If customers want information about their consumption, balance owing or statement, they have to speak with someone in Customer Service. ▪ **Incident management system:** There is no process in place for Regional Customer Service to bring forward IT issues or items to review. One example is the billing parameters – Customer Service needs confirmation that the parameters are set correctly. ▪ **Meter data management system:** Meter data is currently managed manually or within the CC&B system this has contributed greatly to delays in processing meter data effectively, billing errors and increased non-value add workload to process meter data. ▪ **Utilization of existing technology:** There is an opportunity to better use the Microsoft Office 365 suite of applications to automate work processes,	Department level gap SRP candidate (moved to IT/OT SRP) SRP candidate SRP candidate (moved to IT/OT SRP) SRP candidate (potential) SRP candidate (moved to IT/OT SRP) SRP candidate (moved to Metering SRP) Improvement opportunity

Gap Assessment

Sub-Topic Area	Major Gaps	Categorization
	store information and improve communication. It is recommended employees receive basic training on applications.	
	▪ **Appointment booking:** Regional Customer Service currently books appointments with customers. They advised this is working very well. There is an opportunity to implement a queueing system long term along with or in replacement of a walk-in line.	SRP candidate (moved to IT/OT SRP)
	▪ **Bill scanning:** Customer bills have unique bar codes that allow for scanning and input into the CC&B system quickly without the need to manually enter. This technology was not fully implemented and scanners were never purchased.	SRP candidate (moved to IT/OT SRP)
	▪ **Phones & tablets:** Regional CS & Wholesale Accounts lack the necessary technology to complete their roles efficiently. Current processes involve capturing the majority of work-related information on paper. No ability to effectively communicate.	SRP candidate (moved to IT/OT SRP)
	▪ **Meter reading technology:** Manual Meter reading is completed on paper. No workforce management or IT is used to support. Information is manually entered into CC&B. Manual Meter reads are also entered manually into the CC&B System; this is another point of potential failure. This impacts Regional Customer Service resources to manage process and manage additional customer inquiries resulting from incorrect statements.	SRP candidate (moved to Metering SRP)
	▪ **Ability to convert & accept electronic documentation:** District and local office staff are storing significant amounts of customer documents, in some cases taking up large amounts of unnecessary space. There is no corporate standard for storage and management of customer documentation. It is recommended that this system be modernized including processes to receive electronic documents and an application that allows them to store information using an electronic filing system.	SRP candidate (moved to IT/OT SRP)
	▪ **Knowledge database:** Regional Customer Service lacks a training, process, and procedure database for new and existing employees to strengthen knowledge of policies and procedures. A virtual library and evergreen process would help ensure information is available to those who need it. It is recommended that this technology be purchased, or that the existing programs better utilized to ensure employees need the information they require to make decisions.	SRP candidate (moved to IT/OT SRP)
	▪ **Standardized office technology:** IT was inconsistent from office to office; in some cases, employees were observed working with old or less than adequate IT hardware while others had up-to-date equipment.	SRP candidate (moved to IT/OT SRP)

Regional Customer Service Scorecard: Scoring

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Areas					
XIII-1 **Organization & Strategy** *Alignment between business strategy and roles in daily operations and risk assessment.*		X			
XIII-2 **Processes** *Application of processes and linkages with business strategy.*		X			
XIII-3 **Key Accounts Management** *Proactive management of key accounts.*	X				

CUSTOMER SERVICE

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIII-4 **T&D Operations Integration Plan** *Integration with Operations.*	X				
XIII-5 **Community Investment** *Existence and quality of community investment strategy.*	X				
XIII-6 **Performance Management (KPIs)** *Strength of performance metric system.*		X			
XIII-7 **Information & Technology** *Link between technology and operations.*		X			

XIV. Training

Evaluation Framework

The Training Focus Area consists of seven sub-areas that define an effective information technology system management process.

- XIV-1 Vision & Strategy
- XIV-2 Processes
- XIV-3 Training Materials
- XIV-4 Training Delivery
- XIV-5 Governing Documents – Policies, Procedures, Standards & Process Maps
- XIV-6 Performance Management (KPIs)
- XIV-7 Information & Technology

Observations & Contributors

Training Sub-Topic Area	Observations & Contributors
XIV-1 **Vision & Strategy** *Extent that training aligns with intended customer service and execution of meter to cash process. Includes both soft skill training for CS delivery and technical skill training for process quality.*	▪ **Training accountability and allocation:** PREPA has five training centers. Human Resources (HR) is responsible for the first four training centers listed below, while the Electrical Generation business unit maintains the Electrical System Training Center (CASE). The five training centers and their training focus/responsibilities are as follows: **Centro de Adiestramiento de Distribución Eléctrica (CADE)**: The Electrical Distribution Training Center belongs to HR. Their main clients are employees from the Transmission and Distribution Directorate. They train all the linemen and employees from the technical offices. **Centro de Adiestramiento de Operaciones Comerciales (CAOC)**: The Commercial Operations Training Center belongs to HR. Their main clients are employees from the Customer Service department who work in the Call Center or in commercial offices. **Centro de Desarrollo de Competencias Administrativas (CDCA)**: The Administrative Competencies Development Center belongs to HR. All employees can take training offered through the CDCA, which includes topics such as governmental ethics, supervisory capabilities and training skills (train the trainer). **Centro Educativo de Capacitación en Informática (CECI)**: The Computer Sciences Training Center belongs to HR. All employees can take trainings offered through the CECI, which includes training on computer programs such as Microsoft Office (Excel, Word, PowerPoint, Access, Outlook) and Kronos. **Centro de Adiestramiento del Sistema Eléctrico (CASE)**: The Electrical System Training Center belongs to the Generation Directorate, which focuses on training their employees on power plant conservation and operation. ▪ **Training vision and strategy alignment:** While management acknowledges the critical necessity for all Contact Center employees to receive focused training on customer service skills (including building soft skills, handling challenging calls and taking ownership of each customer contact to a satisfactory resolution), there does not appear to be a clearly defined, consistently executed training vision and strategy that drives customer service across the five training centers. **Current training challenges:** ▪ PREPA has multiple courses and curricula, yet there is no longer a dedicated CS training team (all training personnel are in HR). Also, there is a shortage of qualified trainers available to deliver training, having either retired or moved to other full time roles where they are responsible for daily operations and cannot be spared to perform training roles. ▪ The last training for PREPA employees was in 2018 after Hurricane Maria. ▪ In August 2019, PREPA outsourced most of their Contact Center calls to third party companies (Insight Communications Group and Telecontacto). A subject matter expert (SME) from the Customer Service Directorate provides training to these outsourced agents, representing one less qualified trainer available to deliver training to PREPA employees. ▪ PREPA recently upgraded their Oracle CC&B version, after which employees received online training (less than two hours long). This training focused specifically on CC&B

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Training Sub-Topic Area	Observations & Contributors
	search/flow, yet existing training on related CC&B procedures and processes has not been updated to include the use of this updated version. ▪ Reference XIV-6 Performance Management (KPIs) for observations and contributors associated with the lack of processes to identify, train and assess skills development for employees and outsourced CSRs. ▪ Division of training accountability and allocation among five training centers creates an opportunity to centralize accountability and to organize and streamline multiple courses and curriculum through a single LMS, building efficiencies and opportunities to cross train on shared topics (such as common business skills, customer service delivery, electrical industry knowledge).
XIV-2 **Processes** *Extent that training processes are delivering desired results (i.e., efficient and empathetic customer service with documented processes). Extent of documentation processes for policy, process, procedure and training material to meet CS business needs. Includes evaluation of documentation maintenance process.*	▪ **Training on existing processes:** Existing processes do not appear to have a common customer focus to promote best-in-class customer interactions. Recent training of procedures and processes was conducted at outsourced call centers, yet those procedures and processes are long and involved, so the SME/trainer created condensed lists of relevant points (paper job aids). (See Vision & Strategy.) ▪ **Training on updated processes:** While processes may be impacted by updates and changes to laws and regulations implemented by the government, and training is conducted when these impacts affect customer contact with PREPA, there does not appear to be consistent tracking of what training documents have been updated, when, and for what reasons. This is communicated more informally through meetings and email. When the PREPA Customer Service Directorate identifies a change to a documented procedure or process (for example, change in rate structure and/or law requiring itemized listing on customer bills), they provide training to affected employees. The directorate identifies supervisors, conducts train-the-trainer sessions, and then assigns those supervisors to conduct onsite training. ▪ Updates to processes are communicated to outsource call centers and training is conducted as needed.
XIV-3 **Training Materials** *Extent to which training documentation is maintained in an effective and efficient manner, is sufficient for efficient and easy to understand training delivery, and effectively educates employees on both soft skills and technical skills.*	▪ **Soft skills training:** The outsourced companies have conducted recent soft skills training (primarily phone etiquette) for agents at their respective call centers. Some soft skills training is included in PREPA's catalog of courses (primarily from the CDCA), yet these have not been offered for some time. ▪ **Technical skills training:** Recent technical training conducted for agents at outsourced call centers primarily comprise demonstrations in the live systems. These new agents do not have access to any live or test systems during training, so they do not have an opportunity to practice before receiving customer calls. While a short eLearning (2 hours) on CC&B was provided to all internal and outsourced agents to learn updated system look and feel, all existing training material needs to be updated to include new CC&B material, as it currently includes images of previous system. ▪ **Training evaluations:** Generally, employee satisfaction with training is not evaluated (Level 1) at the outsourced contact centers but is at the PREPA Contact Center, and no systems or tools are in place to incorporate feedback and update training accordingly.
XIV-4 **Training Delivery** *Extent that customer service training delivery is appropriate in quality, duration, delivery method, location, post-training support and identification of ongoing/refresher training methods.*	▪ PREPA uses a blended delivery approach, yet training is mainly provided through instructor-led training (ILT). Current ILT for onboarding and continuous learning is impacted by Covid-19, so virtual training is in place to mitigate risks. ▪ **Training delivery methods:** Contact Center agents receive onboard training via classroom and virtual methods (per Covid-19). Onboard training is currently delivered in four days to the Insight Communications Group and Telecontacto (third party contact centers). ▪ Non-onboarding training is generally ILT (pre-Covid-19). ▪ **Training calendar:** Generally, upcoming training is communicated using e-mail and a calendar of available courses, yet the training calendar does not appear to be updated today. Instead, courses are scheduled as interest for a session is expressed and an available trainer is found. ▪ **Post-training support:** Onsite outsourced supervisors and PREPA supervisors observe work quality and support agents on the job. Agents use scripts to prompt them in call handling. These scripts generally provide content for all levels of a call. ▪ PREPA Contact Center agents have been in their positions for longer periods of time (see GMA for details). Their seniority has provided them more training along with more time to field calls. The seniority plus service model is generally understood to mean that PREPA agents have more real time call knowledge and skills. ▪ **Trainers:** There is a trainer for the onboarding of agents at third party contact centers. There is a need for qualified trainers for courses, but as mentioned in sub-area I. Vision

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Training Sub-Topic Area	Observations & Contributors
	and Strategy, their ability to train is limited by their competing workload, business units, and succession planning/retirement. ▪ **Participants:** Course sizes vary. Onboarding ILT at outsource call center training room maximum capacity is 25, yet currently the largest roster size is 14 participants. Again, during Covid, all training has been virtual, where CSRs sit at their stations and the trainer facilitates from a different location. ▪ **Trainer evaluations:** Generally, participants do not appear to have a means of evaluating their classroom experience or trainer knowledge and delivery of material. Also, there does not appear to be standardized criteria for trainer performance or regular trainer observation and performance evaluation.
XIV-5 **Governing Documents – Policies, Procedures, Standards & Process Maps** *Extent that current process for documenting and maintaining CS policy, process, procedure, training material meets business needs. Includes documentation, updating and improvements to processes.*	▪ Metrics and standards for mapping, maintaining and updating training materials are not stored in a content management system or learning management system. ▪ **Quality control:** Files are sent, received and stored via e-mail. It is not uncommon for content to be in PDF format. Much of the content lacks formal revision and quality control standards. ▪ **Best practices and process mapping:** There does not appear to be any standard in place for policy and process mapping/creation. It is not immediately clear how many processes and procedures exist and how many may need updating. ▪ **Version control**: Training content was first authored using a numeric 700 catalogue series naming convention for document control. As a result of updates and revisions to content. Customer Service training currently resides in the 800 series naming convention. Updates generally occur to procedures and processes that then require corresponding updates to training content. The primary drivers of updates are technical systems, regulations and employee performance.
XIV-6 **Performance Management (KPIs)** *Extent that Customer Service Training has a performance metric system that is identified, documented, and monitored and contributes to metric-driven improvement initiatives. Metric goals and actuals are easily accessible and are understood across functional teams; strategic and business plans incorporate improved metrics.*	▪ **Call monitoring:** Supervisors record and monitor calls at third party contact center and provide feedback to agents. Generally, there is no recording system in place at PREPA's Customer Contact Center (local). At local contact center, supervisors providing demonstrative meetings and coaching when opportunities are discovered. ▪ The current state at PREPA's Customer Contact Center does not permit coaching based on performance due to union contract issues preventing PREPA CSRs from communicating with supervisors. Walkouts have occurred when supervisors have tried to coach their CSRs. ▪ As use of call monitoring is informal and unstructured, and no apparent connections exist between training outcomes and on-the-job performance, this sub-area represents a critical opportunity to put in place accessible, metric-driven improvement initiatives. ▪ **Application of training**: No metrics are in place to measure knowledge and skills attained from training or direct application of learning from training to job performance. ▪ There is no evidence that a measurement to access the effectiveness of training exists at PREPA and its outsourced contact centers. Most organizations use the Kirkpatrick model to measure training effectiveness. The Kirkpatrick model has four levels: 1. Level 1-Reaction measures thoughts and feelings of the participants about the training. 2. Level 2-Learning measures the increase in knowledge or understanding as a result of the training. 3. Level 3-Behavior measures the extent of change in behavior, attitude, or capability. 4. Level 4-Results measures the return on the investment as a result of the training. 5. In order for the Kirkpatrick model to fully evaluate training effectiveness, two elements must be present, data and time. A Level 1 evaluation is given following the training to immediately measure the participants' response to training content, facilitation and their reaction to the training they just received. Level 2 evaluations require some amount of time to pass before a proper evaluation may be done to assess whether knowledge has increased as a result of training. The same is true for Level 3 and Level 4. Each of these evaluations requires data and time (in the case of Level 3 and Level 4 evaluations, ideally large amounts of data and time) for meaningful measurements to be assessed to see whether behaviors (Level 3) have changed as a result of training and ultimately whether dollars have been saved as a result of training (Level 4).
XIV-7 **Information & Technology** *Extent that technology used for training and documentation maintenance meets the needs of the CS business.*	▪ Information Technology (IT) currently in place for contact center training is a blend of desktop applications and applications. ▪ **eLearning/micro-learning tools:** No applications or tools are in place to build blended content for eLearning or multi/micro-learning delivery.

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Training Sub-Topic Area	Observations & Contributors
	▪ **Onboarding IT | sandbox/test system(s):** Onboarding consists of a PowerPoint deck presented virtually or live. There is no sandbox for live contact center application simulation. ▪ **Learning management system (LMS):** No systems or tools are in place to administer, document, track, report and provide the functionality of an LMS. ▪ **Knowledge management system (KMS):** PREPA uses OpenText for core purposes, yet it is not expansively used as a knowledge base for CSRs to pull help articles. ▪ **Virtual learning platform:** MS Teams is currently used to deliver virtual learning. ▪ **Training evaluation tool(s):** No apparent systems or tools are in place to incorporate feedback and update training accordingly.

Major Gaps

Sub-Topic Areas	Major Gaps	Categorization
XIV-1 **Vision & Strategy** *Extent that training aligns with intended customer service and execution of meter to cash process. Includes both soft skill training for CS delivery and technical skill training for process quality.*	▪ Division of training accountability and allocation among five training centers creates an opportunity to centralize accountability and to organize and streamline multiple courses and curriculum through a single LMS, building efficiencies and opportunities to cross train on shared topics (such as common business skills, customer service delivery, electrical industry knowledge).	SRP
XIV-2 **Processes** *Extent that training processes are delivering desired results (i.e., efficient and empathetic customer service with documented processes). Extent of documentation processes for policy, process, procedure and training material to meet CS business needs. Includes evaluation of documentation maintenance process.*	▪ Current processes and training material are primarily, if not exclusively, written in Spanish. Translation to English is necessary to enable critical assessment and mapping to connect processes to the training material that covers those processes. ▪ A clear comparison of documented processes to the actual processes being performed is necessary to establish a current, as-is state, enabling Luma business leads to identify where changes need to be made and driving training material updates and new training development.	Priority Priority
XIV-3 **Training Materials** *Extent to which training documentation is maintained in an effective and efficient manner, is sufficient for efficient and easy to understand training delivery, and effectively educates employees on both soft skills and technical skills.*	▪ Need to create a world class customer service training academy curriculum that reaches beyond the fundamentals and essential onboarding topics to include continuous learning opportunities centered on all aspects of customer interactions, from verbal and written communication to emotional intelligence and the technology and tools that facilitate customer service. This curriculum will position LUMA on the leading edge of customer service and customer relationships. All training materials will be created in English and translated to Spanish for delivery. Translation will be done using a fluent training team member and software. ▪ Establishing a process and schedule to update existing training materials is needed pre-commencement to ensure that critical updates are incorporated and tracked. For example, time-sensitive updates related to regulations, such as safety updates that must be documented and communicated with a short turnaround (compared to noted typos or updates to non-critical training content that can be updated on a quarterly basis). ▪ To provide data and metrics on the effectiveness of pre-commencement transition training, process(es) to evaluate new training material and their delivery (for example, document review process, piloting and testing processes, document translation process) are needed. ▪ Need to establish consistent offering of Level 1 evaluations (measuring **reaction/satisfaction** with training) to provide data and metrics on training	Priority Priority Priority Priority

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Sub-Topic Areas	Major Gaps	Categorization
	effectiveness and a benchmark for evaluation of all Customer Service training moving forward. ▪ Post-commencement, to provide more robust data on the effectiveness of training, LUMA needs to mature training evaluations from Level 1 to Level 2 (measuring learning – increase in knowledge, skills or experience from conducting and documenting pre- and post-training assessments).	Improvement opportunity
XIV-4 **Training Delivery** *Extent that customer service training delivery is appropriate in quality, duration, delivery method, location, post-training support and identification of ongoing/refresher training methods.*	▪ Current shortage of resources creates need to hire or train employees/leaders to prepare a sufficient roster of qualified trainers. ▪ Promoting coaching, subject matter expert (SME) and trainer responsibilities as a measure of exceptional performance for all supervisors and managers is needed to formalize value and ensure time is allocated to the trainer role. This will, again, build the roster of qualified trainers and support a learning culture. ▪ To free up training resources to facilitate ILT that requires personal interaction and SME guidance, such as role play interactions and more complex troubleshooting scenarios or customer service scenarios paired with branching system decisions, as well as provide ready access to on-demand learning opportunities, Luma can identify ILT content to convert to an online microlearning format, shifting more simple or straightforward concepts (such as basic system navigation and introductory soft skills topics) away from ILT. ▪ Designated training facilities that support all Customer Service training, including adequate equipment for practice and presentation, as well as test system capabilities, need to be established to support optimal learning opportunities.	Priority SDG Improvement opportunity Improvement opportunity
XIV-5 **Governing Documents – Policies, Procedures, Standards & Process Maps** *Extent that current process for documenting and maintaining CS policy, process, procedure, training material meets business needs. Includes documentation, updating and improvements to processes.*	▪ Establishing an as-is state for current policies, processes and procedures is critical. This requires translating from Spanish to English and conducting interviews with PREPA supervisors and managers and outsource agents to confirm how current processes and procedures are currently performed. These policies, processes and procedures will be referenced in pre-commencement transition training. ▪ All existing training material needs to be collected in a common location and translated to English so that policies, processes and procedures can be mapped to existing training material.	Priority Priority
XIV-6 **Performance Management (KPIs)** *Extent that Customer Service Training has a performance metric system that is identified, documented, and monitored and contributes to metric-driven improvement initiatives. Metric goals and actuals are easily accessible and are understood across functional teams; strategic and business plans incorporate improved metrics.*	▪ A clear connection between training objectives, job/role responsibilities and performance metrics must be established as it correlates directly to pre-commencement transition training design and development. ▪ Once processes and systems are in place to connect KPIs, job roles and responsibilities, and individual performance, we can create a phased plan to mature training evaluation levels to Level 3 (measuring behavior — Are employees applying what they learn in training on the job?) and then to Level 4 (measuring results – Did training have a positive influence on the business/organization?) ▪ Not only should there be a connection between KPIs and employee performance and training goals, but also between leader KPIs and their contributions to coaching and training employees. These responsibilities should be measures of high	Priority Improvement Opportunity Priority

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Sub-Topic Areas	Major Gaps	Categorization
	performance and demonstrate a clear value for this role – from the top down. (Bonus: This will provide Luma with a stronger roster of qualified trainers, greatly reducing or even eliminating the current shortage.)	
XIV-7 **Information & Technology** *Extent that technology used for training and documentation maintenance meets the needs of the CS business.*	Based on the observations and contributors for sub-area 7, the following training systems, technologies, and tools are all identified gaps: ▪ Access to eLearning/microlearning content: This includes development of critical system demonstrations and simulations for pre-commencement transition training, as well online interactions to supplement ILT. ▪ Onboarding IT | sandbox/test system(s): This is a high-value opportunity to best prepare new employees to work in critical systems from Day One. ▪ Learning management system (LMS): This includes launch of Workday LMS. ▪ Knowledge management system (KMS): This includes both customer and employee access to knowledge articles. ▪ Virtual learning platform: This includes assessment of current use of MS Teams as a classroom substitution. ▪ Training evaluation tool(s): This includes evaluation of pre-commencement transition training to assess effectiveness and establish benchmark.	Priority Improvement opportunity SRP SRP Priority Priority

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Topic Areas					
XIV-1 **Vision & Strategy**	X				
XIV-2 **Processes**	X				
XIV-3 **Training Materials**	X				
XIV-4 **Training Delivery**	X				
XIV-5 **Governing Documents – Policies, Procedures, Standards & Process Maps**	X				
XIV-6 **Performance Management (KPIs)**	X				
XIV-7 **Information & Technology**	X				

V. Support Services

LUMA

Gap Assessment

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Gap Assessment

General Approach

The IT (Information Technology) OT (Operational Technology) gap assessment includes the following main areas of focus, as shown in the tables below:

General Management: There are nine management focus areas that generally apply to all departments.

Core Business: There are nine core business focus areas specifically relating to IT OT.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting & Cost Performance
III	Leadership Management
IV	Process Efficiency & Effectiveness
V	Employee Training & Development
VI	Workforce Management
VII	Management Systems & Technology
VIII	Performance Metrics & Continuous Improvement
IX	PREPA Culture & Momentum
Core Business Focus Areas	
XI	Asset Management
XII	Program/Project Planning & Execution
XIII	Technology Operations
XIV	Technology Operations Practices
XV	Risk & Compliance Management
XVI	Service Solution Development & Deployment
XVII	Crisis Management
XVIII	Ancillary Support
XIX	Enterprise Technology

We applied the following standard methodology to both the General Management and Core Business Assessments, thus forming the bases for identifying gaps.

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Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

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Focus & Sub-Focus Areas

The nine **General Management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas			
I	**Organization Design Effectiveness**	I-1	Span of Control	I-3	Ratio of Administrative to Direct Workers
		I-2	Clarity on Management & Supervisory Roles	I-4	Impact of Protected Patronage Workers
II	**Budgeting & Cost Performance**	II-1	Actual Expenditures as Percentage of Budgeted	II-4	Overtime & Contractors Management
		II-2	Impact of Emergent Issues on Budgets	II-5	Direct and Allocated Indirect Cost Management
		II-3	Unit Cost/Productivity Management		
III	**Leadership Management**	III-1	Qualifications & Experience	III-3	Ability to Deliver Results
		III-2	Accountability	III-4	Inter- & Intra-Organization Collaboration
IV	**Process Efficiency & Effectiveness**	IV-1	Potential Risks to Post-Commencement	IV-3	Process Compliance Management
		IV-2	Process Familiarity by all Stakeholders	IV-4	Efficiency of Overall Process Flow
V	**Employee Training & Development**	V-1	Training Budgets & Program Effectiveness	V-3	Skills Assessment & Personnel Training Plans
		V-2	Ability to Cross-Train as Personnel Development Path	V-4	Demographics & Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1	Effectiveness of Current Workforce Management Processes	VI-2	Time Charging & Productivity Tracking & Reporting
VII	**Management Systems & Technology**	VII-1	Process Automation	VII-3	Interaction or Linkage with Other Functional Areas' IT Plans or Systems
		VII-2	Adaptability to New Systems & Technology	VII-4	Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics & Continuous Improvement**	VIII-1	Recognition of Critical Performance Metrics	VIII-4	Instances (or Lack) of Data-Driven Management Initiatives
		VIII-2	Performance Metric Collection, Validation & Reporting	VIII-5	Recent Performance Trends
		VIII-3	Root Cause & Trend Analysis		
IX	**PREPA Culture & Momentum**	IX-1	Resistance (Active or Passive) to LUMA Management	IX-3	Employee Empowerment/Action Orientation
		IX-2	Employee Morale/Excitement about LUMA	IX-4	Timeframe to Improve Performance
				IX-5	Impact of Organization Silos

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I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Focus Area consists of four sub-areas (core and enabling areas that define an effective organization design):

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	▪ Managers are involved in the day-to-day activities of their reports which leads to frequent micromanagement. ▪ Lack of resources leads to frequent use of overtime. ▪ Inconsistent reporting structure. ▪ Vertical organizational structure with power emanating from top to bottom. ▪ Little evidence of input to decision making at lower levels of the IT OT organization. Decisions are made at the management level and not communicated to lower levels in the department
I-2 Clarity on Management & Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	▪ No clear strategic governance. Influence of union agreements is apparent. ▪ Limited ability of managers to promote and increase pay. ▪ Inconsistent reporting structure due to vacancies. ▪ Inflexibility in hiring rules reduces qualified applicant pool.
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	▪ Ratio of admin to direct workers appears high due to manual processes putting dependencies on administrative workers. ▪ Many vacancies required administrative workers to take on additional tasks. ▪ Not enough administrative workers or skilled professionals for the current workload. ▪ Excessive paperwork is required for many processes.
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	▪ Frequent political intervention affects the required qualifications to hold the position. ▪ Leadership positions become volatile and change with the government. ▪ No evidence of dismissal for cause. ▪ Senior and executive roles have high turnover with political changes. ▪ Frequent retirements without ability to backfill roles.

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Major Gaps

Sub-Focus Area	Major Gaps	Categorization
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	▪ Lack of adequate resources; many vacancies. ▪ Due to vacancies, leaders need to be involved in the day-to-day activities of the department.	Improvement opportunity
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	▪ Lack of promotion process/ability to increase pay. ▪ Inability to recruit new talent leads to many vacant positions.	Department level gap
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*	▪ Lack of adequate resources. ▪ Lack of online document management. ▪ Lack of process automation.	Improvement opportunity
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	▪ Lack of independence/separation from government. ▪ Lack of consistency in leadership roles. ▪ Lack of succession planning upon retirement.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	X				
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	X				
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*		X			
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	X				

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Gap Assessment

II. Budgeting & Cost Performance

Evaluation Framework

The Budgeting & Cost Performance Focus Area consists of five sub-areas that define effective budgeting and cost performance:

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost/Productivity Management
- II-4 Overtime & Contractors Management
- II-5 Direct & Allocated Indirect Cost Management

Key observations and contributors, identified gaps, and scorecard for each sub-focus area follows:

Observations & Contributors

Sub-Focus Area	Observations & Contributors
II-1 Actual Expenditures as Percentage of Budgeted *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	▪ Inconsistent and siloed budgeting process with little input from other management members/leaders. ▪ Main area of budget tracking is for capital projects. ▪ Departments appear to spend allocated funds; funds are distributed on a regular basis.
II-2 Impact of Emergent Issues on Budgets *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	▪ Funding process can cause delays in programs/projects. ▪ Inconsistent responsibility requirements for budget tracking. ▪ No evidence of emergency fund for natural disasters and emergencies. ▪ Limited ability to change budget with emergent issues.
II-3 Unit Cost/Productivity Management *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	▪ No evidence of KPIs (key performance indicators), productivity metrics, or tracking of unit costs. ▪ Highly variable workload.
II-4 Overtime & Contractors Management *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	▪ Manual tracking of overtime, potential for abuse as most tracking is reactive rather than proactive. ▪ Frequent use of overtime due to lack of adequate personnel. ▪ Fluctuations in contractor usage due to RFP (request for proposal) needs. ▪ Some workers consider overtime and per diem as part of their base pay.

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Sub-Focus Area	Observations & Contributors
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ No evidence of cost allocation across departments; budget decisions made at upper levels of management. ▪ No capital budget.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	▪ Lack of consistent and integrated budget process. ▪ Lack of responsibility at lower levels for budget management. ▪ Disconnect between budget needs and budget creation. ▪ Lack of responsibility and accountability for operating expenses.	Department level gap
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	▪ Limited visibility in emergent issues due to lack of consistent budget tracking process. ▪ Inability to change funding. ▪ Lack of emergency funds.	Department level gap
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	▪ Lack of metrics: KPIs, productivity, unit costs.	Improvement opportunity
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	▪ Siloed manpower planning. ▪ Lack of consistency in overtime tracking and planning.	Improvement opportunity
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ Lack of departmental budget allocation process; costs are not transferred across departments. ▪ Limited approved capital budgets. ▪ No evidence of budget responsibility within IT OT departments.	Department level gap

IT OT

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	X				
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*		X			
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*		X			
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*		X			
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	X				

IT OT

Gap Assessment

III. Leadership Management

Evaluation Framework

The Leadership Management Focus Area consists of four sub-areas (core and enabling areas that define an effective leadership management process):

- III-1 Qualifications & Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter- & Intra-Organization Collaboration

Observations & Contributors

Sub-Focus Area	Observations & Contributors
III-1 **Qualifications & Experience** *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ Unclear hiring qualifications/experience requirements. ▪ Unnecessary inflexibility with hiring process, even when candidate is highly qualified. ▪ No clear training programs in place.
III-2 **Accountability** *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company's mission, values and goals. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ Accountability varies greatly based on manager and leadership style, no evidence of company-wide accountability process or expectations from management. ▪ Micromanagement from upper levels. Lack of resources causes issues with prioritization of tasks (leading to some tasks remaining incomplete indefinitely).
III-3 **Ability to Deliver Results** *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	▪ Limited reporting and funding availability restricts ability to deliver results. ▪ Unclear expectations between departments/business units. ▪ Many functions are not meeting expectations due to lack of funding and resource availability. ▪ Unclear/poor management of vendor expectations and timeline.
III-4 **Inter- & Intra-Organization Collaboration** *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ No evidence of leadership pushing collaboration. ▪ Departments are very siloed at upper levels and only interact when necessary; however, they are less siloed at lower levels and have more frequent interaction. ▪ Minimal communication with business stakeholders.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
III-1 **Qualifications & Experience** *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ Lack of resources with necessary skillsets. ▪ Lack of qualification/experience-based hiring criteria. ▪ Lack of training program. ▪ Lack of succession planning.	Department level gap

IT OT

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ Lack of RACI (responsible, accountable, consulted, informed) matrix, accountability, and task tracking. ▪ No evidence of feedback process (formal/informal) for employees. ▪ Lack of performance improvement initiatives. ▪ Lack of strategic governance plan.	Department level gap
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	▪ Lack of clear project management methodology. ▪ Limited resources to complete required work (funding, personnel).	Department level gap
III-4 Inter- & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ No apparent expectations from leadership for collaboration across departments. ▪ Lack of unified strategy and governance. ▪ Lack of defined organizational goals and alignment. ▪ Service catalog does not exist.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	X				
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*		X			
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*		X			
III-4 Inter- & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	X				

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Gap Assessment

IV. Process Efficiency & Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness Focus Area consists of four sub-areas (core and enabling areas that define effective process efficiency and effectiveness):

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IV-1 Potential Risks to Post-Commencement *Identifies risks to post-commencement and steps needed to mitigate the risks.*	▪ Very little alignment within organization indicates poor communication which increases risk levels. ▪ Organization is highly reactive to risks and does not follow pre-defined processes. ▪ Minimal tools to support processes do not exist. ▪ No evidence of succession planning or documented work procedures and standards.
IV-2 Process Familiarity by All Stakeholders *Examines operational processes to ensure they are defined and understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.*	▪ No evidence of process for documentation and maintenance of processes and work procedures.
IV-3 Process Compliance Management *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	▪ Lack of process documentation/mapping leads to lack of process compliance. ▪ Enforcement of policies is difficult due to union involvement.
IV-4 Efficiency of Overall Process Flow *Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.*	▪ Processes are highly manual and undocumented. ▪ Employees are willing to document and evaluate processes, but lack of resources makes it difficult to do so.

IT OT

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IV-1 Potential Risks to Post-Commencement *Risks to post-commencement and steps to mitigate those risks are identified.*	▪ Lack of documented processes and standards limits consistent approaches and presents a risk to the organization. ▪ Lack of internal alignment and communication.	Improvement opportunity
IV-2 Process Familiarity by All Stakeholders *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*	▪ No standardized approach due to lack of documented processes. ▪ No process for documentation, maintenance, and redesign of processes.	Improvement opportunity
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	▪ No process mapping/maintenance tools. ▪ No evidence of compliance audits. ▪ Lack of resources to maintain processes.	Improvement opportunity
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	▪ No standardized process flow makes it difficult to track efficiency.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IV-1 Potential Risks to Post-Commencement *Risks to post-commencement and steps to mitigate those risks are identified.*		X			
IV-2 Process Familiarity by all Stakeholders *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*		X			
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*		X			
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*		X			

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Gap Assessment

V. Employee Training & Development

Evaluation Framework

The Employee Training & Development Focus Area consists of four sub-areas (core and enabling areas that define an effective employee training and development process):

- V-1 Training Budgets & Program Effectiveness
- V-2 Ability to Cross-Train as Personnel Development Path
- V-3 Skills Assessment & Personnel Training Plans
- V-4 Demographics & Profile of Personnel by Skill Level

Observations & Contributors

Sub-Focus Area	Observations & Contributors
V-1 **Training Budgets & Program Effectiveness** *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	▪ Lack of department-managed training budget restricts training availability. ▪ Some training available related to new products (e.g., soft skills development and Microsoft products). ▪ Technical training is generally self-directed through self-funded or free resources.
V-2 **Ability to Cross-Train as Personnel Development Path** *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	▪ No formal cross-training plan or program. ▪ Not enough time or resources for cross-training.
V-3 **Skills Assessment & Personnel Training Plans** *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	▪ No evidence of personnel development, assessment or training plans. ▪ No evidence of performance evaluations or regular career discussions.
V-4 **Demographics & Profile of Personnel by Skill Level** *Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.*	▪ Significant portion of workforce is at or near retirement. ▪ Little succession planning. ▪ Limited funding to fill skill gaps.

IT OT

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	▪ Lack of funding for training budget. ▪ Lack of resources to cover day-to-day operations while others train.	Department level gap
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	▪ No cross-training program established within organization.	Improvement opportunity
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	▪ Lack of employee development initiatives. ▪ Lack of formal training plans. ▪ Lack of performance evaluations.	Improvement opportunity
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	▪ Lack of succession planning for retired workforce. ▪ Inability to terminate for cause. ▪ Limited skilled labor available in Puerto Rico, and difficulty with retention due to competition.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training is evidenced by training budget and program effectiveness.*	X				
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross-training initiatives to improve development path for personnel*	X				
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets.*	X				

IT OT

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
V-4 Demographics & Profile of Personnel by Skill Level *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	X				

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Gap Assessment

VI. Workforce Management

Evaluation Framework

The Workforce Management Focus Area consists of two sub-areas (core and enabling areas that define effective work management):

- VI-1 Effectiveness of Current Workforce Management Systems & Processes
- VI-2 Time Charging, Productivity Tracking & Reporting

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	▪ Management of contractor performance and time is manual. ▪ No evidence of performance metric tracking and no workforce management tools available. ▪ Some desire for agile/scrum methodologies.
VI-2 **Time Charging, Productivity Tracking & Reporting** *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	▪ Time tracking is done in a variety of applications depending on the team (Kronos, Jira, ad hoc timesheets). ▪ Some concerns regarding time tracking accuracy. ▪ Overtime is often tracked in a reactive manner but requires justification. ▪ Administrative staff supports time charging for field workers. ▪ Accumulation of sick and vacation time poses risk to day-to-day operations

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Defined processes and work rules to ensure efficient labor utilization.*	▪ No workforce management tool and no integrations across technology systems. ▪ No KPIs to track allocated work and results. ▪ No work item level tracking.	Department level gap

IT OT

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
VI-2 Time Charging, Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	▪ Lack of standard timecard submission process across all departments. ▪ No remote accessibility of timecards for field workers. ▪ Significant liability with time and resources owed to sick and vacation time.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Defined processes and work rules to ensure efficient labor utilization.*	X				
VI-2 Time Charging, Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*			X		

IT OT

Gap Assessment

VII. Management Systems & Technology

Evaluation Framework

The Management Systems & Technology Focus Area consists of four sub-areas (core and enabling areas that define effective management systems and technology):

- VII-1 Process Automation
- VII-2 Adaptability to New Systems & Technology
- VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VII-1 **Process Automation** *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	▪ Manual processes require a lot of paperwork and data entry. ▪ Minimal integrations between systems to enable departmental automatic processes.
VII-2 **Adaptability to New Systems & Technology** *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	▪ Finding contractors/employees that have the right skills to complete upgrades is challenging. ▪ Continued support from consultants after work is completed is a challenge when the contract hasn't been negotiated accordingly. ▪ Success of implementation of changes depends on user buy-in.
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	▪ Positive relationship between IT OT and customer service. ▪ Admin for customer service/ CC&B works closely with IT. ▪ Improvements needed for legacy systems that support the business. ▪ Not many integrations between systems.
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ Project online is used by some (not all) for project governance. ▪ Need alignment between IT and business units in addition to documentation and standardization. ▪ Review of user access and permissions could improve security. ▪ Consolidation of inventory management to provide better oversight. ▪ Opportunity to optimize and consolidate contracts.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	▪ Lack of automated processes; most are still manual. ▪ Limited guidance for use of standardized and accepted company applications (e.g., use of SharePoint for company forms). ▪ Lack of automated work management in Telecom. ▪ Lack toolset (service management, security framework).	Department level gap

IT OT

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes and technology to make quality improvements.*	▪ Limited change management program to support user buy-in. ▪ Knowledge gap for upgrades. ▪ Challenges with obtaining continued support.	Improvement opportunity
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*	▪ Lack of integration of IT OT throughout all aspects of the business. ▪ Many legacy systems are out of support.	Department level gap
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ Project gating has not been demonstrated and implementation of project governance will guide the department. ▪ Governed security approach would reduce security gaps. ▪ Change management with new systems can improve communication and drive user acceptance and capability.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VII-1 Process Automation *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	X				
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes and technology to make quality improvements.*	X				
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*	X				
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	X				

IT OT

Gap Assessment

VIII. Performance Metrics & Continuous Improvement

Evaluation Framework

The Performance Metrics & Continuous Improvement Focus Area consists of five sub-areas (core and enabling areas that define performance metrics and continuous improvement process):

- **VIII-1** Recognition of Critical Performance Metrics
- **VIII-2** Performance Metric Collection, Validation & Reporting
- **VIII-3** Root Cause & Trend Analysis
- **VIII-4** Instances (or Lack) of Data-Driven Management Initiatives
- **VIII-5** Recent Performance Trends

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VIII-1 Recognition of Critical Performance Metrics *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	▪ Some areas are tracked in tools like Jira (service deck incidents), but KPIs are not evaluated in an established manner, or held accountable to target performance.
VIII-2 Performance Metric Collection, Validation & Reporting *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	▪ Although some teams manage their project-related work in Jira, there is a need for more accountability of managers to track money spent and metrics throughout the business for project-related and day-to-day work.
VIII-3 Root Cause & Trend Analysis *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	▪ Performance drivers are not recognized and understood. ▪ The company is unable to estimate the cost or benefits of improving KPIs. ▪ Issues are handled reactively and do not conduct proper root cause analysis to find permanent solutions.
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	▪ Performance improvement initiatives are not tracked. ▪ Historical data does not exist, preventing establishment of data-driven targets.

IT OT

Gap Assessment

Sub-Focus Area	Observations & Contributors
VIII-5 Recent Performance Trends *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	▪ No evidence of KPIs and other performance metrics being trended within IT OT.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	▪ Lack of definition and collection of performance metrics hampers ability to measure performance improvements.	Improvement opportunity
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	▪ Lack of definition and collection of performance metrics hampers ability to measure performance improvements.	Improvement opportunity
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	▪ Lack of understanding of performance drivers. ▪ Issues are handled reactively and do not conduct proper root cause analysis to find permanent solutions. ▪ No evidence of trend analysis being performed.	Improvement opportunity
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	▪ Performance improvement initiatives are not tracked. ▪ Historical data does not exist which prevents establishment of data-driven targets.	Improvement opportunity
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	▪ No evidence of KPIs and other performance metrics being trended within IT OT	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	X				
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	X				

IT OT

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	X				
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	X				
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	X				

IX. PREPA Culture & Momentum

Evaluation Framework

The PREPA (Puerto Rico Electric Power Authority) Culture & Momentum Focus Area consists of five sub-areas (core and enabling areas that define the PREPA culture and momentum):

- IX-1 Resistance (Active or Passive) to LUMA Management
- IX-2 Employee Morale/Excitement About LUMA
- IX-3 Employee Empowerment/Action Orientation
- IX-4 Timeframe to Improve Performance
- IX-5 Impact of Organization Silos

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	▪ Some view LUMA as positive and hope that politics will disappear. Others feel uncertain about LUMA, especially the unions, due to uncertainty around years of service and pension.
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	▪ Current employees have mixed feelings about the transition. Some are nervous about the transition due to the lack of transparency and concerns around years of service for retirement and pension plans. ▪ Some feel restricted/inhibited by the current situation and excited for the opportunity to improve the electric system with LUMA.
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.*	▪ Employees don't have a strong enough understanding of the new empowered org design and culture to be able to articulate attitudes towards it. ▪ Decision making has been limited to the management levels within the IT OT department. Employee's expressed a desire to be empowered to make decisions within their roles based on their experience and knowledge. ▪ Employees expressed concern over their ability to propose new projects that will enable the business operations and also no ability to manage scope changes as these all need to be escalated to upper management. ▪
IX-4 **Timeframe to Improve Performance** *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	▪ With the introduction of standard service management processes and procedures combined with the training of help desk resources it is anticipated that improvement in the delivery of IT OT services will be noticeable within the first few months of operations. LUMA will also implement standard project management methodology ensuring projects deliver on expected business outcomes within the planned timeline and budget, improvement to the delivery of project services will be noticeable as projects are initiated and implemented post commencement. Employees expressed the desire to move to industry frameworks and best practices that due to current resource constraints they have been unable to achieve.
IX-5 **Impact of Organization Silos** *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	▪ While some teams have worked to break down silos, they still exist within the organization. ▪ Silos are emphasized by lack of communication. ▪ Silos can be overcome with improvements in communication and culture awareness.

IT OT

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IX-1 Resistance (Active or Passive) to LUMA Management *Extent employees will resist new LUMA team.*	▪ Lack of communication of unified organization strategy and goals. ▪ Lack of communication around pension plans and retirement. ▪ Lack of employee appreciation initiatives. ▪ Limited engagement distances and separates a unified approach between LUMA and PREPA.	Priority
IX-2 Employee Morale/ Excitement About LUMA *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	▪ Lack of communication to employees regarding retirement and pension plans. ▪ Lack of recognition and appreciation initiatives for employees. ▪ Lack of career progression and development. ▪ Lack of productivity tools and supplies.	Priority
IX-3 Employee Empowerment/ Action Orientation *Degree that employee attitudes embrace new empowered organizational design and culture.*	▪ Cultural tendency to hierarchy may affect empowerment. ▪ Political drivers impact decisions and loyalty. ▪ Lack delegation of authority.	Department level gap
IX-4 Timeframe to Improve Performance *Timeframe for embracing LUMA initiatives.*	▪ Lack of information being provided from PREPA on how the transition will proceed has PREPA resources unclear on if they will apply to LUMA.	Priority
IX-5 Impact of Organization Silos *Extent to which existing org silos can be overcome or represent ongoing challenge.*	▪ Lack of integrated teams. ▪ Lack of business processes leading to siloed teams.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IX-1 Resistance (Active or Passive) to LUMA Management *Extent employees will resist new LUMA team.*	X				
IX-2 Employee Morale/ Excitement About LUMA *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	X				
IX-3 Employee Empowerment/ Action Orientation *Degree that employee attitudes embrace new empowered organizational design and culture.*	X				
IX-4 Timeframe to Improve Performance *Timeframe for embracing LUMA initiatives.*		X			
IX-5 Impact of Organization Silos *Extent to which existing org silos can be overcome or represent ongoing challenge.*	X				

Core Business Assessment

Focus & Sub-Focus Areas

The nine **Core Business** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas			
XI	**Asset Management (Shared with UT)**	XI-1 XI-2 XI-3	Organization, Strategy & Vision Processes Information & Technology	XI-4 XI-5	Culture & Competencies Current Practices (Age & Condition of Software, Infrastructure, End-User Computing)
XII	**Program/Project Planning & Execution**	XII-1 XII-2 XII-3 XII-4`	Identification Planning Scheduling Execution	XII-5 XII-6	Closeout Current Practices (Gating, Project Success Rates)
XIII	**Operational Technology**	XIII-1 XIII-2 XIII-3	SCADA Outage Management Telecom & Substation Control	XIII-4 XIII-5 XIII-6	AMR Facilities IT Network
XIV	**Technology Operations Practices**	XIV-1 XIV-2	Incident Management Problem Management	XIV-3 XIV-4	Request Fulfilment Performance Management
XV	**Risk & Compliance Management**	XV-1 XV-2	Strategy & Risk Alignment Risk, Compliance & Governance Processes	XV-3 XV-4	Information & Technology Culture & Competencies
XVI	**Service Solution Development & Deployment**	XVI-1 XVI-2 XVI-3	Service & Solution Lifecycle Planning Service & Solution Architecture Configuration & Testing	XVI-4 XVI-5	Maintenance & Testing Service & Solution Deployment
XVII	**Crisis Management**	XVII-1 XVII-2 XVII-3 XVII-4	Detection Management Response Planning Damage Assessment/Analysis Incident Containment & Mitigation	XVII-5 XVII-6 XVII-7	Communication Recovery Planning Improvement Implementation
XVIII	**Ancillary Support**	XVIII-1 XVIII-2 XVIII-3	Customer Relationship Business Strategy Procurement & Contracts	XVIII-4 XVIII-5	Vendor Management Safety
XIX	**Enterprise Technology**	XIX-1 XIX-2 XIX-3	Enterprise Resource Planning (ERP) Work & Asset Management Customer Care & Billing	XIX-5 XIX-6	Outage Management Geospatial Information Systems

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XI. Asset Management

Evaluation Framework

The Asset Management (AM) Focus Area consists of five sub-areas that define an effective asset management system.

- **XI-1** Organization, Strategy & Vision
- **XI-2** Processes
- **XI-3** Information & Technology
- **XI-4** Culture & Competencies
- **XI-5** Current Practices (Age & Condition of Software, Infrastructure, End-User Computing)

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XI-1 Organization, Strategy & Vision *The extent to which the technology asset management system aligns with ISO 55000 and/or international asset management standards. Specifically, review the organization's implementation of the asset owner, asset manager and service provider functions and evaluate the consistency between overall strategy, the underlying philosophy in managing assets, and the deployment of personnel in capturing the value of installed assets.*	▪ Intent for asset strategy is there but lacking in resources and tools to manage IT OT assets. ▪ Excel is heavily used, and most server and networking assets are tracked, but this does not drive lifecycle management and maintenance of technology systems. No formal or consistent asset registries. ▪ Awareness of value of asset strategy, but asset strategy itself is lacking; asset criticality/risk profile not fully understood/communicated, particularly with electric/technology asset dependencies. ▪ Level of asset inventory/detail varies across departments/groups. ▪ Safety/customer/reliability given as key business objectives, but not enough granularity provided to drive consistency throughout the organization; technology in place not taken advantage of (hurdles to overcome), existing capabilities are not being used.
XI-2 Processes *Consistency of risk analysis methodology and investment planning with AM policy and corporate/business area strategies; determines the extent to which investments are identified, prioritized and optimized based on overall value, resources, and risk; AM plans, processes and procedures are factored into the planning and execution of capital projects and O&M (operations and maintenance) programs; and strategic objectives, and KPI measures are aligned and established utilizing industry best practices and credible benchmarking information.*	▪ Asset management tools in place are not adequate for managing electrical assets including fleet. No evidence assets are consistently tagged and tracked. It is up to the end user to enter their assets into the system. ▪ Evidence of equipment that is purchased but not installed. ▪ Asset vulnerabilities are not kept up to date, no/limited security review/assessment of new technology, lack of penetration testing being conducted. ▪ Not all systems are integrated and managed, with many not supporting new cybersecurity protocols. ▪ Network Operations Center (NOC) exists, but much of the networking equipment is not supported and past service life. ▪ Users are managed locally on computers and application. There is no active directory or group/role-based administration. ▪ Outside of primary centers (Monacillo), consistent controls are not in place to manage identities and credentials. ▪ Transmission assets and work is managed through Access. ▪ Distribution work is managed through unsupported CGI STORMS application. ▪ Asset Suite is only used for procurement of materials. ▪ Planned and corrective maintenance on equipment is not tracked. ▪ No reliability centered maintenance in place. ▪ No tracking cost of maintenance.
XI-3 Information & Technology *The extent to which the asset management information management architecture and processes in place are adequate to*	▪ Custom database that tracks voice radio systems. ▪ Mentioned that 3000 VHF (2-way) radios were missing. ▪ They use NMSs on both the IT and OT for tracking network equipment. ▪ Servers and OS's (Operating Systems) are typically tracked using the virtualization platforms.

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Sub-Focus Area	Observations & Contributors
ensure availability of accurate asset condition and performance information in support of asset-related decisions.	▪ Budget constraints limit management/maintenance of installed assets. ▪ External feeds and integrations have not been shown or documented. ▪ Configuration Rules/Run Books not documented, basic diagrams only. ▪ Data mapping dependency across technology solutions is limited.
XI-4 **Culture & Competencies** *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement an asset management process. Also includes the extent of the communication and training practices for cybersecurity and how ingrain a cyber safe culture is within the organization.*	▪ Technology is widely used and critical to the business, however, technology does not appear to have been engaged very early on in the strategy/plans, limited evidence of IT/OT and the business being partnered. ▪ Limited training and trained resources available for cyber risk and cybersecurity, dependency on superusers. ▪ History of inconsistent leadership direction.
XI-5 **Current Practices (Age & Condition of Software, Infrastructure, End-User Computing)** *The extent to which the organization has a handle on the state of its software, infrastructure and end user computing, applies analytics to support the maintain/extent vs. replace decision and properly prioritize the replacements. In addressing these issues, the extent to which the organization adopts an integrated view of the future technology landscape vs stand-alone view of replacing aging technology as part of an integrated business and technology planning process.*	▪ Asset management does not drive the replacement of assets and service management/maintenance. ▪ There is substantial aged and depreciated equipment. ▪ Often equipment that is replaced is not fully removed or salvaged. There is evidence of old equipment that was not fully recycled and removed from sites – (No formal decommissioning process). ▪ No refresh cycles. End user devices and servers are still operating on outdated OS systems. ▪ Issue tracking has moved to JIRA but processes have not matured enough to drive asset maintenance decisions at this time (JIRA is primarily an Agile-based development tool and should not be the intended asset management tool). ▪ Extensive evidence of end of life hardware, software and infrastructure ▪ Duplicate Asset IDs exist.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XI-1 **Organization, Strategy & Vision** *The extent to which the technology asset management system aligns with ISO 55000 and/or international asset management standards. Specifically, review the organization's implementation of the asset owner, asset manager and service provider functions and evaluate the consistency between overall strategy, the underlying philosophy in managing assets, and the deployment of personnel in capturing the value of installed assets.*	Process ▪ No evidence of asset management strategy or plan in place or awareness of the value. ▪ No evidence of IT principles (infrastructure refresh cycles, license policies, etc.). ▪ Some technology assets have limited capabilities/problems preventing them from supporting critical business operations. ▪ No ongoing working relationship/ engagement model between the business and IT OT organization. ▪ Evidence of technology assets capabilities not being fully leveraged (e.g., Esri, CC&B). Lack of a Data Security Plan to help protect assets and set organizational process to improve the protection of assets.	Priority

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Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XI-2 Processes *Consistency of risk analysis methodology and investment planning with AM policy and corporate/business area strategies; Determines the extent to which investments are identified, prioritized and optimized based on overall value, resources, and risk; AM plans, processes and procedures are factored into the planning and execution of capital projects and O&M programs; and strategic objectives, and KPI/measures are aligned and established utilizing industry best practices and credible benchmarking information.*	Process ▪ Asset management processes not documented/consistent/executed across the company/departments/groups. ▪ Inconsistent controls in place to ensure identities and credentials are managed for authorized devices, users and processes across assets/locations. ▪ Lack of effective work management process for maintaining and controlling assets. ▪ No formal documented prioritization of work ▪ No evidence of formal process for capturing installed asset information into record systems.	Department level gap
XI-3 Information & Technology *The extent to which the asset management Information Management architecture and processes in place are adequate to ensure availability of accurate asset condition and performance information in support of asset-related decisions.*	Process: ▪ Lack of data quality management and data governance. ▪ Management and maintenance of installed assets is limited. ▪ Lack of documentation around external dependencies (feeds and integrations between systems) which prevents impact analysis. ▪ Configuration Management needs to be implemented. Technology ▪ There is no definitive system for managing electrical assets. ▪ There is no definitive system for tracking IT OT applications, hardware and infrastructure.	SRP related
XI-4 Culture & Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement an asset management process. Also includes the extent of the communication and training practices for cybersecurity and how ingrain a cyber safe culture is within the organization.*	People ▪ No evidence that asset management is recognized as a core competency within IT OT. ▪ No evidence of documented asset owners. ▪ No evidence of formalized, end-user training in asset management. Process: ▪ Lack of alignment between the business and IT OT related to strategy, planning and implementation of asset management practices and solutions.	Department level gap
XI-5 Current Practices (Age & Condition of Software, Infrastructure, End-User Computing) *The extent to which the organization has a handle on the state of its software, infrastructure and end user computing, applies analytics to support the maintain/extent vs. replace decision and properly prioritize the replacements. In addressing these issues, the extent to which the organization adopts an integrated view of the future technology landscape vs stand-alone view of replacing aging technology as part of an Integrated business and technology planning process.*	Process: ▪ Assets are not managed through lifecycle process. ▪ Some technology assets at end of life and not supported by vendors. ▪ No evidence of unique Asset ID for each asset. ▪ No evidence of formal asset registry. ▪ No evidence of asset criticalities and key asset attributes. ▪ No evidence of IT OT asset management (maintain, replace options) strategy. ▪ No evidence of asset health prescriptive metrics.	SRP candidate

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XI-1 Organization, Strategy & Vision *The extent to which the technology asset management system aligns with ISO 55000 and/or international asset management standards. Specifically, review the organization's implementation of the asset owner, asset manager and service provider functions and evaluate the consistency between overall strategy, the underlying philosophy in managing assets, and the deployment of personnel in capturing the value of installed assets.*	X				
XI-2 Processes *Consistency of risk analysis methodology and investment planning with AM policy and corporate/business area strategies; Determines the extent to which investments are identified, prioritized and optimized based on overall value, resources, and risk; AM plans, processes and procedures are factored into the planning and execution of capital projects and O&M programs; and strategic objectives, and KPI/measures are aligned and established utilizing industry best practices and credible benchmarking information.*	X				
XI-3 Information & Technology *The extent to which the asset management information management architecture and processes in place are adequate to ensure availability of accurate asset condition and performance information in support of asset-related decisions*	X				
XI-4 Culture & Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement an asset management process. Also includes the extent of the communication and training practices for cybersecurity and how ingrain a cyber safe culture is within the organization*	X				

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XI-5 Current Practices (Age & Condition of Software, Infrastructure, End-User Computing) *The extent to which the organization has a handle on the state of its software, infrastructure and end user computing, applies analytics to support the maintain/extent vs. replace decision and properly prioritize the replacements. In addressing these issues, the extent to which the organization adopts an integrated view of the future technology landscape vs stand-alone view of replacing aging technology as part of an integrated business and technology planning process.*	X				

XII. Program/Project Planning & Execution

Evaluation Framework

The Program/Project Planning & Execution Focus Area consists of six sub-areas that define an effective program/project planning and execution process. The practices and disciplines that underlie these sub-areas apply to both O&M work and capital projects.

- XII-1 Identification
- XII-2 Planning
- XII-3 Scheduling
- XII-4 Execution
- XII-5 Closeout
- XII-6 Current Practices (Gating, Project Success Rates)

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XII-1 **Identification** *Extent to which projects are identified within a program of work as part of an effective business technology strategy, aligned to the business strategy, the business outcome is clearly communicated in terms of scope, and prioritized applying a risk and value-based assessment framework.*	▪ There is no formal process for technology process identification. Technology projects are identified by various departments and corporate leadership. IT OT is not included in the business strategy discussions to identify these opportunities. Once a decision is made by the departments or corporate leadership, IT OT is notified of technology projects by email or in meetings.
XII-2 **Planning** *Extent to which projects are managed leveraging industry best practices for technology project management, including required gating, detailed work breakdown structure (including dependencies), resource plans, project schedule and project budget. Standard industry risk management, issue management, assumption management and decision management processes are in place and projects risk assessments are performed throughout the project lifecycle to ensure business outcomes and cost benefits are still achievable.*	▪ There is no formal documented process for planning technology work. IT OT directors (direct reports to Hiram) are responsible for planning the approved technology project under their responsibilities. They serve as the de facto project managers for the technology initiatives. Many of the internal resources are overloaded so project plans are affected.
XII-3 **Scheduling** *Extent to which regular maintenance (releases, patches etc.) and emergency changes are scheduled in sufficient detail to confirm resource availability and assure coordination with other project activities. Further, assess the role scheduling plays in maximizing the use and productivity of available resources.*	▪ There is no formal documented process for scheduling resources required to work on technology initiatives. When external vendors are involved, the vendor is scheduling external resources for the project. For other projects, IT OT Directors are responsible for scheduling internal resources for projects under their purview. While Project Online is available, its capabilities are not fully leveraged for resource scheduling.

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Gap Assessment

Sub-Focus Area	Observations & Contributors
In short, confirm the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization (technology resources, SMEs etc.).	
XII-4 **Execution** *Extent to which project plans that include business, data, application and infrastructure architecture, along with functional and no functional requirements, design, configuration/build and testing (unit, system, integration, UAT [user acceptance testing], and performance) and defect resolution are used. Extend to which program/project managers (technology and business) provide oversight of project activities, contracted 3rd parties and project deliverables including quality assurance.*	▪ When external vendors are involved, the vendor is responsible for identifying a project manager responsible for executing the project based on the vendor's methodology with minimal oversight. For other projects, the IT OT directors (direct reports to Hiram) play the PM role and are responsible for executing the project. Project Online is used to track the execution of projects to provide visibility.
XII-5 **Closeout** *The extent which costs and activities are tracked accurately, including post commencement work. New technology assets are integrated with the asset management plan, operational recovery, disaster recovery and business continuity plans.*	▪ There is no formal process and template to perform a project retrospectives/lessons learned on projects or to solicit feedback from stakeholders. Minimal integration of lessons learned into future project work.
XII-6 **Current Practices (Gating, Project Success Rates)** *The extent to which the organization actively manages the activities that detract from on-time, on-budget deliverables and milestones (e.g., adherence to governance processes, estimation methodology, scope creep, rework due to unclear requirements etc.) and conduct and implement lessons learned to overall program/project methodology.*	▪ There is no standard set of tools, templates, or methodologies for managing technology projects. However, Project Online is used to update the project plan for some technology projects.

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Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XII-1 Identification *Extent to which a projects are identified within a program of work as part of an effective business technology strategy, aligned to the business strategy, the business outcome is clearly communicated in terms of scope, and prioritized applying a risk and value-based assessment framework.*	*These projects are viewed as technology projects* People: ▪ Inadequate capacity and lack of skills in project management disciplines.	Improvement opportunity
XII-2 Planning *Extent to which projects are managed leveraging industry best practices for technology project management, including required gating, detailed work breakdown structure (including dependencies), resource plans, project schedule and project budget. Standard industry risk management, issue management, assumption management and decision management processes are in place and projects risk assessments are performed throughout the project lifecycle to ensure business outcomes and cost benefits are still achievable.*	Process ▪ Lack of alignment of business and corporate strategies with IT OT. ▪ No EPMO (Enterprise Project Management Office) that includes IT OT in place. ▪ No consistent project governance in place. ▪ Lack of consistent vendor management oversight and quality assurance of project execution. ▪ Inconsistent scaling of project management methodologies across projects.	Improvement opportunity
XII-3 Scheduling *Extent to which regular maintenance (releases, patches etc.) and emergency changes are scheduled in sufficient detail to confirm resource availability and assure coordination with other project activities. Further, assess the role scheduling plays in maximizing the use and productivity of available resources. In short, confirm the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization (Technology resources, SMEs etc.).*	▪ No integrated software development/implementation lifecycle methodology: ○ No project initiation, prioritization, approval and funding process. ○ No project planning, scheduling, execution and closeout. ○ No standardized tools and templates for each project phase. ○ No standards for project document storage, folder organization, naming convention. ○ No defined project run-book. ○ No evidence of defined lessons learned process nor integration of lessons learned into future project planning.	Improvement opportunity
XII-4 Execution *Extent to which project plans that include business, data, application and infrastructure architecture, along with functional and no functional requirements, design, configuration/build and testing (unit, system, integration, UAT, performance) and defect resolution are used. Extend to which Program/Project managers (technology and business) provide oversight of project activities, contracted 3rd parties and project deliverables including quality assurance.*	▪ Project management methodologies are not integrated with business relationship management, enterprise architecture, and technology. ▪ No formalized project success scoring process and KPIs to evaluate project performance (cost, schedule, feedback from stakeholders, benefits realized).	Improvement opportunity
XII-5 Closeout *The extent which costs and activities are tracked accurately, including post commencement work. New technology assets are integrated with the asset management plan, operational recovery, disaster recovery and business continuity plans.*		Improvement opportunity
XII-6 Current Practices (Gating, Project Success Rates) *The extent to which the Organization actively manages the activities that detract from on-time, on-budget deliverables and milestones (e.g., adherence to governance processes, estimation methodology, scope creep, rework due to unclear requirements etc.) and conduct and implement lessons learned to overall program/project methodology.*	Technology: ▪ No standardized project management tools for project of varying complexities.	Improvement opportunity

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XII-1 Identification *Extent to which a projects are identified within a program of work as part of an effective business technology strategy, aligned to the business strategy, the business outcome is clearly communicated in terms of scope, and prioritized applying a risk and value-based assessment framework.*	X				
XII-2 Planning *Extent to which projects are managed leveraging industry best practices for technology project management, including required gating, detailed work breakdown structure (including dependencies), resource plans, project schedule and project budget. Standard industry risk management, issue management, assumption management and decision management processes are in place and projects risk assessments are performed throughout the project lifecycle to ensure business outcomes and cost benefits are still achievable.*	X				
XII-3 Scheduling *Extent to which regular maintenance (releases, patches etc.) and emergency changes are scheduled in sufficient detail to confirm resource availability and assure coordination with other project activities. Further, assess the role scheduling plays in maximizing the use and productivity of available resources. In short, confirm the extent to which there exists an integrated resource-loaded schedule that assists in managing the activities of the entire organization (Technology resources, SMEs etc.).*	X				
XII-4 Execution *Extent to which project plans that include business, data, application and infrastructure architecture, along with functional and no functional requirements, design, configuration/build and testing (unit, system, integration, UAT, performance) and defect resolution are used. Extend to which program/project managers (technology and business) provide oversight of project activities, contracted 3rd parties and project deliverables including quality assurance.*	X				

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XII-5 Closeout *The extent which costs and activities are tracked accurately, including post commencement work. New technology assets are integrated with the asset management plan, operational recovery, disaster recovery and business continuity plans.*	X				
XII-6 Current Practices (Gating, Project Success Rates) *The extent to which the Organization actively manages the activities that detract from on-time, on-budget deliverables and milestones (e. g., adherence to governance processes, estimation methodology, scope creep, rework due to unclear requirements etc.) and conduct and implement lessons learned to overall program/project methodology.*	X				

XIII. Technology Operations

Evaluation Framework

The Technology Operations Focus Area consists of six sub-areas that define an effective operational technology process.

- **XIII-1** SCADA (Supervisory Control and Data Acquisition)
- **XIII-2** Outage Management
- **XIII-3** Telecom & Substation Control
- **XIII-4** AMR
- **XIII-5** Facilities
- **XIII-6** IT Network

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XIII-1 SCADA *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's supervisory control and data acquisition technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]
XIII-2 Outage Management *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's outage management technology capabilities to meet the technology service workload in line with user expectations for managing before, during and after outages. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]

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Gap Assessment

Sub-Focus Area	Observations & Contributors
XIII-3 Telecom & Substation Control *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's telecom technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]
XIII-4 AMR *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's AMR technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]
XIII-5 Facilities *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's facilities technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]
XIII-6 IT Network *The extent to which the technology organization has implemented policies, processes, practices and*	[redacted]

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Gap Assessment

Sub-Focus Area	Observations & Contributors
resources for the day-to-day operation of the organization's network (IT and OT) capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIII-1 SCADA *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's supervisory control and data acquisition technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]	[redacted]
XIII-2 Outage Management *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's outage management technology capabilities to meet the technology service workload in line with user expectations for managing before, during and after outages. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]	[redacted]

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Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XIII-3 Telecom & Substation Control *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's Telecom technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]	[redacted]
XIII-4 AMR *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's automated meter reading technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]	[redacted]
XIII-5 Facilities *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's acilities technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]	[redacted]
XIII-6 IT Network *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's network (IT and OT) capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]	[redacted]

IT OT

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIII-1 SCADA *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's supervisory control and data acquisition technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]				
XIII-2 Outage Management *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's outage management technology capabilities to meet the technology service workload in line with user expectations for managing before, during and after outages. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*					
XIII-3 Telecom & Substation Control *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's telecom technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*					
XIII-4 AMR *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's automated meter reading technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*					

IT OT

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIII-5 Facilities *The extent to which the technology organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's Facilities technology capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*	[redacted]				
XIII-6 IT Network *The extent to which the Technology Organization has implemented policies, processes, practices and resources for the day-to-day operation of the organization's network (IT and OT) capabilities to meet the technology service workload in line with user expectations. Activities include preparing and validating input data, making available online systems, running job schedules, performing backup and restore procedures, and providing output in required media formats.*					

XIV. Technology Operations Practices (ITSM)

Evaluation Framework

The Technology Operations Practices Focus Area consists of four sub-areas that define an effective information technology system management process.

- **XIV-1** Incident Management
- **XIV-2** Problem Management
- **XIV-3** Request Fulfilment
- **XIV-4** Performance Management

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XIV-1 Incident Management *The extent to which processes and technology have been implemented to assist internal and external users resolve issues and problems with technology services and solutions. Considerations include logging and prioritized problems and requests, engaging appropriate support resources, escalating issues, and assuming primary user responsibility until a resolution is in place.*	[redacted]
XIV-2 Outage Management *The extent to which processes and technology have been implemented to identify, investigate, resolve and report on problems with technology services. Consideration to problem reporting metrics, time to resolution, root cause analysis reporting.*	[redacted]
XIV-3 Request Fulfilment *The extent to which processes and technology have been implemented to assist internal and external users in requesting technology services and solutions. Considerations include services catalogue, logging and prioritized requests, service level metrics, engaging appropriate support resources/vendors, deploying technology services, and assuming primary user responsibility until request is fulfilled.*	[redacted]
XIV-4 Performance Management *The extent to which the technology organization has implemented performance monitoring tools and*	[redacted]

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Gap Assessment

Sub-Focus Area	Observations & Contributors
provides reporting on performance metrics (e.g., identifying application service level, time to respond, time to restore etc.)	

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XIV-1 Incident Management *The extent to which processes and technology have been implemented to assist internal and external users resolve issues and problems with technology services and solutions. Considerations include logging and prioritized problems and requests, engaging appropriate support resources, escalating issues, and assuming primary user responsibility until a resolution is in place.*	[redacted]	[redacted]
XIV-2 Outage Management *The extent to which processes and technology have been implemented to identify, investigate, resolve and report on problems with technology services. Consideration to problem reporting metrics, time to resolution, root cause analysis reporting.*	[redacted]	[redacted]
XIV-3 Request Fulfilment *The extent to which processes and technology have been implemented to assist internal and external users in requesting technology services and solutions. Considerations include services catalogue, logging and prioritized requests, service level metrics, engaging appropriate support resources/vendors, deploying technology services, and assuming primary user responsibility until request is fulfilled.*	[redacted]	[redacted]
XIV-4 Performance Management *The extent to which the technology organization has implemented performance monitoring tools and provides reporting on performance metrics (examples include identifying application service level, time to respond, time to restore etc.)*	[redacted]	[redacted]

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIV-1 Incident Management *The extent to which processes and technology have been implemented to assist internal and external users resolve issues and problems with technology services and solutions. Considerations include logging and prioritized problems and requests, engaging appropriate support resources, escalating issues, and assuming primary user responsibility until a resolution is in place.*	[redacted]				
XIV-2 Outage Management *The extent to which processes and technology have been implemented to identify, investigate, resolve and report on problems with technology services. Consideration to problem reporting metrics, time to resolution, root cause analysis reporting.*					
XIV-3 Request Fulfilment *The extent to which processes and technology have been implemented to assist internal and external users in requesting technology services and solutions. Considerations include services catalogue, logging and prioritized requests, service level metrics, engaging appropriate support resources/vendors, deploying technology services, and assuming primary user responsibility until request is fulfilled.*					
XIV-4 Performance Management *The extent to which the technology organization has implemented performance monitoring tools and provides reporting on performance metrics (examples include identifying application service level, time to respond, time to restore etc.)*					

XV. Risk & Compliance Management (Business Resilience)

Evaluation Framework

The Risk & Compliance Management Focus Area consists of four sub-areas that define an effective governance, risk and compliance framework.

- **XV-1** Strategy & Risk Alignment
- **XV-2** Risk, Compliance & Governance Processes
- **XV-3** Information Technology
- **XV-4** Culture & Competencies

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XV-1 Strategy & Risk Alignment *The extent to which the organization can rapidly adapt and respond to any internal or external opportunity, demand, disruption or threat while maintaining continuous business operations.*	[redacted]
XV-2 Risk, Compliance & Governance Processes *The extent to which the organization has implemented policies, processes and practices to identify, evaluate, prioritize, and mitigating business and technology risks that may affect the ongoing delivery of technology services to the organization*	[redacted]
XV-3 Information Technology *The extent to how the organization defines and maintains the enterprise information/data policies, standards and procedures collection, quality, consolidation and integration, access, usage, retention, protection. The extent to how the organization has implemented and executes data administration responsibilities. The extent to which the organization has implemented technology solutions to educate employees, monitor the health of the technology landscape, detect vulnerabilities and attacks and control the environments.*	[redacted]
XV-4 Culture & Competencies	[redacted]

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Gap Assessment

Sub-Focus Areas	Observations & Contributors
The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement a cybersecurity practice. Also includes the extent of the communication and training practices for cybersecurity and how ingrain a cyber safe culture is within the organization.	[redacted]

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XV-1 Strategy & Risk Alignment *The extent to which the organization can rapidly adapt and respond to any internal or external opportunity, demand, disruption or threat while maintaining continuous business operations.*	[redacted]	[redacted]
XV-2 Risk, Compliance & Governance Processes *The extent to which the organization has implemented policies, processes and practices to identify, evaluate, prioritize, and mitigating business and technology risks that may affect the ongoing delivery of technology services to the organization.*	[redacted]	[redacted]
XV-3 Information Technology *The extent to how the organization defines and maintains the enterprise information/data policies, standards and procedures: collection, quality, consolidation and integration, access, usage, retention, protection. The extent to how the organization has implemented and executes data administration responsibilities. The extent to which the organization has implemented technology solutions to educate employees, monitor the health of the technology landscape, detect vulnerabilities and attacks and control the environments.*	[redacted]	[redacted]

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Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XV-4 Culture & Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement a cybersecurity practice. Also includes the extent of the communication and training practices for cybersecurity and how ingrain a cyber-safe culture is within the organization.*	[redacted]	[redacted]

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XV-1 Strategy & Risk Alignment *The extent to which the organization can rapidly adapt and respond to any internal or external opportunity, demand, disruption or threat while maintaining continuous business operations.*	[redacted]				
XV-2 Risk, Compliance & Governance Processes *The extent to which the organization has implemented policies, processes and practices to identify, evaluate, prioritize, and mitigating business and technology risks that may affect the ongoing delivery of technology services to the organization.*					
XV-3 Information Technology *The extent to how the organization defines and maintains the enterprise information/data policies, standards and procedures: collection, quality, consolidation and integration, access, usage, retention, protection. The extent to how the organization has implemented and executes data administration responsibilities The extent to which the organization has implemented technology solutions to educate employees, monitor the health of the technology landscape, detect vulnerabilities and attacks and control the environments.*					
XV-4 Culture & Competencies *The extent to which the organization has embedded the skills, competencies and continuous improvement culture necessary to successfully implement a cybersecurity practice. Also includes the extent of the communication and training practices for cybersecurity and how ingrain a cyber safe culture is within the organization*					

XVI. Service Solution Development & Deployment

Evaluation Framework

The Service Solution Development & Deployment Focus Area consists of five sub-areas that define an effective IT OT service delivery process.

- **XVI-1** Service & Solution Lifecycle Planning
- **XVI-2** Service & Solution Architecture
- **XVI-3** Configuration & Testing
- **XVI-4** Maintenance & Testing
- **XVI-5** Service & Solution Deployment

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XVI-1 Service & Solution Lifecycle Planning *The extent to how the technology organization monitors and track new business requirements and technology approaches including:* ▪ *Identifying when new technology services and solutions are required.* ▪ *Determining overall approach to evolving existing technology services and solutions.* ▪ *Planning lifecycle developments of feature, functionality and technology enhancements.* ▪ *Developing end-of-life plans for technology services and solutions.*	[redacted]
XVI-2 Service & Solution Architecture *The extent to which the organization has implemented processes to maintain the overall implementation-level architecture of technology services and solutions. Including determining how services and solutions will be structured, integrated and reused to meet the organization's business requirements in an optimum manner, while complying with the enterprise application and infrastructure architectures.*	[redacted]

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Gap Assessment

Sub-Focus Areas	Observations & Contributors
XVI-3 Configuration & Testing *The extent to which the organization has implemented processes to undertake all activities within the technology service and solution development lifecycle including:* ▪ *Understanding and validating requirements.* ▪ *Creating service/solution design.* ▪ *Build and test service/solution components.* ▪ *Test integrated service/solution* ▪ *Package service/solution for deployment.*	[redacted]
XVI-4 Maintenance & Testing *The extent to how the technology organization manages enhancements and minor upgrades to existing technology services and solutions ensuring solutions continue to meet business requirements, technology standards and vendor support requirements.*	[redacted]
XVI-5 Solution & Service Deployment *The extent to which the technology organization has implemented policies, processes and procedures to manage all aspects of change and release activity, including assignments, scheduling, approval, distribution, synchronization, installation, monitoring, and activation. How formalized is the packaging and delivery of service and solution content to balance the objectives of the introduction of new or revised functionality (or other service adjustments) with maintaining service availability and integrity against undesirable impacts of deployment. Assess competency for all tasks associated with adding or incorporating change or release content into operational service. As an example, emergency changes such as repair of technology within a steady state environment.*	[redacted]

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Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVI-1 Service & Solution Lifecycle Planning *The extent to how the technology organization monitors and track new business requirements and technology approaches including:* ▪ *Identifying when new technology services and solutions are required.* ▪ *Determining overall approach to evolving existing technology services and solutions.* ▪ *Planning lifecycle developments of feature, functionality and technology enhancements.* ▪ *Developing end-of-life plans for technology services and solutions.*	[redacted]	[redacted]
XVI-2 Service & Solution Architecture *The extent to which the organization has implemented processes to maintain the overall, implementation-level architecture of technology services and solutions. Including determining how services and solutions will be structured, integrated and reused to meet the organization's business requirements in an optimum manner, while complying with the enterprise application and infrastructure architectures.*	[redacted]	[redacted]
XVI-3 Configuration & Testing *The extent to which the organization has implemented processes to undertake all activities within the technology service and solution development lifecycle including:* ▪ *Understanding and validating requirements.* ▪ *Creating service/solution design.* ▪ *Build and test service/solution components.* ▪ *Test integrated service/solution.* ▪ *Package service/solution.*	[redacted]	[redacted]
XVI-4 Maintenance & Testing *The extent to how the technology organization manages enhancements and minor upgrades to existing technology services and solutions ensuring solutions continue to meet business requirements, technology standards and vendor support requirements.*	[redacted]	[redacted]
XVI-5 Solution & Service Deployment *The extent to which the technology organization has implemented policies, processes and procedures to manage all aspects of change and release activity, including assignments, scheduling, approval, distribution, synchronization, installation, monitoring, and activation. How formalized is the packaging and delivery of service and solution content to balance the objectives of the introduction of new or revised functionality (or other service adjustments) with maintaining service availability and integrity against undesirable impacts of deployment. Assess competency for all tasks associated with adding or incorporating change or release content into operational service. As an example, emergency changes such as repair of technology within a steady state environment.*	[redacted]	[redacted]

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVI-1 Service & Solution Lifecycle Planning *The extent to how the technology organization monitors and track new business requirements and technology approaches including:* ▪ *Identifying when new technology services and solutions are required.* ▪ *Determining overall approach to evolving existing technology services and solutions.* ▪ *Planning lifecycle developments of feature, functionality and technology enhancements.* ▪ *Developing end-of-life plans for technology services and solutions.*	[redacted]				
XVI-2 Service & Solution Architecture *The extent to which the organization has implemented processes to maintain the overall, implementation-level architecture of technology services and solutions. Including determining how services and solutions will be structured, integrated and reused to meet the organization's business requirements in an optimum manner, while complying with the enterprise application and infrastructure architectures.*					
XVI-3 Configuration & Testing *The extent to which the organization has implemented processes to undertake all activities within the technology service and solution development lifecycle including:* ▪ *Understanding and validating requirements.* ▪ *Creating service/solution design.* ▪ *Build and test service/solution components.* ▪ *Test integrated service/solution* ▪ *Package service/solution for deployment.*					
XVI-4 Maintenance & Testing *The extent to how the technology organization manages enhancements and minor upgrades to existing technology services and solutions ensuring solutions continue to meet business requirements, technology standards and vendor support requirements.*					

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVI-5 Solution & Service Deployment *The extent to which the technology organization has implemented policies, processes and procedures to manage all aspects of change and release activity, including assignments, scheduling, approval, distribution, synchronization, installation, monitoring, and activation. How formalized is the packaging and delivery of service and solution content to balance the objectives of the introduction of new or revised functionality (or other service adjustments) with maintaining service availability and integrity against undesirable impacts of deployment. Assess competency for all tasks associated with adding or incorporating change or release content into operational service. As an example, emergency changes such as repair of technology within a steady state environment.*	[redacted]				

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Gap Assessment

XVII. Crisis Management

Evaluation Framework

The Crisis Management Focus Area consists of seven sub-areas that define an effective crisis management process.

- XVII-1 Detection Management
- XVII-2 Response Planning
- XVII-3 Damage Assessment/Analysis
- XVII-4 Incident Containment & Mitigation
- XVII-5 Communication
- XVII-6 Recovery Planning
- XVII-7 Improvement Implementation

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XVII-1 **Detection Management** *The extent to which the organization has implemented processes and tools to enable the timely discovery of cybersecurity events and responses to disasters. Also the extent to which tools, processes have been implemented for security continuous monitoring.*	[redacted]
XVII-2 **Response Planning** *The extent to which the organization has implemented and tested processes, procedures and technology for responding too and containment of potential cybersecurity events.*	[redacted]
XVII-3 **Damage Assessment/Analysis** *The extent to which processes and procedures are in place to formally analyze and classify incidents/events based on their potential impact and to prioritize the remediation of the incident/event.*	[redacted]
XVII-4 **Incident Containment & Mitigation** *The extent to which the organizations response plan identifies and describes the appropriate steps to mitigate the impact of an incident/event to: prevent further harm, notify potentially impacted 3rd parties, and mitigate impact different type of incident.*	[redacted]

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Gap Assessment

Sub-Focus Area	Observations & Contributors
XVII-5 Communication *The extent to which the organization has implemented processes to manage the communication of events/incidents, including a designated point(s) of contact for managing internal, customer, partner, media, regulator and law enforcement communications, during and after and event/incident.*	[redacted]
XVII-6 Recovery Planning *How quickly can the organization recover to normal operations and reduce the impact from a cybersecurity event.*	[redacted]
XVII-7 Improvement Implementation *How quickly can the organization implement system improvements through proven processes and methodologies while minimizing the timing to implement?*	[redacted]

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XVII-1 Detection Management *The extent to which the organization has implemented processes and tools to enable the timely discovery of cybersecurity events and responses to disasters. Also the extent to which tools, processes have been implemented for security continuous monitoring.*	[redacted]	[redacted]
XVII-2 Response Planning *The extent to which the organization has implemented and tested processes, procedures and technology for responding too and containment of potential cybersecurity events.*	[redacted]	[redacted]

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Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XVII-3 Damage Assessment/Analysis *The extent to which processes and procedures are in place to formally analyze and classify incidents/events based on their potential impact and to prioritize the remediation of the incident/event.*	[redacted]	[redacted]
XVII-4 Incident Containment & Mitigation *The extent to which the organizations response plan identifies and describes the appropriate steps to mitigate the impact of an incident/event to: prevent further harm, notify potentially impacted 3rd parties, mitigate impact different type of incident.*	[redacted]	[redacted]
XVII-5 Communication *The extent to which the organization has implemented processes to manage the communication of events/incidents, including a designated point(s) of contact for managing internal, customer, partner, media, regulator and law enforcement communications, during and after and event/incident.*	[redacted]	[redacted]
XVII-6 Recovery Planning *How quickly can the organization recover to normal operations and reduce the impact from a cybersecurity event.*	[redacted]	[redacted]
XVII-7 Improvement Implementation *How quickly can the organization implement system improvements through proven processes and methodologies while minimizing the timing to implement?*	[redacted]	[redacted]

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVII-1 **Detection Management** *The extent to which the organization has implemented processes and tools to enable the timely discovery of cybersecurity events and responses to disasters. Also, the extent to which tools, processes have been implemented for security continuous monitoring.*	[redacted]				
XVII-2 **Response Planning** *The extent to which the organization has implemented and tested processes, procedures and technology for responding too and containment of potential cybersecurity events.*					
XVII-3 **Damage Assessment/Analysis** *The extent to which processes and procedures are in place to formally analyze and classify incidents/events based on their potential impact and to prioritize the remediation of the incident/event.*					
XVII-4 **Incident Containment & Mitigation** *The extent to which the organizations response plan identifies and describes the appropriate steps to mitigate the impact of an incident/event to: prevent further harm, notify potentially impacted 3rd parties, and mitigate impact different type of incident.*					

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVII-5 Communication *The extent to which the organization has implemented processes to manage the communication of events/incidents, including a designated point(s) of contact for managing internal, customer, partner, media, regulator and law enforcement communications, during and after an event/incident.*	[redacted]				
XVII-6 Recovery Planning *How quickly can the organization recover to normal operations and reduce the impact from a cybersecurity event.*					
XVII-7 Improvement Implementation *How quickly can the organization implement system improvements through proven processes and methodologies while minimizing the timing to implement?*					

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XVIII. Ancillary Support

Evaluation Framework

The Ancillary Support Focus Area consists of five sub-areas.

- XVIII-1 Customer Relationship
- XVIII-2 Business Strategy
- XVIII-3 Procurement & Contracts
- XVIII-4 Vendor Management
- XVIII-5 Safety

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XVIII-1 Customer Relationship *The extent to which the organization is focused on the management and optimization of the communications and interactions between the customers of technology and the providers of IT. Includes the evaluation of competencies including gathering business requirements, establishing how technology will respond to changes in the business strategy or environment, demonstrating technology leadership in business transformation, helping the customer to develop justifications for requested solutions, providing the initial interface to the team of architects who will design the solution, and monitoring customer satisfaction with the development, deployment, and ongoing support of the solution.*	[redacted]
XVIII-2 Business Strategy *The extent to which the organization:* ▪ *Integrates business and technology to ignite innovation.* ▪ *Creates and delivers integrated business strategies that leverage technology.* ▪ *Measures and manage the dollars they spend (and the value they receive) from the technology portfolio.* ▪ *Actively communicates the business value of information technology investments.*	[redacted]

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Sub-Focus Area	Observations & Contributors
XVIII-3 Procurement & Contracts *Extent to which technology procurement and contracts following industry best practices and are align with the organizational overall procurement policies and practices.*	[redacted]
XVIII-4 Vendor Management *The extent to which vendor and alliance partner selection processes are documented and known. Also includes the extent to which processes are documented and followed for contract negotiations, vendor governance, and vendor management service levels. Extent to which the organizations manages the vendor/alliance partner portfolio to maximize the benefits of services and products provided and monitors performance.*	[redacted]
XVIII-5 Safety *Extent to which safety and health policies are established and working, a safety committee is established and effective, all-hands participation is driven, routine inspections occur, ergonomic exposures are identified/prioritized for resolution, industrial hygiene is factored into the program, pre-employee placement screenings occur prior to job assignments, and injuries and near misses are investigated.*	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVIII-1 Customer Relationship *The extent to which the organization is focused on the management and optimization of the communications and interactions between the customers of technology and the providers of IT. Includes the evaluation of competencies including gathering business requirements, establishing how technology will respond to changes in the business strategy or environment, demonstrating technology leadership in business transformation, helping the customer to develop justifications for requested solutions, providing the initial interface to the team of architects who will design the solution, and monitoring customer satisfaction with the development, deployment, and ongoing support of the solution.*	[redacted]	[redacted]

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Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XVIII-2 Business Strategy *The extent to which the organization:* ▪ *Integrates business and technology to ignite innovation.* ▪ *Creates and delivers integrated business strategies that leverage technology.* ▪ *Measures and manage the dollars they spend (and the value they receive) from the technology portfolio.* ▪ *Actively communicates the business value of information technology investments.*	[redacted]	[redacted]
XVIII-3 Procurement & Contracts *Extent to which technology procurement and contracts follow industry best practices and align with the organizational overall procurement policies and practices.*	[redacted]	[redacted]
XVIII-4 Vendor Management *The extent to which vendor and alliance partner selection processes are documented and known. Also includes the extent to which processes are documented and followed for contract negotiations, vendor governance, and vendor management service levels. Extent to which the organizations manages the vendor/alliance partner portfolio to maximize the benefits of services and products provided and monitors performance.*	[redacted]	[redacted]
XVIII-5 Safety *Extent to which safety and health policies are established and working, a safety committee is established and effective, all-hands participation is driven, routine inspections occur, ergonomic exposures are identified/prioritized for resolution, industrial hygiene is factored into the program, pre-employee placement screenings occur prior to job assignments, and injuries and near misses are investigated.*	[redacted]	[redacted]

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVIII-1 Customer Relationship *The extent to which the organization is focused on the management and optimization of the communications and interactions between the customers of technology and the providers of IT. Includes the evaluation of competencies including gathering business requirements, establishing how technology will respond to changes in the business strategy or environment, demonstrating technology leadership in business transformation, helping the customer to develop justifications for requested solutions, providing the*	[redacted]				

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
initial interface to the team of architects who will design the solution, and monitoring customer satisfaction with the development, deployment, and ongoing support of the solution.	[redacted]				
XVIII-2 Business Strategy *The extent to which the organization:* ▪ *Integrates business and technology to ignite innovation.* ▪ *Creates and delivers integrated business strategies that leverage technology.* ▪ *Measures and manage the dollars they spend (and the value they receive) from the technology portfolio.* *Actively communicates the business value of information technology investments.*					
XVIII-3 Procurement & Contracts *Extent to which technology procurement and contracts follow industry best practices and are align with the organizational overall procurement policies and practices.*					
XVIII-4 Vendor Management *The extent to which vendor and alliance partner selection processes are documented and known. Also includes the extent to which processes are documented and followed for contract negotiations, vendor governance, and vendor management service levels. Extent to which the organizations manages the vendor/alliance partner portfolio to maximize the benefits of services and products provided and monitors performance.*					
XVIII-5 Safety *Extent to which safety and health policies are established and working, a safety committee is established and effective, all-hands participation is driven, routine inspections occur, ergonomic exposures are identified/prioritized for resolution, industrial hygiene is factored into the program, pre-employee placement screenings occur prior to job assignments, and injuries and near misses are investigated.*					

XIX. Enterprise Technology

Evaluation Framework

The Enterprise Technology consists of five sub-areas, each with a context diagram providing a high-level view of software and integrations that are used to support the business capabilities within the sub-area.

- **XIX-1** Enterprise Resource Planning (ERP)
- **XIX-2** Work & Asset Management
- **XIX-3** Customer Care & Billing

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- **XIX-4** Outage Management
- **XIX-5** Geospatial Information Systems

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XIX-1 Enterprise Resource Planning (ERP) *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for enterprise resource planning including the software solutions, infrastructure, integrations and extensions.*	[redacted]
XIX-2 Work & Asset Management *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing assets and work including the software solutions, infrastructure, integrations and extensions*	[redacted]

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Sub-Focus Area	Observations & Contributors
XIX-3 Customer Care & Billing *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing measurements, customer engagement and billing including the software solutions, infrastructure, integrations and extensions*	[redacted]
XIX-4 Outage Management *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing the steady state and operational state of the electrical network including the software solutions, infrastructure, integrations and extensions.*	[redacted]
XIX-5 Geospatial Information Systems *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing*	[redacted]

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Gap Assessment

Sub-Focus Area	Observations & Contributors
geospatial data including the software solutions, infrastructure, integrations and extensions.	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIX-1 Enterprise Resource Planning (ERP) *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for enterprise resource planning including the software solutions, infrastructure, integrations and extensions.*	[redacted]	[redacted]
XIX-2 Work & Asset Management *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing assets and work including the software solutions, infrastructure, integrations and extensions.*	[redacted]	[redacted]
XIX-3 Customer Care & Billing *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing measurements, customer engagement and billing including the software solutions, infrastructure, integrations and extensions.*	[redacted]	[redacted]

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Sub-Focus Area	Major Gaps	Categorization
XIX-4 Outage Management *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing the steady state and operational state of the electrical network including the software solutions, infrastructure, integrations and extensions.*	[redacted]	[redacted]
XIX-5 Geospatial Information Systems *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing geospatial data including the software solutions, infrastructure, integrations and extensions.*	[redacted]	[redacted]

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements that define this sub-area and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/ starting to apply them.	The organization has identified the means to address the major elements that define this sub-area, and work is progressing on implementation.	All elements that define this sub-area are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches that go beyond the basic requirements, driving to achieve maximum value in this sub-area.
Sub-Focus Area					
XIX-1 Enterprise Resource Planning (ERP) *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for enterprise resource planning including the software solutions, infrastructure, integrations and extensions.*	[redacted]				

IT OT

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIX-2 Work & Asset Management *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing assets and work including the software solutions, infrastructure, integrations and extensions.*	[redacted]				
XIX-3 Customer Care & Billing *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing measurements, customer engagement and billing including the software solutions, infrastructure, integrations and extensions.*					
XIX-4 Outage Management *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing the steady state and operational state of the electrical network including the software solutions, infrastructure, integrations and extensions.*					
XIX-5 Geospatial Information Systems *The extent to which the organization is focused on the management and optimization of technology solutions to support the business capabilities for managing geospatial data including the software solutions, infrastructure, integrations and extensions.*					

LUMA

Gap Assessment

Health, Safety, Environment and Quality

Contents

Gap Assessment

General Approach

The Health, Safety, Environment and Quality (HSEQ) gap assessment includes the following main areas of focus, as shown in the tables below:

General Management: There are nine management focus areas that generally apply to all departments.

Core Business: There are three core business focus areas specifically relating to HSEQ operations.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting and Cost Performance
III	Leadership Management
IV	Process Efficiency and Effectiveness
V	Employee Training and Development
VI	Workforce Management
VII	Management Systems and Technology
VIII	Performance Metrics and Continuous Improvement
IX	PREPA Culture and Momentum
Core Business Focus Areas	
X	Health and Safety
XI	Environmental
XII	Quality

We applied the following standard methodology to the HSEQ General Management and Core Business Assessments, thus forming the bases for identifying gaps.

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus and Sub-focus Areas

The nine **General Management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-focus Areas	
I	**Organization Design Effectiveness**	I-1 Span of Control I-2 Clarity on Management and Supervisory Roles	I-3 Ratio of Administrative to Direct Workers I-4 Impact of Protected Patronage Workers
II	**Budgeting and Cost Performance**	II-1 Actual Expenditures as Percentage of Budgeted II-2 Impact of Emergent Issues on Budgets II-3 Unit Cost / Productivity Management	II-4 Overtime and Contractors Management II-5 Direct and Allocated Indirect Cost Management
III	**Leadership Management**	III-1 Qualifications and Experience III-2 Accountability	III-3 Ability to Deliver Results III-4 Inter- and Intra-Organization Collaboration
IV	**Process Efficiency and Effectiveness**	IV-1 Potential Risks to Post-Commencement IV-2 Process Familiarity by all Stakeholders	IV-3 Process Compliance Management IV-4 Efficiency of Overall Process Flow
V	**Employee Training and Development**	V-1 Training Budgets and Program Effectiveness V-2 Ability to Cross-Train as Personnel Development Path	V-3 Skills Assessment and Personnel Training Plans V-4 Demographics and Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1 Effectiveness of Current Workforce Management Processes	VI-2 Time Charging and Productivity Tracking and Reporting
VII	**Management Systems and Technology**	VII-1 Process Automation VII-2 Adaptability to New Systems and Technology	VII-3 Interaction or Linkage with Other Functional Areas, IT Plans or Systems VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics and Continuous Improvement**	VIII-1 Recognition of Critical Performance Metrics VIII-2 Performance Metric Collection, Validation and Reporting VIII-3 Root Cause and Trend Analysis	VIII-4 Instances (or Lack) of Data-driven Management Initiatives VIII-5 Recent Performance Trends
IX	**PREPA Culture and Momentum**	IX-1 Resistance (Active or Passive) to LUMA Management IX-2 Employee Morale / Excitement about LUMA	IX-3 Employee Empowerment / Action Orientation IX-4 Timeframe to Improve Performance IX-5 Impact of Organization Silos

HSEQ

Gap Assessment

I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Focus Area consists of four sub-focus areas (core and enabling areas that define an effective organization design):

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Observations and Contributors

NOTE: Observations and Contributors should be representative of major insights, trends, takeaways from the interviews / analyses and should include underlying causes to the extent known.

Sub-focus Areas	Observations and Contributors
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	▪ **Safety**: There are three direct reports to the department head and approximately eight direct reports to supervisors. ▪ **Environmental and Quality**: The span of control is small (averaging 1:3). Resources with required expertise are scattered across departments and directorates. The small size of teams leads to inefficient processes.
I-2 Clarity on Management and Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	▪ **Safety**: Safety field workers are three layers below the department head. ▪ **Environmental and Quality**: There are not many layers (two to three), but teams are split oddly and do not align with organizational priorities. Some teams are quite small, others larger. There are too many leaders for the number of frontline contributors.
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	▪ **Safety**: There are two administrative staff personnel. Leadership manages most of their own administrative tasks. ▪ **Environmental and Quality**: The number of administrative staff seems appropriate to the size of the groups. Attrition of administrative personnel has forced the department to simplify administrative tasks. There are several different administrative job titles and the differences between them are unclear.
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	▪ **Safety**: The department head is an appointed patronage position. The last termination is unconfirmed, and information has not been provided. ▪ **Environmental and Quality**: There are no patronage workers aside from the politically appointed heads of the division and higher.

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Gap Assessment

Major Gaps

Sub-focus Area	Major Gaps	Categorization
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	▪ **Safety**: Middle level management (i.e., Field Supervisor) has too many direct reports and has responsibility for the entire island. Span of control should be better aligned with the Operations structure. ▪ **Environmental and Quality**: Span of control should be increased so it is closer to an optimal ratio, 1:7.	Priority
I-2 Clarity on Management and Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	▪ **Safety**: Clear alignment on management and supervisor roles, no gap identified in this area. ▪ **Environmental and Quality**: A simpler organizational structure is needed to increase accountability and efficiency and reduce administrative burden.	Priority
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*	▪ **Safety**: The current ratio of administrative to direct workers is adequate. ▪ **Environmental and Quality**: A simpler organizational structure is needed to increase accountability and efficiency and reduce administrative burden.	N/A
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	▪ **Safety, Environmental and Quality**: Patronage positions affect the overall performance and completion of any improvements / projects. This is due to the lack of continuity related to changes every four years and the lack of understanding of complexity of the roles.	Priority

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	X Safety	X Environmental and Quality			
I-2 Clarity on Management and Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*		X Safety, Environmental and Quality			
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*		X Safety	X Environmental and Quality		

HSEQ

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
I-4 **Impact of Protected Patronage Workers** *Existence and economic impact of patronage positions to the organization.*	X Safety		X Environmental and Quality		

II. Budgeting and Cost Performance

Evaluation Framework

The Budgeting and Cost Performance focus area consists of five sub-focus areas that define effective budgeting and cost performance:

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost / Productivity Management
- II-4 Overtime and Contractors Management
- II-5 Direct and Allocated Indirect Cost Management

Key observations and contributors, identified gaps, and scorecard for each sub-focus area follows.

Observations and Contributors

Sub-focus Area	Observations and Contributors
II-1 **Actual Expenditures as Percentage of Budgeted** *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	▪ **Safety**: The Safety department budget is mainly associated with salaries. There are minimal categories for other expenditures (training, professional development, etc.). There have been no budget cuts since 2017. There are no restrictions on the budget except that it cannot exceed that of the previous year. ▪ **Environmental and Quality**: The budget is consistent but general. The departments have stayed on budget in recent years.
II-2 **Impact of Emergent Issues on Budgets** *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	▪ **Safety**: A budget for emergent issues does not exist within the Safety department. However, if situations arise, expenses are drawn from a different category such as finance reserves. Hurricane Maria is an example. ▪ **Environmental and Quality**: A large amount of risk contingency is integrated into the budget to deal with emergent issues. However, the risk contingency amount is largely estimated, and not vetted. It also may go unused.
II-3 **Unit Cost / Productivity Management** *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	▪ **Safety**: Productivity management is not tracked. There is no associated budget metric. ▪ **Environmental and Quality**: Productivity is not tracked and there is no initiative to review whether costs are reasonably incurred.
II-4 **Overtime (OT) and Contractors Management** *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	▪ **Safety**: Overtime (OT) generally is not approved unless there is a special circumstance. OT is approved by managers only. There are no contractors within the Safety department. ▪ **Environmental and Quality**: The organization appears to be 'right-sized' for the volume of work and the breakdown of deliverables between contractors and employees. There is a perception within departments that the organization is understaffed due to attrition.

HSEQ

Gap Assessment

Sub-focus Area	Observations and Contributors
II-5 Direct and Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ **Safety**: The budget cycle and controls are inadequate. Despite recognized needs, the budget shows no changes for the past three years. There are no changes unless an emergent issue presents. ▪ **Environmental and Quality**: Front line workers do not see or review budget numbers.

Major Gaps

Sub-focus Area	Major Gaps	Categorization
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	▪ **Safety**: The Safety department operates within budget. However, there are no budgetary planning meetings to consider the department's financial needs and the next fiscal year budget. ▪ **Environmental and Quality**: Enhanced budget planning processes that forecast budgetary needs down to the line item are needed.	Priority
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	▪ **Safety**: The budget must include a buffer to address potential emergent issues. The budget should reflect the potential for risk as part of the department budget or as an element of LUMA's financial reserves. ▪ **Environmental and Quality**: The risk buffer should be based on rolling averages rather than using a placeholder for worst case scenarios.	Department level gap
II-3 Unit Cost / Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	▪ **Safety, Environmental and Quality**: There is no productivity tracking. Productivity should be managed and tracked to ensure continuous improvement.	Improvement opportunity
II-4 Overtime (OT) and Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	▪ **Safety**: PREPA does not use contractors and OT is not regularly approved unless there is an emergency issue. ▪ **Environmental and Quality**: N/A, no major gap.	Department level gap
II-5 Direct and Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ **Safety**: Since budget is limited to salaries, there is no impact on corporate or other department budgeting decisions. ▪ **Environmental and Quality**: Once out of bankruptcy, direct and indirect cost allocation should occur to ensure project and operational support are adequately costed.	Improvement opportunity

HSEQ

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
II-1 **Actual Expenditures as Percentage of Budgeted** *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*		X Environmental and Quality	X Safety		
II-2 **Impact of Emergent Issues on Budgets** *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*		X Safety	X Environmental and Quality		
II-3 **Unit Cost / Productivity Management** *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	X Safety	X Environmental and Quality			
II-4 **Overtime (OT) and Contractors Management** *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*		X Safety	X Environmental and Quality		
II-5 **Direct and Allocated Indirect Cost Management** *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*		X Environmental and Quality	X Safety		

III. Leadership Management

Evaluation Framework

The Leadership Management focus area consists of four sub-focus areas (core and enabling areas that define an effective leadership management process):

- III-1 Qualifications and Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter- and Intra-organization Collaboration

Key observations and contributors, identified gaps and scorecard for each sub-focus area follow.

Observations and Contributors

Sub-focus Area	Observations and Contributors
III-1 **Qualifications and Experience** *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ **Safety**: Most department members have 15 or more years of experience. They are technically skilled with minimal utility experience. There is no evidence of management positions being filled by merit. Rather, it appears that promotions are based on personal relationships, i.e., favoritism. ▪ **Environmental and Quality**: Generally, management positions are filled by those qualified to perform the duties.
III-2 **Accountability** *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company's mission, values and goals. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ **Safety**: There are no incentives for accountability. The fact that employees are unionized leaves little or no power to hold department team members accountable. ▪ **Environmental and Quality**: Leaders are positive and decisive. However, there is a lack of accountability as problems go unresolved due to organizational bureaucracy and silos.
III-3 **Ability to Deliver Results** *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	▪ **Safety**: There is little or no ability to deliver results. Contributing factors include union, budgets, resources, technology, and patronage positions among others. ▪ **Environmental and Quality**: Many small problems can be resolved (e.g., notices of violation from external inspections), but larger problems build up (e.g., lack of secondary containment systems at tank sites, missed permitting, and non-compliance with an existing EPA consent decree for generation assets).
III-4 **Inter- & Intra-Organization Collaboration** *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ **Safety**: Directorates operate in silos. There are few cross-functional teams. There is little evidence that Safety works with Operations regularly. ▪ **Environmental and Quality**: Intra-department collaboration exists, but inter-department collaboration appears largely siloed. (For example, the Environment Directorate indicated they had no way of holding the Generation or T&D Directorates accountable for complying with environmental requirements.)

HSEQ

Gap Assessment

Major Gaps

Sub-focus Area	Major Gaps	Categorization
III-1 Qualifications and Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ **Safety**: There are no systems in place for annual reviews to ensure that merit promotions and professional development occur. ▪ **Environmental and Quality**: N/A	Department level gap
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ **Safety, Environmental and Quality**: Organizational and individual accountability needs to be integrated into performance metrics and reviews. Integration can be implemented with a process based HSEQ management system.	SRP candidate or department level gap
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	▪ **Safety**: There is a lack of resources and technology to deliver results. Patronage positions contribute to lack of ability to deliver results. ▪ **Environmental and Quality**: Organizational and individual accountability needs to be integrated into performance metrics and reviews. Integration can be implemented with a process based HSEQ management system.	Priority
III-4 Inter- & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ **Safety**: More opportunity to collaborate with other departments is needed. ▪ **Environmental and Quality**: Organizational and individual accountability needs to be integrated into performance metrics and reviews. Integration can be implemented with a process based HSEQ management system.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
III-1 Qualifications and Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*			X Safety Environmental and Quality		
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	X Safety	X Environmental and Quality			
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*		X Safety Environmental and Quality			

HSEQ

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
III-4 **Inter- & Intra-Organization Collaboration** *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	X Safety	X Environmental and Quality			

IV. Process Efficiency and Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness focus area consists of four sub-focus areas (core and enabling areas that define effective process efficiency and effectiveness):

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations and Contributors

Sub-focus Areas	Observations and Contributors
IV-1 **Potential Risks to Post-Commencement** *Identifies risks to post-commencement and steps needed to mitigate the risks.*	▪ **Safety**: The way risks are recognized in the field is adequate, but there are no mitigation measures in place. The team also does not have the ability to implement mitigation. ▪ **Environmental and Quality**: Risk is recognized but largely estimated. Generally, the only mitigation is a budget "cushion" for additional contractors or administrative penalties.
IV-2 **Process Familiarity by All Stakeholders** *Examines operational processes to ensure they are defined and understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.*	▪ **Safety**: Processes are not mapped or documented. ▪ **Environmental and Quality**: Processes are manual and only known by department members. There are many black boxes due to organizational change and rapid reorganization within PREPA.
IV-3 **Process Compliance Management** *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	▪ **Safety**: There is limited quality assurance (QA) and quality control (QC). ▪ **Environmental and Quality**: Deviations from primary processes are not monitored or maintained. Few spot audits and inspections are completed by the HSEQ department.
IV-4 **Efficiency of Overall Process Flow** *Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.*	▪ **Safety**: There are no highly automated processes. Everything is manual. ▪ **Environmental and Quality**: Processes are largely tacit and manual. It is unclear if processes are followed by members of other directorates. Evidence from operational field visits indicates varying degrees of environmental compliance and quality management.

HSEQ

Gap Assessment

Major Gaps

Sub-focus Area	Major Gaps	Categorization
IV-1 **Potential Risks to Post-Commencement** *Risks to post-commencement and steps to mitigate those risks are identified.*	▪ **Safety, Environmental and Quality**: A process-based HSEQ management system is needed to ensure clarity of processes, identify major issues and determine points of efficiency and automation. Use of tacit knowledge as opposed to clear documentation to complete tasks leads to significant risk to organization.	SRP candidate
IV-2 **Process Familiarity by All Stakeholders** *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*	▪ **Safety, Environmental and Quality**: Process-based HSEQ management system is needed.	SRP candidate
IV-3 **Process Compliance Management** *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	▪ **Safety, Environmental and Quality**: A process-based HSEQ management system is needed to ensure clarity of processes, identify major issues and determine points of efficiency and automation. Use of tacit knowledge as opposed to clear documentation to complete tasks leads to significant risk to organization.	Priority
IV-4 **Efficiency of Overall Process Flow** *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	▪ **Safety, Environmental and Quality**: Automated processes are essential to improve productivity within budget constraints.	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
IV-1 **Potential Risks to Post-Commencement** *Risks to post-commencement and steps to mitigate those risks are identified.*	X Safety	X Environmental and Quality			
IV-2 **Process Familiarity by all Stakeholders** *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*	X Safety	X Environmental and Quality			

HSEQ

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	X Safety	X Environmental and Quality			
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	X Safety	X Environmental and Quality			

V. Employee Training and Development

Evaluation Framework

The Employee Training and Development focus area consists of four sub-focus areas (core and enabling areas that define an effective employee training and development process):

- V-1 Training Budgets and Program Effectiveness
- V-2 Ability to Cross-Train as Personnel Development Path
- V-3 Skills Assessment and Personnel Training Plans
- V-4 Demographics and Profile of Personnel by Skill Level

Key observations and contributors, identified gaps and scorecard for each sub-focus area follows.

Observations and Contributors

Sub-focus Areas	Observations and Contributors
V-1 **Training Budgets and Program Effectiveness** *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	▪ **Safety**: There is little to no reserve for training department members. Annual targets for training budgets are set but not approved for the Safety division. ▪ **Environmental and Quality**: Due to current organizational constraints, there is no funding available for training, which may stifle innovation.
V-2 **Ability to Cross-Train as Personnel Development Path** *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	▪ **Safety, Environmental and Quality**: Cross training is pursued but usually only within the same directorate. There appears to be significant cultural hurdles to cross-train employees across directorates (e.g., union hurdles, resource hoarding, etc.).
V-3 **Skills Assessment and Personnel Training Plans** *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	▪ **Safety**: There are no personnel development plans. Development plans are informally managed by leadership. ▪ **Environmental and Quality**: Generalized training plans are conducted in accordance with job descriptions, giving employees a general career path. There is no evidence provided of personnel-specific plans.
V-4 **Demographics and Profile of Personnel by Skill Level** *Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.*	▪ **Safety**: Most employees are university educated with 20 or more years of employment. Currently, there are five employees nearing retirement. However, consideration has not been given to ensure that an adequate number of trained personnel will be available. ▪ **Environmental and Quality**: Generally, demographics are monitored, and departments have employees with a great deal of related education and experience.

Major Gaps

Sub-focus Areas	Major Gaps	Categorization
V-1 **Training Budgets and Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	▪ **Safety**: The budget for safety training is insufficient. ▪ **Environmental and Quality**: Enhanced human resource development needs to be established across the organization.	Department level gap

HSEQ

Gap Assessment

Sub-focus Areas	Major Gaps	Categorization
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	▪ **Safety**: Union restrictions on job responsibilities impede cross training efforts and personnel development plans. ▪ **Environmental and Quality**: Rotations between groups should be encouraged and demographics monitored to ensure that personnel develop a diversity of skills and experiences.	Department level gap
V-3 **Skills Assessment and Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	▪ **Safety**: Professional development plans are missing. ▪ **Environmental and Quality**: Rotations between groups should be encouraged and demographics monitored to ensure diversity of skills and experience amongst personnel.	Department level gap
V-4 **Demographics and Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	▪ **Safety**: Succession plans are not in place. ▪ **Environmental and Quality**: Rotations between groups should be encouraged and demographics monitored to ensure diversity of skills and experience in the workforce.	Priority

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
V-1 **Training Budgets and Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	X Safety	X Environmental and Quality			
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	X Safety	X Environmental and Quality			
V-3 **Skills Assessment and Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	X Safety	X Environmental and Quality			
V-4 **Demographics and Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	X Safety		X Environmental and Quality		

VI. Workforce Management

Evaluation Framework

The Workforce Management focus area consists of two sub-focus areas (core and enabling areas that define effective work management):

- VI-1 Effectiveness of Current Workforce Management Systems and Processes
- VI-2 Time Charging, Productivity Tracking and Reporting

Observations and Contributors

Sub-focus Areas	Observations and Contributors
VI-1 **Effectiveness of Current Workforce Management Systems and Processes** *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	▪ **Safety**: There are no workforce management systems and processes in place and cost-benefit analyses (CBA) have not been completed to increase productivity. ▪ **Environmental and Quality**: The organization has few approved processes related to environmental protection and quality management.
VI-2 **Time Charging, Productivity Tracking and Reporting** *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	▪ **Safety**: Time is charged directly to the division. There are no QA or QC measures in place. All hours are reported to one charge code. There are no productivity metrics. ▪ **Environmental and Quality**: The management team generally knows which tasks are completed and how long they take to complete, but such information is not integrated into the time-tracking system or formally calculated.

Major Gaps

Sub-focus Areas	Major Gaps	Categorization
VI-1 **Effectiveness of Current Workforce Management Systems and Processes** *Defined processes and work rules to ensure efficient labor utilization.*	▪ **Safety**: There is a lack of processes to measure productivity and ensure continuous improvement and cost savings over time. ▪ **Environmental and Quality**: A process-based HSEQ management system is needed to ensure clarity of processes, identify major issues and determine points of efficiency and automation. Over-reliance on the use of tacit knowledge as opposed to clear documentation to complete tasks has led to a significant risk of knowledge loss to the organization.	SRP candidate SRP candidate
VI-2 **Time Charging, Productivity Tracking and Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	▪ **Safety**: There is a lack of productivity metrics. ▪ **Environmental and Quality**: A process-based HSEQ management system is needed to ensure clarity of processes, identify major issues and determine points of efficiency and automation. Very few resources (labor hours, contractor use) are tracked and reported. Time tracking to specific tasks does not occur.	Department level gap

HSEQ

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
VI-1 **Effectiveness of Current Workforce Management Systems and Processes**. *Defined processes and work rules to ensure efficient labor utilization.*	X Safety	X Environmental and Quality			
VI-2 **Time Charging, Productivity Tracking and Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*		X Safety and Environmental and Quality			

VII. Management Systems and Technology

Evaluation Framework

The Management Systems and Technology focus area consists of four sub-focus areas (core and enabling areas that define effective management systems and technology):

- VII-1 Process Automation
- VII-2 Adaptability to New Systems and Technology
- VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations and Contributors

Sub-focus Area	Observations and Contributors
VII-1 **Process Automation** *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	▪ **Safety**: Manual processes are in place for metrics, inspections, auditing, risk assessments, etc. There is no technology available. ▪ **Environmental and Quality**: Processes are entirely manual with little automation.
VII-2 **Adaptability to New Systems and Technology** *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	▪ **Safety**: Since no systems and technology are in place for the Safety division, adaptability to new systems is a moot point. HSE software was proposed 15 years ago but lacked buy-in from other directorates. ▪ **Environmental and Quality**: Although some evidence exists that departments are adapting to changes in technology (e.g., use of Microsoft 0365), most processes and systems appear unchanged for the last decade.
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	▪ **Safety**: There is no interaction or compatibility with other functional areas due to a lack of systems and technology. ▪ **Environmental and Quality**: There is some use of IT systems within departments, but the use appears to be one way. This means that the HSEQ department has little input into how or what these systems are, and there is no iterative or feedback mechanism to improve these systems.
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ **Safety**: No quick wins due to no system and technology in place. ▪ **Environmental and Quality**: There is evidence that demonstrated improvement in some areas (e.g., developing management systems for tracking spills or permit renewals) will help resolve cultural problems that have prevented innovation in the past. Such improvements have been stifled by emergencies and rapidly changing organizational priorities.

Major Gaps

Sub-focus Area	Major Gaps	Categorization
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	▪ **Safety**: There is no technology in place to automate routine tasks, notifications, or reporting. All tasks are manual and paper-based. ▪ **Environmental and Quality**: No technology exists to automate processes. The policy and procedure library is online but reviews and updates are manually completed. The HSEQ management system should have a supporting IT system or infrastructure that supports professionals within the department to improve efficiency, consistency, and communication.	Department level gap

HSEQ

Gap Assessment

Sub-focus Area	Major Gaps	Categorization
VII-2 **Adaptability to New Systems and Technology** *Ability to adjust attitudes, processes and technology to make quality improvements.*	▪ **Safety, Environmental & Quality**: It is unclear if employees are adaptable to new systems and technologies as it has rarely been explored.	Department level gap
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*	▪ **Safety**: No interaction or linkage with other areas as there is no technology in place. ▪ **Environmental and Quality**: Systems in use are either managed by other departments (e.g., GIS system) or commercial off the shelf (e.g., SharePoint). There is no linkage between systems.	Department level gap
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ **Safety, Environment & Quality**: There are opportunities for quick wins using both resources (e.g., prioritizing equipment and employee mobilization) and technology (e.g., implementing systems for incident reporting and tracking, permit renewals).	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	X Safety	X Environmental and Quality			
VII-2 **Adaptability to New Systems and Technology** *Ability to adjust attitudes, processes and technology to make quality improvements.*	X Safety	X Environmental and Quality			
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*	X Safety	X Environmental and Quality			
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	X Safety		X Environmental and Quality		

HSEQ
Gap Assessment

VIII. Performance Metrics and Continuous Improvement

Evaluation Framework

The Performance Metrics and Continuous Improvement focus area consists of five sub-focus areas (core and enabling areas that define performance metrics and continuous improvement process):

- VIII-1 Recognition of Critical Performance Metrics
- VIII-2 Performance Metric Collection, Validation and Reporting
- VIII-3 Root Cause and Trend Analysis
- VIII-4 Instances (or Lack) of Data-driven Management Initiatives
- VIII-5 Recent Performance Trends

Observations and Contributors

Sub-focus Area	Observations and Contributors
VIII-1 **Recognition of Critical Performance Metrics** *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	▪ **Safety, Environmental and Quality**: The limited key performance indicators (KPIs) that exist are monitored but are not tied to major initiatives or a review of organizational performance.
VIII-2 **Performance Metric Collection, Validation and Reporting** *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	▪ **Safety**: There are few, if any, methods to collect data and to validate the data gathered. The organization does not have adequate situational awareness of its operations. ▪ **Environmental and Quality**: There is a disconnect between performance metrics, overall environmental and quality requirements, and operational performance.
VIII-3 **Root Cause and Trend Analysis** *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	▪ **Safety**: There is little evidence performance drivers that are recognized or understood. The department does not have the ability to estimate the cost or benefits to improving KPIs. ▪ **Environmental and Quality**: Little evidence beyond qualitative conversations is available for performance monitoring over time. The organization is focused on a few key administrative performance indicators. Nothing else is tracked.
VIII-4 **Instances (or Lack) of Data-driven Management Initiatives** *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	▪ **Safety**: The division shows little success in establishing performance initiatives. Therefore, it is unlikely that it recognizes successes or failures in past initiatives. ▪ **Environmental and Quality**: Data-driven initiatives are administrative and only based on a percentage of report filings. No indicators exist to track overall performance of environmental protection or quality management.

HSEQ

Gap Assessment

Sub-focus Area	Observations and Contributors
VIII-5 **Recent Performance Trends** *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	▪ **Safety**: There are limited trended KPIs. The department claims to have made improvements, but observations indicate that the information may be inaccurate. ▪ **Environmental and Quality**: It is impossible to characterize performance trends with the KPIs currently in place.

Major Gaps

Sub-focus Area	Major Gaps	Categorization
VIII-1 **Recognition of Critical Performance Metrics** *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets.*	▪ **Safety, Environmental and Quality**: Departments do not have performance metrics tied to safety, environmental or quality performance. The only metrics that are tracked are OSHA injury rates and percentages of permits renewed. An HSEQ Management System is needed to outline primary and secondary key performance indicators to demonstrate organizational success and to ensure that continuous improvement aligns with business values and corporate objectives. The processes, procedures and systems can then be determined and enhanced to best achieve those indicators	Department level gap
VIII-2 **Performance Metric Collection, Validation and Reporting** *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	▪ **Safety, Environmental and Quality**: Since departments do not have specific performance metrics aside those listed above, there are no methods to collect data. Any data collected by departments for other initiatives (e.g., request from a regulatory body) are manual and conducted as one-time reports.	Department level gap
VIII-3 **Root Cause and Trend Analysis** *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	▪ **Safety, Environmental and Quality**: There was no evidence or root cause analysis provided to demonstrate a recognition of performance drivers or to determine improvement initiatives.	Department level gap
VIII-4 **Instances (or Lack) of Data-driven Management Initiatives** *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	▪ **Safety, Environmental and Quality**: Since departments do not have specific performance metrics, there are no records of performance improvement over time or recognition of past successes or failures.	Department level gap
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	▪ **Safety, Environmental and Quality**: Since departments do not have specific performance metrics, there are record of performance improvement over time or recognition of past successes or failures. PREPA compares its corporate injury rates to other electric utilities but this does not result in improvement initiatives.	Department level gap

HSEQ

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets.*	X Safety	X Environmental and Quality			
VIII-2 Performance Metric Collection, Validation and Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	X Safety	X Environmental and Quality			
VIII-3 Root Cause and Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	X Safety and Environmental and Quality				
VIII-4 Instances (or Lack) of Data-driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	X Safety	X Environmental and Quality			
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	X Safety	X Environmental and Quality			

IX. PREPA Culture and Momentum

Evaluation Framework

The PREPA (Puerto Rico Electric Power Authority) Culture and Momentum focus area consists of five sub-focus areas (core and enabling areas that define the PREPA culture and momentum):

- **IX-1** Resistance (Active or Passive) to LUMA Management
- **IX-2** Employee Morale / Excitement About LUMA
- **IX-3** Employee Empowerment / Action Orientation
- **IX-4** Timeframe to Improve Performance
- **IX-5** Impact of Organization Silos

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations and Contributors

Sub-focus Area	Observations and Contributors
IX-1 Resistance (Active or Passive) to LUMA Management *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	▪ **Safety**: Unionized Safety department employees are more likely to resist LUMA; non-union employees are more likely to work towards success. ▪ **Environmental and Quality**: The perception of LUMA within PREPA is mixed. LUMA will need to demonstrate core values and differentiate itself from PREPA early in the process.
IX-2 Employee Morale/ Excitement About LUMA *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	▪ **Safety, Environmental and Quality**: Some employees seem to embrace change positively; others are apprehensive.
IX-3 Employee Empowerment/ Action Orientation *Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.*	▪ **Safety, Environmental and Quality**: Some employees seem to embrace change positively; others are apprehensive.
IX-4 Timeframe to Improve Performance *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	▪ **Safety**: PREPA Safety employees will likely take a year or more to fully embrace change. However, this alignment is dependent on LUMA fulfilling the changes needed for processes and infrastructure. ▪ **Environmental and Quality**: If LUMA can demonstrate change, PREPA employees will likely be convinced to align with LUMA by the end of the first year.
IX-5 Impact of Organization Silos *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	▪ **Safety**: The existence of silos can be overcome by putting the right processes and infrastructure in place. However, having the division's performance tied to organizational and departmental performance is necessary for positive transformation. ▪ **Environmental and Quality**: Siloed divisions and groups are a significant cultural roadblock within PREPA. For example, projects are developed without Environmental input for routing and permitting or corporate-level procedures are not communicated throughout PREPA.

HSEQ

Gap Assessment

Major Gaps

Sub-focus Area	Major Gaps	Categorization
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*	▪ **Safety, Environmental and Quality**: A lack of communication about the process and benefits has resulted in a mixed perception from employees related to the introduction of LUMA. Communication will be key to resolve passive resistance.	Priority
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	▪ **Safety, Environmental and Quality**: Although some excitement is observed about the opportunities for positive change within the organization, the excitement is overshadowed by uncertainty related to pay and benefits of employees related to the transition. More communication is needed within PREPA.	Priority
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*	▪ **Safety, Environmental and Quality**: The department needs greater diversity in its workforce to introduce a variety of perspectives, drive innovation, and resolve issues. When recruiting for LUMA positions, the alignment of the applicant's values in accordance with LUMA values may be as significant as the applicant having the necessary skills for the position.	Priority
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*	▪ **Safety, Environmental and Quality**: Not an applicable gap in PREPA's existing operations.	N/A
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*	▪ **Safety, Environmental and Quality**: Performance of the Safety, Environmental and Quality divisions is not tied to organizational and departmental performance.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*		X Safety	X Environmental and Quality		
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*		X Safety, Environmental and Quality			
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*		X Safety, Environmental and Quality			
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*		X Safety	X Environmental and Quality		

HSEQ

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*		X Safety, Environmental and Quality			

Core Business Assessment

HSEQ

Gap Assessment

Focus and Sub-focus Areas

	Focus Areas	Sub-focus Areas			
XI	**Health and Safety**	XI-1	Written Safety and Health Program Assessment	XI-3	Field Assessments
		XI-2	Public Safety Program Assessment	XI-4	Staff Assessments
XII	**Environmental**	XII-1	Field and Facilities	XII-3	Permitting
		XII-2	Waste Contracting	XII-4	Processes, Policies, and Procedures
XIII	**Quality**	XIII-1	Field Assessments	XIII-3	QMS Processes, Policies, and Procedures
		XIII-2	Quality Control Plans		
XIV	**Operations Technical Training**	Provided in a separate report: Operations Gap Assessment			

XI. Health and Safety

Evaluation Framework

The Safety and Health focus area consists of four sub-focus areas:

- XI-1 Written Health and Safety Program Assessment
- XI-2 Public Safety Program Assessment
- XI-3 Facilities and Field Assessments
- XI-4 Staff Assessments

Observations and Contributors

Sub-focus Areas	Observations and Contributors
XI-1 **Written Health & Safety Program Assessment** *Baseline assessment of written health and safety programs to determine compliance with OSHA regulations and benchmark against industry best practices.*	▪ **Corporate level**: The Health and Safety manual states that it is aligned with OSHA, the Code of Federal Regulations, the Fire Prevention Code of the Puerto Rico fire department and the American Public Power Association Safety Manual (2004 version). While the manual is in place, it is not updated regularly. There is an associated "receipt sheet" to document that every employee receives the manual. However, during observation there was no evidence that employees have a copy of the manual. When queried about the manual, employees stated that they had never seen it. ▪ **Field level**: The Health and Safety manual is not followed. During observation, there was blatant disregard for following safety requirements. Safety Officers who respectfully provided guidance on the use of personal protective equipment (PPE) were ignored. For example, an employee in a bucket with no harness ignored the instructions of the three PREPA Safety Officers. Job briefings are done in the office and not in the field. Completion is noted in a “check box” on the compliant list. There is no evidence of field level hazard assessment.
XI-2 **Public Safety Program Assessment** *Conduct baseline assessment of PREPA’s Public Safety program to benchmark against industry standards and best practices.*	▪ **Public incidents**: The department has little involvement in public safety efforts. They are only involved when asked to participate. There is no evidence that public safety incidents are tracked or investigated unless there is evidence of significant risk to PREPA. In such situations, the Litigation function deploys an investigative team to gather information. The team includes a contractor previously employed by PREPA. This individual has 30+ years of experience as an electrical engineer and specializes in scene reconstruction. There are many outstanding cases involving public safety related claims that have been stayed due to bankruptcy. Litigation claims that due to the reputation of the "power company" many public safety incidents result in litigation because the public perceives that the organization has money. It is evident that public safety is a multifaceted concern. ▪ **Public communication:** During observation, it was stated that the PREPA Communications function previously made school visits using materials such as a coloring book and an electrical pole display prop for young children. Scheduled field visits stopped many years ago, and there has been no other public outreach to other groups; only school visits made upon request. ▪ **Advertising:** Public safety advertising is limited to the PREPA website and includes a statement regarding hurricane season but has limited other information. The website does not speak to downed power lines or power line safety. There are no "call before you dig" messages or advertising / awareness concerning buried facilities. Due to limited advertising budget during an election year, some public initiatives may be postponed or put on hold.
XI-3 **Facilities and Field Assessments** *Compliance of PREPA T&D service centers with OSHA regulations and benchmark against industry best practices. Includes walkthroughs and field visits.*	▪ **Facility assessments:** During facility inspections, significant differences were noted in different facilities across the island. Noted areas of concern in facilities include: o Lighting, exits and entrances o Storage of housekeeping supplies, debris, and other materials in offices o Boxes of files stored ceiling high and barring access to doors. There appears to be a sense of keeping all paper records in the office. o Overloaded shelving units o Flammable materials stored in mechanical / communications rooms o Fire extinguishers not inspected monthly

Gap Assessment

	○ First aid kits available, but not inspected ○ Automated external defibrillators (AEDs) not available or operational. In some cases AEDs were observed in boxes, out of service, or containing dead batteries. ○ Ceiling tiles damaged or having evidence of water damage ○ Fire alarm systems and emergency lighting inoperable ○ Gas powered tools and equipment in indoor facilities and non-ventilated rooms ○ "Homemade" meter rooms used for testing purposes in commercial buildings. Devices have the potential to arc, explode, or catch fire and do not have emergency shut off switches. Often, these rooms are in tiny back corner offices surrounded by combustible materials. ○ Operating "storage areas" in buildings that should be condemned due to structural issues and possible mold, bird feces, lead, etc. contamination. Employees do not work in the building, but store materials in the building. ○ Backup battery storage in communications areas and server rooms without access to eye wash stations ▪ **Warehouses**: Warehouses (especially in the south) are generally newer and well organized. Some noted concerns include: ○ Open electrical panels ○ Not-in-service overhead cranes not tagged out ○ Overhead doors not inspected ○ MSDS/SDS Material Safety Data Sheets/Safety Data Sheets unavailable
XI-4 **Staff Assessments** *Conduct interviews with PREPA applicants for positions in the LUMA post commencement health and safety chart.* *Expand to external candidates if positions cannot be filled with existing PREPA employees.*	▪ PREPA Safety employees have been strictly directed by leadership to not communicate or meet with LUMA Safety personnel unless a PREPA supervisor, technical advisor or chief is present. Therefore, the LUMA Safety team has been unable to meet one-on-one with PREPA personnel, limiting the ability to gather information about job functions and responsibilities. Some interaction has occurred as part of LUMA Safety town hall events.

Gap Assessment

Major Gaps

Sub-focus Area	Major Gaps	Categorization
XI-1 **Written Health and Safety Program Assessment** *Baseline assessment of written health and safety programs to determine compliance with OSHA regulations and benchmark against industry best practices.*	▪ There are no references to industry best practices in the written Health Safety manual. ▪ The manual was last updated 2010. ▪ The manual is not readily available or known to employees. ▪ There is a limited access to safety documents (other than paper copy) due to limited or no access to technology. ▪ There is a lack of regard for the Health and Safety manual, safety requirements and safety guidance from Safety Officers among field staff. ▪ Safety department appears to tolerate insubordinate behavior with little ability to influence change. Safety Officers do not hold a respected position, and some officers appear intimidated by field employees. ▪ Field level hazard assessments are not completed on job sites.	SRP candidate
XI-2 **Public Safety Program Assessment** *Conduct baseline assessment of PREPA's Public Safety program to benchmark against industry standards and best practices.*	▪ There is a lack of formal processes for public safety functions. This includes reporting, investigating and following up on public safety incidents. ▪ Although it is an industry-standard protocol for Safety departments to be involved in claims, incidents or near misses related to public safety, the Litigation function often operates independently of Safety. ▪ With little data regarding public incidents, it is hard to target areas as there is little data to use for focus areas. This requires a collaborative approach among departments (i.e., Operations, Communications and Customer Service) to determine focus areas for public safety programs. ▪ There is no communication plan outlining the focus areas to target for public safety campaigns. ▪ There is a lack of safety materials to share with the general public and specific groups such as contractors, municipalities and businesses. ▪ There is no budget allocation for advertising, public outreach and awareness. ▪ There is no advertising for power line awareness or overhead / underground facilities.	SRP candidate
XI-3 **Facilities and Field Assessments** *Compliance of PREPA T&D service centers with OSHA regulations and benchmark against industry best practices. Includes walkthroughs and field visits.*	▪ Exits in many facilities are not free and clear. ▪ Offices need to be cleared of files, debris and other materials. ▪ Removal of flammable and combustible materials from mechanical and communication rooms is required. ▪ Monthly fire extinguishers inspections have not been completed in any facility. ▪ Overhead door inspections have not been completed in any facility. ▪ Inoperable fire alarms and emergency lighting systems need repair and/or replacement. ▪ Gas powered tools lack proper storage and should not be kept inside buildings without ventilation. ▪ Single meter testing rooms/locations have inadequate safety engineering and design. Meter testing should not be allowed in small spaces, crowed locations, without emergency shut-off switches or blast shields installed, or surrounded by flammable and combustible materials. ▪ Condemned buildings should not be used for storage purposes. This potentially puts personnel who enter the facilities at risk from the collapse of structurally unsound buildings or exposure to contaminants. ▪ Access to eyewash stations (even portable) in battery rooms are required. ▪ Lock out and tag out of out-of-service cranes is required when equipment is broken or awaiting inspection.	Priority

HSEQ

Gap Assessment

XI-4 Staff Assessments *Conduct interviews with PREPA applicants for positions in the LUMA post commencement health and safety organizational chart. Expand to external candidates if positions cannot be filled with existing PREPA employees.*	▪ Limited access to H&S personnel has resulted in a lack of understanding about employee roles, responsibilities or job expectations. ▪ Safety Officer requires an engineering degree as a minimum but no formal safety education or training. ▪ Employee performance evaluations do not occur. ▪ Training and cross training opportunities are limited.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
XII-1 Written Health and Safety Program Assessment *Baseline assessment of written health and safety programs to determine compliance with OSHA regulations and benchmark against industry best practices.*		X			
XII-2 Public Safety Program Assessment *Conduct baseline assessment of PREPA's Public Safety program to benchmark against industry standards and best practices.*		X			
XII-3 Facilities and Field Assessments *Compliance of PREPA T&D service centers with OSHA regulations and benchmark against industry best practices. Includes walkthroughs and field visits.*		X			
XII-4 Staff Assessments *Conduct interviews with PREPA applicants for positions in the LUMA post commencement health and safety organizational chart.* *Expand to external candidates if positions cannot be filled with existing PREPA employees.*		X			

XII. Environmental

Evaluation Framework

The Environmental focus area consists of four sub-focus areas:

- XII-1 Field and Facilities
- XII-2 Waste Contracting
- XII-3 Permitting
- XII-4 Processes, Policies and Procedures

Observations and Contributors

Sub-focus Areas	Observations and Contributors
XII-1 **Field and Facilities** *Determine baseline environmental conditions at PREPA T&D facilities. Develop due care plans to protect workers and environmental receptors due to recognized environmental conditions.*	▪ PREPA will complete facility environmental assessments per the Operations & Maintenance Agreement. PREPA is targeting a completion in Q2 2021. Any gaps resulting in Recognized Environmental Conditions will be addressed in Due Care Plans by LUMA prior to commencement.
XII-2 **Waste Contracting** *Validate waste sources, manifesting and transportation processes and disposal locations. Determine discrepancies between documented procedures and field activities.*	▪ The primary source of waste arises from T&D operations. ▪ Waste manifestation, transport and disposal is managed by region with guidance from the Environmental department and contracts approved by the contracting office under the Legal department. ▪ Field operations do not safely store or handle waste. ▪ Disposal contracts appear to comply with local laws, but a review of waste disposal permits by facility is needed to confirm.
XII-3 **Permitting** *Validate permitting required for T&D operations. Update permitting when required for LUMA operations and determine missing permit requirements.*	▪ The current systems and processes for permitting are inefficient. ▪ The systems handling the administration, maintenance and renewal of permits are largely manual and siloed. This has resulted in permitting gaps: expired permits, missing permits and non-compliance issues.
XII-4 **Processes, Policies and Procedures** *Evaluate existing PREPA environmental systems in relation to ISO 14001 framework and industry competitors.*	▪ Due to organizational challenges and the need to mitigate risks, PREPA's operational processes for T&D assets are largely reactionary. Knowledge, systems, and processes are mostly tacit. ▪ Some waste management procedures exist, but PREPA staff indicated that these are outdated.

Major Gaps

Sub-focus Area	Major Gaps	Categorization
XII-1 **Field and Facilities** *Determine baseline environmental conditions at PREPA T&D facilities. Develop due care plans to protect workers and environmental receptors due to recognized environmental conditions.*	▪ Any gaps in environmental controls resulting in Recognized Environmental Conditions will be addressed in Due Care Plans by LUMA prior to commencement.	Not applicable

HSEQ

Gap Assessment

Sub-focus Area	Major Gaps	Categorization
XII-2 Waste Contracting *Validate waste sources, manifesting and transportation processes and disposal locations.* *Determine discrepancies between documented procedures and field activities.*	▪ Many facilities improperly handle or store waste. EPA waste generator statuses are likely inaccurate or non-compliant. ▪ The state of compliance for disposal facilities needs to be validated.	Priority for assessing conformance SRP candidate for cleanup of excess waste
XII-3 Permitting *Validate permitting required for T&D operations. Update permitting when required for LUMA operations and determine missing permit requirements.*	▪ Many facilities lack permits for septic systems. ▪ Spill Prevention, Control & Countermeasure (SPCC) plans require the use of secondary containment systems which do not exist at many T&D facilities. ▪ Many permits are expired and LUMA was unable to confirm whether updated permits exist.	Department level gap
XII-4 Processes, Policies and Procedures *Evaluate existing PREPA environmental systems in relation to ISO 14001 framework and industry competitors.*	▪ There is a lack of system-based thinking applied to environmental management, which leads to inefficiencies. ▪ Management commitment to improve environmental performance is lacking.	Priority

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
XII-1 Field and Facilities *Determine baseline environmental conditions at PREPA T&D facilities. Develop due care plans to protect workers and environmental receptors due to recognized environmental conditions.*			X		
XII-2 Waste Contracting *Validate waste sources, manifesting and transportation processes and disposal locations.* *Determine discrepancies between documented procedures and field activities.*		X			
XII-3 Permitting *Validate permitting required for T&D operations. Update permitting when required for LUMA operations and determine missing permit requirements.*		X			
XII-4 Processes, Policies and Procedures *Evaluate existing PREPA environmental systems in relation to ISO 14001 framework and industry competitors.*	X				

HSEQ

Gap Assessment

XIII. Quality

Evaluation Framework

The Quality focus area consists of three sub-focus areas:

- XIII-1 Field Assessments
- XIII-2 Quality Control Plans
- XIII-3 QMS Processes, Policies and Procedures

Observations and Contributors

Sub-focus Areas	Observations and Contributors
XIII-1 **Field Assessments** *Evaluate system processes. Assess inputs and outputs and evaluate inter and intra department relationships.*	▪ Although the field has engineering drawings and some standards in place, there is no interaction between the design and field teams (e.g., redlining and inspections). ▪ There is little interaction between PREPA departments in relation to the development of policies and procedures and through inspections to ensure field employees are following policies and procedures. ▪ Adjustments to QC and QA plans, including drawings and project records, appear to be made 'on-the-fly' – for example, quality plans may be project- or department-specific, such as a quality plan for a transmission line project, while other departments like Customer Service have no formal documentation related to quality management. ▪ Although progress to develop quality systems and processes has been made within some departments (e.g., PMO establishing a draft quality management system for its contracts and records), the progress is siloed and not readily visible throughout the organization.
XII-2 **Quality Control Plans** *Review QC plans. Review customer and design and engineering requirements critical to quality control. Identify dependencies that have affected or could potentially contribute to the success of quality control plans.*	▪ Quality control plans for operations or construction projects were not observed or are not in place. ▪ Quality inspections for some larger projects may occur, but do not appear to be centrally managed by PREPA. ▪ Monthly visual inspections at substations are not focused on quality issues. ▪ The existence of QC plans within the Customer Service department is unconfirmed. ▪ Although progress to develop quality systems and processes has been made within some departments (e.g., PMO establishing a draft quality management system for its contracts and records), the progress is siloed and not readily visible throughout the organization.
XII-3 **QMS Processes, Policies and Procedures** *Assess existing quality management system (QMS). Review existing documentation, policies and standards related to Customer Service, Metering and Operations. Review controls for identification, review, approval and retention of critical documentation that affect implementation of quality control plan.*	▪ Some elements of conventional quality management systems (e.g., policies and procedures, records management processes, human resources policies and procedures) exist within specific departments and in various parts throughout the organization. ▪ Documentation related to the PMO QMS was unavailable to review. ▪ Many PREPA employees appear unaware of any quality processes carried out by other departments. ▪ The main area being addressed by the draft quality management system within the PMO is document control and systems are currently fragmented across divisions.

HSEQ

Gap Assessment

Major Gaps

Sub-focus Area	Major Gaps	Categorization
XIII-1 Field Assessments *Evaluate system processes, assess inputs and outputs and evaluate relationships within and between departments.*	▪ Most processes are not standardized and there is no oversight of process performance. Instead, processes are based on largely tacit knowledge. ▪ Many processes are not widely known or communicated throughout the company. ▪ Continuous improvement of QC cannot be achieved until process standardization occurs.	Priority
XIII-2 Quality Control Plans *Review QC plans that contribute to metering.*	▪ The lack of process standardization, regular inspections and verification of processes make it difficult to develop quality control plans that meet customer requirements. ▪ The siloed nature of the organization results in process inefficiencies.	Department level gap
XIII-3 QMS Processes, Policies and Procedures *Assess quality management system, including documentation, policies, standards and controls.*	▪ Implementation of a QMS: Although a centralized and consolidated quality management system does not always exist for electrical utilities, it can help with streamlining communications and processes. A QMS as part of the integrated HSEQ system can help prioritize initiatives, remove bureaucracy, and improve quality performance.	Priority

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-focus Areas					
XIII-1 Field Assessments *Evaluate system processes, assess inputs and outputs and evaluate relationships within and between departments.*	X				
XIII-2 Quality Control Plans *Review QC plans that contribute to metering.*	X				
XIII-3 QMS Processes, Policies and Procedures *Assess quality management system, including documentation, policies, standards and controls.*	X				

LUMA

Gap Assessment

Financial Management

Contents

Gap Assessment

General Approach

The Financial Management gap assessment includes the following perspectives, as shown in the tables below:

General Management: There are nine management focus areas that apply to all departments.

Core Business: There are seven core business focus areas specifically relating to Financial Management operations.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting & Cost Performance
III	Leadership Management
IV	Process Efficiency & Effectiveness
V	Employee Training & Development
VI	Workforce Management
VII	Management Systems & Technology
VIII	Performance Metrics & Continuous Improvement
IX	PREPA Culture & Momentum
Core Business Focus Areas	
I	Internal Controls
II	Financial Reporting Processes
III	Initial Budgets
IV	Financial System Set-up
V	Real Estate Assessment
VI	Risk Management
VII	Sourcing, Procurement & Non-federal Funding

We applied the following standard methodology to both the General Management and Financial Management core business assessments, thus forming the bases for identifying gaps.

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus & Sub-Focus Areas

The nine **General Management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas	
I	**Organization Design Effectiveness**	I-1 Span of Control I-2 Clarity on Management & Supervisory Roles	I-3 Ratio of Administrative to Direct Workers I-4 Impact of Protected Patronage Workers
II	**Budgeting & Cost Performance**	II-1 Actual Expenditures as Percentage of Budgeted II-2 Impact of Emergent Issues on Budgets II-3 Clarity on Management & Supervisory Roles	II-4 Overtime & Contractors Management II-5 Direct and Allocated Indirect Cost Management
III	**Leadership Management**	III-1 Qualifications & Experience III-2 Accountability	III-3 Ability to Deliver Results III-4 Inter- & Intra-Organization Collaboration
IV	**Process Efficiency & Effectiveness**	IV-1 Potential Risks to Post-Commencement IV-2 Process Familiarity by all Stakeholders	IV-3 Process Compliance Management IV-4 Efficiency of Overall Process Flow
V	**Employee Training & Development**	V-1 Training Budgets & Program Effectiveness V-2 Ability to Cross-Train as Personnel Development Path	V-3 Skills Assessment & Personnel Training Plans V-4 Demographics & Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1 Effectiveness of Current Workforce Management Processes	VI-2 Time Charging & Productivity Tracking & Reporting
VII	**Management Systems & Technology**	VII-1 Process Automation VII-2 Adaptability to New Systems & Technology	VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics & Continuous Improvement**	VIII-1 Recognition of Critical Performance Metrics VIII-2 Performance Metric Collection, Validation & Reporting VIII-3 Root Cause & Trend Analysis	VIII-4 Instances (or Lack) of Data-Driven Management Initiatives VIII-5 Recent Performance Trends
IX	**PREPA Culture & Momentum**	IX-1 Resistance (Active or Passive) to LUMA Management IX-2 Employee Morale/Excitement about LUMA	IX-3 Employee Empowerment / Action Orientation IX-4 Timeframe to Improve Performance IX-5 Impact of Organization Silos

I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Effectiveness focus area consists of four sub-focus areas that define an effective organization design:

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Key observations and contributors, identified gaps and scorecard for each sub-focus area follows:

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	Upon review of the organization charts and the span of control, the supervisor / subordinate ratios do not appear to be properly coordinated with the duties of direct reports as well as with the increased number of vacant positions. Exceptions will be addressed as LUMA Financial Management reconsiders the current overall structure.
I-2 Clarity on Management & Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	• The issues around management and supervisory roles include both a lack of clarity of roles and responsibilities as well as a skills mismatch in managing the day-to-day finance activities. These lead to difficulties in the financial decision-making process. • Development, implementation and communication of key Policies and procedures will mobilize the organization's human talent to help the business to evade obstacles and hit goals as well as freeing higher cost resources for more priority work.
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	• Management and supervisory roles have little time to devote to coaching and strategic thinking due to an overwhelming amount of administrative work. • Administrative work is driven by paper and repetitive manual activities vs. leading practices on system improvements and coaching. • Some key activities are being conducted outside of Finance (such as Accounts Receivable and procurement), impacting problem resolution and book closing. • High reliance placed on consultants for critical tasks. • High number of legacy balances/transactions that are not resolved and continue to impact the overall day-to-day transactional and closing processes.
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	Instances of protected patronage workers (termed “trust positions”) within the Finance department have been identified. Such positions add cost to the business and most of the times do not provide the right skills and competencies, resulting in little benefit.

Major Gaps

Sub-Focus Area	Major Gaps	Category
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	Evaluation of internal controls such as deficiencies and related remediation plans are not formally performed by internal audit or management. Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
	We could not identify evidence of assessments done by Internal Audit on significant changes and/or fraud risk nor evidence those were discussed with the Audit Committee. The focus seems to be on the work performed by Internal Audit on the whistleblower hotline items that may indicate alleged fraud. However, no evidence on the review, action and findings were shared with us. Despite the existence of an Internal Audit department, it is evident that there is a lack of resources to perform audits over financial statements and non-compliance risks.	SRP Candidate
	The 2018-2019 Internal Audit plan identified risks, but we could not obtain evidence of any communication addressing findings or the assessment of risks on deferring audits in significant process areas (i.e., cash disbursements, payroll, cybersecurity). Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	The risk management process and guidance on the assessment of internal and external risks and potential risk exposure for the organization are not documented, nor do they appear to involve the appropriate level of management at the departmental and corporate levels. Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
	There is no formal evidence on procedures to ensure that policies and procedures are reviewed for updates on a timely basis. Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*	Management relies on external consultants to identify and assess the impact and define actions on complex transactions and accounting pronouncements applicable to the organization. Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	Employee skill levels must be improved to properly execute policies and procedures that are required for financial management. Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*		X			
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*		X			
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*		X			
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*		X			

II. Budgeting & Cost Performance

Evaluation Framework

The Budgeting & Cost Performance focus area consists of five sub-focus areas that define effective budgeting and cost performance:

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost/Productivity Management
- II-4 Overtime & Contractors Management
- II-5 Direct & Allocated Indirect Cost Management

Key observations and contributors identified gaps and a scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
II-1 **Actual Expenditures as Percentage of Budgeted** *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	• A reconciliation and detailed review and variance analysis of planned vs. actual costs has not yet been conducted. Lack of a detailed budget profiled does not allow for Budget to Actual variance and explanation to occur regularly to identify divergences and take correction actions. • There is room for improvement in establishing priorities and coordinating activities among the Finance department.
II-2 **Impact of Emergent Issues on Budgets** *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	• The budgeting process does not have sufficient detail to separate planned expenditures versus contingencies for unknown/uncertain events (i.e., earthquakes and hurricanes).
II-3 **Unit Cost/Productivity Management** *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	• Consultants are highly relied upon to verify, finalize and complete budgeting details. This limits PREPA control of planned activities and results in unexpected budgeting changes that occur outside of PREPA's budgeting process. • There is room for improvement in establishing policies and procedures to emphasize the need for the review to be performed and actions taken.
II-4 **Overtime & Contractors Management** *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	• Overtime is mostly due to high employee vacancies in key areas as a result of overall employee reductions as part of cost cutting measures. • Overtime is generally authorized to allow employees to complete tasks within expectations set by senior management and external regulatory bodies. • There is room for improvement in establishing policies and procedures to emphasize the need for the review to be performed and actions taken.

FINANCIAL MANAGEMENT

Gap Assessment

Sub-Focus Area	Observations & Contributors
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ Please refer to Observations & Contributors – II-1/II-2/II-3.

Major Gaps

Sub-Focus Area	Major Gaps	Category
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	▪ No formal process and/or review to: o Produce the budget to actual analysis, check accuracy and agree to Oracle o Identify items requiring explanation and communicate to responsible departments o Ensure this is performed in a timely and complete manner o Follow up with users on variances as well as actions taken to address those	Department level gap
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	• The budgeting process does not have sufficient detail to separate planned expenditures versus contingencies for unknown/uncertain events (i.e., earthquakes and hurricanes).	Improvement opportunity
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	• Management utilizes key third-party service providers (i.e., ADP, Kronos). Evidence was not available to confirm that PREPA management reviews the associated audit reports, including assessment of manual controls necessary for reliance on third party service provider systems. Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps. • Consultants are highly relied upon to verify, finalize and complete budgeting details. This limits PREPA control of planned activities and results in unexpected budgeting changes that occur outside of PREPA's budgeting process between consultants and FOMB.	SRP Candidate SRP Candidate

FINANCIAL MANAGEMENT

Gap Assessment

Sub-Focus Area	Major Gaps	Category
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	▪ No formal evidence or procedures to ensure policies and procedures are reviewed for updates on a timely basis (most recent edits occurred in April 2018). Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
II-5 Direct & Allocated Indirect Cost Management	Please refer to Observations & Contributors – II-1/II-2/II-3.	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
II-1 Actual Expenditures as Percentage of Budgeted *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*			X		
II-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*		X			
II-3 Unit Cost/Productivity Management *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*		X			
II-4 Overtime & Contractors Management *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*		X			
II-5 Direct & Allocated Indirect Cost Management		X			

III. Leadership Management

Evaluation Framework

The Leadership Management focus area consists of four sub-areas that define an effective leadership management process:

- III-1 Qualifications & Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter– & Intra-Organization Collaboration

Key observations and contributors identified gaps and a scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
III-1 Qualifications & Experience *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ The Governing Board provides direction on PREPA's initiatives and objectives. ▪ PREPA Executive Director is appointed by the Governing Board and can be removed by the Governing Board for cause. This requires notice and an opportunity to be heard. ▪ Chairman of the Board, Vice Chairman and one additional member of the Governing Board designated by the Chairman constitute the Executive Committee. The Executive Committee advises and aids the PREPA Executive Director in all matters concerning interests and management of the business. ▪ The Chairman of the Governing Board also designates an Audit Committee composed of not less than two members of the Governing Board. The Audit Committee periodically reviews audits performed by internal and external auditors, along with the annual work plan for tasks to be undertaken by the Internal Audit office. The Internal Audit office reports to the Audit Committee of the Governing Board. The Internal Audit Office Administrator is a PREPA officer, who is responsible to the Governing Board for office operations and to the Executive Director on administrative terms. ▪ The current leadership structure, which has a strong political influence, mostly appears to have the key skills and experience. ▪ Despite the existence of an Internal Audit department, evidence points to a lack of guidance and resources to perform audits on financial statements and non-compliance risks.
III-2 Accountability *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company's mission, values and goals. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ The organization lacks an actionable accountability framework, upon which expectations are clearly communicated and agreed upon, action is taken, and results are presented and accepted. This establishes accountability as a foundational element for advancement and employment.

Gap Assessment

III-3 Ability to Deliver Results *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	▪ There is no evidence of proper guidance and alignment between strategic objectives and the approach taken by Finance and Operations on the assessment, mitigation, monitoring and reporting of internal and external risks associated with day-to-day business activities. Insight and communication of those risks and controls should be part of the enterprise assessment. ▪ Lack of development of the internal knowledge, implementation of key transactions, reconciliations, validation, physical inspection and disclosures steps, and enforcement of applicable policies and procedures to enable employees to identify deviations and root causes, assess the impact of and define corrective actions in key areas.
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ No clear layout of how the business works, delineating relationships and accountability or establishing controls to mitigate the impact of risks and achieve goals.

Major Gaps

Sub-Focus Area	Major Gaps	Category
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	None	
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	Refer to Observations & Contributors III-2 and III-3	SRP Candidate
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	Inability to establish a common set of procedures and develop internal knowledge to achieve defined company goals. Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	Gaps related to organizational silos and their impact on the business are identified in the Core Business sections of this report.	Department level gap

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*			X		
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*			X		
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*			X		
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*			X		

IV. Process Efficiency & Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness focus area consists of four sub-focus areas that define quality process efficiency and effectiveness:

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Key observations and contributors, identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IV-1 **Potential Risks to Post-Commencement** *Identifies risks to post-commencement and steps needed to mitigate the risks.*	▪ Lack of a formal assessment of the Internal Control Framework – no reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance. Ability to effectively and efficiently develop systems of **internal control** that adapt to changing business and operating environments, mitigate risks to acceptable levels and support sound decision making and governance of the organization. ▪ The organization's processes, policies and procedures are inadequately documented, stored and maintained. Many policies and procedures are inaccurate and/or irrelevant in today's operating environment. Multiple versions of policies and procedures are used in different areas. ▪ A formal plan needs to be established to follow up and promptly communicate with the Audit Committee regarding any material weaknesses, deficiencies and other matters identified by internal and external auditors. This plan should include details on the process and actions to be taken to assess the root cause, dependencies and a remediation plan. ▪ Need to identify and corroborate common ethics challenges in the work environment and workplace and establish a compliance program to follow up on deviations. ▪ Need for building the foundation for the internal audit team - identifying and bringing the necessary skills and technology. Establish more frequent and fluid audit cycles on key areas of focus and prompt communication across the Audit Committee, the Finance and Operations departments and external auditors. ▪ Need to ensure the proper guidance and alignment exist between Strategic Objectives and the approach taken by Finance and Operations on the assessment/mitigation/monitoring and reporting of internal and external risks associated with day-to-day business activities. Insight/communication of those risks/controls as part of the enterprise assessment. ▪ Need for focus on the development of the internal knowledge, implementation of key transactions, reconciliations, validation, physical inspection and disclosure steps, and enforcement of applicable policies and procedures to enable employees to identify deviations/route causes, assess the impact and to define corrective actions in key areas such as cash, procurement, capital assets, revenue & account receivables, accruals and inventory.
IV-2 **Process Familiarity by all Stakeholders** *Examines operational processes to ensure they are defined and*	▪ Need to ensure policies and procedures are reviewed for updates and also reflect inputs based on perspective from business processes. Enforce that all employees and contractors are knowledgeable of those and have access to the "Administrative Manual".

Gap Assessment

Sub-Focus Area	Observations & Contributors
understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.	▪ Process training is not uniform. Rather, it is communicated through word of mouth and is experience based.
IV-3 **Process Compliance Management** *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	▪ There is a need to develop better internal knowledge, capabilities for implementation of key transactions, reconciliations, validation, physical inspection and disclosures steps, and enforcement practices of applicable policies and procedures to enable employees to identify deviations and root causes, assess the impact and to define corrective actions in key areas such as cash, procurement, capital assets, revenue & account receivables, accruals and inventory. ▪ A formal plan needs to be established to follow up and promptly communicate with the Audit Committee regarding any material weaknesses, deficiencies and other matters identified by internal and external auditors. This plan should include details on the process and actions to be taken to assess the root cause, dependencies and a remediation plan.
IV-4 **Efficiency of Overall Process Flow** *Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.*	▪ Some processes are not automated. Rather, they depend on manual effort, which reduces efficiency, increases cost and increases the potential for greater error.

Major Gaps

Sub-Focus Area	Major Gaps	Category
IV-1 **Potential Risks to Post-Commencement** *Risks to post-commencement and steps to mitigate those risks are identified.*	Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
IV-2 **Process Familiarity by all Stakeholders** *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*	Business processes are often undocumented and inconsistently applied. Refer to Observations & Contributors in IV-1 and IV-2 - Please refer to the Core Business Focus Areas – Internal Controls Framework Gaps.	SRP Candidate
IV-3 **Process Compliance Management** *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	Please refer to the Core Business Focus Areas – Gaps.	SRP Candidate
IV-4 **Efficiency of Overall Process Flow** *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	Please refer to the Core Business Focus Areas – Gaps.	SRP Candidate

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
IV-1 Potential Risks to Post-Commencement *Risks to post-commencement and steps to mitigate those risks are identified.*		X			
IV-2 Process Familiarity by all Stakeholders *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*		X			
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*		X			
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*		X			

V. Employee Training & Development

Evaluation Framework

The Employee Training & Development focus area consists of four sub-focus areas that define an effective employee training and development process:

- V-1 Training Budgets & Program Effectiveness
- V-2 Ability to Cross-Train as Personnel Development Path
- V-3 Skills Assessment & Personnel Training Plans
- V-4 Demographics & Profile of Personnel by Skill Level

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
V-1 **Training Budgets & Program Effectiveness** *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	When queried, managers and supervisors recall a time when proactive training and personal development was a priority focus at PREPA. However, over the past decade, reliance on external consultants has increased to deal with complex transactions
V-2 **Ability to Cross-Train as Personnel Development Path** *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	There is a general absence of competency / skill development processes. It is not uncommon for an individual to be placed in a specific position, doing the same job over an extended period, with little or no access to other functions and no ability to learn new skills from more experienced personnel.
V-3 **Skills Assessment & Personnel Training Plans** *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	There is no formal process in place to evaluate individual employee performance. Pay increases and promotions are not merit based.
V-4 **Demographics & Profile of Personnel by Skill Level** *Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.*	▪ A proactive plan to ensure the transfer of knowledge and skills from more experienced (and possibly aging workers) to less experienced (and possibly younger) workers does not appear to be a priority. ▪ There are no proactive measures in place to identify potential skill gaps or areas where there will be critical capability shortfalls. ▪ There is a high percentage of employees approaching retirement.

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Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Category
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	Refer to Observations & Contributors in V-1. Refer to the Core Business Focus Areas – Gaps.	SRP Candidate
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	Refer to Observations & Contributors in V-2 Refer to the Core Business Focus Areas – Gaps.	SRP Candidate
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	Refer to Observations & Contributors in V-3 Refer to the Core Business Focus Areas – Gaps.	SRP Candidate
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	Refer to Observations & Contributors in V-4 Refer to the Core Business Focus Areas – Gaps.	SRP Candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training is evidenced by training budget and program effectiveness.*		X			
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross-training initiatives to improve development path for personnel*		X			
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets.*		X			

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*		X			

VI. Workforce Management

Evaluation Framework

The Workforce Management focus area consists of two sub-focus areas that define effective workforce management:

- **VI-1** Effectiveness of Current Workforce Management Systems & Processes
- **VI-2** Time Charging, Productivity Tracking & Reporting

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	▪ It is difficult to assess the effectiveness of workforce planning and optimization given that PREPA currently operates in a more reactive manner. This reactive manner applies to regulator accounting and financial requirements. ▪ PREPA is currently working on the completion of the 2018 fiscal year audit, so no planning has been initiated to address the impact of recent accounting pronouncements applicable to PREPA (i.e., revenue recognition, leases). ▪ An inability to secure employees contributes to a high vacancy rate (i.e., difficult to get new positions approved) results in excessive overtime and fatigue. Managers and supervisors spend significant time supporting gaps left by vacant positions, taking their focus away from leading their teams.
VI-2 Time Charging & Productivity Tracking & Reporting *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	▪ Worker productivity is not tracked. ▪ Time charging and reporting using the Kronos time clock (directly for those with immediate access or as two-step process in which staff complete a daily log for later entry into Kronos) is not always accurate.

Major Gaps

Sub-Focus Area	Major Gaps	Category
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Defined processes and work rules to ensure efficient labor utilization.*	Refer to Observations & Contributors in VI-1 Refer to the Core Business Focus Areas – Gaps.	SRP Candidate
VI-2 Time Charging & Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	Refer to Observations & Contributors in VI-2 Refer to the Core Business Focus Areas – Gaps.	SRP Candidate

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Defined processes and work rules to ensure efficient labor utilization.*		X			
VI-2 **Time Charging & Productivity Tracking & Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*		X			

VII. Management Systems & Technology

Evaluation Framework

The Management Systems & Technology focus area consists of four sub-focus areas that define effective management systems and technology:

- VII-1 Process Automation
- VII-2 Adaptability to New Systems & Technology
- VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VII-1 **Process Automation** *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Observations and Contributors.
VII-2 **Adaptability to New Systems & Technology** *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Observations and Contributors.
VII-3 **Interaction or Linkage with Other Functional Areas, IT Plans or Systems** *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Observations and Contributors.
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	• Please refer to the Core Business Focus Areas – IV Financial System Set-up - Observations and Contributors.

Major Gaps

Sub-Focus Area	Major Gaps	Category
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Gaps.	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Gaps.

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Gap Assessment

Sub-Focus Area	Major Gaps	Category
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes and technology to make quality improvements.*	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Gaps.	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Gaps.
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Gaps.	▪ Please refer to the Core Business Focus Areas – IV Financial System Set-up - Gaps.
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	• Please refer to the Core Business Focus Areas – IV Financial System Set-up - Gaps.	• Please refer to the Core Business Focus Areas – IV Financial System Set-up - Gaps

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VII-1 Process Automation *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*			X		
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes and technology to make quality improvements.*			X		
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*			X		
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*			X		

VIII. Performance Metrics & Continuous Improvement

Evaluation Framework

The Performance Metrics & Continuous Improvement focus area consists of five sub-focus areas that define performance metrics and continuous improvement processes:

- **VIII-1** Recognition of Critical Performance Metrics
- **VIII-2** Performance Metric Collection, Validation & Reporting
- **VIII-3** Root Cause & Trend Analysis
- **VIII-4** Instances (or Lack) of Data-Driven Management Initiatives
- **VIII-5** Recent Performance Trends

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VIII-1 Recognition of Critical Performance Metrics *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	• There appears to be few identified KPIs or metrics considered by the Financial Management department. This delays effective coordination of resources and process improvements. • Key operational and financial reports are presented by PREPA's CFO to the Finance and Bankruptcy Committee - see detailed list in the Core Business Focus Areas – I Internal Controls Framework - Observations and Contributors
VIII-2 Performance Metric Collection, Validation & Reporting *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	▪ Management reporting packages tend to focus on high level results without identification of root causes and underlying trends.
VIII-3 Root Cause & Trend Analysis *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	▪ There is no formal plan to follow up and promptly communicate any material weaknesses, deficiencies and other matters identified by internal and external auditors to the Audit Committee. Such a plan should include details on the processes and actions to be undertaken to assess the root cause(s), dependencies and remediation plan(s) for identified weaknesses and deficiencies.
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	▪ There was no evidence of track records of actions to improve processes or to ensure those are conducted in accordance with the provisions of applicable laws and regulations.

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Gap Assessment

Sub-Focus Area	Observations & Contributors
VIII-5 Recent Performance Trends *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	▪ See observation in VIII-1

Major Gaps

Sub-Focus Area	Major Gaps	Category
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	None	
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	Please refer to the Core Business Focus Areas – Internal Controls Framework - Gaps.	SRP Candidate
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	None	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*			X		

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Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*			X		
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*			X		
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*			X		
VIII-5 Recent Performance Trends *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*			X		

IX. PREPA Culture & Momentum

Evaluation Framework

The PREPA Culture & Momentum focus area consists of five sub-focus areas that define the PREPA culture and momentum:

- IX-1 Resistance (Active or Passive) to LUMA Management
- IX-2 Employee Morale/Excitement About LUMA
- IX-3 Employee Empowerment/Action Orientation
- IX-4 Timeframe to Improve Performance
- IX-5 Impact of Organization Silos

Key observations and contributors identified gaps and scorecard for each sub-focus area follows.

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	In general, Finance managers and supervisors seem to lean favorably towards LUMA, as in they see this as an opportunity to garner the support necessary to do their jobs. However, there is still some resistance from union employees related to the transition.
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	There are several elements necessary for change, the current state of which is summarized below: ▪ Group optimism: Commitment to a successful outcome is high amongst management but at best, mixed among union workers. ▪ Trust and involvement: No alignment towards achieving commonly shared organizational goals. In fact, knowledge of these goals may vary within and across the organization. ▪ Dignity and respect: There appear to be some confusion regarding ability to negotiate to a common vision and whether all parties feel valued and appreciated in the process. ▪ Clarity of direction: Values currently differ and there is confusion around expectations. ▪ Market driven focus: Rather than acknowledging the realities that drove this decision, there is no natural bias towards action. Instead, the organization has a self-focused orientation which is normal in any transformation, particularly one where there will be a noted change in culture. ▪ Performance accountability: Strong bias towards political impacts and less on accountability and meritocracy, along with a strong sense of victimization. ▪ Learning organization: Consumed in addressing the urgent item of the day, no time to reflect on trends, lessons learned, inter-/intra-organization communication and coordination (way too siloed in their interactions)
IX-3 **Employee Empowerment/ Action Orientation**	With minor exceptions, there does not seem to be an emergence of individuals focused on driving an organizational transformation; rather, PREPA's organization appears to be looking

Gap Assessment

Sub-Focus Area	Observations & Contributors
Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.	forward to LUMA's presence and impetus to drive change. There appear to two general postures: ▪ A view of LUMA as the savior, with a plan to embrace whatever is said, or at least hopeful that things will improve ▪ A skeptical "wait and see" posture, expecting things to get worse There is no indication of a drive on the part of PREPA to actively build organizational commitment to the transition. In classic change management terms, it appears the drive will come from the LUMA transition team. PREPA's management team will need to transition from one of "passive acceptance and endorsement" to becoming proactive advocates There are no specific Finance employee surveys to elicit feedback around current morale, improvement suggestions, etc. There is also a lack of employee incentives for progression or performance and lack of ongoing employee development strategy. No programs exist to identify and leverage top performers. No formal performance improvement recognition program is in place to incentivize employees to perform well.
IX-4 **Timeframe to Improve Performance** *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	Recognizing that full cultural transformation can take a few years, an extended time frame would be projected. That said, given PREPA's Finance current state, particularly in internal controls, we should see a steady improvement profile starting at six to nine months.
IX-5 **Impact of Organization Silos** *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	PREPA is an extremely siloed organization with little sharing of initiatives across groups and prioritization of work, all resulting in sub-optimal outcomes. Organizational silos preclude alignment in establishing priorities / coordinating activities among Finance and with support functions.

Major Gaps

Sub-Focus Area	Major Gaps	Category
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*	Mixed feelings regarding the transformation from PREPA to LUMA (refer to observations).	Department level gap
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	Key elements that determine success of any organizational transformation (refer to observations).	Department level gap
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*	Embedded in IX-2, "Employee Morale/ Excitement about LUMA	Department level gap
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*	Time frame for conversion of transformation to significant and sustainable performance improvement is likely to span beyond 24 months.	SRP Candidate
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*	Addressed across several focus areas within the Core Business Assessment	SRP Candidate

FINANCIAL MANAGEMENT

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team*		X			
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment*			X		
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture*			X		
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives*		X			
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge*		X			

Core Business Assessment

Focus & Sub-focus Areas

The seven **Core Business** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-focus Areas	
I	**Internal Controls**	I-1 Commitment to integrity and ethical values I-2 Assessment of the structure, authority, risks, objectives and responsibilities I-3 Risk Identification and analysis over objectives I-4 Assessment of significant changes and fraud risk	I-5 Communication on internal controls (objectives and responsibilities) I-6 Assessment of policies and procedures and controls to support objectives 1-7 Evaluation and communication of deficiencies
II	**Financial Reporting Processes**	II-1 Processes and structure II-2 Accuracy of financial balances II-3 Internal / external stakeholders' needs	II-4 Information and technology II-5 Application of GAAP rules
III	**Initial Budgets**	III-1 Processes and structure III-2 Accounting and regulatory requirements III-3 Strategy alignment III-4 Assurance and accuracy of expenditures	III-5 Impact of emergent issues on budgets III-6 Cost allocation III-7 Communication
IV	**Financial System Set-up**	IV-1 System support of key processes: financial, accounting, regulatory IV-2 Maintain existing system structures III-3 Control key financial reports	IV-4 Payroll system
V	**Real Estate Assessment**	V-1 Business practices V-2 Real estate portfolio V-3 Facilities	V-4 Third-party contracts V-5 Physical security V-6 Environmental services
VI	**Risk Management**	VI-1 Processes and structure VI-2 Risk identification and coverage adequacy	VI-3 Loss analysis and forecasting VI-4 Claims and reserve practices
VII	**Sourcing, Procurement & Non-Federal Funding**	VII-1 Processes and structure VII-2 Contracts and contracting process documentation	VII-3 Non-federal funding procurement guidelines VII-4 System and technology requirements

I. Internal Controls

Evaluation Framework

The Internal Controls focus area consists of seven sub-focus areas (core and enabling areas that define an effective organization design):

- I-1 Commitment to integrity and ethical values
- I-2 Assessment of the structure, authority, risks, objectives, and responsibilities
- I-3 Risk identification and analysis over objectives
- I-4 Assessment of significant changes and fraud risk
- I-5 Communication on internal controls (objectives and responsibilities)
- I-6 Assessment of policies and procedures and controls to support objectives
- I-7 Evaluation and communication of efficiencies

Observations & Contributors

Sub-Focus Area	Observations & Contributors
I-1 **Commitment to integrity and ethical values** *Extent that the organization demonstrates commitment to integrity and ethical values.*	- The 2003 Code of Conduct policy, modified April 2018, is available to all employees under "Manuals, Procedures and Other" on the PREPA intranet. Employees receive and acknowledge receipt of the policy during the onboarding process. - There is a new hire packet that contains paperwork for employees to complete during onboarding. The packet includes company policies, I-9 form, equal opportunity information, documents related to union membership, benefits information, etc. - Employees and members of the Governing Board must comply with the Standards of Ethical Conduct for Employees of the Executive Branch issued by the US Office of Government Ethics (OGE) in 1992. (Refer to 5 C.F.R. Part 2635 on www.oge.gov.) Per OGE regulations, employees must complete at least one hour of ethics training annually.

I-2 **Assessment of the structure, authority, risks, objectives and responsibilities**
Extent that management establishes, with board oversight, structures, reporting lines, and appropriate authorities and responsibilities to meet company objectives.
	- The Governing Board serves as the oversight entity of PREPA (www.aeepr.com). Its mission is to "be an integral, united and committed Governing Board that represents the people of Puerto Rico to lead the transformation of its Electric Power Authority, guide it to achieve its vision, and promote the sustainable development of the commonwealth through the achievement of the following strategic objectives:
	  - Earn the respect and trust of customers
	  - Integrity, willingness and commitment in the performance of its human resources
	  - Innovation in operations and infrastructure for greater effectiveness and efficiency
	  - A robust financial condition based on fair rates and diversification of services
	- The Governing Board meets on the third Tuesday of each month. Matters to be considered come from different directors of PREPA. The PREPA Executive Director may attend all Board meetings but does not have the right to vote. The Governing Board consists of seven members: three members appointed at the sole discretion of the Governor; three independent members appointed by the Governor of Puerto Rico with advice and consent of the Puerto Rico Senate, and one member elected by customers as representative of customer interests.
	- Additionally, several subcommittees report to the Governing Board, including Audit Committee, Finance and Bankruptcy Committee and Executive Committee.

Gap Assessment

Sub-Focus Area	Observations & Contributors

	- Responsibilities include:
	  - The PREPA Executive Director is appointed by the Governing Board and can be removed by the Governing Board for cause after notice has been given and an opportunity to be heard granted.
	  - The Executive Committee is comprised of the Chairman of the Board, Vice Chairman and one additional member of the Governing Board designated by the Chairman. The Executive Committee advises and aids the PREPA Executive Director in all matters concerning the interests and management of the business.
	  - The Chairman of the Governing Board designates an Audit Committee composed of at least two members of the Governing Board. The Audit Committee periodically reviews audits performed by internal and external auditors and the annual work plan of tasks to be undertaken by the Internal Audit Office.
	  - The Internal Audit Office reports to the Audit Committee of the Governing Board. The Internal Audit Office Administrator is an officer of PREPA, responsible to the Governing Board for the office operations and to the Executive Director in administrative terms. The 2018-2019 Internal Audit Plan was presented to the Audit Committee on 02/19/2019 with ongoing assessment on procurement, pension plan, investigation of irregularities (hotline monitoring), correction action reviews and internal audit recommendations. Other process-related areas such as finance and treasury, cybersecurity, cash disbursements and payroll were noted as deferred.
	- The Governing Board provides direction to PREPA's initiatives and objectives. For FY2020, initiatives to reduce costs and increase safety, reliability and resiliency, such as grid modernization, contribution in lieu of taxes (CILT) excess consumption collection, pension benefits reform, among others (refer to Puerto Rico Transformation Act included in the 2019 Fiscal Plan for PREPA as well as the 2020 Fiscal Plan for PREPA, on www.aeepr.com). The June 2020 meeting materials were inspected, including the agenda of the Finance and Bankruptcy Committee, Contracting and Recovery Committee Meeting, Audit Committee and Governing Board.
	- PREPA has organizational charts for the overall entity and for each department. The overall chart dated January 3, 2019 was inspected as well as the Finance and Internal Audit organizational charts provided by Juan Carlos Adrover, Administrator Directorado de Finanzas (Administrative Finance Director) on 7/20/2020, and Orlando Colon, Internal Audit Director on 08/21/2020, respectively, which demonstrates the structure and reporting lines. Corporate By-Laws outline the duties of PREPA officers and directors, who interact monthly with the respective Committee of the Governing Board.
	- There is a delegation of authority matrix which is maintained and updated by the Departamento de Estudios y Procedimientos Corporativos (Corporate Studies and Procedures Department). The Document Approval Levels Rule revised August 15, 2019 was inspected. The levels of authority applicable to the PREPA Executive Director are defined in the Corporate By-Laws.
	- The May 2020 key operational and financial reports presented by CFO Nelson Morales to the Finance and Bankruptcy Committee includes inspection of the following reports:

Financial Highlights for May 2020	Budget vs. Actual Presentation – FY2019-20
• Monthly Flash Financial /Operational report – includes change in net position, sales and generation, fuel and purchased power and operational expenses,	• Financial Summary to Governing Board – includes sales per kWh, kWh sold vs. generation, fuel barrel and prices, fuel expense vs. purchased power, average price by kWh billed, summary of statement of income and expenses (GAAP) by month and FYTD, payroll (base salary, overtime and

Gap Assessment

Sub-Focus Area	Observations & Contributors	
	including price per kWh in cents	compensatory time) for budgeted and actual debt service coverage
	• Overtime Expense, Compensation Time as of May 2020	• Revenue and Expenses per GAAP
	• Monthly Operations and Financial Report (M-5 Report)	• Line of Credit as of May 31
	• Employee Statistics – HR Report as of May 2020 (5,512 total employees as of May)	• FEMA Flash Report as of June 12
	• PREPA Case Update as of June 1	• 13-week Cash Flow Update as of June 17
	• Daily Cash Flash Report as of June 22	• B2A Variance Report Q3-FY2020
	• Insurance Claims Progress Report	• Status of FY17 Audited Financial Statements (subsequently issued in July 2020)
I-3 **Risk identification and analysis over objectives** *Extent that organization identifies risks to achievement of its objectives and analyzes risks as a basis for determining how the risks should be managed.*	PREPA established an Enterprise Risk Management (ERM) charter and committee in May 2019, which has subsequently been placed on hold. Per inspection of the draft charter, the following was noted: - Management of risk is the primary responsibility of each directorate. - Development and implementation of the ERM charter is part of the strategic objectives of the Governing Board and the ERM Committee. The charter is executed by the Risk Management Office. - The ERM charter applies to all PREPA staff, directorates and functions. It outlines PREPA's approach to identifying, measuring, managing, reporting and controlling risk. It documents sound practices to help ensure that risk is managed and measured in an effective and consistent manner across the PREPA organization. It describes elements of the PREPA ERM framework including key roles and responsibilities. - The Chief Executive Officer (CEO) is responsible for ensuring that appropriate risk management practices are in place and operate effectively. The CEO retains ultimate responsibility for the effective management of risks in PREPA within the limits reviewed and approved by the Governing Board (defined in the Corporate By-laws previously mentioned). The CEO is responsible for the operational implementation and management of the Risk Management department within the ERM Committee-approved framework. The CEO approves the ERM charter and has oversight of the ERM Committee. - The Risk Management and Internal Audit departments have direct access to the Governing Board and the ERM Committee, which is responsible for ensuring that risks to PREPA are managed within the framework. - The Governing Board has oversight responsibility for ERM, including the assurance that PREPA's risk management practices are consistent with its fiscal plan strategy and are aligned with defined risk appetite. The Risk Management Office and Internal Audit Office are tasked to perform regular reviews and audits of the ERM processes. However, no evidence is available to confirm that these	

Gap Assessment

Sub-Focus Area	Observations & Contributors
	activities have occurred. Reviews and audits include both activities of the departments and the independent risk management function. - Members of the ERM Committee include the following leaders: deputy executive director, finance, human resources, legal, planning & environmental protection, risk management office (facilitator) and internal audit office (participant). - The 2019 Fiscal Plan for PREPA includes key risks that may affect the organization objectives, as identified by PREPA management and presented to the Governing Board. For 2019, examples of risks include: federal funding, conventional fuel, purchase power, etc.
I-4 **Assessment of significant changes and fraud risk** *Extent that the organization considers potential for fraud in assessing risks to the achievement of objectives as well as identifies and assesses changes that could significantly impact the system of internal control.*	- In-person anti-corruption training is provided by the Administrative Development Training Center as part of the new employee onboarding process. The date of completion is maintained in Oracle.
I-5 **Communication on internal controls (objectives and responsibilities)** *Extent that the organization internally communicates information, including objectives and responsibilities necessary to support the functioning of internal control. The organization communicates with external parties regarding matters affecting the functioning of internal control.*	- PREPA prepares a monthly financial report that is reviewed by Nelson Morales, CFO, and presented to the Finance and Bankruptcy Committee of the Governing Board. (See previous summary of items included in the May 2020 report). - The Finance department uses a month-end close checklist and reporting calendar to gather information for the report. The December 2019 checklist was obtained, noting that PREPA closes within 15 days. This checklist provides financial information to the Chief Financial Officer. - A standard chart of accounts is maintained by the Finance department. It is used to enter information into the general ledger in Oracle EBS to provide consistent reporting. The current chart of accounts dated July 14, 2020 was inspected for each PREPA entity, including account, subaccount, and description amongst other information. - The Governing Board provides oversight to PREPA management. The Internal Audit department reports directly to the Governing Board. External auditors also can meet with the Governing Board monthly. - As a governmental entity, information is distributed to the public via the PREPA website. For example, Governing Board meetings are recorded and posted to the website along with agenda topics, approved resolutions, etc. Additionally, monthly financial reports, including audited financial statements and fiscal year plans / budgets are made available on the website. Nonfinancial information, including contracts, official statements and other applicable information are also available. - Customers and employees may report allegations of energy theft, corruption and/or illegal acts against an official, employee or contractor of PREPA on PREPA's website or by phone (787-521-1212). Allegations are routed to the Internal Audit Director, who reviews, investigates, and reports on such allegations to the Governing Board.
I-6 **Assessment of policies and procedures and controls to support objectives** *Extent that the organization internally communicates information, including objectives and responsibilities for internal control, necessary to support the functioning of internal controls. Extent that the organization communicates with external parties*	- PREPA has a department focused on monitoring and maintaining employee policies and procedures in an administrative manual and available on the PREPA intranet. Policies and procedures are detailed by position. The most recent update is April 2018. This department monitors new laws and regulations applicable to the company, ensuring that PREPA identifies not only a response but applicable policies and/or procedures resulting from these new laws and regulations. Reliance is placed on such policies and procedures rather than high level flowcharts, narratives and/or formalized controls. The PREPA Information Technology (IT) Director maintains a summary of IT systems and the processes/subprocesses to which they relate. - Management relies on external consultants to identify and assess the impact of recent accounting pronouncements applicable to PREPA.

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Sub-Focus Area	Observations & Contributors
regarding matters affecting the functioning of internal control.	- Significant estimates are assessed informally and in conjunction with the annual audit - Projects requiring IT are identified by various PREPA departments and corporate leadership and communicated to the PREPA IT department. - PREPA management presents overall goals and objectives to the Governing Board annually. Status on such goals / objectives are reported monthly either directly to the Governing Board or to the respective Committee of the Governing Board. - PREPA's annual budgeting process typically begins late December or early January. The Controller prepares a calendar and notifies applicable directorates of due dates. Prior to COVID-19, PREPA would perform a roadshow presenting funds available and the background and development of budgeted items that support the budgeted amounts. Budgets are finalized in May, with PREPA management attending public hearings, publishing notices in the newspaper, etc., via the presentations to the Finance and Bankruptcy Committee of the Governing Board (and ultimately, the Governing Board). With PREPA currently in bankruptcy, the budget is reviewed and certified by the Financial Oversight and Management Board (FOMB) rather than the Governing Board. The 2020 Fiscal Plan (published on the www.aafaf.pr.gov website, known as the Puerto Rico Fiscal Agency and Financial Advisory Authority) was inspected, verifying the certification of said 2020 fiscal plan.
I-7 **Evaluation and communication of deficiencies** *Extent that the organization evaluates and communicates internal control deficiencies in a timely manner to parties responsible for taking corrective action, including senior management and the Board of Directors, as appropriate.*	- The Finance and Bankruptcy Committees of the Governing Board review the monthly financial package presented by the CFO. The financial package contains various reports including balance sheet and income statement amounts. The Audit Committee of the Governing Board reviews current findings presented by internal and external auditors. - A phone hotline and the PREPA website is available for customers or PREPA employees to report allegations. Allegations are routed to the Internal Audit Director and findings are reported to the applicable PREPA department and to the Audit Committee/Governing Board.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
I-1 **Commitment to integrity and ethical values** *Commitment to integrity and ethical values*	• There is no evidence that annual employee ethics training occurs or is monitored and followed up. • It is unclear how PREPA addresses non-compliance issues.	SRP candidate SRP candidate

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Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
I-2 **Assessment of the structure, authority, risks, objectives and responsibilities** *Oversight, structures, reporting lines and authorities / responsibilities to meet objectives*	• Management utilizes third-party service providers (i.e., ADP or Kronos). There is no evidence that management reviews audit reports of third-party service providers or assesses manual controls necessary for reliance on third party service provider systems. • There is a lack of evidence that assessments of significant changes and/or fraud risks are completed by the Internal Audit department or are discussed with the Audit Committee. The focus of the work done by Internal Audit appears to be on "whistleblower" hotline items that may indicate alleged fraud. Yet, evidence of the review, actions and findings were not available to review. • The Internal Audit department lacks resources to perform audits of financial statements and non-compliance risks. The 2018-2019 Internal Audit plan has identified risks; however, evidence of addressing its findings or assessment of risks on deferring audits in significant process areas (i.e., cash disbursements, payroll, cybersecurity) is not available.	SRP candidate SRP candidate SRP candidate
I-3 **Risk identification and analysis over objectives** *Risk identification and analysis*	• The risk management process and guidance on assessment of internal and external risks and potential risk exposure for PREPA are not documented and do not appear to involve the appropriate level of management at the departmental and corporate levels. • There is no evidence on how Transmission & Distribution (T&D) gathers information for their assessment and how that information is then communicated to the CEO for an enterprise-wide assessment.	SRP candidate SRP candidate
I-4 **Assessment of significant changes and fraud risk** *Potential for fraud in risk assessment*	• It does not appear that significant changes and fraud risk are assessed and/or presented to executive management or the Governing Board for review. • Management appears to rely on the whistleblower hotline for items of alleged fraud.	SRP candidate
I-5 **Communication on internal controls (objectives and responsibilities)** *Internal communication to support internal controls*	• The timeframe in which financial information presented to the Governing Board is made public and published on the PREPA website is unclear.	Departmental gap
I-6 **Assessment of policies and procedures and controls to support objectives** *Internal communications for internal controls*	• There is no formal evidence that company policies and procedures are reviewed and updated on a timely basis. This finding was reported by external auditors as part of the 2017 financial statements audit. • Significant estimates and reconciliations in Finance and Accounting are not formally assessed and evidenced by management. Given the delayed issuance of current financial statements, management uses actual results to determine estimates and provide reconciliations. Once current, management estimates and reconciliations will be critical for accurate financial statement reporting. • PREPA management relies on external consultants to identify and assess the impact and define the	SRP candidate SRP candidate

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	actions of complex transactions and accounting pronouncements. Such assessment is only performed in conjunction with the annual audit, which is currently underway for the 2018 fiscal year. Therefore, recent accounting pronouncements applicable to PREPA prior to 2020 have not been assessed (e.g., revenue recognition and leases).	SRP candidate
I-7 **Evaluation and communication of deficiencies** *Evaluation and communications on internal control deficiencies*	• The evaluation of internal controls related to deficiencies and remediation plans are not formally performed by the Internal Audit department or management. The most recent letter provided by BDO on internal control findings shows findings previously noted by the internal / external audits.	SRP candidate
	• There is no process to assess the root cause of issues identified by external auditors. This results in recurring issues and adjustments in subsequent audits and indicates that inaccurate financial information may continue to exist. Previously, management's priority was to address requests from other parties, resulting in resources being unable to adequately address root cause(s).	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
I-1 **Commitment to integrity and ethical values** *Commitment to integrity and ethical values*		X			
I-2 **Assessment of the structure, authority, risks, objectives and responsibilities** *Oversight, structures, reporting lines and authorities / responsibilities to meet objectives*		X			
I-3 **Risk identification and analysis over objectives** *Risk identification and analysis*		X			
I-4 **Assessment of significant changes and fraud risk** *Potential for fraud in risk assessment*	X				

FINANCIAL MANAGEMENT

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
I-5 **Communication on internal controls (objectives and responsibilities)** *Internal communication to support internal controls*		X			
I-6 **Assessment of policies and procedures and controls to support objectives** *Policies, procedures and controls*		X			
I-7 **Evaluation and communication of deficiencies** *Evaluation and communications on internal control deficiencies*	X				

II. Financial Reporting Processes

Evaluation Framework

The Financial Reporting Processes focus area consists of five sub-focus areas (core and enabling areas that define an effective organization design):

- **II-1** Processes and structure
- **II-2** Accuracy of financial balances
- **II-3** Internal / external stakeholders' needs
- **II-4** Information and technology
- **II-5** Application of GAAP rules

Observations & Contributors

Sub-Focus Area	Observations & Contributors
II-1 Processes and structure *Extent that organization has financial reporting processes and procedures in place to meet stakeholder needs.*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.
II-2 Accuracy of financial balances *Extent that organization's financial balances are not materially misstated. Processes and procedures are in place to ensure financial accuracy and completeness.*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.
II-3 Internal / external stakeholders' needs *Extent that organization's policies and procedures ensure key financial information is communicated and meets stakeholder needs.*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.
II-4 Information and technology *Extent that organization's IT systems are operating effectively and address key risks, requirements and deliverables.*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.
II-5 Application of GAAP rules *Extent that organization's policies and procedures are consistent with Generally Accepted Accounting Principles (GAAP) and are properly applied and disclosed in internal / external deliverables.*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
II-1 **Processes and structure** *Financial reporting processes and procedures*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.	Departmental gap
II-2 **Accuracy of financial balances** *Financial accuracy and associated processes and procedures*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.	Departmental gap
II-3 **Internal / external stakeholders' needs** *Communications on key financial information*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.	Departmental gap
II-4 **Information and technology** *Effectiveness of IT operations to address risks, requirements and deliverables*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.	Departmental gap
II-5 **Application of GAAP rules** *Consistency with GAAP rules*	• Work has been performed and documented within the Internal Controls Framework and in specific walkthroughs, flowcharts and narratives for key business processes.	Departmental gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
II-1 **Processes and structure** *Financial reporting processes and procedures*		X			
II-2 **Accuracy of financial balances** *Financial accuracy and associated processes and procedures*		X			
II-3 **Internal / external stakeholders' needs** *Communications on key financial information*		X			

FINANCIAL MANAGEMENT

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
II-4 **Information and technology** *Effectiveness of IT operations to address risks, requirements and deliverables*		X			
II-5 **Application of GAAP rules** *Financial reporting processes and procedures*		X			

III. Initial Budgets

Evaluation Framework

The Initial Budgets focus area consists of seven sub-focus areas (core and enabling areas that define an effective organization design):

- III-1 Processes and structure
- III-2 Accounting and regulatory requirements
- III-3 Strategy alignment
- III-4 Assurance and accuracy of expenditures
- III-5 Impact of emergent issues on budgets
- III-6 Cost allocation
- III-7 Communication

Observations & Contributors

Sub-Focus Area	Observations & Contributors
III-1 **Processes and structure** *Extent that organization demonstrates proper budgeting and forecasting processes, assumptions and scenarios. Existence of an annual plan, review and approval by management, and review and approval of changes to the budget throughout the process.*	• On July 7, 2020 PREPA Finance and LUMA Finance kicked off the initial budgeting process and shared information about the PREPA budgeting process and cycle. Through dialogue and requests for information following the meeting, the gaps detailed in the next table were identified.
#-2 **Accounting and regulatory requirements** *Extent that management establishes US GAAP oversight, structures, budget reporting lines, account for regulatory expenditures in a similar way to fiscal expenditures.*	• On July 7, 2020 PREPA Finance and LUMA Finance kicked off the initial budgeting process and shared information about the PREPA budgeting process and cycle. Through dialogue and requests for information following the meeting, the gaps detailed in the next table were identified.
III-3 **Strategy alignment** *Extent that organization 1) shows executive-level participation and insight into organizational strategy, 2) measures and communicates critical metrics to success, and 3) validates goals against key metrics.*	• On July 7, 2020 PREPA Finance and LUMA Finance kicked off the initial budgeting process and shared information about the PREPA budgeting process and cycle. Through dialogue and requests for information following the meeting, the gaps detailed in the next table were identified.
III-4 **Assurance and accuracy of expenditures** *Extent that organization considers all key operational expenses (KOE) and contingencies. Extent that organization considers full costs (including indirect costs or overhead and direct costs or per cost line items).*	• On July 7, 2020 PREPA Finance and LUMA Finance kicked off the initial budgeting process and shared information about the PREPA budgeting process and cycle. Through dialogue and requests for information following the meeting, the gaps detailed in the next table were identified.

Gap Assessment

III-5 Impact of emergent issues on budgets *Extent that organization considers adequate assumptions on contingencies (hurricane season) and impact of the unexpected.*	• On July 7, 2020 PREPA Finance and LUMA Finance kicked off the initial budgeting process and shared information about the PREPA budgeting process and cycle. Through dialogue and requests for information following the meeting, the gaps detailed in the next table were identified.
III-6 Cost allocation *Extent that organization properly identifies, aggregates and assigns costs to cost activity / line items.*	• On July 7, 2020 PREPA Finance and LUMA Finance kicked off the initial budgeting process and shared information about the PREPA budgeting process and cycle. Through dialogue and requests for information following the meeting, the gaps detailed in the next table were identified.
III-7 Communication *Extent that organization evaluates and communicates budget variances in a timely manner to parties responsible for taking corrective action, including senior management, the Board of Directors, and others, as appropriate.*	• On July 7, 2020 PREPA Finance and LUMA Finance kicked off the initial budgeting process and shared information about the PREPA budgeting process and cycle. Through dialogue and requests for information following the meeting, the gaps detailed in the next table were identified.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
III-1 Processes and structure *Budgeting and forecasting processes, assumptions and scenarios*	• There is a lack of support / backup to annual planned expenditures. The inability to reconcile actuals to planned expenditures results in a breakdown of the budgeting and planning process.	Improvement opportunity
	• Budgets built by department teams use entries that are straight lined across the whole year. This results in large monthly budget to actual variances. The tracking of budgeted versus actual performance does not occur or lacks meaning. Forecasting is nonexistent. (Timing is not profiled into the budgeting process monthly to effectively track performance throughout the fiscal year.) Note: Fuel and purchase power costs are profiled (perhaps completed by Siemens or other external party as part of the generation forecast).	SRP candidate
	• The budget maps to general-level account details, but PREPA has not provided this information to LUMA to reconcile the Certified Budget (as approved by the FOMB on June 29, 2021) to the General Ledger accounts and Budget Online tool details. Ongoing discussions and requests for information continue between the LUMA Finance and Regulatory departments and PREPA's Finance and PREPA PMO-Regulatory departments.	SRP candidate
	• There is little accountability within department teams to have accurate budgets as incentives are not aligned with this performance goal. Department teams tend to work in silos and broader communication / top-down direction and performance goals within the organization do not appear to occur.	Improvement opportunity
	• There is a reliance on consultants to verify, finalize, and complete budgeting details. This results in a lack of control for planned activities and unknown budgeting changes that occur outside of PREPA's budgeting	Improvement opportunity

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	process between consultants and the FOMB. These changes have not been reconciled and/or demonstrated by PREPA Finance to LUMA. The PREPA PMO-Regulatory department has indicated that efforts to regain such control have begun, but adjustments outside of PREPA's control continue to occur, affecting the overall budgeting process. • PREPA has noted a budget approval process. However, accountability and signoff structure / review of performance (Budget to Actuals) have not been demonstrated. • The Title III bankruptcy status has affected long-term budget planning. Budgets are created to manage through the current fiscal year.	Improvement opportunity Improvement opportunity
III-2 **Accounting and regulatory requirements** *GAAP oversight and associated reporting lines*	• Title III bankruptcy status has affected accounting procedures. PREPA currently operates on a cash accounting basis. Exiting Title III will necessitate reexamination of accounting procedures, including how planned costs are treated. The restructuring will require reorganization or "rethinking" of the overall budgeting and approval process. LUMA will bridge this gap.	Improvement opportunity
I-3 **Strategy alignment** *Executive participation, metrics and goals*	• PREPA has indicated that senior management reviews and approves the annual budgeting process. However, oversight and signoff and controls applied to the budgeting development process have not been demonstrated.	SRP candidate
I-4 **Assurance and accuracy of expenditures** *Operational expenditures, including indirect and direct*	• There is a lack of support / backup to annual planned expenditures. The inability to reconcile actuals to planned expenditures has resulted in a breakdown of the budgeting and planning process. • Budgets built using entries that are straight lined across the whole year result in large monthly budget to actual variances with no ability to track budgeted versus actual performance and no controls in place to track and question annual progress. As a result, there is no forecasting. Annual tracking to budget approvals does not occur. • The lack of backup is a large gap to supporting and understanding the overall budget as prepared and filed by PREPA.	Improvement opportunity Improvement opportunity Improvement opportunity
I-5 **Impact of emergent issues on budgets** *Contingencies and emergent issues*	• Budgeting detail does not identify planned expenditures versus contingencies for unknown / uncertain events (e.g., earthquakes and hurricanes).	Improvement opportunity
I-6 **Cost allocation** *Alignment of costs to cost activity and line items*	• A reconciliation and detailed review and variance analysis of planned vs. actual expenditures has not been identified. The lack of a detailed budget profiled to the plan does not allow for budget to actual variances and explanatory details. Timely monitoring, tracking, and correcting does not occur.	Improvement opportunity
I-7 **Communication** *Budget related communications*		

FINANCIAL MANAGEMENT

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
III-1 **Processes and structure** *Budgeting and forecasting processes, assumptions and scenarios*			X		
III-2 **Accounting and regulatory requirements** *GAAP oversight and associated reporting lines*			X		
III-3 **Strategy alignment** *Executive participation, metrics and goals*			X		
III-4 **Assurance and accuracy of expenditures** *Operational expenditures, including indirect and direct*			X		
III-5 **Impact of emergent issues on budgets** *Contingencies and emergent issues*			X		
III-6 **Cost allocation** *Alignment of costs to cost activity and line items*			X		
III-7 **Communication** *Budget related communications*			X		

IV. Financial System Set-up

Evaluation Framework

The Financial System Set-up focus area consists of four sub-focus areas (core and enabling areas that define an effective organization design):

- IV-1 System support of key business processes: financial, accounting, regulatory
- IV-2 Maintain existing system structures
- IV-3 Control key financial reports
- IV-4 Payroll system

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IV-1 **System support of key business processes: financial, accounting, regulatory** *Extent that financial systems support key business processes. Systems provide efficient transaction processing across the organization with appropriate tools in place.*	The review of the Oracle EBS system and how it supports key business processes was completed based on analysis and "discovery session" meetings with PREPA on all major business areas, along with input from the internal project team. Chart of Accounts - The existing chart of accounts was reviewed by multiple stakeholders and was deemed to sufficiently support the business. However, the organization's use of the values available in the system is a noted gap. Large amounts of costs are coded into one general bucket instead of coded into detailed accounts and sub-accounts. This makes detailed regulatory reporting in Oracle EBS impossible. Procure to Pay - Three discovery sessions were conducted for Purchase to Pay (P2P) purchasing in Asset Suite, purchasing in Oracle EBS and accounts payable / disbursements. - There are two procurement processes and systems used within PREPA, Asset Suite for purchases over $5,000 and Oracle iProcurement for purchases under $5,000. - Maintaining and recording two systems and processes is more work and need to investigate why it is necessary. - The purchase order receiving process in some cases occurs after an invoice has been received and there seems to be a process delay in the required documentation that causes delays in payment and unnecessary follow up by the Accounts Payable department. - PREPA uses budgetary controls for the control of small procurement transactions in Oracle which prior to the requisition approval it checks if there is available budget to cover the transaction. Asset Suite does not have this functionality. - Within Asset Suite there are two process, one for materials and another for services. Services should be processed through a custom solution called Contract Payment Authorization (CPA) which controls additional requirements for contract services. The use of a material or services requisition is decided by the user and in many cases not followed. Meaning that service requisitions are entered as material requisitions bypassing the CPA processes. The CPA process is all paper based and does not take advantage of any automation. - Purchasing tolerances can be used in the system to allow for small outages between purchase orders, receipts and invoices. The tolerance is currently set to 0. This means that even if there is a rounding issue between the purchase order and the invoice the purchase order would need to be revised in order to complete payment. This revision takes time and delays the payment process.

Gap Assessment

Sub-Focus Area	Observations & Contributors

	- Asset Suite has only been configured to code requisitions to project numbers not project tasks. All transactions are defaulted with task 1. This is a large limitation on the ability to manage and control large project costs.
	- The Human Resources integration to activate and inactivate employees between Asset Suite and Oracle is a manual process. If not completed after an employee terminates, he or she remains an active user in Asset Suite. This is not an issue if there are strong controls around termination of user access.
	- Since most large purchases should be completed in Asset Suite, Oracle iProcurement has not been configured with an item catalog. The use of an item catalogue helps to define items that are used across the organization and to source those common items for best pricing and also provides a standard for reporting on expenditures.
	- Asset Suite has been configured to create transactions at the time of receipt which would provide timely costs for project execution. The costs are not integrated with Oracle until the end of the month.
	- The receiving transaction processing appears to require an employee to record the receipt in the system as well as include a paper record that is attached. While this is good from a documentation standpoint, consideration should be given on the impact of transaction processing.
	- Payment processing for suppliers is 80% done by check with only 20% of payments being made electronically.
	- There is no invoice scanning technology. Paper copies of invoices are physically stored.
	- The supplier addition process is very robust with many requirements for addition and the addition into the system appears to be controlled within a small group.
	- Employee expense reimbursement is a paper process. There is no automation.
	- Expenses related to capital projects are charged to overhead accounts in the general ledger, and not the project. There is no ability to charge expenses directly to a project.
	- Reimbursement for UTIER expenses are made in cash. All other expenses are reimbursed by check with various deadlines. No reimbursements are made electronically.
	- Inventory uses a manual requisition process. A paper copy of the requisition is taken to the warehouse and depending on the item is either picked at the time or the employee is given a time to come back for pick up.
	- Improvements noted during PREPA discovery sessions concerning inventory include the following:
	  • Receiving process
	  • Give suppliers more visibility to status of payments
	  • Add technology to manage inventory
	  • Install security cameras at warehouses
	  • Add bar coding capabilities
	  • Replace inventory paper requisition process
	  • Implement and improve the governance over item catalogues for control and cost savings
	  • Physical inventory – cycle counts
	  • Have automated payments for expenses, stop paying expenses in cash

Time to Pay:	

Gap Assessment

Sub-Focus Area	Observations & Contributors
	- Time is entered by a crew leader on paper forms. - The version of Storms currently in use is unsupported. - PD Storms is a custom program that is both complex and contains errors that go unfixed due to its complexity. - Employees do not review their own timesheets. Timesheets are only reviewed by the crew leader and supervisor. - Storms is not reconciled to Kronos to ensure that “costed time” is equal to “time worked” as recorded in Kronos. - There is no way in Storms or PD Storms to adjust for time distribution changes made in Oracle EBS via journal entries. - The timelines for Storms and payroll payment are not synced. Storms cuts off on the 20th of the month. Payroll premium pay lags by two to four weeks from time worked. This creates confusion about how payroll is costed to the right distributions. - PD Storms produces an allocation file by employee to be used to distribute payroll costs. This allocation goes through a manual confirmation process to ensure coding is valid and the total equals 100%. Build to Retire: • The management of major capital projects is difficult with the current functionality. As noted above, coding of costs to tasks are not currently supported by Asset Suite, expenses cannot be coded to projects and invoice integration only recorded monthly. • The addition of capital overheads to projects is completed monthly and using a custom program ran by IT. • The methodology that allocates overheads to projects takes the budgeted overhead amount and allocates the total incurred overhead for the period to that department. Then the amount for that department is allocated to the projects that have received costs in that period. This method can create large amounts of overheads to be allocated to projects which are not defendable or reasonable. This methodology should be revisited. • Project creation and approval is a manual paper process and appears to require many levels of approval before it can be created. • New projects created are automatically integrated with Asset Suite so they are available for coding requisitions. There is no such integration for Storms & PS Storms new project values must be added manually to those systems to allow timecards to be created. • Projects are changed to inactive status when project costs reach 90% of estimate. • Project forecasts are not completed in the financial system. • The project closeout process is completely manual and must include in-service date document signatures, approvals, evidence of journal, invoices, and a review of costs by expense types. • Capital projects are reviewed and capitalized in the Property department in Finance. That department reviews the closeout package and completes the necessary identification of assets to be created in fixed assets. • The fixed asset module in Oracle Financials has configures that currently will not allow the recording of asset retirements. This means that values in the sub ledger system are not accurate and would produce inaccurate depreciation calculations. • Depreciation rates have not been updated in Oracle since the 2009 depreciation study.

Gap Assessment

Sub-Focus Area	Observations & Contributors
	• Knowledge of fixed asset processes and system is limited. Fleet: • The fleet consists of 3200 units. • Costs incurred for the fleet are not captured by unit but as a pool. • The Fleet Focus currently used is an out-dated version. • There are 22 fleet maintenance facilities and 44 employees. • Operations brings units in for maintenance at their discretion or when broken. For optimal maintenance to occur, it will be necessary to change behavior.
IV-2 **Maintain existing systems structures** *Extent that financial system is maintained with practices that mitigate risks and support data integrity of financial data.*	- Knowledgeable IT employees support Oracle Financials. - Oracle EBS is maintained, updated and managed by Oracle under a support agreement. - The current version of Oracle is R12. - Other applications that rely on information in Oracle EBS include Asset Suite, CC&B and PD Storms. - PD Storms has dated rules that cannot be fixed due to its complexity, so manual interventions or other workarounds exist. - One employee supports Storms & PD Storms for the entire organization. - The Contract Procurement Approval Process is a custom program. The reliability of upgrades and information integration with other programs is unknown. - There is a lack of automation and system controls to reconcile labor hours (PD Storms (hours costed to total hours worked in Kronos). - There has not been a module reconciliation to date, so the effectiveness of maintenance is unclear. - Depreciation rates have not been updated based on the 2009depreciation study. - There are system issues with the configuration of fixed assets that prevents recording retirement transactions. - The Fleet Focus application software used by the Fleet management groups is outdated and unsupported. - Testing of the application during upgrades are in good shape. Test scripts for the application are maintained. - Application testing practices are in good shape and are disciplined. Testing scripts are maintained and cover all areas. -
IV-3 **Control key financial reports** *Extent that key financial report changes are controlled and managed through a change process which includes testing and approval from appropriate resources.*	- Carve out of T&D GridCo has not occurred. - Most financial reports are created using Oracle Financial Statement Generator (FSG) and custom reports. - Project control functions use Oracle Discoverer. - For some modules a list of reports is available. - There is no ad hoc reporting tool available to the users that would support analysis required for business decisions. -

Gap Assessment

Sub-Focus Area	Observations & Contributors
IV-4 **Payroll system** *Extent that organization has processes in place to ensure the integrity of the information produced by the payroll system.*	- WorkDay Payroll software will replace the existing payroll software in Oracle EBS. Certain risks are associated with the new implementation, including undefined human resource data, undefined union contracts, configuration and integration risks, day-one cut-over and executive payroll security.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IV-1 **System support of key business processes: financial, accounting, regulatory** *Extent that financial systems support key business processes.*	- Employee expense reimbursement is a manual, time-consuming process. The lines that form for cash expense disbursements may take hours each week.	SRP candidate
	- A new process and system for tracking and recording employee time is needed. The existing process is manual, uses an unsupported tool, allows for changes after approval without audit, and has technical issues that cannot be fixed due to the program's complexity. Recording of time to task level in Storms is not available and therefore would not meet the requirements for FEMA capital funding.	SRP candidate
	- There is a lack of automation and system controls for reconciliation, specifically between hours costed in PD Storms and total hours worked in Kronos.	Department level gap
	- Project approvals are manual and require approval from various groups. These tasks are currently done by paper circulation. The use of standard Oracle EBS workflow would be beneficial.	Department level gap Improvement opportunity
	- Capital overhead is cleared to project monthly, which creates over or under burdening depending on expenditure levels. Tasks are done manually, and rates have not been reviewed for many years. Project accounting can apply burdens automatically and produce reports that are timely. Material and service receipts of purchase orders are not done in a timely manner and there are many manual steps that duplicate system receipts. The process requires a lot of time and effort in the Disbursement department and could be improved.	Improvement opportunity Improvement opportunity

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IV-2 Maintain existing systems structures *Maintenance of financial systems to support data integrity and mitigate risks*	-	The split of T&D and Generation has not occurred. - The fixed asset depreciation rates have not been updated since 2009. - The fixed asset functionality in Oracle has not worked since the last upgrade several years ago so retirements have not been recorded. - There is only one person that administers the STORMS and PD Storms applications, which represents a risk to the organization.	Priority Department level gap SRP candidate SRP candidate
IV-3 Control key financial reports *Control of financial reports*	-	There is no ad-hoc reporting tool for users to complete analysis to support decision making and all data reports must be created as custom reports.	SRP candidate Improvement opportunity
IV-4 Payroll system *Integrity of payroll information*	-	None	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IV-1 System support of key business processes: financial, accounting, regulatory *Extent that financial systems support key business processes.*			X		
IV-2 Maintain existing systems structures *Maintenance of financial systems to support data integrity and mitigate risks*				X	
IV-3 Control key financial reports *Control of financial reports*			X		
IV-4 Payroll system *Integrity of payroll information*					X

V. Real Estate

Evaluation Framework

The Real Estate focus area consists of six sub-focus areas (core and enabling areas that define an effective organization design):

- V-1 Business practices
- V-2 Real estate portfolio
- V-3 Facilities
- V-4 Third-party contracts
- V-5 Physical security
- V-6 Environmental services

Observations & Contributors

Sub-Focus Area	Observations & Contributors
V-1 **Business practices** *Extent that department operates in a stand-alone "silo" or engages with other departments to meet company-wide goals. The degree to which managers instill a collaborative work environment and mobilizes resources.*	- The Real Estate department engages with other business units when the unit has a real estate need. The unit approaches the department to facilitate and coordinate all due diligence activities across various departments including the Risk department, Health Safety and Environment (HSE), Legal Affairs, etc. however, this isn't a controlled practice. Supporting departments rarely perform their reviews on time, or not at all. - A collaborative work environment is lacking between the Real Estate department and other departments included in the due diligence process. Contracts and other related documents are reviewed by Legal for long periods of time with no accountability regarding responsibility or transaction management. - The lack of internal controls and communication between the business units and the Real Estate department results in a lack of strategic planning and a reactive environment. This is in contrast with the desired state of proactive, beneficial planning practices, effective process flows and shared information. - The Real Estate department does not have a dedicated legal expert or team that reviews real estate transaction documents or assists with associated legal issues. Therefore, there is no control over the timing and accountability of real estate transactions.
V-2 **Real estate portfolio** *Demonstrates due diligence, appropriate levels of authority, and coordinated workflow for activities related to real property acquisition and disposition.*	- Responsible due diligence occurs when real estate is acquired. This includes Phase I ESA, risk review and property valuations (appraisal or market comps). - There is a documented process flow for property acquisition and disposition. - There is a documented approval matrix for contract execution. Business units also bypass the Real Estate department processes sourcing their own properties and negotiating their own terms. The real estate portfolio is tracked and managed via several Excel documents and all real estate documents are paper-based files that are not stored electronically.
V-3 **Facilities** *Demonstrates the ability to develop well-structured Facility programs and initiatives.*	- The Architectural department is highly respected and sought after for building projects. Personnel are highly qualified, and the team is led by a strong department lead. There are clear processes in place, open lines of communication with other departments, strong controls on processes and effective project resource allocation. - The Facilities department is decentralized and manages two primary locations – Santurce and Monacillos. The department's organizational structure below the supervisory level is unclear, and there is lack of understanding concerning roles and responsibilities of team members. Processes are not documented and cannot

Gap Assessment

Sub-Focus Area	Observations & Contributors
	be described well. Other observations concerning the Facilities department include: • There is a lack of thought and strategy supporting the development of budgets, programs and initiatives. • There is no employee training. Yet, there are concerns regarding the safety of internal employees and external contractors. • All Facilities work requests are submitted to the department Administrator who assigns specific tasks. • There is a lack of technology and software necessary to manage daily facility-related tasks and assignments. • There is a lack of off-site storage for documents and files. - There is a lack of auditing and inspections required by regulation and concerning the physical condition of facilities systems, parts, and components. - There is a lack of landscaping schedules, services, or vegetation management. - There is a lack of janitorial services or lack in quality of services provided. - There is a lack of reliable waste management and recycling programs. - There are issues with warranties on products such as roofs due to storms. - There are no monthly reviews or walk through of space to confirm burnt out lights, heating controls, debris in spaces. - A repair and maintenance program are needed for building faces – e.g., painting. - There is a lack of employee services such and providing coffee and supplies. - A reliable waste management and recycling program is needed. - There is no confidential shredding program. - There is no master key system in the building and employees can add locks as needed. - There is a lack of pest control services. - A vendor has not been identified to address signage needs. - Life, fire, and safety systems are lacking, and signs and materials do not meet building code. - There are issues with warranties on products such as roofs due to storms. - There is congestion into facilities with one security access point. - There is a lack of directional signage. - Upgrades to electrical panels are needed. - Upgrades to generators are needed. - Upgrades required for interior and exterior lighting. - Parking lot repairs are needed. - There is a lack of interior and exterior building signage. - There is significant damage to several buildings from earthquakes and hurricane Maria. - There are old and failing building systems, parts, and components. - There is a lack of or non-existent building automation systems. - Repairs to ceiling grids are needed including T-Bar and ceiling tile replacements. - Repairs to building HVAC systems are needed.

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Sub-Focus Area	Observations & Contributors
	- Upgrades to elevator systems are needed. - Replacement of some windows and doors are needed. - Upgrades for yard and perimeter lighting are needed. - Upgrades to fencing and intrusion detection are needed. - Washrooms need upgrading. - Parking barriers and site jersey barriers need to be replaced. - Reflective ceiling studies are needed. - Electrical panel replacements are needed. - Sprinkler systems need to be installed. - Areas deemed uninhabitable need to be demolished. - New construction of some facilities is Capital upgrades to repair facilities due to deterioration and lack of maintenance. - A furniture decommissioning project should be established. - Furniture replacement project should be established. - The Architectural team is not equipped with the latest software to perform their roles effectively. - A database / technology to capture facility occupancy or stacking information is lacking. - A conference room booking system is needed. - An effective asset management system is needed. Asset management is currently paper based and strenuous, and as such disadvantageous to the employees. - A facility request system is not in place. - A space management system is not in place. - A project system is not in place. - Floorplans are not centralized and housed in a central repository. - Floorplans do not have seating plans, department information, or occupancy vs vacancy rate information. - GIS mapping does not include commercial assets and real estate. - Estimating programs specific to island architecture and construction are not in place. -
V-4 **Third party contracts** *Extent that well-established third party contracts are in place that are regulatory compliant and benefit the organization.*	- It is unknown which contracts and associated processes for third party goods and services are in place. The method for ordering new goods and services is unclear.
V-5 **Physical security** *Facilities are physically secure and there is a high level of importance placed on physical security at each location.*	- Physical security guards are prevalent in all facilities. - Security processes related to access for personnel among buildings are in alignment.

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Sub-Focus Area	Observations & Contributors
	- There are strong controls to restrict access by external parties within Santurce and Monacillos, however, card access is not in place island-wide and physical keys or doors are not locked at all. - There is a lack of monitoring equipment. - Fence lines have deteriorated, are broken, unlocked, or trees and shrubs have overtaken fence lines causing weakening points and easy access for intrusion.
V-6 **Environmental services** *Determine overall commitment to environmental due diligence for acquisition and disposition of assets and real property.*	Policies and procedures have not been established for the responsible disposition and decommissioning of facilities assets Hazardous materials testing is not common practice for new acquisitions or dispositions. Air quality testing is not a common practice for existing assets or assets that have been impacted by natural disaster events.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
V-1 **Business practices** *Collaboration with other relevant departments*	- The Real Estate department is engaged with other business units when the unit has a real estate need but does not adequately control the process.	Improvement opportunity
	- There is a lack of internal controls and communication between business units and the Real Estate and Facilities Services departments.	Department level gap
	- There is a lack of collaboration between Real Estate and other departments regarding the real estate due diligence process. The Real Estate department does not have a dedicated legal expert to review documents.	SRP candidate
V-2 **Real estate portfolio** *Due diligence and processes for real estate acquisition and disposition*	- Lease contracts that have expired have not been renewed, nor have new contracts been established.	Improvement opportunity
	- There is a lack of accurate data depicting physical addresses and properties within the Real Estate portfolio.	Improvement opportunity
	- There is a lack of adequate technology to manage, store, and retrieve real estate portfolio information electronically.	Department level gap
V-3 **Facilities** *Development of facility programs and initiatives*	Preventative Maintenance Program - Develop a preventative maintenance program to address management of;- asset management - routine repairs and maintenance - non-routine repairs and maintenance	SRP candidate
	Tenant Services Program - Develop a tenant services program to manage services related to employee comfort; - Janitorial services - Relocation services	SRP candidate

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
	- Coffee and water programs - Waste and recycle management	
	Capital Program Develop a capital program to address building code deficiencies, impairments, and building ailments and improve the overall health of all assets and site infrastructure.	SRP candidate
	Technology Requirements Provide tools and technological systems for employees to effectively perform their roles.	SRP candidate
	Processes, Procedures, and Workflow Implementation - There is a lack of auditing and inspections after facility work is completed. - There are no strategies concerning bulk order purchases, standardization or maximizing efficiencies throughout the supply chain. - There are no monthly reviews of seating and space plans to confirm drawings are accurate.	SRP candidate
	Processes, Procedures, and Workflow Development - There is a lack of clear process and timelines for procurement of materials, goods and services.	Improvement opportunity
	Change Management - Centralizing Facilities - There is a lack of understanding surrounding the benefits of a centralized facilities services department. - Departments that should be supported by the facilities services model in Santurce and Monacillos still hold budgets for facilities related services and purchases.	Improvement opportunity
	Development of Organizational Structure and Recruitment - There is a lack of understanding of positional scope, roles and responsibilities. - There are gaps in staffing requirements for in-scope personnel yet an excess of staff in middle management.	SRP candidate
	Sustainability Initiatives - There is a lack of responsibility for decommissioning of materials and products. - There is a lack of sustainable programs such as rainwater collection. - A building management system is needed to track peak loads to find trends and balance power usage.	SRP candidate
	Security Program - Card access system is deficient. - Primary entrance points would benefit by having bi-lingual guards posted. - Upgrades and redeployment of card readers and CCTVs are needed to heighten intrusion detection. - The process for security access request should be automated to ensure proper tracking and management of access control.	SRP Candidate

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Sub-Focus Area	Major Gaps	Categorization
	- The strong emphasis placed on physical security may have created an overabundance of on-site security manpower at locations. Safety Program - Employees disregard safety protocols such as evacuating during an alarm event. - There are safety issues regarding warehouse racking and piling of materials. - There is a lack of awareness for evacuation materials, procedures, and processes. - There is a lack of safety training and protocol for internal employees and external vendors.	SRP Candidate
	Storage and Digitization - There is a lack of cost-effective storage for materials. Historical files take up prime real estate.	Department level gap
	Internal Service Workers - The quality of work by internal service workers such as painters and drywallers is subpar.	Department level gap
	Business Responsibilities - Business units are unable to focus on core business when managing facilities services tasks. This also results in Facility Services' needs going unattended when core business needs are given priority attention.	SRP Candidate
	Storm Preparation - Facility Services ceases all operational activities and services when storm preparation is required. - There are no documented processes to support storm preparedness, business continuity, and crisis management.	SRP Candidate
	Environmental Program - Several buildings appear to contain lead, mold and asbestos. Further testing and action are required. - Several facilities appear to have environmental concerns such as ground contamination from chemical leeching and spills. Further investigation is required. - Several buildings have been closed by OSHA due to safety concerns. Needs to be examined/addressed. **Design and Space Planning** Space studies are needed to optimize facility space. - Adjustments for space standards should be reviewed with the consideration of decreasing the square footage per person ratio.	Department level gap
V-4 **Third party contracts** *Establishment of regulatory compliant and beneficial third party contracts*	- There is a single approver for the entire department. - A list of third party contracts or information on primary vendors or agreements has not been made available. - It is unclear if all third party bids are made public and what are the procurement thresholds. - There are no procurement cards for employees.	Department level gap Department level gap

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Sub-Focus Area	Major Gaps	Categorization
	- Third party leases are often tied up in the Legal Affairs department for extended periods of time. Leased facilities are often occupied under expired lease contracts.	Department level gap Improvement opportunity SRP candidate
V-5 Physical security *Physical security of facilities*	- There is a strong emphasis on locking away personal belongings.	Department level gap
V-6 Environmental services *Commitment to environmental due diligence as part of real estate acquisition and disposition*	- There is a lack of understanding between the Facilities department and the Environmental department. This includes the relationship between teams, communication between teams, and the policies, processes, and procedures in effect. - The role of the Environmental department is unclear concerning assessing a new build, acquisition, disposition, extension, or change to facilities or properties.	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
V-1 Business practices *Collaboration with other relevant departments*	X				
V-2 Real estate portfolio *Due diligence and processes for real estate acquisition and disposition*			X		
V-3 Facilities *Development of facility programs and initiatives*	X				
V-4 Third party contracts *Establishment of regulatory compliant and beneficial third party contracts*			X		
V-5 Physical security *Physical security of facilities*			X		
V-6 Environmental services *Commitment to environmental due diligence as part of real estate acquisition and disposition*		X			

VI. Risk Management

Evaluation Framework

The Risk Management focus area consists of four sub-focus areas (core and enabling areas that define an effective organization design):

- VI-1 Processes and structure
- VI-2 Risk identification and coverage adequacy
- VI-3 Loss analysis and forecasting
- VI-4 Claims and reserve practices

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VI-1 **Processes and structure** *Extent that organization has built processes and has efficiently structured itself to handle the risk and insurance tasks required of a large municipal utility. Effectively manages subcontractor insurance.*	- The current Risk Management structure is disjointed and understaffed by approximately 50%. The department has operational processes in place but seems to function to simply report information up the chain. It is not reaching its full potential and importance to the organization. - Subcontractor insurance is managed at the procurement stage. Draft contracts are provided to the Legal department to edit for changes to insurance limits. A matrix for requiring higher limits from subcontractors who can provide them does not exist. It is not clear how subcontractor certificates of insurance are handled for renewal.
VI-2 **Risk identification and coverage adequacy** *Extent that organization identifies and addresses risks that affect its operations. It evaluates the effectiveness of its risk-transfer products and continuously strives for coverage improvement.*	- The Enterprise Risk Management (ERM) process is nascent at PREPA and as part of building an ERM program they have initiated a Risk Committee to oversee the risks incorporated into the ERM model.. The ERM framework and supporting documents are in place and a local consultant is directing the process. - However, risks have not yet been processed through the new model, so it remains unclear whether the level of support from the local consultant will identify all enterprise-level risks. LUMA is concerned that given their financial situation that PREPA consider themselves in a weak position to push insurance markets to provide the appropriate options, coverages and alternative risk transfer options that could benefit them. The insurance broker tasked to renew the large property renewal does not seem to work with the Risk department or even present renewal terms to the department , instead they present their results to the Treasury department and then inform the Risk department of what transpired during the renewal process and what results they were able to bring to the table.
VI-3 **Loss analysis and forecasting** *Extent that organization applies loss analysis and forecasting methodologies that identify current and future trends to manage risk.*	- PREPA does not apply loss analysis or forecasting practices, which puts the organization at a disadvantage with insurance carriers who might provide preferred rates if relevant data about efforts to control claims and predict future performance was available.
VI-4 **Claims and reserve practices** *Extent that organization effectively receives, reports, handles and closes claims. The organization effectively monitors reserves.*	- Claims for bodily injury and all but minor property damage are not handled in the Risk department. Rather, claims handling is provided by the Legal department. The Risk department does not have visibility to claims until they are settled and when loss runs are pulled from carriers at year end. - Hiring a third party administrator or handling more claims in house should help match the purchasing of insurance to the spending done by the carriers.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VI-1 **Risk management processes and structure** *Processes and structure for risk and insurance tasks*	- The Risk department appears disconnected from some processes normally under a Risk department's purview. - The primary insurance broker has the direct relationship with the insurance carriers and in some cases markets large renewals without the advice, consent or visibility of the Risk department. - It is not apparent how Risk Management obtains exposure information or how reliable that information is. They could be missing insurable values or assets that are not insured or are underinsured.	Department level gap SRP candidate Department level gap
VI-2 **Risk identification and coverage adequacy** *Identification and addressing of risks to operations*	• An enterprise-wide risk management system has been initiated but is not fully functional. This is essential for the Risk department to identify and manage risks in the various directorates. • The Risk department may not be fully aware of all risk exposures to the company. It may not fully understand the worldwide insurance markets and solutions available. • PREPA does not currently purchase cyber insurance. This could potentially expose the company to cyber extortion, which could lead to downtime, exposure to ransomware and impending expenses for downtime and lost revenue. There is also potential exposure to lost customer records.	SRP candidate SRP candidate Priority
VI-3 **Loss analysis and forecasting** *Quality of loss analysis and forecasting methodologies*	• There is a lack of formal loss analysis and forecasting. There is no risk management information system in place to collect exposure values or to trend and track losses at any level. • Losses seem to be only reviewed once a year at renewal. Since the claims function is largely handled by the Legal department, there is a disconnect between the purchase of the insurance and the handling of claims. This is not an ideal situation nor a common practice.	Department level gap Department level gap
VI-4 **Claims and reserve practices** *Practices to receive, report, handle and close claims*	• The Risk department mainly handles small property damage claims and routes other claims to the Legal department. There is little feedback communicated about claim outcomes to the departments. • It would be more optimal for a company this size to handle more claims in the Risk department and liaise with the Legal department as needed. • Investigations of serious accidents are not done or directed by the Risk department. This will likely cause claim costs to increase and put PREPA in a weaker position to legally defend a case.	Department level gap Department level gap SRP candidate

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VI-1 **Risk management processes and structure** *Processes and structure for risk and insurance tasks*		X			
VI-2 **Risk identification and coverage adequacy** *Identification and addressing of risks to operations*		X			
VI-3 **Loss analysis and forecasting** *Quality of loss analysis and forecasting methodologies*	X				
VI-4 **Claims and reserve practices** *Practices to receive, report, handle and close claims*		X			

VII. Sourcing, Procurement & Non-federal Funding

Evaluation Framework

The Sourcing, Procurement & Non-federal Funding focus area consists of four sub-focus areas (core and enabling areas that define an effective organization design):

- VII-1 Processes and structure
- VII-2 Contracts and contracting process documentation
- VII-3 Non-federal funding procurement guidelines
- VII-4 System and technology requirements

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VII-1 Processes and structure *Extent that end-to-end procurement processes are structured. Examines:* • *Areas of accountability and responsibility that reside in the function as opposed to "procurement" functions residing in operational teams* • *Policies, procedures, and processes that govern the workflow from vendor engagement to payment (This goes beyond non-federal funding procurement as it includes requisitioning and purchase order processes.)*	- Authority delegation is centralized. The head of the supply chain holds most of the approval authority with a handful of delegations. Shop supervisors have a delegation for local, minor purchases related to fleets. - iProcurement software is used for minor procurements up to $5K arriving in less than three days. - Larger (non-minor) procurements go through UTIER buyers and are done in Asset Suite. - Requests for proposals (RFPs) go through multiple levels of approval prior to issuance. This process extends timelines but will discontinue post commencement. - Contracts greater than $10M are reviewed/approved by FOMB. - PREB reviews RFPs and contracts for generation modernization and initiatives that will increase the rate base. - Processes are designed for exceptions. There are 7 separate procurement processes (spot buys <$5K, small purchases $5-200K, sealed bid process, request for proposals, request for professional services, emergency, fuel). - Procurement department is not the centralized starting point for all procurements; some go through the Project Management Office (PMO) or the Legal department, perhaps causing efficiencies and duplicated efforts. - A small number of contract templates exist. Contracts are custom tailored by the Legal department based on these templates.
VII-2 Contracts and contracting process documentation *Extent that material system contracts and generation supply contracts are available and their renewal information identifiable to assure operation continuity.*	- Existing reporting is mediocre, vague, and ineffective. There is no contract list that includes both directorate and scope. - Contracts are not stored in a central location.
VII-3 Non-federal funding procurement guidelines *Policies, processes, and procedures with respect to procurement guidelines and*	- Per the Enabling Act, all purchases and contracts for goods and services are made through a sealed bid process. Exceptions include: - Acquisitions up to $200K

contractual provisions. This applies to commercial transactions, post-award contract administration and oversight, including standards and methods for: addressing employee and organization conflicts of interest, avoiding acquisition of unnecessary or duplicative items, granting awards to responsible contractors, maintaining records of procurement history, managing time-and-materials contracts, resolving disputes, selecting transactions for procurement and conducting technical evaluations.	- Emergency deliverables of materials, supplies, equipment and services (As defined term in the bid guidelines, emergencies, can be a major event such as natural disasters or urgent matters such as an event that would negatively impact a project timeline, customers, or the environment.) - Acquisition of spare parts, accessories, supplemental equipment, or services required for previously furnished or contracted equipment or services - Professional or expert services - Acquisitions provided only by a single source or when prices are regulated by law (direct negotiation) - Acquisitions obtained through the RFP process as determined by the Governing Board to be in PREPA's best interests - Fuel purchases - The sealed bid process is similar to a request for tender. PREPA generally uses the RFP process rather than sealed bids. RFPs are used when: - Expertise is required. - Proponents who are capable of filling the business need are known. - There is no minimum number of bids required for either sealed bids or RFPs. - The Project Management Office runs RFPs that are of strategic importance or have relevance to the fiscal plan. - The following general guidelines apply to all contracts: • Contracts must be in writing. • Contracts are effective from the execution date. • Contracts contain defined contract terms, detailed scope of work, payment terms, and budgeting account numbers and insurance terms recommended by the Risk Management office. • Contracts are submitted to the Puerto Rico Comptroller Office (PRCO) within 15 days of execution. Contracts, including amendments, cannot be paid until registered. • Payment cannot be made for work performed prior to the contract's effective date or after its expiration. • Contract amendments must be executed prior to the contract's expiration.
VII-4 System and technology requirements *Extent that manual processes are replaced with a digital procurement process, including e-bidding, technical and commercial evaluations, contract development and issuing purchase orders.*	- There are two systems for procurement activity: Oracle and Asset Suite. Oracle arose from the need to go paperless. However, a single system is preferred. Asset Suite is the preferred system choice due to its inventory management capabilities. - Bid regulation permits manual processes for sealed bids and supplier registration. Some buyers are hesitant to use digital processes because electronic bidding and recordkeeping are not specifically mentioned in existing regulation. This creates inefficiency and expands timelines. - Power Advocate is used for e-bidding. - Spend Intelligence is used only by the IT department. - The ability to create new reports or analyze data for procurement activity is done outside the Procurement department.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VII-1 **Processes and structures** *Structure of procurement, including accountability and processes*	• End-user contract requests are initially sent to the Legal department. Procurement becomes involved after contract negotiation. • The Procurement department is not the centralized starting point for all procurements; some procurements are initiated by the Project Management Office (PMO) or the Legal department. This causes some efficiencies and duplicated efforts. • The PREPA Purchasing department is transactional and does not have strategic workgroup oversight to proactively source and manage vendors. • Certain government laws and the current bankruptcy status dictate processes that do not align or are inefficient. • There are no corporate credit cards in use. • Contract management processes exist but are inconsistently adopted by end-user groups. • Manual processes for supplier registry and bidding are permitted by outdated policies and regulations. • Vendor segmentation is not applied as a consistent strategy.	Department level gap Department level gap SRP Candidate Improvement opportunity SRP candidate SRP candidate Department level gap Department level gap
VII-2 Contracts and contracting process documentation *Availability and ease of renewal of contracts*	• Contract listing does not specify scope, description or PREPA department ownership / management. • Contract terms are annual due to bankruptcy status requirements. There are no long-term strategic contracts.	SRP candidate Department level gap
VII-3 **Non-federal funding procurement guidelines** *Policies, processes, and procedures with respect to procurement guidelines and contractual provisions.*	• Some PREPA procurement processes are not mapped out or lack supporting procedures. • There are a limited number of contract templates as the Procurement department is not the initial contract request department.	SRP candidate Department level gap
VII-4 **System and technology requirements** *Extent that manual processes are replaced with a digital procurement process*	• Both Oracle iProcurement and Asset Suite software are used to record procurement activity; neither is used for e-bidding. PowerAdvocate is only used for e-bidding. PowerAdvocate is not used for strategic sourcing development or spend categorization.	Improvement opportunity

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VII-1 **Processes and structures** *Structure of procurement, including accountability and processes*			X		
VII-1 2 Contracts and contracting process documentation *Availability and ease of renewal of contracts*		X			
VII-1 3 **Non-federal funding procurement guidelines** *Policies, processes, and procedures with respect to procurement guidelines and contractual provisions.*		X			
VII-1 4 **System and technology requirements** *Extent that manual processes are replaced with a digital procurement process*			X		

LUMA

Gap Assessment

Regulatory

Contents

Gap Assessment

General Approach

The Regulatory gap assessment includes the following main areas of focus, as shown in the tables below:

General Management: Nine management focus areas apply to all departments.

Core Business: There are 10 core business focus areas specifically relating to Regulatory operations.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting & Cost Performance
III	Leadership Management
IV	Process Efficiency & Effectiveness
V	Employee Training & Development
VI	Workforce Management
VII	Management Systems & Technology
VIII	Performance Metrics & Continuous Improvement
IX	PREPA Culture & Momentum
Core Business Focus Areas	
X	Permit Compliance
XI	Land Management
XII	IRP Coordination: Load Forecast
XIII	IRP Coordination: Energy Efficiency
XIV	IRP Coordination: Renewable Generation/Energy Storage
XV	IRP Development
XVI	Intra-Department Regulatory Process
XVII	PREB Filing Process
XVIII	External Relationships
XIX	Regulatory Strategy

We applied the following standard methodology to both the General Management and Core Business Assessments, thus forming the bases for identifying gaps.

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus & Sub-Focus Areas

The **general management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas			
I	**Organization Design Effectiveness**	I-1	Span of Control	I-3	Ratio of Administrative to Direct Workers
		I-2	Clarity on Management & Supervisory Roles	I-4	Impact of Protected Patronage Workers
II	**Budgeting & Cost Performance**	II-1	Actual Expenditures as a Percentage of Budgeted	II-4	Overtime & Contractors Management
		II-2	Impact of Emergent Issues on Budgets	II-5	Direct and Allocated Indirect Cost Management
		II-3	Unit Cost/Productivity Management		
III	**Leadership Management**	III-1	Qualifications & Experience	III-3	Ability to Deliver Results
		III-2	Accountability	III-4	Inter- & Intra-Organization Collaboration
IV	**Process Efficiency & Effectiveness**	IV-1	Potential Risks to Post-Commencement	IV-3	Process Compliance Management
		IV-2	Process Familiarity by all Stakeholders	IV-4	Efficiency of Overall Process Flow
V	**Employee Training & Development**	V-1	Training Budgets & Program Effectiveness	V-3	Skills Assessment & Personnel Training Plans
		V-2	Ability to Cross-Train as Personnel Development Path	V-4	Demographics & Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1	Effectiveness of Current Workforce Management Processes	VI-2	Time Charging & Productivity Tracking & Reporting
VII	**Management Systems & Technology**	VII-1	Process Automation	VII-3	Interaction or Linkage with Other Functional Areas' IT Plans or Systems
		VII-2	Adaptability to New Systems & Technology	VII-4	Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics & Continuous Improvement**	VIII-1	Recognition of Critical Performance Metrics	VIII-4	Instances (or Lack) of Data-Driven Management Initiatives
		VIII-2	Performance Metric Collection, Validation & Reporting	VIII-5	Recent Performance Trends
		VIII-3	Root Cause & Trend Analysis		
IX	**PREPA Culture & Momentum**	IX-1	Resistance (Active or Passive) to LUMA Management	IX-3	Employee Empowerment / Action Orientation
		IX-2	Employee Morale/Excitement about LUMA	IX-4	Timeframe to Improve Performance
				IX-5	Impact of Organization Silos

I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Focus Area consists of four sub-focus areas:

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	▪ Permit Compliance: The organizational responsibility for managing compliance with operational and environmental permits has been delegated to the various departments and there is a lack of an organization management system to ensure compliance. ▪ Land Management: A Land Department managing the full scope of services required does not exist in the organization. Some functions are managed through the Catastro office, and these core functions are performed well. The reporting relationships are not clear through the organization. ▪ Regulatory Coordination: Roles are throughout the organization, performed by remaining key individuals in a reactive state and using undocumented processes. ▪ IRP coordination: Not a centralized function. Roles, with the heavy presence of third-party consultants, are throughout the organization managed by a small number of individuals.
I-2 Clarity on Management & Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	▪ Permit Compliance: There is a lack of clarity on responsibilities for managing compliance to permit obligations. ▪ Land Management: There appears to be clarity of roles for core functions and strictly defined activities. Most of the activities are concentrated in one. Land acquisition or land management activities involving outside parties may lack specific attention. ▪ Regulatory Coordination: Uncertain. Roles are throughout the organization, performed by remaining key individuals in a reactive state and using undocumented processes. ▪ IRP Coordination: Not clear. Lack of personnel requires hiring third party consultants
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	▪ Permit Compliance: Undetermined. ▪ Land Management: Essential functions appear to be performed reasonably with a suitable proportion of administrative to direct workers. However, processes tend to be manual. ▪ Regulatory Coordination: Opportunities to improve processes or increase computer technology, but to achieve a proactive state, uncertain as to whether this would create efficiencies in administrative personnel. ▪ IRP Coordination: Undetermined.
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	▪ Permit Compliance: No identification of patronage workers in this area. ▪ Land Management: No identification of patronage workers in this area. ▪ Regulatory Coordination: No identification of patronage workers in this area. ▪ IRP Coordination: No identification of patronage workers in this area.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	▪ Permit Management: There is a lack of an organizational management system for permits and permit compliance. ▪ Land Management: While certain core areas appear to be managed appropriately, there is a need to better manage processes with third parties (pole attachments, crossing agreements) and with landowner relations (lack of notifications, negotiations, damages). ▪ Regulatory Coordination: There is a lack of documented roles, responsibilities and understanding of expectations for the individuals within PREPA who support regulatory filing. ▪ IRP Coordination: Lack of coordination between areas resulting in differences between data in two different systems that are supposed to be aligned. No central report processing.	Department level gap
I-2 Clarity on Management & Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	▪ Permit Management: Organizational structure and management systems are not in place to effectively manage compliance obligations. ▪ Land Management: Good clarity for core functions but insufficient attention to certain processes. ▪ Regulatory Coordination: There is a lack of documented roles, responsibilities and understanding of expectations for the individuals within PREPA who support regulatory filings. ▪ IRP Coordination: Lack of documented processes.	Department level gap
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	▪ Permit Management: Organizational structure and management systems are not in place to effectively manage compliance obligations. ▪ Land Management: Good clarity for core functions but insufficient attention to certain processes. ▪ Regulatory Coordination: There is a lack of documented roles, responsibilities and understanding of expectations for the individuals within PREPA who support regulatory filings. ▪ Regulatory Coordination: Lack of documented processes.	Department level gap
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	▪ Permit Compliance: No identification of patronage workers in this area. ▪ Land Management: No identification of patronage workers in this area. ▪ Regulatory Coordination: No identification of patronage workers in this area. ▪ Regulatory Coordination: No identification of patronage workers in this area.	Improvement opportunity

REGULATORY

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	Permit Compliance Regulatory Coordination	Land Management IRP Coordination			
I-2 Clarity on Management & Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	Permit Compliance Regulatory Coordination	Land Management IRP Coordination			
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	Permit Compliance Regulatory Coordination IRP Coordination	Land Management			
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*		IRP Coordination	Permit Compliance Land Management Regulatory Coordination		

II. Budgeting & Cost Performance

Evaluation Framework

The Budgeting & Cost Performance Focus Area consists of five sub-focus areas:

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost/Productivity Management
- II-4 Overtime & Contractors Management
- II-5 Direct & Allocated Indirect Cost Management

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
II-1 **Actual Expenditures as Percentage of Budgeted** *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	▪ Permit Compliance: There is no specific budget applied to managing compliance to permits. The activities have been delegated to the functional areas without an apparent management system in place. Budgets for compliance activities are often not visible within the departmental budgets. ▪ Land Management: The core functional area appears to maintain key functions within the departmental budget; however, tracking expenditures on various activities is not apparent. ▪ Regulatory Coordination: Regulatory filings are performed on a reactionary basis with limited resources and not using formalized project management practices. ▪ IRP Coordination: No clear budget defined for IRP preparation and control.
II-2 **Impact of Emergent Issues on Budgets** *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	▪ Permit Compliance: Response to permit compliance issues are reactive, which results in additional expenditure requirements. The net result is either the compliance activity is deferred (which is not desirable), funds necessary for the compliance activity are taken from other planned budgets or an increase in expenditure. ▪ Land Management: Work tends to be managed to the budget available, meaning that critical work may be deferred or not performed when required. ▪ Regulatory Coordination: Regulatory filings are performed on a reactionary basis with limited resources, not using formalized project management practices. ▪ IRP Coordination: Reactionary nature leads to reliance on third-party consultants.
II-3 **Unit Cost/Productivity Management** *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	▪ Permit Compliance: There has been no observation of this kind of measurement in place. ▪ Land Management: There has been no observation of this kind of measurement in place. ▪ Regulatory Coordination: Regulatory filings are performed on a reactionary basis with limited resources and not using formalized project management practices. ▪ IRP Coordination: No evidence of a tracking system.
II-4 **Overtime & Contractors Management** *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	▪ Permit Management: Response to compliance issues tends to be reactive and unplanned; therefore, overtime or contract resources required to correct a compliance issue will negatively affect the budget. ▪ Land Management: The response to legal issues relating to land rights may require additional legal resources and impact expenditures for some core responsibilities that cannot be deferred. ▪ Regulatory Coordination: Regulatory filings are performed on a reactionary basis with limited resources, not using formalized project management practices. ▪ Regulatory Coordination: Due to the reduced number of personnel, many IRP tasks rely on third-party consultants.

REGULATORY

Gap Assessment

Sub-Focus Areas	Observations & Contributors
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ Permit Compliance: Compliance activities are generally absorbed within the department budgets. The management systems to track the expenditures versus the activities to meet compliance obligations are not apparent. ▪ Land Management: Budgets are forecast based on the department staff levels and work is planned around employee availability. ▪ Regulatory Coordination: Regulatory filings are performed on a reactionary basis with limited resources and not using project management practices. ▪ IRP Coordination: No formalized project management practice is in place. The work is done on an as-needed basis.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
II-1 Actual Expenditures as Percentage of Budgeted *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	▪ Permit Compliance: Compliance activities may result in unplanned expenditures. ▪ Land Management: Necessary work is not performed or not performed on time due to budget constraints. ▪ Regulatory Coordination: This area is understaffed with no capacity to work on improving processes or schedules. ▪ IRP Coordination: There are not enough PREPA employees working coordinating IRP activities, no project management practices are in place.	Department level gap
II-2 Impact of Emergent Issues on Budgets *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	▪ Permit Compliance: Activities to meet compliance obligations may not be performed due to budget constraints and competing priorities within department budgets. Necessary activities for compliance may result in increased expenditures. ▪ Land Management: Work performed will match the level of staffing, which may mean that necessary work is not performed or not performed on time. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. ▪ IRP Coordination: There are not enough PREPA employees working on coordinating IRP activities and there are no project management practices in place.	Department level gap
II-3 Unit Cost/Productivity Management *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	▪ Permit Compliance: This type of measurement cannot be performed without a comprehensive management system to define the requirements to meet obligations under permits and to properly complete and document compliance activities. Obligations to permit agencies are not well understood and are not well communicated in the organization. ▪ Land Management: The cost tracking systems to complete these measurements are not in place within the organization. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. ▪ IRP Coordination: There are not enough PREPA employees working on coordinating IRP activities and there are no project management practices in place.	Priority gap

REGULATORY

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
II-4 Overtime & Contractors Management *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	▪ Permit Compliance: Activities to meet compliance obligations may not be performed due to budget constraints and priorities within department budgets. Necessary activities for compliance may result in increased expenditures due to overtime requirements or contract work. ▪ Land Management: Work performed will match the level of staffing, which may mean that necessary work must be performed on overtime or through contract resources. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. ▪ IRP Regulatory: There are not enough PREPA employees working coordinating IRP activities and there are no project management practices in place.	Priority gap
II-5 Direct & Allocated Indirect Cost Management *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ Permit Compliance: A management system for compliance with permit obligations needs to be in place so that the budget impacts can be understood. ▪ Land Management: Budgets are developed to maintain the necessary core functions, but other functional areas require attention. For example, the land records building does not meet the standards for maintaining these critical records. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. ▪ IRP Regulatory: There are not enough PREPA employees working coordinating IRP activities and there are no project management practices in place.	Priority gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
II-1 Actual Expenditures as Percentage of Budgeted *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	Permit Compliance Regulatory Coordination IRP Coordination	Land Management			
II-2 Impact of Emergent Issues on Budgets *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	Permit Compliance Regulatory Coordination IRP Coordination	Land Management			

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
II-3 **Unit Cost/Productivity Management** *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				
II-4 **Overtime & Contractors Management** *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	Permit Compliance Regulatory Coordination IRP Coordination	Land Management			
II-5 **Direct & Allocated Indirect Cost Management** *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	Permit Compliance Regulatory Coordination IRP Coordination	Land Management			

III. Leadership Management

Evaluation Framework

The leadership management focus area consists of four sub-focus areas:

- III-1 Qualifications & Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter– & Intra-Organization Collaboration

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
III-1 Qualifications & Experience *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ Permit Compliance: The qualifications and experience for personnel working in the Environmental and Operations department are solid. Performance for compliance obligations is constrained by the lack of an organizational management system to focus on the processes required to obtain results. ▪ Land Management: The qualifications and experience of the land team are very good. There is a strong knowledge of the processes to perform the core functions. Performance is constrained by the lack of systems and resources to respond to outside parties (i.e., third-party pole attachments, crossings). ▪ Regulatory Coordination: PREPA routinely misses deadlines and is subject to PREB fines. This is due to their limited resources. Those limited resources can handle the process employed during the last filing/deadline but cannot improve the process or apply best practices. ▪ IRP Coordination: The main work is done via third-party consultants. There is no experience within the organization responsible to consolidate IRP.
III-2 Accountability *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company's mission, values and goals. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ Permit Compliance: Accountability for decisions made in the Environment department is clearer than in Operations due to the direct link between permit obligations and work performance. ▪ Land Management: The accountabilities are well defined within the core functions of land management. ▪ Regulatory Coordination: It is not possible to discern a cohesive strategy from PREPA senior leadership, or individuals working on PREB filings, nor what success means for the organization within regulatory filings. ▪ IRP Coordination: Not clearly defined and it is spread out to different areas.
III-3 Ability to Deliver Results *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	▪ Permit Compliance: Leaders can mobilize resources and take action. Constraints exist in the form of budget limitations, lack of management systems to clearly define objectives and responsibilities, resource constraints, and competing priorities. ▪ Land Management: Leaders can deliver the results within core functions. Constraints exist in the form of a poor building design for records systems, lack of an IT-based integrated land management system, lack of management priority given to landowner relations and a lack of management priority given to service to third parties. ▪ Regulatory Coordination: Largely due to PREPA's reactive state, no evidence of formal approvals supporting its regulatory filings. While the key players within PREPA seek advice from other teams and individuals both within PREPA and outside consultants, this is done on an informal basis via in-person meetings. ▪ IRP Coordination: Reactionary in response to demands. Lack of ability to defend proposed initiatives.
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ Permit Compliance: There is no management system for compliance with permit obligations. Departments tend to operate independently from one another to address core functions. Obligations to the agencies are not always well understood and are not always communicated well within the organization. ▪ Land Management: The department supports core functions of land records and various legal processes well.

REGULATORY

Gap Assessment

Sub-Focus Areas	Observations & Contributors
	▪ Regulatory Coordination: Largely due to PREPA's reactive state, no evidence or formal approvals support its regulatory filings. While key players at PREPA use their best efforts to seek advice from teams and individuals both within PREPA and at outside consultants, this is done on an informal basis via in-person meetings. ▪ IRP Coordination: Differences in data/reports (e.g., DG per feeders) are evidence of silos within the operation.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ Permit Compliance: Limitations are the result of a lack of management systems and communications within the organization. It appears that leadership positions are filled with qualified and experienced personnel. ▪ Land Management: Limitations are the result of a poor building for records management, lack of an IT platform for an integrated land management system, and lack of priority given to landowner relations and service to third parties. It appears that leadership positions are filled with qualified and experienced personnel. ▪ Regulatory Coordination: PREPA routinely misses deadlines and is subject to PREB fines, because of PREPA's reactive state with limited resources. Those limited resources appear to understand the processes employed during the last filing/deadline, but there is no capacity to improve the process or apply best practices. ▪ IRP Coordination: Eager to perform young professionals with a lack of experience.	
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ Permit Compliance: Within Operations, there are more grey areas whereby obligations are not well understood or communicated and accountabilities are not well defined. ▪ Land Management: The lines of accountability appear reasonable. ▪ Regulatory Coordination: Was not able to discern a cohesive strategy from PREPA senior leadership, or individuals working on PREB filings, nor what success means for the organization within regulatory filings. ▪ IRP Coordination: Lack of experience block them from identifying improvement opportunities.	
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	▪ Permit Compliance: Constraints exist in the form of budget limitations, lack of management systems to clearly define objectives and responsibilities, resource constraints, and competing priorities. ▪ Land Management: Constraints exist in the form of a poor building design for records systems, lack of an IT-based integrated land management system, lack of management priority given to landowner relations, lack of management priority given to service to third parties (pole attachments, crossing agreements). ▪ Regulatory Coordination: Largely due to PREPA's reactive state, no evidence or formal approvals support its regulatory filings. While key players at PREPA use their best efforts to seek advice from teams and individuals both within PREPA and at outside consultants, this is done on an informal basis via in-person meetings. ▪ IRP Coordination: Reactionary modus operandi, work done based on resolution and orders as supposed to developing new initiatives to anticipate regulator requests.	

REGULATORY

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ Permit Compliance: Activities tend to be completed within the department with information sharing not apparent. The communication within the organization to define requirements and understand permit obligations could be improved. ▪ Land Management: Within its core functions, the team collaborates reasonably well with other departments. Limitations exist with service to third parties (pole attachments) and landowner relations. ▪ Regulatory Coordination: Largely due to PREPA's reactive state, no evidence or formal approvals support its regulatory filings. While key players at PREPA use their best efforts to seek advice from teams and individuals both within PREPA and at outside consultants, this is done on an informal basis via in-person meetings. ▪ IRP Coordination: Lack of effective collaboration among different areas.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	Regulatory Coordination	IRP Coordination		Permit Compliance Land Management	
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	Regulatory Coordination IRP Coordination		Permit Compliance	Land Management	
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	Regulatory Coordination IRP Coordination	Permit Compliance	Land Management		
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	Permit Compliance Regulatory Coordination IRP Coordination		Land Management		

IV. Process Efficiency & Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness Focus Area consists of four sub-focus areas:

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
IV-1 **Potential Risks to Post-Commencement** *Identifies risks to post-commencement and steps needed to mitigate the risks.*	▪ Permit Compliance: Awareness of risk and mitigation measures for risks are not fully recognized by management. ▪ Land Management: There is a general awareness of the risk associated with some legal processes associated with land rights. The risks associated with the state of land records are not recognized. The risk associated with the lack of procedures for pole attachments is beginning to be understood due to the overloading of infrastructure. Risks associated with lack of notifications to landowners and poor landowner relationships are beginning to be understood due to impacts on vegetation management. ▪ Regulatory Coordination: Operating in a reactive state, there is a lack of documented roles, responsibilities and understanding of expectations for the individuals within PREPA who support regulatory filings. ▪ IRP coordination: Lack of existing business processes allows setting the new norm, new business practice.
IV-2 **Process Familiarity by all Stakeholders** *Examines operational processes to ensure they are defined and understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.*	▪ Permit Compliance: Some processes are mapped out. These would exist more in the Environmental area than in Operations. There would be inconsistencies in processes between operating groups. ▪ Land Management: Some core processes are very well mapped out. Some areas of responsibility need attention. ▪ Regulatory Coordination: Operating under a reactive state, there is a lack of documented roles and responsibilities leading to a gap in the understanding of expectations for the individuals within PREPA who support regulatory filings. ▪ IRP Regulation: Lack of existing business processes allows setting the new norm, new business practice.
IV-3 **Process Compliance Management** *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	▪ Permit Compliance: Some environmental processes do follow this type of process compliance management, but many areas do not have a compliance management process defined. ▪ Land Management: Process compliance management would generally be lacking. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on processes/schedules. ▪ IRP coordination: Lack of existing business processes allows setting the new norm, new business practice.
IV-4 **Efficiency of Overall Process Flow**	▪ Permit Compliance: Most processes are manual. ▪ Land Management: Most processes are manual.

REGULATORY

Gap Assessment

Sub-Focus Areas	Observations & Contributors
Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.	▪ Regulatory Coordination: While key players at PREPA use their best efforts to seek advice from teams and individuals both within PREPA and at outside consultants, this is done on an informal basis via in-person meetings. ▪ IRP coordination: Lack of existing business processes allows setting the new norm, new business practice.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
IV-1 **Potential Risks to Post-Commencement** *Risks to post-commencement and steps to mitigate those risks are identified.*	▪ Permit Compliance: There is a lack of a structured management system to ensure that permit obligations are met and documented. ▪ Land Management: The land records are stored in a building that is not fit for purpose. Upgrading records storage to a more suitable system is essential. The processes for pole attachments are lacking and have resulted in overloading the poles and poor documentation of the existing infrastructure. An integrated land management system is needed. Poor landowner relationships can have an impact on new construction and operational programs like vegetation management. ▪ Regulatory Coordination: It appears that the strategy and the outcome are determined by certain PREPA individuals, and there is no cohesive strategy to mitigate risk from PREPA senior leadership or what success means for the organization within regulatory filings. ▪ IRP Coordination: No business processes in place.	Department level gap
IV-2 **Process Familiarity by all Stakeholders** *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*	▪ Permits Compliance: Obligations to the Agencies are not well understood and are not well communicated within the organization. ▪ Land Management: The established processes are well understood, but some additional processes are needed (e.g., pole attachments and landowner notifications). ▪ Regulatory Coordination: PREPA's regulatory filing may lack consistency given no strategy has been set. The success of filings is dependent on a few individuals to ensure the appropriate work and analysis is performed. ▪ IRP Coordination: No business processes in place.	Department level gap
IV-3 **Process Compliance Management** *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	▪ Permits Compliance: The lack of a management system to address permit compliance indicates that compliance management needs improvement. Industry best practices should be implemented. ▪ Land Management: Although work is necessarily performed to strict legal requirements, the management systems necessary to validate these	Department level gap

REGULATORY

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
	processes are not in place. Storage of land records does not meet current standards. Industry best practices should be implemented. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on processes/schedules. ▪ IRP Coordination: No business process in place.	
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	▪ Permits Compliance: A structured management system to address compliance obligations is necessary. Industry best practices should be implemented. ▪ Land Management: An IT platform to develop an integrated land management system is necessary. Industry best practices should be implemented. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on processes/schedules. ▪ IRP Coordination: No business process in place.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
IV-1 Potential Risks to Post-Commencement *Risks to post-commencement and steps to mitigate those risks are identified.*	Regulatory Coordination IRP Coordination	Permit Compliance	Land Management		
IV-2 Process Familiarity by all Stakeholders *Operational processes are defined and understood. There are no "black boxes" where processes stall and participants do not understand why.*	Regulatory Coordination IRP Coordination	Permit Compliance	Land Management		
IV-3 Process Compliance Management *Primary processes are routinely monitored to ensure compliance. Irregularities are addressed, and the impact of noncompliance is understood.*	Permit Compliance Regulatory Coordination IRP Coordination	Land Management			

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
IV-4 Efficiency of Overall Process Flow *Highly automated process flow with near real-time status awareness. Responsibilities are grouped to increase efficiency with minimal hand-offs or back-and-forth process flows.*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				

V. Employee Training & Development

Evaluation Framework

The Employee Training & Development Focus Area consists of four sub-focus areas:

- V-1 Training Budgets & Program Effectiveness
- V-2 Ability to Cross-Train as Personnel Development Path
- V-3 Skills Assessment & Personnel Training Plans
- V-4 Demographics & Profile of Personnel by Skill Level

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
V-1 **Training Budgets & Program Effectiveness** *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	▪ Permit Compliance and Land Management: Training budgets and training programs have been generally not observed. There is a reliance on experienced personnel to train employees in new roles. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on training/development. ▪ IRP Coordination: No training plan, people learn over time.
V-2 **Ability to Cross Train as Personnel Development Path** *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	▪ Permit Compliance and Land Management: Training of employees tends to be done by gaining experience and there is a focus on training to meet the direct needs of the job. Cross-training is not evident. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on training/development. ▪ IRP Coordination: No training plan, people learn over time.
V-3 **Skills Assessment & Personnel Training Plans** *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	▪ Permit Compliance and Land Management: The skills assessment and development of personnel plans are focused on the immediate needs of each job. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on training/development. ▪ IRP Coordination: No process to assess skills sets nor training plan, people learn over time.
V-4 **Demographics & Profile of Personnel by Skill Level** *Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.*	▪ Permits Compliance: Difficult to assess, as the basic management system is lacking. ▪ Land Management: The land management group does appear to have sufficient trained personnel to address core functions. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on training/development. ▪ IRP Coordination: No process to assess skills nor training plan, people learn over time.

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gap	Categorization
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	▪ Permit Compliance and Land Management: Training budgets and programs do not appear to be at industry best practice levels. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on training/development. ▪ IRP Coordination: No process to assess skills sets nor training plans; people learn over time.	Priority gap
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	▪ Permit Compliance and Land Management: Personnel development does not appear to be at industry best practice levels. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on training/development. ▪ IRP Coordination: No process to assess skills sets nor training plans; people learn over time.	Priority gap
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	▪ Permit Compliance and Land Management: Personnel development does not appear to be at industry best practice levels. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on training/development. ▪ IRP Coordination: No process to assess skills sets nor training plans; people learn over time.	Priority gap
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	▪ Permit Compliance: Difficult to assess; however, this element would track operational competencies. ▪ Land Management: Core functions are competently covered; however, other skill sets required for land management, land acquisition, third party interactions, and landowner relations need development. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on training/development. ▪ IRP Coordination: No process to assess skills sets nor training plans; people learn over time.	Priority gap

REGULATORY

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
V-1 Training Budgets & Program Effectiveness *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	Regulatory Coordination IRP Coordination	Permit Compliance Land Management			
V-2 Ability to Cross-Train as Personnel Development Path *Pursuit of cross training initiatives to improve development path for personnel.*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				
V-3 Skills Assessment & Personnel Training Plans *Process to map existing and future employee skill sets relative to company needs.*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				
V-4 Demographics & Profile of Personnel by Skill Level *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	Permit Compliance Regulatory Coordination IRP Coordination	Land Management			

VI. Workforce Management

Evaluation Framework

The Workforce Management Focus Area consists of two sub-focus areas:

- VI-1 Effectiveness of Current Workforce Management Systems & Processes
- VI-2 Time Charging & Productivity Tracking & Reporting

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	▪ Permit Compliance: There appear to be workforce management systems in place for the environmental groups. For operational groups, there is some lack of awareness of the importance of working in a manner compliant with obligations. ▪ Land Management: The group takes pride in managing the strict requirements for land rights and does so despite limitations placed on it by the organization. An example is their ability to maintain land records despite a building that is inadequate for the purpose. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on workforce management. ▪ IRP Coordination: Lack of personnel results in a reactionary mode of operation.
VI-2 **Time Charging & Productivity Tracking & Reporting** *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	▪ Permit Compliance: Time charging systems seem to be in place, but there is no clear system for QA/QC for the accuracy of the information. ▪ Land Management: The systems appear functional for core responsibilities. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on workforce management. ▪ IRP Coordination: Lack of personnel results in a reactionary mode of operation.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Defined processes and work rules to ensure efficient labor utilization.*	▪ Permit Compliance: Emphasis on the documentation of working under permit obligations is required. ▪ Land Management: Existing management systems are designed for certain core functions but need to be expanded for requirements like landowner notifications, landowner relations, customer service to outside parties. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on workforce management. ▪ IRP Coordination: Lack of personnel results in a reactionary mode of operation.	Priority gap

REGULATORY

Gap Assessment

VI-2 Time Charging & Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	▪ Permit Compliance and Land Management: The systems used to track labor hours and apply to productivity improvements are rudimentary and could be improved, but there are other priorities in each area that should take precedence. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on workforce management. ▪ IRP Coordination: Lack of personnel results in a reactionary mode of operation.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VI-1 Effectiveness of Current Workforce Management Systems & Processes *Defined processes and work rules to ensure efficient labor utilization.*	Regulatory Coordination IRP Coordination	Permit Compliance Land Management			
VI-2 Time Charging & Productivity Tracking & Reporting *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	Regulatory Coordination IRP Coordination	Permit Compliance Land Management			

VII. Management Systems & Technology

Evaluation Framework

The Management Systems & Technology Focus Area consists of four sub-focus areas:

- **VII-1** Process Automation
- **VII-2** Adaptability to New Systems & Technology
- **VII-3** Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- **VII-4** Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
VII-1 Process Automation *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	▪ Permit Compliance: The process automation cannot occur until the basic management systems are in place. ▪ Land Management: The information for certain lines has been digitized. The department has lacked the budget and resources to complete the entire system. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No existing business process, thus no visibility to automate it.
VII-2 Adaptability to New Systems & Technology *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	▪ Permit Compliance: The need for documentation to demonstrate that work is being performed in a manner consistent with permit obligations needs to be implemented. To the extent that new systems or technology can aid this requirement, there is likely to be acceptance of the adoption of such systems or technology among user and operational groups. ▪ Land Management: The group is open to new technologies. There needs to be an organizational understanding of the importance of land records, and new technology must accommodate the strict legal requirements associated with the work in this area. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No existing business process, thus no visibility to automate it.
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	▪ Permit Compliance: There is little consideration for linkages with other areas. ▪ Land Management: The team has a good understanding of how their area affects operations and legal processes. Records are kept as best as possible, despite the building being inadequate for this purpose. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No existing business process, thus no visibility to automate it.
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ Permit Compliance: The implementation of a management system is a necessary start. ▪ Land Management: Leverage additional resources to digitize more information so that a land management system can be put in place in the future. Processes and procedures for digitization are in place. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No existing business process, thus no visibility to automate it.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
VII-1 Process Automation *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	▪ Permit Compliance: Constrained by the lack of a full management system to address these matters. ▪ Land Management: Some implementation has occurred, but the department has been constrained by budget and resource limitations. Management understanding of the critical nature of land records is necessary for proper implementation. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No existing business process, thus no visibility to automate it.	Priority gap
VII-2 Adaptability to New Systems & Technology *Ability to adjust attitudes, processes and technology to make quality improvements.*	▪ Permit Compliance and Land Management: Each area can adapt to new technology. Support through training programs would be necessary. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No existing business process, thus no visibility to automate it	Improvement opportunity
VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems *Linkages of existing systems to other functional areas.*	▪ Permit Compliance: Leveraging systems applied in operations is an opportunity to address permit compliance matters. ▪ Land Management: Industry best practices would warrant the implementation of an integrated land management system to support operations and legal processes more efficiently. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No existing business process, thus no visibility to automate it.	Priority gap
VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ Permit Compliance: Progress in this area is dependent on the implementation of the necessary management system. It is too early to consider full IT systems. ▪ Land Management: The team is capable of implementing further digitization of records but has been constrained by budget and resource limitations. Addressing the inadequate storage location of physical records should be a priority. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No existing business process, thus no visibility to automate it.	Department level gap

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	Regulatory Coordination IRP Coordination	Permit Compliance	Land Management		
VII-2 **Adaptability to New Systems & Technology** *Ability to adjust attitudes, processes and technology to make quality improvements.*	Regulatory Coordination IRP Coordination	Permit Compliance	Land Management		
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*	Regulatory Coordination IRP Coordination	Permit Compliance	Land Management		
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	Permit Compliance Regulatory Coordination IRP Coordination		Land Management		

VIII. Performance Metrics & Continuous Improvement

Evaluation Framework

The Performance Metrics & Continuous Improvement Focus Area consists of five sub-focus areas:

- VIII-1 Recognition of Critical Performance Metrics
- VIII-2 Performance Metric Collection, Validation & Reporting
- VIII-3 Root Cause & Trend Analysis
- VIII-4 Data-Driven Management Initiatives
- VIII-5 Recent Performance Trends

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
VIII-1 **Recognition of Critical Performance Metrics** *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	▪ Permit Compliance and Land Management: Use of KPIs not observed. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported.
VIII-2 **Performance Metric Collection, Validation & Reporting** *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	▪ Permit Compliance and Land Management: Use of performance metric collection, validation and reporting not observed. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported.
VIII-3 **Root Cause & Trend Analysis** *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	▪ Permit Compliance and Land Management: Use of root cause and trend analysis not observed. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No business process nor KPIs were reported. No option to perform root cause and trend analysis.
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	▪ Permit Compliance: Work tends to be reactionary to events rather than data-driven. ▪ Land Management: The needs for data-driven initiatives are understood, but the department is constrained by budget and resource limitations. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported.
VIII-5 **Recent Performance Trends** *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	▪ Permit Compliance and Land Management: Use of KPIs not observed. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported and no data-driven performance analysis was performed.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
VIII-1 **Recognition of Critical Performance Metrics** *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	▪ Permit Compliance: The need for a management system for permit compliance is a predecessor to the implementation of KPI metrics. ▪ Land Management: Performance metrics for landowner notifications and response to third-party requests (pole attachments, crossing agreements) are areas where KPIs could be implemented. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported.	Priority gap
VIII-2 **Performance Metric Collection, Validation & Reporting** *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	▪ Permit Compliance and Land Management: Data is not currently collected in a fashion necessary for measurement of the effectiveness of work programs. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported.	Priority gap
VIII-3 **Root Cause & Trend Analysis** *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	▪ Permit Compliance and Land Management: Data is not currently collected in a fashion necessary for root cause trend analysis. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported.	Improvement opportunity
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	▪ Permit Compliance: Work tends to be reactionary to events rather than data-driven. ▪ Land Management: The need for data-driven initiatives is understood, but the department is constrained by budget and resource limitations. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported.	Improvement opportunity
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	▪ Permit Compliance and Land Management: Data is not currently collected in a fashion necessary for measurement of the effectiveness of work programs. ▪ Regulatory Coordination: There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on process improvements. ▪ IRP Coordination: No KPIs were reported.	Improvement opportunity

REGULATORY

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VIII-1 Recognition of Critical Performance Metrics *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				
VIII-2 Performance Metric Collection, Validation & Reporting *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				
VIII-3 Root Cause & Trend Analysis *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				
VIII-4 Instances (or Lack) of Data-Driven Management Initiatives *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	Permit Compliance Regulatory Coordination IRP Coordination	Land Management			

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				

IX. PREPA Culture & Momentum

Evaluation Framework

The PREPA Culture & Momentum Focus Area consists of five sub-focus areas:

- IX-1 Resistance (Active or Passive) to LUMA Management
- IX-2 Employee Morale/Excitement About LUMA
- IX-3 Employee Empowerment/Action Orientation
- IX-4 Timeframe to Improve Performance
- IX-5 Impact of Organization Silos

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	▪ Permit Compliance: Resistance is not expected from the Environment group to the objectives of compliance with permit obligations. For operations, permit compliance will be an additional requirement, and acceptance will be dependent on the effectiveness of operational programs. ▪ Land Management: Resistance to new initiatives could occur; however, there is an awareness and desire to improve certain areas. Management's understanding of the core functions of the department will help with buy-in. Support for digitization initiatives will also be important. ▪ Regulatory Coordination: Resistance to new initiatives/processes may occur but to date, collaboration has been welcomed and LUMA anticipates building on the experience of key team members. With consultants and resource adequacy this team can transition from a reactive to a proactive state which would mitigate this risk. ▪ IRP Coordination: No resistance is anticipated, a positive attitude toward Luma's direction.
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	▪ Permit Compliance and Land Management: Some employees see the potential for transformation but remain reserved due to uncertainty of the entire process. ▪ Regulatory Coordination: Currently moderate interest/excitement in LUMA. Significant nervousness has caused some uncertainty but many see LUMA as a learning opportunity with the potential for professional growth. ▪ IRP Coordination: No resistance is anticipated, a positive attitude toward Luma's direction.
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.*	▪ Permit Compliance and Land Management: Given the right conditions and support, employees can adapt and will embrace a new culture and new way of operating. ▪ Regulatory Coordination: Reorganization into a team with sufficient resources, defined roles/responsibilities/strategies would support improvement. ▪ IRP Coordination: No resistance is anticipated, high expectation of Luma's direction
IX-4 **Timeframe to Improve Performance** *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	▪ Permit Compliance: Four months. ▪ Land Management: Two months. ▪ Regulatory Coordination: Five months due to reorganization and large proceedings with the first five years. ▪ IRP Coordination: One month. Expected reorganization, but improvement will depend on the data quality.
IX-5 **Impact of Organization Silos** *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	▪ Permit Compliance: Past practices have reinforced organizational silos, and it will take some effort to overcome this method of working. ▪ Land Management: The group is aware of the need to support operations, legal processes, and other organizational needs. ▪ Regulatory Coordination: Past practices have reinforced organizational silos, and it will take some effort to overcome this method of working. ▪ IRP Coordination: This depends on Luma's management and business process.

REGULATORY

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*	▪ Permit Compliance and Land Management: Institutionalized behavior within an organization that has operated for decades as a government agency will be embedded and will require substantial effort to change to adopt industry best practices. ▪ Regulatory Coordination: While key PREPA employees and consultants carry undocumented knowledge these resources also carry experience built through reactive practices and processes. Substantial effort is expected to enable the required change. ▪ IRP Coordination: No resistance is expected.	Priority gap
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	▪ Permit Compliance: The efforts to improve operational compliance with permit obligations will be dependent on the operational programs put in place. ▪ Land Management: There is potential for this department to become supporters in the implementation of best practices and the transformation of the business. ▪ Regulatory Coordination: To date collaboration has been welcomed and LUMA anticipates building on the experience of key team members with consultants. ▪ IRP Coordination: No resistance is anticipated, positive attitude toward Luma's direction.	Priority gap
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*	▪ Permit Compliance: The efforts to improve operational compliance with permit obligations will be dependent on the operational programs put in place. ▪ Land Management: There is potential for this department to become supporters in the implementation of best practices and the transformation of the business. ▪ Regulatory Coordination: To date collaboration has been welcomed and LUMA anticipates building on the experience of key team members with consultants. ▪ IRP Coordination: Not resistance is anticipated, high expectation of Luma's direction.	Improvement opportunity
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*	▪ Permit Compliance: This area will likely take longer to transform due to the lack of management systems for permit compliance and to the reliance on operational programs for implementation. ▪ Land Management: The department is competent in core functions and performs well despite budget and resource constraints. There is an awareness that better performance can be beneficial in certain areas, such as pole attachments and landowner notifications. The larger concepts of landowner relations and other industry best practices may take some time. ▪ Regulatory Coordination: While key PREPA employees and consultants carry undocumented knowledge these resources also carry experience built through reactive practices and processes. Reorganization of the team with established roles/responsibilities and defined processes supporting large regulatory proceedings is expected to assist in the required change. ▪ IRP Coordination: Besides team morale, this largely depends on the availability of good data.	Priority gap

REGULATORY

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
IX-5 Impact of Organization Silos *Extent to which existing org silos can be overcome or represent ongoing challenge.*	▪ Permit Compliance: Silos of information are common, and it will take effort to improve communication within the organization concerning the consistent interpretation of agency requirements and accountabilities for work. ▪ Land Management: The department has supported the needs of other organizational departments through the maintenance of land records. Improvements for support of outside party requests (pole attachments, crossing agreements, landowner notifications) are possible. ▪ Regulatory Coordination: Organizational silos are common, and it will take effort to overcome this method of working. ▪ IRP Coordination: This is Luma's challenge and a new approach will be effectively implemented.	Priority gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
IX-1 Resistance (Active or Passive) to LUMA Management *Extent employees will resist new LUMA team.*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				
IX-2 Employee Morale/ Excitement About LUMA *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				
IX-3 Employee Empowerment/ Action Orientation *Degree that employee attitudes embrace new empowered organizational design and culture.*	Permit Compliance Land Management Regulatory Coordination IRP Coordination				

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
IX-4 Timeframe to Improve Performance *Timeframe for embracing LUMA initiatives.*		Permit Compliance Regulatory Coordination IRP Coordination	Land Management		
IX-5 Impact of Organization Silos *Extent to which existing org silos can be overcome or represent ongoing challenge.*		Permit Compliance Regulatory Coordination IRP Coordination	Land Management		

Core Business Assessment

Focus & Sub-Focus Areas

	Focus Areas	Sub-Focus Areas			
Permits and Land					
X	**Permit Compliance**	X-1 X-2 X-3	Awareness of Requirements Compliance Management Procedures	X-4 X-5	Training Records
XI	**Land Management**	XI-1 XI-2	Dispute Resolution Procedures	XI-3 XI-4	Land Acquisition Process Records
IRP Coordination					
XII	**Load Forecast**	XII-1 XII-2	Data Collection Methods	XII-3	Scope
XIII	**Energy Efficiency**	XIII-1 XIII-2	Program Design Implementation and Control	XIII-3 XIII-4	Credits Rate Recovery Mechanisms
XIV	**Renewable Generation/Energy Storage**	XIV-1 XIV-2 XIV-3	Vision and Mission Net-Metering Policy Interconnection Policy	XIV-4 XIV-5	Rate Recovery Mechanisms Process Management
XV	**IRP Development**	XV-1 XV-2	Processes Roles and Responsibilities	XV-3	Data and Tools
Regulatory Coordination					
XVI	**Intra-Department Regulatory Process**	XVI-1 XVI-2 XVI-3 XVI-4	Roles and Responsibilities Documentation Practices Systems and Tools Process	XVI-5 XVI-6 XVI-7	Schedule Management Communication Oversight
XVII	**PREB Filing Process**	XVII-1 XVII-2	Quality Timeliness	XVII-3 XVII-4	Schedule Management Success Rate
XVIII	**External Relationships**	XVIII-1 XVIII-2	PREB Quality	XVIII-3	Government
XIX	**Regulatory Strategy**	XIX-1 XIX-2	Definition Implementation	XIX-3	Location Considerations

X. Permit Compliance

Evaluation Framework

The Permit Compliance Focus Area consists of five sub-focus areas:

- X-1 Awareness of Requirements
- X-2 Compliance Management
- X-3 Procedures
- X-4 Training
- X-5 Records

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
X-1 Awareness of Requirements *Evidence that the requirements and restrictions included in the operating permit are understood by those with responsibility for the performance of the work. Evidence that there are controls within the organization to ensure that work occurs within the boundaries of the permit conditions.*	▪ Many of the existing permits are identifiable within the database. Some staff in the legal department are aware of the permits and that there are obligations within the permit. ▪ The permit requirements are heavily weighted towards the Environmental department that recently was changed to the Operations Area of PREPA. There is no evidence of a general and widespread understanding of the obligations across the organization.
X-2 Compliance Management *Evidence for Quality Control management systems that provide a framework for compliance obligations under each permit. Evidence of work within that system to ensure compliance. Evidence of management's understanding of permit obligations and management's review of compliance.*	▪ There is no evidence that quality management is a priority for existing management. ▪ There is no evidence that quality management principles or practices form part of the awareness of employees when performing work. ▪ If a quality management system is in place (though there does not seem to be any evidence of one), it appears that practices and principles are not generally observed. Documentation is consistently lacking. ▪ It has been observed that there is a general lack of procedures and documentation practices to evidence compliance throughout the organization. The Environmental department seems to concentrate the information and compliance, so compliance is focused on filling information to the different governmental authorities involved.
X-3 Procedures *Evidence for job procedures to ensure that those performing the work comply with permit obligations. Evidence for existence of document control practices to ensure current procedures are used and have been distributed to those that need them.*	▪ There is a general lack of procedures to perform work. ▪ There is a lack of documentation to demonstrate that work is performed following procedures. ▪ There is a reliance on experienced people with knowledge of the system to perform work in the fashion necessary to "get the job done" and to "keep the system running".
X-4 Training *Evidence for existence of training programs to ensure that quality management systems and work procedures can be correctly implemented. Evidence for training of those who perform the work about: the documentation of work*	▪ Evidence of focused training programs is lacking. There is a reliance on supervisors to teach staff how to do the job. ▪ There is no evidence of any focus on performing work under a defined quality management system. ▪ Documentation to demonstrate compliance with permit obligations is lacking and there is no general awareness of the need to do so.

REGULATORY

Gap Assessment

Sub-Focus Areas	Observations & Contributors
and flow, and information required to ensure the record of compliance is adequate.	
X-5 Records *Evidence for filing of compliance reports with the various agencies as per the requirements of the permit. Internal records systems can provide access to documentary evidence of compliance. Evidence of systems for retrieval of records and tracking of documents. Assessment of completeness of file records. Evidence of communications between departments and support documentation across departments and templates to support compliance.*	▪ Evidence of focused training programs is lacking. There is a reliance on supervisors to teach staff how to do the job. ▪ There is no evidence of any focus on performing work under a defined quality management system. ▪ Documentation to demonstrate compliance with permit obligations is lacking and there is no general awareness of the need to do so.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
X-1 Awareness of Requirements *Evidence that the requirements and restrictions included in the operating permit are understood by those with responsibility for the performance of the work. Evidence that there are controls within the organization to ensure that work occurs within the boundaries of the permit conditions.*	▪ Lack of awareness of specific requirements or obligations defined in permits. ▪ Little or no coordination between departments. ▪ Exclusions of permits due to Governmental agreements between agencies. ▪ The organization is lacking top to bottom awareness of permit obligations and the need to work in compliance. The documentation systems are lacking.	Priority gap
X-2 Compliance Management *Evidence for Quality Control management systems that provide a framework for compliance obligations under each permit. Evidence of work within that system to ensure compliance. Evidence of management's understanding of permit obligations and management's review of compliance.*	▪ Lack of a quality management system. ▪ Lack of adherence to any quality management system. ▪ There is a lack of a defined quality management system and a lack of awareness to perform work consistent with a quality standard. There is a reliance on getting the job done through the use of experienced personnel.	Priority gap
X-3 Procedures *Evidence for job procedures to ensure that those performing the work comply with permit obligations. Evidence for existence of document control practices to ensure current procedures are used and have been distributed to those that need them.*	▪ General lack of adherence to procedures. ▪ Lack of procedures to address compliance of obligations. ▪ Over-reliance on experience to operate the system. ▪ The organization is aware that procedures are necessary, but there is a general lack of procedures. There is an over-reliance on experience. Work on developing procedures is deferred to keep the system running.	Priority gap
X-4 Training *Evidence for existence of training programs to ensure that quality management systems*	▪ Lack of training to address the need to meet obligations within permits.	Priority gap

REGULATORY

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
and work procedures can be correctly implemented. Evidence for training of those who perform the work about: the documentation of work and flow, and information required to ensure the record of compliance is adequate.	▪ Lack of training to complete documentation to evidence compliance. ▪ Training has not been focused on the need to perform work consistent with the obligations under permits.	
X-5 Records *Evidence for filing of compliance reports with the various agencies as per the requirements of the permit. Internal records systems can provide access to documentary evidence of compliance. Evidence of systems for retrieval of records and tracking of documents. Assessment of completeness of file records. Evidence of communications between departments and support documentation across departments and templates to support compliance.*	▪ Records systems fragmented and departmentalized. ▪ Lack of consistency. ▪ Incomplete records and unreliable for purpose of demonstrating compliance with permits. ▪ There is no evidence that the organization as a whole understands the need for permit compliance and the documentation systems necessary to demonstrate compliance. There is a fragmentation of records within departments and no consistent methodology or standard of information.	Priority gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
X-1 Awareness of Requirements *Evidence that the requirements and restrictions included in the operating permit are understood by those with responsibility for the performance of the work. Evidence that there are controls within the organization to ensure that work occurs within the boundaries of the permit conditions.*	X				
X-2 Compliance Management *Evidence for Quality Control management systems that provide a framework for compliance obligations under each permit. Evidence of work within that system to ensure compliance. Evidence of management's understanding of permit obligations and management's review of compliance.*	X				
X-3 Procedures *Evidence for job procedures to ensure that those performing the work comply with permit obligations. Evidence for existence of document control practices to ensure current procedures are used and have been distributed to those that need them.*		X			

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
X-4 Training *Evidence for existence of training programs to ensure that quality management systems and work procedures can be correctly implemented. Evidence for training of those who perform the work about: the documentation of work and flow, and information required to ensure the record of compliance is adequate.*	X				
X-5 Records *Evidence for filing of compliance reports with the various agencies as per the requirements of the permit. Internal records systems can provide access to documentary evidence of compliance. Evidence of systems for retrieval of records and tracking of documents. Assessment of completeness of file records. Evidence of communications between departments and support documentation across departments and templates to support compliance.*	X				

XI. Land Management

Evaluation Framework

The Land Management Focus Area consists of four sub-focus areas:

- **XI-1** Dispute Resolution
- **XI-2** Procedures
- **XI-3** Land Acquisition Process
- **XI-4** Records

Sub-Focus Areas	Observations & Contributors
XI-1 Dispute Resolution *Determine the number of active litigation processes relating to land acquisition and specifically the expropriation process. Determine the full cost of maintaining these processes. Determine if an alternate resolution may be viable in some cases.*	▪ It is known that there are many dispute resolution processes ongoing, but the exact number has not been defined. ▪ The cost tracking for each dispute resolution process is not in place. There is no record in the organization of the costs of resolving landowner disputes. ▪ Going through the process in court is the established process and there is little awareness of alternate settlement options. There is a reluctance in the organization to take such decisions, even though settlements could be in the interest of the organization.
XI-2 Procedures *The extent to which the land management process and landowner relations seem to be treated as a legal exercise rather than a business practice. As such,the extent to which it appears that any landowner concern is managed through the legal department. Evidence of administration of agreements to allow other parties to company infrastructure.*	▪ Land is generally acquired through expropriation. ▪ There is little thought to landowner management or to landowner relationships. ▪ There is a heavy, almost exclusive, reliance on acquiring land through legal processes by PREPA.
XI-3 Land Acquisition Process *Evidence of procedures and controls in determining whether to obtain an agreement through negotiation or proceed as quickly as possible to the expropriation process. Procedures and guidelines for the purchase of land in certain circumstances. Evidence of procedures and records for company infrastructure to cross third-party facilities, such as roads, highways, telecommunications, etc.*	▪ The procedures for acquiring land through legal processes are not well defined and understood. ▪ There does not appear to be evidence of comprehensive crossing documentation or agreements to cross third-party infrastructure. ▪ Requires further investigation.
XI-4 Records *Evidence of filing of action reports with the court as per the requirements of the expropriation process. Internal records systems can provide access to the records of land rights. Evidence of systems for retrieval of records and tracking of documents. Completeness of file*	▪ Land records are organized based on the legal processes to acquire the land. ▪ Finding basic information about the land agreement in each file is difficult. ▪ Improvement to the organization of land files would benefit the operation of the system.

Gap Assessment

Sub-Focus Areas	Observations & Contributors
records for each file. Evidence of ommunication between departmentss and support documentation across departments and templates to support compliance.	

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XI-1 Dispute Resolution *Determine the number of active litigation processes relating to land acquisition and specifically the expropriation process. Determine the full cost of maintaining these processes. Determine if an alternate resolution may be viable in some cases.*	▪ Lack of tracking of individual cases, actions are responsive, no strategic planning to resolve disputes. ▪ Cost tracking of each case does not exist. ▪ Going through the process in court is the established process and there is little awareness of alternate settlement options. There is a reluctance in the organization to take such decisions, even though settlements could be in the interest of the organization. ▪ The organization understands the legal process, but the overall strategic management of land disputes is lacking. There is little awareness or willingness to consider more cost-effective solutions to landowner disputes.	Priority gap
XI-2 Procedures *The extent to which the land management process and landowner relations seem to be treated as a legal exercise rather than a business practice. As such,the extent to which it appears that any landowner concern is managed through the legal department. Evidence of administration of agreements to allow other parties to company infrastructure.*	▪ Lack of tracking of individual cases, actions are responsive, no strategic planning to resolve disputes. ▪ Cost tracking of each case does not exist. ▪ Going through the process in court is the established process and there is little awareness of alternate settlement options. There is a reluctance in the organization to take such decisions, even though settlements could be in the interest of the organization. ▪ The organization understands the legal process, but the overall strategic management of land disputes is lacking. There is little awareness or willingness to consider more cost-effective solutions to landowner disputes.	Priority gap
XI-3 Land Acquisition Process *Evidence of procedures and controls in determining whether to obtain an agreement through negotiation or proceed as quickly as possible to the expropriation process. Procedures and guidelines for the purchase of land in certain circumstances. Evidence of procedures and records for company infrastructure to cross third-party facilities, such as roads, highways, telecommunications, etc.*	▪ Procedures for land acquisition through legal processes have not been found. ▪ Evidence suggests most of the work for land acquisition is done by a third party. ▪ Land acquisition is performed within the required parameters of the legal processes available. Land can be acquired with reasonable efficiency. The strategic management of land acquisition is a missing element in this process.	Priority gap

REGULATORY

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XI-4 Records *Evidence of filing of action reports with the court as per the requirements of the expropriation process. Internal records systems can provide access to the records of land rights. Evidence of systems for retrieval of records and tracking of documents. Completeness of file records for each file. Evidence of ommunication between departmentss and support documentation across departments and templates to support compliance.*	▪ Land files are poorly organized. ▪ Information is difficult to find within files. ▪ Structure in files is lacking. ▪ Landowner files exist but are not organized effectively for use. Records are simply put into the file as per the chronological events, but there is no organization to allow users to find basic and essential information.	Priority gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XI-1 Dispute Resolution *Determine the number of active litigation processes relating to land acquisition and specifically the expropriation process. Determine the full cost of maintaining these processes. Determine if an alternate resolution may be viable in some cases.*	X				
XI-2 Procedures *The extent to which the land management process and landowner relations seem to be treated as a legal exercise rather than a business practice. As such,the extent to which it appears that any landowner concern is managed through the legal department. Evidence of administration of agreements to allow other parties to company infrastructure.*	X				
XI-3 Land Acquisition Process *Evidence of procedures and controls in determining whether to obtain an agreement through negotiation or proceed as quickly as possible to the expropriation process. Procedures and guidelines for the purchase of land in certain circumstances. Evidence of procedures and records for company infrastructure to cross third-party facilities, such as roads, highways, telecommunications, etc.*		X			

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XI-4 Records *Evidence of filing of action reports with the court as per the requirements of the expropriation process. Internal records systems can provide access to the records of land rights. Evidence of systems for retrieval of records and tracking of documents. Completeness of file records for each file. Evidence of ommunication between departmentss and support documentation across departments and templates to support compliance.*	X				

XII. IRP Coordination: Load Forecast

Evaluation Framework

The Load Forecast Focus Area consists of three sub-focus areas:

- **XII-1** Data Collection
- **XII-2** Methods
- **XII-3** Scope

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XII-1 Data Collection *The extent to which data collection processes are documented, managed and measured to comply with regulatory and business results. The extent to which the processes identify internal and external areas and clear responsibilities to provide specific data. The extent to which processes are collected and processed in timely and accurate standard data analysis approaches. The extent to which the processes identify internal and external areas for which data is processed.*	▪ PREPA has no documented process to collect data. Currently, they operate as business-as-usual following legacy process. ▪ Billing system (CC&B) records data in IT system. IT help processing and gathering data/tables as per Planning data request, e.g., MWh, MW per customer class is collected monthly.
XII-2 Methods *To the extent to which load forecast modeling, studying, approving and reporting processes are documented, managed, and measured to comply with regulatory and business results. Evidence of defined load forecast scenarios based on regulatory and corporate requirements. Documented evidence of an appropriate number*	▪ For the load forecasting process, PREPA uses a spreadsheet and uses econometric variables to forecast the load on a monthly and yearly basis. ▪ Since IRP was approved back in 2015, PREPA has been using the econometric parameters the study determined to allocate the load to customer classes. ▪ PREPA uses E-Views for seasonal and number of customers forecasts.

Gap Assessment

Sub-Focus Areas	Observations & Contributors
of review layers between employees performing analysis/work (including field employees) and department heads; opportunities to reduce a review layer to right-size documentation review.	
XII-3 Scope *The extent of performing load forecast per geographical area (per District, Region, and entire Island) system element (per HV/HV substation, per HV/MV substation), customer classification (HV customers, MV customers, LV customer classes).*	▪ The load forecast is performed for the entire system (Island of Puerto Rico) only. No load forecast (MWh nor MW) is allocated to specific geographical areas (i.e., Regions, SUBs), nor by voltage level. ▪ Yearly load forecast per customer class (i.e., different rates) is produced. ▪ No spatial load forecast is performed.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XII-1 Data Collection *The extent to which data collection processes are documented, managed and measured to comply with regulatory and business results. The extent to which the processes identify internal and external areas and clear responsibilities to provide specific data. The extent to which processes are collected and processed in timely and accurate standard data analysis approaches. The extent to which the processes identify internal and external areas for which data is processed.*	▪ The load forecast process is required to be documented. The process should encompass: data gathering, data cleansing, data formatting for different regulatory and stakeholder requirements. ▪ The process should incorporate IT systems and RACI charts identifying functional areas and data flow.	Department level gap
XII-2 Methods *To the extent to which load forecast modeling, studying, approving and reporting processes are documented, managed, and measured to comply with regulatory and business results. Evidence of defined load forecast scenarios based on regulatory and corporate requirements. Documented evidence of an appropriate number of review layers between employees performing analysis/work (including field employees) and department heads; opportunities to reduce a review layer to right-size documentation review.*	▪ The IRP study will identify econometric parameters to be used: o Seasonal and yearly forecast o Voltage class o Per SUBs	Improvement opportunity
XII-3 Scope *The extent of performing load forecast per geographical area (per District, Region, and entire Island) system element (per HV/HV substation, per HV/MV substation), customer classification (HV customers, MV customers, LV customer classes).*	▪ No spatial load forecast is identified to be required. PREPA has not recognized the need for the basic elements that define this Sub-Area and/or there is no evidence of commitment to put them in place.	Improvement opportunity

REGULATORY

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XII-1 Data Collection *The extent to which data collection processes are documented, managed and measured to comply with regulatory and business results. The extent to which the processes identify internal and external areas and clear responsibilities to provide specific data. The extent to which processes are collected and processed in timely and accurate standard data analysis approaches. The extent to which the processes identify internal and external areas for which data is processed.*			X		
XII-2 Methods *To the extent to which load forecast modeling, studying, approving and reporting processes are documented, managed, and measured to comply with regulatory and business results. Evidence of defined load forecast scenarios based on regulatory and corporate requirements. Documented evidence of an appropriate number of review layers between employees performing analysis/work (including field employees) and department heads; opportunities to reduce a review layer to right-size documentation review.*		X			
XII-3 Scope *The extent of performing load forecast per geographical area (per District, Region, and entire Island) system element (per HV/HV substation, per HV/MV substation), customer classification (HV customers, MV customers, LV customer classes).*	X				

XIII. IRP Coordination: Energy Efficiency

Gap Assessment

Evaluation Framework

The IRP Coordination: Energy Efficiency Focus Area consists of four sub-focus areas:

- **XIII-1** Program Design
- **XIII-2** Implementation and Control
- **XIII-3** Credits
- **XIII-4** Rate Recovery Mechanisms

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XIII-1 Program Design *Evidence of a market study to identify, define and design energy efficiency programs. Existence of energy efficiency business case, prioritizing those that provide higher energy (e.g., per region, customer class).* *Evidence of energy efficiency pilot projects and programs with adjustments based on the results. Records of post-project testing to validate the effectiveness of the energy efficiency program.*	▪ According to Act 57-2014, a government entity (La Oficina Estatal de Política Publica Energetica - OEPPE), was mandated among others to create energy efficiency programs. The OEPPE is an autonomous entity under the Department of Economic Development and Commerce of P.R. OEPPE, created "Programa de Política Publica Energetica (PPPE) and is responsible for managing the Energy Efficiency program (informing, promoting, designing, implementing and monitoring). ▪ PPPE promotes and implements: o Home Weatherization Program (WAP) o State Energy Program (SEP) o State Program of the Green Energy Fund ▪ PREPA was mandated to update streetlight technology to LED. The program is a maintenance/improvement plan with luminaires replaced by LEDs when the unit fails.
XIII-2 Implementation and Control *Evidence of the energy efficiency program implementation per customer class.* *Existence of process controls.*	▪ One high-level report is created following the PREB requirement to monitor the energy consumption of Government agencies, legislatures and public corporations. ▪ PREPA reports yearly energy consumption of those accounts and compares them with 2013 energy consumption.
XIII-3 Credits *Verification of filing process to claim credit for the energy efficiency program investment.* *Confirmation of approved credits from the energy efficiency program implementation.*	▪ Under the current regulatory configuration for Energy Efficiency, it is not applicable, however, the reduction of energy consumption may harm the average energy rate due to the high level of investment planned in the IRP to renewable integration.
XIII-4 Rate Recovery Mechanisms *Existence of recovery mechanisms approved by the company and the regulator.*	▪ Under the current regulatory configuration for Energy Efficiency, it is not required.

REGULATORY

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XIII-1 Program Design *Evidence of a market study to identify, define and design energy efficiency programs. Existence of energy efficiency business case, prioritizing those that provide higher energy (e.g., per region, customer class).* *Evidence of energy efficiency pilot projects and programs with adjustments based on the results. Records of post-project testing to validate the effectiveness of the energy efficiency program.*	▪ Other than replacing the streetlight system to convert to LED and reporting public entities energy consumption, PREPA has not taken an active role in the Energy Efficiency program, A proactive and active role is required to cooperate with different government initiatives: ○ PPPE ○ PRDOH (i.e., weatherization programs, community solar and community microgrid initiatives)	SRP candidate
XIII-2 Implementation and Control *Evidence of the energy efficiency program implementation per customer class. Existence of process controls.*	▪ The reporting of energy consumption of government accounts requires more analytics to assess whether the reduction in consumption is due to Energy Efficiency measures or is due to other events (e.g., personnel reduction/downsizing).	Department level gap
XIII-3 Credits *Verification of filing process to claim credit for the energy efficiency program investment. Confirmation of approved credits from the energy efficiency program implementation.*	▪ Not required at this time. ▪ Additional implementation effort is required to be eligible.	Department level gap
XIII-4 Rate Recovery Mechanisms *Existence of recovery mechanisms approved by the company and the regulator.*	▪ Not required at this time. ▪ Additional implementation effort is required to be eligible.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIII-1 Program Design *Evidence of a market study to identify, define and design energy efficiency programs. Existence of energy efficiency business case, prioritizing those that provide higher energy (e.g., per region, customer class).* *Evidence of energy efficiency pilot projects and programs with adjustments based on the results. Records of post-project testing to validate the effectiveness of the energy efficiency program.*		X			
XIII-2 Implementation and Control *Evidence of the energy efficiency program implementation per customer class.* *Existence of process controls.*		X			

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIII-3 Credits *Verification of filing process to claim credit for the energy efficiency program investment. Confirmation of approved credits from the energy efficiency program implementation.*	X				
XIII-4 Rate Recovery Mechanisms *Existence of recovery mechanisms approved by the company and the regulator.*	X				

XIV. IRP Coordination: Renewable Generation/Energy Storage

Evaluation Framework

The IRP Coordination: Renewable Energy/Energy Generation Focus Area consists of five sub-focus areas:

- **XIV-1** Vision and Mission
- **XIV-2** Net-Metering Policy
- **XIV-3** Interconnection Policy
- **XIV-4** Rate Recovery Mechanisms
- **XIV-5** Process Management

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XIV-1 Vision and Mission *Existence of defined state and company renewable generation integration policy based on state vision of clean energy. Verification of utility-scale renewable generation integration. Net-metering (behind the meter) renewable generation. Evidence of regulatory policy of recovery mechanism.*	▪ Act 57-2014, Act 17-2019, establishes and regulates Puerto Ricos's renewable integration goals for the next 30 years.
XIV-2 Net-Metering Policy *Capture which entities the organization partners with for volunteerism and frequency of any activities, donations.*	▪ Act 57-2014, Act 17-2019, establishes and regulates Puerto Ricos's renewable integration goals for the next 30 years. Existing process requires re-designed to deal with backlog and increased number of DG applications.
XIV-3 Interconnection Policy *Evidence of renewable integration policy and procedures for:* *- Utility-scale renewable generation.* *- Net-metering renewable generation.*	▪ The existing interconnection process requires improvement regarding technical study requirements before a DG is approved for interconnection. This to be developed by Engineering.
XIV-4 Rate Recovery Mechanisms *Existence of recovery mechanism approved by company and regulator.*	▪ No evidence of recovery policy/process due to increase DG integration in the Transmission and Distribution system.
XIV-5 Process Management *Evidence of renewable generation application management process from DG application through*	▪ PREPA has implemented an interconnection application process. The process requires improvement as well as the required studies before a renewable source is approved for implementation.

Sub-Focus Areas	Observations & Contributors
commissioning and generation tracking process. *Evidence of interconnection guidelines developed by the company.*	

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XIV-1 Vision and Mission *Existence of defined state and company renewable generation integration policy based on state vision of clean energy. Verification of utility-scale renewable generation integration. Net-metering (behind the meter) renewable generation. Evidence of regulatory policy of recovery mechanism.*	▪ Aggressive goal to achieve renewable integration: 40% by 2025, 60% by 2040 and 100% by 2050. Currently, the island has achieved around five percent renewable integration. Due to Hurricane Maria, all seven exiting renewable sources interrupted their production for about seven to nine months. The island should not rely on intermittent power in the long run. Levels of controllable sources should be considered. The following studies will be required: ○ P1: Perform Locational Net Benefit (LNB) Study at the transmission and sub-transmission levels to identify optimal capacity and location of PV, ESS, PV/ESS. ○ P2: Develop RFI/RFP targeting nodes, technology, and capacity based on the LNB study result.	SRP candidate
XIV-2 Net-Metering Policy *Capture which entities the organization partners with for volunteerism and frequency of any activities, donations.*	▪ Aggressive goal to achieve renewable integration: 40% by 2025, 60% by 2040 and 100% by 2050. Currently, the island has achieved around 5% renewable integration. Due to Hurricane Maria, all 7 existing renewable sources interrupted their production for about 7 to 9 months. The island should not rely on intermittent power in the long run. Levels of controllable sources should be considered. The following studies will be required: ○ P1: Distribution System hosting capacity study (sample feeders per voltage level) ○ P3: Perform LNB at the distribution level (sample feeders per voltage level) ○ P4: Develop RFI/RFP targeting SUBs, technology, and capacity based on LNB study results.	SRP candidate
XIV-3 Interconnection Policy *Evidence of renewable integration policy and procedures for:* *- Utility-scale renewable generation.* *- Net-metering renewable generation.*	▪ Existing interconnection requirement policy and process required to be improved based on Engineering evaluation.	Department level gap
XIV-4 Rate Recovery Mechanisms *Existence of recovery mechanism approved by company and regulator.*	▪ A new IRP study will provide clarity on the required rate recovery plan.	Improvement opportunity
XIV-5 Process Management *Evidence of renewable generation application management process from DG application through commissioning and generation tracking process.* *Evidence of interconnection guidelines developed by the company.*	▪ The process implemented by PREPA still does not allow for approvals of interconnection of renewable sources and therefore needs to be improved.	Department level gap

REGULATORY

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIV-1 Vision and Mission *Existence of defined state and company renewable generation integration policy based on state vision of clean energy. Verification of utility-scale renewable generation integration. Net-metering (behind the meter) renewable generation. Evidence of regulatory policy of recovery mechanism.*	X				
XIV-2 Net-Metering Policy *Capture which entities the organization partners with for volunteerism and frequency of any activities, donations.*		X			
XIV-3 Interconnection Policy *Evidence of renewable integration policy and procedures for:* *- Utility-scale renewable generation.* *- Net-metering renewable generation.*			X		
XIV-4 Rate Recovery Mechanisms *Existence of recovery mechanism approved by company and regulator.*		X			
XIV-5 Process Management *Evidence of renewable generation application management process from DG application through commissioning and generation tracking process.* *Evidence of interconnection guidelines developed by the company.*			X		

XV. IRP Development

Evaluation Framework

The IRP Development Focus Area consists of three sub-focus areas:

- **XV-1** Processes
- **XV-2** Roles and Responsibilities
- **XV-3** Data and Tools

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XV-1 Processes *The extent to which the utility has implemented IRP practices and processes aligned with utilities of similar scope, conditions, and policy objectives. Evaluate the extent to which the processes are coordinated across the various departments including regulatory and external affairs and the stakeholder engagement processes. Corroborate the existence of process and RACI chart to elaborate IRP. Process stages should range from load and renewable generation forecast, through recovery average rate. Evidence of coordination with internal areas and external stakeholders to identify load, generation, economics scenarios.*	▪ Distribution planning: there is a lack of defined process, combined with a lack of a clear vision on responsibilities, e.g. hosting capacity studies to identify the level of renewable sources with recommendations for minimum to system-wide improvements, ▪ Transmission planning: there is a lack of process and a lack of vision on the organisation's role in feeding long term planning (master plan) to feed the IRP, ▪ Generation Planning: There is a lack of process and a lack of vision on the organisation's role in provide sound justification of generation sources needs based on expected renewable integration, ▪ Planning is taking the leadership role to revise the IRP. No process in place.
XV-2 Roles and Responsibilities *Evidence of participation of internal functional areas in the IRP development (i.e., meeting minutes, etc.).*	▪ No evidence of internal communication between functional areas and no RACI chart is in place.
XV-3 Data and Tools *Evidence of data collection process. List of tools being used during the IRP development process.*	▪ Each functional area seems to track its own data.

REGULATORY

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XV-1 Processes *The extent to which the utility has implemented IRP practices and processes aligned with utilities of similar scope, conditions, and policy objectives. Evaluate the extent to which the processes are coordinated across the various departments including regulatory and external affairs and the stakeholder engagement processes. Corroborate the existence of process and RACI chart to elaborate IRP. Process stages should range from load and renewable generation forecast, through recovery average rate. Evidence of coordination with internal areas and external stakeholders to identify load, generation, economics scenarios.*	▪ No formal process in place.	Department level gap
XV-2 Roles and Responsibilities *Evidence of participation of internal functional areas in the IRP development (i.e., meeting minutes, etc.).*	▪ No RACI Charts in place.	Department level gap
XV-3 Data and Tools *Evidence of data collection process. List of tools being used during the IRP development process.*	▪ Relies on a legacy system of record keeping. ▪ It is taking months to get the data versus weeks which is typical for utilities. This describes the data collection, not the data quality.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XV-1 Processes *The extent to which the utility has implemented IRP practices and processes aligned with utilities of similar scope, conditions, and policy objectives. Evaluate the extent to which the processes are coordinated across the various departments including regulatory and external affairs and the stakeholder engagement processes. Corroborate the existence of process and RACI chart to elaborate IRP. Process stages should range from load and renewable generation forecast, through recovery average rate. Evidence of coordination with internal areas and external stakeholders to identify load, generation, economics scenarios.*		X			
XV-2 Roles and Responsibilities *Evidence of participation of internal functional areas in the IRP development (i.e., meeting minutes, etc.).*		X			

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XV-3 Data and Tools *Evidence of data collection process. List of tools being used during the IRP development process.*			X		

XVI. Intra-Department Regulatory Process

Evaluation Framework

The Intra-Department Regulatory Process Focus Area consists of seven sub-focus areas:

- XVI-1 Roles and Responsibilities
- XVI-2 Documentation Practices
- XVI-3 Systems and Tools
- XVI-4 Process
- XVI-5 Schedule Management
- XVI-6 Communication
- XVI-7 Oversight

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XVI-1 **Roles and Responsibilities** *The extent that clear roles & responsibilities exist and are documented within the regulatory group, understanding of expectations of the regulatory group, and specifically how it supports required filings or regulatory guidance/advice (both at an individual and group level). Evidence that any significant gaps are known and proactively looking to determine improvements.*	▪ There is a lack of documented roles & responsibilities and an understanding of expectations for the individuals within PREPA who support regulatory filings. For example, while PREPA does not have a regulatory team in one area, the bulk of this work is done by key players within the PREPA's planning team, as well as certain individuals/teams within the PMO PREPA team. Individuals performing regulatory funcitons hold significant knowledge and work hard to meet deadlines. ▪ It appears that the strategy and the outcome are swung heavily by certain PREPA individuals, including the Governing Board at the 11th hour. ▪ Was not able to discern a cohesive strategy from PREPA senior leadership, or individuals working on PREB filings, nor what success means for the organization within regulatory filings.
XVI-2 **Documentation Practices** *Evidence of review of regulatory information by appropriate individuals (within and outside of Regulatory team) and robust documented support for all regulatory information. The appropriate number of review layers between employees performing analysis/work (including field employees) and Dept heads; opportunities to reduce a review layer to right-size documentation review.*	▪ Largely due to PREPA's reactive state, no evidence or formal approvals support its regulatory filings. While key players at PREPA use their best efforts to seek advice from teams and individuals both within PREPA and at outside consultants, this is done on an informal basis via in-person meetings.
XVI-3 **Systems and Tools** *The extent of IT systems and solutions which support efficient regulatory filings and information compilation. IT systems that support document control and allow collaboration as well as enable tracking of status/flows.*	▪ Information appears to be based on unaudited information from accounting systems but is only controlled through spreadsheets. It is not clear how document control works, whether PREPA uses a SharePoint approach where certain individuals are given access and can manipulate the same document, or if the information is compiled via emails through one person.

REGULATORY

Gap Assessment

Sub-Focus Areas	Observations & Contributors
XVI-4 Process *Evidence of internal knowledge of regulatory filings by PREPA and an understanding of inter-relationships of teams to collaborate to deliver an accurate filing supported with robust detail. Evidence of consistent support documentation across departments and templates to support filings.*	▪ No evidence of formal project management within regulatory filings or workings with other PREPA groups or consultants. Scope of work with consultants tends to change significantly throughout the engagement and LUMA has observed consultants reminding PREPA of upcoming deadlines. ▪ There are not enough PREPA employees working in a regulatory capacity to manage the workload. Those who are present are overloaded with work and are unable to spend significant time on processes/schedules. ▪ Certain initiatives such as the previous rate case do exhibit backup and support for their filings. However, many regulatory filings are based on PREPA providing its thoughts and comments into PREB. PREPA has stated that several initiatives that should be led by PREPA are done by PREB, and PREPA is having to take a more contributory approach to these filings than a leading approach.
XVI-5 Schedule Management *Evidence of maintaining schedules and key timelines, both from a regulatory group capacity as well as broader company knowledge, supporting the effort required to collaborate and consolidate information coming from a variety of sources. Factors that impact schedule delivery may include: understanding of deliverables required (business cases, defensible forecasts), quality of information from inside/outside of Regulatory, project management practices, knowledge of inside/outside of Regulatory process and PREB requirements, available resources inside/outside of Regulatory, etc.*	▪ Individuals performing regulatory funcitons hold significant knowledge and work hard to meet deadlines, however PREPA routinely misses filing deadlines and is subject to PREB late fines.
XVI-6 Communication *Evidence of communication and ultimately quality information coming from various divisions into Regulatory, as well as effective communication and project management from the Regulatory team.*	▪ Communications between teams are very much informal and primarily done through in-person meetings and emails where needed. There are no formal summaries of decisions or strategies sent/recorded internally.
XVI-7 Oversight *The extent of Regulatory team involvement in business decisions, capital projects, performance tracking, preparing information, or background/support on items that should originate from outside of the Regulatory team. Examples: capital project management, such as operational/financial information, business cases, defendable forecasts, procurement documentation, etc. Functionally how processes and filings work, and how involved the regulatory needs to be to complete regulatory filings.*	▪ There is a lack of evidence of how the individuals and teams supporting regulatory filings are linked into non-regulatory filings, where regulatory is required to weigh into operational decisions. PREPA PMO team stated that there is no responsibility for teams to achieve their applicable budget or forecast, or not.

REGULATORY

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XVI-1 Roles and Responsibilities *The extent that clear roles & responsibilities exist and are documented within the regulatory group, understanding of expectations of the regulatory group, and specifically how it supports required filings or regulatory guidance/advice (both at an individual and group level). Evidence that any significant gaps are known and proactively looking to determine improvements.*	▪ PREPAs actions are reactive to regulatory obligations. They lack documented roles, responsibilities, and understanding of expectations for the individuals within PREPA who support regulatory filings. It appears there is no cohesive strategy from PREPA senior leadership, nor parameters for what success means, for the organization within regulatory filings.	Department level gap
XVI-2 Documentation Practices *Evidence of review of regulatory information by appropriate individuals (within and outside of Regulatory team) and robust documented support for all regulatory information. The appropriate number of review layers between employees performing analysis/work (including field employees) and Dept heads; opportunities to reduce a review layer to right-size documentation review.*	▪ No evidence of formal approvals support its regulatory filings. ▪ PREPA's regulatory filings may lack a consistent response given no outright strategy has been determined in advance. Responses largely hang on certain individuals to ensure the appropriate work and analysis is performed.	Department level gap
XVI-3 Systems and Tools *The extent of IT systems and solutions which support efficient regulatory filings and information compilation. IT systems that support document control and allow collaboration as well as enable tracking of status/flows.*	▪ Information appears to be based on sources and processes prone to issues/errors, such as basing responses on unaudited information and the use of spreadsheets and emails.	Department level gap
XVI-4 Process *Evidence of internal knowledge of regulatory filings by PREPA and an understanding of inter-relationships of teams to collaborate to deliver an accurate filing supported with robust detail. Evidence of consistent support documentation across departments and templates to support filings.*	▪ There is a no defined process for completing regulatory filings. There is also no evidence of formal project management within regulatory filings or workings with other PREPA groups or consultants.	Department level gap
XVI-5 Schedule Management *Evidence of maintaining schedules and key timelines, both from a regulatory group capacity as well as broader company knowledge, supporting the effort required to collaborate and consolidate information coming from a variety of sources. Factors that impact schedule delivery may include: understanding of deliverables required (business cases, defensible forecasts), quality of information from inside/outside of Regulatory, project management practices, knowledge of inside/outside of Regulatory process and PREB requirements, available resources inside/outside of Regulatory, etc.*	▪ Due to PREPAs reactionary state, and lack of resources – also due to previous regulatory filings and decisions – PREPA routinely misses deadlines and is subject to PREB fines. PREPA's teams and individuals that support regulatory filings do not have a consistent or formalized approach to regulatory filings, such as using formalized project management software or approaches.	Department level gap
XVI-6 Communication *Evidence of communication and ultimately quality information coming from various divisions into Regulatory, as well as effective communication and project management from the Regulatory team.*	▪ There is a lack of evidence of formal project management processes or communications from individuals supporting PREPA's regulatory filings.	Department level gap

REGULATORY

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XVI-7 Oversight *The extent of Regulatory team involvement in business decisions, capital projects, performance tracking, preparing information, or background/support on items that should originate from outside of the Regulatory team. Examples: capital project management, such as operational/financial information, business cases, defendable forecasts, procurement documentation, etc. Functionally how processes and filings work, and how involved the regulatory needs to be to complete regulatory filings.*	▪ Any operational link over to key regulatory individuals within PREPA is very much done a piecemeal basis, and is likely only done if those individuals reach out and keep an active eye on certain initiatives.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVI-1 Roles and Responsibilities *The extent that clear roles & responsibilities exist and are documented within the regulatory group, understanding of expectations of the regulatory group, and specifically how it supports required filings or regulatory guidance/advice (both at an individual and group level). Evidence that any significant gaps are known and proactively looking to determine improvements.*	X				
XVI-2 Documentation Practices *Evidence of review of regulatory information by appropriate individuals (within and outside of Regulatory team) and robust documented support for all regulatory information. The appropriate number of review layers between employees performing analysis/work (including field employees) and Dept heads; opportunities to reduce a review layer to right-size documentation review.*	X				
XVI-3 Systems and Tools *The extent of IT systems and solutions which support efficient regulatory filings and information compilation. IT systems that support document control and allow collaboration as well as enable tracking of status/flows.*	X				
XVI-4 Process *Evidence of internal knowledge of regulatory filings by PREPA and an understanding of inter-relationships of teams to collaborate to deliver an accurate filing supported with robust detail. Evidence of consistent support documentation across departments and templates to support filings.*	X				

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVI-5 Schedule Management *Evidence of maintaining schedules and key timelines, both from a regulatory group capacity as well as broader company knowledge, supporting the effort required to collaborate and consolidate information coming from a variety of sources. Factors that impact schedule delivery may include: understanding of deliverables required (business cases, defensible forecasts), quality of information from inside/outside of Regulatory, project management practices, knowledge of inside/outside of Regulatory process and PREB requirements, available resources inside/outside of Regulatory, etc.*	X				
XVI-6 Communication *Evidence of communication and ultimately quality information coming from various divisions into Regulatory, as well as effective communication and project management from the Regulatory team.*	X				
XVI-7 Oversight *The extent of Regulatory team involvement in business decisions, capital projects, performance tracking, preparing information, or background/support on items that should originate from outside of the Regulatory team. Examples: capital project management, such as operational/financial information, business cases, defendable forecasts, procurement documentation, etc. Functionally how processes and filings work, and how involved the regulatory needs to be to complete regulatory filings.*	X				

XVII. PREB Filing Process

Evaluation Framework

The PREB Filing Process Focus Area consists of four sub-focus areas:

- **XVII-1** Quality
- **XVII-2** Timeliness
- **XVII-3** Schedule Management
- **XVII-4** Success Rate

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XVII-1 Quality *Evidence of quality regulatory filings, with comments from other parties, and information that can be translated clearly, with minimal errors, that ultimately allows PREB to provide a ruling. Evidence that interveners (interested third-parties) and PREB understand filings and are satisfied with the quality of the information provided.*	▪ Regulatory filings are performed on a reactionary basis with limited resources, not using formalized project management practices.
XVII-2 Timeliness *Evidence of driving for regulatory efficient schedules for PREB filings, with minimal extensions, late filings or incomplete filings.*	▪ Individuals performing regulatory funcitons hold significant knowledge and work hard to meet deadlines, however PREPA routinely misses deadlines and is subject to PREB fines.
XVII-3 Schedule Management *Existence of culture of pro-active preparation for regulatory filings and issues, compared to reactive responses. Evidence that information provided in a manner that aligns/supports PREB's stated policy objectives.*	▪ Evidence of reactive culture to PREPA's regulatory filings and issues.
XVII-4 Success Rate *Evidence of Regulatory team efforts to encourage positive outcome of filings. Evidence of filings/motions that support PREPA's policy perspective.*	▪ Reactionary state of regulatory filings, with no clear or formalized policy objectives determined before filings.

REGULATORY

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XVII-1 Quality *Evidence of quality regulatory filings, with comments from other parties, and information that can be translated clearly, with minimal errors, that ultimately allows PREB to provide a ruling. Evidence that interveners and PREB understand filings and are satisfied with the quality of the information provided.*	▪ Evidence that regulatory filings are performed on a reactionary basis with limited resources, not using formalized project management practices. Quality of filings was determined to be lacking within the most recent PREB resolution and order from the 2017 PREPA rate order.	Department level gap
XVII-2 Timeliness *Evidence of driving for regulatory efficient schedules for PREB filings, with minimal extensions, late filings or incomplete filings.*	▪ Due to PREPAs reactionary state, and lack of resources – also due to from previous regulatory filings and decisions – PREPA routinely misses deadlines and is subject to PREB fines. PREPA's teams and individuals that support regulatory filings do not have a consistent or formalized approach to regulatory filings, such as using formalized project management software or approaches.	Department level gap
XVII-3 Schedule Management *Existence of culture of pro-active preparation for regulatory filings and issues, compared to reactive responses. Evidence that information provided in a manner that aligns/supports PREB's stated policy objectives.*	▪ Evidence of reactive culture to PREPA's regulatory filings and issues. No clear or formalized policy objectives.	Department level gap
XVII-4 Success Rate *Evidence of Regulatory team efforts to encourage positive outcome of filings. Evidence of filings/motions that support PREPA's policy perspective.*	▪ Reactionary state of regulatory filings, with no clear or formalized policy objectives determined before filings. Therefore, uncertain as to whether filings are successful, or meet quality standards – as filings are likely performed under what can be done within best efforts given deadlines.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVII-1 Quality *Evidence of quality regulatory filings, with comments from other parties, and information that can be translated clearly, with minimal errors, that ultimately allows PREB to provide a ruling. Evidence that interveners and PREB understand filings and are satisfied with the quality of the information provided.*	X				
XVII-2 Timeliness *Evidence of driving for regulatory efficient schedules for PREB filings, with minimal extensions, late filings or incomplete filings.*	X				

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVII-3 **Schedule Management** *Existence of culture of pro-active preparation for regulatory filings and issues, compared to reactive responses. Evidence that information provided in a manner that aligns/supports PREB's stated policy objectives.*	X				
XVII-4 **Success Rate** *Evidence of Regulatory team efforts to encourage positive outcome of filings. Evidence of filings/motions that support PREPA's policy perspective.*	X				

XVIII. External Relationships

Evaluation Framework

The External Relationships Focus Area consists of three sub-focus areas:

XVIII-1 PREB
XVIII-2 Quality
XVIII-3 Government

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XVIII-1 PREB *The existence of frequent and quality interactions directly with PREB, understanding of PREB key concerns, objectives, goals and outcomes. The ability of PREPA to influence issues and processes during planning and development.*	▪ PREPA takes an informal approach to its relationship with PREB. There are certain key PREPA individuals and teams that routinely have discussions with PREB (its commissioners, and consultants) without formal procedures.
XVIII-2 Quality *The existence of frequent and quality interactions directly with Interveners, understanding of Intervener concerns, objectives, goals, and outcomes.*	▪ No evidence of ongoing relationship with Interveners.
XVIII-3 Government *The existence of frequent and quality interactions directly with various levels of government and government bodies, understanding of concerns, objectives, goals, and outcomes. The ability of PREPA to influence issues during planning and development.*	▪ An informal process to PREPA's relationship with the P3A and FOMB.

REGULATORY

Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XVIII-1 PREB *The existence of frequent and quality interactions directly with PREB, understanding of PREB key concerns, objectives, goals and outcomes. The ability of PREPA to influence issues and processes during planning and development.*	▪ Working sessions and further breakout sessions revealed an informal process to PREPA's relationship with PREB. There are certain key PREPA individuals and teams that routinely have discussions with PREB (its commissioners, and consultants). It appears that PREPA has a positive working, and collaborative relationship with PREB, but appears that PREB leads the majority of items, (and again due to lack of resources and reactionary nature to regulatory filings), PREPA is brought in for comments and feedback as to opposed to leading to the desired outcome.	Improvement opportunity
XVIII-2 Quality *The existence of frequent and quality interactions directly with Interveners, understanding of Intervener concerns, objectives, goals, and outcomes.*	▪ No evidence of ongoing relationship with Interveners, as no set responsibility for a direct Intervener relationship, unlike the roles PREPA has for PREB/FOMB, etc. relationships.	Improvement opportunity
XVIII-3 Government *The existence of frequent and quality interactions directly with various levels of government and government bodies, understanding of concerns, objectives, goals, and outcomes. The ability of PREPA to influence issues during planning and development.*	▪ Working sessions and further breakout sessions revealed an informal process to PREPA's relationship with the P3A and FOMB. There are certain key PREPA individuals and teams that routinely have discussions with these entities (its staff and consultants). It appears that PREPA has a positive working and collaborative relationship with P3A and FOMB.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XVIII-1 PREB *The existence of frequent and quality interactions directly with PREB, understanding of PREB key concerns, objectives, goals and outcomes. The ability of PREPA to influence issues and processes during planning and development.*	X				
XVIII-2 Quality *The existence of frequent and quality interactions directly with Interveners, understanding of Intervener concerns, objectives, goals, and outcomes.*	X				

REGULATORY

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVIII-3 Government *The existence of frequent and quality interactions directly with various levels of government and government bodies, understanding of concerns, objectives, goals, and outcomes. The ability of PREPA to influence issues during planning and development.*	X				

XIX. Regulatory Strategy

Evaluation Framework

The Regulatory Strategy Focus Area consists of three sub-focus areas:

XIX-1 Definition
XIX-2 Implementation
XIX-3 Location Considerations

Observations & Contributors

Sub-Focus Areas	Observations & Contributors
XIX-1 Definition *The extent to which the Regulatory process is defined and understood by PREPA. The extent of analysis of PREB rulings to date including position papers. General understanding of PREB preferences/positions and a calendar of upcoming filings/cases.*	▪ Due to the reactionary state and lack of resources, there is no evidence of formalized position papers, stating objectives or next steps
XIX-2 Implementation *Evidence or examples of position papers of current regulatory strategies. Evidence of integration of strategic policy into regulatory filings.*	▪ No evidence of formulated strategies or strategic policy within regulatory filings, or communication to other internal PREPA teams.
XIX-3 Location Considerations *Existence of PREPA culture to understand and adjust regulatory filings and PREPA actions for overall landscape with various party's concerns in Puerto Rico.*	▪ Through working sessions and further breakout sessions, PREPA appears to understand the overall regulatory landscape, and how to navigate and adapt to the various party's concerns.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XIX-1 Definition *The extent to which the Regulatory process is defined and understood by PREPA. The extent of analysis of PREB rulings to date including position papers. General understanding of PREB preferences/positions and a calendar of upcoming filings/cases.*	▪ Due to PREPA's reactionary state and lack of resources, there is no evidence of formalized position papers, stating objectives or next steps. However, key individuals and teams have a clear sense of what is coming up in the regulatory calendar, and they use informal and reactionary ways of working to complete the critical filings/cases.	Department level gap
XIX-2 Implementation *Evidence or examples of position papers of current regulatory strategies. Evidence of integration of strategic policy into regulatory filings.*	▪ No evidence of formulated strategies or strategic policy within regulatory filings, or communication to other internal PREPA teams.	Department level gap

REGULATORY

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XIX-3 Location Considerations *Existence of PREPA culture to understand and adjust regulatory filings and PREPA actions for overall landscape with various party's concerns in Puerto Rico.*	▪ Through working sessions and further breakout sessions, PREPA appears to understand the overall regulatory landscape, and how to navigate and adapt to the various party's concerns. It appears that PREPA often takes a follower approach to items with PREB and the FOMB instead of voicing their preferred alternative and approach.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XIX-1 Definition *The extent to which the Regulatory process is defined and understood by PREPA. The extent of analysis of PREB rulings to date including position papers. General understanding of PREB preferences/positions and a calendar of upcoming filings/cases.*	X				
XIX-2 Implementation *Evidence or examples of position papers of current regulatory strategies. Evidence of integration of strategic policy into regulatory filings.*	X				
XIX-3 Location Considerations *Existence of PREPA culture to understand and adjust regulatory filings and PREPA actions for overall landscape with various party's concerns in Puerto Rico.*	X				

LUMA

Gap Assessment

Human Resources

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Gap Assessment

General Approach

The Human Resources gap assessment includes the following main areas of focus, as shown in the tables below:

General Management: There are nine management focus areas that generally apply to all departments.

Core Business: There are eight core business focus areas specifically relating to Human Resources.

General Management Focus Areas	
I	Organization Design Effectiveness
II	Budgeting & Cost Performance
III	Leadership Management
IV	Process Efficiency & Effectiveness
V	Employee Training & Development
VI	Workforce Management
VII	Management Systems & Technology
VIII	Performance Metrics & Continuous Improvement
IX	PREPA Culture & Momentum
Core Business Focus Areas	
XI	General Employment
XII	Total Rewards
XIII	HCM
XIV	Employee Health Clinic
XV	Employee Engagement
XVI	Compliance
XVII	Talent Management
XVIII	Employee Training and Development (Non-Technical)

We applied the following standard methodology to both the General Management and Core Business Assessments, thus forming the bases for identifying gaps.

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus & Sub-Focus Areas

The nine **General Management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas			
I	**Organization Design Effectiveness**	I-1	Span of Control	I-3	Ratio of Administrative to Direct Workers
		I-2	Clarity on Management & Supervisory Roles	I-4	Impact of Protected Patronage Workers
II	**Budgeting & Cost Performance**	II-1	Actual Expenditures as a Percentage of Budgeted	II-4	Overtime & Contractors Management
		II-2	Impact of Emergent Issues on Budgets	II-5	Direct and Allocated Indirect Cost Management
		II-3	Unit Cost/Productivity Management		
III	**Leadership Management**	III-1	Qualifications & Experience	III-3	Ability to Deliver Results
		III-2	Accountability	III-4	Inter- & Intra-Organization Collaboration
IV	**Process Efficiency & Effectiveness**	IV-1	Potential Risks to Post-Commencement	IV-3	Process Compliance Management
		IV-2	Process Familiarity by all Stakeholders	IV-4	Efficiency of Overall Process Flow
V	**Employee Training & Development**	V-1	Training Budgets & Program Effectiveness	V-3	Skills Assessment & Personnel Training Plans
		V-2	Ability to Cross-Train as Personnel Development Path	V-4	Demographics & Profile of Personnel by Skill Level
VI	**Workforce Management**	VI-1	Effectiveness of Current Workforce Management Processes	VI-2	Time Charging & Productivity Tracking & Reporting
VII	**Management Systems & Technology**	VII-1	Process Automation	VII-3	Interaction or Linkage with Other Functional Areas' IT Plans or Systems
		VII-2	Adaptability to New Systems & Technology	VII-4	Potential for Quick Wins That Do Not Require Full IT Systems Replacements
VIII	**Performance Metrics & Continuous Improvement**	VIII-1	Recognition of Critical Performance Metrics	VIII-4	Instances (or Lack) of Data-Driven Management Initiatives
		VIII-2	Performance Metric Collection, Validation & Reporting	VIII-5	Recent Performance Trends
		VIII-3	Root Cause & Trend Analysis		
IX	**PREPA Culture & Momentum**	IX-1	Resistance (Active or Passive) to LUMA Management	IX-3	Employee Empowerment / Action Orientation
		IX-2	Employee Morale/Excitement about LUMA	IX-4	Timeframe to Improve Performance
				IX-5	Impact of Organization Silos

I. Organization Design Effectiveness

Evaluation Framework

The Organization Design Focus Area consists of four sub-focus areas (core and enabling areas that define an effective organization design):

- I-1 Span of Control
- I-2 Clarity on Management and Supervisory Roles
- I-3 Ratio of Administrative to Direct Workers
- I-4 Impact of Protected Patronage Workers

Observations & Contributors

Sub-Focus Area	Observations & Contributors
I-1 Span of Control *Examines the supervisor/subordinate ratio and responsibilities and seeks evidence of the potential to remove or reclassify one-on-one reporting relationships and/or mid-level management positions.*	▪ Human Resources (HR) total headcount (HC) is 124. HR Director has 8 direct reports, a second-level span of control ranges from four to seven direct reports per manager. ▪ Based on the information received by HR leadership, it appears that there are opportunities for right sizing, especially for roles that perform administrative and manual tasks.
I-2 Clarity on Management & Supervisory Roles *Examines manager / supervisor job classifications and responsibilities, noting the layers between lower-level field workers and department heads. Identifies opportunities to reduce reporting layers to right-size organization.*	▪ In most HR units there are three to four layers between workers and the department head. ▪ A leaner organizational structure is necessary to increase efficiency and reduce administrative burden.
I-3 Ratio of Administrative to Direct Workers *Examines the tasks performed by administrative personnel that could be done by direct workers. Explores opportunities to reduce administrative personnel through improved processes or increased computer technology.*	▪ There are at least 7 admins in HR. Historically PREPA has assigned admins to each department and division. Some departments require specialized knowledge i.e., Labor Relations require legal skills. Each dept in HR has its own administrator. Since this is a career position (Servicio de Carrera) the employee has rights and cannot be terminated without cause (i.e., disciplinary fault). Automation of critical HR processes could lead to a reduction in admin support. ▪ Each department has its own administrative assistant, reporting to the dept. manager / supervisor. ▪ Rationale: There is a significant amount of administrative manual work, including tasks that cannot be performed by directors due to a lack of skills or the tasks being too administrative. PREPA is heavily regulated and needs to ensure compliance in all areas.
I-4 Impact of Protected Patronage Workers *Uncovers the existence of patronage positions and examines the economic impact to the organization.*	▪ Per HR Director, there are no patronage positions in Human Resources.

HUMAN RESOURCES

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*	▪ Not enough information on employees' responsibilities to decide.	
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*	▪ Once positions are created and employees are hired, they acquire rights over their jobs. Historic organizational procedures contribute to many positions per department. ▪ Not enough information on job positions in order to determine. ▪ Consider a third party vendor to complete this analysis.	Improvement opportunity
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*	▪ Excessive administrative manual processes and procedures cause increased workload.	Department level gap
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*	▪ N/A	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
I-1 Span of Control *Supervisor/subordinate ratio and relationships are appropriate with no one-on-one reporting relationships or extraneous mid-level management positions.*					
I-2 Clarity on Management & Supervisory Roles *Manager / supervisor responsibilities are clear and without added layers between lower-level field workers and department heads.*		X			
I-3 Ratio of Administrative to Direct Workers *Number of administrative to direct workers is an ideal ratio, and tasks performed by administrative personnel are appropriate and cannot be done by direct workers, improved processes or computer technology.*	X				
I-4 Impact of Protected Patronage Workers *Existence and economic impact of patronage positions to the organization.*				X	

II. Budgeting & Cost Performance

Evaluation Framework

The Budgeting & Cost Performance Focus Area consists of five sub-focus areas:

- II-1 Actual Expenditures as Percentage of Budgeted
- II-2 Impact of Emergent Issues on Budgets
- II-3 Unit Cost/Productivity Management
- II-4 Overtime & Contractors Management
- II-5 Direct & Allocated Indirect Cost Management

Observations & Contributors

Sub-Focus Area	Observations & Contributors
II-1 **Actual Expenditures as Percentage of Budgeted** *Examines ability to operate within budget; ensures expenditures are within department's control; examines evidence of activity-based budgeting; examines process used to develop the annual budget.*	▪ Focus is on maintaining status quo, with no new investments planned. ▪ Per the HR Director, the HR function operates within its budget. ▪ Received department budget, however, detail is vague and didn't receive budget preparation process.
II-2 **Impact of Emergent Issues on Budgets** *Examines the ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact. Uncovers evidence of regularly exceeding approved budgets.*	▪ The focus is to maintain current state. The Director may request additional funding for specific projects or critical positions. ▪ The budget is sent to Finance and approved by FOMB. ▪ The budget is approved one to two months prior to Fiscal Year close. ▪ The fiscal year is defined as July 1 to June 30. ▪
II-3 **Unit Cost/Productivity Management** *Seeks evidence that productivity is a high priority, is routinely monitored, and improvements are continuously made.*	▪ There is no productivity tracking. Productivity should be managed and tracked to ensure continuous improvement.
II-4 **Overtime & Contractors Management** *Evaluates manpower utilization to ensure that overtime and contractor usage are not used to meet commitments that could have been achieved with adequate planning and management.*	▪ Per the HR Director, HR employees rarely works OT, however, when another function requires HR staff to work overtime, time is charged to the requesting function. ▪ HR hires two contractors (former judges) for Labor Relations issues. These contracts follow the procedures established in the Administration Manual, however, the same contractors have been hired for more than 20 years.
II-5 **Direct & Allocated Indirect Cost Management** *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ HR Budget is limited to the HR Directory and has no impact in other departments budgets. ▪ Did not receive any information indicating that other corporate or functions decisions dictate the HR budget performance.

HUMAN RESOURCES

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
II-1 **Actual Expenditures as Percentage of Budgeted** *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	▪ A miscellaneous budget of 282,000 is included, with vague details on expenditures. ▪ More detailed information is necessary in order to assess any budget improvement opportunities.	Improvement opportunity
II-2 **Impact of Emergent Issues on Budgets** *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	▪ There is not a defined budget for potential emergent issues. Department budget consists mostly of salaries and other payments to employees.	Department Level Gap
II-3 **Unit Cost/Productivity Management** *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	▪ Productivity is not measured. The practice is to maintain the status quo, therefore, no measurement of planning for improvement is in place.	Department Level Gap
II-4 **Overtime & Contractors Management** *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*	▪ OT is rarely used in HR, however, the usage of the same contractors is a practice that has been in place for more than 20 years.	Department Level Gap
II-5 **Direct & Allocated Indirect Cost Management** *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*	▪ Did not receive enough information to assess.	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
II-1 **Actual Expenditures as Percentage of Budgeted** *Ability to operate within budget and with assurance that expenditures are within the department's control and void of activity-based spending.*	X				
II-2 **Impact of Emergent Issues on Budgets** *Ability to anticipate potential risks to budget performance and to manage such risks to mitigate their impact.*	X				
II-3 **Unit Cost/Productivity Management** *Evidence that productivity is a high priority, is routinely monitored and improvements are continuously made.*	X				

HUMAN RESOURCES

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
II-4 **Overtime & Contractors Management** *Overtime and contractor usage are used to meet commitments and not the result of inadequate planning and management.*		X			
II-5 **Direct & Allocated Indirect Cost Management** *Examines the extent that corporate or other department budgeting decisions dictate budget performance at the function level. Ensures adequacy of corporate budget cycle and controls.*					

III. Leadership Management

Evaluation Framework

The leadership management focus area consists of four sub-focus areas:

- III-1 Qualifications & Experience
- III-2 Accountability
- III-3 Ability to Deliver Results
- III-4 Inter– & Intra-Organization Collaboration

Observations & Contributors

Sub-Focus Area	Observations & Contributors
III-1 Qualifications & Experience *Examines leadership positions to ensure they are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ Most management positions were filled before the director started, however, he has evaluated his staff and is comfortable with their skills and experience. He has made two management changes to improve skills. ▪ Per the HR Director, all HR leadership is highly qualified to perform their roles and have been assigned to their roles based on their qualifications and performance.
III-2 Accountability *Examines leadership accountability to explain, justify, and take responsibility for decisions and actions and outcomes which should align with the company's mission, values and goals. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ Director holds his management team accountable for their units. without micromanaging them. ▪ The director shows to be open and honest with employees. ▪ HR leadership practice is to delegate responsibilities, let employees learn from their own mistakes and counsel when needed.
III-3 Ability to Deliver Results *Examines the extent to which leaders mobilize resources and solve problems to achieve defined goals. Leaders do not allow problems to fester without resolution.*	▪ Per the HR Director, the leadership team is accountable and responsive to issues that arise, however, since there's not a performance management process, it is very difficult to hold union employees accountable. The lack of resources and technology also contribute to low accountability.
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ There is strong collaboration between the various HR units. Information is shared between units as necessary to complete the necessary cross-unit HR tasks. ▪ Although HR has significant interaction with other departments, due to the nature of the services offered, the HR Director thinks that most departments work in silos.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*	▪ Since there's not an employee performance management process, we did not receive information to corroborate the employees experience as well as their performance.	Department level gap

HUMAN RESOURCES

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible.*	▪ N/A	
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*	▪ A performance management process which includes continuous performance metrics needs to be implemented.	Improvement Opportunity
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*	▪ Per the HR Director, most non-HR departments work in silos.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
III-1 Qualifications & Experience *Leadership positions are filled by merit and experience using an objective process that is consistently applied and routinely monitored.*		X			
III-2 Accountability *Leaders' decisions, actions and outcomes align with the company's mission, values and goals, and leaders are accountable for them. Leaders adopt a culture of identifying and applying "lessons learned" wherever possible..*				X	
III-3 Ability to Deliver Results *Leaders mobilize resources and solve problems to achieve defined goals. They do not allow problems to fester without resolution.*		X			
III-4 Inter– & Intra-Organization Collaboration *Collaborates with other departments to meet company goals (versus operating as an organizational silo).*		X			

IV. Process Efficiency & Effectiveness

Evaluation Framework

The Process Efficiency and Effectiveness Focus Area consists of four sub-focus areas:

- IV-1 Potential Risks to Post-Commencement
- IV-2 Process Familiarity by all Stakeholders
- IV-3 Process Compliance Management
- IV-4 Efficiency of Overall Process Flow

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IV-1 **Potential Risks to Post-Commencement** *Identifies risks to post-commencement and steps needed to mitigate the risks.*	▪ Many HR processes, especially recruiting, onboarding, training, employee files maintenance are performed manually, creating excessive paper documentation. ▪ Recruiting process is extremely manual: resumes are received in paper, and all candidate screening and selection process is done by paper as well. ▪ All onboarding documentation is physically signed by employees and filed in paper form. No electronic filing process is used. ▪ Training materials and tracking is done manually. No digital training delivery or tracking system is in place. ▪ Automation of HR critical processes is needed.
IV-2 **Process Familiarity by all Stakeholders** *Examines operational processes to ensure they are defined and understood. Looks for existence of "black boxes" where processes stall and participants do not understand why.*	▪ Processes are not mapped or documented. They are mostly manual and only known by department members.
IV-3 **Process Compliance Management** *Assures that primary processes are routinely monitored to ensure compliance, any irregularities are addressed, and the impact of noncompliance is understood.*	▪ HR processes are audited for compliance at the department level. Monthly reports are submitted to the Junta de Gobienro of PREPA (PREPA Governance Board), including HR Key Performance Indicators (KPIs).
IV-4 **Efficiency of Overall Process Flow** *Examines flow efficiency to ensure highly automated processes with near real-time status awareness. Ensures responsibilities are grouped to increase efficiency with hand-offs or back-and-forth process flows are minimized.*	▪ Automated processes are necessary to improve productivity within budget constraints

HUMAN RESOURCES

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IV-1 **Potential Risks to Post-Commencement** *Extent to which risks are recognized and adequate risk mitigation measures are in place or are recognized by management.*	▪ Automation of critical processes is needed to reduce manual work and physical documentation.	Improvement opportunity
IV-2 **Process Familiarity by all Stakeholders** *Primary processes are generally mapped out and process flow is well understood by most stakeholders. Very few if any, "black boxes" where process stalls and participants do not understand why.*	▪ There are no process maps. A process-based system is needed to ensure clarity of processes resulting in efficiency and automation.	Improvement opportunity
IV-3 **Process Compliance Management** *Primary processes are routinely monitored, deviations addressed, and impacts recognized. Periodic spot audits conducted to ensure compliance.*	▪ N/A	
IV-4 **Efficiency of Overall Process Flow** *. Highly automated process, with near real-time status awareness, responsibilities grouped to increase efficiencies, hand-offs or back-and-forth process flows are minimized.*	▪ Processes are not automated. Automation of critical processes is needed to reduce manual work and physical documentation.	Improvement opportunity

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IV-1 **Potential Risks to Post-Commencement** *Extent to which risks are recognized and adequate risk mitigation measures are in place or are recognized by management.*	X				
IV-2 **Process Familiarity by all Stakeholders** *Primary processes are generally mapped out and process flow is well understood by most stakeholders. Very few if any, "black boxes" where process stalls and participants do not understand why.*	X				
IV-3 **Process Compliance Management** *Primary processes are routinely monitored, deviations addressed, and impacts recognized. Periodic spot audits conducted to ensure compliance.*				X	
IV-4 **Efficiency of Overall Process Flow** *Highly automated process, with near real-time status awareness, responsibilities grouped to increase efficiencies, hand-offs or back-and-forth process flows are minimized.*	X				

V. Employee Training & Development

Evaluation Framework

The Employee Training & Development Focus Area consists of four sub-focus areas:

- V-1 Training Budgets & Program Effectiveness
- V-2 Ability to Cross-Train as Personnel Development Path
- V-3 Skills Assessment & Personnel Training Plans
- V-4 Demographics & Profile of Personnel by Skill Level

Observations & Contributors

Sub-Focus Area	Observations & Contributors
V-1 **Training Budgets & Program Effectiveness** *Evaluates the emphasis placed on employee training by examining the training budget and program effectiveness.*	▪ Per the HR Director, HR does not manage the training budget nor have a program to measure training effectiveness. ▪ There is a target training amount included in the budget, however, no surrounding details were shared.
V-2 **Ability to Cross-Train as Personnel Development Path** *Availability and pursuit of cross training, along for broader employee long-term development, along with appropriate flexibility to balance personal and corporate training targets.*	▪ PREPA does not have a formal cross-training program. ▪ Per the HR director, specifically referring to the HR Department, there have been instances when HR employees have been temporarily assigned to support other areas, especially during emergencies.
V-3 **Skills Assessment & Personnel Training Plans** *Is there an adequate process in place to map existing and future skill sets of employees with company needs?*	▪ There is not a formal process to match employee skills with company needs. ▪ Employees are selected to new and future positions based on their current manual recruitment process. Skills are evaluated case by case when employees apply for internal positions. ▪ There are no formal development plans. For the HR department, development plans are informally managed within HR..
V-4 **Demographics & Profile of Personnel by Skill Level** *Evaluate long-term employee demographic patterns (considering retirement and personnel development timelines) to ensure there will be adequately trained personnel available in the future.*	▪ There is not a formal process to ensure that an adequate number of trained personnel will be available.

HUMAN RESOURCES

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gap	Categorization
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training as evidenced by training budget and program effectiveness.*	▪ No training budget details were available, however, the amount of 40,000 was documented..	Department level gap
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross training initiatives to improve development path for personnel.*	▪ No formal cross-training plan. ▪ Cross-training rotations should be encouraged and monitored to ensure that personnel develop a diversity of skills and experiences.	Department level gap
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets relative to company needs.*	▪ There are no career development plans. ▪ Cross- training should be encouraged to ensure that employees develop different skills and experiences.	Department level gap
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	▪ Cross-training is encouraged to ensure that employees develop different skills and experiences.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
V-1 **Training Budgets & Program Effectiveness** *Emphasis placed on employee training is evidenced by training budget and program effectiveness.*		X			
V-2 **Ability to Cross-Train as Personnel Development Path** *Pursuit of cross-training initiatives to improve development path for personnel*		X			
V-3 **Skills Assessment & Personnel Training Plans** *Process to map existing and future employee skill sets.*	X				
V-4 **Demographics & Profile of Personnel by Skill Level** *Long-term employee demographic patterns consider retirement and personnel development timelines to ensure there will be adequately trained personnel available for future work efforts.*	X				

VI. Workforce Management

Evaluation Framework

The Workforce Management Focus Area consists of two sub-focus areas:

- VI-1 Effectiveness of Current Workforce Management Systems & Processes
- VI-2 Time Charging & Productivity Tracking & Reporting

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Examines defined processes and work rules to ensure efficient labor utilization. This includes CBA restrictions, the management focus on seeking out productivity enhancements, and if the workforce itself takes pride in seeking to become best-in-class.*	▪ There is no workforce management process or systems to measure efficient labor utilization. ▪ There is not a performance management culture. Employee labor is not measured against pre-defined goals or targets.
VI-2 **Time Charging & Productivity Tracking & Reporting** *Evaluates how labor hours are spent and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Assures that quality assurance and quality control measures are key elements of the evaluation.*	▪ There is not a process to measure work efficiency and possible costs reductions due to overtime. ▪ Time is charged directly to the division. There are no QA or QC measures in place. There are no productivity metrics.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Defined processes and work rules to ensure efficient labor utilization.*	▪ There is a lack of processes to measure productivity and ensure continuous improvement and cost savings over time.	Priority
VI-2 **Time Charging & Productivity Tracking & Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*	▪ Employees working for different departments are charged to the department they are supporting. ▪ There is a lack of productivity metrics.	Priority

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements that define this sub-area and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/ starting to apply them.	The organization has identified the means to address the major elements that define this sub-area, and work is progressing on implementation.	All elements that define this sub-area are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches that go beyond the basic requirements, driving to achieve maximum value in this sub-area.
Sub-Focus Area					
VI-1 **Effectiveness of Current Workforce Management Systems & Processes** *Defined processes and work rules to ensure efficient labor utilization.*	X				
VI-2 **Time Charging & Productivity Tracking & Reporting** *Labor is tracked and evaluated to improve productivity, contribute to the bottom line and improve customer satisfaction. Quality assurance and quality control measures are key elements of the evaluation.*		X			

VII. Management Systems & Technology

Evaluation Framework

The Management Systems & Technology Focus Area consists of four sub-focus areas:

- VII-1 Process Automation
- VII-2 Adaptability to New Systems & Technology
- VII-3 Interaction or Linkage with Other Functional Areas' IT Plans or Systems
- VII-4 Potential for Quick Wins That Do Not Require Full IT Systems Replacements

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VII-1 **Process Automation** *Evaluates the current efficiency of technology trends, re-engineered process designs and automated functions.*	▪ Most of the processes performed in HR are manual, i.e., recruitment, personnel transactions and training.
VII-2 **Adaptability to New Systems & Technology** *Evaluate the ability to adjust attitudes, processes, and technology to make quality improvement strides.*	▪ Leadership expressed interest in having more automated processes, but pointed out that since, most processes have been manual for many years and employees are used to a manual process.
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Evaluate the extent to which existing systems link to other functional areas. Consider how these interactions affect prioritization of upgrade initiatives.*	▪ There is interaction with other functional areas but due to numerous system bolt-on's processes are complex and leave room for error and data inconsistencies. .
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Evaluate "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ Automation of HR processes will require a transformational in clulture, including process re-engineering and automation.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	▪ Need to automate critical HR processes.	SRP candidate (Priority)
VII-2 **Adaptability to New Systems & Technology** *Ability to adjust attitudes, processes and technology to make quality improvements.*	▪ There is no technology in place to automate routine tasks, notifications, or reporting. All tasks are manual and paper-based.	Department Level Gap

HUMAN RESOURCES

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*	▪ Interaction or linkage with other areas relies on complex data flows that may result in data inconsistencies. .	Priority
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	▪ Employee adaptability to new technologies is unknown as a result of managing manual processes for so many years.. ▪ Cultural change and critical HR process re-engineering and automation is necessary.	Priority

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VII-1 **Process Automation** *Extent to which technology trends, re-engineered process designs, and automated functions are current and efficient.*	X				
VII-2 **Adaptability to New Systems & Technology** *Ability to adjust attitudes, processes and technology to make quality improvements.*	X				
VII-3 **Interaction or Linkage with Other Functional Areas' IT Plans or Systems** *Linkages of existing systems to other functional areas.*	X				
VII-4 **Potential for Quick Wins That Do Not Require Full IT Systems Replacements** *Application of "quick wins" – ways to adapt in smaller increments to improve processes.*	X				

VIII. Performance Metrics & Continuous Improvement

Evaluation Framework

The Performance Metrics & Continuous Improvement Focus Area consists of five sub-focus areas:

- VIII-1 Recognition of Critical Performance Metrics
- VIII-2 Performance Metric Collection, Validation & Reporting
- VIII-3 Root Cause & Trend Analysis
- VIII-4 Data-Driven Management Initiatives
- VIII-5 Recent Performance Trends

Observations & Contributors

Sub-Focus Area	Observations & Contributors
VIII-1 **Recognition of Critical Performance Metrics** *Are key performance indicators (KPIs) identified and routinely monitored? Are major improvement initiatives matched to data driven performance targets?*	▪ Director submits a monthly KPI report to the Governance Board, mostly focused on headcount, number of terminations, complaints and disciplinary actions, labor relations cases, leaves, medical plan usage, ▪ HR KPi's are not tied to organizational performance ▪ No KPI's improvement initiatives were shared
VIII-2 **Performance Metric Collection, Validation & Reporting** *Do adequate methods exist to collect performance data and to validate its accuracy? Does the Company have adequate situational awareness of its operations?*	▪ All HR divisions collaborate to produce the monthly KPI report. ▪ No evidence of adequate situational awareness was provided.
VIII-3 **Root Cause & Trend Analysis** *Are performance drivers recognized and understood? Does the Company can estimate the costs or benefits of improving KPIs?*	▪ The indicators are understood by the various HR units but they don't have a process to estimate the cost or benefits to improving KPIs.
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Existence of a track record of establishing and achieving performance improvement initiatives? Does the company recognize what has caused success or failure in past initiatives?*	▪ The department has not established performance improvement initiatives; therefore, it is unlikely that they have a process in place to recognize success or failure.
VIII-5 **Recent Performance Trends** *Are KPI levels trended? What has recent trend been? How does company measure up to industry averages?*	▪ HR Director indicated that the HR KPIs maintain a stable trend, unless there are union strikes. ▪ They do not measure or compare KPI performance against any other industry in Puerto Rico.

HUMAN RESOURCES

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VIII-1 **Recognition of Critical Performance Metrics** *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*	▪ HR KPI's should be connected with the overall organization's performance ▪ Improvement initiatives should be put in place.	Department Level Gap
VIII-2 **Performance Metric Collection, Validation & Reporting** *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*	▪ No evidence of adequate situational awareness was provided.	Department Level Gap
VIII-3 **Root Cause & Trend Analysis** *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs.*	▪ There was no evidence or root cause analysis provided to demonstrate a recognition of performance drivers or to determine improvement initiatives..	Department Level Gap
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	▪ No records of performance improvement over time or recognition of past successes or failures was provided. ▪ Performance improvement process is not in place.	Department Level Gap
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	▪ Trends are not tracked in relation to industry averages.	Department Level Gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
VIII-1 **Recognition of Critical Performance Metrics** *Identification and routine monitoring of KPIs, along with improvement initiatives matched to data driven performance targets*		X			
VIII-2 **Performance Metric Collection, Validation & Reporting** *Existence of adequate methods to collect and validate performance data, along with situational awareness of operations*		X			
VIII-3 **Root Cause & Trend Analysis** *Recognition and understanding of performance drivers and Company's ability to estimate costs and benefits of improving KPIs*	X				

HUMAN RESOURCES

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
VIII-4 **Instances (or Lack) of Data-Driven Management Initiatives** *Track record of establishing and achieving performance improvement initiatives; Recognition of what has caused success or failure in past initiatives.*	X				
VIII-5 **Recent Performance Trends** *Trend tracking of KPIs, recent trends, and how these are measured relative to industry averages*	X				

IX. PREPA Culture & Momentum

Evaluation Framework

The PREPA Culture & Momentum Focus Area consists of five sub-focus areas:

- IX-1 Resistance (Active or Passive) to LUMA Management
- IX-2 Employee Morale/Excitement About LUMA
- IX-3 Employee Empowerment/Action Orientation
- IX-4 Timeframe to Improve Performance
- IX-5 Impact of Organization Silos

Observations & Contributors

Sub-Focus Area	Observations & Contributors
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent that employees will resist the new LUMA team and actively work to thwart success, either as a group or potentially for targeted disruption.*	▪ The HR team has had positive interactions with LUMA employees. HR employees fully supported consultants on all requests. The Director has met with the team on numerous occasions and discussed feelings about the LUMA transaction. ▪ The Director does not envision much resistance in the HR department, however, he mentioned that there's a general sense of anxiety and uncertainty that must be addressed.
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees will see LUMA team as a positive and embrace the opportunity to transform operations and create positive work environment.*	▪ They see the opportunity for improvement. Most of the HR staff understand that PREPA is in a precarious situation and change is necessary, however, they are afraid to change.
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes will embrace new empowered org design and culture and take decisive steps where needed.*	▪ The Director is confident that his leadership team will manage the increased responsibility very well. They see new opportunities for growth and improved processes. ▪ Other HR employees may require more time to embrace and adapt to LUMA.
IX-4 **Timeframe to Improve Performance** *Timeframe for function to embrace changes and align with LUMA and proposed initiatives.*	▪ The HR employees will require some time to adjust to the new culture and technology. A year seems an appropriate timeframe.
IX-5 **Impact of Organization Silos** *Extent to which existing silos can be overcome or represent continued challenge to transformation.*	▪ Most functions operate in silos. HR interacts with Finance regularly as Payroll reports to Finance. ▪ HR manages Trust Service personnel payroll and works directly with Finance to provide required data to process this payroll.

HUMAN RESOURCES

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team.*	▪ There's increased uncertainty and discomfort among the general PREPA population. Actions must be taken to lower anxiety and uncertainty. ▪ Regular communication with employees is necessary to understand and address concerns.	SRP candidate (Priority)
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment.*	▪ New technology training and a change management strategy is critical to engage employees in the process.	SRP candidate (Priority)
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture.*	▪ Regular communication with employees is necessary to understand and address their main concerns. ▪ LUMA should create various communication channels and touchpoints with PREPA employees.	Priority
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives.*	▪ A significant amount of technology training is required. ▪ Employees will need to adjust to the private company environment. ▪ A minimum of 6 months to one year is necessary for PREPA employees to adjust to LUMA standards	Priority
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*	▪ Most functions work in silos. Strong cross- functional collaboration is required to achieve company goals.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
IX-1 **Resistance (Active or Passive) to LUMA Management** *Extent employees will resist new LUMA team*			X		
IX-2 **Employee Morale/ Excitement About LUMA** *Extent that employees see LUMA as positive opportunity to transform operations and create positive work environment*			X		
IX-3 **Employee Empowerment/ Action Orientation** *Degree that employee attitudes embrace new empowered organizational design and culture*	X				
IX-4 **Timeframe to Improve Performance** *Timeframe for embracing LUMA initiatives*					

HUMAN RESOURCES

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
IX-5 **Impact of Organization Silos** *Extent to which existing org silos can be overcome or represent ongoing challenge.*		X			

Core Business Assessment

Focus & Sub-Focus Areas

The eight **Core Business** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas			
XI	**General Employment**	XI-1	Emergency Response Plan	XI-3	Terms and Conditions
		XI-2	Policies and Procedures		
XII	**Total Rewards**	XII-1	Pension	XII-5	Claims
		XII-2	Health and Welfare Plan	XII-6	Retirement Portal
		XII-3	Retirement Health and Welfare	XII-7	Compensation
		XII-4	Funding Arrangements		
XIII	**HCM**	XIII-1	Core Indicative Data	XIII-7	Competencies/Performance Management
		XIII-2	Benefits	XIII-8	Talent Management
		XIII-3	Administration	XIII-9	Time Tracking/Project Costing
		XIII-4	Training and Development (LMS)	XIII-10	Manager and Employee Self Service
		XIII-5	Compensation	XIII-11	Mobile Capabilities
		XIII-6	Absence/Leave Management		
XIV	**Employee Health Clinic**	XIV-1	Services	XIV-3	Assessment of Initiatives (ROI)
		XIV-2	Compliance		
XV	**Employee Engagement**	XV-1	Communication Plan	XV-3	Employee Surveys
		XV-2	Partnerships and Community Investment		
XVI	**Compliance**	XVI-1	Resources	XVI-3	Policies and Procedures
		XVI-2	Compliance with Employment Laws	XVI-4	Auditing and Monitoring Systems
XVII	**Talent Management**	XVII-1	Recruitment	XVII-3	Performance Management
		XVII-2	Onboarding	XVII-4	Employee Relations
XVIII	**Employee Training and Development (Non-Technical)**	XVIII-1	Policies, Standards and Practices	XVIII-3	Career Paths
		XVIII-2	Education and Curriculum		

XI. General Employment Scorecard

Evaluation Framework

The General Employment Office Focus Area consists of three sub-focus areas:

- XI-1 Policies and Procedures
- XI-2 Terms and Conditions
- XI-3 Emergency Response Plan

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XI-1 Policies and Procedures *Extent that organization has defined policies and procedures and how they address pertinent issues, including what is fundamentally deemed acceptable employee behavior.*	▪ HR does not hire independent contractors with the exception of four ex-judges who are contracted through a professional services contract. The judges are utilized by PREPA's Legal department. They support investigations in Labor Affairs. Provided last contract for four Labor Relations officers. Two contracts have not been fully executed, just signed by the legal contractor and not by PREPA. ▪ All policies were received and were well documented, protective of the company and compliant with labor regulations. However, some policies have not been updated for many years. HR does not develop or review policies, it is done in the Corporate procedures directory. ▪ Per the HR team, the Administration Manual provides professional services contract requirements and mentioned a checklist they must follow. However, LUMA was not able to find these it the manual. LUMA has requested the policy and checklist..
XI-2 Terms and Conditions *Terms and conditions of employment necessary for employees to abide by and agree to as a condition of employment.*	▪ Per the HR Director, there are not any special terms and conditions for any HR employee. All employees in HR were hired under the standard terms and conditions based on their roles.
XI-3 Emergency Response Plan *Extent of preparation for an emergency. Includes risk assessments (if available) that were used to identify potential emergency scenarios. Assess resource requirements and plans and procedures in place. Review whether ERP provides facility (location specific) plans that protect employees, visitors, contractors and anyone else in the facility.*	▪ There is a documented general PREPA emergency plan. Each function (Directorado) develops its area plan. The Operational Emergency Plan was prepared following guidelines established by the Department of Homeland Security (DHS), the Federal Emergency Management Agency (FEMA) and in collaboration with the Emergency Management Negotiated (NMEAD). ▪ The Director of Human Resources and Labor Affairs is responsible for preparing and updating the specific and detailed Emergency Operational Plan for HR. ▪ Each of the division heads, administrators, supervisors, employees, officials of the of Human Resources Directory and Labor Affairs has the duty, responsibility and designated function to activate and implement the Operational Plan for Emergencies, which will assist in case of an emergency. ▪ There is an established succession plan. ▪ There is a business continuity plan and specific responsibilities assigned to HR.

HUMAN RESOURCES

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XI-1 Policies and Procedures *Defined policies and procedures to address pertinent issues*	▪ Most policies have not been updated in many years. Policy effectiveness is not formally measured. ▪ A review of each policy is needed ensure compliance with current labor laws. ▪ Professional services contracts are not fully executed. Recommend to complete execution to avoid any future issues or claims of null contracts. ▪ Will require training in new policies. Recommend that Luma train. ▪ Possible internal controls gap.	Department level gap
XI-2 Terms and Conditions *Terms and conditions of employment required for employees*	▪ Did not receive enough information to assess.	
XI-3 Emergency Response Plan *Preparation for emergencies*	▪ Did not receive enough information to assess.	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XI-1 Policy and Procedures *Defined policies and procedures to address pertinent issues*		X			
XI-2 Terms and Conditions *Terms and conditions of employment required for employees*				X	
XI-3 Emergency Response Plan *Preparation for emergencies*				X	

XII. Total Rewards

Evaluation Framework

The Total Rewards Focus Area consists of seven sub-focus areas:

- XII-1 Pension
- XII-2 Health and Welfare Plan
- XII-3 Retirement Health and Welfare
- XII-4 Funding Arrangements
- XII-5 Claims
- XII-6 Retirement Portal
- XII-7 Compensation

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XII-1 **Pension** *Review current pension plan provisions and determine extent to which LUMA will make contributions per employee.*	▪ PREPA offers a comprehensive retirement plan which offers several retirement options. All regular, special regular, conditional, regular probationary and temporary employees, who receive fixed compensation from PREPA, other than a pension, are eligible for this retirement benefit. Employees with emergency appointments, contract employees or apprentice students are not eligible. The employer contributes an established percentage every year. ▪ There are various types of Pension plans: ▪ Merit Pension- (Annuity of Merito - 30 years of service) Pension per merit is the equivalent of 75 percent of final average compensation. ▪ Pension for Age- Employees who reach 60 years of age can retire if they have a minimum of five years of service at PREPA. To qualify for the minimum pension, they must have been accredited for 10 years. ▪ Pension for Physical or Mental Disability- those who began work since January 1, 1993 must have 10 years of accredited service. Zero to five years of service, if the disability is related to a work accident certified by the State Insurance Fund. ▪ Deferred Pension- A member who at the date of termination has 10 years of additional required service can choose to leave their accumulated contributions in the system, rather than receiving the lump sum of money. They are not entitled to the Special Fund. Once they reach 60 years of age, they are entitled to receive a determined Pension based on their final average compensation and creditable service until the date they cease their employment. ▪ Actuarial Pension – Once an employee reaches 20 years of service, he/she has the right to opt for an actuarial retirement. The pension is calculated based on one and a half percent of the final average compensation of the first 20 years of service and two percent for each year over 20. ▪ Reduced Merit Pension (Early Retirement)- As of January 1, 2000, active employees who started working at PREPA before January 1, 1999 and have between 25 and 29 accredited service years, can retire and receive a reduced Pension which ranges between 62.5% and 72.5% of their determined salary. When initiating the retirement and pension process, active employees need to apply by written notice to the Junta de Sindicos (Board of Trustees). The application must include the date of retirement, which may not be less than 30 days or more than 90 days after applying. ▪ Other Retiree Benefits ▪ Health plan ▪ Insurance coverage for personal loans ▪ Mortgage and Personal Loans ▪ Christmas Bonus $400 ▪ Summer Bonus $100 ▪ Funeral Expenses ▪ Scholarship Fund

HUMAN RESOURCES

Gap Assessment

XII-2 Health and Welfare
Review current Health and Welfare Plan provisions and determine transition on to Luma benefits.
	▪ PREPA offers the following benefits:
	  ▪ Health Plan (Employee & Family): 100% paid by PREPA to all regular full-time employees. Temporary employees pay for family coverage.
	  ▪ Wellness program focused on preventive education to minimize plan utilization.
	  ▪ Employee Assistance Program (EAP) provides psychological services offered by internal staff. Services are offered in the onsite clinics.
	  ▪ Disability Insurance (SINOT)
	  ▪ Seguro Choferil (Drivers)
	  ▪ Workers Comp (FSE)
	  ▪ Christmas Bonus
	  ▪ Retirement Plan
	▪ Life Insurance for non-union employees (Gerenciales): Discontinued
	▪ Funeral Insurance: Discontinued
	▪ Lawyers Professional Assoc. Fees: Discontinued
	
	▪ All employees are eligible to 100% PREPA paid healthcare coverage.
	▪ Temporary employees are eligible for individual health coverage & can pay for family coverage.

XII-3 Retirement Health and Welfare *Review retirement Health and Welfare Plan provisions and determine transition to Luma benefits.*	▪ A medical Plan is available for retirees and their family. The Administrative Manual defines the eligibility rules. ▪ They verify marriage status and request a marriage certificate not older than 3 months.
XII-4 Funding Arrangements *Review above-mentioned plans and funding, along with extent to which Luma will still need to be involved.*	▪ PREPA offers a self-insured plan ▪ Administration cost per month= $44,551 ▪ Total estimated cost for 2020 - $11,938,000 ▪ Cost per employee per month = $320
XII-5 Claims *Review of claims data for cost drivers and future focus on wellness.*	▪ Total claims per month = $950,268 ▪ Specific Stop-Loss (SSL) is the form of excess risk coverage that provides protection for the employer against a high claim on any one individual. This is protection against abnormal severity of a single claim rather than abnormal frequency of claims in total. Specific stop-loss is also known as an individual stop-loss. ▪ In the case of the actual PREPA contract, the SSL amount is $125,000. ▪ Aggregate Stop-Loss provides a ceiling on the dollar amount of eligible expenses that an employer would pay, in total, during a contract period. The carrier reimburses the employer after the end of the contract period for aggregate claims, the actual contract provides coverage above 115%, the actual amount on the budget considered the maximum claim exposure.
XII-6 Retirement Portal *Extent that retirement information and calculations are available at the employee's request. Assess available resources.*	▪ Employees have access to a retirement portal via PREPA intranet. They can view balances and current loans. ▪ More analysis is required to propose possible portal improvements.
XII-7 Compensation *Extent that organization has a defined compensation structure and how they address salary increases, bonus payouts and special pay practices.*	▪ Compensation administration is dictated by the Administration Manual and CBAs. Pay scales were determined in 2000 and have not been revised since then. The last increase to non-union employees was in 2010. ▪ Salary increases are given when employees are moved to higher compensation positions, based on the compensation scales. ▪ OT data is owned and managed by Finance.

HUMAN RESOURCES

Gap Assessment

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XII-1 **Pension** *Current pension plan provisions*	▪ PREPA offers a defined benefit plan. Luma will offer a defined contribution plan which is fundamentally different from the PREPA plan.	SRP candidate
XII-2 **Health and Welfare Plan** *Current Health and Welfare plan provisions for employees*	▪ No monthly payroll deductions are taken from PREPA employees for their health coverage. . The same is true for the LUMA health coverage. ▪	SRP candidate
XII-3 **Retirement Health and Welfare** *Current Health and Welfare plan provisions for retirees*	▪ PREPA offers a defined benefit plan. LUMA will offer a defined contribution plan which is fundamentally different from the PREPA plan.	Department level gap
XII-4 **Funding Arrangements** *Funding for Health and Welfare plans and pension*	▪ Did not receive enough information to assess.	
XII-5 **Claims** *Claims data for cost drivers and future focus on wellness*	▪ Did not receive enough information to assess.	
XII-6 **Retirement Portal** *Access to retirement information and calculations*	▪ N/A	
XII-7 **Compensation** *Compensation structure and practices*	▪ Employee compensation information provided by PREPA was inaccurate. ▪ A benchmark analysis may be necessary to understand gap vs market. ▪ Further analysis is required to quantify the possible impact.	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XII-1 **Pension** *Current pension plan provisions*			X		
XII-2 **Health and Welfare Plan** *Current Health and Welfare plan provisions for employees*			X		
XII-3 **Retirement Health and Welfare** *Current Health and Welfare plan provisions for retirees*			X		
XII-4 **Funding Arrangements** *Funding for Health and Welfare plans and pension*					

HUMAN RESOURCES

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XII-5 Claims *Claims data for cost drivers and future focus on wellness*					
XII-6 Retirement Portal *Access to retirement information and calculations*				X	
XII-7 Compensation *Compensation structure and practices*	X				

XIII. HCM

Evaluation Framework

The HCM Focus Area consists of 11 sub-focus areas:

- XIII-1 Core Indicative Data
- XIII-2 Benefits
- XIII-3 Administration
- XIII-4 Training and Development (LMS)
- XIII-5 Compensation
- XIII-6 Absence/Leave Management
- XIII-7 Competencies/Performance Management
- XIII-8 Talent Management (Succession Planning)
- XIII-9 Time Tracking/Project Costing
- XIII-10 Manager and Employee Self-Service
- XIII-11 Mobile Capabilities

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XIII-1 **Core Indicative Data** *Employee personal and job-related data commonly used for HR and benefits administration and reporting.*	▪ All HR data is tracked in Oracle. Includes the full employee life cycle. ▪ Service dates for accrual purposes are tracked in Oracle and Kronos. ▪ Service is not bridged. Once an employee leaves, if they are later re-hired, the service date is the new hire date. ▪ There is not a current HR processes map. ▪ A deep dive across departments is needed to understand the correlation between department processes.
XIII-2 **Benefits** *Plan attributes and rates, and employee and dependent election information.*	▪ The plan is administered by brokers using their system and process. ▪ The PREPA Health Plan unit manages the files and benefits for Health and Wellness. They are responsible for evaluating eligibility, expenses and utilization. ▪ There is no open enrollment process. Employees enroll once hired and only make changes as necessary thereafter. Changes are made manually and then logged in Oracle and Kronos. Exception: Dependents 19-26 years old, who enroll each month of December.
XIII-3 **Administration** *Tasks and processes that comprise employee life cycle (i.e., hires, terminations, supervisor changes, etc.)*	▪ All HR transactions are performed either manually or in Oracle.
XIII-4 **Training and Development (LMS)** *Extent organization provides training and learning requirements online or in person.*	▪ Each training center has coordinators who support the training processes. As part of their responsibility, they document manually all training activity and then transfer it into Oracle. Physical copies of training documentation are housed in the employee file and Oracle.
XIII-5 **Compensation** *Pay practices, job codes, grades and merit matrix.*	▪ All compensation changes are tracked in Oracle.

HUMAN RESOURCES

Gap Assessment

Sub-Focus Area	Observations & Contributors
XIII-6 **Absence/Leave Management** *Extent that organization administers its leave and return to work policy.*	▪ Employees request vacation or sick leave manually using a paper form. ▪ Supervisor approves and enters leave details in KRONOS. Supervisors track the use of leave time and manage correct usage within their teams. ▪ For extended sick leaves, the supervisor requests information from employees and consults with the Medical Services unit. Employee shares relevant information with the supervisor, and the supervisor shares this with the Occupational Doctor. The Occupational Doctor then evaluates the employee and recommends further actions, i.e., reasonable accommodation, stay at home, go back to work, etc. Occupational doctors are external resources contracted by the Occupational Health division. The contract is managed by HR. ▪ For FMLA leave, employees request the leave and provide supporting documentation to the supervisor. The supervisor received the documentation and consults with Labor Relations (Equal Opportunity office). Once the leave is approved, the employee's division administers the leave. ▪ Review process in order to streamline and ensure privacy for employee, and consistent policy application.
XIII-7 **Competencies/Performance Management** *Extent the organization provides performance reviews and key competencies to employees.*	▪ The performance management process is only done for temporary employees every 84 days until they are hired as regular full-time employees. ▪ No formal performance management process is used for the rest of the employees.
XIII-8 **Talent Management** *Extent organization has succession planning to identify top talent.*	▪ No succession planning program is in place.
XIII-9 **Time Tracking/Project Costing** *Capture how the organization tracks times and the relation to project costs.*	▪ It is not common to bill time to projects. However, from time to time, HR employees may work temporarily in other units and charge the time to the respective units. ▪ All employees clock in and out via biometric clocks located in their respective departments. They don't select or track department codes when recording time.
XIII-10 **Manager and Employee Self Service** *Extent that employees and managers can use self-service in the HCM system.*	▪ Employees only have access to view and print their paystubs. Changes to personal data are recorded through HR. ▪ Managers do not have access to perform employee actions in self-service.
XIII-11 **Mobile Capabilities** *Extent that employees can use their mobile devices to access online tools at the organization.*	▪ No mobile applications are available to employees.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIII-1 **Core Indicative Data** *Employee personal and job-related data commonly used for HR and benefits administration and reporting.*	▪ There are not current HR process maps. A deeper multi-department analysis is needed to understand the correlation between HR and department processes.	Department level gap
XIII-2 **Benefits** *Plan attributes and rates, and employee and dependent election information.*	▪ Good internal process, however, too manual. Recommend automation to streamline processes and create internal efficiencies.	SRP candidate (Priority)
XIII-3 **Administration** *Tasks and processes that comprise employee life cycle (i.e., hires, terminations, supervisor changes, etc.)*	▪ N/A	

HUMAN RESOURCES

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XIII-4 **Training and Development (LMS)** *Extent organization provides training and learning requirements online or in person.*	▪ All training-related activities and transactions are done manually. The process can be improved by automating registration, completion and certification processes.	SRP candidate
XIII-5 **Compensation** *Pay practices, job codes, grades and merit matrix.*	▪ Compensation transactions are done manually. Recommend automation to streamline processes and create internal efficiencies.	SRP candidate
XIII-6 **Absence/Leave Management** *Extent that organization administers its leave and return to work policy.*	▪ Leave requests and tracking processes are extremely manual and time consuming. ▪ Recommend automating.	SRP candidate
XIII-7 **Competencies/Performance Management** *Extent the organization provides performance reviews and key competencies to employees.*	▪ No formal performance management process in place. Recommend implementing with non-union employees according to Luma standards.	SRP candidate
XIII-8 **Talent Management (Succession Planning)** *Extent organization has succession planning to identify top talent.*	▪ No succession planning program. Recommend to gradually implement with non-union employees according to Luma standards.	SRP candidate
XIII-9 **Time Tracking/Project Costing** *Capture how the organization tracks times and the relation to project costs.*	▪ Did not receive enough information to assess.This is done outside of HR and Kronos.	
XIII-10 **Manager and Employee Self-Service** *Extent that employees and managers can use self-service in the HCM system.*	▪ Employees do not have access to make personnel information changes via self-service. All changes are done on paper and then entered in Oracle by HR staff. Manual and time-consuming process. Recommend automation to streamline processes and create internal efficiencies.	SRP candidate
XIII-11 **Mobile Capabilities** *Extent that employees can use their mobile devices to access online tools at the organization.*	▪ No mobile applications are available to employees. Recommend automation to streamline processes and create internal efficiencies.	SRP candidate

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XIII-1 **Core Indicative Data** *Employee personal and job-related data commonly used for HR and benefits administration and reporting.*				X	
XIII-2 **Benefits** *Plan attributes and rates, and employee and dependent election information.*			X		

HUMAN RESOURCES

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XIII-3 **Administration** *Tasks and processes that comprise employee life cycle (i.e., hires, terminations, supervisor changes, etc.)*				X	
XIII-4 **Training and Development (LMS)** *Extent organization provides training and learning requirements online or in person.*			X		
XIII-5 **Compensation** *Pay practices, job codes, grades and merit matrix.*			X		
XIII-6 **Absence/Leave Management** *Extent that organization administers its leave and return to work policy.*			X		
XIII-7 **Competencies/Performance Management** *Extent the organization provides performance reviews and key competencies to employees.*	X				
XIII-8 **Talent Management (Succession Planning)** *Extent organization has succession planning to identify top talent.*	X				
XIII-9 **Time Tracking/Project Costing** *Capture how the organization tracks times and the relation to project costs.*					
XIII-10 **Manager and Employee Self-Service** *Extent that employees and managers can use self-service in the HCM system.*	X				
XIII-11 **Mobile Capabilities** *Extent that employees can use their mobile devices to access online tools at the organization.*	X				

XIV. Employee Health Clinic

Evaluation Framework

The Employee Health Clinic Focus Area consists of three sub-focus areas:

- **XIV-1** Services
- **XIV-2** Compliance
- **XIV-3** Assessment of Initiatives (ROI)

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XIV-1 Services *Capture how the organization utilizes the services provided.*	▪ The Occupational Healthcare Clinic is made up of six divisions: Employee Assistance Program (EAP), Occupational Medicine, Prevention and Primary Assistance, Medical Plan, Special Testing and Medical Records. ▪ There are occupational dispensaries in five plants. They offer first aid medical services and evaluations for employees who suffer work accidents or sudden illnesses. There are no out of pocket expenses to employees for services offered in the plant clinics. No drugs are prescribed as there is no pharmacy on site. ▪ Service is only provided to employees. Service is not for visitors or family members. Behavioral health benefits are offered through EAP, which is a fully internal program, operated by internal resources. Medical record keeping is manual and Oracle software is used to keep appointment information and participation register. ▪ Special testing is used exclusively for substance abuse referrals (from EAP) and random testing. ▪ Employees on leave must go through clinic clearance before returning to work.
XIV-2 Compliance *Extent that organization has procedures to maintain compliance including privacy.*	▪ There is a dedicated Medical records office. ▪ They follow HIPPA laws. ▪ HR staff signs a Non-Disclosure Agreement. ▪ Medical records are kept separate from regular employee files.
XIV-3 Assessment of Initiatives (ROI) *Extent that organization reviews the cost of maintaining the clinic.*	▪ Average of 100-150 visits per day (due to the COVID protocol) ▪ Follow up is given in 60%-70% of cases. ▪ A partial budget was provided, but it was missing salaries and other employee-related costs.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XIV-1 Services *Capture how the organization utilizes the services provided.*	▪ Clinics should be managed by H&S and not by HR. Recommend transitioning to internal personnel. ▪ EAP program to a private program administered by HR and separated from the clinic structure. ▪ Follow-up management should be coordinated with the health plan.	SRP candidate
XIV-2 Compliance *Extent that organization has procedures to maintain compliance including privacy.*	▪ N/A	
XIV-3 Assessment of Initiatives (ROI) *Extent that organization reviews the cost of maintaining the clinic.*	▪ The wellness program should be transitioned outside of the clinic structure. Further analysis is required to understand financial and resource implications.	SRP candidate

HUMAN RESOURCES

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XIV-1 **Services** *Capture how the organization utilizes the services provided.*		X			
XIV-2 **Compliance** *Extent that organization has procedures to maintain compliance including privacy.*				X	
XIV-3 **Assessment of Initiatives (ROI)** *Extent that organization reviews the cost of maintaining the clinic.*		X			

XV. Employee Engagement

Evaluation Framework

The Employee Engagement Focus Area consists of three sub-focus areas:

- **XV-1** Communication Plan
- **XV-2** Partnerships & Community Investments
- **XV-3** Employee Surveys

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XV-1 Communication Plan *Capture how the organization communicates with its employees i.e., all forms, modes, deliveries, etc.*	▪ Communications to employees are sent via Outlook, no metrics are used to measure effectiveness.
XV-2 Partnerships & Community Investments *Entities that organization partners with for volunteerism and frequency of any activities, donations.*	▪ Fondos Unidos, employee contributions are deducted from paychecks ▪ Events: Motivational events, sports events, health fairs ▪ Additional information is needed to assess.
XV-3 Employee Surveys *Extent that employee surveys are conducted, interpreted and opportunities for impact by surfacing drivers for engagement and hotspots across teams and demographics. Evaluate the drivers for which the organization is benchmarking the results against similar organizations.*	▪ No employee surveys are conducted. ▪ No employee engagement strategy is in place.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XV-1 Communication Plan *How organization communicates with employees*	▪ No metrics used to measure communication effectiveness.	SRP candidate
XV-2 Partnerships & Community Investments *Partners for volunteerism and frequency of activities and donations*	▪ Additional information is needed to assess.	
XV-3 Employee Surveys *Use of employee surveys for engagement*	▪ No employee engagement data is available. ▪ Recommend implementing according to LUMA standards.	SRP candidate

HUMAN RESOURCES

Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XV-1 **Communication Plan** *How organization communicates with employees*		X			
XV-2 **Partnerships & Community Investments** *Partners for volunteerism and frequency of activities and donations*					
XV-3 **Employee Surveys** *Use of employee surveys for engagement*	X				

XVI. Compliance

Evaluation Framework

The Compliance Management Focus Area consists of four sub-focus areas:

- XVI-1 Resources
- XVI-2 Compliance with Employment Laws
- XVI-3 Policies and Procedures
- XVI-4 Auditing and Monitoring Systems

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XVI-1 Resources *Extent that resources (people and software) are dedicated to Compliance function within Human Resources.*	▪ Anti-corruption and ethics training is tracked in Oracle. ▪ Multiple resources manage compliance in HR. ▪ No HR resource dedicated to compliance only. ▪ Each division monitors its compliance.
XVI-2 Compliance with Employment Laws *Extent that organization follows both federal and local labor laws.*	▪ The Administration Manual and the CBAs mandate the minimum compensation, which is approximately $12.70 per hour. Overtime: Work week is 37.5 hours, any hour above seven and a half per day or 37.5 per week is paid as overtime at one and a half times the rate. ▪ Hours worked are tracked in KRONOS. ▪ Equal Employment Opportunity (EEO) self-identification form is completed by all new hires. ▪ Physical employees' files are retained in the general Personnel Office for up to three years after retirement. Per HR all required posters are displayed in all administrative offices, departments and divisions and designated bulletin boards in the facilities.
XVI-3 Policies and Procedures *Review of policies and procedures with a compliance lens.*	▪ Administrative manual does not address this requirement. However, as part of the new hire process, all new hires complete an I9 form. This form is then archived in the employee file. ▪ HR verifies identification and completes I9 (paper). There is not a process or policy description of the I9 process. ▪ Verified 10 random employee files and they all complied with the I9 form. Based on information received from HR and physical review of files, we can assume that they comply with this requirement.
XVI-4 Auditing and Monitoring Systems *Extent that self-audits are in place for compliance with federal and local labor laws.*	▪ HRIS entries are audited in the Personnel division, however, no formal SOP is in place No scheduled HR audits. Audits are done on an ad hoc basis. ▪ Most employee claims are due to overtime pay claims, per diem pay, salaries not paid, unjustified absences, leaves, invasion to work unit. Once a claim is received, the Labor Relations unit investigates, follows up and closes the case. Any case that requires further investigation or has been appealed goes to an administrative hearing. If not resolved, the case goes to arbitration.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVI-1 Resources *Resources dedicated to Compliance function*	▪ Multiple resources that overlook compliance. ▪ Recommend an HR organizational design analysis to identify improvement opportunities.	SRP candidate
XVI-2 Compliance with Employment Laws *Extent that organization follows both federal and local labor laws.*	▪ N/A	

HUMAN RESOURCES

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
XVI-3 **Policies and Procedures** *Review of policies and procedures with a compliance lens.*	▪ The Administrative Manual defines the company's policies but does not address the I-9 requirement. ▪ Recommend drafting an updated policy or addendum to include the verification of legal status as a condition of hire. ▪ Compensation policies for exempt employees are written as if they were non-exempt employees. Thus, exempt employees receive additional payments that are calculated as overtime.	SRP candidate
XVI-4 **Auditing and Monitoring Systems** *Extent that self-audits are in place for compliance with federal and local labor laws.*	▪ Did not receive enough information to assess.	

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVI-1 **Resources** *Resources dedicated to Compliance function*		X			
XVI-2 **Compliance with Employment Laws** *Extent that organization follows both federal and local labor laws.*				X	
XVI-3 **Policies and Procedures** *Review of policies and procedures with a compliance lens.*		X			
XVI-4 **Auditing and Monitoring Systems** *Extent that self-audits are in place for compliance with federal and local labor laws.*					

XVII. Talent Management

Evaluation Framework

The Talent Management Focus Area consists of four sub-focus areas:

- XVII-1 Recruitment
- XVII-2 Onboarding
- XVII-3 Performance Management
- XVII-4 Employee Relations

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XVII-1 **Recruitment** *Current recruitment standard operating policies, procedures and processes.*	▪ For external positions: Area director communicates resource needs to HR. HR partners with the PR Dept. of Labor to post the job in the general government jobs board (Convocatoria). No external postings are done. The Labor Dept. receives resumes and sends all applications (physical resumes) to HR. HR reviews all resumes, sends qualifying candidates to the hiring manager and disposes of those that do not qualify. Area Director coordinates interviews & HR participates as requested. ▪ Selected candidates are entered in Oracle as candidates until they complete all hiring requirements, then they are flagged as hires. Candidates who were not selected are not communicated of the decision. All candidate tracking is done manually. ▪ For internal non-union jobs: HR publishes the job via email and creates a physical register of all open positions. Employees who don't have access to email can verify the open jobs physically. Internal jobs are open for 10 days after publishing. All interested candidates' applications are evaluated by HR. HR then prepares a list of all qualifying candidates and shares it with the appropriate area. The hiring manager coordinates interviews and selects the final candidate. No offer letters are sent, however, after the candidate completes all the requirements and is officially hired in the position, he/she receives a "Personnel Action" document, which details the position title, responsibilities, salary, location, supervisor, etc. ▪ For union employees: HR publishes the job via email and creates a physical registry of all open positions. Employees who don't have access to email can verify the open jobs physically. Internal jobs are open for 10 days after publishing. All interested candidate applications are evaluated by HR. HR then prepares a list of all qualifying candidates in order of seniority and shares it with the appropriate area. Jobs are assigned based on seniority, with no interview process.
XVII-2 **Onboarding** *Current onboarding programs in existence, including but not limited to new hire orientation and onboarding tools and resources.*	▪ New hires go through a four to five day induction covering ethics, anti-corruption, company policies, benefits, teamwork and interpersonal relations. ▪ May participate in additional one-day training (engagement and customer service). ▪ The new hire packet includes company policies, benefits summary and other department information. ▪ Requested a sample, still to be provided. All in compliance with labor regulations.
XVII-3 **Performance Management** *Extent that performance evaluations, performance improvement, coaching, counseling and discussions are happening and how.*	▪ Temporary employees are evaluated every 84 days until hired as permanent employees. ▪ Disciplinary process: The supervisor completes a disciplinary report and shares it with HR (Labor Relations). An action decision is notified to Personnel and then recorded in Oracle.
XVII-4 **Employee Relations** *Extent that employee complaints are investigated, reviewed and resolved.*	▪ Well-documented complaints process and tracking. Once a complaint is received in HR, it is entered in Oracle. Every claim is managed and tracked by the Labor Relations division. ▪ Once a claim is received, the Labor Relations unit investigates, follows up and closes the case. Any case that requires further investigation or has been appealed goes to an administrative hearing. If not resolved, the case goes to arbitration. The division uses external legal advisors to review cases that move to administrative hearings.

HUMAN RESOURCES

Gap Assessment

Sub-Focus Area	Observations & Contributors
	▪ Records are kept for three years after employee retirement. There are currently 5,638 active arbitration cases. ▪ Turnover data includes involuntary terminations and retirements. The monthly HR report does not include resignations. ▪ Turnover data is not used to measure employee engagement. There are no formal efforts to measure employee engagement.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVII-1 Recruitment *Current recruitment standard operating policies, procedures and processes.*	▪ Extremely manual process ▪ Possible non-compliance ▪ Poor or no communication with non-selected candidates. Recommend a recruitment process re-design for implementation at the commencement date.	SRP candidate
XVII-2 Onboarding *Current onboarding programs in existence, including but not limited to new hire orientation and onboarding tools and resources.*	▪ Process is extremely manual, time and resource consuming. Risk of losing or misplacing documentation. Recommend automation and digitalization.	SRP candidate
XVII-3 Performance Management *Extent that performance evaluations, performance improvement, coaching, counseling and discussions are happening and how.*	▪ There is no formal company-wide Performance Management system or process. ▪ Recommend implementing for non-union employees based on LUMA standards.	SRP candidate
XVII-4 Employee Relations *Extent that employee complaints are investigated, reviewed and resolved.*	▪ The full turnover picture is not being tracked. ▪ Employee turnover data is not used to measure employee engagement. ▪ No formal employee engagement measures are in place.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVII-1 Recruitment *Current recruitment standard operating policies, procedures and processes.*	X				
XVII-2 Onboarding *Current onboarding programs in existence, including but not limited to new hire orientation and onboarding tools and resources.*		X			
XVII-3 Performance Management *Extent that performance evaluations, performance improvement, coaching, counseling and discussions are happening and how.*		X			

HUMAN RESOURCES

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
XVII-4 **Employee Relations** *Extent that employee complaints are investigated, reviewed and resolved.*		X			

XVIII. Employee Training and Development

Evaluation Framework

The Employee Training and Development Focus Area consists of three sub-focus areas:

- **XVIII-1** Policies, Standards and Practices
- **XVIII-2** Education and Curriculum
- **XVIII-3** Career Paths

Observations & Contributors

Sub-Focus Area	Observations & Contributors
XVIII-1 Policies, Standards and Practices *Review of methods, delivery mechanisms, training administration and tracking for in-place training.*	▪ The administrative manual defines all training policies. ▪ Training is delivered by internal resources. All training is tracked in Oracle. ▪ Onboarding compliance training includes Code of Ethics and anti-corruption training. Need to evaluate if the onboarding training program is compliant with LUMA's curriculum.
XVIII-2 Education and Curriculum *Comprehensive review of training modules, curriculum, resources, training plans.*	▪ There are four main training centers in HR and one additional under Generation: Educational Training in Computer Science Center (CECI) - Provides IT training as needed, including systems used such as Oracle, KRONOS, Microsoft suite, etc. ▪ Administrative Development Training Center (CDCA) - training courses focused on personal development, supervisory skills and administrative procedures. ▪ Electrical Distribution Training Center (CADE) - Offer technical training to all T&D employees. Six months training minimum with continued education as needed. ▪ Commercial Operations Training Center (CAOC) - Trains commercial operations and customer service staff. ▪ Training Center for Electrical System (CASE)- Training for employees in the Generation area. ▪ These centers are operated by PREPA employees and deliver training as requested by the functions. ▪ They use PREPA facilities, HR coordinates booking manually. The training catalogs are well defined with a plethora of available courses per Directorate. No major gaps were found, except the fact that most training seems to be recommended and not required. ▪ Five training centers exist. These were not visually validated.
XVIII-3 Career Paths *Assess career paths for all job classifications, if in existence.*	▪ No career path documented. Employees progress by applying to internal postings.

HUMAN RESOURCES

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Major Gaps

Sub-Focus Area	Major Gaps	Categorization
XVIII-1 **Policies, Standards and Practices** *Review of methods, delivery mechanisms, training administration and tracking for in-place training.*	▪ Need to review onboarding training content and validate compliance with LUMA's requirements.	SRP candidate
XVIII-2 **Education and Curriculum** *Comprehensive review of training modules, curriculum, resources, training plans.*	▪ All training is approved through the government of Puerto Rico. ▪ Recommend having a third party validate or review training courses for relevancy and accuracy to ensure they are up to date with current best practices and regulations.	SRP candidate
XVIII-3 **Career Paths** *Assess career paths for all job classifications, if in existence.*	▪ No career path is defined for employees.	Department level gap

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Area					
XVIII-1 **Policies, Standards and Practices** *Review of methods, delivery mechanisms, training administration and tracking for in-place training.*			X		
XVIII-2 **Education and Curriculum** *Comprehensive review of training modules, curriculum, resources, training plans.*			X		
XVIII-3 **Career Paths** *Assess career paths for all job classifications, if in existence.*	X				

VI. Generation

Gap Assessment

Generation

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Gap Assessment

General Approach

The Generation gap assessment includes the following main areas of focus, as shown in the tables below:

General Management: There are seven management focus areas generally apply to all departments.

Core Business: There is one core business focus areas specifically relate to Generation operations.

General Management Focus Areas	
I	Financial Controls
II	Maintenance
III	Support Services
IV	Outage Management
V	Plant Performance Management
VII	Preparedness for the Future
VIII	Major Equipment Condition
Core Business Focus Areas	
XI	Systems Operations Principles (SOP)

Maturity Scoring Criteria

On a scale of 1 to 5 and representing the consensus of the interviewers, a maturity score rating (scorecard) is assigned to each sub-focus area using the following criteria:

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated

General Management Assessment

Focus Areas and Sub-Areas

The seven **General Management** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas	
I **Financial Controls**	I-1 Actual Expenditures as Percentage of Budgeted I-2 Impact of Emergent Issues on Budgets I-3 Unit Cost/Productivity Management	I-4 Overtime and Contractors Management I-5 Direct and Allocated Indirect Cost Management I-6 Accuracy of Forecasts (near- and long- term)	
II	**Maintenance**	II-1 Operator Qualifications and experience II-2 Numbers of Critical Personnel	II-3 Adequacy of Daily Routine Maintenance II-4 Scope Definition and Control of Major Maintenance Projects
III	**Support Services**	III-1 Back Office & Support Functions III-2 Engineering	III-3 Environmental III-4 Safety
IV	**Outage Management**	IV-1 Outage Planning (long-term and near-term) IV-2 Outage Cost & Schedule Execution	IV-3 Coordination of Outage Support Functions (material, labor, contractors)
V	**Plant Performance Management**	V-1 Heat Rate V-2 Forced Outage Rates	V-3 Availability V-4 Unit Cost ($/kWh)
VI	**Preparedness for the Future**	VI-1 Demarcation/Ring-Fencing VI-2 Operate Under SOPX-2	VI-3 Operate as Stand-Alone Entity with P&L and Performance Expectations VI-4 Property Record Keeping and Reporting
VII	**Major Equipment Condition**	VII-1 Condition Assessment Performed Periodically and Recommendations Implemented VII-2 PREPA Has Appropriate and Accurate Understanding of Asset Conditions Today	VII-3 Understanding and Program to Provide Basic Asset Management Services

I. Financial Controls

Evaluation Framework

The Financial Controls Focus Area consists of five Sub-Focus Areas (Core and Enabling areas that define effective Financial Controls):

- I-1 Actual Expenditures as Percentage of Budgeted
- I-2 Impact of Emergent Issues on Budgets
- I-3 Overtime & Contractor Management
- I-4 Direct & Allocated Indirect Cost Management
- I-5 Accuracy of Forecasts (near- and long-term)

Observations and Contributors

Sub-Focus Areas	Observations and Contributors
I-1 **Actual Expenditures as Percentage of Budgeted** *Extent that department/function operates within its authorized budget and budget expenditures are within its control. Evidence of activity-based budgeting and overall process to develop annual budgets.*	▪ Annual budgets are in place. Budgets are managed to within an annual variance as opposed to optimizing on a monthly basis. ▪ There are indications that controls on inter-plant budget reallocation process could be improved.
I-2 **Impact of Emergent Issues on Budgets** *Ability to anticipate potential risk factors to budget performance, and to manage these risks to mitigate their impact. Is there evidence of regularly exceeding approved budgets?*	▪ Emergent repairs are typically paid for out of operating accounts and later capitalized. Funding is reallocated from other capital projects or other plants. ▪ Anecdotal stories suggest that when operating issues emerge, this creates an urgency to restore the plant to service. This situation means that personnel are pushed to use budget codes which do not necessarily align with the operational need to restore service. Management and cost controls are not always reconciled. ▪ Plants have not had a multi-year planning horizon in several years, which raises questions on the robustness of existing assumptions.
I-3 **Overtime and Contractor Management** *Overtime (OT) and contractor management*	▪ PMO provides project management and oversight of contractors, instead of this being carried out by plant management staff. This can result in defused accountability and greater operational inefficiencies than if contractors were more directly managed by plant managers. This also limits opportunities to prioritize where all budgeted dollars are spent, because of centralized budget decision makers' lack of localized knowledge of contracted personnel activity. ▪ Overtime of plant personnel is planned for at the plant level, but is being underfunded in several of the plant budgets as budget estimates made at the plant level are often revised downward at the corporate level.
I-4 **Direct and Allocated Indirect Cost Management** *Appropriate management focus on employee planning issues and evidence that OT and contractor usage is not abused to meet annual commitments that should have been achieved with adequate planning and management.*	▪ Allocated overhead appears high compared to industry norms and arbitrarily applied by Corporate. ▪ Generation directorate budget capabilities are sub-optimal since they are only involved in a subset of total plant related expenditures; lack of availability of appropriate financial tools and data for analysis also limits capabilities. ▪ Sub-optimal control and involvement of plant managers, which reducesreduces theirplant managers' ability to manage indirect costs.

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Gap Assessment

Sub-Focus Areas	Observations and Contributors
I-5 Accuracy of Forecasts (near- and long-term) *To what extent do corporate or other department budgeting decisions dictate budget performance at the function level? Adequacy of corporate budget cycle and controls.*	▪ Many significant flaws in budget process include a lack of adequate involvement of the Generation directorate in support functions and expenditures, poor financial tools and data availability, and a general lack of confidence expressed by each PREPA group in other PREPA organizational groups.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
I-1 Actual Expenditures as Percentage of Budgeted *Extent that department/function operates within its authorized budget and budget expenditures are within its control. Evidence of activity-based budgeting and overall process to develop annual budgets.*	▪ Poor ability to track actuals against budget. Since so many different groups make adjustments that other groups are not a part of, the resulting budget itself does not have widespread support as an indication of expected costs. ▪ Challenging and atypical treatment of capital vs. expense budgets	N/A
I-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risk factors to budget performance, and to manage these risks to mitigate their impact. Is there evidence of regularly exceeding approved budgets?*	▪ Several anecdotes from each plant paint a consistent picture that there is a generally inadequate ability to respond to emergent budget issues. When issues emerge, decisions are made in order to restore the plant to full service but management controls over the reconciliation of budgets is inadequate.	N/A
I-3 Overtime and Contractor Management *Overtime (OT) and contractor management*	▪ Plant management does not have proper reporting responsibility for contractors and they should have this responsibility restored. ▪ Overtime is not adequately managed and budgeted (e.g. one plan had used an entire year's budget for overtime only four months into the fiscal year).	N/A
I-4 Direct and Allocated Indirect Cost Management *Appropriate management focus on employee planning issues and evidence that OT and contractor usage is not abused to meet annual commitments that should have been achieved with adequate planning and management.*	▪ Inadequate transparency into allocation of indirect costs	N/A
I-5 Accuracy of Forecasts (near- and long-term) *To what extent do corporate or other department budgeting decisions dictate budget performance at the function level? Adequacy of corporate budget cycle and controls.*	▪ Because corporate senior management has not defined the remaining life expectations for most plants, it becomes difficult for plants to properly prioritize capital (Necessary Maintenance Expenditures [NME]) projects. Unclear timing of plant retirement.	N/A

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Gap Assessment

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
I-1 Actual Expenditures as Percentage of Budgeted *Extent that department/function operates within its authorized budget and budget expenditures are within its control. Evidence of activity-based budgeting and overall process to develop annual budgets.*		X			
I-2 Impact of Emergent Issues on Budgets *Ability to anticipate potential risk factors to budget performance, and to manage these risks to mitigate their impact. Is there evidence of regularly exceeding approved budgets?*		X			
I-3 Overtime and Contractor Management *Overtime (OT) and contractor management*		X			
I-4 Direct and Allocated Indirect Cost Management *Appropriate management focus on employee planning issues and evidence that OT and contractor usage is not abused to meet annual commitments that should have been achieved with adequate planning and management.*		X			
I-5 Accuracy of Forecasts (near- and long-term) *To what extent do corporate or other department budgeting decisions dictate budget performance at the function level? Adequacy of corporate budget cycle and controls.*		X			

II. Maintenance

Evaluation Framework

The Process Efficiency and Effectiveness focus area consists of four Sub-Focus Areas (Core and Enabling areas that define effective process efficiency and effectiveness):

- II-1 Operator Qualifications & Experience
- II-2 Numbers of Critical Personnel
- II-3 Adequacy of Daily Routine Maintenance
- II-4 Scope Definition & Control of Major Maintenance Projects

Observations and Contributors

Sub-Focus Areas	Observations and Contributors
II-1 **Operator Qualifications and Experience** *Do the equipment operators have sufficient experience and training to maintain the equipment safely and reliably?*	▪ LUMA did not conduct a staffing assessment at operating plants since LUMA will not be operating Generation.
II-2 **Numbers of Critical Personnel** *Are there sufficient personnel for the most critical tasks?*	▪ LUMA did not conduct a staffing assessment at operating plants since LUMA will not be operating Generation.
II-3 **Adequacy of Daily Routine Maintenance** *Are daily tasks of maintenance staff sufficient to maintain the plants?*	▪ A cursory review of maintenance tasks indicates that tasks that are performed, are performed well.
II-4 **Scope Definition and Control of Major Maintenance Projects** *Does plant management have sufficient control of the scope and execution of major maintenance projects?*	▪ The scope definition for major projects, as reviewed by LUMA, appears reasonable from a planning perspective. However, there were indications that scope is often reduced during a project if internal resources cannot be identified or if the plant is required to return to service. ▪ Coordination of 3rd party maintenace projects is negatively affected by lengthy procurement regulations which makes it difficult to schedule long-lead time items. ▪ Control of contractor resources should be returned to plant management as is the case at most utility generation fleets.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
II-1 **Operator Qualifications and Experience** *Do the equipment operators have sufficient experience and training to maintain the equipment safely and reliably?*	▪ N/A	N/A
II-2 **Numbers of Critical Personnel** *Are there sufficient personnel for the most critical tasks?*	▪ N/A	N/A
II-3 **Adequacy of Daily Routine Maintenance** *Are daily tasks of maintenance staff sufficient to maintain the plants?*	▪ Existing processes are inconsistently applied by the different regions. ▪ Lack of process enforcement tools	N/A

GENERATION

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
II-4 Scope Definition and Control of Major Maintenance Projects *Does plant management have sufficient control of the scope and execution of major maintenance projects?*	▪ Poor automation of processes and reporting tools	N/A

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
II-1 Operator Qualifications and Experience *Do the equipment operators have sufficient experience and training to maintain the equipment safely and reliably?*			N/A		
II-2 Numbers of Critical Personnel *Are there sufficient personnel for the most critical tasks?*			N/A		
II-3 Adequacy of Daily Routine Maintenance *Are daily tasks of maintenance staff sufficient to maintain the plants?*		X			
II-4 Scope Definition and Control of Major Maintenance Projects *Does plant management have sufficient control of the scope and execution of major maintenance projects?*	X				

III. Support Services

Evaluation Framework

The Support Services Focus Area consists of four Sub-Focus Areas (Core and Enabling areas that define an effective Support Services process):

- III-1 Back Office & Support Functions
- III-2 Engineering
- III-3 Environmental
- III-4 Safety

Observations and Contributors

Sub-Focus Areas	Observations and Contributors
III-1 **Back Office & Support Functions** *How well do back office and support functions operate? These functions are the center of administrative work for how business is carried out, as opposed to how it deals with customers and supporting efforts.*	▪ Support functions are performed in other silos in the organization with inadequate involvement and direction from plant management. These will be provided on a shared services basis after commencement.
III-2 **Engineering** *How well does the Engineering department operate? The Engineering department oversees the engineering, business and management aspects of projects, operations or systems, and makes sure that all the parts properly work together.*	▪ Engineering services, which were inside the Generation directorate, are now provided from outside the directorate. This is a recent organizational change with limited apparent rationale. Engineering will be transferred back post-Commencement.
III-3 **Environmental** *How well do Environmental services operate? This function should oversee compliance with permits, licenses and health concerns for the organization.*	▪ Environmental services were not assessed as these will be entirely transferred to GenCo post-commencement.
III-4 **Safety** *How well do Safety services operate? This function should prepare the EHS (Environmental Health and safety) plan for the company, ensure compliance with statutory provisions and required documents, and continuously raise awareness about safety among company employees.*	▪ Safety services were not assessed as these will be entirely transferred to GenCo post-commencement.

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Gap Assessment

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
III-1 Back Office & Support Functions *How well do back office and support functions operate? These functions are the center of administrative work for how business is carried out, as opposed to how it deals with customers and supporting efforts.*	▪ Weak management controls, lack of line-of-sight accountability and lack of budget efficiencies from having such a dispersed accountability for services.	N/A
III-2 Engineering *How well does the Engineering department operate? The Engineering department oversees the engineering, business and management aspects of projects, operations or systems, and makes sure that all the parts properly work together..*	▪ Organizational placement of Engineering in a different directorate is considered sub-optimal and LUMA would expect these groups to all be part of GenCo.	N/A
III-3 Environmental *How well do Environmental services operate? This function should oversee compliance with permits, licenses and health concerns for the organization.*	▪ LUMA would expect the GenCo to have direct responsibility for environment functions related to generation, which it currently does not.	N/A
III-4 Safety *How well do Safety services operate? This function should prepare the EHS (Environmental Health and safety) plan for the company, ensure compliance with statutory provisions and required documents, and continuously raise awareness about safety among company employees.*	▪ LUMA would expect the GenCo to have direct responsibility for safety functions related to generation, which it currently does not.	N/A

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
III-1 Back Office & Support Functions *How well do back office and support functions operate? These functions are the center of administrative work for how business is carried out, as opposed to how it deals with customers and supporting efforts.*	Not applicable in the current state.				
III-2 Engineering *How well does the Engineering department operate? The Engineering department oversees the engineering, business and management aspects of projects, operations or systems, and makes sure that all the parts properly work together..*	Not applicable in the current state.				
III-3 Environmental *How well do Environmental services operate? This function should oversee compliance with permits, licenses and health concerns for the organization.*	Not applicable in the current state.				

GENERATION

Gap Assessment

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
III-4 **Safety** *How well do Safety services operate? This function should prepare the EHS (Environmental Health and safety) plan for the company, ensure compliance with statutory provisions and required documents, and continuously raise awareness about safety among company employees.*	Not applicable in the current state.				

IV. Outage Management

Evaluation Framework

The Outage Management focus area consists of three Sub-Focus Areas (core and enabling areas that define effective work management):

- **IV-1** Outage Planning (long-term and near-term)
- **IV-2** Outage cost & schedule execution
- **IV-3** Coordination of Outage Support Functions (Material, Labor, Contractors)

Observations and Contributors

Sub-Focus Areas	Observations and Contributors
IV-1 Outage Planning (long-term and near-term) *The process by which scheduling, resourcing and coordination of planned maintenance outages occurs.*	▪ There are no centralized workforce management tools. Resources needed to address this need are not planned as part of the yearly long-range plan activities. Resources are matched to corrective maintenance work daily, meaning that corrective maintenance work takes priority over project work. ▪ Outdated processes are used to track hours. This includes manually filling out time cards and entering the data into spreadsheets.
IV-2 Outage Cost & Schedule Execution *How the organization manages calendar and budgetary aspects of planned maintenance outages.*	▪ The majority of these functions are managed by the PMO. In the past, project scope has been reduced mid-project when proper skills or manpower were not available. ▪ Personnel appear to be loaned out from plants to other plants to support outage requirements which is a positive action, but there are some indications of loose reporting of costs and expenditures in relation to this.
IV-3 Coordination of Outage Support Functions (Material, Labor, Contractors) *The process for project management and coordination for necessary support functions to execute planned maintenance outages.*	▪ The majority of outage coordination tasks are managed by PMO.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
IV-1 Outage Planning (long-term and near-term) *The process by which scheduling, resourcing and coordination of planned maintenance outages occurs.*	▪ Long-term planning appears weak for several reasons: Plants are busy scrambling to resolve to daily emergent issues and have "no time to plan". Plant remaining life and appropriate planning cycle makes the need for long-term planning less urgent. ▪ Near-term planning exists, but is forced to be very reactive to evolving conditions.	N/A
IV-2 Outage cost & schedule execution *How the organization manages calendar and budgetary aspects of planned maintenance outages.*	▪ It seems that some capital projects may not be implemented, even if budgeted and approved. If proper personnel are not available at the necessary time, scope may get reduced or projects cancelled. Projects that are scheduled earlier in the FY have a better chance of execution than those later in the year. Unplanned events and emergencies typically consume much of the capital budget and require defunding of approved capital projects not yet executed. This leads, in practice, to the same capital projects being approved over multiple budget cycles, but never being executed.	N/A

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Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
IV-3 Coordination of Outage Support Functions (Material, Labor, Contractors) *The process for project management and coordination for necessary support functions to execute planned maintenance outages.*	▪ N/A	N/A

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
IV-1 Outage Planning (long-term and near-term) *The process by which scheduling, resourcing and coordination of planned maintenance outages occurs.*		Long-Term Outage Planning [PS, SJ]	Near-Term Outage Planning [PS, CS, SJ] CS, AG - Long Term		
IV-2 Outage cost & schedule execution *How the organization manages calendar and budgetary aspects of planned maintenance outages.*		PS CS SJ AG			
IV-3 Coordination of Outage Support Functions (Material, Labor, Contractors) *The process for project management and coordination for necessary support functions to execute planned maintenance outages.*			N/A		

Key : CS = Costa Sur, AG = Aguirre, PS = Palo Seco, SJ = San Juan

Note: VI-3 not scored as this is a service delivered by PMO and LUMA will not be involved post-Commencement.

V. Plant Performance Management

Evaluation Framework

The Plant Performance Management Focus Area consists of four Sub-Focus Areas (Core and Enabling areas that define Plant Performance Management):

- V-1 Heat Rate
- V-2 Forced Outage Rates
- V-3 Availability
- V-4 Unit Cost ($/kWh)

Observations and Contributors

Sub-Focus Areas	Observations and Contributors
V-1 **Heat Rate** *Metric for efficiency of power plant in BTU/kWh. Equal to the ratio of thermal energy to electricity produced.*	▪ Heat rates generally seem high, and different heat rate values are cited in different internal reports. ▪ Lack of the performance engineering function at the plants inhibits definitive determination of heat rates and ongoing tracking of heat rates. Heat rates are currently estimated from production outputs and reported fuel consumption. ▪ Reported heat rate performance metrics are assessed by LUMA to be highly unreliable and only could be relied upon to give directional indication of relative efficiencies.
V-2 **Forced Outage Rates** *Measure of outages that are not part of a planned maintenance program.*	▪ Forced Outage rates are very high. Some indications that 2020 forced outage rates have improved. ▪ The lack of a robust and verifiable reporting system, combined with often contradictory anectdotal evidence, precludes LUMA making any firm conclusions based on reported data until it can first be validated.
V-3 **Availability** *Percent of time that plants are available for dispatch if required.*	▪ There is poor generating availability due to age of equipment and lack of capital spending to properly extend system life. All key metrics trending in wrong direction.
V-4 **Unit Cost ($/kWh)** *Actual fully loaded cost of producing electricity measured in kWh.*	▪ Without visibility into cost per BTU for fuel procurement and ongoing system performance monitoring, plants do not have the ability to track unit cost metrics. ▪ Systems Operations control room does not have adequate awareness of actual unit costs and is currently unable to conduct economic dispatch of the generation fleet. ▪ Insufficient levels of Resource Adequacy and reserves mean it could be several years before true economic dispatch can be implemented.

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
V-1 **Heat Rate** *Metric for efficiency of power plant in BTU/kWh. Equal to the ratio of thermal energy to electricity produced.*	▪ System performance analysis has not validated the heat rate, could not identify analysis in past 10-plus years. ▪ Capital investment prioritization hindedred by no accurate system performance data.	N/A
V-2 **Forced Outage Rates** *Measure of outages that are not part of a planned maintenance program.*	▪ Performance Engineering functions at the plants do not exist. ▪ High Forced Outage rates results in several load shed events each month, and limits flexibility of control room operators.	N/A

GENERATION

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
V-3 **Availability** *Percent of time that plants are available for dispatch if required.*	▪ Plants should track and report on key performance indicators in keeping with industry practices. ▪ Some anectdotal indications that existing PI System could be easily repaired but has fallen into disuse. Performance data is not evaluated.	N/A
V-4 **Unit Cost ($/kWh)** *Actual fully loaded cost of producing electricity measured in kWh.*	▪ Plants do not have the ability to track unit cost and control room cannot conduct economic dispatch. Data is not regularly refreshed and put into the SCADA and/or the PI system.	N/A

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
V-1 **Heat Rate** *Metric for efficiency of power plant in BTU/kWh. Equal to the ratio of thermal energy to electricity produced.*	X				
V-2 **Forced Outage Rates** *Measure of outages that are not part of a planned maintenance program.*		X			
V-3 **Availability** *Percent of time that plants are available for dispatch if required.*		X			
V-4 **Unit Cost ($/kWh)** *Actual fully loaded cost of producing electricity measured in kWh.*	X				

VI. Preparedness for Future Role

The Plant Performance Management Focus Area consists of four Sub-Focus Areas (Core and Enabling areas that define effective Preparedness for Future Roles):

VI-1 Demarcation/Ring-Fencing
VI-2 Operate under SOP
VI-3 Operate as Stand-Alone Entity with P&L & Performance Expectations
VI-4 Property Record Keeping & Reporting

Observations and Contributors

Sub-Focus Areas	Observations and Contributors
VI-1 **Demarcation/Ring-Fencing** *Is there clear delineation of ownership or responsibility for equipment?*	▪ PREPA has not yet begun developing a demarcation plan as required by the OMA. They retained S&L to examine demarcation, but their work was not completed.
VI-2 **Operate Under SOP** *Organization's ability to conduct business based on documented policies and procedures.*	▪ Systems Operations has been too busy responding to daily contingency events, and do not have adequate EMS to properly analyze system performance trends and underlying root causes.
VI-3 **Operate as Stand-Alone Entity with P&L and Performance Expectations** *To what extent is the GenCo capable of running as a for profit business without reliance on LUMA other than for Shared Services.*	▪ PREPA does not appear rto have made efforts up to now to establish a new GenCo organization. ▪ PREPA leadership does not appear to place value on operating practices that value efficiency, cost of operations or profitability.
VI-4 **Proper Record Keeping and Reporting** *Does regular collection of required data occur? Is this data kept and maintained in compliance with policies?*	▪ There are multiple instances of key record keeping mechanisms not being utilized or maintained, and poor procedural controls over what data is fed into these systems. o OSI Soft PI system for operating and performance data o Asset Suite for maintenance management and cost reporting controls o Regular performance assessments of generation assets o Updating of as-built drawings

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
VI-1 **Demarcation/Ring-Fencing** *Is there clear delineation of ownership or responsibility for equipment?*	▪ Clear demarcation boundaries should be established. This is similar to almost every power plant in mainland US that was unbundled, and similar to has been done with AES and EcoElectrica. ▪ Second set of meters should be installed in all plants. ▪ Several issues of concern related to the shared equipment and facilities between GridCo and GenCo will need to be addressed.	N/A
VI-2 **Operate Under SOP** *Organization's ability to conduct business based on documented policies and procedures.*	▪ No written Operating Procedures exist; processes based on loose rules of thumb, informal processes and shared team experiences with the plants. ▪ Some form of annual assessment report is needed to report on past year's operating performance, procedural compliance, root cause of past events and incorporation of lessons learned. ▪ As more experienced personnel approach retirement age, fully documenting Standard Operating Procedures and other intellectual capital in the plants is a priority (and currently underway at LUMA).	N/A

GENERATION

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
VI-3 **Operate as Stand-Alone Entity with P&L and Performance Expectations** *To what extent is the GenCo capable of running as a for profit business without reliance on LUMA other than for Shared Services.*	▪ GenCo lacks even the most basic financial awareness of its total budget and capital prioritization process. ▪ Generation directorate does not have adequate authority to manage the costs of generation. Below industry-level financial performance and reporting capability.	N/A
VI-4 **Proper Record Keeping and Reporting** *Does regular collection of required data occur? Is this data kept and maintained in compliance with policies?*	▪ Plant personnel at all levels not trained on the value of proper record keeping and reporting utilizing the systems that are already in place.	N/A

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VI-1 **Demarcation/Ring-Fencing** *Is there clear delineation of ownership or responsibility for equipment?*	X				
VI-2 **Operate Under SOP** *Organization's ability to conduct business based on documented policies and procedures.*	X				
VI-3 **Operate as Stand-Alone Entity with P&L and Performance Expectations** *To what extent is the GenCo capable of running as a for profit business without reliance on LUMA other than for Shared Services.*	X				
VI-4 **Proper Record Keeping and Reporting** *Does regular collection of required data occur? Is this data kept and maintained in compliance with policies?*	X				

VII. Major Equipment Condition

Evaluation Framework

The Plant Performance Management Focus Area consists of three Sub-Focus Areas (Core and Enabling areas that define Major Equipment Condition):

VII-1 Condition Assessment Performed Periodically & Recommendations Implemented
VII-2 PREPA Has Appropriate & Accurate Understanding of Asset Conditions Today
VII-3 Understanding & Program to Provide Basic Asset Management Services

Observations and Contributors

Sub-Focus Areas	Observations and Contributors
VII-1 **Condition Assessment Performed Periodically and Recommendations Implemented** *Are condition assessments performed periodically, followed by implementation of recommendations?*	[redacted]
VII-2 **PREPA Has Appropriate and Accurate Understanding of Asset Conditions Today** *Does PREPA have an appropriate and accurate understanding of current asset conditions?*	[redacted]
VII-3 **Understanding and Program to Provide Basic Asset Management Services** *Does PREPA have the understanding and programming to provide basic asset management services?*	[redacted]

Major Gaps

Sub-Focus Area	Major Gaps	Categorization
VII-1 **Condition Assessment Performed Periodically and Recommendations Implemented** *Are condition assessments performed periodically, followed by implementation of recommendations?*	[redacted]	[redacted]

GENERATION

Gap Assessment

Sub-Focus Area	Major Gaps	Categorization
VII-2 **PREPA Has Appropriate and Accurate Understanding of Asset Conditions Today** *Does PREPA have an appropriate and accurate understanding of current asset conditions?*	[redacted]	[redacted]
VII-3 **Understanding and Program to Provide Basic Asset Management Services** *Does PREPA have the understanding and programming to provide basic asset management services?*	[redacted]	[redacted]

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
VII-1 **Condition Assessment Performed Periodically and Recommendations Implemented** *Are condition assessments performed periodically, followed by implementation of recommendations?*	[redacted]				
VII-2 **PREPA Has Appropriate and Accurate Understanding of Asset Conditions Today** *Does PREPA have an appropriate and accurate understanding of current asset conditions?*					
VII-3 **Understanding and Program to Provide Basic Asset Management Services** *Does PREPA have the understanding and programming to provide basic asset management services?*					

Core Business Assessment

Focus and Sub-Focus Areas

The one **Core Business** focus areas are further defined by the following sub-focus areas:

	Focus Areas	Sub-Focus Areas			
XI	**Systems Operations Principles (SOP)**	XI-1	Procedures management (e.g. written, well understood, compliance audits)	XI-3	Flexibility to adapt to future Regulatory Vision
		XI-2	Adequate systems to monitor compliance	XI-4	Ability to support future GenCo spin-off

XI. Systems Operations Principles

Evaluation Framework

The Systems Operations Principles Focus Area consists of four Sub-Areas:

XI-1 Procedures Management (e.g., written, well understood, compliance audits)
XI-2 Adequate Systems to Monitor Compliance
XI-3 Flexibility to Adapt to Future Regulatory Vision
XI-4 Ability to Support Future GenCo Spin-Off

Observations and Contributors

Sub-Focus Areas	Observations and Contributors
XI-1 **Procedures Management (e.g., written, well understood, compliance audits)** *Extent to which basic processes are defined and performed as required vs. ad hoc decision making*	▪ No written Operating Procedures exist; processes based on loose rules of thumb, informal processes and shared team experiences within the plants.
XI-2 **Adequate Systems to Monitor Compliance** *Extent that procedural compliance is measured and monitore, deviations are trended and corrective actions taken to increase compliance*	▪ No existing capability to monitor compliance since there were no written procedures that defined performance expectations.
XI-3 **Flexibility to Adapt to Future Regulatory Vision** *Ability to define a master framework that can be adjusted later if necessary, to adapt to future regulatory initiatives (e.g. retail wheeling, prosumer, etc.)*	▪ Due to no written principles or procedures, the current environment has inadequate ability to effectively respond to emerging policy changes.
XI-4 **Ability to Support Future GenCo Spin-Off** *Extent that GenCo has the capability to end its dependence on GridCo and stand up as a separate autonomous entity*	▪ The creation of a clear SOP should facilitate the creation and future operation of an autonomous GenCo.

Major Gaps

Sub-Focus Areas	Major Gaps	Categorization
XI-1 **Procedures Management (e.g., written, well understood, compliance audits)** *Extent to which basic processes are defined and performed as required vs. ad hoc decision making*	▪ As more experienced personnel approach retirement age, fully documenting Standard Operating Procedures and other intellectual capital in the plants is a priority. ▪ Written principles and procedures will facilitate training of new personnel and ensure more consistent operation, which should increase efficiencies.	N/A

GENERATION

Gap Assessment

Sub-Focus Areas	Major Gaps	Categorization
XI-2 **Adequate Systems to Monitor Compliance** *Extent that procedural compliance is measured and monitore, deviations are trended and corrective actions taken to increase compliance*	▪ Some form of annual assessment report is needed to provide information on previous year's operating performance, procedural compliance, root causes of past events and incorporate of lessons learned.	N/A
XI-3 **Flexibility to Adapt to Future Regulatory Vision** *Ability to define a master framework that can be adjusted later if necessary, to adapt to future regulatory initiatives (e.g. retail wheeling, prosumer, etc.)*	▪ The existence of written principles and procedures will facilitate the ability to adapt to future policy changes by creating the documents or framework that can be changed to comply with future policy directions.	N/A
XI-4 **Ability to Support Future GenCo Spin-Off** *Extent that GenCo has the capability to end its dependence on GridCo and stand up as a separate autonomous entity*	No identifiable LUMA gaps to standing up a new GenCo.	N/A

Scorecard

Score	Unfocused 1	Aware 2	Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place.	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them.	The organization has identified the means to address the major elements and some work is progressing on implementation.	All elements are in place and are implemented in the day-to-day operations of the business.	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value.
Sub-Focus Areas					
XI-1 **Procedures Management (e.g., written, well understood, compliance audits)** *Extent to which basic processes are defined and performed as required vs. ad hoc decision making*			X		
XI-2 **Adequate Systems to Monitor Compliance** *Extent that procedural compliance is measured and monitore, deviations are trended and corrective actions taken to increase compliance*		X			
XI-3 **Flexibility to Adapt to Future Regulatory Vision** *Ability to define a master framework that can be adjusted later if necessary, to adapt to future regulatory initiatives (e.g. retail wheeling, prosumer, etc.)*			X		
XI-4 **Ability to Support Future GenCo Spin-Off** *Extent that GenCo has the capability to end its dependence on GridCo and stand up as a separate autonomous entity*		X			

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-002

Request:

Provide results of the LUMA utility-wide risk-based screening process, which screened each initiative for the likelihood of a failure occurring if the proposed SRP initiative does not address the identified deficiency, and for the potential for significant adverse consequences or impacts of that failure.

Response:

LUMA applied a Component Business Model (CBM) methodology to systematically determine the impact / consequence across the business. The CBM provided a utility-wide platform for LUMA to assess the risks affecting the utility in order to select the highest risk components.

LUMA assessed risk by functional area across the business, referred to as business components. Components were evaluated in terms of their current maturity and their impact of negative events that may occur due to poor functioning (low maturity) within each component. Specifically related to impact or consequence, each of the 146 components were rated low, medium or high based on multiple risk categories: employee health and safety, public safety, delivery of electric service, physical and cyber security, financial and requirements of applicable law.

This process is described in detail in the SRP submission:

- Section 3.2 Gap Assessment & 3.2.1 Summary of Key Organizational Health Findings (State of the Organization)
- Section 4.2 Selecting Non-Asset Related Programs – Component Business Model; and
- Appendix C: Organization Gap Assessment
- Appendix G: Component Business Model

Please refer to LUMA's CBM working papers (RFI-LUMA-MI-20-0019-210406-PREB-002 Attachment 1), which show the base CBM developed for LUMA, LUMA's assessment of component impact / consequence and assessment of component maturity, a proxy for likelihood of failure. LUMA's assessment of component maturity utilized results of the Gap Assessments (refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 1).

Unsurprisingly, high impact / consequence components are focused on asset operations and maintenance, supply and demand management, and supply chain as it relates to delivery of service, employee health and safety and public safety and requirements of applicable law. Customer billing and finance related to financial loss to the utility and requirements of applicable law and cyber security, health, safety and environment relate predominantly to safety and requirements of applicable law.

Furthermore, LUMA mapped the CBM components to the portfolio programs to confirm those programs to include in the SRP. Please refer to attachment CBM Mapping to SPR Program Briefs document (RFI-

LUMA-MI-20-0019-210406-PREB-002 Attachment 2) to understand the relationship between high and moderate liability components and SRP programs.

Given a lack of asset data, LUMA leveraged information from reports previously developed by Sargent & Lundy, Navigant Consulting, Siemens PT and the US DOE and performed confirmatory site inspections across the T&D System to assess the overall asset health condition. The asset health condition includes both likelihood and impact / consequence information and is a reasonable measure of the asset risk and therefore was used as a basis for identifying SRP work. The inspections involved a sample of key assets, which allowed LUMA to verify the findings contained in the reports and contribute to the development of the initiatives. These confirmatory inspections along with information from reports previously developed informed LUMA's estimates of SRP work within each program.

However, further risk assessment to delineate SRP selection by asset is required as asset level data is not available. Field inspections (as described in Distribution Lines Inspection, Inspection of Transmission Lines and Transmission and Distribution Substation Rebuilds programs) will focus on inspecting each asset to assess both the likelihood of failure and the impact / consequence of failure. The data collected during these inspections will support the assessment of both the likelihood of failure and the impact / consequence of failure and identify the assets that are included in the SRP. Currently percentages of SRP work within programs are based on estimates from LUMA's assessment described above. This process is described in detail in the SRP submission:

- Section 3.2 Gap Assessment & 3.2.2 Summary of Key Asset Health Findings
- Section 4.3 Selecting Asset-Related Programs - Risk Assessment
- Appendix D: Guidance from Key Previous Reports
- Appendix E: Inspections

The lack of accurate data to inform business and asset management decisions was particularly prevalent when assessing the health of the T&D System assets. PREPA has neither had nor performed an inspection program to document the health condition of its system assets. There is little data or other evidence documenting inspections, testing, and repair of critical system assets. LUMA anticipates that, as the SRP work proceeds, including inspection programs, a more comprehensive picture of the state of the T&D System and the pace of investment of improvements will be further understood.

For any asset inspection data regarding the condition of utility physical assets, please refer to RFI-LUMA-MI-20-0019-210406-PREB-001.

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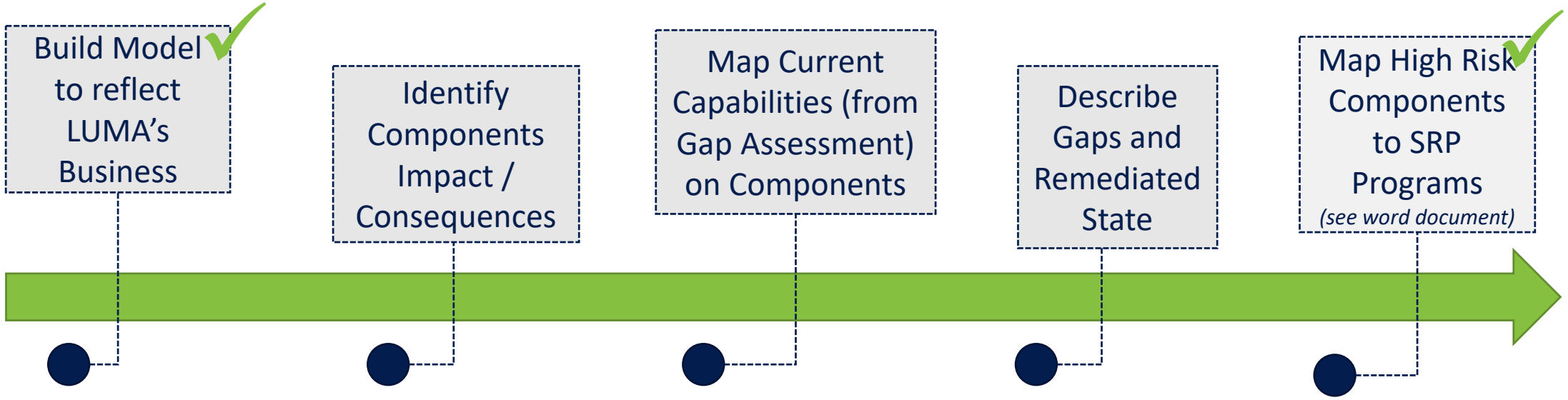
Component Business Model (CBM)

Component Business Model Process



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Introduction to CBM

What is a Component Business Model (CBM)?

- A CBM is a map of the business "building blocks". It is a representation of the entire business in a simple framework. It is not meant to replicate an organizational structure.
- A CBM was implemented to assess risk across the all components of the business
    - A **component view** addresses the question "What capabilities must I have (or have access to) in order to produce a given output?" (versus a **process view** which answers "What tasks must we undertake to produce a given output?")
    - This allows for LUMA to determine areas with high risk, for inclusion in the SRP, and the level in which those risks must be remediated
    - The **component view** focuses on what the utility should have the capability to do compared to the **process view**, which focuses on how we do what we do

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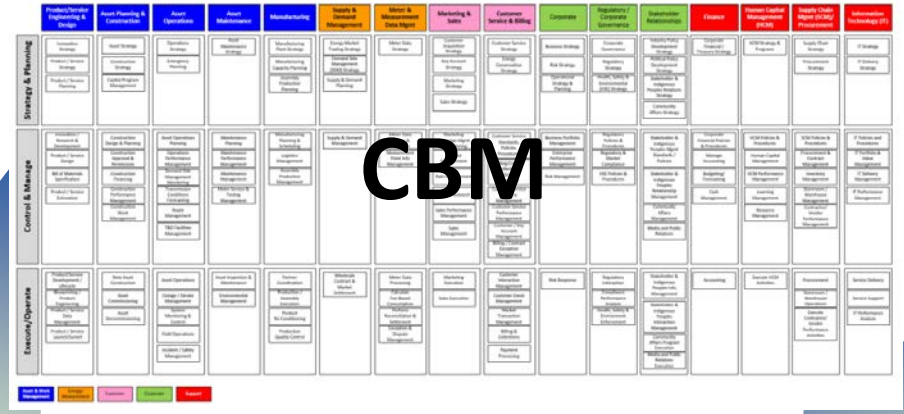
CBM: Representing the enterprise on a single page

Columns are **Business Competencies** defined as large business areas with characteristic skills and capabilities (e.g., product development or supply chain) – components have "affinity of purpose"



An **Accountability Level** characterizes the *scope* and *intent* of activity and decision-making.

- ***Directing - Strategy & Planning***: overall direction and policy
- ***Controlling - Control & Manage***: monitoring, managing exceptions and tactical decision making
- ***Executing - Execute / Operate***: doing the work

Boxes are a **Business Component** is a part of an enterprise that has the potential to operate independently

The CBM is used to comprehensively review the Utility business

- Identify areas where risks are the greatest
- Rates the current competency level of the business components
- Allows for a systematic allocation of gaps and definition of remediated across different components and activity levels
- Holistic visualization of risk assessment across the business

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LUMA CBM

	Asset Planning & Construction	Asset Operations	Asset Maintenance	Supply & Demand Management	Meter Measurement Data Mgmt	Marketing & Sales	Customer Service & Billing	Corporate	Regulatory/ Corporate Governance	Stakeholder Relationships and External Comms	Finance	Human Capital Management (HCM)	Supply Chain Management / Procurement	Information Technology
Strategy & Planning	Asset Strategy	Operations Strategy	Asset Maintenance Strategy	Demand Side Management Strategy	Meter Data Strategy	Customer Acquisition Strategy	Customer Service Strategy	Business Strategy	Corporate Governance	Industry Policy Development Strategy	Corporate Financial/ Treasury Strategy	HCM Strategy & Programs	Supply Chain Strategy	IT Strategy
	Construction Strategy	Emergency Planning		Supply & Demand Planning		Key Account Strategy	Energy Conservation Strategy	Risk Strategy	Regulatory Strategy		Shared Services Strategy	Succession Planning Strategy	Procurement Strategy	IT Delivery Strategy
	Capital Program Management	Fleet Strategy				Marketing Strategy		Operational Strategy & Planning	Health, Safety & Environmental (HSE) Strategy					Cybersecurity Strategy
						Sales Strategy		Office Facilities Strategy	OMA Strategy					
								Federal funding strategy	Bankruptcy Strategy					
Control & Manage	Construction Design & Planning	Asset Operations Planning	Maintenance Planning	Supply & Demand Management	Meter Data Policies & Standards	Marketing Campaign Mgmt & Monitoring	Customer Service Standards, Policies, Procedures	Business Portfolio Management	Regulatory Policies and Procedures	Stakeholder Management Standards/ Policies	Corporate Financial Policies & Procedures	HCM Policies & Procedures	SCM Policies & Procedures	IT Policies and Procedures
	Construction Approval and Permissions	Operations Performance Management	Maintenance Performance Management		Measurement Point info Management	Rate Management	Billing/ Credit/ Collections Policies and Standards	Enterprise Portfolio Management	Regulatory & Market Compliance	Stakeholder Relationship Management	Management Accounting	Human Capital Management	Procurement & Contract Management	IT Portfolio Value Management
	Construction Financing	Demand Side Management Monitoring	Maintenance Management			Market Research	Customer Service Delivery Management	Risk Management	HSE Policies and Procedures	Community Affairs Management	Budgeting/ Forecasting	HCM Performance Management	Inventory Management	IT Delivery Management
	Construction Performance Management	Transmission Conditions Forecasting	Meter Service & Testing Management			Sales Performance Management	Customer Service Performance Management	Federal funding relationship management	OMA relationship management	Media and Public Relations	Cash Management	Learning Management	Storeroom/ Warehouse Management	IT Performance Management
	Construction Work Management	Fleet Management	Route Management			Sales Management	Customer/ Key Account Management	Office Facilities Management	Bankruptcy relationship management		Shared Services Management	Resource Management	Contract Vendor Performance Management	Cybersecurity Management
		T&D Facilities Management					Billing / Contract Exception Management					Competency management		
Execute/ Operate	New Asset Construction	Asset Operations	Asset Inspection and Maintenance	Dispatch and GenCo Power Purchase Operating Agreement	Meter Data processing	Marketing Execution	Customer Interaction Management	Risk Response	Regulatory Interaction	Stakeholder Info Management	Financial Accounting	Execute HCM Activities	Procurement	Service Delivery
	Asset Commissioning	Outage/ Derate Management	Environmental Management		Calculate billing determinants	Sales Execution	Customer Event Management	Federal Funding Execution	Regulatory Compliance	Stakeholder Interaction Management	Shared Services Execution		Storeroom/ Warehouse Operations	Service Support
	New Asset Decommissioning	System Monitoring & Control	Vegetation Management		Perform reconciliation and settlement		Billing & Collections	Office Facilities Operations	Health, Safety & Environment Enforcement	Community Affairs Program Execution			Execute Contract/ Vendor Performance Activities	IT Performance Analysis
		Field Operations			Exception dispute management		Payment Processing		Execute OMA	Media and Public Relations Execution				Cybersecurity Execution and Response
		Incident/ Safety Management							Bankruptcy reporting and execution					
		Fleet Operations												

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Identify Component Impact / Consequence

Team evaluated each component for the CBM for Impact / Consequence:

- Categories
  - Low, medium, high
- Impact / Consequence categories:
  - Safety – to employees, customers and public
    - Example of high impact / consequence – If a pole breaks / falls over in an urban area – it could result in danger to the public; Condition of bucket trucks – if a bucket falls off, then this could potentially result in significant harm to an employee
  - Delivery of service – ability to deliver electricity to customers
    - Example of high impact / consequence - Failure of a transmission transformer resulting in a large number of customers losing power; physical security breach at substation resulting in loss of service
  - Material financial impact to utility – impact to the ability to collect revenues or may result in large costs
    - Example of high impact / consequence – if the bill printing equipment fails, LUMA will be unable to bill customers, creating a large disruption to the utility's ability to collect revenues

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LUMA CBM

Impact / Consequence

	Strategy & Planning	Control & Manage	Execute/ Operate
Asset Planning & Construction	Asset Strategy Construction Strategy Capital Program Management	Construction Design & Planning Construction Approval and Permissions Construction Financing Construction Performance Management Construction Work Management	New Asset Construction Asset Commissioning Asset Decommissioning
Asset Operations	Operations Strategy Emergency Planning Fleet Strategy	Asset Operations Planning Operations Performance Management Demand Side Management Monitoring Transmission Conditions Forecasting Fleet Management T&D Facilities Management	Asset Operations Outage/ Derate Management System Monitoring & Control Field Operations Incident/ Safety Management Fleet Operations
Asset Maintenance	Asset Maintenance Strategy	Maintenance Planning Maintenance Performance Management Maintenance Management Meter Service & Testing Management Route management	Asset Inspection and Maintenance Environmental Management Vegetation Management
Supply & Demand Management	Demand Side Management Strategy Supply & Demand Planning	Supply & Demand Management	Dispatch and GenCo Power Purchase Operating Agreement
Meter Measurement Data Mgmt	Meter Data Strategy	Meter Data Policies & Standards Measurement Point info Management	Meter Data processing Calculate billing determinants Perform reconciliation and settlement Exception dispute management
Marketing & Sales	Customer Acquisition Strategy Key Account Strategy Marketing Strategy Sales Strategy	Marketing Campaign Mgmt & Monitoring Rate Management Market Research Sales Performance Management Sales Management	Marketing Execution Sales Execution
Customer Service & Billing	Customer Service Strategy Energy Conservation Strategy	Customer Service Standards, Policies, Procedures Billing/ Credit/ Collections Policies and Standards Customer Service Delivery Management Customer Service Performance Management Customer/ Key Account Management Billing / Contract Exception Management	Customer Interaction Management Customer Event Management Billing & Collections Payment Processing
Corporate	Business Strategy Risk Strategy Operational Strategy & Planning Office Facilities Strategy Federal funding strategy	Business Portfolio Management Enterprise Portfolio Management Risk Management Federal funding relationship management Office Facilities Management	Risk Response Federal Funding Execution Office Facilities Operations
Regulatory/ Corporate Governance	Corporate Governance Regulatory Strategy Health, Safety & Environmental (HSE) Strategy OMA Strategy Bankruptcy Strategy	Regulatory Policies and Procedures Regulatory Compliance HSE Policies and Procedures OMA relationship management Bankruptcy relationship management	Regulatory Interaction Regulatory Compliance Health, Safety & Environment Enforcement Execute OMA Bankruptcy reporting and execution
Stakeholder Relationships and External Comms	Industry Policy Development Strategy	Stakeholder Management Standards/ Policies Stakeholder Relationship Management Community Affairs Management Media and Public Relations	Stakeholder Info Management Stakeholder Interaction Management Community Affairs Program Execution Media and Public Relations Execution
Finance	Corporate Financial/ Treasury Strategy Shared Services Strategy	Corporate Financial Policies & Procedures Management Accounting Budgeting/ Forecasting Cash Management Shared Services Management	Financial Accounting Shared Services Execution
Human Capital Management (HCM)	HCM Strategy & Programs Succession Planning Strategy	HCM Policies & Procedures Human Capital Management HCM Performance Management Learning Management Resource Management Competency Management	Execute HCM Activities
Supply Chain Management / Procurement	Supply Chain Strategy Procurement Strategy	SCM Policies & Procedures Procurement & Contract Management Inventory Management Storeroom/ Warehouse Management Contract Vendor Performance Management	Procurement Storeroom/ Warehouse Operations Execute Contract/ Vendor Performance Activities
Information Technology	IT Strategy IT Delivery Strategy Cybersecurity Strategy	IT Policies and Procedures IT Portfolio Value Management IT Delivery Management IT Performance Management Cybersecurity Management	Service Delivery Service Support IT Performance Analysis Cybersecurity Execution and Response

Safety, Delivery, Financial Impact

- High
- Medium
- Low

High: Performance directly correlates to one or more impact / consequence categories

Medium: Performance only correlates to one or more impact / consequence categories loosely / indirectly

Low: Performance does not directly correlate to any impact / consequence categories

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Maturity Scoring and Definition of Remediated

Score	Unfocused 1	Aware 2	Remediated: Developing 3	Competent 4	Excellent 5
Scoring Criteria	The organization has not recognized the need for the basic elements and/or there is no evidence of commitment to put them in place. Work is performed informally or ad hoc Processes are undocumented and/or undefined Issues present major exposures Required expertise/training does not exist, capacity is insufficient or both Supporting technology is missing or wholly inadequate	The organization has a basic understanding of the need to address these elements and is in the process of deciding how/starting to apply them. Preliminary documentation of processes being compiled Performance is unmeasured Little organizational effort to identify issues Supporting technology is inadequate or underexploited	The organization has identified the means to address the major elements and some work is progressing on implementation. Basic performance can be measured Performance is minimally adequate Processes are documented and defined Issue identification is performed Competitively sub-par Supporting technology is adequate and exploited reasonably	All elements are in place and are implemented in the day-to-day operations of the business. Major improvements made Performance is adequate and continuously measured/verified Processes are managed (followed consistently) with appropriate controls Disciplined issues identification Competitively at par Supporting technology is largely attuned to business needs, flexes well in response to change requirements	The organization is using processes and approaches beyond the basic requirements, driving to achieve maximum value. Verifiable issues/ defect reductions and or practices continuous improvement Deliberate effort to optimize/improve processes Competitively well positioned to competitively differentiated Supporting technology is continuously address/ deployed for additional strategic advantage

High Impact Mapping

- Draft Work Product - For Discussion Purposes Only -

LUMA CBM

High Impact / Conse-quence Current Capability

	Asset Planning & Construction	Asset Operations	Asset Maintenance	[redacted]	Meter Measurement Data Mgmt	Marketing & Sales	Customer Service & Billing
Strategy & Planning	Asset Strategy Construction Strategy Capital Program Management	Operations Strategy Emergency Planning Fleet Strategy	Asset Maintenance Strategy	[redacted]	Meter Data Strategy	Customer Acquisition Strategy Key Account Strategy Marketing Strategy Sales Strategy	Customer Service Strategy Energy Conservation Strategy
Control & Manage	Construction Design & Planning Construction Approval and Permissions Construction Financing Construction Performance Management Construction Work Management	Asset Operations Planning Operations Performance Management Demand Side Management Monitoring Transmission Conditions Forecasting Fleet Management T&D Facilities Management	Maintenance Planning Maintenance Performance Management Maintenance Management Meter Service & Testing Management Route management	[redacted]	Meter Data Policies & Standards Measurement Point info Management	Marketing Campaign Mgmt & Monitoring Rate Management Market Research Sales Performance Management Sales Management	Customer Service Standards, Policies, Procedures Billing/ Credit/ Collections Policies and Standards Customer Service Delivery Management Customer Service Performance Management Customer/ Key Account Management Billing / Contract Exception Management
Execute/ Operate	New Asset Construction Asset Commissioning New Asset Decommissioning	Asset Operations Outage/ Derate Management [redacted] Field Operations Incident/ Safety Management Fleet Operations	Asset Inspection and Maintenance Environmental Management Vegetation Management	[redacted]	Meter Data processing Calculate billing determinants Perform reconciliation and settlement Exception dispute management	Marketing Execution Sales Execution	Customer Interaction Management Customer Event Management Billing & Collections Payment Processing

	Corporate	Regulatory/ Corporate Governance	Stakeholder Relationships and External Comms	Finance	Human Capital Management (HCM)	Supply Chain Management / Procurement	Information Technology
Strategy & Planning	Business Strategy Risk Strategy Operational Strategy & Planning Office Facilities Strategy Federal funding strategy	Corporate Governance Regulatory Strategy Health, Safety & Environmental (HSE) Strategy OMA Strategy Bankruptcy Strategy	Industry Policy Development Strategy	Corporate Financial/ Treasury Strategy Shared Services Strategy	HCM Strategy & Programs Succession Planning Strategy	Supply Chain Strategy Procurement Strategy	IT Strategy IT Delivery Strategy [redacted]
Control & Manage	Business Portfolio Management Enterprise Portfolio Management Risk Management Federal funding relationship management Office Facilities Management	Regulatory Policies and Procedures Regulatory Compliance HSE Policies and Procedures OMA relationship management Bankruptcy relationship management	Stakeholder Management Standards/ Policies Stakeholder Relationship Management Community Affairs Management Media and Public Relations	Corporate Financial Policies & Procedures Management Accounting Budgeting/ Forecasting Cash Management Shared Services Management	HCM Policies & Procedures Human Capital Management HCM Performance Management Learning Management Resource Management Competency Management	SCM Policies & Procedures Procurement & Contract Management Inventory Management Storeroom/ Warehouse Management Contract Vendor Performance Management	IT Policies and Procedures IT Portfolio Value Management IT Delivery Management IT Performance Management [redacted]
Execute/ Operate	Risk Response Federal Funding Execution Office Facilities Operations	Regulatory Interaction Regulatory Compliance Health, Safety & Environment Enforcement Execute OMA Bankruptcy reporting and execution	Stakeholder Info Management Stakeholder Interaction Management Community Affairs Program Execution Media and Public Relations Execution	Financial Accounting Shared Services Execution	Execute HCM Activities	Procurement Storeroom/ Warehouse Operations Execute Contract/ Vendor Performance Activities	Service Delivery Service Support IT Performance Analysis [redacted]

Excellent
Competent
Developing
Aware
Un focused

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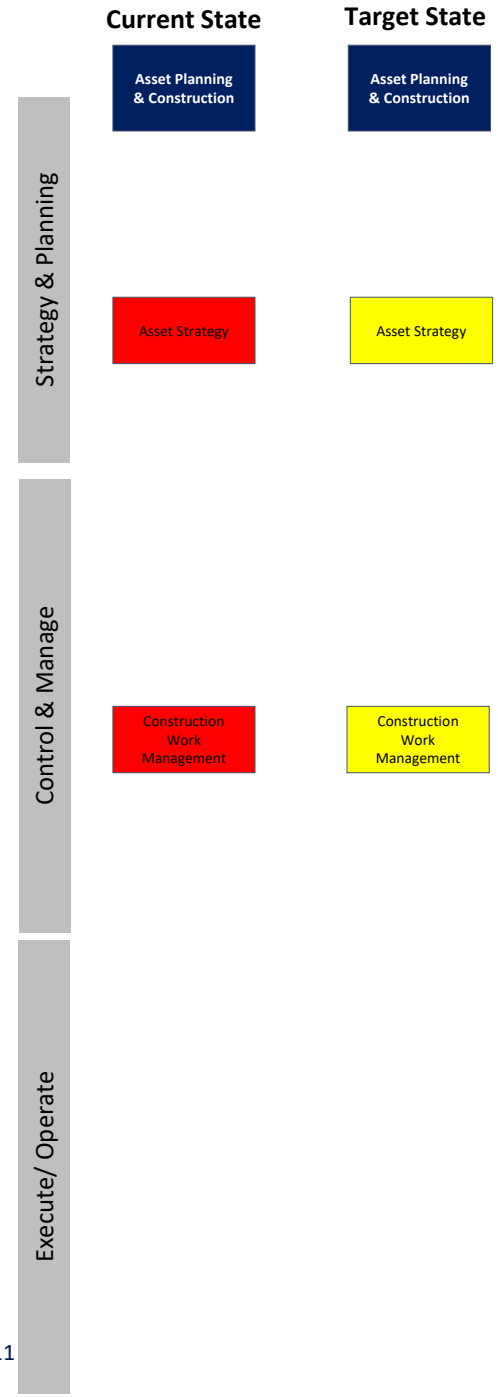
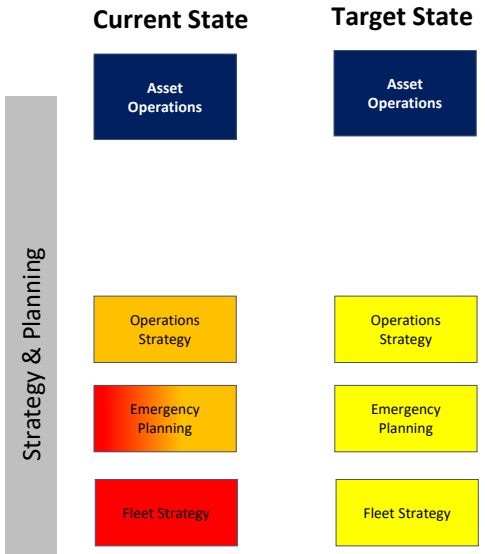
Mapping to Gap Analysis:
Asset Planning and Construction – Asset Strategy and Construction Work Management



	Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Asset Strategy	• Asset decision making and frameworks are undefined • Lack asset management plan, objective and strategy and no clear understanding of how best to establish Asset Management Strategy and supporting policies and practices (repair vs replace criteria, maintain or "run to failure", and time-based vs condition based preventive maintenance, capital investment portfolio optimization) • Strong regional bias and organizational silos lead to inconsistent decisions	• Maintain physical asset model • Set repair, replace, dispositions for existing assets (expand, decommission, net new, etc.) • With stakeholders, assess asset capacity / source viability / future supply options • Identify commercial potential for by-products (e.g. industrial wastewater) • Determine asset renewal timelines and estimate costs
Construction Work Management	• Lack design and construction standards • No clear supervision, monitoring or control directly by PREPA of construction execution work due to lack Construction management resources • Construction projects are managed through external resources • Construction and Commissioning management processes need to be developed	• Identify construction requirements • Setup construction work orders • Monitor and manage construction work order lifecycle • Undertake quality control • Create work and asset records • Monitor / obtain approval for asset design changes • Monitor work performance against plan • Manage security and access to sites • Manage external construction contractors

Mapping to Gap Analysis:
Asset Operations – Operations Strategy, Emergency Planning and Fleet Strategy



	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Operations Strategy	• Asset decision making and frameworks are undefined • Lack asset management plan, objective and strategy and no clear understanding of how best to establish Asset Management Strategy and supporting policies and practices (repair vs replace criteria, maintain or "run to failure", and time-based vs condition based preventive maintenance, capital investment portfolio optimization) • Strong regional bias and organizational silos lead to inconsistent decisions • O&M budget is high compared to similar sized utilities and most money goes to emergent issues related to daily outages and major storm restoration	• Assess operational goals and objectives • Define operational targets • Define operational budget • Specify operations policies
Emergency Planning	• Lack risk assessments, scenario modeling and cybersecurity planning • Resource planning is mostly done by subject matter experts based on past experience before, during, and after events	• Risk assessments, scenario modeling (includes security incidents) • Conduct emergency planning activities • Generate scenario resource plans • Establish incident response priority • Establish inter-agency emergency response agreements
Fleet Strategy	• Lack fleet strategy • No defined operational and sustainability targets • No lease agreements due to history of bad financial performance	• Establish fleet goals, objectives • Establish operational and sustainability targets • Establish lease vs. buy policies, establish partner agreement(s)

Mapping to Gap Analysis:
Asset Operations – Asset Operations Planning, Operations Performance Management, and Transmission Conditions Forecasting

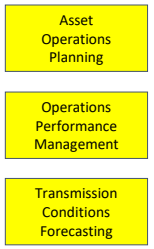
Strategy & Planning

Control & Manage

Execute/ Operate

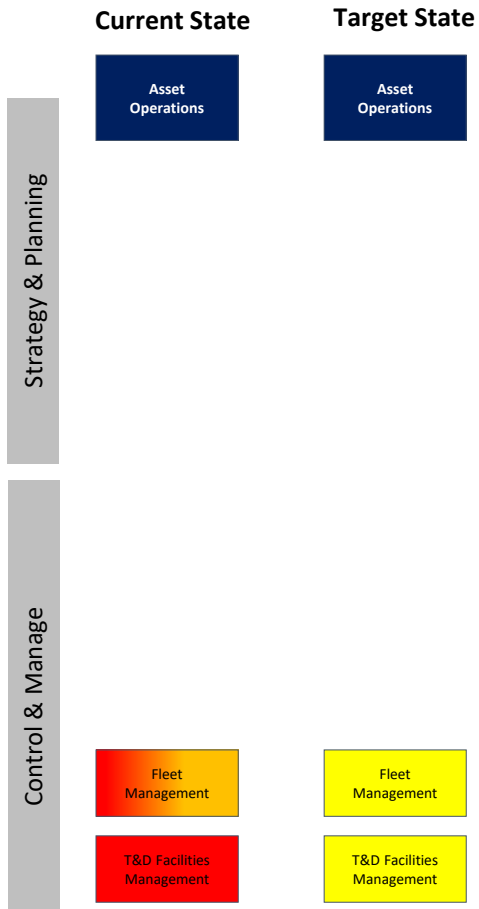
Current State

Target State



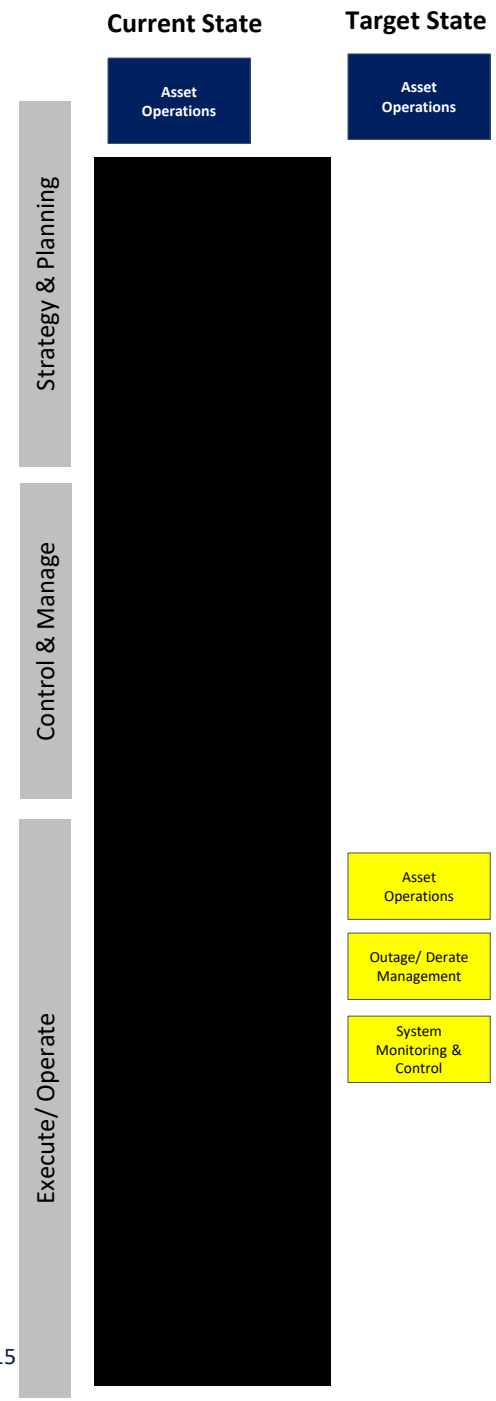
	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Asset Operations Planning	• No effective way to mange energy supply and demand with lack of generation, load forecast and dispatch processes • Outage planning relies on one individual • Consistent security policies and practices are not established	• Physical management of supply and demand • Negotiate agreements with suppliers • Approve vendor plans and budgets • Establish asset-specific outage plan • Establish asset-specific security plan • Schedule outages • Schedule site security inspections / audits
Operations Performance Management	• Lack of documented processes and procedures across System Operations (Real time, outage scheduling, engineering support, operation support) • Calculate performance through reliability reporting (SAIFI, CAIDI, etc.) but is not tied to cost of service • Asset Heath performance indicators or targets are not measured • Do not follow risk-based approach for Asset Management, which hinders prioritization of activities • No documented processes to report on service levels or customer satisfaction	• Measure performance vs. targets • Identify variances • Prioritize problems • Investigate priority problems, investigate solutions • Report on service levels / customer satisfaction, monitor progress
Transmission Conditions Forecasting	• No computerized maintenance management system linked to asset database • Condition and performance information are not stored, and data is not complete • PREPA is not aware of transmission performance • Lack of automated processes, and no ability to track work • Lack documented procedures	• Historical transmission data analysis • Transmission asset activities information analysis (additions, maintenance, outages) • Electricity generation information analysis • Consumption and transmission peak forecasts • Scenario analysis • Download weather data • Produce ½ hourly weather forecasts • Produce load forecasts from weather forecast

Mapping to Gap Analysis:
Asset Operations – Fleet Management and T&D Facilities Management



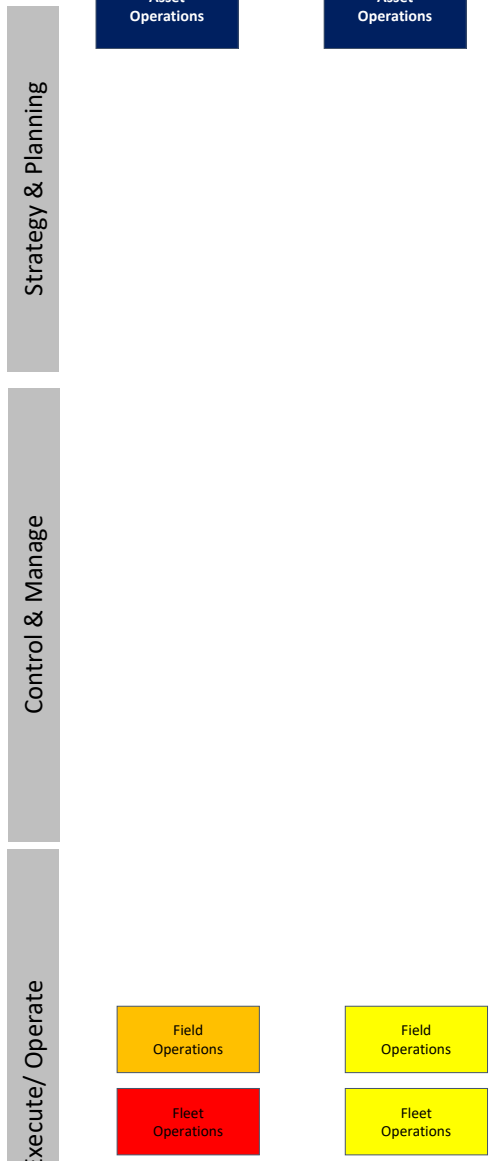
	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Fleet Management	• PREPA utilizes the PR Government's program for fuel and the fuel card program needs improvement • No lifecyle based replacement forecast or capital plan exist • Lacking inventory management process and system • No detailed fleet cost tracking system	• Define fleet management policies and procedures • Identify equipment specification and configuration management • Measure performance versus targets • Manage re-marketing program • Manage insurance, fuel, licenses
T&D Facilities Management	• Lack security standards • Facilities are outdated, and backup facilities are inadequate	• Manage facilities / manage facility security • Conduct maintenance / monitoring activities

Mapping to Gap Analysis:
Asset Operations – Asset Operations, Outage/ Derate Management, and System Monitoring & Control



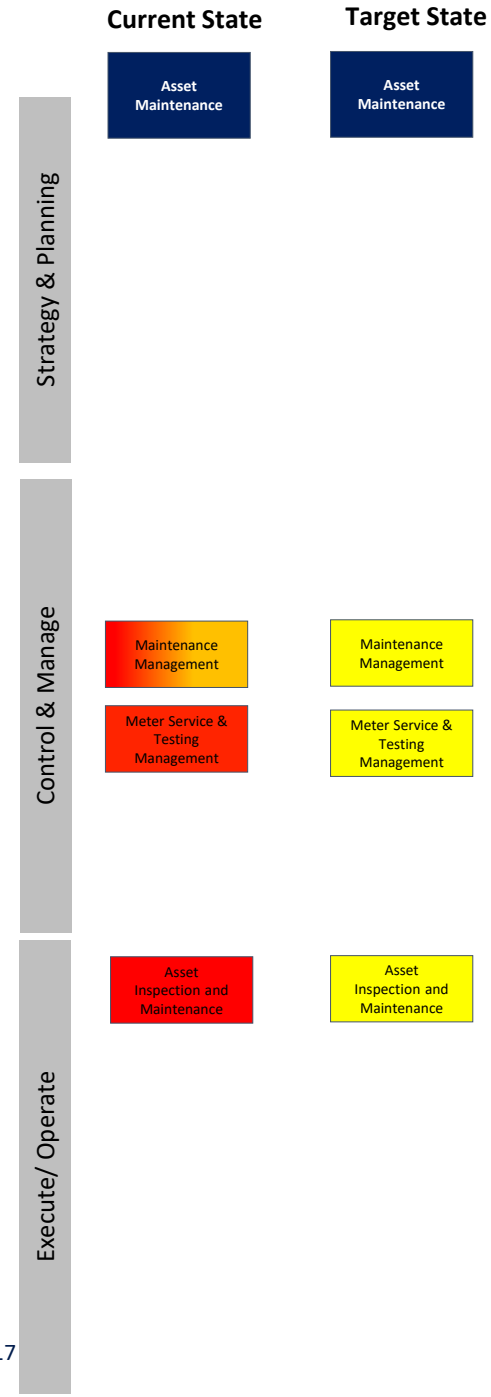
		Definition of Remediated (Developing)
Asset Operations		• Determine operation parameters • Monitor / control operation performance • Manage / coordinate generation • Manage / coordinate distribution
Outage / Derate Management		• Predict outages • Detect outages • Identify remedial actions • Restore service • Review restoration service effectiveness • Conduct causal analysis
System Monitoring & Control		• Monitor and control capacity, energy and ancillary services • Monitor demand side management actions – and impact on peak load

Mapping to Gap Analysis:
Asset Operations – Field Operations and Fleet Operations



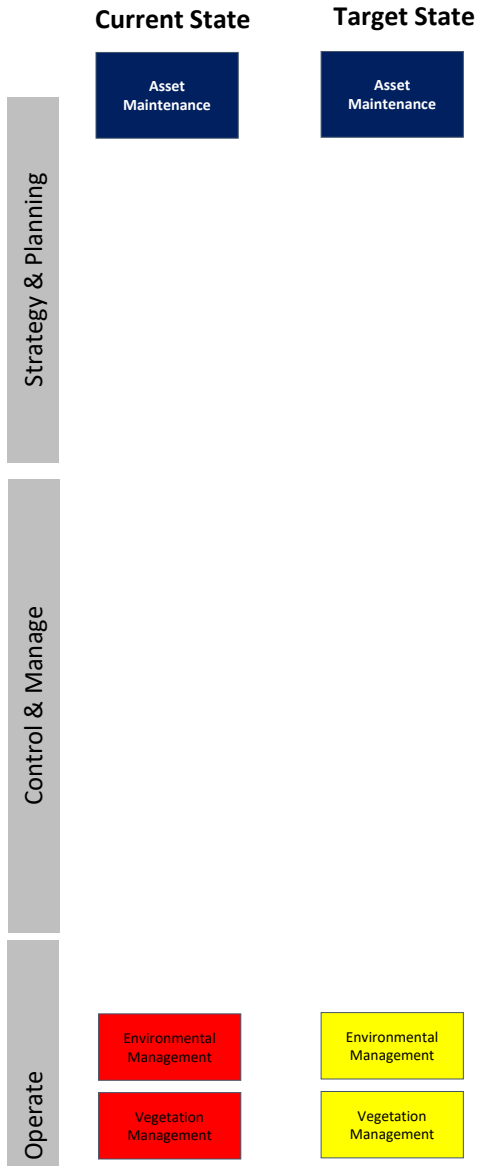
	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Field Operations	• Rigid crew size, • Inability to easily bundle related work • Lack of a planning regimen that "protects the schedule" • Limited availability of appropriate technology causes • Tool to dispatch work is antiquated (STORMS) and crews do not have the ability to use the tool for reporting, or to receive automated work orders • Difficult to track crew location and no ability to predict estimated restoration time for customers	• Situational analysis / troubleshooting • Connect installation / disconnection • Customer on-premise services
Fleet Operations	• Purchasing/ procurement processes are very lengthy for new fleet equipment (often 3 to 12 months) • GPS / Telematics is not used to its full potential • Lack reports for fleet utilization, drive behavior, mileage / hours, etc. • Lack basic maintenance program and records • Lack parts/ inventory management process for fleet	• Vehicle acquisition and disposal • Fleet maintenance • Accident management and safety (driver abstracts)

Mapping to Gap Analysis:
Asset Maintenance – Maintenance, Metering Services & Testing Management, and Asset Inspection and Maintenance



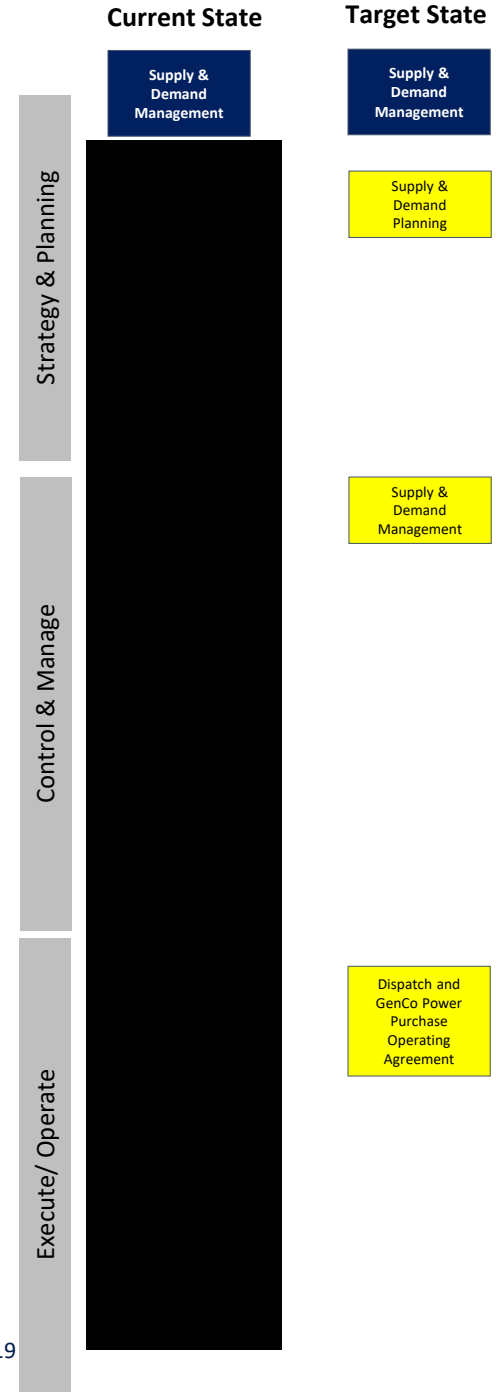
	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Maintenance Management	• Work management, crew formation, dispatch are either routine (scheduled) or ad hoc / reactive – condition-based maintenance is unpracticed • Work order management is supported with manual processes, little automation being utilized • No condition-based predictive analytics capability exists • Work site security is inconsistent / unevenly implemented • Asset record-keeping is inconsistent / incomplete • Shortfalls are evident, both in expertise and capacity	• Identify incident-based maintenance requirements • Identify condition-based maintenance requirements • Work management / maintenance requirements reconciliation • Maintenance work order identification • Monitor and manage maintenance work order lifecycle • Receive work plan • Schedule work • Obtain resources • Undertake quality control • Update work and asset records • Manage security and access to sites
Meter Services & Testing Management	• Lack of documented meter testing standards and processes • Lack of personnel to conduct meter testing • Meter facilities and test equipment are inadequate, meter shop unable to receive, clean, test, seal, and store meters effectively • Unable to sample test as WECO boards have been dispersed to regional facilities, need to establish testing standards	• Establish test standards • Establish test intervals and sampling techniques • Establish meter shop with appropriate capabilities
Asset Inspection and Maintenance	• Asset inspections are performed in response to an event or are ad hoc – inspection results / work order creation is supported manually • Maintenance results / work order performance are captured inconsistently, sometimes unreported • An asset inspection plan exists, but routine inspections have been deferred for the past ~10 years • Shortfalls are evident, both in expertise and capacity	• Identify unplanned maintenance requirements • Repair and maintain assets • Perform testing, calibration and certification • Report work order execution / metrics • Inspect / modify / enhance existing asset • Determine decommissioned asset disposition • Identify meter maintenance requirements

Mapping to Gap Analysis:
Asset Maintenance – Environment and Vegetation Management



	Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Environmental Management	• Lack formal environment incident response processes	• Identify changed site sensitivities • Environmental incident management / incident response
Vegetation Management	• Vegetation management inspections are under-performed, little in the way of proactive / preventive management (adheres to “run-to-failure” model) • 25% of service failures attributed to vegetation, suspected of being under-reported • Vegetation management is incident-based or observational, rather than systematic / knowledge-based	• Tree pruning and removal • Vegetation control around poles, substations, and other electric facilities • Manual, mechanical, or chemical control of vegetation along rights-of-way • Pre- and post inspections of required work • Tree planting and transplanting • Research and development • Vegetation management public education • Tree inventories, work management systems, and sundry computerized functions

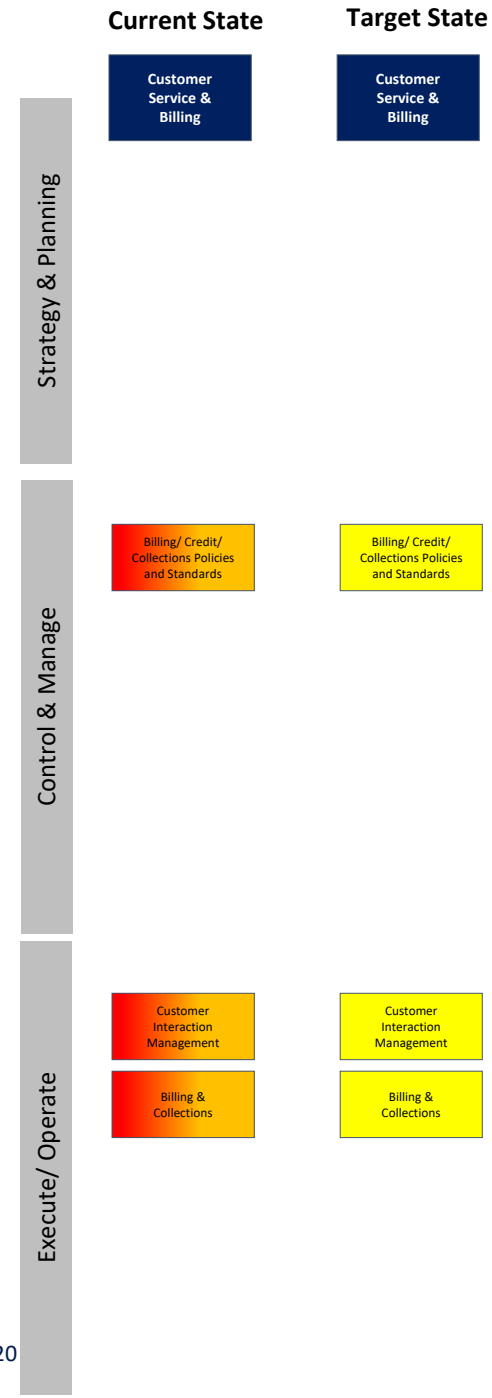
Mapping to Gap Analysis:
Supply & Demand Management – Supply & Demand Planning & Management, and Dispatch & GenCo Power Purchase Operating Agreement



[redacted]

		Definition of Remediated (Developing)
Supply & Demand Planning	[redacted]	• Supply and Demand Analytics • Transmission and distribution asset model analysis • Historical transmission and distribution data analysis • Transmission and distribution asset activities information analysis (additions, maintenance, outages) • Electricity generation information analysis • Consumption and transmission peak forecasts
Supply & Demand Management		• Establish risk management guidelines • Analyze management reports • Apply risk management systems • Execute internal and customer orders • Monitor exposure • Perform financial analytics and calculate balances • Develop statistical models
Dispatch and GenCo Power Purchase Operating Agreement		• Define power output parameters for each generation asset • Define connection points • Test and commission transfer assets • Monitor metering data and assess contract compliance • Assess condition inspection reports • Outline required corrective actions in response to non-performance / non-compliance

Mapping to Gap Analysis:
Customer Services & Billing – Billing/ Credit/ Collections Policy & Standards, Customer Interaction Management, and Billing Collections

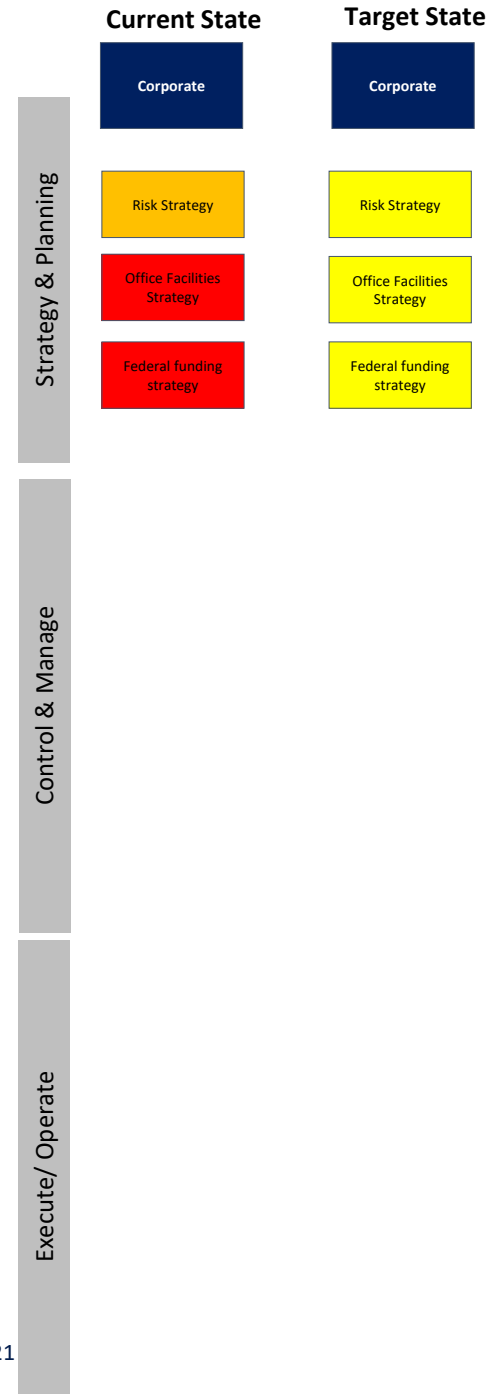


	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Billing / Credit / Collections Policies and Standards	• Lack documented processes • Processes that are documented are very outdated • Processes are manual and do not utilize modern technology or software • Current stakeholders seem to be aware of the processes which are operationally utilized, but poses risk to stakeholders in other groups that are not familiar with the processes • Lack staff to create and document new business processes	• Establish billing and collection standards • Develop billing and collection controls • Implement revenue assurance processes

Customer Interaction Management	• Lack social media monitoring and customer interaction
	• Lack customer chat capabilities
	• Lack critical metrics in KPI scorecards within the contact center
	• Lack monitoring of call center interactions and overall quality assurance processes
	• Lack formal complaint handling
	• Offers two primary inbound channels, voice and email which are often challenged due to high volumes of customer contacts
	• Lack proactive customer relationship management
		• Inbound Activities
		  • Identify customer and validate customer identity
		  • Validate and classify customer event (request, query or dispute)
		  • Record interaction / channel of interaction / assignment
		• Outbound Activities
		  • Identify customer to contact and reason for contacting
		  • Record interaction / channel of interaction
		• Conduct proactive customer relationship management

Billing & Collections	• Outdated bill printing process and technology • Lack centralized capabilities for bill estimation • Lack managing backlog of billing exceptions • Dunning processes are outdated • Lack of centralized collections leads to fragmented efforts and reporting • Improve self service payment options • Improve Collections Operational Reporting: improve reporting and visibility of financial metrics related to collections such as Days Sales Outstanding and Accounts Receivable by customer segment. • Lack of low income or customer assistance programs • Some accounts are not currently billed (streetlights, etc.)	• Calculate charges and service fees • Generate bills / invoices and supporting details • Produce notification of refund / payment advice • Manage dunning and collections • Coordinate Collection Agency actions • Write-off decisioning • Billing and collections reconciliation and reporting

Mapping to Gap Analysis:
Corporate – Risk and Office Facilities & Federal Funding Strategies

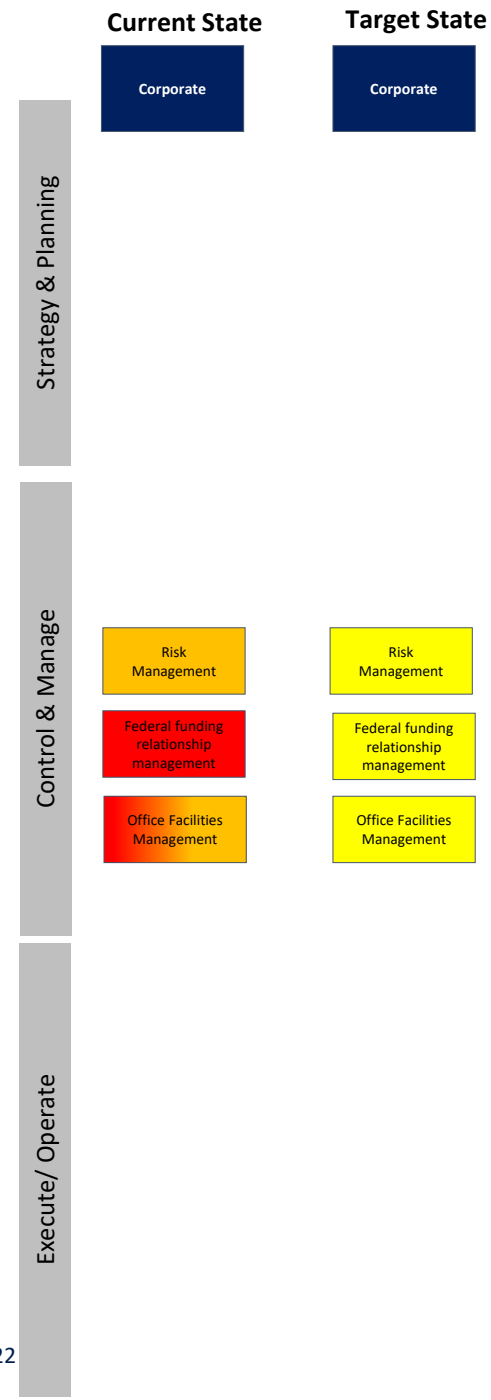


	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)

Risk Strategy	• The risk management process and guidance on the assessment of internal and external risks and potential risk exposure are not documented nor appear to involve appropriate level of management at departmental/corporate level
	• Risk is not fully aware of all exposures
	• Lack strategy and alignment for managing risk on a capital projects level
	• Lack of risk identification and mitigation strategy
		• Identify risk class and probabilities
		• Define risk response strategies (e.g., avoid, accept, transfer, mitigate)
		• Credit risk strategy
		  • Identify acceptable exposure limits – overall, by portfolio, et al
		  • Identify partnership / key customer risk limits

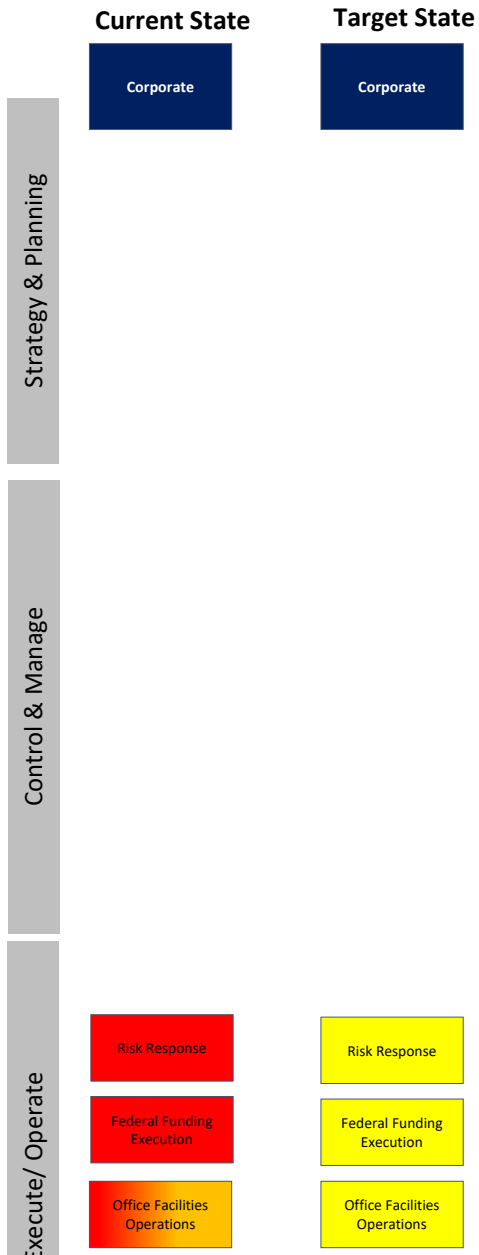
Office Facilities Strategy	• Lack of internal controls and communication between business units and Real Estate which causes a lack in strategic planning and a reactive environment • Lack of preventive maintenance strategy and program • Lack of real estate document strategy	• Develop strategy for acquiring / leasing / managing office buildings and other LUMA operated facilities • Determine location of new offices (if needed) • Space and utilization strategy
Federal Funding Strategy	• Permanent work is a new activity for PREPA / LUMA	• Create strategy for obtaining federal funding from federal funding agencies • Identify and prioritize funding initiatives • Develop baseline performance metrics • Create templates for documentation needed for approvals

Mapping to Gap Analysis:
Corporate – Risk, Federal Funding Relationship, and Office Facilities Management



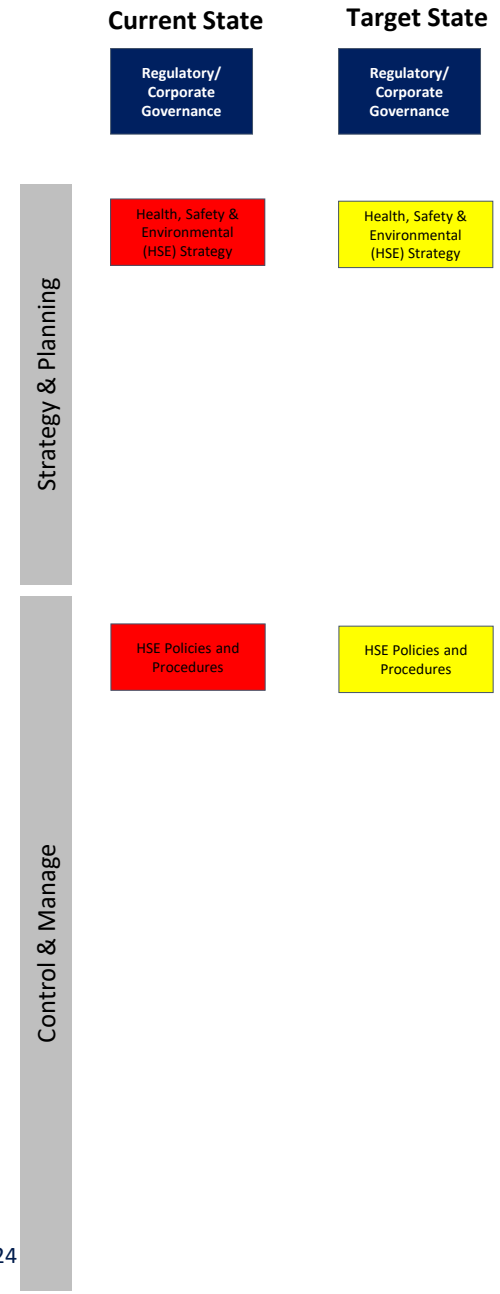
	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Risk Management	• Enterprise Risk Committee has just been established, relying heavily on one consultant to direct the process • Lack Enterprise Risk Management plan and processes • Does not perform loss analysis or forecasting • Limited used of scenario testing	• Develop risk profile, identify and quantify risks • Develop business continuity plans (BCP) • Assess risk / calculate risk event probability (e.g., risk models, BCP simulations) • Coordinate risk response • Assess credit worthiness
Federal Funding Relationship Management	• Permanent work is a new activity for PREPA / LUMA	• Develop processes and procedures for handling federal applications for funding • Manage investment requests and business case approvals • Develop reporting structure and cadence in compliance with federal funding requirements • Monitor and measure performance
Office Facilities Management	• Lack planning practices, information and process flows • Lack master key program • Lack confidential shredding program • Lack of pest control	• Monitor and manage occupancy to optimize space utilization • Organize spaces and provide workplace services to ensure occupant safety • Develop office safety / incident response plans and test schedule • Manage new cleaning and maintenance projects

Mapping to Gap Analysis:
Corporate – Risk Response, Federal Funding Execution, and Office Facilities Operations



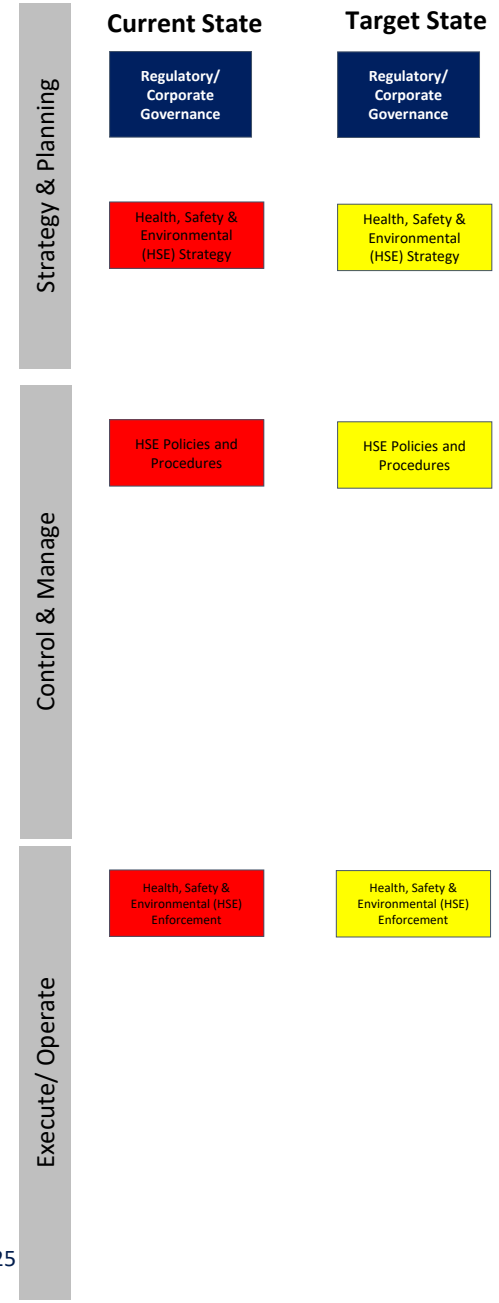
	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Risk Response	• Risk Management system has recently been started, but it is not fully practiced • Lack fully developed Risk Management Information System to collect exposure values and trend/ track losses • Losses are reviewed on an annual basis, and are largely handled by the Legal Department	• Test / execute risk response • Test / execute business continuity plan • Monitor effectiveness and take additional action, as necessary • Assess lessons learned • Report and initiate change / improvements
Federal Funding Execution	• Permanent work is a new activity for PREPA / LUMA	• Execute projects approved for federal funding • Monitor effectiveness of projects • Provide reports to federal funding governing bodies
Office Facilities Operations	• Real estate portfolio is tracked and managed via Excel spreadsheets and all documents are not stored electronically • Lack landscaping schedules, services or vegetation management • Lack of janitorial services • Lack of reliable waste management and recycling program • Buildings require many repairs and maintenance • No month reviews or walk throughs of spaces to confirm burnt out lights, heating controls or debris in spaces	• Lease administration and accounting • Execute and track cleaning and maintenance projects • Execute reporting on operational data • Audit facilities for employee and third-party compliance to safety and other terms and conditions

Mapping to Gap Analysis:
Regulatory/ Corporate Governance – Health, Safety & Environment Strategy, and HSE Policies & Procedures



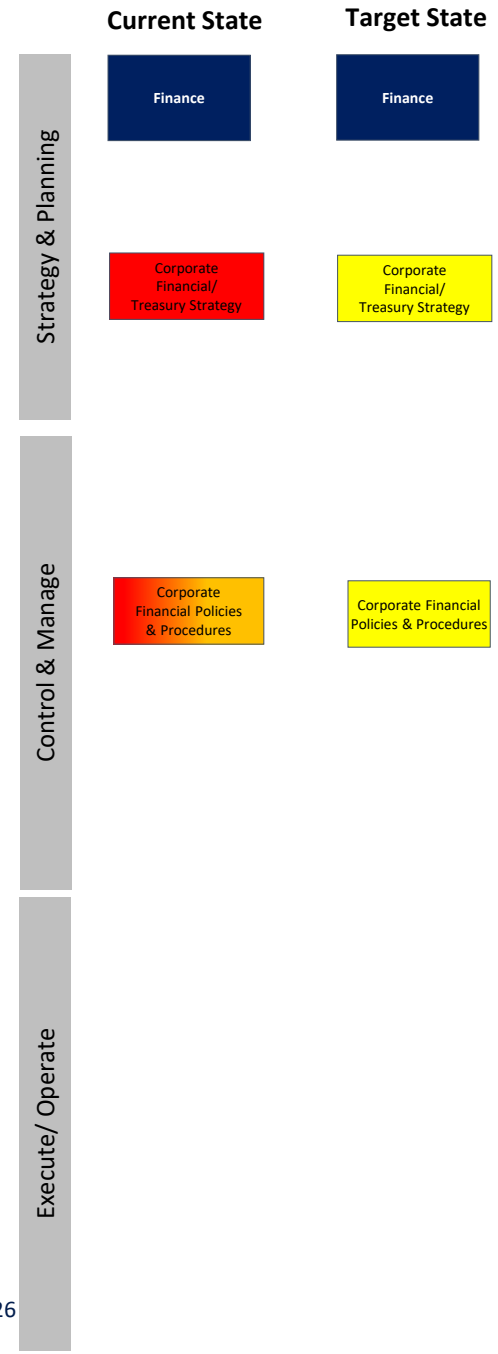
	Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Health, Safety & Environmental (HSE) Strategy	• Lack of confirmation of compliance to mandatory and applicable Puerto Rico Laws, Acts, Regulations and Codes	• Understand/assess/interpret current regulatory environment • Evaluate future regulatory changes • Assess regulatory impact on operations/business strategy • Identify other utility responses to regulatory initiatives • Collaborate with other utilities on regulatory interaction/ response • Determine regulatory strategy/ response
HSE Policies and Procedures	• Some processes and procedures may be out of date and in noncompliance with current and applicable Puerto Rico Laws, Acts, Regulations and Codes	• Assess policies / procedures requirements • Develop policies and procedures • Communicate / manage policies and procedures • Manage regulatory awareness education • Establish compliance review policies

Mapping to Gap Analysis:
Regulatory/ Corporate Governance – Health, Safety & Environment Strategy, Policies & Procedures, and Enforcement



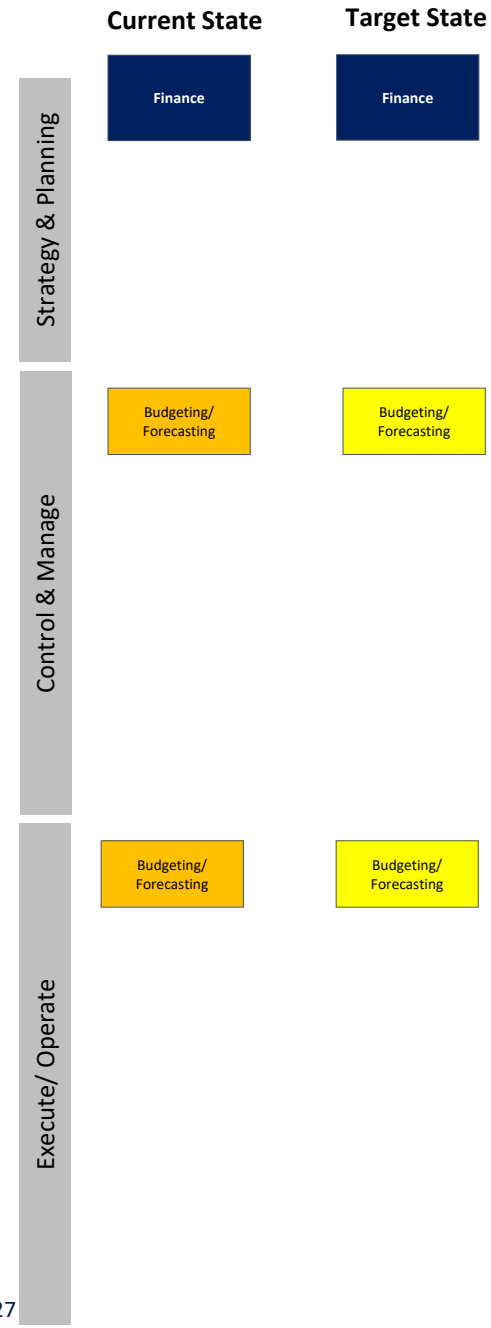
	Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Health, Safety & Environmental (HSE) Strategy	• Absence of a Safety Culture and the Organization does not promote safety or safety performance • Safety and Environmental accountabilities not established. • Public Safety Program lacking • Awareness and compliance to HSE regulatory requirements is not apparent • Assurance of compliance to mandatory HSE requirements and applicable Puerto Rico Laws, Acts, Regulations and Codes	• Understand/ assess/ interpret effectiveness of current HSE strategy and corporate directions; assess previous safety records • Evaluate future HSE regulatory changes; anticipate legislative direction • Assess regulatory impact on operations/business strategy • Identify other utility responses to HSE initiatives • Determine HSE strategy/ response
HSE Policies and Procedures	• No effective Safety or Environmental or Fleet Management system in place • Some processes and procedures may be out of date and in noncompliance to mandatory HSE requirements and applicable Puerto Rico Laws, Acts, Regulations and Codes • Limited safety and environmental performance management date and analytics performed to drive and corrective action/ safety and environmental initiatives • Switching system operating procedures and associated operator training lacking, out-of-date and inaccessible drawings creating potentially serious safety and operating concerns • Lack of formal operating procedures/ checklists to drive service restoration/ major event damage activities potentially causing safety issues • No evidence of hazardous material handling and storage process or spill management process. • Lack of and expired permits	• Generate risk-based metrics in association with HSE events and develop response • Assess policies/ procedures requirements • Develop policies and procedures • Communicate/ manage HSE policies and procedures • Manage HSE awareness education
Health, Safety & Environmental (HSE) Enforcement	• A significant safety issue is ever-present in the field • Failure to wear proper PPE is prevalent field-based operations and maintenance, and warehouse operations • Fleet safety is not a priority • Competency/ training in safety and environmental work practices not apparent and no best practical manual available. • Inadequate storage and handling of hazardous materials • Limited oil containment at most sites and availability of spill kits	• Deliver and record participation in HSE awareness education • Monitor employee/ contractor/ vendor HSE compliance and institute corrective action • Report HSE and related incidents

Mapping to Gap Analysis:
Finance – Corporate Finance/ Treasury Strategy, and Corporate Financial Policies & Procedures



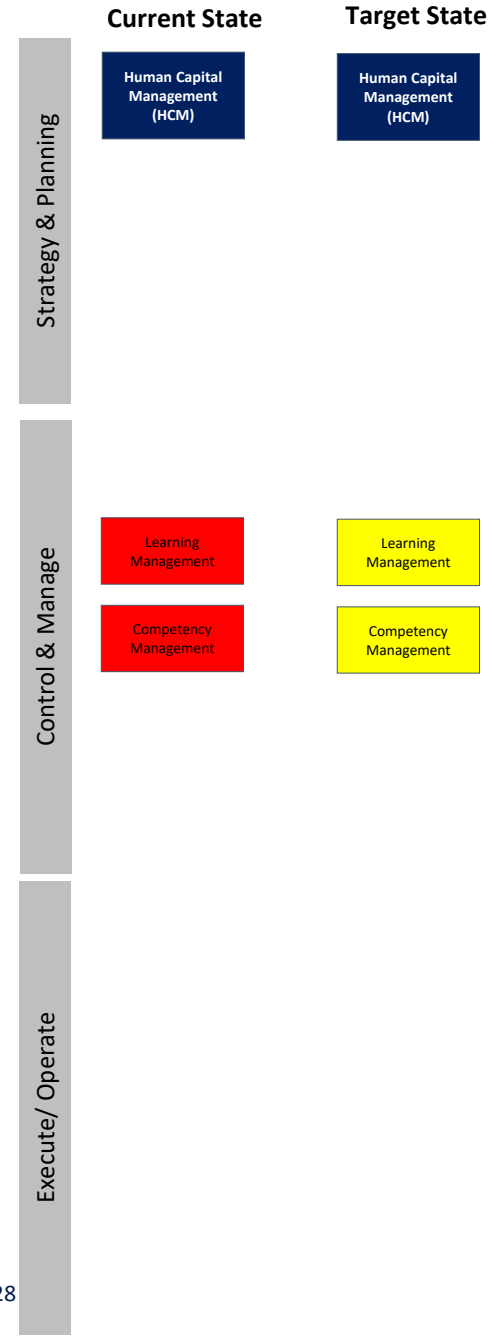
	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Corporate Financial / Treasury Strategy	• No formal Enterprise Risk Management system policy and program established • No formal review and approval of insurance policy renewals • No formal investigations of significant accidents/ fraud events and associated claims conducted or directed by Risk Management	• Identify / optimize company liquidity, balance sheet • Identify financial risk • Determine position needs (capital, cash, currency) • Identify optimal methods of establishing needed positions • Weigh market appetite, other factors to inform position • Identify rating goals, market perception
Corporate Financial Policies & Procedures	• Policies and Procedure not reviewed and updated on a timely basis • No monitoring and follow-up of annual ethics financial compliance; or ethics training provided to employees • Evaluation of internal controls (including identification of root cause) are not formally performed by Internal Audit or management • No review of key third-party services and audit reports • Significant estimates and reconciliations are not formally assessed	Corporate Financial Policies & Procedures • Assess policies / procedures requirements • Develop policies and procedures • Communicate / manage policies and procedures • Provide ethical financial guidance and oversight Management Accounting • Develop management accounting information systems • Adopt management accounting framework • Manage accounting consolidation / monitor against forecast • Conduct management accounting activities (e.g., tax filings, dividends, balance sheet) • Define audit parameters

Mapping to Gap Analysis:
Finance – Budgeting & Forecasting



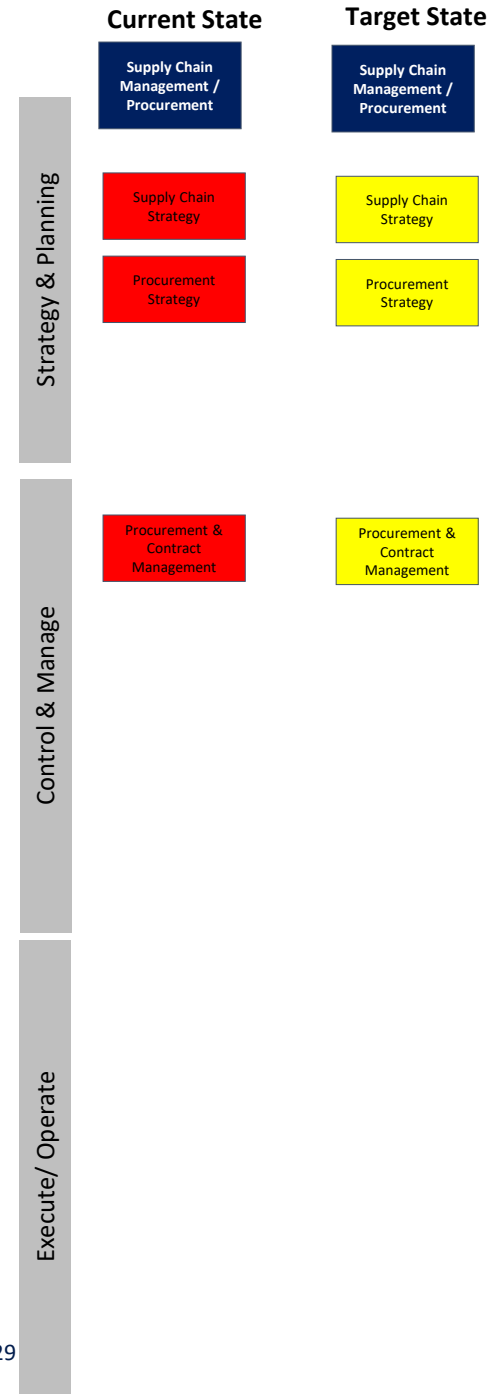
	Summary of Current Gaps (Aware)	Definition of Remediated (Developing)
Budgeting and Forecasting	• Budgets are built by Departments on an annual basis and then straight lined across the whole year. Tracking of budget to actual on a monthly basis is not performed consistently • Forecasting on an annual basis throughout the fiscal year also does not exist	• Forecast spending needs and develop budget strategy • Prepare forecast/budget reports, variances • Analyze historical data • Manage payables and receivables • Manage sweep /reconciliation accounts • Manage account transfers and balances
Budgeting and Forecasting	• Budget does map to the general level account details • Manual and time-consuming employee expense reimbursement • Time entry process and system is inadequate (manual, unsupported tool, and allows for unapproved changes • Fixed Asset functionality in Oracle is not been functioning • Lack of supply change optimization strategy, proactively source and management of vendors for operations, consistent contract management process, or credit cards • Deficient facility preventative & capital maintenance, security, sustainability, safety, environmental programs and lease review	• Implement financial accounting framework / GL • Conduct financial accounting activities (payables, receivables, billing, et al) • Trial balance preparation • Reconcile accounts • Tax, regulatory and SOX reporting, etc. • Management reporting

Mapping to Gap Analysis:
Human Capital Management – Learning & Competency Management



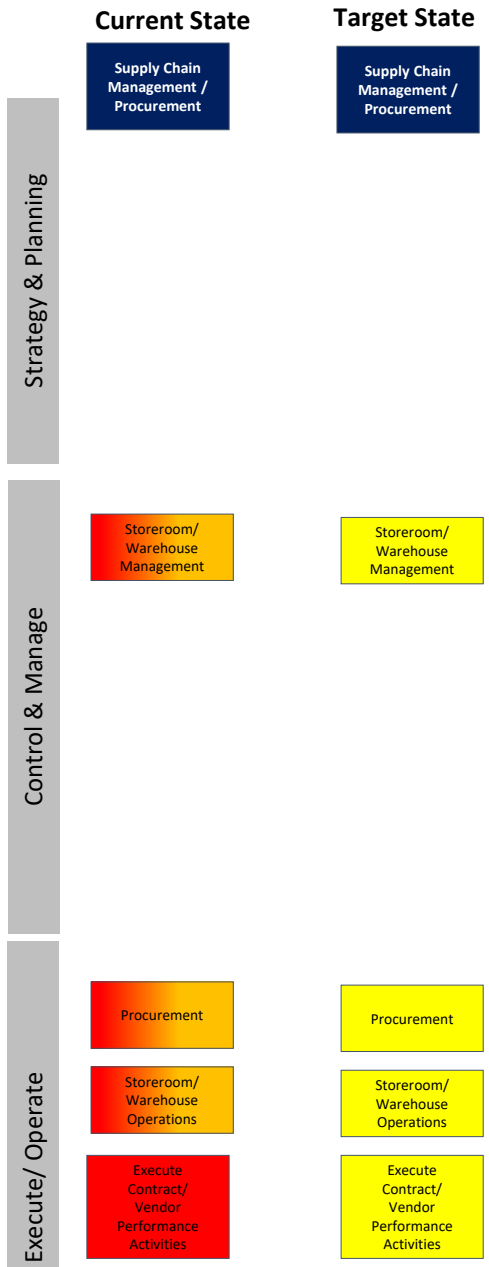
	Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Learning Management	• All training is approved through the government of Puerto Rico • Lack career development planning or succession planning	• Design learning programs and accreditation hierarchy • Align learning programs to competencies & accreditations • Manage career development
Competency Management	• Lack formal training, most learnings come from on the job experience • Lack competency management and skills evaluations of employees	• Manage competencies of employees • Catalogue competencies (observed, credentialed, licensed, et al) • Track competencies vs skills needed to perform work • Evaluate workforce opposite required competencies / required capacity • Address gaps in competencies with training and new hires

Mapping to Gap Analysis:
Supply Chain/ Procurement Management – Supply Change & Procurement Strategies, and Procurement & Contract Management



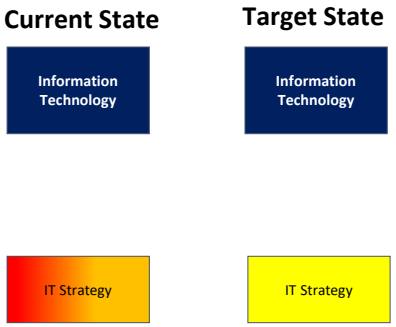
	Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Supply Chain Strategy	• No clear evidence of documented supply chain strategy	• Establish linkage between business strategy / corporate goals and supply chain management • Establish specific supply chain drivers / objectives (e.g., global vs local, quality/cost equation) • Identify potential for optimization throughout supply chain
Procurement Strategy	• Lack comprehensive procurement strategy • Contracts are renewed on an annual, lack long term strategic contracts due to bankruptcy status • Lack independent Procurement and Contracts administration	• Develop supplier, contractor and alliance strategies • Develop single-source strategies • Identify and plan for adhering to and demonstrating compliance
Procurement & Contract Management	• Procurement is not the central location for all contracting, PMO and Legal are responsible for many contracts • Some contract management processes exist but are not consistently adopted across end user groups • Manual processes exist for supplier registry and bidding and are permitted by outdated policies/ regulations • Vendor segmentation is not consistent • Limited number of contract templates as procurement is not the initial contract request department	• Specify required goods / services • Manage bid process • Select vendor / supplier / contractor • Manage vendor catalogue / vendor status • Establish contract / master services agreement (MSA) • Contract lifecycle management (e.g., renewal, extension, termination)

Mapping to Gap Analysis:
Supply Chain Management – Storeroom/ Warehouse Management, Procurement, Storeroom/ Warehouse Operations, and Execute Contract/ Vendor Performance Activities



	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Storeroom / Warehouse Management	• Absence of standard inventory management processes (including spares, Asset Recovery, Ordering and Requisition, Min max and related criteria, disposal/ return, auditing and intra group communication and coordination) • Lack end to end warehousing policies and practices • Lack logistics management processes and supporting IT platform	• Manage storage locations / stock locator • Take stock, investigate inventory discrepancies • Determine shipping / distribution requirements
Procurement	• All contracts are not kept in a centralized location • Asset acquisition reporting is vague and ineffective and the ability to create new reports analyze the data sits outside of Procurement	• Manage requests / requisitions • Consolidate orders / place orders • Manage item / vendor masters • Conduct procurement activities • Manage payment schedule / authorize payment • Engage warranty
Storeroom / Warehouse Operations	• Material handling equipment is not properly maintained • Use of pallets, racking, storage and protection of material and assets does not comply with industry standards • Warehouse buildings are poorly maintained and not properly sized or fit for purpose • Inventory is not reflective of current specifications nor located in a manner that optimizes the trade offs between cost, quick accessibility, and efficient use of space)	• Perform check-in / check-out • Perform inter-location shipping • Conduct physical inventory verification • Identify stale-dated inventory / set disposition (e.g., write-off, salvage, refurbishment, reconditioning)
Executive Contract / Vendor Performance Activities	• Two systems are used for procurement activity (Oracle and Asset Suite) • Lack evidence of monitoring performance metrics	• Monitor work performance against contract / SLA • Undertake quality audits • Identify corrective actions

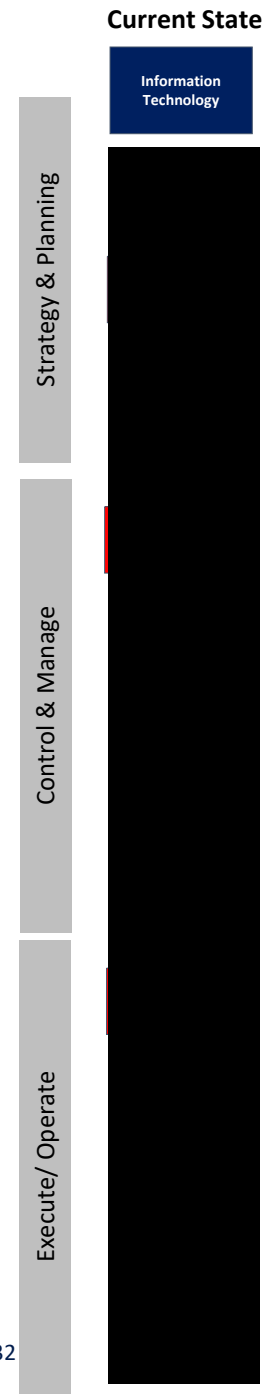
Mapping to Gap Analysis:
Information Technology – IT Strategy



	Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)

IT Strategy	• Lack formal documented IT Strategic Plan
	• Lack IT Service management strategy and processes
	• Lack defined IT business operating model
	• Lack defined Enterprise Architecture strategy practice, standards, and processes
		• Develop IT strategic plan
		• Monitor and map current and emerging technologies to required business capabilities
		• Develop IT business operating model (e.g., engagement, buy vs build, third party partners, cost centre, chargeback model)
		• Develop IT services portfolio (e.g., IT service offerings)
		• Develop business relationship management strategy
		  - Conduct IT visioning
		  - Understand transformation goals and objectives
		• Enterprise architecture (EA)
		  - Define enterprise architectures
		  - Assess enterprise architectures and standards for continued alignment with business objectives and new technology/innovation

Mapping to Gap Analysis:
Information Technology – Cybersecurity Strategy, Management and Execution & Response



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	Definition of Remediated (Developing)
Cybersecurity Strategy	• Develop cybersecurity strategy • Create and publish cybersecurity framework (policies, guidelines, standards) • Assess current state for cybersecurity and develop target state • Establish and stand up information security office • Staff plan and roles and responsibilities in place
Cybersecurity Management	• Develop cybersecurity policies for employees & third-parties to follow • Implement and execute cybersecurity awareness program • Measure performance / conformance to targets • Implement relevant playbooks • Manage security of programs / project portfolios / projects • Identity Access management is implemented (User access reviews, least privilege, etc.)
Cybersecurity Execution and Response	• Monitor and analyze technology landscape • Track incidents and response; mitigate impact to organization • Conduct vulnerability and other threat scans • Develop cybersecurity awareness education and education cadence • Report issues and security shortfalls

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Medium Impact Mapping

- Draft Work Product - For Discussion Purposes Only -

LUMA

LUMA CBM

Medium Impact / Consequence Current Capability

	Asset Planning & Construction	Asset Operations	[redacted]	Supply & Demand Management	Meter Measurement Data Mgmt	Marketing & Sales	Customer Service & Billing	Corporate	Regulatory/ Corporate Governance	Stakeholder Relationships and External Comms	Finance	Human Capital Management (HCM)	Supply Chain Management / Procurement	Information Technology
Strategy & Planning	Asset Strategy Construction Strategy Capital Program Management	Operations Strategy Emergency Planning Fleet Strategy	[redacted]	Demand Side Management Strategy Supply & Demand Planning	Meter Data Strategy	Customer Acquisition Strategy Key Account Strategy Marketing Strategy Sales Strategy	Customer Service Strategy Energy Conservation Strategy	Business Strategy Risk Strategy Operational Strategy & Planning Office Facilities Strategy Federal funding strategy	Corporate Governance Regulatory Strategy Health, Safety & Environmental (HSE) Strategy OMA Strategy Bankruptcy Strategy	Industry Policy Development Strategy	Corporate Financial/ Treasury Strategy Shared Services Strategy	HCM Strategy & Programs Succession Planning Strategy	Supply Chain Strategy Procurement Strategy	IT Strategy IT Delivery Strategy [redacted]
Control & Manage	Construction Design & Planning Construction Approval and Permissions Construction Financing Construction Performance Management Construction Work Management	Asset Operations Planning Operations Performance Management Demand Side Management Monitoring Transmission Conditions Forecasting Fleet Management T&D Facilities Management		Supply & Demand Management	Meter Data Policies & Standards Measurement Point info Management	Marketing Campaign Mgmt & Monitoring Rate Management Market Research Sales Performance Management Sales Management	Customer Service Standards, Policies, Procedures Billing/ Credit/ Collections Policies and Standards Customer Service Delivery Management Customer Service Performance Management Customer/ Key Account Management Billing / Contract Exception Management	Business Portfolio Management Enterprise Portfolio Management Risk Management Federal funding relationship management Office Facilities Management	Regulatory Policies and Procedures Regulatory Compliance HSE Policies and Procedures OMA relationship management Bankruptcy relationship management	Stakeholder Management Standards/ Policies Stakeholder Relationship Management Community Affairs Management Media and Public Relations	Corporate Financial Policies & Procedures Management Accounting Budgeting/ Forecasting Cash Management Shared Services Management	HCM Policies & Procedures Human Capital Management HCM Performance Management Learning Management Resource Management Competency Management	SCM Policies & Procedures Procurement & Contract Management Inventory Management Storeroom/ Warehouse Management Contract Vendor Performance Management	IT Policies and Procedures IT Portfolio Value Management IT Delivery Management IT Performance Management [redacted]
Execute/ Operate	New Asset Construction Asset Commissioning New Asset Decommissioni ng	Asset Operations Outage/ Derate Management [redacted] Field Operations Incident/ Safety Management Fleet Operations		Dispatch and GenCo Power Purchase Operating Agreement	Meter Data processing Calculate billing determinants Perform reconciliation and settlement Exception dispute management	Marketing Execution Sales Execution	Customer Interaction Management Customer Event Management Billing & Collections Payment Processing	Risk Response Federal Funding Execution Office Facilities Operations	Regulatory Interaction Regulatory Compliance Health, Safety & Environment Enforcement Execute OMA Bankruptcy reporting and execution	Stakeholder Info Management Stakeholder Interaction Management Community Affairs Program Execution Media and Public Relations Execution	Financial Accounting Shared Services Execution	Execute HCM Activities	Procurement Storeroom/ Warehouse Operations Execute Contract/ Vendor Performance Activities	Service Delivery Service Support IT Performance Analysis [redacted]

Legend
Excellent
Competent
Developing
Aware
Un focused

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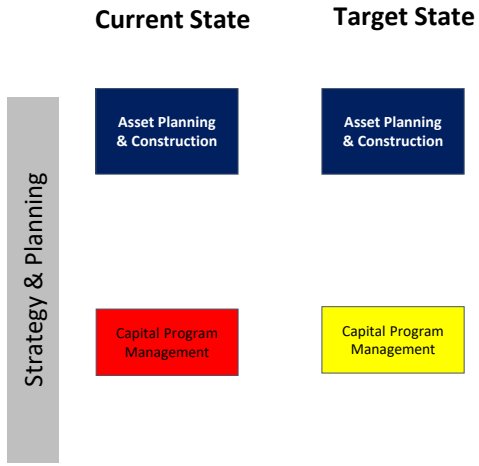
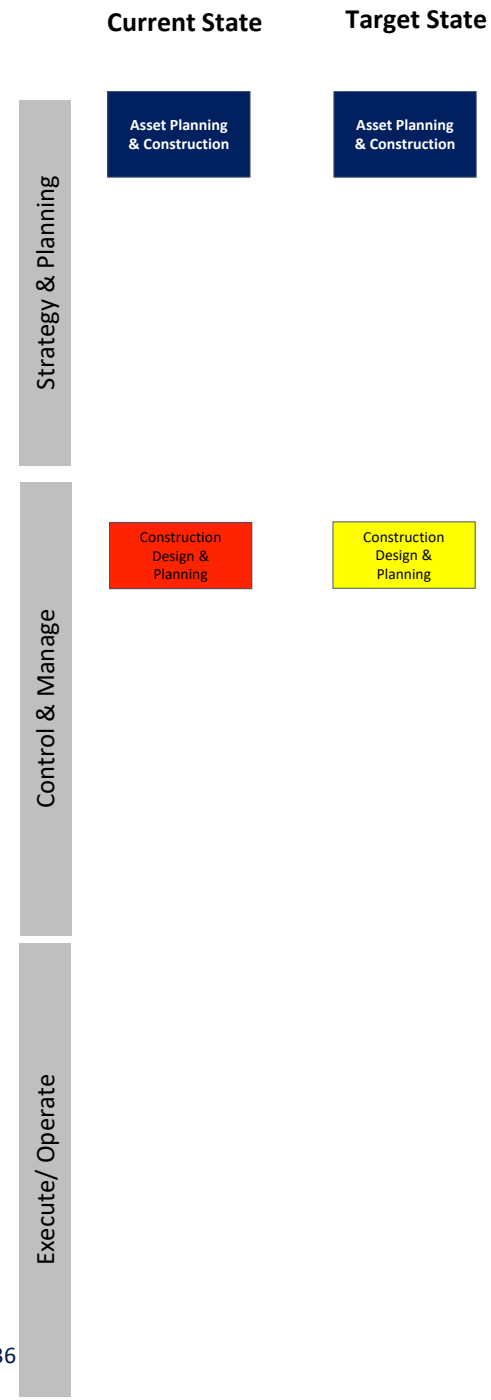
Mapping to Gap Analysis:
Asset Planning and Construction – Capital Program Management



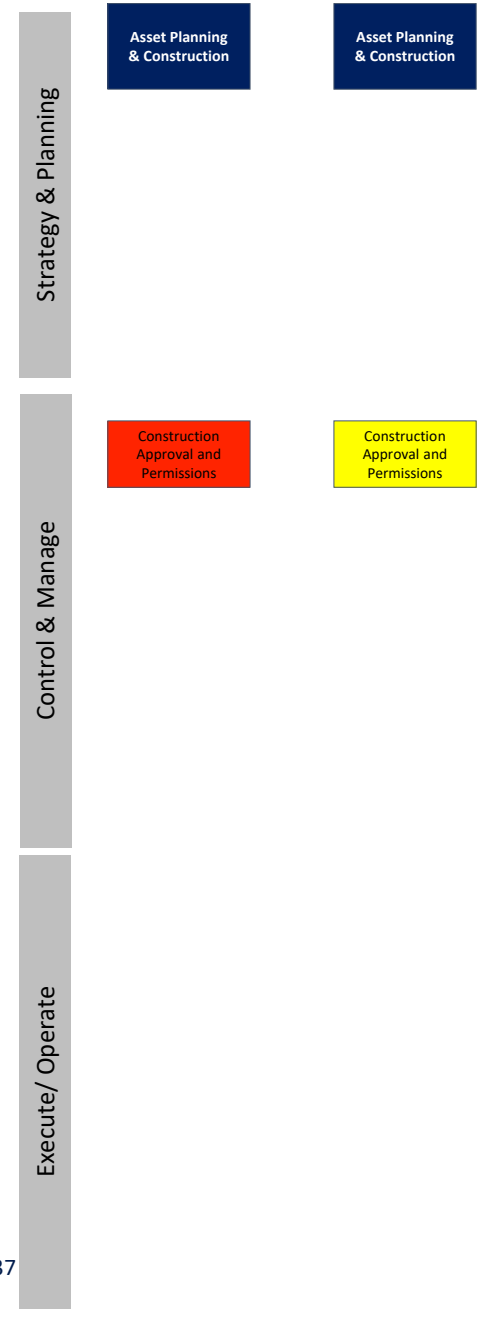
Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Capital Program Management • Very basic capital portfolio reporting, aggregated at the program or major project level • No formal project/ program approval process • No formalized project estimating and scheduling, status reporting of actuals expenditures to budget, schedule progress to planned, key risk realized • Recently established and immature PMO for Projects and Project Management responsible for establishing: Project Management Standards, Processes, Procedures, Guides, Project Management Software Tools, KPIs, PM Dashboards , Progress Reports, Lessons Learned etc.	**Capital Program Management** • Approval and monitoring of the major capital projects/ programs, overall portfolio: including prioritization, timing and funding (investment and financing requirements) • Develop gated approval process for major projects/ programs (including consideration for all critical regulatory requirements) • Develop strategy regarding inhouse versus external service providers related to: engineering, project and construction management, construction and procurement of materials and apparatus • Ensure financial and managerial accounting requirements/ practices for capital projects, programs and portfolio are determined and implemented • Implement improvements and ongoing development of the PMO

Mapping to Gap Analysis:
Asset Planning and Construction – Construction Design & Planning



Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Construction Design and Planning • T&D Engineering Department has been dissolved and engineering staff have been reassigned to various positions in the PMO • Acceptance criteria and processes necessary for commissioning are nonexistent or lacking • A complete and detailed Project Management Plan and its Subcomponent Plans is missing or underdeveloped - Schedule Management, Cost Management, Scope Management, QHSE Plan, Communication Plan, Risk Management, Procurement Plan, Contract Management, Construction Execution plans, Commissioning Plans • No consistent management of Project Records/ Document Control process	**Engineering** • Design and authenticate (owner's engineer or engineer of record) facilities to acceptable engineering standards and codes to meet functional specifications • Effectively manage necessary design changes **Asset Acceptance** • Establish facility/ asset performance criteria necessary to achieve acceptance, and specify in contracts as required **Project Construction and Procurement** • Plan projects scope, schedule and budget including: - risk management - critical regulatory approvals and permits, - landowner consultation - project & construction management - construction execution - apparatus and material procurement - contract management - SHEQ management - PMO & project controls processes compliance

Mapping to Gap Analysis:
Asset Planning and Construction – Construction Approval & Permissions



Summary of Gaps (Unfocused)	Definition of Remediated (Developing)
Construction Approval and Permissions • There is no evidence of an inhouse permit tracker to support construction execution, and it appears to left to the construction contractor to manage	**Construction Permits** • Implement a permit management system • Identify and obtain all necessary construction permits, including: - land access (landowners consultation) and land acquisition - crossing and encroachment – waterways, roads, special lands - environmental permits – compliance to restrictions pertaining to flora and fauna: consideration of endangered spices, migratory and breeding/nesting periods, prevention of spread/ contamination of noxious weeds - avoidance of historical sites and archeological discoveries

Mapping to Gap Analysis:
Asset Operations – Demand Side Management Monitoring and Incident/ Safety Management

Strategy & Planning

Control & Manage

Execute/ Operate

Current State

Asset Operations

[redacted]

Target State

Asset Operations

Demand Side Management Monitoring

Incident/ Safety Management

[redacted]

Definition of Remediated (Developing)

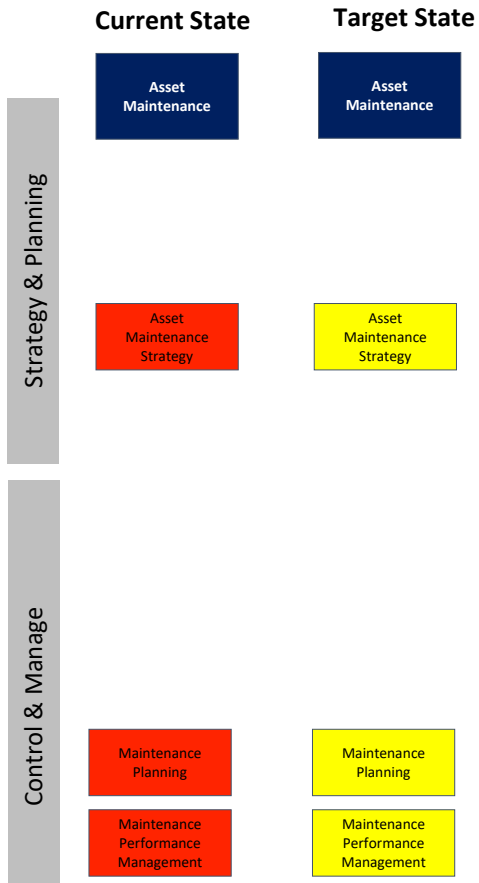
Demand Side Management Monitoring

- Monitor and assess peak load data
- Monitor demand side management actions – impact on peak load
- Supply management and security
- Determine megawatt / volume requirements
- Define model for predicting supply requirements
- Manage energy supply-security

Incident / Safety Management

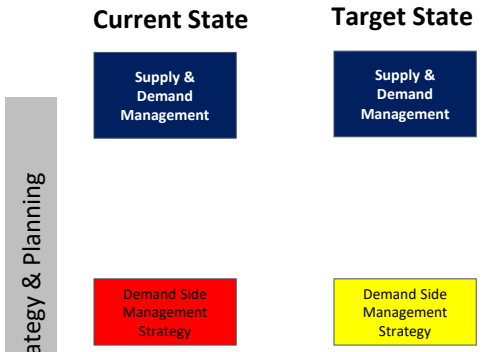
- Investigate incidents (includes health, safety, environment (HSE) and security incidents)
- Coordinate incident response
- Conduct emergency response activities (including training / other follow-up actions)
- Report safety / security / environment metrics

Mapping to Gap Analysis:
Asset Maintenance – Asset Management Strategy, Maintenance Planning and Maintenance Performance Management



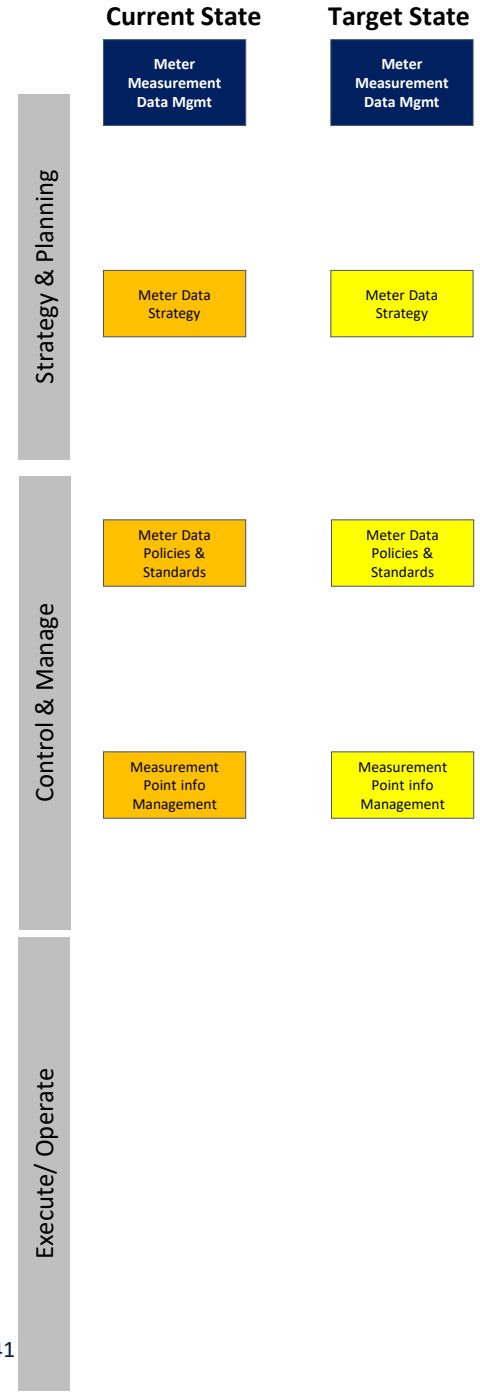
Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Asset Management Strategy • Lack Asset Maintenance Strategy and asset decision making frameworks • Need to develop strategy around repair vs replace criteria, maintain or "run to failure", and time-based vs condition based preventive maintenance	**Asset Maintenance Strategy** • Identify maintenance approach and mix (reactive, preventative, predictive) • Define operational targets • Define operational budget • Develop asset servicing / renewal strategy • Develop detailed maintenance strategies • Specify maintenance policies, incorporate external standards (e.g., NERC) • Define customer service standards
Maintenance Planning • Work management, crew formation, dispatch are either routine (scheduled) or ad hoc / reactive – condition-based maintenance is unpracticed • Work order management is supported with manual processes, little automation being utilized • No condition-based predictive analytics capability exists • Work site security is inconsistent / unevenly implemented • Asset record-keeping is inconsistent / incomplete • Staffing shortfalls are evident, both in expertise and capacity	**Maintenance Planning** • Generate maintenance contract (e.g., re-conditioning a customer's structure) • Identify work management tasks • Establish inspection schedule • Assign priorities • Conduct resource planning • Create work plan
Maintenance Performance Management • Asset inspections are performed in response to an event or are ad hoc – inspection results / work order creation is supported manually • Maintenance results / work order performance are captured inconsistently, sometimes unreported • An asset inspection plan exists, but routine inspections have been deferred for the past ~10 years • Lack evidence of reporting of maintenance management	**Maintenance Performance Management** • Monitor performance against planned orders and contracts • Manage investment • Report on service levels • Report on customer satisfaction • Monitor progress

Mapping to Gap Analysis:
Supply & Demand Management – Demand Side Management Strategy



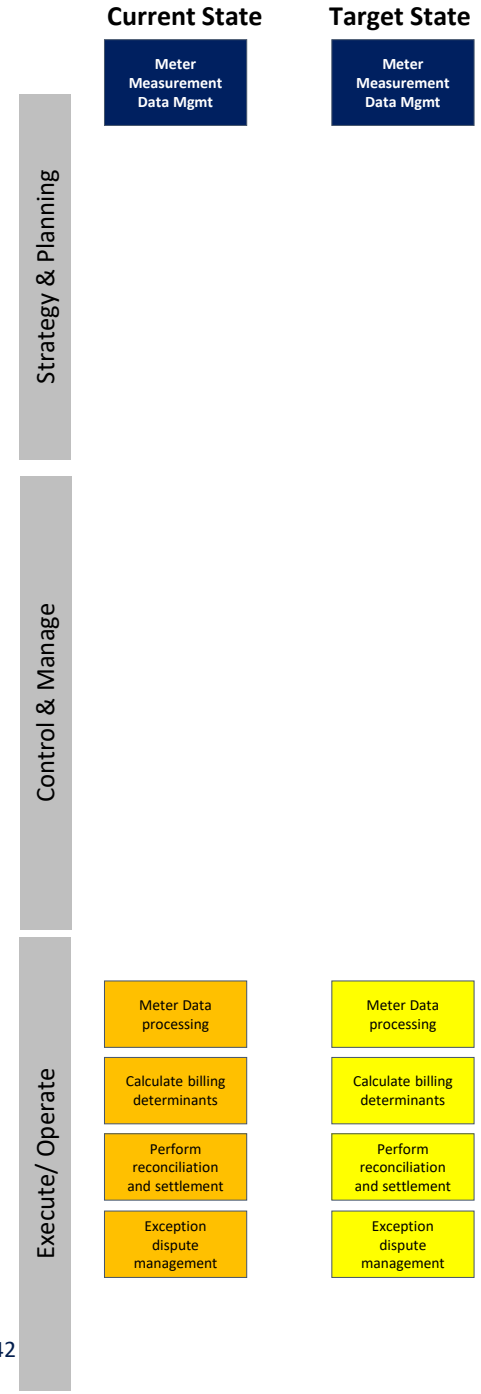
Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Demand Side Management Strategy • Lack strategy to manage supply and demand • Lack demand side options analysis with limited forecasting capabilities • Lack of program definition • Limited coordination with generation	**Demand Side Management Strategy** • Demand side management policy • Demand side management options analysis • Demand side management programs definition

Mapping to Gap Analysis:
Meter & Data Management – Meter Data Strategy, Meter Data Policies & Standards, and Measurement Point Information Management



Summary of Current Gaps (Aware)	Definition of Remediated (Developing)
Meter Data Strategy • Lack of documented meter data strategy • Lack of organizational clarity • Lack business strategy or vision for the future of the Metering Department	**Meter Data Strategy** • Define meter data strategy • Define meter data dissemination strategy • Investigate monetization of meter data dissemination
Meter Data Policies & Standards • Lack of documented metering processes • Lack of personnel to document and execute the processes	**Meter Data Policies & Standards** • Define validation rules • Define measurement rules • Define reporting requirements
Measurement Point Information Management • Utilize Oracle CC&B for long term storage of customer usage data in place of traditional Meter Data Management System	**Measurement Point Information Management** • Maintain measurement point information (e.g., site contact, elevation, heat area, etc.) • Maintain retailer enrollment / de-enrollment information

Mapping to Gap Analysis:
Meter & Data Management – Meter Data Processing, Calculate Billing Determinant, Measurementt Point Information Management, and Exception & Dispute Management

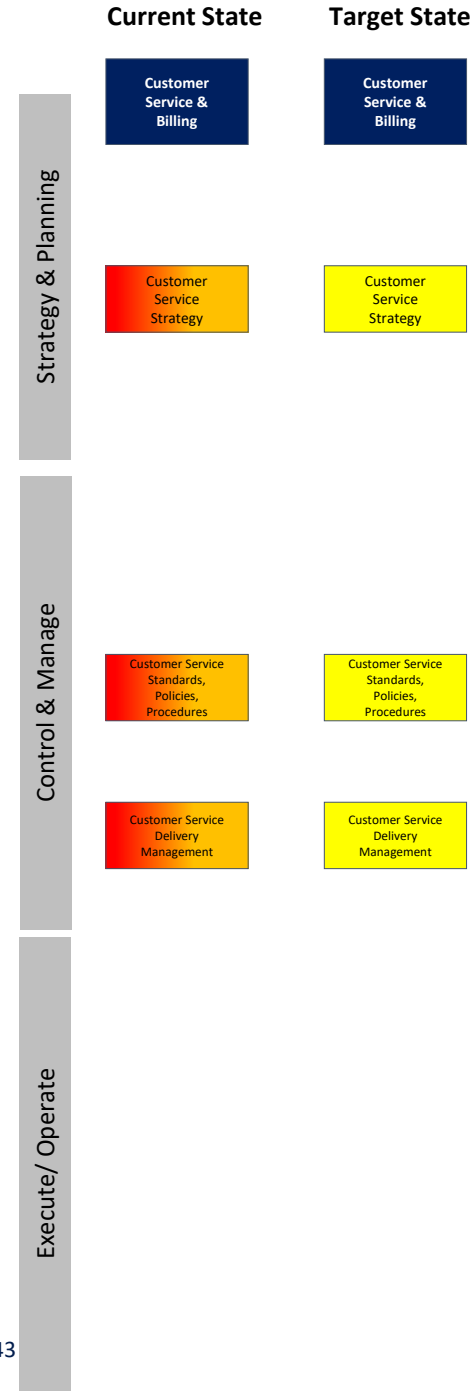


Summary of Current Gaps (Aware)	Definition of Remediated (Developing)

Meter Data Processing
• Limited ability to collect, store and ultimately use data
• Aclara lite MDM is inefficient for tracking and processing meter reads
• TWACS system is outdated and needs to be improved to support billing and theft management
• Most meters are read manually, even AMR meters
• Lack AMI implementation and functionality
• ~60K AMR meters are broken and out of service
	Meter Data Processing
	• Manage meter readings
	  • Collect meter data and validate (automated/manually read meters)
	  • Estimate readings
	  • Process requests for special reads
	• Process meter data
	  • Perform Validation, Estimation and Editing (VEE)
	  • Calculate usage
	• Disseminate / publish meter reading/consumption data to interested third parties

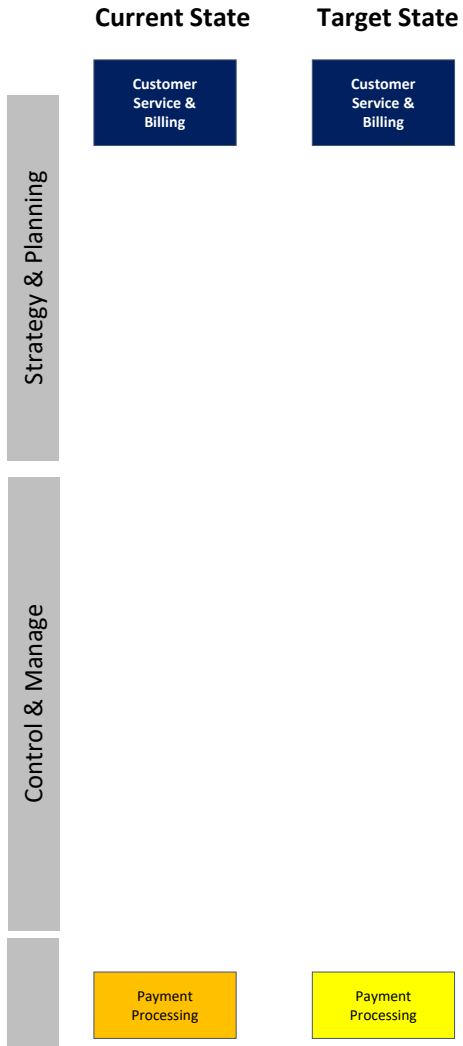
Calculate Billing Determinant • Significant unbilled streetlight accounts • Lack of accountability and data governance for oversight of customer usage data • 10 to 15% of bills are estimated ~150 to 220K accounts • Lack adequate staff to manage estimated read backlog	**Calculate Billing Determinant** • Calculate consumption for metered device • Calculate consumption for unmetered device (e.g., streetlight, power for railway crossings)
Measurement Point Information Management • Utilize Oracle CC&B for long term storage of customer usage data in place of traditional Meter Data Management System	**Measurement Point Information Management** • Maintain measurement point information (e.g., site contact, elevation, heat area, etc.) • Maintain retailer enrollment / de-enrollment information
Exception & Dispute Management • Billing exceptions are managed by extracting information from CC&B and reports are extracted using PowerBI. Lack workforce management system to manage work, gain insights and provide clearer accountability • Billing estimates are managed at the Regional Customer Service offices with lack of standardized processes	**Exception & Dispute Management** • Meter data exception reporting • Resolve disputes with participants

Mapping to Gap Analysis:
Customer Service & Billing – Customer Service Strategy, Customer Service Standards, Policies & Procedures, and Customer Service Delivery Management



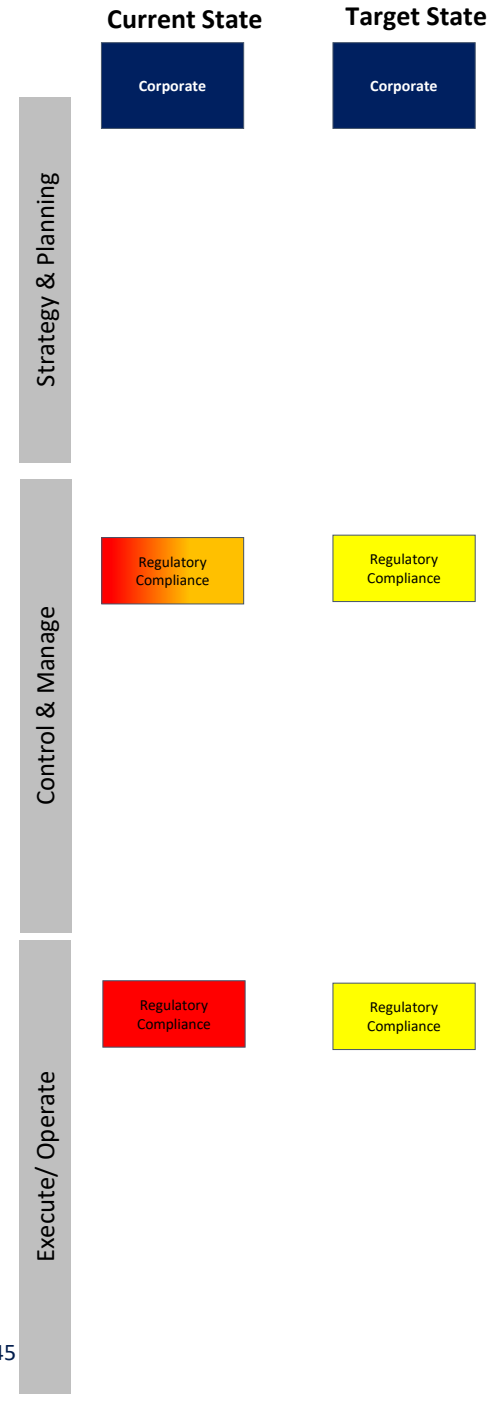
Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Customer Service Strategy • Lack formal vision for Contact center although management highlights goal to "provide excellent service" • Lack specific goals, objectives and roadmaps to evolve contact center strategy • Lack customer channel strategy, currently only two channels are used, phone and email	**Customer Service Strategy** • Establish customer service goals and objectives • Establish relationship management goals and objectives • Define customer classes and service targets • Develop customer-channel strategy - bills and communication (e.g., electronic, paper invoice, pre-authorized bank withdrawals, re-presentment terms, etc.)
Customer Service Standards, Policies & Procedures • Undefined organizational strategy and design for key processes and ownership • Lack defined customer service standards and documented policies and procedures • Contact center is 3 different operations because Contact center outsourced ~60 to 70% of the call volume to two different vendors creating a challenge of delivering a consistent customer experience • Lack defined KPIs with the exception of Wait Time (in Queue) and Abandonment	**Customer Service Standards, Policies & Procedures** • Define customer service standards • Develop customer service policies and procedures • Implement revenue assurance processes
Customer Service Delivery Management • Lack of performance management • Lack reporting on Service Level, average speed to answer, first call resolution, average handling time, average talk time, QA Score, schedule adherence, or any measure of customer satisfaction	**Customer Service Delivery Management** • Manage new relationships – retailers, key accounts • Establish service delivery parameters, terms & conditions • Manage contract details

Mapping to Gap Analysis:
Customer Service & Billing – Payment Processing



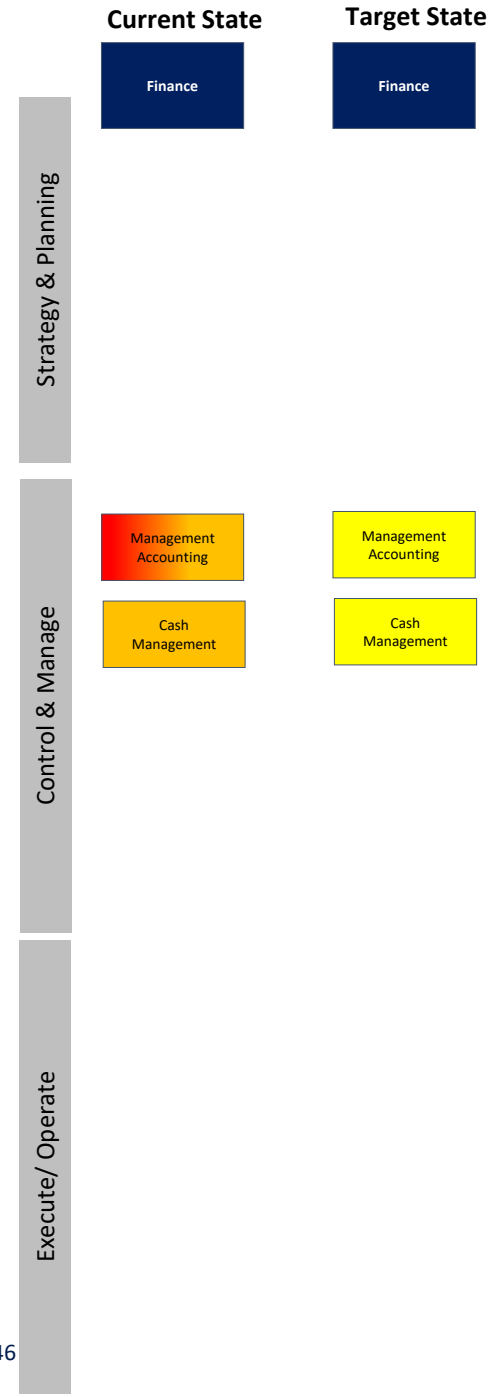
Summary of Current Gaps (Aware)	Definition of Remediated (Developing)
Payment Processing • PREPA customers can pay bill through industry standard expected payment methods (ACH, credit/ debit card, cash, etc.) and through multiple channels (IVR, call center, internet and retail) • One quarter of customers pay bills through electronic methods • Some customers prefer to pay in cash at retail locations, with an abundance of payment partner facilities which appears redundant • Some large / commercial accounts pay via check	**Payment Processing** • Generate automated payment instructions • Process and allocate payments, part-payments and pre-payments • Send and receive payment information to/from financial institutions

Mapping to Gap Analysis:
Corporate – Regulatory Compliance



Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Regulatory Compliance • Lack of awareness and understanding of applicable Acts, Codes, and Regulations at the Management level • Lack regulatory strategy, management systems and formal review processes • Ad hoc interactions with governing bodies • Certain areas are significantly understaffed, capable employees with limited resources	**Regulatory Compliance** • Identify all applicable Acts, Codes, and Regulations that LUMA must adhere to • Identify managers and functional groups responsible for compliance • Ensure that internal processes are in place to identify and implement any changes to Acts, Codes, and Regulations in a timely manner
Regulatory Compliance • Lack of enforcement of applicable Acts, Codes, and Regulations at the operational level and evidence of non-compliance	**Regulatory Compliance** • Ensure awareness and understanding of all applicable Acts, Codes, and Regulations is maintained at the Execute/ Operate level through ongoing awareness/ education training • Ensure that processes are in place to monitor compliance and report on non-compliance

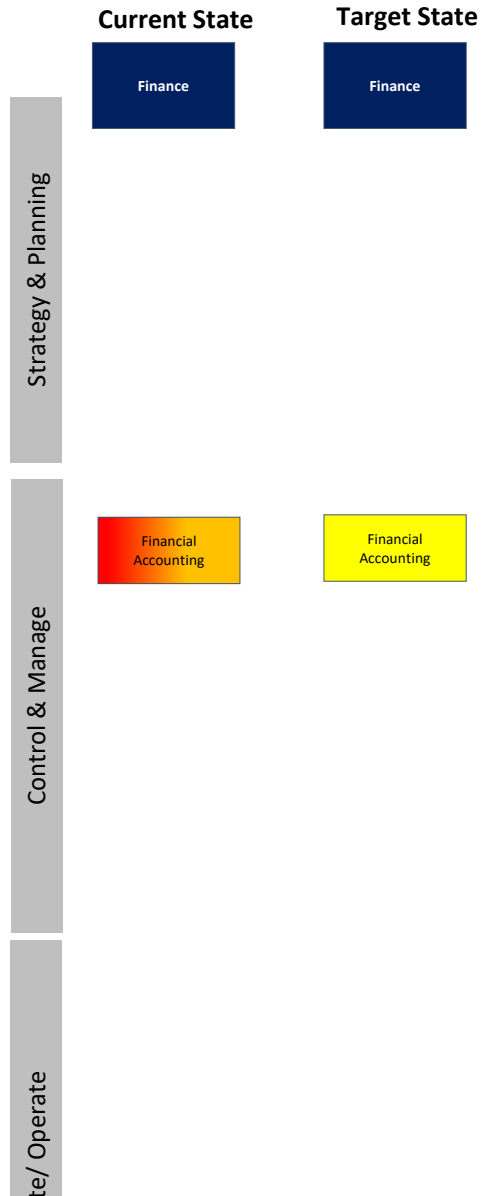
Mapping to Gap Analysis:
Finance – Management Accounting and Cash Management



Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Management Accounting • Lack of detailed level of reporting at the department and section level, including $ and variance explanation of actuals to budgets and updated forecasts • Lack of root cause analysis and potential/ recommended solutions • Limited availability of frequent operational reporting and performance measurement distributed to managers responsible for key areas throughout the company	**Management Accounting** • Develop management accounting information systems • Adopt management accounting framework • Manage accounting consolidation/ monitor against forecast • Conduct management accounting activities (e.g., tax filings, dividends, balance sheet) • Define audit parameters

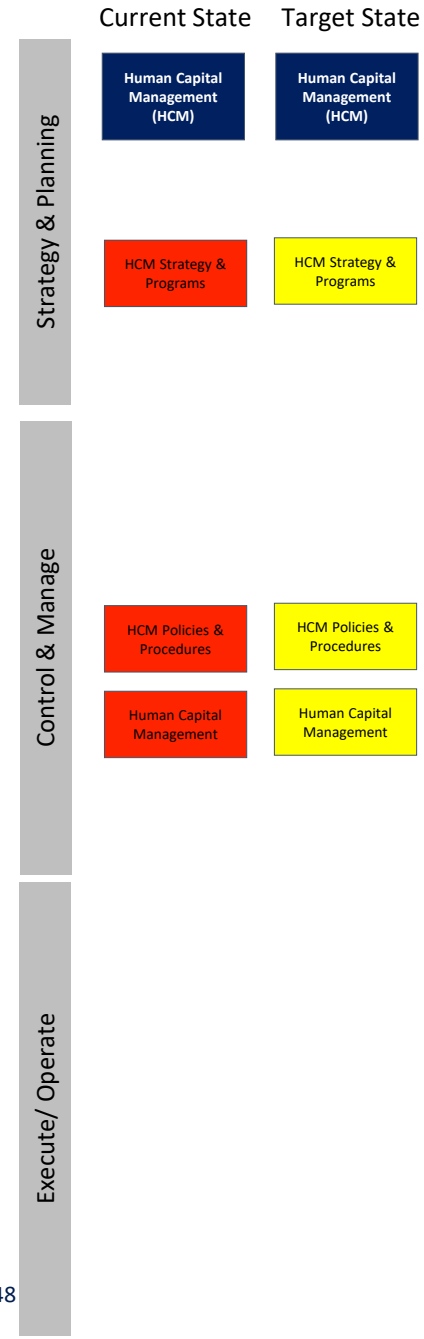
Cash Management
• Cash management (involving the collection, handling, and usage of cash) does not appear to be a major issue identified in the Financial Management gap assessment
• Little evidence of fraud risk is reviewed by the Audit Committee – low level of organizational awareness and reliance on whistleblower and anti-corruption training
• Customer Billing related to cash management
  • Lack of Credit/ Collections policy, processes and automation tools
  • Account management
  • No metrics in place for billing, credit & collections, theft identification, payments and back office
	Cash Management
	• Manage payables and receivables
	• Manage sweep /reconciliation accounts
	• Manage account transfers and balances
	• Manage short term investing

Mapping to Gap Analysis:
Finance – Financial Accounting



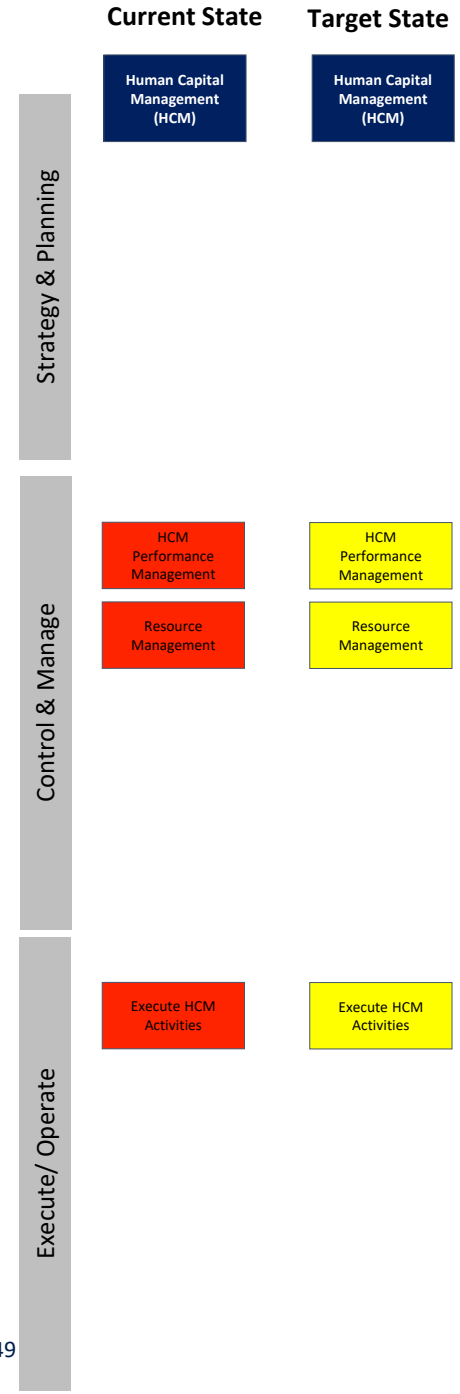
Summary of Current Gaps (Unfocused - Aware)	Definition of Remediated (Developing)
Financial Accounting • Insufficient precision of financial records to ensure accuracy of consolidated financial statements and determination of efficiency/ profitability results of the entire business • Lack of evidence of compliance to accounting standards and proper valuation of assets and liabilities	**Financial Accounting** • Implement financial accounting framework / GL • Conduct financial accounting activities (payables, receivables, billing, et al) • Trial balance preparation • Reconcile accounts • Tax, regulatory and SOX reporting, etc. • Management reporting

Mapping to Gap Analysis:
Human Resources – Human Capital Management Strategy & Programs, Policies & Procedures, and Management



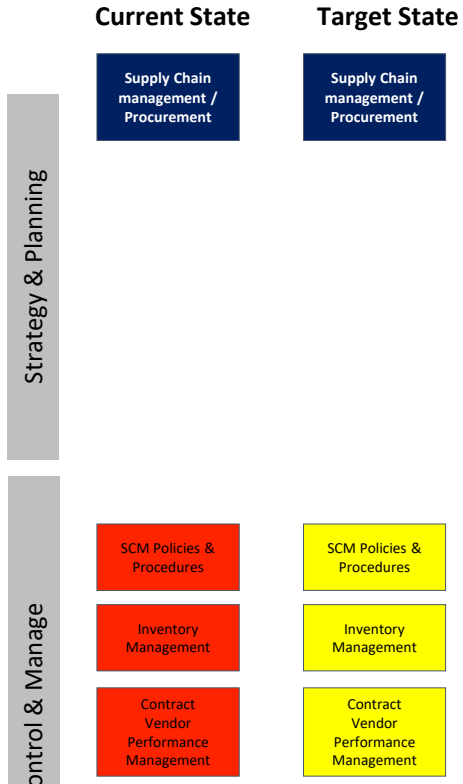
Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
Human Capital Management (HCM) Strategy & Programs • Lack overall strategy and governance programs • Lack performance, compensation, talent management and learning management strategy • Lack career planning and succession planning program	**Human Capital Management (HCM) Strategy & Programs** • Develop HCM strategy, governance & programs • Develop labour relations strategy • Develop performance and compensation strategy & programs • Develop talent management strategy & programs • Develop learning management strategy, accreditation structure and career ladders
HCM Policies & Procedures • Lack documented processes and process maps • Most polices are outdated • Processes are manual for benefits enrollment, training compensation, performance management, onboarding, HR Metrics	**HCM Policies & Procedures** • Assess HCM requirements • Develop HCM policies and procedures • Establish pay grids and compensation guidelines • Establish learning management policies and procedures • Communicate / manage HCM policies and procedures
Human Capital Management • Lacking automated benefits enrollment process • Lack employee engagement levels and data • Lack tracking of HR metrics • Lack career planning and succession planning program • Lack employee self service capabilities	**Human Capital Management** • Manage and control the HCM competency and its KPI's / ensure regulatory compliance • Manage employee surveys and engagement levels • Manage HR reporting processes (e.g., compensation & benefits notifications, job profiles, regulatory) • Arrange benefits programs (e.g., Medical, Dental, Health and Lifestyle Accounts, Employee and Family Assistance Program) • Adhere to relevant privacy regulations

Mapping to Gap Analysis:
Human Resources – Human Capital Performance Management, Resource Management, and Execute HCM Activities



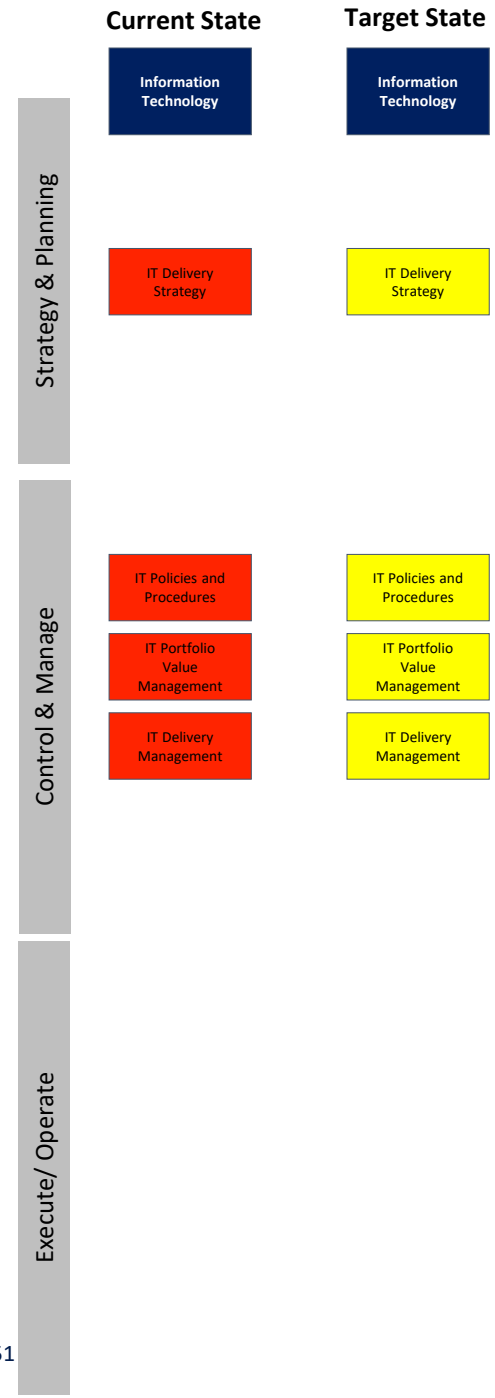
Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
HCM Performance Management • Compensation may not be up to par with the general market, need a benchmarking exercise to remain competitive • Compensation transactions are manual	**HCM Performance Management** • Adopt HCM performance management framework • Manage compensation (e.g., salary/wage, benefits, incentive, pensions) • Manage payroll processing, accounting and reporting
HCM Performance Management • Recruitment process is manual which leads to potential non compliance • Lack employee retention programs and talent management • Lack succession planning and strategy • Lack of communication with non selected candidates • Onboarding process is manual which is time consuming for resources • Lack of updated training and lack skill and competency management	**Resource Management** • Manage resources (e.g., recruit, screen, select, onboard / offboard) • Manage retention programs (e.g., turnover, expatriation, repatriation, employee relations) • Workforce planning and management (workforce transitioning) • Skill, competency and accreditation requirements analysis • Assess and track skills, competencies and accreditations • Crew planning and formation • Manage association agreements (e.g. negotiate, operate, mediate, renew)
Execute HCM Activities • Execution of HCM activities is time consuming due to primarily manual processes • Lack communication and employee engagement surveys • Lack tracking of HR metrics and KPIs • Employees lack self service portal • Training is approved through the government of Puerto Rico and has not been reviewed for relevancy and accuracy	**Execute HCM Activities** • Process compensation, benefits and other programs (e.g., retirement, employee referrals, “top talent”, succession) • Process and administer staff requisitions, transfers, separation, retirement and expatriates • Screen, hire & offer letter administration • Execute on-boarding / off-boarding activities • Oversee / communicate employee objectives, performance against objectives, compensation system elements, development plans / follow-up • Administer employee data & information • Time and attendance tracking • Arrange and administer training & accreditations (employees and contractors) • Contract negotiations

Mapping to Gap Analysis:
Supply Chain Management/ Procurement – SCM Policies & Procedures, Inventory Management, and Contractor Vendor Performance Management



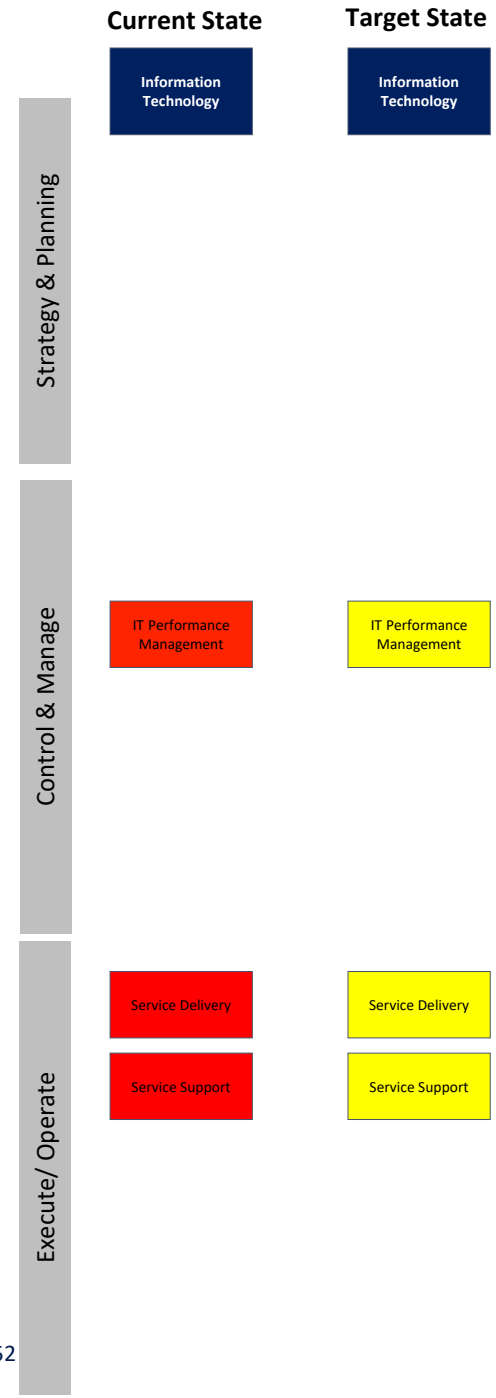
Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
SCM Policies & Procedures • Lack documented policies and procedures for SCM and inventory management	**SCM Policies & Procedures** • Develop SCM policies and procedures • Establish inventory management controls • Establish purchasing authorizations
Inventory Management • Suboptimal material inventory practices and asset suite solution • Absence or poor implementation of standard inventory management processes • Material handling equipment is not properly maintained • Shortfalls in core logistics management processes	**Inventory Management** • Generate inventory demand forecasts and establish re-order levels / frequencies • Schedule inventory verification audits, reconcile book-to-physical counts • Track order fulfillment / receipt of goods • Maintain master stock locator • Manage disputes / exceptions
Contractor / Vendor Performance Management • Contracts are not held in one common place • Contract/ vendor performance management seems to be done on a department basis or by the PMO and is not controlled by Procurement • Lack definition of SLAs, etc.	**Contractor / Vendor Performance Management** • Generate vendor / contractor analytics • Rank vendor / contractor performance by service level agreement (SLA) compliance, violations, exceptions, etc. • Recommend vendor disposition / future relationship • Warranty management and application

Mapping to Gap Analysis:
Information Technology – Delivery Strategy, Policies & Procedures, Portfolio & Value Management, and Delivery Management



Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
IT Delivery Strategy • IT OT department strategy is not well communicated and understood at all levels of the organization	**IT Delivery Strategy** • Understand business objectives and constraints that guide service delivery decisions • Determine service delivery locations and activities • Identify, deploy and support service delivery tools and enabling technology • Establish continuous improvement and assessment approach
IT Policies and Procedures • Lack formal Incident, Problem, request and performance management processes • Lack of ITIL foundations • lack enterprise architecture practice and standards (building cope, architectural compliance management) • Lack of standardization of technical architecture processes to industry best practices	**IT Policies and Procedures** • Assess IT policies / procedures requirements • Develop IT policies and procedures • Establish project management practices • Communication / manage IT policies and procedures • Create and publish enterprise architecture standards
IT Portfolio & Value Management • There is no coordinated prioritization of projects and escalation process between IT OT and the business. • There is no evidence of benefits realization measurement and tracking. • Lack coordinated prioritization of projects and escalation between IT OT and the business • Lack formalized engagement model even though business units may have meetings with IT OT for updates and collaboration during projects	**IT Portfolio & Value Management** • Determine IT portfolio investment balance based upon business objectives and environment • Rate proposed IT investment projects based on value and balance criteria • Prioritize IT projects to maximize overall portfolio value while maintaining desired investment balance • Promote the “case for change” to relevant stakeholders • Establish and validate IT value criteria • Review and adjust IT portfolio value and balance criteria ensuring ongoing business objectives alignment
IT Portfolio & Value Management • There is no technology roadmaps based on vendor and software/ hardware lifecycle. • There is no alignment of procurement policies and practices at the corporate level. • There is no overarching methodology for Service Solution Development and Deployment. • There is no routine software viability assessment.	**IT Delivery Management** • Plan operational activities for IT service delivery • Plan service and solution lifecycle • Determine required support resource levels and capabilities • Define issue escalation mechanisms • Track and manage major incidents • Manage programs / project portfolios / projects • Advise / approve IT changes

Mapping to Gap Analysis:
Information Technology – Performance Management, Service Delivery, and Service Support



Summary of Current Gaps (Unfocused)	Definition of Remediated (Developing)
IT Performance Management • Lack performance management metrics and KPI tracking • Lack definition of incident vs problem • Lack prioritization of problems	**IT Performance Management** • Measure IT performance vs. targets • Identify variances • Prioritize problems • Investigate priority problems / Investigate solutions • Report on IT service levels / Report on customer satisfaction / Monitor progress
Service Delivery • Lack of Enterprise Architecture Practice and standards • Lack of capacity management • Although PREPA has performance monitoring tools in place, because of resources constraints, metrics are not being measured • Lack comprehensive performance management instrumentation and consolidated console management	**Service Delivery** • Solution creation and testing • Maintain EA vitality • Service level management • Capacity management / availability management • Service continuity management • Manage dependencies and issues between multiple projects and services • Report upon service and project performance
Service Support • Lack formal incident and problem management processes • Lack established Change Advisory processes including approvals that support regular changes and emergency changes • Patch management processes are inconsistent • No established standard monthly/weekly change windows. • No Operational Readiness Review and Operational Acceptance process, and no consistent backout plans and runbooks.	**Service Support** • Service desk and operations • Incident management / problem management • Configuration management / change management • Release management

Mapping of the Component Business Model to System Remediation Plan Program

Approach

Mapping of Component Business Model (CBM) components to each Portfolio and Program allows LUMA to identify Programs that address high risk components and include them in the System Remediation Plan (SRP).

SRP – Portfolios and Programs

There are 69 Programs, of which 46 are designated SRP. The following SRP Programs are categorized into 7 Portfolios, shown in the table below.

LUMA's SRP Program grouped by Portfolio

Portfolio	Program	# of Programs
1. Customer Services	• Modernize Customer Service Technology • Billing Accuracy & Back Office • Standardized Metering & Meter Shop Setup • Streetlight Billing • Distribution Streetlighting	5
2. Distribution	• Distribution Line Rebuild • Distribution Pole & Conductor Repair • Distribution Lines Inspection	3
3. Transmission	• Transmission Line Rebuild • Transmission Priority Pole Replacements • Inspection of Transmission Lines • Telecom Systems & Network	4
4. Substations	• Compliance and Studies • Distribution Substation Rebuild • Transmission Substation Rebuilds • Physical Security for Distribution Facilities • Transmission Substation Security • Transmission Substation T&G Demarcation	6
5. Control Center and Buildings	• Facilities Development & Implementation • Control Center Construction & Refurbishment • Critical System Operation Strategy & Processes • Critical Energy Management System Upgrades • Critical Energy Management & Load Generation Balancing	5

Portfolio	Program	# of Programs
6. Enabling	• Vegetation Management • T&D Fleet • Tools Repair and Management • HSEQ & Technical Training • Asset Data Integrity • Permits Process & Management • Workflow Process and Tracking • Materials Management • Operator Training	9
7. Support Services	• HR Programs • Critical Financial Controls • Critical Financial Systems • IT OT Cybersecurity Program • IT OT Enablement Program • IT OT Asset Management • Land Record Management • Improvements to Systems Dispatch for Increased Reliability and Resiliency • Resource Planning and Processes to Improve Resource Adequacy and Cost Tracking • Update to Third Party Use, Audit, Contract and Billing Procedures • Public Safety • Waste Management • Safety Equipment • Integrated Safety & Operational Management System	14
	Total	**46**

For each Program, the following is provided in Section 6 of the SRP:

- Program description
- Program rationale, including current state and completed state (or “remediated state”)
- Program activities required to achieve the completed state
- Program benefits and risks
- Annual cost estimate and resource requirements, including estimation methods and assumptions
- Program timeline and milestones

Component Business Model (CBM)

The CBM shifts the focus from an organizational view to one focused on critical skills / competencies and managing activities (thereby removing real or perceived barriers and redundancies between operating entities). The Business Competencies and Accountability Levels provide the structure, and the Business Components define the required capabilities to accomplish specific outcomes. This component view allowed LUMA to:

- Focus on components that are associated with high potential impacts and consequences as required in the SRP, and
- Compare current capabilities for each required skill / competency to levels deemed necessary to meet the standard of "remediated."

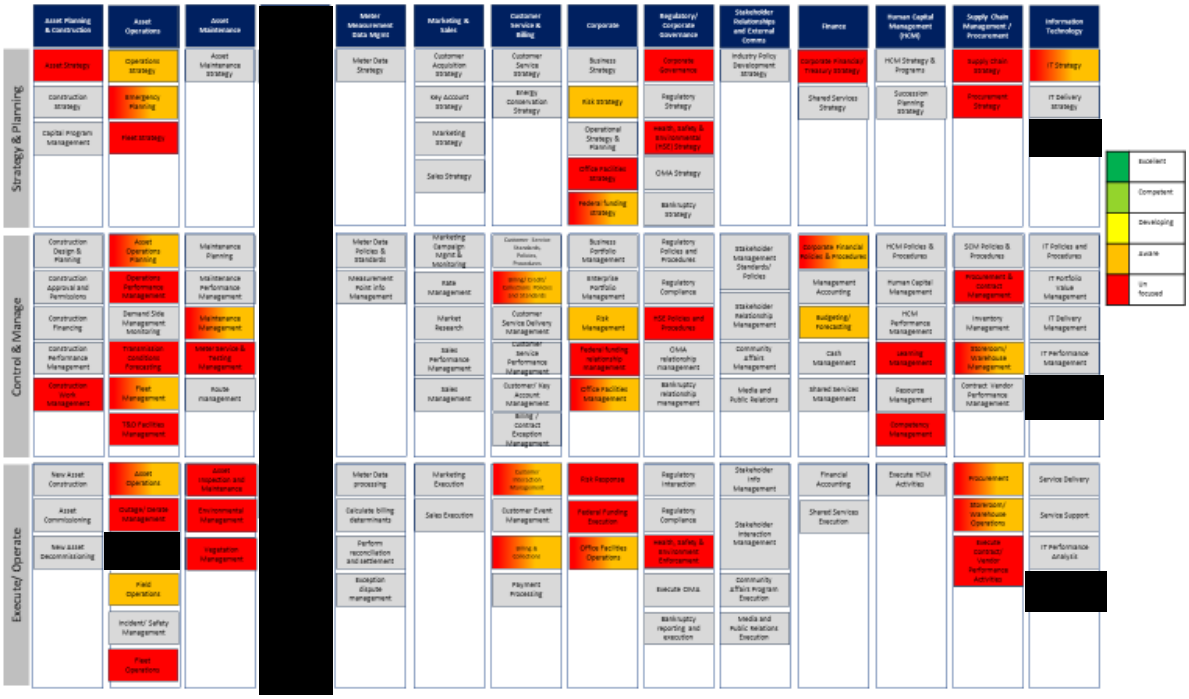
LUMA adopted an established utility framework as a starting point for identifying the Business Competencies (columns) and Components (boxes), adjusted it as necessary to match LUMA's specific operating, business, and regulatory environment; and ensured consistency by leveraging the scope of services defined in the OMA. The framework consists of 14 Business Competencies and three levels of accountability:

LUMA Component Business Model Accountability Levels and Competencies

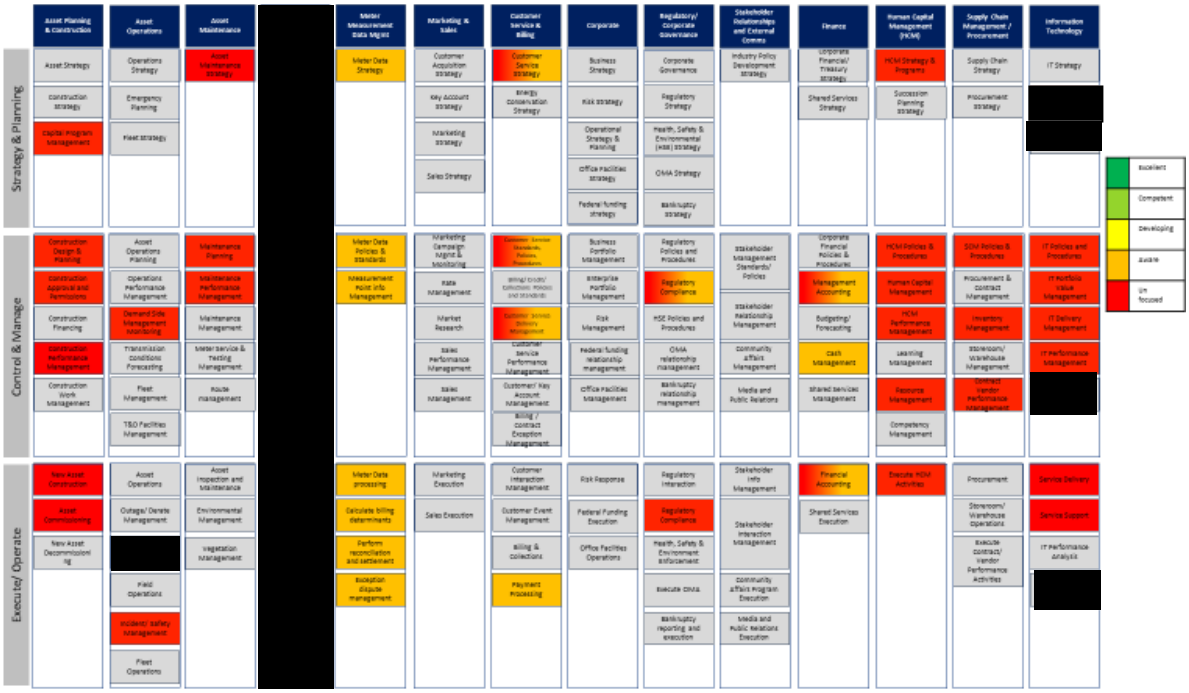
Accountability Levels	Competencies
• Strategy & Planning (Directing) • Control and Manage (Controlling) • Execute and Operate (Executing)	• Asset Planning & Construction • Asset Operations • Asset Maintenance • Supply & Demand Management • Meter Measurement & Data Management • Marketing & Sales • Customer Service & Billing • Corporate • Regulatory & Corporate Governance • Stakeholder Relationships & External Communications • Finance • Human Capital Management (HCM) • Supply Chain Management (SCM) • IT OT

High impact and moderate impact / consequence current capability has been assessed for each of components making up each core competency. Shown in the views below:

LUMA Component Business Model – High Impact / Consequence Current Capability View



LUMA Component Business Model – Medium Impact / Consequence Current Capability View



Mapping of Project Briefs by Portfolio

In the following tables for each portfolio, the high and medium impact / consequence CBM components are mapped to the associated Programs. It is important to recognize that some core competencies/ components will map across more than one Portfolio and Program.

Customer Services (5 SRP Programs)

Customer Services – Program		
Modernize Customer Service Technology	Billing Accuracy & Back Office	Standardized Metering & Meter Shop Setup
This program is focused on remediating the telephony technology through the development/ implementation of a new cloud-based contact center platform that allows for the management of a high volume of inbound/ outbound customer communications across a range of channels. Modernizing contact center procedures will mitigate LUMA's risk of customers being unable to report emergency situations. The program will create real time dashboards and reporting of key performance indicators across all of Customer Service.	This program updates bill print/ delivery and other back office systems to ensure LUMA can produce customer invoices. It includes acquisition of new hardware and software to support billing and customer contracts, along with removing redundant bill printing and enveloping equipment. The program supports back office processing of service order paperwork and address backlogs of estimated and unbilled accounts. It implements a customer experience metrics dashboard and agent routing technology for Billing Services.	This program is targeted at establishing a location for standardized meter testing for LUMA and the provision of appropriate internal and external meter testing equipment. Enhanced procedures are also included, along with operational support for the new facility and equipment.
Component Business Model		
High Impact		
Customer Service & Billing Controlling - Billing/ Credit/ Collection Policies & Standards Executing - Customer Interaction Management, Billing & Collections		Asset Maintenance Controlling - Meter Servicing & Testing Management
Medium Impact		
Customer Service & Billing Directing - Customer Service Strategy Controlling - Customer Service Standards, Policies & Procedures, and Customer Service Delivery Management	Executing - Payment Processing Meter Measurement & Data Management Controlling - Measurement Point Info Management Executing - Meter Data Processing, Perform Reconciliation & Settlement, and Exception Dispute Management	Directing - Meter Data Strategy Controlling - Meter Data Policies & Standards

Customer Services – Programs	
Streetlight Billing	Distribution Streetlighting
This program is an audit of streetlights and associated billing. PREPA has approximately 500,000 streetlights which should be audited on a regular cycle to be determined based on asset management procedures. This program will require LUMA to complete a physical audit of the streetlights, assigning each with a unique indicator/asset tag. Once this process is complete, updates will be made in the Customer Care and Billing (CC&B) system to ensure customers are being billed accurately for their lights. The program also includes communication with customers on corrections to the street lighting system.	This program deals with upgrading and replacing distribution streetlights that are a physical safety hazard and are scheduled for repair or replacement based on their criticality. Along with increasing the number of distribution streetlights in service, this process will also include LED replacements and GIS data entry of all streetlights.
Component Business Model	
High Impact	
Asset Planning and Construction Directing - Asset Strategy	Controlling - Construction Work Management
Asset Maintenance Executing - Asset Inspection and Maintenance	
Medium Impact	
Customer Service & Billing Directing - Customer Service Strategy Controlling - Customer Service Standards, Policies & Procedures, and Customer Service Delivery Management Executing - Calculate Billing Determinants, Perform Reconciliation & Settlement, and Exception Dispute Management	

Distribution (3 SRP Programs)

Distribution - Programs		
Distribution Line Rebuild	Distribution Pole & Conductor Repair	Distribution Lines Inspection
This program replaces damaged or ineffective overhead and underground distribution lines and includes a mix of SRP and non-SRP work: • Perform distribution line upgrades to improve reliability and resiliency • Restore out of service circuits as deemed necessary • Complete unfinished circuit construction presently abandoned as deemed necessary • Perform circuit voltage conversions to improve distribution capacity(non-SRP) • Build new distribution line extensions to connect new customers (non-SRP) • Install underground cable and/or tree wiring to improve service reliability and resiliency to critical customers (non-SRP)	This program focuses on minimizing the safety hazard caused by distribution poles and conductors that need to be repaired or replaced. Major repairs and replacement will be based upon the results of an inspection of the distribution system and an analysis by engineers to schedule the repair or replacement based on the criticality of the pole.	This program aim is to help restore the system and improve reliability and resiliency in line with current codes and standards, including, but not limited to: • Inspecting and treating poles • Performing ground rod inspections and minor repairs/ replacements • Inspecting and replacing anchors and guys • Inspecting conductor condition • Performing line clearance checks to ensure that distribution assets meet live line clearance requirements under the applicable codes and standards • Inspection of streetlight heads and poles • Identification of third party attachments • Inspection of third party attachments for applicable code violations as it pertains to the electrical system
Component Business Model		
High Impact		
Asset Planning and Construction Directing - Asset Strategy Controlling - Construction Approvals and Permissions Asset Operations Directing - Operations Strategy		Asset Maintenance Executing - Asset Inspection and Maintenance
Medium Impact		
Asset Planning and Construction Directing - Capital Program Management Controlling - Construction Design and Planning, and Construction Performance Management Executing - New Asset Construction, and Asset Commissioning		

Transmission (4 SRP Programs)

Transmission - Programs			
Transmission Line Rebuild	Transmission Priority Pole Replacements	Inspection of Transmission Lines	IT OT Telecom Systems & Network
This program includes numerous 230 kV, 115 kV and 38 kV projects to harden and upgrade the transmission system. This includes rebuilding towers along with reinforcing and replacing anchors and guys as required over the course of the upgrade process. This program also incorporates an investigation to mitigate corrosion and restore line design capacity. In addition to the overhead transmission line upgrade work, this program includes the 115 kV underground cable addition in the San Juan area.	This program is to replace damaged overhead transmission poles and towers, along with associated hardware and conductors. Repairs under this program will be made based on results of an inspection conducted under the Inspection of Transmission Lines program. Major repairs and replacement will be based upon the results of the inspection of the transmission system and an analysis by engineers to schedule the repair or replacement based on the criticality of the pole or structure. Following this process, safety /hazard and priority poles and structures will be replaced, along with damaged conductor and hardware.	This program includes the inspection, data collection, testing of the Transmission Lines. Required repairs and replacements will be identified in order to restore the system and improve reliability and resiliency in line with current codes and standards. Inspections will include, but are not limited to, poles, towers and structures, ground rods, anchors and guys, conductor condition and line clearance checks. During this process, the program will also incorporate minor repairs, but major repairs will be undertaken by a separate program.	This program includes IT and OT telecom investments to improve and revamp PREPA's mobile radio system, phone exchange and telephone systems and fiber optic and microwave data radio systems.
Component Business Model			
High Impact			
Asset Planning and Construction Directing - Asset Strategy Controlling - Construction Approvals and Permissions Asset Operations Directing - Operations Strategy		Asset Maintenance Executing - Asset Inspection and Maintenance	Asset Planning and Construction Directing - Asset Strategy Controlling - Construction Approval and Permissions
Medium Impact			
Asset Planning and Construction			Asset Planning and Construction

Directing - Capital Program Management Controlling - Construction Design and Planning, and Construction Performance Management Executing - New Asset Construction, and Asset Commissioning		Controlling - Construction Design and Planning Executing - New Asset Construction, and Asset Commissioning Asset Operations Executing - Fleet Operations

Substations (6 SRP Program)

Substations - Programs		
Compliance and Studies	Distribution Substation Rebuild	Transmission Substation Rebuilds
Distribution Studies focused on eliminating major cascading outages caused by a lack of proper coordination of protective devices and implementing new procedures and standards to ensure the distribution system complies with regulations and Prudent Utility Practice. Studies, procedures and standards for Substations and Transmission Compliance. Transmission and Distribution Substation Compliance Projects - implementation of grounding and environmental projects.	This program focuses on improvements to distribution substations as a means to strengthen the distribution grid. This includes hardening and modernizing distribution substations, upgrades to the latest codes, industry standards and practices and the replacement of electromechanical and electronic relays.	This program (Transmission Substation Rebuilds) covers required inspection, repair and rebuilding of damaged substations. This includes upgrades to the latest codes, industry standards and practices to improve long term reliability. The program also includes installation of Gas Insulated Switchgear (GIS) and replacement of electromechanical and electronic relays, along with repairs and rebuilding of transmission and distribution substations impacted by flooding.
Component Business Model		
High Impact		
Asset Operations Directing – Operations Strategy Controlling - Asset Operations Planning, and Transmission Conditions Forecasting Executing - Outage/ Derate Management	Asset Planning and Construction Directing - Asset Strategy Controlling - Construction Approvals and Permissions Asset Operations Directing - Operations Strategy	
Medium Impact		
	Asset Planning and Construction Directing - Capital Program Management Controlling - Construction Design and Planning, and Construction Performance Management Executing - New Asset Construction, and Asset Commissioning	

Substations - Programs		
Physical Security for Distribution Facilities	Transmission Substation Security	Transmission Substation T&G Demarcation
This program is targeted at the physical security of distribution facilities by replacing and repairing gates and fencing around substations. It also addresses provision of locks for distribution switches and pad mount transformers in the field and meter locks at customer metering points.	This program will focus on a variety of security concerns at transmission substations. The program will replace and add new security technology and hardware to deter, detect and delay security incidents (e.g., intrusion, theft, damage, employee and public safety). Security concerns addressed by this program include fencing and gates including locking devices, lighting, signage, perimeter clean up and window bars.	This program focuses on the demarcation requirements for T&G assets. The demarcation between PREPA's generation assets and the T&D System is required under the OMA, specifically the Scope of Services as set forth in Annex I.
Component Business Model		
High Impact		
Asset Operations Controlling - T&D Facilities Management		Supply & Demand Management Planning - Supply & Demand Planning Controlling - Supply & Demand Management Executing - Dispatch and GenCo Power Operating Agreement
Medium Impact		
		Supply & Demand Management Planning - Demand Side Management Strategy

Control Center and Buildings (5 SRP Programs)

Control Center and Building - Programs	
Facilities Development & Implementation	Control Center Construction & Refurbishment
This program is focused on the development, implementation, and maintenance of several different areas overseen by the Real Estate, Facility Services and Architectural divisions, including: • Construction required to remediate facilities and real property (e.g., warehouses, mechanic shops,etc.) damaged by natural disasters • Implementation of a facility capital improvement program • Implementation of an asset management system to support facility maintenance and the preventative maintenance program • Deployment of robust security devices and systems • Development and implementation of a tenant services program • Development and implementation of safety training programs for Facilities employees • Planning and construction to delineate space between LUMA and the GenCo	This program is targeted at construction or refurbishment of buildings to house the main and back-up control centers and all ancillary support services. Since the current control centers have fallen into disrepair, this program will rebuild or relocate them, along with establishing a designated backup control center. At the same time, the program will centralize more control center activities.
Component Business Model	
High Impact	
Asset Operations Controlling - T&D Facilities Management	Directing - Emergency Planning Executing - System Monitoring & Control
Corporate Directing - Office Facility Strategies Controlling - Office Facilities Management Executing - Office Facilities Operations	
Medium Impact	
	Asset Operations Controlling - Demand Side Management Monitoring

Component Business Model		
High Impact		
Asset Operations Controlling - Asset Operations Planning		
Controlling - Transmission Condition Forecasting	Controlling - Operations Performance Management	
Executing - Asset Operations, Outage/ Derate Management, and System Monitoring and Control		
Supply & Demand Management Planning - Supply & Demand Planning Controlling - Supply & Demand Management Executing - Dispatch and GenCo Power Operating Agreement		
Medium Impact		
Asset Operations Controlling - Demand Side Management Monitoring Supply & Demand Management Planning - Demand Side Management Strategy		

Enabling (9 SRP Programs)

Enabling - Programs		
Vegetation Management	T&D Fleet	Tools Repair and Management
This program includes work to abate or mitigate immediate vegetation risk in the most critical locations, along with an ongoing program to clear and re-establish rights-of-way (ROWs) to standard widths.	The T&D Fleet program includes a range of activities and investments to bring the current fleet up to industry standards including vehicles, aircraft and equipment. Additionally, activities will be focused on initializing and improving processes for data collection, repair and maintenance of these assets.	This program focuses on a personal protective equipment (PPE) and tooling plan to address safety needs along with putting in place a better system for managing PPE and tools. In addition to acquiring the needed PPE and tools, this program includes implementation of a centralized Tool and Equipment Crib system to improve inventory management, tool maintenance, tool supply and coordination and oversight of tool and equipment use.
Component Business Model		
High Impact		
Asset Maintenance Executing - Vegetation Management	Asset Operations Directing - Fleet Strategy Controlling - Fleet Management Executing - Fleet Operations	Asset Operations Executing - Field Operations Regulatory/ Corporate Governance Directing - HSE strategy Controlling - HSE Policies and Procedures Executing - HSE Enforcement
Medium Impact		
Asset Maintenance Directing - Asset Maintenance Strategy		Asset Operations Executing - Incident/ Safety Management

Enabling - Programs		
HSEQ & Technical Training	Asset Data Integrity	Permits Process & Management
This program provides health, safety, environment and quality (HSEQ) and technical training to field personnel. During the initial stage, basic technical training will be provided through the LUMA College and HSEQ training conducted by internal subject matter experts and external providers. Personnel will gain technical skills training for field employees to become fully qualified to complete their work safely and efficiently. Subsequent enhanced technical training will be provided through the LUMA College. Enhanced training modules will be developed and administered based on operational needs for the type of technology being implemented. This program will help to instill a new safety culture across the T&D System.	This program is targeted at assuring the integrity of key asset data, with a focus on GIS and Computerized Maintenance Management System (CMMS). The program works with stakeholders to identify data requirements, determine process and templates for storing data and update asset data systems with data gathered from asset inspections.	LUMA will introduce new systems for managing operational permits to enable the system to comply with permit obligations and to provide support for federal funding requirements. The program will develop new procedures so that responsible parties have the tools to meet permit obligations and identify additional necessary permits, along with introducing training programs to allow those procedures to be implemented effectively.
Component Business Model		
High Impact		
Asset Maintenance Executing - Environmental Management Regulatory/ Corporate Governance Directing - HSE Strategy Controlling - HSE Policies & Procedures Executing - HSE Enforcement	Asset Maintenance Controlling - Maintenance Management	
Medium Impact		
Asset Operations Executing - Incident/ Safety Management	Asset Maintenance Directing - Asset Maintenance Strategy Controlling - Maintenance Planning	Asset Planning & Construction Controlling - Construction Approval and Permissions

Enabling - Programs		
Workflow Process and Tracking	Materials Management	Operator Training
This program includes several initiatives that address gaps between current state and standard industry methods, practices, and processes to manage, track, and report progress on the performance of work in the field. • Establishing proper and safe maintenance regimens (preventive, planned. unplanned corrective, and emergency repairs) • Adherence to design, maintenance, and construction standards • Implementing inspection and testing procedures • KPIs performance management, and • Implementing technologies to reduce cycle time in identifying remediating/ performance anomalies.	This program covers all aspects of materials management and includes management of: • Asset recovery • Oil containment • Inventory management • Asset suite reconfiguration • Demand training • Implementation and measurement of KPIs related to materials • Capital plans for material handling and warehousing storage and facility improvements • Logistics function and related equipment • Material evaluation and disposition	This program will provide all necessary requirements to support new and existing system operator training along with operator competency assessments. As such, the program will address the need to improve current operator training and allow for new cohort(s) of operators to support the system. This program will also improve operator response during an emergency situation.
Component Business Model		.
High Impact		
Asset Operations Directing - Operations Strategy Executing - Field Operations Asset Maintenance Controlling - Maintenance Management	Supply Chain Management/ Procurement Directing - SC Strategy, and Procurement Strategy Controlling - Procurement & Contract Management, Storeroom/ Warehouse Management Executing - Procurement, Storeroom/ Warehouse Operations, Execute Contract/ Vendor Performance Activities	Supply & Demand Management Planning - Supply & Demand Planning Controlling - Supply & Demand Management Executing - Dispatch and GenCo Power Operating Agreement
Medium Impact		
Asset Maintenance Directing - Asset Maintenance Strategy Controlling - Maintenance Planning, and Maintenance Performance Management	SC Management/ Procurement Controlling - SCM Policies and Procedures, Inventory Management, Contract/ Vendor Performance Management	Supply & Demand Management Planning - Demand Side Management Strategy

Support Services (14 SRP Programs)

Support Services - Programs		
HR Programs	Critical Financial Controls	Critical Financial Systems
This Program Brief covers four separate programs to support the LUMA Human Resources (HR)department. This includes the following programs: Employee Benefits, Employee Engagement, Training and Support Software	The Critical Financial Controls program focuses on two key areas, internal control and internal audit. These two areas will build skills and capabilities in financial reporting and audit; and will update and enforce industry standard policies and procedures that comply with the latest laws and regulations.	This program covers the technology projects for Finance and Facilities, including financial management systems and technology, risk management systems and supply chain management technology. The initiatives cover areas within budgeting, reporting, consolidation, risk management, time tracking, employee expenses, fixed asset subledger, procurement, and a major life cycle upgrade for the Oracle E-Business Suite (EBS)system.
Component Business Model		
High Impact		
Human Capital Management Controlling - Learning Management, and Competency Management	Finance Directing - Corporate Financial Treasury Strategy Controlling - Corporate Financial Policies & Procedures, and Budgeting/ Forecasting Corporate Directing - Risk Management Controlling - Risk Management	
Medium Impact		
Human Capital Management Directing - HCM Strategies & Programs Controlling - HCM Policies & Procedures, Human Capital Management, Performance Management, and Resource Management Executing - Execute HCM Activities	Finance Controlling - Management Accounting, Cash Management and Shared Services Management Executing - Financial Accounting and Share Services Execution	

Support Services - Programs		
IT OT Cybersecurity Program	IT OT Enablement Program	IT OT Asset Management
The program centers on enabling the business and protecting key organizational assets, including people, resources and technology to ensure that cyber risk, internal and external threats, vulnerabilities, and natural disasters are identified and mitigated based on risk and readiness factors.	This program will implement capabilities to deliver and maintain IT OT services and systems enabling LUMA operations through the implementation of industry best practices and standardized processes and tools.	LUMA will introduce industry standard IT OT asset management procedures and provide the necessary system upgrades to ensure secure business operation and continuity, as well as improved customer responsiveness.
Component Business Model		
High Impact		
Information Technology Directing - IT Strategy, and Cybersecurity Strategy Controlling - Cybersecurity Management Executing – Cybersecurity Execution and Response	Information Technology Directing - IT Strategy	
Medium Impact		
	Information Technology Directing - IT Delivery Strategy Controlling - IT Policies and Procedures, IT Portfolio Value Management, IT Delivery Management, and IT Performance Management Executing - Service Delivery, and Service Support	

Support Services - Programs		
Land Record Management	Improvements to Systems Dispatch for Increased Reliability and Resiliency	Resource Planning and Processes to Improve Resource Adequacy and Cost Tracking
LUMA will develop a new record management system that allows for land information to be found easily and managed to utility industry standards. This allows compliance with legal requirements to be documented and shown to satisfy regulators. It also allows user groups to have efficient access to information.	This program deals with the repair of non-functioning equipment and processes to allow for the System Operator to have data to carry out economic dispatch of generation assets, in accordance with the System Operation Principles and applicable procedures, and to allow for the safe and reliable operation of the system.	This program focuses on planning studies for dispatch of existing thermal units, along with new processes to audit costs included in the purchased power and fuel cost adjustment mechanism tariffs administered by LUMA in accordance with Section 5.6 of the OMA. The program includes creation and implementation of reasonable prudent administrative procedures for reporting of those related fuel and other generation costs as described in the OMA and being able to accurately present these costs to the PREB. The program does not include the management or oversight of fuel purchasing or of any Genco functions.
Component Business Model		
High Impact		
Information Technology Directing - IT Strategy	Supply & Demand Management Planning - Supply & Demand Planning Controlling - Supply & Demand Management Executing - Dispatch and GenCo Power Operating Agreement	
Medium Impact		
Information Technology Directing - IT Delivery Strategy Controlling - IT Policies and Procedures, IT Portfolio Value Management, IT Delivery Management, and IT Performance Management Executing - Service Delivery, and Service Support	Supply & Demand Management Planning - Demand Side Management Strategy	

Support Services - Programs		
Update to Third Party Use, Audit, Contract and Billing Procedures	Public Safety	Waste Management
This program is focused on updating procedures for third party use of land, use of infrastructure, audits, contracts, and billing. The program will include: • Developing consistent processes and agreement templates; • Streamlining and improving customer service for third parties; • Establishing annual billing to third parties; • Completing updates and corrections to the CC&B system to reflect the current asset management joint use; and • Implementing changes to the billing process for joint use billing, which may include contract updates and renegotiation.	LUMA will introduce an organizational strategy to engage and educate the public on safety around electric equipment and installations, thereby reducing public safety incidents. The program will include the procurement of public safety related materials for training awareness and public outreach, the development and complete roll out of a communications plan and a continuing maintenance plan for the program.	In accordance with the requirements of the OMA Section 5.10 and the scope of OMA Services specified in Annex I, LUMA will install new equipment and implement management processes to comply with environmental statutory requirements and support safe and efficient operations.

Component Business Model		
High Impact		
Customer Service & Billing Controlling - Billing/ Credit/ Collection Policies & Standards Executing - Customer Interaction Management, Billing & Collections	Regulatory/ Corporate Governance Directing - HSE Strategy Controlling - HSE Policies & Procedures Executing - HSE Enforcement	Asset Maintenance Executing - Environmental Management
Medium Impact		
Customer Service & Billing Directing - Customer Service Strategy Controlling - Customer Service Standards, Policies & Procedures, and Customer Service Delivery Management Executing - Payment Processing	Asset Operations Executing - Incident/ Safety Management	

Support Services - Programs	
Safety Equipment	Integrated Safety & Operational Management System
To improve employee and public safety LUMA will procure critical safety equipment and associated supplies such as automated external defibrillators (AEDs), portable eye wash, lone worker/confined space entry monitors and audiometric testing equipment. These items critically improve employees' current state of work-related injuries and illnesses as per OSHA requirements/recommendation.	LUMA will centralize policy and procedure creation by using a fully integrated, efficiently managed internal safety and operational management system that will allow communication of requirements to all employees and monitor health, safety and environmental compliance organization wide.

Component Business Model			
High Impact			
Regulatory/ Corporate Governance Directing - HSE Strategy Controlling - HSE Policies & Procedures Executing - HSE Enforcement			
Medium Impact			
Asset Operations Executing - Incident/ Safety Management			

System Remediation Plan
Docket ID: NERP-MI-2019-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-003

Request:

Provide the final version of the SRP Prioritization Tool used to determine the SRP Program Prioritization and Sequencing Process of the initiatives identified in the gap assessment for funding in the next three years.

Response:

Please refer to RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1 (provided in Microsoft Excel format) [previously filed in Initial Budgets Docket ID NERP-MI-2021-0004 as RFI-LUMA-MI-21-0004-210405-PREB-009 Attachment 1] for the Improvement Programs Prioritization and Sequencing supporting workpapers, which includes:

- Input (tabs in blue highlight), including listing by initiatives ('Input_Initiatives' tab which includes name, scope (and solution), interdependencies (grouping by portfolio) resource requirements and total spend) and improvement program basis ('Programs_Estimates' tab which includes improvement program estimating methods & assumptions, additional basis as necessary and System Remediation Plan basis),

- Model (tabs in orange highlight), including improvement program cost and rating listing ('Program Prioritization' tab) which includes expenditure categories by year and total investments (Federal/Non-Federal/Operating Expenditures (Opex)/SRP expenditure), along with ratings and investment allocation by LUMA goal).

- Output (tabs in green highlight), including information and summary tables included in System Remediation Plan and Initial Budget filings, and the Initial Budget Schedule 5.5 (Improvement Portfolios – Total Capital Expenditures).

For a description of the basis, methodology and rationale of LUMA's Prioritization and Sequencing, please refer below for material included within Docket NEPR-MI-2021-0004 Initial Budgets on April 12, 2021 within RFI-LUMA-MI-21-0004-210405-PREB-006.

PRIORITIZATION AND SEQUENCING - BASIS, METHODOLOGY AND RATIONALE

LUMA's improvement programs were prioritized on the basis of the benefits that they are expected to produce. LUMA used the Recovery and Transformation Mission and Goals, which include improving customer satisfaction, federally funded grid recovery and resiliency initiatives, addressing system remediation concerns, and enabling the sustainable energy transformation. Improvement program investments were also prioritized and sequenced based on operational execution and funding source eligibility considerations.

LUMA's Recovery and Transformation Framework was developed by synthesizing the complex landscape of policy objectives, stakeholder needs, and regulatory and contractual requirements into a

comprehensive strategic framework to guide planning and decision-making. LUMA's Recovery and Transformation Framework provides a comprehensive set of guiding principles that align LUMA's strategy and operations with Puerto Rico's public policy objectives and customer needs.

The rationale for using this Recovery and Transformation Framework to guide prioritization was to provide a basis for making trade-offs, to prevent overinvestment in one area or Goal at the expense of others. We also wanted to avoid prioritizing solely on the basis of LUMA's contractual requirements (System Remediation Plan) or performance metrics because we understood the need to comply with broader policy goals (e.g. IRP, Act 17) and stakeholder considerations. The process of prioritization and sequencing involved substantial technical and managerial judgement.

Methodology

LUMA used a qualitative prioritization matrix to guide investment planning, combined with subject matter expert judgement of operational considerations and needs. The planning team recognized that an entirely quantitative benefit cost analysis approach was not feasible or advisable given the a) lack of data, b) difficulty in quantifying less tangible or indirect benefits, and c) the need to consider other non-quantitative goals that would be overlooked by a benefit cost analysis approach. The planning team used available data and applied technical and professional judgement taking into account the duration and activity scope of the Front-End Transition Period.

It should be noted that the breadth and magnitude of improvements proposed within our SRP and Initial Budgets are different from the typical utility. Utilities typically improve incrementally, focusing efforts on select areas with targeted benefits and programs, whereas LUMA has been tasked with making large foundational improvements across the T&D System and organization to make up for decades of neglect and deterioration. Further, it is difficult to measure, compare and attribute benefits of specific programs when a multitude of interdependent, critical, foundational, but very different investments are required simultaneously.

Despite these difficulties, LUMA's investment decision-making was guided by a systematic and structured process. This process first needed a set of guiding principles to provide a common vision and direction, hence the development of the Recovery and Transformation Framework. The process of using the Recovery and Transformation Framework for prioritization was as follows:

1. **Step 1 - Program Scope and Cost Development**. Program teams developed a scope of work for each program including cost estimate and resource requirements. These program scopes were based on information known to LUMA at the time of development, though program teams found varying quality and availability of data. Program costs were developed using multiple data sources, historical PREPA costs where available, appropriate documentation from FEMA Fixed Cost Estimates, and professional judgement from past experience. A description of each program scope is provided in the program briefs developed for each program.
2. **Step 2 - Program Ratings Development**. Program benefits were rated in terms of impact toward the Recovery and Transformation Goals and Objectives for the T&D System. This encouraged program teams to design programs that maintained focus on these Goals and Objectives. Each program was rated on a 0-3 scale according to their level of impact on each Goal. A rating of 0 meant that the program did not have benefits or impacts in that category; a rating of 1 indicated some or indirect benefits, a rating of 2 indicated moderate impacts and a rating of 3 indicated high impacts. Figure 1 below provides an illustrative depiction of the outcome of the program benefits ratings process. Please refer to the Program Prioritization tab in RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1 for the rating information.

Figure 1: Program Benefit Ratings

PROGRAM RANK	PRIORITIZE SAFETY	IMPROVE CUSTOMER SATISFACTION	SYSTEM REBUILD AND RESILIENCY	OPERATIONAL EXCELLENCE	SUSTAINABLE ENERGY TRANSFORMATION	TOTAL BENEFIT POINTS
1	High Impact (3)	High Impact (3)	High Impact (3)	High Impact (3)	High Impact (3)	15
2	High Impact (3)	High Impact (3)	Med Impact (2)	Med Impact (2)	Low Impact (1)	11
Last	No Impact (0)	No Impact (0)	Med Impact (2)	Low Impact (1)	No Impact (0)	3

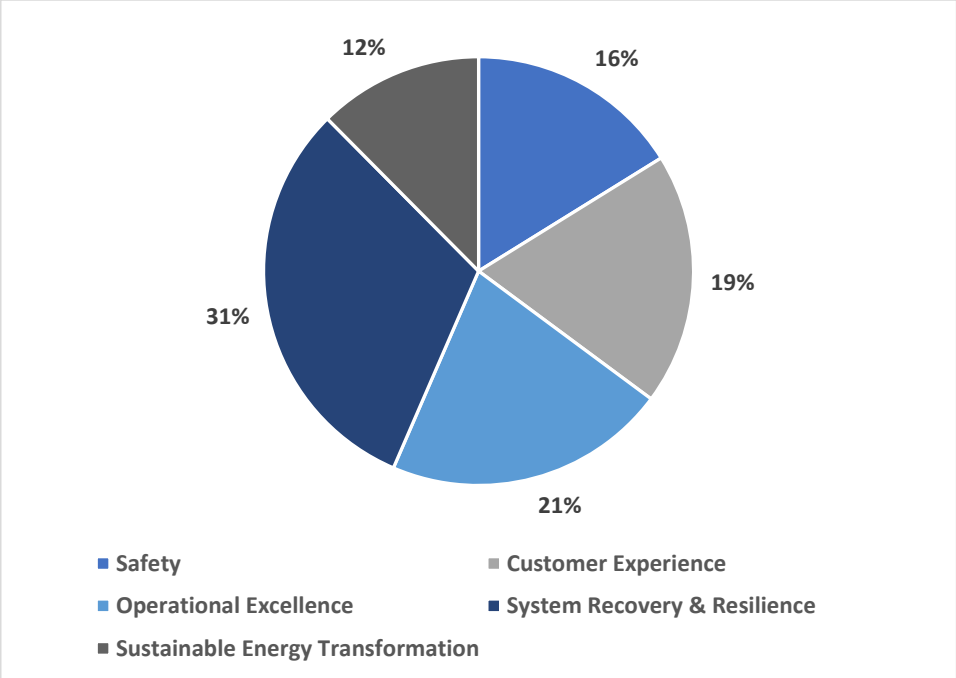
A 0-3 scale was used to ensure a consistent 'apples-to-apples' basis for comparing across initiatives with different benefits. Many of these benefits are not easily quantified and would therefore have been omitted or underestimated in a purely quantitative method. The rationale for these benefit ratings is presented for each program in its Program Brief, as filed within the SRP and Initial Budgets (please refer below for further information where to find each specific Program Brief).

The planning team also provided oversight during the ratings process to standardize and calibrate the benefits ratings provided by teams as a due diligence and quality control review. The planning team discussed program ratings and identified areas where teams may have under or over-estimated likely program benefits and adjusted accordingly. These ratings are provided in the Program Prioritization tab of RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1.

3. **Step 3 - Program Prioritization**. These program benefit ratings were used to rank the programs according to their relative benefits. The highest value programs were those that had direct benefits across multiple goals. The main use for these ratings was to achieve a balance of investment across all goals. This priority list was used as a starting point for program sequencing, providing the basis for a series of subsequent budget planning workshops.

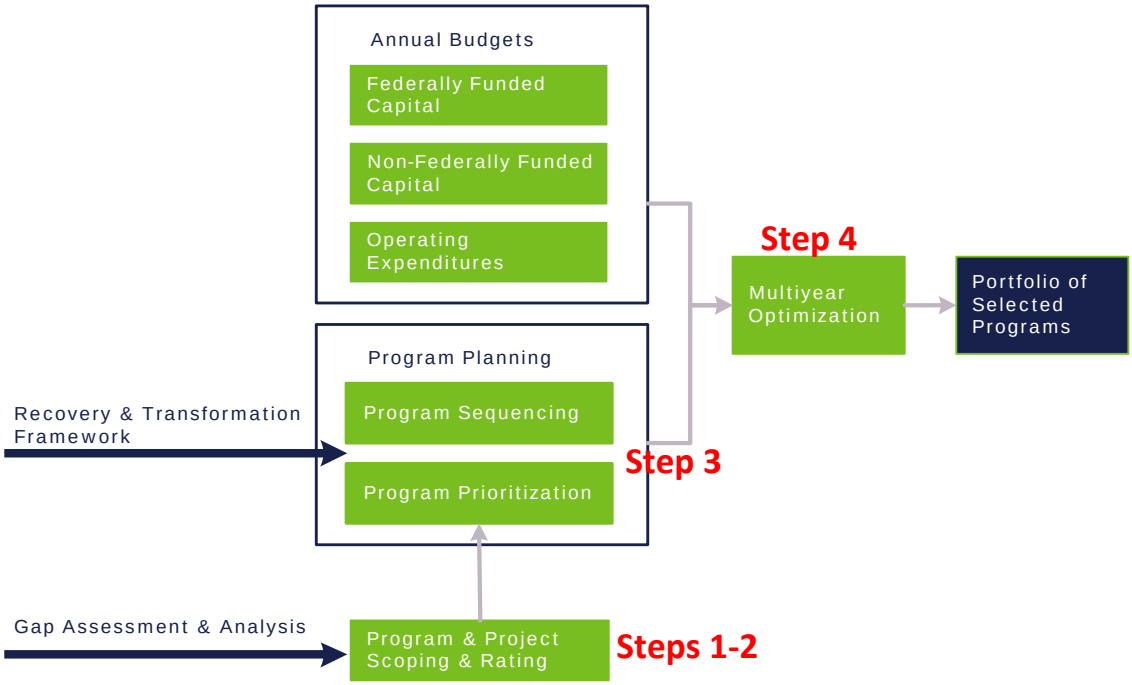
4. **Step 4 - Budget Workshops**. Budget workshops were used to determine program sequencing in the first three years of LUMA's operation to achieve impact across all Goals with available budget and resources. The prioritization ratings were factored in alongside consideration of LUMA's experience and professional judgement including operational and logistical risk, timelines, and interdependencies. This process was meant to ensure LUMA laid the foundation for future investments (such as investing in basic communications and data networks prior to rapid implementation of AMI and ADMS) and dealt with the most critical or urgent needs (PPE, vegetation management), while maintaining a balance of investment across all Goals. Figure 2 below demonstrates the total investment allocated to each Goal for fiscal years 2022-2024. This information is provided in the Portfolio Summary tab of RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1. The total investment by Goal is the cost of each program weighted according to the assigned Goal benefit points for each program.

Figure 2: Total Investment by Goal (FY2022-24)



This process was not used to cut programs off the list, it was meant to schedule activities and some initiatives with less benefits across Goals were extended across multiple years. Teams used the outcome and conclusions of these workshops to develop annual expenditure budgets, including supporting improvement programs.

Figure 3. Program Prioritization and Sequencing Process



PRIORITIZATION COMPARISONS

As described within the prioritization and sequencing process as outlined in (i) above, LUMA balanced investment across improvement programs within available labor and funding resources. This is typical of any budgeting process. The prioritization and sequencing process did not provide an outcome where only the improvement programs with the most benefits went forward and were allocated funds, as well as it did not result in the improvement programs with less benefits being left unfunded. In fact, this prioritization and sequencing process considered spending across all activities. The ultimate outcome was informed from various inputs known at the time, such as the 2017 Final Rate Order, LUMA's gap assessment, LUMA's experience and professional judgement, discussions with PREPA, as well as the Modified Action Plan of the IRP, and 2020 Fiscal Plan. A detailed list of initiatives and programs, which make up all of LUMA's capital expenditures, is provided in RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1.

PROGRAM BRIEFS

Concurrently with the Prioritization and Sequencing process as defined above, individuals responsible of each program brief were provided a template to populate with the details for each program. Please refer to RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 2 for the program brief template provided. After completion of these templates, the program briefs were drafted directly and compiled as part of Appendix D of Initial Budgets and Section 6 of the System Remediation Plan filings as detailed in Table 1 below. No further working papers were prepared for program briefs.

Table 1: Program Brief Details.

Customer Service Portfolio		
Program Brief	**Initial Budgets Reference Starting PDF Page Number**	**System Remediation Plan Reference Starting PDF Page Number**
Distribution Streetlighting	135	101
Billing Accuracy and Back Office	140	106
Standardized Metering and Meter Shop Setup	148	114
AMI Implementation Program	151	N/A
Distribution Meter Replacement & Maintenance	157	N/A
Modernize Customer Service Technology	161	N/A
Loss Recovery Program	165	N/A
Voice of the Customer	169	N/A
Streetlight Billing	173	121
Distribution Portfolio		
Program Brief	**Initial Budgets Reference Starting PDF Page Number**	**System Remediation Plan Reference Starting PDF Page Number**
Distribution Line Rebuild	179	127
Distribution Pole & Conductor Repair	191	134
Distribution Automation	191	N/A
Distribution Lines Inspection	195	139
Distribution Technology	201	N/A

Transmission Portfolio		
Program Brief	**Initial Budgets Reference Starting PDF Page Number**	**System Remediation Plan Reference Starting PDF Page Number**
IT OT Telecom Systems & Network	207	147
Transmission Line Rebuild	214	154
Transmission Priority Pole Replacements	220	160
Inspection of Transmission Lines	225	165
Technology Monitoring Systems	230	N/A
Substation Portfolio		
Program Brief	**Initial Budgets Reference Starting PDF Page Number**	**System Remediation Plan Reference Starting PDF Page Number**
Transmission Substation Rebuilds	237	172
Distribution Substation Rebuilds	243	178
Transmission Substation Reliability Improvements	248	N/A
Transmission Substation Security	252	183
Compliance & Studies	256	187
Distribution Substation Reliability Improvements	264	N/A
Physical Security for Distribution Facilities	268	195
Transmission Substation T&G Demarcation	270	198
Regional & Technical Facilities Security	276	N/A
Control Center and Buildings Portfolio		
Program Brief	**Initial Budgets Reference Starting PDF Page Number**	**System Remediation Plan Reference Starting PDF Page Number**
Facilities Development & Implementation	281	205
Critical Energy Management System Upgrades	287	211
Control Center Construction & Refurbishment	291	215
Critical System Operation Strategy & Processes	295	219
Critical Energy Management & Load Generation Balancing	299	223
Warehouse Security	303	
Enabling Portfolio		
Program Brief	**Initial Budgets Reference Starting PDF Page Number**	**System Remediation Plan Reference Starting PDF Page Number**
Vegetation Management	310	230

T&D Fleet	315	235
Capital Programs, PMO & Funding Management Office Setup	322	N/A
Tools Repair & Management	328	242
HSEQ and Technical Training	335	249
Asset Data Integrity	341	255
Project Management Software & Tools	346	N/A
Permits Processes & Management	351	260
Emergency Response Preparedness	356	N/A
Workflow Processes & Tracking	362	265
Project Controls, Risk Management & Estimating Offices	370	N/A
Construction & Commissioning Management Office	375	N/A
Materials Management	380	273
Operator Training	388	281
Support Services Portfolio		
Program Brief	**Initial Budgets Reference Starting PDF Page Number**	**System Remediation Plan Reference Starting PDF Page Number**
HR Programs	396	289
Renewables Integration, Minigrids & Generation Studies	405	N/A
IT OT Asset Management	410	297
IT OT Cybersecurity Program	417	304
IT OT Enablement Program	424	311
Critical Financial Controls	431	318
Critical Financial Systems	438	325
Land Record Management	445	332
Supporting Shared Services for Generation	449	N/A
Resource Planning and Processes to Improve Resource Adequacy and Cost Tracking	452	336
Improvements to Systems Dispatch for Increased Reliability and Resiliency	457	341
Land Acquisition & Dispute Management	462	N/A
Performance Metrics Process & System Upgrades	467	N/A
Financial Management Functions	471	N/A
Waste Management	478	346
Update to Third Party Use, Audit, Contract and Billing Procedures	482	350

IT OT Collaboration & Analytics	488	N/A
Technical Training, Test Lab & Historian	494	N/A
Safety Equipment	498	356
Integrated Safety & Operational Management System	502	360
Public Safety	506	364

1. Interdependencies

2. Program Description

2.1 Program Code in SRP template

2.2 Program Descriptions as in SRP Template

3. Program Rationale

3.1 Current State and Identified Gaps

3.2 [Description of Remediated State]

3.2.1 Activities to Achieve Remediation

3.3 Description of Program Desired State

3.3.1 Activities to be performed to achieve a Desired State

3.4 Program Benefits

Primary Goals		Objectives		Direct or Indirect Impact
☐	Prioritize Safety	☐	Promote a safe workplace	
		☐	Implement effective public safety practices	
☐	Improve Customer Satisfaction	☐	Deliver a positive customer experience	
		☐	Increase Service Reliability	
		☐	Deliver electricity at reasonable prices	
☐	Operational Excellence	☐	Enable Systematic Management of the Business	
		☐	Pursue Project Delivery Excellence	
		☐	Enable Employees to execute operations systematically	
☐	System Rebuild and Resiliency	☐	Effectively Deploy Federal Funding	
		☐	Restore Damaged Grid Infrastructure	
		☐	Improve Resilience of Vulnerable Infrastructure	
☐	Sustainable Energy Transformation	☐	Modernizing the grid	
		☐	Enable the digital transformation	
		☐	Enable the sustainable energy transformation	
☐	Other	☐	Other	

3.5 Program Risks

4. Program Funding and Timeline

4.1 Program Funding ($M)

Description	2022 Estimate	2023 Estimate	2024 Estimate	2025 Estimate	2026 + Estimate
Total Expenditure	$[x]	x	x	x	x

4.2 Program Resource Requirements

4.3 Program Timeline and Milestones

4.4 Estimating Methods and Assumptions

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-004

Request:

Provide final versions of the Detailed Process and Template used to develop the System Remediation Plan and effectively track its execution.

Response:

DETAILED PROCESS AND TEMPLATE – SRP DEVELOPMENT

SRP programs were selected as a subset within the broader process of developing a comprehensive, coordinated approach to Recovery and Transformation, which is described within RFI-LUMA-MI-20-0019-210406-PREB-003. Please refer to LUMA's response to RFI-LUMA-MI-20-0019-210406-PREB-002 for the risk-based screening analysis completed by LUMA. In formulating the SRP it was imperative to view the results of this broader process through the lens of conditions, activities and assets that pose the highest risk and identify initiatives and plans to remediate these risks. In order to determine the SRP, LUMA's activities included the following:

- conducted a system-wide gap assessment and developed initiatives,
- developed a comprehensive set of initiatives to address the identified gaps along with other broader goals to recover and transform the system and deliver benefits to customers,
- consolidated initiatives into improvement programs of similar, interdependent initiatives,
- prioritized and sequenced the improvement programs to ensure that the right changes are made at the right time to deliver value to customers and meet regulatory and contractual requirements, and
- conducted a screening process to delineate SRP initiatives, with focus only on those items that posed the highest risk. This risk-based screening process identified: 1) those processes and organizational systems that have a low maturity: 2) those assets in poor health that have the largest negative consequence or highest impact to the utility, its employees and customers.

LUMA developed the SRP with the information available and using accepted concepts and techniques to determine areas of high risk where there was insufficient data to support a more traditional and comprehensive analysis. LUMA will review and update the SRP based on ongoing improvements in source data and information so that execution of the SRP programs can be documented and the resulting improvement in maturity and health recorded.

This process is described in detail in the SRP submission within:

- Section 3.0 System Remediation Plan Process
- Section 4.0 Selection of System Remediation Plan Programs
- Section 5.0 System Remediation Plan Management
- Appendix G Component Business Model (further discussion within RFI-LUMA-MI-20-0019-210406-PREB-002)

EFFECTIVELY TRACK SRP EXECUTION

As discussed within Section 5.2 of the System Remediation Plan (SRP), LUMA plans to review and update the SRP on an annual basis, along with revisiting its forecasts for improvement programs within the annual budget process. In addition, LUMA will track progress of SRP programs. Metrics tracked will include funds spent as compared to budget, progress on schedule as compared to original, major milestones, and significant risk issues.

LUMA is currently in ongoing discussions with the P3A and FOMB with respect to how to report results of improvement programs. To avoid duplication and improve efficiency, we are developing one template for the purposes of all parties. We intend to the PREB for review once the template has been completed. Consideration for tracking execution on key improvement programs include reporting on a quarterly basis for updates in significant changes in cost, scope and milestones. It is anticipated that ongoing reporting will be initiated soon after service commencement subject to current PREPA capabilities, increasing with LUMA improvement activities.

LUMA intends to provide a final version of the template to track execution of SRP improvement programs after completion of the process and template, which we anticipate will be after service commencement.

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-005

Request:

To the extent it is not included in requests #2, #3 and #4 above, provide final versions of the Prioritization sequences, cost/benefit analyses and analyses completed to optimize SRP programs and investments.

Response:

Please refer to RFI-LUMA-MI-20-0019-210406-PREB-003.

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-006

Request:

To the extent it is not included in requests #2, #3, #4 and #5 above, provide the roadmap for SRP programs (O&M and capital expenditures) with Milestone Deliverables and projected benefits of SRP programs and investments, particularly reliability developments. Also include the consolidated projection of resource and material requirements, costs and schedules and timelines for the SRP programs developed by LUMA, along with the roadmap of resource requirements, costs, and schedules.

Response:

Please refer to RFI-LUMA-MI-20-0019-210326-PREB-006 Attachment 1 (provided in Microsoft Excel format): for timelines and key milestones ('3.4 Timelines & Milestones' tab), a summary of improvement program projected benefits aligned with primary goals and objectives ('2.5 Benefits' tab) and resource requirements ('3.2 Resource Requirements' tab). Attachment 1 is a summary of the information provided in the SRP submission Sections 6.1 to 6.7 and within the respective SRP program brief subsections 2.5, 3.2 and 3.4. For improvement program cost information, please refer to RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1, 'Program Prioritization' tab. For additional resource requirement information, including estimating and assumptions, please refer to RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1, 'Program_Estimates' tab Columns D-E and 'Input_Initiatives' tab Column F and K.

In addition, improvement programs are described in detail in the SRP submission:

- Section 6.0 System Remediation Plan Portfolios & Spend Profile
- Section 6.1 Customer Services portfolio
- Section 6.2 Distribution Portfolio
- Section 6.3 Transmission Portfolio
- Section 6.4 Substation Portfolio
- Section 6.5 Control Center and Buildings Portfolio
- Section 6.6 Enabling Portfolio
- Section 6.7 Support Services Portfolio

Projected Benefits of SRP Activities

As described in the prioritization and sequencing efforts in RFI-LUMA-MI-20-0019-210406-PREB-003, the breath and magnitude of improvement programs means that many benefits are far reaching and difficult to quantify. LUMA has identified associated impacts where possible and through its filing as:

- **Key Outcomes:** Please refer to Section 2.3.1 Key Outcomes of Initial Budgets, which detail key outcomes for the people of Puerto Rico for the first three years of recovery and transformation, as contemplated and a result of activities forecast in the Initial Budgets.
- **Program Benefits:** Each Program Brief included in both the System Remediation Plan and Initial Budgets included a discussion of impacts within Section 2.5. Program Benefits includes indicating

where items are addressed (Primary Goals, Objectives, Direct or Indirect Impact), and an associated discussion of these items.

In addition, LUMA has projected the following improvements in Performance Metrics:

Performance Metric	Fiscal Year 2022	Fiscal Year 2023	Fiscal Year 2024
Customer Service	11%	26%	31%
Safety	22%	36%	48%
System Average interruption Frequency Index (SAIFI)	7%	20%	30%
System Average interruption Duration Index (SAIDI)	10%	25%	40%

Note – cumulative improvements shown

LUMA continues to define achievements to reach LUMA's 3-year reliability targets, identified in the table above as SAIFI and SAIDI. LUMA is further coordinating our improvement programs (e.g., Distribution Pole & Conductor Repair, Vegetation Management, Distribution Automation, etc.) specific to meeting these reliability targets. The coordination efficiently and effectively targets key assets (e.g., overhead lines, poles, substations, etc.), addresses root-causes (e.g., vegetation, weather, etc.) and provides benefit the public (e.g. targeting worst-performing feeders and most critical customers).

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-007

Request:

For each SRP program, initiative, or capital expenditure category, provide a detailed breakdown of funding source (i.e., federally funded or non-federally funded). For federally funded SRP programs, initiatives, or capital expenditure categories, please provide estimated budget levels, and a description of what steps have been taken to initiate application for federal funding, and/or a roadmap and schedule of remaining steps that need to be taken. For federally funded SRP programs, initiatives or capital expenditure categories that have already initiated application for federal funding, please provide status reports on FEMA and or other agency progress in reviewing and approving those applications.

Response:

For available SRP cost and budget information, please refer to RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1. LUMA has not determined a detailed breakdown of funding source for SRP programs. As described within the SRP Section 4.3.3, the SRP and funding source will continue to be refined through LUMA field inspections.

LUMA notes that during the Front-End Transition it continues to work through activities defined within the OMA, but until commencement, PREPA continues forward with its responsible activities related to federally funded improvement programs. LUMA cannot undertake federally funded work until commencement and confirms it has not initiated funding programs in addition to items underway by PREPA. Through collaborative efforts PREPA and LUMA are aligned with the identification and prioritization of projects in the March 31, 2021 submission provided by PREPA within the PREPA 10-year plan (Docket Number NEPR-MI-2021-0002). As outlined within the March 26, 2021 Resolution and Order within Docket Number NEPR-MI-2021-0002, after commencement LUMA will comply and submit as required to PREB, status updates related to federal funding.

For programs that are identified beyond those items underway by PREPA, LUMA expects the steps to initiate the application for federal funding would include:

- Based on the needs identified, as prioritized and sequenced through the Recovery and Transformation Framework, and as improvement programs filed within the SRP and Initial Budgets, LUMA would work to ensure compliance to the funding criteria for those items identified,

- Develop initial scope of work (SOW) packages and obtain FEMA project numbers,

- Complete architectural and engineering preliminary design and submit final project SOW with level 3 cost estimate packages to FEMA for approval, and

- Begin addressing long delivery procurement items and initiate appropriate federal funding approvals.

Please refer to RFI-LUMA-MI-20-0019-210406-PREB-003 for further discussion on prioritization and sequencing.

System Remediation Plan
Docket ID: NERP-MI-2021-0004

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-008

Request:

Provide a listing of the 600 initiatives identified by LUMA in developing the SRP, including indication of which initiatives are or are not included in the final SRP and why. For each initiative, please include the scope description that was developed, the description of the solution, interdependencies with other initiatives, cost estimates and resource requirements, as discussed in Section 1.4.2 of the SRP.

Response:

Please refer to RFI-LUMA-MI-20-0019-210406-PREB-003 and specifically RFI-LUMA-MI-20-0019-210406-PREB-003 Attachment 1, which includes the 'Input_Initiatives' tab with Initiative Description (Column D) [scope and solution], Portfolio Column E [interdependencies by Portfolio grouping], Preliminary Resource Estimate Column F [resource requirements], and SRP Categorization Column I [indication of SRP inclusion/exclusion]. Please refer to 'Program_Estimates' tab for SRP Basis Column F, which was completed for improvement programs within the associated program brief. Programs were included in the SRP if they met the criteria for inclusion, namely whether the program addresses a high risk (high likelihood and high impact / consequence) activity or item identified through our gap assessments. Please refer to RFI-LUMA-MI-20-0019-210406-PREB-004 for the SRP criteria used to determine inclusion eligibility of improvement program and initiatives in the SRP.

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-009

Request:

Provide results from and supporting workpapers for the System Wide Gap Assessment LUMA completed in developing the SRP.

Response:

The results of the System Wide Gap Assessment and all associated supporting workpapers are included in the Gap Assessments. Please refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 1.

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-010

Request:

Provide a listing of the "comprehensive set of initiatives" to address gaps identified by LUMA and the assessments developed to prioritize, and sequence identified improvement programs in order to deliver value to customers and meet regulatory and contractual requirements.

Response:

Please refer to RFI-LUMA-MI-20-0019-210406-PREB-008 for a discussion of where to find initiative information, prioritization and sequencing, and the SRP criteria contained within RFI-LUMA-MI-20-0019-210406-PREB-003 and RFI-LUMA-MI-20-0019-210406-PREB-004.

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-011

Request:

Provide a working copy of the risk-based screening analysis completed by LUMA to identify (i) those processes and organizational schemes that have low maturity; and (ii) those assets in poor health that have the largest negative consequence or highest impact to the utility, its employees, and customers.

Response:

Please refer to LUMA's response to RFI-LUMA-MI-20-0019-210406-PREB-002 for a copy of the risk based screening analysis completed by LUMA to identify (i) those processes and organizational schemes that have low maturity; and (ii) those assets in poor health that have the largest negative consequence or highest impact to the utility, its employees, and customers.

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-012

Request:

Provide summary workpapers and results from the Organizational Health Assessment, Asset Condition Assessment, review of PREPA system performance data and review of regulatory, legal, and contractual requirements completed by LUMA in Phase I development of the SRP.

Response:

The results of the Organizational Health Assessment and all associated workpapers are included the Gap Assessments. Please refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachment 1.

The Asset Condition Assessment was completed through a series of asset inspections. Please refer to RFI-LUMA-MI-21-0019-210406-PREB-001 Attachments 2 - 6 for all asset inspection workpapers and results.

For summary workpapers and results associated with the review of PREPA system performance data, please refer to the following attachments:

1. For LUMA's System Performance Information document, please refer to RFI-LUMA-MI-21-0019-210406-PREB-012 Attachment 1. Attachment 1 of this response was previously filed on April 12th in Initial Budgets (NEPR-MI-2021-0004) as RFI-LUMA-MI-21-0004-210405-PREB-005d Attachment 4.

2. For data supporting LUMA's System Performance Information document, please refer to RFI-LUMA-MI-21-0019-210406-PREB-012 Attachment 2 provided in Microsoft Excel format.

For the review of regulatory, legal, and contractual requirements, completed by LUMA in Phase I development of the SRP please refer to the respective SRP program briefs within subsection 2. Please refer to RFI-LUMA-MI-20-0019-210406-PREB-012 Attachment 3 for SRP program applicable OMA provisions, applicable laws and public policy goals.

LUMA's System Performance Information

March 29, 2021

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Tables & Figures

1.0 Introduction & Overview

1.1 Introduction

The following information is excerpted from the LUMA Performance Metrics Baselines filing entitled Motion Resubmitting LUMA's Comments on Performance Baselines and Metrics Based on Data Presented on January 19th, 2021 by the Energy Bureau, and Resubmitting Proposed Performance Metrics and Baselines filed with the Energy Bureau on February 5, 2021.

The current performance of PREPA is well below industry standards. Establishing a robust set of Performance Metrics will begin to enable transparency, reverse negative performance trends and will further align LUMA with public policy – critical upon LUMA's commencement of T&S Services. This will advance LUMA's key goals: Prioritize Safety; Improve Customer Satisfaction; System Rebuild and Resiliency; Operational Excellence; and Sustainable Energy Transformation. The Puerto Rico Energy Board ("PREB") has also promulgated regulation concerning Performance Metrics, including NEPR-MI-2019-0014 and NEPR-MI-2019-0007. In the latter docket, PREB, through its order issued December 23, 2020, ordered that LUMA take part in the proceedings.

This submission describes the process followed by LUMA to study and evaluate PREPA's baseline performance for selected Performance Metrics. This work forms part of the Front-End Transition Services being delivered by LUMA under the OMA. LUMA has been reporting its progress during the Front-End Transition in monthly reports provided to P3A and PREB.

LUMA's review took place before December 2020 and included dedicated teams focused on this specific effort and the active participation of experts from each functional department in the organization. The process also included discussion with key stakeholders, who provided feedback on process, regulations and other context that informed this proposal. Please refer to Sections 1.2.3 Summary of Planning Team Activity and Section 2.0 Review of Processes & Data of this document for additional details.

The work performed by the LUMA teams required continuous interaction with the corresponding groups at PREPA for information gathering on current processes and available data. As part of the assessment of current practices, LUMA has determined that there are multiple gaps between PREPA's current processes and supporting data when compared against applicable industry standards and practices for the metrics listed in Annex IX of the OMA (hereafter referred to as "Annex IX"). In this submission, LUMA compares PREPA's current practices with industry standards and practices.

Because LUMA found significant gaps in both processes and data as explained in detail herein, LUMA proposes that reporting of certain metrics and their use in Annex IX be deferred until such time as LUMA is able to provide reliable data for those metrics. In order to provide a full set of metrics, LUMA proposes the addition of some Performance Metrics in Annex IX. Determining baseline performance to enable the setting of realistic performance targets for the proposed Performance Metrics was also a challenge due to current process and data gaps as explained in detail herein.

The proposed Performance Metrics are presented with details related to each, including descriptions, calculations, and performance baselines.

It must be noted that the design of LUMA's plans will be affected in several cases by the absence and lack of quality data. LUMA's plans for improvement in the proposed Performance Metrics is reflected in our prioritization of programs and projects, and ultimately in our Initial Budgets to be submitted to PREB under a separate filing as part of LUMA's Front-End Transition Services obligations.

2.0 Review of Processes & Data

2.1 Technical

The key findings and proposals for these metrics are presented below.

TECHNICAL

In accordance with the OMA and common industry practice, there are certain event exclusions permitted in the calculation and reporting of reliability Performance Metrics. The following defines and describes those exclusions and LUMA's findings.

Annex IX of OMA states that the calculation of technical Performance Metrics (SAIFI and SAIDI) excludes:

- Interruptions associated with outage event days using the IEEE 2.5 Beta Method (defined in IEEE Std 1366™-2012)
- Planned interruptions
- Interruptions caused by generation events

Detailed descriptions of the stated exclusions are of special importance:

THE IEEE 2.5 BETA METHOD

As defined in IEEE Std 1366™-2012[1], the Beta Method "is used to identify Major Event Days (MED), provided that the natural log transformation of the data results closely resembles a Gaussian (normal) distribution.[2] Its purpose is to allow major events to be studied separately from daily operation, and in the process, to better reveal trends in daily operation that would be hidden by the large statistical effect of major events."

- "An MED is a day in which the daily system SAIDI exceeds a threshold value, T_{MED}"
- "The MED identification T_{MED} value is calculated at the end of each reporting period (typically one year) for use during the next reporting period"
- $T_{MED} = e^{\wedge \alpha + 2.5\beta}$
  where α is the log-average of each daily SAIDI in the data set and β is the log-standard deviation of the data set
- "Five years of historical data is preferable for this method."

[1] The Institute of Electrical and Electronics Engineers, Inc., IEEE Guide for Electric Power Distribution Reliability Indices IEEE Std 1366TM-2012

[2] Ibid

PLANNED INTERRUPTIONS

As defined in IEEE Std 1366™-2012, "The loss of electric power to one or more customers that results from a planned outage."[3] The key test to determine if an interruption should be classified as a planned or unplanned interruption is as follows: if it is possible to defer the interruption, then the interruption is a planned interruption; otherwise, the interruption is an unplanned interruption."

INTERRUPTIONS CAUSED BY GENERATION EVENTS

An examination of the PREPA data and conversations with PREPA Operations and Reliability Reporting SMEs revealed that the existing process for identification of interruptions caused by generation events is highly likely to produce unreliable data.

- Rather than selecting from a predefined drop-down list to indicate the component level of where an interruption originated, the system operators manually input this information in an inconsistent manner into a free form field which leads to errors and difficulty searching and filtering thousands of records to identify those interruptions caused by generation events.
- Because of the free form nature of this field and the many ways that individual operators describe what occurred, it is impossible to confirm that all generation events have been excluded.

After examination of many data entries, LUMA made the following assumptions:

- Where generation is mentioned without a related transmission line(s), the event is assumed to be a generation event
- Where generation is mentioned with a related transmission line(s), the event is assumed to be a transmission event

Note that LUMA plans to add a field in the OMS with a drop-down selection of the system component level in which the interruption occurred (G, T, or D) for operators to directly record the necessary information.

IDENTIFIED GAPS AFFECTING PREPA'S REPORTED RELIABILITY PERFORMANCE METRICS

The Major Event Day Threshold (T_{MED}) has not been calculated since 2017 and that calculation was based on 4 years of data. The current value used is derived from assumed data that is not supported by recent operational history.

The process of restoring customer service may include restoring service to small sections of the system (typically a distribution feeder) until service has been restored to all customers.[4] According to IEEE, which

[3] Ibid

[4] The Institute of Electrical and Electronics Engineers, Inc., IEEE Guide for Electric Power Distribution Reliability Indices IEEE Std 1366™-2012 Section 4.3.2

sets the industry standard for collection of this performance data, each of these individual steps should be tracked to collect the start time, end time and the number of customers interrupted for each step.[5,6]

No procedure or functionality exists in the PREPA Outage Management System (OMS) to explicitly capture and track data related to Step Restoration (i.e., Partial Restoration). Currently at PREPA, the operator keeps a daily log of events manually and updates events in the interruptions database manually with his notes about which events were restored in steps. This entails manually creating events for each restoration step related to the main event, then changing the time stamps, events numbers, and cause codes to mimic what occurred in the field. The number of customers involved in each step is based on the knowledge of the operators and crews since PREPA's OMS model functionality, and process does not support capturing this information in the OMS. PREPA's current process is prone to errors and creates a difficult challenge in accurately calculating the number of customers and duration impacted for the event.

Under the current PREPA process, many interruption events are excluded from calculations based on cause code. PREPA excludes events from their calculations that are associated with 28 of PREPA's predefined 43 cause codes. Based on industry practice, events with 25 of the 28 excluded cause codes should be included in calculations. LUMA could not identify valid reasons for excluding these 25 cause codes. Please refer to Tables 2.1 and 2.2 for information regarding PREPA's cause codes.

Table 2.4. PREPA's Interruption Cause Codes

	PREPA	Industry Practice
Include	15	40
Exclude	28	3
Total	**43**	**43**

Table 2.5. PREPA's Interruptions with Cause Code Included or Excluded from Metric Calculation

ID	CODIGO_C (Espanol)	CODE _C (English)	PREPA	Best Practice
13	REMOCION DE ASBESTO O CAJAS DE ACEITE	ASBESTOS OR OIL BOX REMOVAL	exclude	include
15	SECUNDARIA/CONDUCTOR ROTO, ABIERTO O CRU	SECONDARY / DRIVER BROKEN, OPEN OR CRU	exclude	include
16	SECUNDARIA/ESTRUCTURA AVERIADA	SECONDARY / FAILED STRUCTURE	exclude	include
17	SECUNDARIA/DESGANCHE	SECONDARY / RELEASE	exclude	include
18	POWER TRANSFORMER AVERIADO	POWER TRANSFORMER FAILED	exclude	include
19	LINEA DE TRANSMISION/MAL TIEMPO/WET ASH	TRANSMISSION LINE / BAD WEATHER / WET ASH	exclude	include
20	LINEA DE TRANSMISION/ANIMAL U OBJETO EXT	TRANSMISSION LINE / ANIMAL OR EXT OBJECT	exclude	include
21	RELEVO DE CARGA POR CONTINGENCIA	CONTINGENCY LOAD RELAY	exclude	include

[5] The Institute of Electrical and Electronics Engineers, Inc., IEEE Guide for Electric Power Distribution Reliability Indices IEEE Std. 1366™-2012, May 2012, pages 2-3, 17-18.

[6] The Institute of Electrical and Electronics Engineers, Inc., IEEE Guide for Collecting, Categorizing, and Utilizing Information Related to Electric Power Distribution Interruption Events IEEE Std. 1782™-2014, March 2014, pages 10 and 19.

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ID	CODIGO_C (Espanol)	CODE _C (English)	PREPA	Best Practice
22	RELEVO DE CARGA PROGRAMADO	PROGRAMMED LOAD RELAY	exclude	include
23	MAL TIEMPO/RAYOS/WET ASH	BAD WEATHER / LIGHTNING / WET ASH	include	include
24	SUBIR/BAJAR TAP	UP / DOWN TAP	exclude	include
25	DISPARO DE BARRA DE TRANSMISION	TRANSMISSION BAR TRIP	exclude	include
38	LINEA DE TRANSMISION 38KV	38KV TRANSMISSION LINE	exclude	include
39	LINEA DE TRANSMISION 115KV	115KV TRANSMISSION LINE	exclude	include
48	TRANSFORMADOR AVERIADO	FAULTY TRANSFORMER	exclude	include
51	ESTRUCTURA AVERIADA	FAILED STRUCTURE	include	include
52	CONDUCTOR ROTO, ABIERTO O CRUZADO	BROKEN, OPEN OR CROSSED CONDUCTOR	include	include
53	DESGANCHE	RELEASE	include	include
54	PARARRAYOS DEFECTUOSO	DEFECTIVE LIGHTNING ROD	include	include
56	AISLADOR ROTO, PARTIDO O SAFADO	DAMAGED OR BROKEN LOOSE INSULATOR	include	include
58	EMPALME O TERMINACION SOTERRADA AVERIADA	UNDERGROUND JOINT OR TERMINATION BROKEN DOWN OR MALFUNCTING	include	include
59	CABLE SOTERRADO AVERIADO	UNDERGROUND CABLE BROKEN	include	include
63	DESCONECTIVO DEFECTUOSO	DEFECTIVE DISCONNECT	include	include
65	HERRAJE ROTO O PODRIDO	BROKEN OR ROTTED HARDWARE	include	include
66	CAJA PRIMARIA DEFECTUOSA O QUEMADA	DEFECTIVE OR BURNT PRIMARY CASE	include	include
67	UNIDAD SECCIONADORA (SWITCHING UNIT)	SWITCHING UNIT	include	include
69	OTRAS CAUSAS(CERTIFICAR)	OTHER CAUSES (CERTIFY)	exclude	include
83	FUEGO	FIRE	exclude	include
85	ERROR HUMANO	HUMAN ERROR	exclude	include
86	ANIMAL U OBJETO EXTRAÑO	ANIMAL OR STRANGE OBJECT	exclude	include
87	SOBRECARGA	OVERLOAD	include	include
88	DISTURBIO ATMOSFERICO	ATMOSPHERIC DISTURBANCE	exclude	include
89	EQUIPO DE CONTROL DEFECTUOSO	DEFECTIVE CONTROL EQUIPMENT	include	include
90	VIA LIBRE PROGRAMADA - DISTRIBUCION	FREE SCHEDULED ROUTE - DISTRIBUTION	exclude	exclude**
91	RELEVO DE CARGA AUTOMATICO	AUTOMATIC LOAD RELAY	exclude	include
92	VIA LIBRE A SOLICITUD DEL CLIENTE	FREE ROUTE AT THE CLIENT'S REQUEST	exclude	exclude**
93	LINEA DE TRANSMISION	TRANSMISSION LINE	exclude	include
94	BREAKER DEFECTUOSO O NO OPERA	BREAKER DEFECTIVE OR NOT OPERATING	exclude	include
95	VIA LIBRE PROGRAMADA - TRANSMISION	PROGRAMMED FREE ROUTE - TRANSMISSION	exclude	exclude**

ID	CODIGO_C (Espanol)	CODE _C (English)	PREPA	Best Practice
96	VIA LIBRE DE EMERGENCIA - DISTRIBUCION	EMERGENCY FREE ROUTE - DISTRIBUTION	exclude	include
97	VIA LIBRE DE EMERGENCIA - TRANSMISION	EMERGENCY FREE ROUTE - TRANSMISSION	exclude	include
98	PROTECCION DEFECTUOSA	DEFECTIVE PROTECTION	exclude	include
99	NO SE REPORTO CAUSA	NO REPORTED CAUSE	include	include

** Events with these cause codes are excluded from LUMA's Performance Metrics calculations in accordance with the OMA.

In addition to the above, transmission and substation events are excluded from PREPA's calculations. LUMA included these types of events in calculations per industry practices.

The valid data available spans the period May 2018 to August 2020 – data prior to May 2018 is either known to be faulty or not relevant to the configuration and state of today's T&D system due to destruction and emergency reconstruction after Hurricanes Irma and Maria.

ACTIONS TAKEN

Based on our assessment, PREPA has little documentation relating to why certain assumptions are made in the collection of data and calculation of reliability metrics.

As a result of this, LUMA built an interruption data analysis workbook, tested PREPA's assumptions and results, applied PREPA's practices and industry practices under various scenarios of historical data and compared the results.

The LUMA workbook was tested using sample data and results included in IEEE Std. 1366™-2012. PREPA's cause code exclusion list and system component level analyzed for reporting was also used to test the LUMA workbook. Initial results did not match and required many discussions with PREPA personnel, along with trial-and-error analyses. Based on these analyses, LUMA concluded that the current PREPA process excludes interruptions with three additional cause codes relative to what was indicated in PREPA's original list of exclusions (these have been included in Table 2.5). These are failed power transformer, animal or strange object, and defective protection. After excluding these cause codes, the LUMA workbook results matched PREPA's results within reason.

LUMA used the interruption data set from the period May 2018 through Dec 2019 to determine the Major Event Day (MED) Threshold (T_{MED}) as specified in the IEEE Guide for Electric Power Distribution Reliability Indices, IEEE P1366-2012. The T_{MED} calculation procedure in IEEE Std. 1366™-2012 specifies analyzing data up through the end of the year prior to that being currently analyzed and only excluding interruptions from the T_{MED} analysis identified as Planned Interruptions and interruptions caused by generation events. The standard also specifies only excluding interruptions from the metrics analysis identified as a Planned Interruptions, Interruptions Caused by Generation Events, and Interruptions

associated with Major Event Days. These exclusions are currently the predominant practice in the US[7] and only ones stated as exclusions in Annex IX of the OMA.[8]

SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX (SAIFI) AND SYSTEM AVERAGE INTERRUPTION DURATION INDEX (SAIDI)

IEEE Std. 1366™-2012 recommends using five years of historical data in the calculation of T_{MED}. However, five years of credible relative data does not exist. Only 20 months of historical data is available for use in the IEEE Std. 1366™-2012 T_{MED} calculation procedure. The impact that using this limited period of historical data has on the resulting reliability Performance Metrics is unknown and is impractical or impossible to determine. Therefore, LUMA plans to carefully determine and evaluate T_{MED} against the previous T_{MED}s as each additional year of historical data becomes available. While proposing baselines, LUMA will monitor the data for significant changes in T_{MED} during the initial 3-year period and identify any related changes to the proposed reliability Performance Metrics that require revisiting.

CUSTOMER AVERAGE INTERRUPTION DURATION INDEX (CAIDI)

Based on growing industry concerns that CAIDI is a limited value performance metric,[9] LUMA proposes eliminating CAIDI. Since CAIDI is the ratio between SAIDI and SAIFI, CAIDI can be misleading because it can remain the same even when the SAIDI and SAIFI values decrease. In this case, while the customer experience improves, the CAIDI metrics can remain the same, indicating that there was no improvement. Also, valuable improvements to the T&D system such as adding automation will tend to improve SAIDI and SAIFI but could also cause CAIDI to increase because automation tends to reduce less complicated interruptions to less than five minutes (IEEE definition of a sustained outage). The more complicated and time-consuming interruptions are left for field personnel to repair and restore.

CUSTOMERS EXPERIENCING MULTIPLE INTERRUPTIONS ($CEMI_N$)

Setting a meaningful $CEMI_N$ metric is highly dependent on accurate customer information and sufficient customer connectivity in the Outage Management System. Due to data quality issues including a lack of accurate customer information and a lack of customer connectivity in the Outage Management System, LUMA proposes deferring $CEMI_N$. LUMA plans to perform field inspections to increase customer connectivity in the OMS which will be reflected in the GIS. A new process to update the connectivity model will be put in place to capture the new and future updates. These field inspections will be started in year one. The new process for data connectivity will also be implemented in year one. Updates on the connectivity accuracy will be provided on an annual basis to allow for implementation of the $CEMI_N$ metric.

MOMENTARY AVERAGE INTERRUPTION FREQUENCY INDEX (MAIFI)

Due to data availability and quality issues, LUMA recommends deferring the MAIFI metric until it can be accurately measured. Determining a meaningful MAIFI metric is highly dependent on extensive high-quality monitoring infrastructure (e.g., Supervisory Control and Data Acquisition (SCADA), Advanced

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[7] Based on discussions with industry SMEs. Also see Evaluation of Data Submitted in APPA's 2018 Distribution System Reliability & Operations Survey https://www.publicpower.org/system/files/documents/2018%20DSRO%20Report_0.pdf and CPUC Electric System Reliability Annual Reports https://www.cpuc.ca.gov/General.aspx?id=4529.

[8] While OMA Annex IX uses some non-standard terminology, LUMA uses terminology under IEEE Std. 1366™-2012 as cited in the OMA.

[9] Richard Brown, *Electric Power Distribution Reliability 2nd Edition*, (Boca Raton, FL: CRC Press, 2009), 58-59.

Metering Infrastructure (AMI)) and information systems due to the short duration of a momentary interruption. Given that the extensive high-quality monitoring infrastructure (e.g., SCADA, AMI) and information systems necessary are not in place, meaningful values for this metric cannot be determined. Even utilities with extensive monitoring in place find this metric problematic to track consistently. Updates on the monitoring infrastructure to enable implementation of the MAIFI metric will be provided on an annual basis.

ADDITIONAL PERFORMANCE METRICS

DISTRIBUTION LINE INSPECTIONS & TARGETED CORRECTIONS

The Distribution Line Inspections & Targeted Corrections indicator measures the number of distribution line inspections completed, with data recorded in a database for analysis. 100% of the 1,057 three-phase, main line distribution feeders will be inspected over a four-year period, ramping up the number of inspections each year. The inspections will prioritize the worst performing feeders (based on Customer Interruptions and Customer Minutes Interrupted) and critical customers as defined by FEMA (e.g., hospitals, police stations, water treatment plants etc.). These inspections will assess the physical integrity of the poles/structure (and components such as hardware and insulators), line/conductor, guy/anchor system and grounding. The assessment will be used to provide an overall health rating which will identify issues that affect safety and reliability. Serious safety issues to either the public or workers will result in immediate attention by the utility.

PREPA does not have a documented health condition assessment of the grid assets. In recent years, PREPA has not conducted programed inspections of its assets. Inspections were conducted of a sample of the system but the condition of a majority of the grid assets is basically unknown and not documented. It is apparent to experienced LUMA utility engineers from visual observations, site visits and an asset condition sampling that the grid has widespread deficiencies. As a result, LUMA has incorporated field inspections to categorize assets according to their health condition, based on estimates of condition (likelihood of failure) and criticality (consequence of failure). The overall health asset score will be based on 0 being the worse to 4 being the best.

Asset scores of 0 and 1 will be the highest risk assets and will be given the highest priority to repair and / or replace. These will be assets (Asset Score of 0 and 1) that exhibit the following:

- High risk of failure, or already failed and likely to cause:
  - A safety impact to LUMA employees and contractors and members of the public
  - A violation of regulatory or legal requirements, including Act 17 which includes requirements related to safe (based on applicable safety standards) and prudent utility practices, or
  - An outage that will be widespread, long duration and could affect critical customers.

All deficient assets will go into a work planning process to schedule repair or replacement in order to achieve objectives.

TRANSMISSION LINE INSPECTIONS & TARGETED CORRECTIONS

The Transmission Line Inspections metric measures the number of transmission line inspections completed, with data recorded in a database for analysis. 100% of the 260 transmission 230kV, 115kV, and 38kV circuits will be inspected over a four-year period, ramping up the number of inspections each year. The 230kV and 115kV lines will take priority for inspections. These inspections will assess the

physical integrity of the structure (and components such as hardware and insulators), line/conductor, guy/anchor system, foundation and grounding. The assessment will be used to provide an overall health rating which will identify issues that affect safety and reliability. Serious safety issues to either the public or workers will result in immediate attention by LUMA.

PREPA does not have a documented health condition assessment of the grid assets. In recent years, PREPA has not conducted programed inspections of its assets. Inspections were conducted of a sample of the system but the condition of most of the grid assets is basically unknown and not documented. It is apparent to experienced LUMA utility engineers from visual observations, site visits and an asset condition sampling that the grid has widespread deficiencies. As a result, LUMA has incorporated field inspections to categorize assets according to their health condition, based on estimates of condition (likelihood of failure) and criticality (consequence of failure). The overall health asset score will be based on 0 being the worse to 4 being the best.

Asset scores of 0 and 1 will be the highest risk assets and will be given the highest priority to repair and / or replace. These will be assets (Asset Score of 0 and 1) that exhibit the following:

- High risk of failure, or already failed and likely to cause:
  - A safety impact to LUMA employees and contractors and members of the public
  - A violation of regulatory or legal requirements, including Act 17 which includes requirements related to safe (based on applicable safety standards) and prudent utility practices, or
  - An outage that will be widespread, affecting critical customers, and long duration.

All deficient assets will go into a work planning process to schedule repair or replacement in order to achieve the objectives.

T&D SUBSTATION INSPECTIONS & TARGETED CORRECTIONS

The Distribution and Transmission Substation Inspections metric measures the number of distribution and transmission substation inspections completed with data recorded in a database for analysis. 100% of the 392 distribution and transmission substations will be inspected over a four-year period, ramping up the number of inspections each year. Substations with critical customers and/or greatest number of customers served will take priority. These inspections will assess the physical integrity of the substation components and equipment including site/fencing/grounding, structures/foundations, high voltage equipment (breakers, power transformers, switches etc.), control building, protection control and SCADA systems, AC/DC systems and telecommunications systems. The assessments will be used to provide an overall health rating which will identify issues that affect safety and reliability. Serious safety issues to either the public or employees, resulting in immediate attention from the utility.

PREPA does not have a documented health condition assessment of the grid assets. In recent years, PREPA has not conducted programed inspections of its assets. Inspections were conducted of a sample of the system but the condition of most of the grid assets is basically unknown and not documented. It is apparent to experienced LUMA utility engineers from visual observations, site visits and an asset condition sampling that the grid has widespread deficiencies. As a result, LUMA has incorporated field inspections to categorize assets according to their health condition, based on estimates of condition (likelihood of failure) and criticality (consequence of failure). The overall health asset score will be based on 0 being the worse to 4 being the best.

Asset scores of 0 and 1 will be the highest risk assets and will be given the highest priority to repair and / or replace. These will be assets (Asset Score of 0 and 1) that exhibit the following:

- High risk of failure, or already failed and likely to cause:
  - A safety impact to LUMA employees and contractors and members of the public
  - A violation of regulatory or legal requirements, including Act 17 which includes requirements related to safe (based on applicable safety standards) and prudent utility practices, or
  - An outage that will be widespread, affecting critical customers, and long duration.

All deficient assets will go into a work planning process to schedule repair or replacement in order to achieve the objectives.

IMPACT OF FUTURE PROCESS AND IT SYSTEM IMPROVEMENTS - SAIDI & SAIFI

As described in section 4.4.1 of IEEE Guide Std 1782™-2014, entitled "Evaluating the Impact of Outage Management Process Changes":

> "Upon implementation of an automated outage management system, indexes are likely to change reflective of the differences in measuring outage events. Thus, while index levels may indicate deterioration, this is generally the result of collecting data which was not previously collected or may reflect more accuracy in the collection process. A variety of methods have been implemented to try to measure the effect of the process change."

While the above addresses moving from a manual process to an automated process, the same phenomena can occur when making any significant improvements in the outage management process or related IT systems and should be considered when comparing reliability Performance Metrics over time. Guidance from IEEE Std 1782 and IEEE Std 1366 will be considered whenever changes to the outage management process or related IT systems are contemplated and the end to end (the utility becoming aware of an interruption through its ultimate inclusion in the analysis and reporting of reliability Performance Metrics) impact evaluated and considered in the design and implementation of those changes.

TECHNICAL INTERPRETATIONS

The Institute of Electrical and Electronics Engineers, Inc. (IEEE) published standards will be used to interpret matters related to technical Performance Metrics. Where published standards do not address specific matters, IEEE standards in development and published papers and reports from IEEE committees and working groups will be used for guidance.

3.0 Baseline Performance

As introduced in Section 2, "Review of Processes and Data", LUMA relied on its subject matter experts in each of its functional teams to establish and validate performance metric baselines. These teams worked judiciously with the corresponding PREPA departments in a detailed analysis of the processes, tools and data available for each performance metric. The task included initial information gathering, followed by industry benchmarking for industry practices and a gap assessment. The teams then proceeded to calculate baselines using the available acceptable data and, when technically justifiable, used corrections or projections to seek more reasonable and consistent results.

As described in Section 2, in the evaluation process LUMA found that some of the established Performance Metrics cannot be properly baselined (mainly due to nonexistent or inadequate data) and in a few instances found doubtful results even with sufficient data. This supports the deferment of such Performance Metrics or the addition of others, at least until LUMA is able to establish the proper practices for data collection and calculation. The following describes the baseline calculations (and proposed changes) for the Performance Metrics that LUMA proposes to measure and report.

3.1 Technical

3.1.1 SAIFI, SAIDI

Description:

- System Average Interruption Frequency Index (SAIFI)
- System Average Interruption Duration Index (SAIDI)

Calculation: per IEEE Std 1366™-2012

Data Source: PREPA historical data (when available)

Metric baseline calculation: In the process of investigating and validating PREPA's reliability metrics, LUMA built an interruption data analysis workbook based on IEEE Std. 1366-2012 for metric validation, tested PREPA's assumptions and results, and applied industry practices using historical data. The effort included analysis and comparisons of several years of PREPA customer interruption data and reliability metrics calculations and the findings of this investigation are:

- PREPA is a worse performer when compared to other utilities in the IEEE Reliability Benchmarking Study
- Degrading Performance seen in 2020 vs 2019
- Interruption data prior to May 2018 is not valid for current use
- PREPA has not updated the Major Event Days (MED) Threshold (T_{MED}) since 2017
- PREPA uses a beginning period customer count
- PREPA does not include transmission or substation outages that result in customer interruptions
- PREPA does not include interruptions having certain cause codes (28 of 43 are excluded)
- Many reports of no lights/no power from customer telephone calls are not transferred to the Outage Management System (OMS)
- The electrical model in the GIS system that feeds into the OMS system is not accurate or up to date
- Crew findings, actions, time stamps and estimates of customers restored are predominately based on crew knowledge and experience and entered manually
- Dispatch processes are inconsistent between the different regions/districts and dispatch records are manual and handwritten
- As data and processes are improved, metrics will change even if there is no change in customer experience – these changes could appear to cause improved or degraded performance
- The significant increase in construction as LUMA takes control will increase the number of human element (HE) outages due to the necessary large number of construction/commissioning activities (currently excluded)

LUMA established the following parameters for determining reliability Performance Metrics:

- Using the interruption data set from the period May 2018 through Dec 2019 for determining the Major Event Day (MED) Threshold (T_{MED})
- The T_{MED} calculation procedure in IEEE Std. 1366™-2012 specifies analyzing data up through the end of the year prior to that being currently analyzed
- Data for 2020 is skewed by an extremely high daily SAIFI for Jan 7, 2020 due to a magnitude 6.4 earthquake
- Only excluding interruptions from the T_{MED} and metrics analysis identified as planned interruptions or caused by generation events
- Interruptions associated with Outage Event days using the IEEE 2.5 Beta Method (defined in IEEE Std 1366™-2012)

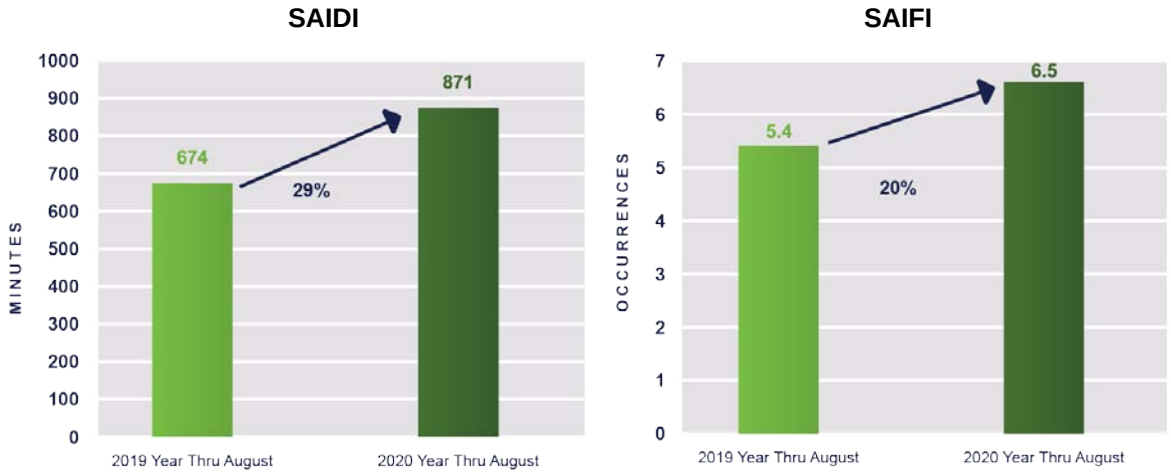
Note that the exclusions stated in the previous two bullets are stated in Annex IX of the OMA as the only exclusions from the calculation of this Technical Performance Metric. This is also currently the predominant practice in the US based on discussions with industry SMEs (see also Evaluation of Data Submitted in APPA's 2018 Distribution System Reliability & Operations Survey[10]).

Based on this analysis LUMA proceeded with specific calculations for Performance Metrics baseline as follows:

SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX (SAIFI) AND SYSTEM AVERAGE INTERRUPTION DURATION INDEX (SAIDI)

To develop a baseline for SAIDI & SAIFI, LUMA applied the definitions of IEEE Std. 1366-2012 and industry practices, calculating 2019 year-end results, 2019 through end-of-August results, and 2020 through end-of-August results (the latest data available at the time the calculations were made). Results through end-of-August results for both years were compared.

Figure 3.1. SAIDI and SAIFI Degradation Year-over-Year



As the charts indicate, the 2020 performance, based on LUMA calculations using industry standards, is significantly degraded from the 2019 performance over the first 8 months of the year, demonstrating that

[10] https://www.publicpower.org/system/files/documents/2018%20DSRO%20Report_0.pdf and CPUC Electric System Reliability Annual Reports https://www.cpuc.ca.gov/General.aspx?id=4529

2019 year-end results would not reflect an appropriate baseline. Therefore, LUMA annualized the 2020 through end-of-August results for SAIDI & SAIFI as follows:

SAIDI Baseline (minutes) = 871 minutes x (12 months ÷ 8 months) = 1,307 minutes

SAIFI Baseline (occurrences) = 6.5 occurrences x (12 months ÷ 8 months) = 9.8 occurrences

Note that applying the degradation factors shown in the charts would have resulted in baselines slightly higher than with the method chosen to estimate an appropriate baseline.

3.1.2 Distribution Line Inspections and Targeted Corrections, Transmission Line Inspections and Targeted Corrections, T&D Substation Inspections and Targeted Corrections

Infrastructure integrity and public/employee safety is paramount. LUMA will embark on the critical task of detailed inspection of PREPA's infrastructure and that effort is certainly a good target for measuring the performance of LUMA in the important period of reconstruction and upgrades. The Distribution Line Inspections and Targeted Corrections, Transmission Line Inspections and Targeted Corrections, and T&D Substation Inspections and Targeted Corrections metrics will assess the physical integrity of the poles, structures, components and equipment, providing data to develop an overall health rating from zero to four. With this information, LUMA will identify serious safety issues to either the public or workers, which will result in immediate priorities for the remediation process. Category 0 and Category 1 findings shall be incorporated in a plan to address within 60 days of identification.

LUMA proposes the use of the inspection effort in the mentioned categories as additional metrics.

Baselines: N/A (cannot be calculated since such tasks are not routinely performed by PREPA)

SRP Program Briefs- OMA Provisions, Energy Laws and Public Policies and Program Benefits

Programs	Applicable OMA Provisions[1]	Energy Laws, including Public Policies, Among Others and In Pertinent Part[2]	Program Benefits Identified in Section 2.5 of the Program Briefs
Customer Service Portfolio			
Distribution Streetlighting This program deals with upgrading and replacing distribution streetlights that are a physical safety hazard and are scheduled for repair or replacement based on their criticality. Along with increasing the number of distribution streetlights in service, this process will also include LED replacements and GIS data entry of all streetlights.	-Public lighting to be maintained and improved and operations and maintenance of these lights, including installation of LED lighting, to be in accordance with Prudent Utility Practice and Applicable Law. Annex I, Sections I(A) and II(F).	Act 17: -An initial objective of the energy public policy is to have all existing high-pressure sodium (HPS) lamps replaced with LEDs or renewable lights by 2030. *See* Section 1.6(12). **- It is a public policy that the Government of Puerto Rico shall achieve a swift conversion of all public lighting to light emitting diodes (LEDs) or renewable energy in order to reduce the general cost of illumination at a municipal and state level. *See* Section 1.5(7)(b).** **-It is a public policy to oversee the implementation of strategies geared toward achieving efficiency in the generation, transmission, and distribution of electric power so as to guarantee the availability and supply thereof at an affordable, just, and reasonable cost. *See* Section 1.5(2)(b).** **-It is a public policy to provide incentives for grid modernization incorporating technology as appropriate to attain the transformation goals without incurring excessive costs. *See* Section 1.5(9)(g).** **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** Act 57: **-It is a public policy that there be the implementation of strategies geared toward achieving efficiency in the generation, transmission, and distribution of electric power shall be sought in order to guarantee**	• Prioritize safety (implement effective safety practices) • Improve customer satisfaction (Deliver positive customer experience; deliver electricity at reasonable prices) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure) • Sustainable energy transformation (Modernizing the grid)

[1] This column lists requirements under the Puerto Rico Transmission and Distribution System Operation and Maintenance Agreement dated as of June 22, 2020, by and among the Puerto Rico Electric Power Authority ("PREPA" or "Owner"), the Puerto Rico Public-Private Partnerships Authority and LUMA Energy, LLC and LUMA Energy, LLC (the "OMA"), related to the Program. Citations are to the OMA.

[2] This column lists legal provisions under energy laws which may be related to the program, which the program advances or with which the program is consistent or aligned. Public policies are highlighted in bold and referenced in pertinent part. The list of laws is not meant to be exhaustive. Other laws and regulations may apply to the specific activities to be undertaken pursuant to each program, which will be complied with, as applicable. Act 17-2019, as amended, is referred to as "Act 17", Act 57-2014, as amended, is referred to as "Act 57"; and Act 83 of May 2, 1941, as amended, is referred to as Act 83. References to laws are not direct quotations.

Programs	Applicable OMA Provisions[1]	Energy Laws, including Public Policies, Among Others and In Pertinent Part[2]	Program Benefits Identified in Section 2.5 of the Program Briefs
		the availability and supply thereof at an affordable, just, and reasonable cost. *See* Section 1.2(d).	
Billing Accuracy & Back Office This program includes updates to bill print and delivery and other back office systems to ensure LUMA has the ability to continue to produce customer invoices. Current technology, machines and systems are outdated, creating a financial liability in delayed revenue of ~$12.5M for each day invoices are not produced. This upgrade includes acquisition of new hardware and software to support billing and customer contracts, along with removing redundant bill printing and enveloping equipment. Additionally, the program supports back office processing of service order paperwork and mobilizes resources to address backlogs of estimated and unbilled accounts. The program also implements a customer experience metrics dashboard and agent routing technology for billing services to reduce resolution time and increase customer satisfaction.	-Implement and optimize billing. Annex I, Section I(A)(4). -Monitor industry advances related to O&M, customer care and related services, etc. Annex I, Section (III). -Conduct timely collections of customer remittances and non-product revenue through lockbox operations, customer centers and other sources and transfer of funds as required for operations and other necessary payments. Annex I, Section VI (E). -Evaluate opportunities for outsourcing <u>any</u> specific activities that will provide greater efficiencies and value to customers and T&D system operations, subject to budget and regulatory constraints. Annex I, Section (I)(J). -Maintain and improve IT to satisfy business needs and requirements of OMA. Annex I, Section I(B)(9). -Conduct design and engineering for customer contact and needs assessment. Annex I, Section I(D)(1). -Determine, acquire deploy and maintain tools, equipment, Information Systems necessary to perform all O&M services. Annex I, Section (II)(D). -Conduct IT systems maintenance support and improvements in accordance with strategic goals, cybersecurity requirements, business continuity plan. Annex I, Section I (II)(E). -Have a continuous improvement program to enhance performance, efficiency and cost-effectiveness. (III) - Have a customer online and mobile website, including mobile applications for Iphone and Android, other electronic media, inbound and outbound customer communications systems. Annex I, Section IV(E)(2).	Act 17: -Electric Service companies must have an website to pay bills, examine consumption history, verify use patterns, obtain information about bills and other data to verify bill, examine data in real time, obtain status of internal matters and access a platform to request information. *See* Section 1.10(j). **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, a transparent and easy to understand bill, and a fast service response. *See* Section 1.5(10)(a).** **-It is a public policy to provide incentives for grid modernization incorporating technology as appropriate to attain the transformation goals without incurring excessive costs. *See* Section 1.5(9)(g).** **Act 57:** **-It is a public policy that every consumer shall have the right to receive a reliable, stable, and excellent electric power service. *See* Section 1.2(l).** Act 83: -PREPA to conduct its business in a responsible and efficient manner with accurate fiscal and operational practices (*See* Section 6(c)) and to maintain a website with required information and access to a platform by clients to request information. *See* Section 6(k). -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Improve customer satisfaction (Deliver positive customer experience; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of business; enable employees to execute operations systematically) • System rebuild and resilience (improve resilience of vulnerable infrastructure) • Sustainable energy transformation (enable the digital transformation)

Programs	Applicable OMA Provisions[1]	Energy Laws, including Public Policies, Among Others and In Pertinent Part[2]	Program Benefits Identified in Section 2.5 of the Program Briefs
Standardized Metering & Meter Shop Setup This program is targeted at establishing a location for standardized meter testing for LUMA and the provision of appropriate internal and external meter testing equipment. Enhanced procedures are also included, along with operational support for the new facility and equipment.	-Repair, replacements, upgrades and maintenance of meters, transmitters and appurtenant wiring, computer system and software to ensure proper operation and accurate reporting. -Maintaining proper operation and accurate reporting of new and existing meters, meter reading systems and components. -Repairing and maintaining new and existing meters to resume proper operations as soon as practicable but no later than the requirements of Performance Metrics. -Ensure new meters are within levels for accuracy. -Have a plan for inspection of commercial and industrial meters for proper operation and prevent tampering or bypassing and maintain records. Annex I, Section IX(G) and (H).	Act 17: **-It is a public policy to provide incentives for grid modernization incorporating technology as appropriate to attain the transformation goals without incurring excessive costs. *See* Section 1.5(9)(g).** **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable,. *See* Section 1.5(10)(a).** Act 57: - Electric Service Companies to adopt reasonable and fair norms and practices to guarantee the precision of the equipment they use to provide service. *See* Section 6.28(b). -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Improve customer satisfaction (increase service reliability; deliver electricity at reasonable prices) • Operational excellence (enable employees to execute operations systematically)
Modernize Customer Service Technology The Modernize Customer Service Technology program is primarily focused on remediating the telephony technology through the development and implementation of a new cloud-based contact center platform. Contact center software allows for the management of a high volume of inbound and outbound customer communications across a range of channels. Modernizing contact center procedures will mitigate LUMA's risk of customers being unable to report emergency situations. The program will create real time dashboards and reporting to cover key performance indicators across all of Customer Service, including the contact center, district offices and billing services.	-Maintaining customer contact through call centers with toll free service numbers, customer offices, authorized payment centers; customer contact to include maintaining a phone line for outage calls, until there is an alternative communication system or technology that makes this information otherwise available. Annex I, Sections IV(E)(1).	Act 17: **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable and a fast service response. *See* Section 1.5(10)(a).** **-It is a public policy to provide incentives for grid modernization incorporating technology as appropriate to attain the transformation goals without incurring excessive costs. *See* Section 1.5(9)(g).** **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9) (e).** Act 57: -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace; implement effective safety practices • Improve customer satisfaction (Deliver positive customer experience; increase service reliability)

Programs	Applicable OMA Provisions[1]	Energy Laws, including Public Policies, Among Others and In Pertinent Part[2]	Program Benefits Identified in Section 2.5 of the Program Briefs
Streetlight Billing This program is an audit of streetlights and associated billing. PREPA has approximately 500,000 streetlights which should be audited on a regular cycle to be determined based on asset management procedures. This program will require LUMA to complete a physical audit of the streetlights, assigning each with a unique indicator/asset tag. Once this process is complete, updates will be made in the Customer Care and Billing (CC&B) system to ensure customers are being billed accurately for their lights. The program also includes communication with customers on corrections to the street lighting system.	-Responsible for customer communications with municipalities. Annex I, Section IV(B). -Performance of all accounting and reporting functions including CILT, subsidies and public lighting reporting functions, provision of information to Owner and Administrator in connection with Owner's contesting of CILT-related assessments. Annex I, Section VI(B)(6).	Act 17: **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, a transparent and easy to understand bill, and a fast service response. *See* Section 1.5(10)(a).** Act 57: **- It shall be public policy that processing of billing or services disputes should be fair and diligent. *See* Section 1.2 (p).** - Transparent billing for each type of client is required. 2.9. -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a). Act 83: -Billing of municipalities to be conducted in accordance with section 22 of Act 83 (CILT).	• Prioritize safety (implement effective safety practices) • Improve customer satisfaction (Deliver positive customer experience; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of business;)
Distribution Portfolio			
Distribution Line Rebuild This program replaces damaged or ineffective overhead and underground distribution lines, including the following initiatives -Perform distribution line upgrades to improve reliability and resiliency -Restore out of service circuits as deemed necessary -Complete unfinished circuit construction presently abandoned as deemed necessary -Perform circuit voltage conversions to improve distribution capacity -Improve voltage profile to customers and reduce distribution energy line losses -Build new distribution line extensions to connect new customers -Install underground cable and / or tree wiring to improve service reliability and resiliency to critical customers	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Determine, acquire deploy and maintain tools, equipment, Information Systems necessary to perform all O&M services. Annex I, Section II (D). -Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A). -Maintain inventory and maintain and document an inventory control program, comply with inventory policy in Annex I, implement inventory consistent with T&D System policies and procedures adopted from time to time in accordance with Prudent Utility Practice, the	Act 17:-Principles governing the electric system include that electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii). **-It is a public policy to design infrastructure so it is robust and resistant to weather events adopting/using codes that comply with current norms recognized at a National level, as well as safety requirements in distribution poles; maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service; and put underground distribution in place after corresponding analysis and to the greatest extent possible in order to increase resiliency, rehabilitation and repopulation and with special emphasis on critical load facilities. *See* Section 1.5 (9)(b),(e) and (h).**	• Prioritize safety (Promote safe workplace; implement effective safety practices) • Improve customer satisfaction (increase service reliability) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure;) • Sustainable energy transformation (Modernizing the grid)

Programs	Applicable OMA Provisions[1]	Energy Laws, including Public Policies, Among Others and In Pertinent Part[2]	Program Benefits Identified in Section 2.5 of the Program Briefs
	Emergency Response Plan and/or the Federal Funding Procurement Manual. Annex I, Section II(B)(1)-(3). -Provide maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, Section VIII(C). -Perform normal and ordinary maintenance of all property, keep the system in operational condition and repair and in neat and orderly condition in accordance with Contract Standards; provide or make provisions for labor, materials, supplies, equipment, spare parts, consumables and services for maintenance consistent with Contract Standards and Prudent Utility Practice and conduct predictive, preventive and corrective maintenance as required by Contract Standards. Annex I, Section VIII(A). -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section I(B)(1).	-PREPA or the T&D contractor will conduct improvements to the Electric System so that it is robust, resilient and stable, in accordance with the modernization and reconstruction priorities established in Section 1.15 of Act 17, including: maintaining standardized transmission and distribution voltage compatible with those in the states of the United States; evaluating the benefits of substituting the transmission and distribution lines in the in urban town centers and critical services installations; and making the equipment and design uniform with the parameters of USDA Rural Utilities Service when feasible and appropriate, to help in the replacement in regular and emergency situations, among other things. *See* Section 1.15. (e), (g) and (n). Act 57: **-It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and security of the electric service. *See* Section 1.2 (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	
Distribution Pole and Conductor Repair This program focuses on minimizing the safety hazard caused by distribution poles and conductors that need to be repaired or replaced. Major repairs and replacement will be based on the results of an inspection of the distribution system and an analysis by engineers to schedule the repair or replacement based on the criticality of the pole. Following this process, safety hazard and priority poles will be replaced, along with damaged conductor and hardware.	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A). -Provide maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, Section VIII(C). -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section I(B)(1).	Under Act 17: -Principles governing electric system include that electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii). **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** -PREPA or the T&D contractor will conduct improvements to the Electric System so that it is robust, resilient and stable, in accordance with the modernization and reconstruction priorities established in Section 1.15 of Act 17, including replacement of temporary transmission towers by single poles and poles with material and design resistant to 150 mph winds and to prevent overload; replacement and maintenance	• Prioritize safety (Promote safe workplace; implement effective safety practices) • Improve customer satisfaction (Increase service reliability) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

Programs	Applicable OMA Provisions[1]	Energy Laws, including Public Policies, Among Others and In Pertinent Part[2]	Program Benefits Identified in Section 2.5 of the Program Briefs
		of transmission infrastructure anchoring systems to maintain resiliency and implementation of programs to mitigate corrosion in grid infrastructure; maintain standardization and compatibility with transmission and distribution voltage in the United States; evaluate the benefits of substituting transmission and distribution in downtown urban areas and critical installations, evaluate feasibility of relocating transmission lines for easy and quick access for repair and maintenance, among other things (all as applicable to the circumstances). *See* Section 1.15. Act 57: **It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and security of the electric service. *See* Section 1.2 (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	
Distribution Line Inspection This program is targeted at the inspection, testing and studying of distribution lines, along with required spot repairs and replacements. Distribution line inspections will first be prioritized by worst performing feeder and highest criticality with the initial assessment focusing on the identification of SRP items. Because of the magnitude of the work, the SRP portion of the inspection program is anticipated to take four years to complete with the remainder of inspections to be completed after the SRP period. Its aim is to help to restore the system and improve reliability and resiliency in line with current codes and standards, including, but not limited to: -Inspecting and treating poles -Performing ground rod inspections and minor repairs / replacements -Inspecting and replacing anchors and guys -Inspecting conductor condition -Performing line clearance checks to ensure that distribution assets meet live line clearance requirements under the applicable codes and standards -Inspection of streetlight heads and poles -Identification of third-party attachments	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Determine, acquire deploy and maintain tools, equipment, Information Systems necessary to perform all O&M services. Annex I, Section II (D). -Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A). -Maintain inventory and maintain and document an inventory control program, comply with inventory policy in Annex I, implement inventory consistent with T&D System policies and procedures adopted from time to time in accordance with Prudent Utility Practice, the Emergency Response Plan and/or the Federal Funding Procurement Manual. Annex I, Section II(B)(1)-(3). -Provide maintenance with due regard for public health and safety and at a safe level consistent	Act 17: -Principles governing electric system include electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii) **-It is a public policy to design infrastructure so it is robust and resistant to weather events adopting/using codes that comply with current norms recognized at a National level, as well as safety requirements in distribution poles; maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service; and put underground distribution in place after corresponding analysis and to the greatest extent possible in order to increase resiliency, rehabilitation and repopulation and with special emphasis on critical load facilities. *See* Section 1.5 (9)(b),(e) and (h).** -PREPA or the T&D contractor will conduct improvements to the Electric System so that it is robust, resilient and stable, in accordance with the modernization and reconstruction priorities established	• Prioritize safety (Promote safe workplace; implement effective safety practices) • Improve customer satisfaction (increase service reliability) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

Programs	Applicable OMA Provisions[1]	Energy Laws, including Public Policies, Among Others and In Pertinent Part[2]	Program Benefits Identified in Section 2.5 of the Program Briefs
-Inspection of third-party attachments for applicable code violations as it pertains to the electrical system The identified major repairs and replacements will then be undertaken by a separate program.	with Contract Standards. Annex I, Section VIII(C) -Perform normal and ordinary maintenance of all property, keep the system in operational condition and repair and in neat and orderly condition in accordance with Contract Standards; provide or make provisions for labor, materials, supplies, equipment, spare parts, consumables and services for maintenance consistent with Contract Standards and Prudent Utility Practice and conduct predictive, preventive and corrective maintenance as required by Contract Standards. Annex I, Section VIII(A) -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section I(B)(1)	in Section 1.15 of Act 17, including: maintaining standardized transmission and distribution voltage compatible with those in the states of the United States; evaluating the benefits of substituting the transmission and distribution lines in the in urban town centers and critical services installations; and making the equipment and design uniform with the parameters of USDA Rural Utilities Service when feasible and appropriate, to help in the replacement in regular and emergency situations, among other things. *See* Section 1.15. (e), (g) and (n). Act 57: **It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and security of the electric service. *See* Section 1.2 (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	
Transmission Portfolio			
IT OT Telecom Systems & Network This program includes IT and OT telecom investments to improve and revamp PREPA's mobile radio system, phone exchange and telephone systems and fiber optic and microwave data radio systems. These systems are used to carry all PREPA IT and OT data. Capability enhancements will include improved first responder and emergency response communication, greater resilience of the internal telecommunications network, an enhanced microfiber network and network control center to improve centralized monitoring and control over facilities and IT traffic.	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Determine, acquire deploy and maintain tools, equipment, Information Systems necessary to perform all O&M services. Annex I, Section II (D). Maintain and improve IT to satisfy business needs and requirements of OMA. Annex I, Section I(B)(9). Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A).	Act 17: -Principles governing electric system include that electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii). **-It is a public policy to provide incentives for grid modernization incorporating technology as appropriate to attain the transformation goals without incurring excessive costs. *See* Section 1.5(9)(g).** **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9) (e).** Act 57: **- It is a public policy that the safety and reliability of the electricity infrastructure shall be guaranteed by integrating clean and efficient energy and using**	• Prioritize safety (Promote safe workplace; implement effective safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • Operational excellence (Enable systematic management of business; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure) • Sustainable energy transformation (Modernizing the grid; enable the digital transformation; enable the sustainable energy transformation)

Programs	Applicable OMA Provisions[1]	Energy Laws, including Public Policies, Among Others and In Pertinent Part[2]	Program Benefits Identified in Section 2.5 of the Program Briefs
		modern technological tools that promote economic and efficient operations. *See* Section 1.2(e). **-It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and security of the electric service. *See* Section 1.2 (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	
Transmission Line Rebuild This program includes numerous 230kV, 115kV, and 38kV projects to harden and upgrade the transmission system. This includes rebuilding towers along with reinforcing and replacing anchors and guys as required over the course of the upgrade process. This program also incorporates an investigation to mitigate corrosion and restore line design capacity. In addition to the overhead transmission line upgrade work, this program includes the 115kV underground cable replacement in the San Juan area.	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Determine, acquire deploy and maintain tools, equipment, Information Systems necessary to perform all O&M services. Annex I, Section II (D). -Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A). -Maintain inventory and maintain and document an inventory control program, comply with inventory policy in Annex I, implement inventory consistent with T&D System policies and procedures adopted from time to time in accordance with Prudent Utility Practice, the Emergency Response Plan and/or the Federal Funding Procurement Manual. Annex I, Section II(B)(1)-(3). -Provide maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, Section VIII(C) -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section I(B)(1)	Act 17: -Principles governing electric system include electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii). **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)((e).** -PREPA or the T&D contractor will conduct improvements to the Electric System so that it is robust, resilient and stable, in accordance with the modernization and reconstruction priorities established in 1.15 of Act 17, including replacement of temporary transmission towers by single poles and poles with material and design resistant to 150 mph winds and to prevent overload; replacement and maintenance of transmission infrastructure anchoring systems to maintain resiliency and implementation of programs to mitigate corrosion in grid infrastructure, among other things. *See* Section 1.15. Act 57: **It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and security of the electric service. *See* Section 1.2 (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace) • Improve customer satisfaction (increase service reliability) • Operational excellence (enable employees to execute operations systematically) • System rebuild and resilience (restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

Transmission Priority Pole Replacements This program is to replace damaged overhead transmission poles and towers, along with associated hardware and conductors. Repairs under this program will be made based on results of an inspection conducted under a separate program. Major repairs and replacement will be based upon the results of an inspection of the transmission system and an analysis by engineers to schedule the repair or replacement based on the criticality of the pole or structure. Following this process, safety / hazard and priority poles and structures will be replaced, along with damaged conductor and hardware. This program is to replace damaged overhead transmission poles and towers, along with associated hardware and conductors. Repairs under this program will be made based on results of an inspection conducted under a separate program. Major repairs and replacement will be based upon the results of an inspection of the transmission system and an analysis by engineers to schedule the repair or replacement based on the criticality of the pole or structure. Following this process, safety / hazard and priority poles and structures will be replaced, along with damaged conductor and hardware.	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A). -Provide maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, Section VIII(C) -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section I(B)(1)	Act 17: -Principles governing electric system include electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii). **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** -PREPA or the T&D contractor will conduct improvements to the Electric System so that it is robust, resilient and stable, in accordance with the modernization and reconstruction priorities established in Section 1.15, including replacement of temporary transmission towers by single poles and poles with material and design resistant to 150 mph winds and to prevent overload; replacement and maintenance of transmission infrastructure anchoring systems to maintain resiliency and implementation of programs to mitigate corrosion in grid infrastructure; maintain standardization and compatibility with transmission and distribution voltage in the United States; evaluate the benefits of substituting transmission and distribution in downtown urban areas and critical installations, evaluate feasibility of relocating transmission lines for easy and quick access for repair and maintenance, among other things (all as applicable to the circumstances). *See* Section 1.15. Act 57: **It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2 (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace; implement effective safety practices) • Improve customer satisfaction (increase service reliability) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

Inspection of Transmission Lines This program includes the inspection, data collection, testing of the Transmission Lines. Required repairs and replacements will be identified in order to restore the system and improve reliability and resiliency in line with current codes and standards. Inspections will include, but are not limited to, poles, towers and structures, ground rods, anchors and guys, conductor condition and line clearance checks. During this process, the program will also incorporate minor repairs, but major repairs will be undertaken by a separate program.	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A). -Maintain inventory and maintain and document an inventory control program, comply with inventory policy in Annex I, implement inventory consistent with T&D System policies and procedures adopted from time to time in accordance with Prudent Utility Practice, the Emergency Response Plan and/or the Federal Funding Procurement Manual. Annex I, Section II(B)(1)-(3). -Provide maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, Section VIII(C) -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section I(B)(1).	Act 17: -Principles governing electric system include electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii). **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** -PREPA or the T&D contractor will conduct improvements to the Electric System so that it is robust, resilient and stable, in accordance with the modernization and reconstruction priorities established in law, including reinforcing substation assets, including transformers, circuit interrupters, switch gear, and equipment control, such as relays and communication equipment, among other things. *See* Section 1.15. Act 57: **-It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and security of the electric service. *See* Section 1.2 (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace; implement effective safety practices) • Improve customer satisfaction (increase service reliability) • Operational excellence (Enable systematic management of business; pursue project delivery excellence) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure) • Sustainable energy transformation (Modernizing the grid; enable the digital transformation)
Substations Portfolio			
Transmission Substation Rebuilds This program covers required inspection, repair and rebuilding of damaged substations. This includes upgrades to the latest codes, industry standards and practices to improve long term reliability. The program also includes installation of gas insulated switchgear, and replacement of electromechanical and electronic relays, along with repairs and rebuilding of transmission and distribution substations impacted by flooding.	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A). -Maintain inventory and maintain and document an inventory control program, comply with inventory policy in Annex I, implement inventory consistent with T&D System policies and procedures adopted from time to time in accordance with Prudent Utility Practice, the Emergency Response Plan and/or the Federal Funding Procurement Manual. Annex I, Section II(B)(1)-(3). -Provide maintenance with due regard for public health and safety and at a safe level consistent	Act 17: -Principles governing electric system include electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii). **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** -PREPA or the T&D contractor will conduct improvements to the Electric System so that it is robust, resilient and stable, in accordance with the modernization and reconstruction priorities established in law, including reinforcing substation assets, including transformers, circuit interrupters, switch gear, and equipment control, such as relays and communication equipment, among other things. *See* Section 1.15.	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Increase service reliability) • Operational excellence (Enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

	with Contract Standards. Annex I, Section VIII(C). -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section I(B)(1)	Act 57: **It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and security of the electric service. *See* Section 1.2 (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	
Distribution Substation Rebuilds This program focuses on improvements to distribution substations as a means to strengthen the distribution grid. This includes hardening and modernizing distribution substations, upgrades to the latest codes, industry standards and practices and the replacement of electromechanical and electronic relays.	-Be responsible for T&D service and related activities for safe and reliable operation and maintenance of system. Annex I, Section I(A). -Determine, acquire deploy and maintain tools, equipment, Information Systems necessary to perform all O&M services. Annex I, Section II (D). -Manage and maintain all assets in accordance with Contract Standards. Annex I, Section II(A). -Maintain inventory and maintain and document an inventory control program, comply with inventory policy in Annex I, implement inventory consistent with T&D System policies and procedures adopted from time to time in accordance with Prudent Utility Practice, the Emergency Response Plan and/or the Federal Funding Procurement Manual. Annex I, Section II(B)(1)-(3). -Provide maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, Section VIII(C). -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section I(B)(1).	Act 17: -Principles governing electric system include electric service must comply with technical requirements and reliability and quality standards. *See* Section 1.4 (ii). **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** -PREPA or the T&D contractor will conduct improvements to the Electric System so that it is robust, resilient and stable, in accordance with the modernization and reconstruction priorities established in the law, including reinforcing substation assets, including transformers, circuit interrupters, switch gear, and equipment control, such as relays and communication equipment, among other things. *See* Section 1.15. Act 57: **-It is a public policy that the electric infrastructure will be maintained in optimal conditions to ensure reliability and security of the electric service. *See* Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Increase service reliability) • Operational excellence (Enable systematic management of the business; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)
Transmission Substation Security This program will focus on a variety of security concerns at transmission substations. The program will replace and add new security technology and hardware to deter, detect and delay security incidents (e.g., intrusion, theft, damage, employee and public safety). Security concerns addressed by this program include fencing and gates including locking devices, lighting, signage, perimeter cleanup and window bars.	-Develop and maintain a physical security program in accordance with Prudent Utility Practice and applicable laws and regulations. Annex I, Section VIII(C)(7). -Develop a Physical Security Plan for the T&D System. Section and implement it. This plan must guard against physical damage to the T&D System caused by trespass, theft, negligence,	Act 17: **-It is a public policy that the energy infrastructure be maintained in optimal conditions to ensure reliability, resilience and safety. *See* Section 1.5(9)(e).** **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable. *See* Section 1.5(10)(a).**	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Operational excellence (Enable systematic management of the business; enable employees to execute operations systematically)

	vandalism, malicious mischief or cyber-attacks. Sections 4.2(h) and 5.7(c). -Take all reasonable precautions for the health and safety of, and provide all reasonable protection to prevent physical damage, bodily injury or loss as a result of the operation of the T&D System, to the public, materials and equipment used in the O&M Services and other property constituting part of the T&D System. Section 5.7(a). -As part of its asset management and maintenance services, managing and maintaining T&D System security to protect it from vandalism, terrorism or other acts. Annex I, Section II(A)(6).	Act 57: **-It is a public policy for the electricity infrastructure to be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• System rebuild and resilience (Restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)
Compliance and Studies This program consists of three major workstreams: -*Distribution Studies* focused on eliminating major cascading outages caused by lack of proper coordination of protective devices and implementing new procedures and standards to ensure the distribution system complies with regulations and Prudent Utility Practice. -A group of different projects to ensure *Distribution Substation Grounding Compliance* to IEEE Std 80-IEEE Guide for Safety in AC Substation Grounding and National Electrical Safety Code (NESC). This includes safety and environmental projects including grounding, animal contact mitigation and civil site upgrades (including insulating gravel additions). -Studies, procedures and standards for *Substations and Transmission Compliance* focused on: identify issues with current infrastructure, developing and implementing new procedures and standards to ensure that transmission lines and substations both comply with codes and regulations and can effectively and safely perform their requirements, field implementation of grounding compliance requirements to ensure the transmission and distribution substations meet proper grounding requirements for safety purposes, in accordance with IEEE Std 80-IEEE Guide for Safety in AC Substation Grounding and NESC.	-Provide maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, paragraph VIII(C). -Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, paragraph I(B)(1).	Act 17: **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** **-It is a public policy to design the infrastructure of the Electrical System to be more robust and resistant to weather events and other disasters, so as to apply and adopt design codes that meet the National standards in effect, as well as security requirements for the utility poles that carry power distribution lines and telecommunication lines, among others things. *See* Section 1.5(9)(b).** Act 57: **-It is a public policy for the electricity infrastructure to be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Increase service reliability) • Operational excellence (Enable systematic management of the business; enable employees to execute operations systematically) • System rebuild and resilience (Restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)
Physical Security for Distribution Facilities This program is targeted at the physical security of distribution facilities by replacing and repairing gates and fencing around substations. It also addresses provision of locks for distribution switches and pad mounted transformers in the field and meter locks at customer metering points.	-Establish and prioritize workplace safety initiatives to bring the T&D System up to Prudent Utility Practices by systematically evaluating all T&D System sites to address immediately safety issues, including grounding and tripping hazards and lighting. Annex I, Section VIII(C)(1). -Take reasonable precautions for the health and safety of all persons working in the system to	Act 17: **- It is a public policy that the infrastructure be designed to be robust and resistant to weather events adopting or using codes that comply with current norms recognized at a national level and safety requirements in distribution poles, and that it be maintained in optimal conditions to ensure**	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Deliver electricity at reasonable prices) • System rebuild and resilience (Restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

	prevent damage, injury or loss to the system or its property. Annex I, Section VIII(C)(2). -Establishing reasonable safeguards for health and safety protection, including fencing, posting danger signs and other warnings against hazards and promulgating safety regulations. Annex I, Section VIII(C)(3).	**reliability, resilience and safety, among other things. *See* Section 1.5(9)(b) and (e).** Act 57: **-It is a public policy that the infrastructure be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2(f).**	
Transmission Substation T&G Demarcation This program focuses on the demarcation requirements for transmission and generation (T&G) assets. The demarcation between PREPA's generation assets and the T&D System is required under the OMA, specifically the Scope of Services as set forth in Annex I. The demarcation must include high accuracy metering[1] to accurately measure power generation into the network and facilitate communication with the system operator. The accurate measurement will provide transparency of total net power generation and energy losses to the network. The demarcation must also be defined in a non-complicated manner to provide LUMA and GenCo operators sufficient clarity regarding the separation of assets to prevent mis-operation, and subsequent damage to equipment and / or system.	-Be responsible for the development of necessary interconnection agreements, interconnection demarcation points, and the work plan to delineate generator interconnection. Annex I, Section II(G).	Act 17: **-It is a public policy that the infrastructure be maintained in optimal conditions to ensure reliability, resilience and safety, among other things. *See* Section 1.5(9)(e).** **-It is a public policy to promote transparency and citizen participation in every process related to electric power service in Puerto Rico. *See* Section 1.5(10)(c).** Act 57: **-It is a public policy that the infrastructure be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2 (f).**	• Improve customer satisfaction (Increase service reliability) • System rebuild and resilience (Improve resilience of vulnerable infrastructure)
Control Center and Buildings Portfolio			
Facilities Development & Implementation This program is focused on the development, implementation, and maintenance of several different areas over*see*n by the Real Estate, Facility Services and Architectural divisions, including: -Construction required to remediate facilities and real property (e.g., warehouses, mechanic shops, etc.) damaged by natural disasters -Implementation of a facility capital improvement program -Implementation of an asset management system to support facility maintenance and the preventative maintenance program -Deployment of robust security devices and systems -Development and implementation of a tenant services program -Development and implementation of safety training programs for Facilities employees -Planning and construction to delineate space between LUMA and the GenCo	-Manage and maintain all assets of the T&D System in accordance with Contract Standards. Annex I, Section II(A). -Manage and perform construction improvements Annex I, Section I(A)(2). -Maintain, improve and develop culture of safety. Annex I, Section I(B)(1). -Provide physical operations and maintenance. Annex I, Section I(B)(3). -Manage effectively environmental, health and safety program. Annex I, Section I(D)(3). -Comply with environmental requirements. Annex I, Section I(D)(3). -Develop and maintain a physical security program in accordance with Contract Standards. Annex I, Section VIII(C)(7). -Maintain safety and security. Annex I, Section VIII(C).	Act 17: **-To maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, . *See* Section 1.5(10)(a).** Act 57: **- It is a public policy that the infrastructure be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2 (e).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace) • Improve customer satisfaction (increase service reliability; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding; improve resilience of vulnerable infrastructure) • Sustainable energy transformation (enable the sustainable energy transformation) • Other (Environmental)

	-Establish and prioritize workplace safety initiatives to bring system up to Prudent Utility Practices, by systematically evaluating all T&D System sites to address immediately safety issues, including grounding, tripping hazards and lighting. Annex I, Section VIII(D)(1). -Establish reasonable safeguards for health and safety and protection, including fencing, posting danger signs and other warnings against hazards and promulgating safety regulations. Annex I, Section VIII(C)(2). -Designate qualified and responsible employees for supervision of T&D health and safety, prevention of fires and accidents and coordination of activities with federal and local officials. Annex I, Section VIII(C)(5).		
Critical Energy Management System Upgrades This program will replace an obsolete and unsupported EMS and add relevant technology to operate the electric system safely and reliably. This program will also implement an Advanced Distribution Management System (ADMS). The EMS is a computer-based system that is used by operators to monitor, control and optimize the performance on the generation, transmission and distribution system.	-During Emergency Operating Conditions, the Operator shall implement the Emergency Response Plan per established protocols. After Emergency Operating Conditions have passed, the Operator shall conduct post-event reviews with stakeholders, gather and analyze data from the Energy Management System to determine appropriateness of actions taken during the Emergency Event, and communicate and implement lessons learned. Annex I, Schedule 1.	Act 17: **-It is a public policy to provide incentives for grid modernization incorporating technology as appropriate to attain the transformation goals without incurring excessive costs. *See* Section 1.5(9)(g).** Act 57: **-It is a public policy that the safety and reliability of the electricity infrastructure shall be guaranteed by integrating clean and efficient energy and <u>using modern technological tools that promote economic and efficient operations</u>. *See* Section 1.2(e).**	• Operational excellence (Enable systematic management of business; enable employees to execute operations systematically) • System rebuild and resilience (improve resilience of vulnerable infrastructure) • Sustainable energy transformation (Modernizing the grid; enable the digital transformation; enable the sustainable energy transformation)
Control Center Construction & Refurbishment This program is targeted at construction or refurbishment of buildings to house the main and back-up control centers and all ancillary support services. Since the current control centers have fallen into disrepair, this program will rebuild or relocate them, along with establishing a designated backup control center. At the same time, the program will centralize more control center activities.	Annex I of the OMA requires Operator serve the role of T&D System operator including managing control center operations, including generation scheduling and economic/reliable T&D System dispatch.	Act 17: **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response. *See* Section 1.5(10)(a).** Act 57:	• Operational excellence (Enable systematic management of business; enable employees to execute operations systematically) • System rebuild and resilience (improve resilience of vulnerable infrastructure) • Sustainable energy transformation (Modernizing the grid; enable the digital transformation; enable the sustainable energy transformation)

		- It is a public policy that the infrastructure be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2 (e). -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	
Critical System Operation Strategy & Processes This program will develop all the procedures and strategies necessary to operate the electrical system reliably and efficiently. This includes procedures and strategies associated with managing blackstarts, load shedding, outage management, transmission lines, substations, distribution and deployment of the Outage Management System. Procedures developed will be consistent with the System Operation Principles including the implementation of Estimated Times of Restoration for customers.	Develop a plan to enhance [critical system operation strategy and processes] that connects to customer service interface to keep customers apprised of system status and service orders in real time. Annex I..	Act 17: -Electric service companies to maintain a website free of cost, to: (i) pay bills and examine usage and billing information; (ii) examine real time data; (iii) examine status of legislated changes; and (iv) request information/documents. *See* Section 1.10(j). -Electric service companies to notify customers at least 48 hours prior to planned service interruptions through website, social media, etc. (*See* Section 1.10(k).) **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response. *See* Section 1.5(10)(a).** Act 57: **- It is a public policy that the infrastructure be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2 (e).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a). Act 83: -PREPA to maintain a website free of cost, to pay bills and examine usage and billing information and information about the infrastructure, among other information. *See* Section 6(k). -PREPA to notify customers at least 48 hours prior to planned service interruptions through website, social media, etc. (see Section 6(l).)	• Prioritize safety (Promote safe workplace) • Improve customer satisfaction (increase service reliability) • Operational excellence (Enable systematic management of business; enable employees to execute operations systematically) • System rebuild and resilience (improve resilience of vulnerable infrastructure)
Critical Energy Management & Load Generation Balancing This program will develop capabilities related to energy management and	The OMA requires the Operator promote, administer, plan, develop and implement energy	Act 17:	

load / generation balancing. This includes development of strategies and mechanisms for energy balancing and the establishment and implementation of a strategy for operating reserves. Additionally, the program will address technology needs to efficiently manage renewable energy, battery storage and demand response programs, along with defining the role of microgrids within the electrical system as required by the IRP.	efficiencies, demand response, load management and renewable energy programs and policies as required under Applicable Law, regulation or IRP. Annex I, Section I (F).	**- It is a public policy the implementation of strategies to achieve efficiency in generation and T&D so as to ensure availability and supply at affordable, just and reasonable cost. *See* Section 1.5(2)(b).** **- It is a public policy to maximize use of available resources and empower consumer to be part of energy resources through energy efficiency, demand response, distributed generation, among others. *See* Section 1.5(2)(e).** **-It is a public policy that incentives be provided for the modernization of the grid incorporating adequate technology to comply with transformation objectives, without resulting in excessive costs. *See* Section 1.5(9)(g).**	

-It is a public policy to ensure the safety and reliability of the electricity infrastructure through the use of modern technological tools, so as to propel an economic and efficient operation and allow integration and deployment of renewable energy sources. *See* Section 1.5(9)(a).

Act 57: -Develop/implement strategies to further Act 57, including reducing/stabilizing energy costs, demand response programs, RPS, energy storage and DG integration and ensure all rates and charges for purchase, wheeling and interconnection are just and reasonable, in the public interest and comply with PREB regulations. *See* Section 6.3(f).	• Operational excellence (Enable systematic management of business; enable employees to execute operations systematically) • Sustainable energy transformation (Modernizing the grid; enable the digital transformation; enable the sustainable energy transformation)		
Enabling Portfolio			
Vegetation Management This program includes work to abate or mitigate immediate vegetation risk in the most critical locations, along with an ongoing program to clear and re-establish rights-of-way (ROWs) to standard widths. This includes an immediate response for the highest risk sites, along with reclaiming rights-of-way corridors (especially those impacting the transmission and distribution systems). The program will also use a field enabled IT tool to manage the vegetation management program, along with ongoing line clearance, pruning, tree removal, herbicides, etc. and vegetation management training. In addition, the program will evaluate and pilot an advanced artificial intelligence (AI) remote sensing project to improve vegetation management.	-Implement a vegetation management plan in accordance with Prudent Utility Practice and Applicable Law. OMA, Annex I, Section II(A)(10). -Develop and submit to PREB and Administrator a Vegetation Management Plan during the Front-End Transition Period that will become effective on the Service Commencement Date. Section 4.2(h).	Act 17: -An initial objective of the law is to establish priorities for the maintenance of infrastructure of the electric system and create vegetation management plans. *See* Section1.6(5) -The Operator of the T&D must prepare and present a comprehensive Vegetation Management Program in accordance with best industry practices to protect the integrity of the grid. This program must meet the requirements of this Section including required clearances, routine patrolling and releasing vegetation, adopting accepted industry tree trimming standards, such as ANSI, produce periodic and detailed compliance reports; establish adequate and independent fund for the program. *See* Section 1.16. **-It is a public policy to maintain the electric infrastructure in optimal conditions to ensure**	• Prioritize safety (implement effective safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

		reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e). Act 57: -PREB will oversee the compliance of T&D Operator with a vegetation management plan in accordance with best practices in the industry to protect the grid. See Section 6.3 (ww). - **It is a public policy that the infrastructure be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2 (e) and (f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	
T&D Fleet The T&D Fleet program includes a range of activities and investments to bring the current fleet up to industry standards including vehicles, aircraft and equipment. Additionally, activities will be focused on initializing and improving processes for data collection, repair and maintenance of these assets.	-Perform normal and ordinary maintenance of all property (including fleet, machinery and tools), keep systems in operational condition and repair in neat and orderly condition in accordance with Contract Standards; provide or make provisions for labor, materials, supplies, equipment, spare parts, consumables and services for maintenance consistent with Contract Standards and Prudent Utility Practice and conduct predictive, preventive and corrective maintenance as required by Contract Standards. Annex I(VIII)(A). -Provide fleet management and refueling in compliance with Commonwealth and federal alternative fuel environmental compliance programs, maintenance, signage. Annex I(II)(C).	- Act 17: **It is a public policy to maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** **It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response. *See* Section 1.5(10)(a).** **-It is a public policy, among other things, that there be compliance with applicable environmental laws and regulations to improve the quality of life of Puerto Ricans and ecosystems in Puerto Rico. *See* Section 1.5(6)(a).** -Electric service companies to address energy and environmental challenges using available scientific and technological advances and incorporating best practices in the energy industry in other jurisdictions (see Section 1.10(c)) and to comply with all applicable environmental laws and regulations (see Section 1.10(g)). **Act 57:** **-It is a public policy that every consumer shall have the right to receive a reliable, stable, and excellent electric power service. *See* Section 1.2(l).**	• Prioritize safety (Promote safe workplace; implement effective safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

Tools Repair & Management This program focuses on a personal protective equipment (PPE) and tooling plan to address safety needs along with putting in place a better system for managing PPE and tools. In addition to acquiring the needed PPE and tools, this program includes implementation of a centralized Tool and Equipment Crib system to improve inventory management, tool maintenance, tool supply and coordination and oversight of tool and equipment use.	-Take all reasonable precautions for the health and safety of, and provide all reasonable protection to prevent physical damage, bodily injury or loss as a result of the operation of the T&D System to all members of the public and persons involved in providing O&M Services, among other things. Section 5.7(a). -Take all actions which may be required to bring the T&D System into and maintain compliance with applicable Commonwealth and federal requirements in accordance with and related to the Occupational Health and Safety Act. Section 5.7(b). -Maintain, improve, and develop a culture of safety. Annex I, Section I(B)(1). -Manage effectively an environmental, health and safety program and maintain compliance with the corresponding regulatory requirements. Annex I, Section I(D)(3) and (4). -Maintain inventory and maintain and document an inventory control program (including of materials and parts), comply with inventory policy in Annex I, implement inventory consistent with T&D System policies and procedures adopted from time to time in accordance with Prudent Utility Practice, the Emergency Response Plan and/or the Federal Funding Procurement Manual. Annex I, Section II(B)(1)-(3). -Determine, acquire deploy and maintain tools, equipment and Information Systems necessary to perform all O&M services. Annex I, Section II(D). -Perform normal and ordinary maintenance of all property (including fleet, machinery and tools), keep system in operational condition and repair in neat and orderly condition in accordance with Contract Standards; provide or make provisions for labor, materials, supplies, equipment, spare parts, consumables and services for maintenance consistent with Contract Standards and Prudent Utility Practice and conduct predictive, preventive and corrective maintenance as required by Contract Standards. Annex I, Section VIII(A).	Act 17: **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of the electric service. *See* Section 1.5(9)(e).** Act 57: **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure the reliability and safety of the electric service. *See* Section 1.2(f).**	• Prioritize safety (Promote safe workplace; implement effective safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • Operational excellence (Enable systematic management of business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)

	-Conduct maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, Section VIII(C).		
HSEQ and Technical Training This program provides health, safety, environment and quality (HSEQ) and technical training to field personnel. During the initial stage, basic technical training will be provided through the LUMA College and HSEQ training conducted by internal subject matter experts and external providers. Personnel will gain technical skills training for field employees to become fully qualified to complete their work safely and efficiently. Subsequent enhanced technical training will be provided through the LUMA College. Enhanced training modules will be developed and administered based on operational needs for the type of technology being implemented but could include areas such as operation of smart grids, work on energized lines (e.g., hot line and barehand programs), splicing of conductors and helicopter work for transmission repairs. This program will help to instill a new safety culture across the T&D System, thus reducing safety incidents, bringing the T&D System into compliance with Contract Standards, including but not limited to OSHA and broader industry standards and improving overall employee efficiency.	-Implementing safety measures in maintenance activities, by among other things, designating qualified and responsible employees for supervision of T&D health and safety, prevention of fires and accidents and coordination of activities with federal and local officials. Annex I, par. (VIII)(C)(5). -As part of day to day operations, conduct hiring and training of human resources. Annex I, par. I(B)(8).	Act 17: **- It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** **-It is a public policy, among other things, that there be compliance with applicable environmental laws and regulations to improve the quality of life of Puerto Ricans and ecosystems in Puerto Rico. *See* Section 1.5(6)(a).** -Electric service companies are to comply with applicable environmental laws and regulations. See Section 1.10(g). Act 57: **-It is a public policy for the electricity infrastructure to be maintained in optimal conditions to ensure reliability and safety of the electric service. See Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • Operational excellence (Enable systematic management of the business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)
Asset Data Integrity This program is targeted at assuring the integrity of key asset data, with a focus on GIS and Computerized Maintenance Management System (CMMS). The program works with stakeholders to identify data requirements, determine process and templates for storing data and update asset data systems with data gathered from asset inspections. These systems and the integrity of their information are fundamental for accurate modeling, operations and planning of the T&D System.	-Manage and maintain all assets of the T&D System, including machinery, equipment, structures, improvements and condition assessment of the electrical system components, in accordance with the Contract Standards. Annex I, Section II (A).	Act 17: - The modernization of the T&D System to be achieved through specific improvements to the T&D System which will require obtaining system data through an effective and accurate GIS system. **- It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).**	• Prioritize safety (Promote safe workplace) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • Operational excellence (Enable systematic management of the business; pursue project delivery excellence; enable employees to execute operations systematically)
Permits Processes & Management LUMA will introduce new systems for managing operational permits to enable the system to comply with permit obligations and to provide support for federal funding requirements. The program will develop new procedures so that responsible parties have the tools to meet permit obligations and identify additional necessary permits, along with introducing training	-Along with PREPA and the P3 Authority, to identify the Governmental Approvals required for the commencement of operations on the Service Commencement Date and assist PREPA with any required assignments and/or new applications. Section 4.4.	Act 17: **- It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).**	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability)

programs to allow those procedures to be implemented effectively. As part of this program, LUMA will continue to engage with government agencies to adhere to any adjusting permitting procedures or requirements to be implemented after commencement.	-Make all filings and applications and submit all reports necessary to obtain and maintain all Governmental Approvals in the name of PREPA, or if required by Applicable Law, LUMA. Section 5.6(b). -Effectively manage an environmental, health and safety program. Annex I, Section I(D)(3). -Be responsible for environmental compliance, maintenance of documentation and acquisition of permitting required for T&D operations. Annex I, Section I(G)(2).	**-It is a public policy, among other things, that there be compliance with applicable environmental laws and regulations to improve the quality of life of Puerto Ricans and ecosystems in Puerto Rico. *See* Section 1.5(6)(a).** -Electric service companies are to comply with applicable environmental laws and regulations. *See* Section 1.10(g). Act 57: **-It is a public policy for the electricity infrastructure to be maintained in optimal conditions to ensure reliability and safety of the electric service. *See* Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Operational excellence (Enable systematic management of the business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding)
Workflow Processes & Tracking This program includes several initiatives that address gaps between current state and standard industry methods, practices, and processes to manage, track, and report progress on the performance of work in the field. Specific areas include: -Establishing proper and safe maintenance regimens (preventive, planned and unplanned corrective, and emergency repairs) -Adherence to design, maintenance, and construction standards, -Implementing proper inspection and testing procedures, -Key Performance Indicators (KPIs) / Metric performance management with a focus on measuring and driving improvements in work quality, effectiveness, and efficiency, and -Implementing technologies to reduce cycle time in identifying and remediating any performance anomalies while concurrently supporting the Asset Management function.	-Manage and maintain all assets of the T&D System in accordance with Contract Standards. Annex I, Section II(A). -Use asset management strategies and risk optimization to achieve combined technical performance, life cycle cost, safety, customer satisfaction and regulatory compliance. Annex I, Section II(A)(1). -Perform normal and ordinary maintenance of all property (including fleet, machinery and tools); keep system in operational condition and repair in neat and orderly condition in accordance with Contract Standards; provide or make provisions for labor, material, supplies, equipment, spare parts, consumables and services for maintenance consistent with Contract Standards and Prudent Utility Practice; and conduct predictive, preventive and corrective maintenance as required by Contract Standards. Annex I, Section VIII(A).	Act 17: **-It is a public policy that the energy infrastructure be maintained in optimal conditions to ensure reliability, resilience and safety. *See* Section 1.5(9)(e).-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response. *See* Section 1.5(10)(a).** Act 57: **-It is a public policy, among other things, that the infrastructure be maintained in optimal condition. *See* Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of the business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure)
Materials Management This program covers all aspects of materials management and includes management of: Asset recovery Oil containment Inventory management	-Take all reasonable precautions for the health and safety of, and provide all reasonable protection to prevent physical damage, bodily injury or loss as a result of the operation of the T&D System to (A) all members of the public and persons involved in providing O&M Services; (B) all materials and equipment used in the provision of the O&M	Act 17: **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of the electric service. *See* Section 1.5(9)(e).** **-It is a public policy, among other things, that there be compliance with applicable environmental laws**	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Increase service reliability; deliver electricity at reasonable prices)

Asset suite reconfiguration Demand training Implementation and measurement of KPIs related to materials Capital plans for material handling and warehousing storage and facility improvements Logistics function and related equipment Material evaluation and disposition	Services and under the care, custody or control of Operator; and (C) other property constituting part of the T&D System and under the care, custody or control of Operator. OMA, Section 5.7(a)(i)(A) and (B). -Establish and enforce all reasonable applicable safeguards for health and safety and protection, including posting danger signs and other warnings against hazards and promulgating health and safety regulations; and develop and carry out a site-specific health and safety program, including employee training and periodic inspections designed to implement the requirements of Section 5.7(a) of the OMA (Safety and Security-Safety). Section 5.7(a)(ii) and (vii). -Take all actions which may be required in order to bring the T&D System into and maintain compliance with applicable Commonwealth and federal requirements in accordance with and related to the Occupational Health and Safety Act. OMA, Section 5.7(b). -Manage and maintain all assets of the T&D System in accordance with Contract Standards, including procurement and inventory management. Annex I, Section II(A)(5). -Maintain, improve and develop a culture of safety. Annex I, Section I(B)(1). -Manage effectively an environmental, health and safety program and maintain compliance with the corresponding regulatory requirements. Annex I, Section I(D)(3) and (4). -Maintain inventory and maintain and document an inventory control program (including of materials and supplies), comply with inventory policy in Annex I, implement inventory consistent with T&D System policies and procedures adopted from time to time in accordance with Prudent Utility Practice, the Emergency Response Plan and/or the Federal Funding Procurement Manual. Annex I, Section II(B)(1)-(3). - Determine, acquire deploy and maintain tools, equipment and Information Systems necessary to perform all O&M services. Annex I, Section II(D).	**and regulations to improve the quality of life of Puerto Ricans and ecosystems in Puerto Rico. *See* Section 1.5(6)(a).** -Electric service companies to address energy and environmental challenges using available scientific and technological advances and incorporating best practices in the energy industry in other jurisdictions (see Section 1.10(c)) and to comply with all applicable environmental laws and regulations (see Section 1.10(g)). **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response. *See* Section 1.5(10)(a).** Act 57: **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure the reliability and safety of the electric service. *See* Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Operational excellence (Enable systematic management of the business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure)

	-Perform normal and ordinary maintenance of all property (including fleet, machinery and tools), keep system in operational condition and repair in neat and orderly condition in accordance with Contract Standards; provide or make provisions for labor, materials, supplies, equipment, spare parts, consumables and services for maintenance consistent with Contract Standards and Prudent Utility Practice and conduct predictive, preventive and corrective maintenance as required by Contract Standards. Annex I, Section VIII(A). -Conduct maintenance with due regard for public health and safety and at a safe level consistent with Contract Standards. Annex I, Section VIII(C).		
Operator Training This program will provide all necessary requirements to support new and existing system operator training along with operator competency assessments. As such, the program will address the need to improve current operator training and allow for new cohort(s) of operators to support the system. This will also improve operator response during an emergency situation.	-Be responsible for day-to-day operation of the T&D System, including all human resources functions, including hiring and training employees. Annex I, Section I(B)(8). -Conduct meter-reading crew training to be able to detect and prosecute misuse. Annex I, Section IX(G)(1)(m). -Develop and carry out a site-specific health and safety program, including employee training. Section 5.7(a).	Act 17: **It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of the electric service. *See* Section 1.5(9)(e).**	• Prioritize safety (Promote safe workplace) Operational excellence (Enable employees to execute operations systematically)
Support Services Portfolio			
HR Programs This Program Brief covers four separate programs to support the LUMA Human Resources (HR) department. This includes the following programs: -**Employee benefits**. LUMA will implement industry competitive benefits programs for its employees such as an Employee Assistance Program (EAP), Long term Disability (LTD), Short term Disability (STD), Life Insurance, and a defined contribution plan (401(k)). -**Employee engagement**. LUMA will launch an employee engagement strategy to ensure all employees feel part of the new LUMA family, and they feel engaged with decision making and their long-term career progression. The comprehensive employee engagement strategy includes employee activities, regular employee surveys, volunteerism, town halls, career growth opportunities and spaces where employees can express their feedback. -**Training**. LUMA will implement core compliance training programs to ensure employee understanding and compliance with all Corporate policies	Annex I of the OMA requires the Operator be responsible for the day-to-day operation of the T&D System including all human resources functions, including hiring and training employees.	Act 17: **It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of the electric service. *See* Section 1.5(9)(e).**	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • Operational excellence (Pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Restore damaged grid infrastructure; improve resilience of vulnerable infrastructure) • Other (Attract talent, increase employee retention and provide incentive for improved performance)

and procedures, State Laws and Regulations, to prevent any inappropriate conduct. In addition, all functions in LUMA will implement a training program inclusive of at least the minimum requirements necessary to improve employee skill sets to bring performance to Contract Standards. This comprehensive functional training program will be applied across all functions in LUMA. -**Support software**. The scope of the General Technology Human Capital Management program is to introduce standardized processes for management of employee data, employee performance management, talent management, succession planning, recruitment on-boarding and off-boarding management, learning management and compensation management. It will also provide employee and manager self-service capabilities			
IT OT Asset Management LUMA will introduce industry standard IT OT asset management procedures and provide the necessary system upgrades to ensure secure business operation and continuity, as well as improved customer responsiveness. The scope of the program includes assessing PREPA's application and infrastructure portfolio and beginning a series of software and infrastructure upgrades that drive toward a transition to cloud-based technology. IT OT resilience in this program also extends to the establishment of a new backup data center to ensure reliability and resilience of technology systems. **]**	-Consistent with Contract Standards be responsible for providing information technology systems maintenance support and improvements in accordance with strategic goals of achieving interoperability and flexibility of open design and standard-based data architecture and in compliance with requirements that support network and day-to-day activities. Annex I, Section II(E). -Manage and maintain all assets of the T&D System in accordance with Contract Standards by using strategies and risk optimization to achieve combined technical performance, life cycle cost, safety, customer satisfaction and regulatory compliance. Annex I, Section II(A).	Act 17: **-It is a public policy that every electric service company design mitigation options adapted to their information technology networks and operations, which shall include the adoption of specific cyber security measures to effectively prevent and manage cyber-attacks. *See* Section 1.5 (8)(d).** **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response. *See* Section 1.5(10)(a).** **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of the electric service. *See* Section 1.5(9)(e).**	• Prioritize safety (Promote safe workplace) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • Operational excellence (Enable systematic management of business; enable employees to execute operations systematically) • System rebuild and resilience (Improve resilience of vulnerable infrastructure)
IT OT Cybersecurity Program The program centers on enabling the business and protecting key organizational assets, including people, resources and technology to ensure that cyber risk, internal and external threats, vulnerabilities, and natural disasters are identified and mitigated based on risk and readiness factors. Improving cybersecurity is a critical part of hardening the Transmission and Distribution (T&D) system and ensuring business continuity. Cyber risks could severely impact T&D operations to the extent of widespread failure. This program will design and implement the people, processes, and technologies essential for effective cybersecurity governance, cybersecurity operations and monitoring, vulnerability identification and management, and cloud security.	Section 13 of the OMA requires compliance with a Data Security Plan to meet the standards requirements specified in the OMA.	Act 17: **-It is a public policy and an initial objective to be reached under that law, that all electric service companies design options for mitigation adapted to their information and operative technology networks, including adoption of concrete cyber security measures to prevent and effectively manage cyber-attacks. *See* Section 1.5(8)(d) and 1.6(6). - It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).**	

Act 57: -PREB to oversee that electric service companies establish measures to prevent and effectively manage cyber-attacks that could affect the information and operative technology networks in accordance with recognized industry practices. *See* Section 6.3(xx).**-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure the reliability and safety of the electric service. *See* Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • Operational excellence (Enable systematic management of business; enable employees to execute operations systematically) • System rebuild and resilience (Improve resilience of vulnerable infrastructure) • Sustainable energy transformation (Modernizing the grid; enable the digital transformation; enable the sustainable energy transformation)	
IT OT Enablement Program This program will implement capabilities to deliver and maintain IT OT services and systems enabling LUMA operations through the implementation of industry best practices and standardized processes and tools. Fit for purpose devices will be deployed to carry out business operations enabling near real-time access to electric network data providing a safer work environment. Industry best practices for Information Technology Service Management (ITSM) will be implemented so that technology assets are managed, provisioned and maintained securely. Processes will be implemented to establish end user device standards along with mobile application management (MAM) to control how end user devices are used. Enterprise Architecture (EA) and project management frameworks will be implemented to ensure software and infrastructure assets are implemented, maintained and disposed of in accordance with vendor support requirements including patching and upgrades. This will mitigate the risk of prolonged system outages on non-vendor supported software and infrastructure. By the end of the program LUMA will have developed and executed an operational data strategy, developed foundational enterprise architecture guidance and outlined a cloud strategy. LUMA's IT and OT organization will be able to design, plan, deliver, operate and control the lifecycle of IT OT services, projects and assets. An IT service management tool will ensure that technology is managed, provisioned and maintained securely to reduce risk to the organization and enable users.	- Manage and maintain all assets of the T&D System in accordance with Contract Standards, including determining, acquiring, deploying and maintaining tools, equipment and Information Systems necessary to perform all O&M services and conducting IT systems maintenance support and improvements in accordance with strategic goals, cybersecurity requirements and a business continuity plan. Annex I, Section II (A), (D) and (E). -Consistent with Contract Standards, provide information technology systems maintenance support and improvements in accordance with, among other things "strategic goals of achieving interoperability and flexibility of open design and standard-based architecture, data modeling and software development life cycle." Annex I, Section II(E). -Develop a data security, cyber security and information security plan relating to the T&D System, which shall be subject to the System Remediation Plan. Section 4.2(h). -Ensure that all Operator Related Parties, Contractors and Subcontractors comply with the Data Security Plan, any other Contract Standards and all requirements of Applicable Law regarding data security, cyber security and information security, use commercially reasonable efforts to ensure these parties notify of material Cybersecurity Breaches, loss or theft of data, and take certain actions to address it. Section 13.3(a). -Update the Data Security Plan from time to time to meet the requirements of Section 13.3(b), including that it incorporate reasonable and appropriate organizational, administrative, physical and technical measures to maintain the security of and to protect the internal and external integrity of the System Information and related Information Systems against any unlawful or unauthorized use, processing, destruction, loss,	Act 17: **- It is a public policy, among other things, to provide incentives for the modernization of the grid that incorporates adequate technology to achieve the transformation objectives without excessive costs. *See* Section 1.5(9)(g).** **- It is a public policy and as an initial objective to be reached under that law, that all electric service companies design options for mitigation adapted to their information and operative technology networks, including adoption of concrete cyber security measures to prevent and effectively manage cyber-attacks. *See* Section 1.5(8)(d) and 1.6(6).** **- It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** Act 57: **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure the reliability and safety of the electric service. *See* Section 1.2(f).**

	alteration, disclosure, theft or access, among other things. Section 13.3(b).		

-All energy companies must provide an adequate, reliable, safe, efficient service, among other things. *See* Section 6.21(a).	• Prioritize safety (Promote safe workplace) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability) • Operational excellence (Enable systematic management of business; enable employees to execute operations systematically)		
Critical Financial Controls The Critical Financial Controls program focuses on two key areas, internal control and internal audit. These two areas will build skills and capabilities in financial reporting and audit; and will update and enforce industry standard policies and procedures that comply with the latest laws and regulations. Internal Controls will address various internal control items, including obtaining and reviewing service organization controls for major vendors, the implementation of key transaction controls, reconciliations, validation, physical inspections, documentation evidencing performance of control tasks, disclosures, enforcement of applicable policies and procedures for employees to identify deviations, the establishment of a formal plan for communications with the audit committee and the revamp of the internal audit department. Internal Audit builds the foundation of the internal audit team as well as the development of the methodology and process, along with building and retaining the required skills and technology base.	Pursuant to the OMA, LUMA is responsible for all finance, accounting, budgeting, longer-term financial forecasting, auditing and treasury operations. Annex I, Section VI(B), (C), (D) and (E).	Act 17: **-Charges, rents and rates and any other type of amount charged by an electric service company must be fair and reasonable and consistent with correct fiscal and operational policies that provide a reliable service at the least reasonable cost. *See* Section 1.5(1)(a).** **-It is a public policy that incentives be provided for the modernization of the grid incorporating adequate technology to comply with transformation objectives, without resulting in excessive costs. *See* Section 1.5(9)(g).** **-It is a public policy to ensure the safety and reliability of the electricity infrastructure through the use of modern technological tools, so as to propel an economic and efficient operation and allow integration and deployment of renewable energy sources. *See* Section 1.5(9)(a).** Act 83: -PREPA is responsible for conducting its business in a responsible, efficient manner and with correct fiscal and operational practices. *See* Section 6(c).	• Prioritize safety (Promote safe workplace) • Operational excellence (Enable systematic management of business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding)
Critical Financial Systems This program covers the technology projects for Finance and Facilities, including financial management systems and technology, risk management systems and supply chain management technology. The initiatives cover areas within budgeting, reporting, consolidation, risk management, time tracking, employee expenses, fixed asset subledger, procurement, and a major life cycle upgrade for the Oracle E-Business Suite (EBS) system. These initiatives are required to maintain a supported version of the financial applications or to address gaps identified in the financial management area.	Pursuant to the OMA, LUMA is responsible for all finance, accounting, budgeting, longer-term financial forecasting and treasury operations. Annex I, Section VI(B), (C), (D) and (E).	Act 17: **-Charges, rents and rates and any other type of amount charged by an electric service company must be fair and reasonable and consistent with correct fiscal and operational policies that provide a reliable service at the least reasonable cost. *See* Section 1.5(1)(a).** **-It is a public policy that incentives be provided for the modernization of the grid incorporating adequate technology to comply with transformation objectives,**	• Operational excellence (Enable systematic management of business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding) • Sustainable energy transformation (Enable the digital transformation)

		without resulting in excessive costs. *See* Section 1.5(9)(g). **- It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).-It is a public policy to ensure the safety and reliability of the electricity infrastructure through the use of modern technological tools, so as to propel an economic and efficient operation and allow integration and deployment of renewable energy sources. *See* Section 1.5(9)(a).** Act 83: -PREPA is responsible for conducting its business in a responsible, efficient manner and with correct fiscal and operational practices. *See* Section 6(c).	
Land Record Management LUMA will develop a new record management system that allows for land information to be found easily and managed to utility industry standards. This allows compliance with legal requirements to be documented and shown to satisfy regulators. It also allows user groups to have efficient access to information. In particular, such a system lets Operations and Construction perform their work while respecting land rights agreements.	-Be responsible for maintenance of documentation and acquisition of Easements as required for T&D System operations. Annex I, Section I(G)(2). -Manage and maintain all T&D System assets, including Easements. Annex I, Section II(A). -Identify areas to be encumbered by Easements for operation, maintenance, repair, restoration, replacements, improvements, additions and alterations of the T&D System and take the necessary actions to acquire and constitute it. Section 5.19(a).	Act 17: **- It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).** **-It is a public policy that incentives be provided for the modernization of the grid incorporating adequate technology to comply with transformation objectives, without resulting in excessive costs. *See* Section 1.5(9)(g).**	• Prioritize safety (Implement effective safety practices) • Improve customer satisfaction (Deliver positive customer experience; increase service reliability; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of business; pursue project delivery excellence) • System rebuild and resilience (Effectively deploy federal funding)
Resource Planning and Processes to Improve Resource Adequacy and Cost Tracking This program focuses on planning studies for dispatch of existing thermal units, along with new processes to audit costs included in the purchased power and fuel cost adjustment mechanism tariffs administered by LUMA in accordance with Section 5.6 of the OMA. The program includes creation and implementation of reasonable prudent administrative procedures for reporting of those related fuel and other generation costs as described in the OMA and being able to accurately present these costs to the PREB. The program does not include the management or oversight of fuel purchasing or of any Genco functions. Improved information on fuel costs, inventory, and availability will support resource planning as well as the more efficient and reliable dispatch of peaking power plants and other thermal plants. The program	-Dispatch, schedule and coordinate Power and Electricity from available generation assets and provide related services; coordinate the scheduling of load requirements and Power with IPPs pursuant to their Generation Supply Contracts and Electricity and GenCo pursuant to the GridCo-Genco PPOA; implement and apply, on a continuous basis on the relevant time basis applicable, the System Operations Principles in order to ensure and coordinate the delivery of Power and Electricity; and perform any other services related to the dispatch, scheduling or coordination of Power and Electricity from	Act 17: **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response. *See* Section 1.5(10)(a).** **-It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).**	• Improve customer satisfaction (Increase service reliability; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of business) • System rebuild and resilience (Improve resilience of vulnerable infrastructure) • Sustainable energy transformation (Enable the digital transformation)

aims to improve resource adequacy and lower energy supply costs. As described in Exhibit H, Section 2.2. of the OMA and subject to the final reorganization plan for PREPA, fuel procurement and management responsibilities for PREPA's generation units will remain with PREPA's Genco unit. According to Section 5.13(b) of the OMA, LUMA shall have the right to reasonably access "... information consistent with Prudent Utility Practice required to perform the dispatch and scheduling of Power and Electricity, which includes fuel availability, fuel cost, fuel inventory, unit availability, unit marginal cost, unit outage schedules, electric system reliability requirements, reserve requirements, identification of must-run generation resources and any other information reasonably requested by Operator consistent with prudent Utility Practice required to perform the dispatch, scheduling, and coordination of Power and Electricity." Under the OMA, LUMA has the responsibility of presenting adjustments to the fuel adjustment and purchased power tariff clauses. Under the OMA, LUMA will manage and administer all existing and future PPOAs.	existing and future available generation assets, among other things. Section 5.13(a).		
Improvements to Systems Dispatch for Increased Reliability and Resiliency This program deals with the repair of non-functioning equipment and processes to allow for the System Operator to have data to carry out economic dispatch of generation assets, in accordance with the System Operation Principles and applicable procedures, and to allow for the safe and reliable operation of the system.	-Dispatch, schedule and coordinate Power and Electricity from available generation assets and provide related services; coordinate the scheduling of load requirements and Power with IPPs pursuant to their Generation Supply Contracts and Electricity and GenCo pursuant to the GridCo-Genco PPOA; implement and apply, on a continuous basis on the relevant time basis applicable, the System Operations Principles in order to ensure and coordinate the delivery of Power and Electricity; and perform any other services related to the dispatch, scheduling or coordination of Power and Electricity from existing and future available generation assets, among other things. Section 5.13(a).	Act 17: **-It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response. *See* Section 1.5(10)(a).** **- It is a public policy that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Section 1.5 (9)(e).**- It is an initial objective of Act 17 to facilitate the interconnection of distributed generation to the electric power grid through any available mechanism including, but not limited to, distributed generation, renewable energy sources, net metering, and the use of microgrids by implementing the mechanisms, strategies, and technologies available in the electric power industry for such purposes. See Section 1.6 (8). - It is an initial objective of Act 17 to promote demand response and energy efficiency programs with a defined timetable and incentives in order to make short-, medium- and long-term programs feasible, while stressing the benefits that such programs provide to consumers and the electrical system. See Section 1.6 (10). - PREPA or the transmission and distribution network Contractor shall fix, from time to time and subject to the	• Prioritize safety (Promote safe workplace) • Improve customer satisfaction (Increase service reliability; deliver electricity at reasonable prices) • Operational excellence (Enable employees to execute operations systematically) • System rebuild and resilience (Improve resilience of vulnerable infrastructure)

		Bureau's review and approval, the optimal reserve margin for Puerto Rico, taking into account the best industry practices as well as the geographic and electricity infrastructure realities of Puerto Rico, and shall work to maintain such reserve, thus ensuring the continuity and reliability of the electric power service in Puerto Rico. See Section 1.11(c).	
Waste Management In accordance with the requirements of the OMA Section 5.10 and the scope of OMA Services specified in Annex I, LUMA will install new equipment and implement management processes to comply with environmental statutory requirements and support safe and efficient operations. The program includes installing secondary containment to prevent contamination, ensuring proper containers are in place to store wastes and, when required for site operations, processing or removal of accumulated waste debris. LUMA will take actions with respect to pre-existing environmental conditions, including accumulated waste, in accordance with the OMA Section 5.10(b).	-Perform the following environmental health and safety activities related to the provision of electric service to T&D Customers: (i) managing an environmental, health and safety program for the T&D System in accordance with the Contract Standards; and (ii) coordinating, overseeing, ensuring and maintaining compliance of the T&D System with Environmental Law, including documentation thereof, among other things. Section 5.10(a). -Take all reasonable precautions for the health and safety of, and provide all reasonable protection to prevent physical damage, bodily injury or loss as a result of the operation of the T&D System to (A) all members of the public and persons involved in providing O&M Services; (B) all materials and equipment used in the provision of the O&M Services and under the care, custody or control of Operator; and (C) other property constituting part of the T&D System and under the care, custody or control of Operator. Section 5.7(a)(i)(A) and (B). -Establish and enforce all reasonable applicable safeguards for health and safety and protection, including posting danger signs and other warnings against hazards and promulgating health and safety regulations; and develop and carry out a site-specific health and safety program, including employee training and periodic inspections designed to implement the requirements of Section 5.7(a) of the OMA (Safety and Security-Safety). Section 5.7(a)(ii) and (vii). -Take all actions which may be required in order to bring the T&D System into and maintain compliance with applicable Commonwealth and federal requirements in accordance with and related to the Occupational Health and Safety Act. Section 5.7(b).	Act 17: -Electric service companies to address energy and environmental challenges using available scientific and technological advances and incorporating best practices in the energy industry in other jurisdictions (See Section 1.10(c)) and to comply with all applicable environmental laws and regulations (See Section 1.10(g)). **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of the electric service. See Section 1.5(9)(e).** **-It is a public policy, among other things, that there be compliance with applicable environmental laws and regulations to improve the quality of life of Puerto Ricans and ecosystems in Puerto Rico. See Section 1.5(6)(a).** Act 57: **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure the reliability and safety of the electric service. See Section 1.2(f).**	• Prioritize safety (Promote safe workplace) • Operational excellence (Enable systematic management of business)

	-Manage and maintain all assets of the T&D System in accordance with Contract Standards, including procurement and inventory management. Annex I, Section II(A)(5). -Maintain, improve and develop a culture of safety. Annex I, Section I(B)(1). -Manage effectively an environmental, health and safety program and maintain compliance with the corresponding regulatory requirements. Annex I, Section I(D)(3) and (4).		
Update to Third Party Use, Audit, Contract and Billing Procedures This program is focused on updating procedures for third party use of land, use of infrastructure, audits, contracts, and billing. The program will include: Developing consistent processes and agreement templates to ensure compliance with legislation; Streamlining and improving customer service for third parties who wish to use pole infrastructure; Establishing annual billing to third parties to ensure they are paying the associated fee to attach to each individual structure (either overhead or underground); Completing updates and corrections to the CC&B system to ensure data accurately reflects the current asset management joint use attachment numbers and identifies responsible billing parties; and Implementing necessary changes to the billing process for joint use billing, which may include contract updates and renegotiation.	-Complete inventory, including location of pole attachments, and plans for revenue optimization be made. Annex I, Section II(D).	Act 17: **--It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable. See Section 1.5(10)(a).** Act 83: -PREPA is responsible for conducting its business in a responsible, efficient manner and with correct fiscal and operational practices. See Section 6(c).	• Prioritize safety (Promote safe workplace; implement effective public safety practices) • Improve customer satisfaction (Deliver positive customer experience; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Restore damaged grid infrastructure; improve resilience of vulnerable infrastructure) Other (Provide additional revenue)
Safety Equipment This program is focused on updating procedures for third party use of land, use of infrastructure, audits, contracts, and billing. The program will include: Developing consistent processes and agreement templates to ensure compliance with legislation; Streamlining and improving customer service for third parties who wish to use pole infrastructure; Establishing annual billing to third parties to ensure they are paying the associated fee to attach to each individual structure (either overhead or underground); Completing updates and corrections to the CC&B system to ensure data accurately reflects the current asset management joint use attachment numbers and identifies responsible billing parties; and Implementing necessary changes to the billing process for joint use billing, which may include contract updates and renegotiation.	-Develop and carry out site-specific health and safety programs, including employee training. Section 5.7(a). -Take all actions which may be required in order to bring the T&D System into and maintain compliance with the applicable Commonwealth and federal requirements in accordance with and related to OSHA. Section 5.7(b). -Manage an effective health and safety program. Annex I, Section I(D).	Act 17: **It is a public policy that the energy infrastructure be maintained in optimal conditions to ensure reliability, resilience and safety. See Section 1.5(9)(e).** Act 57: **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure the reliability and safety of the electric service. See Section 1.2(f).**	• Prioritize safety (Promote safe workplace; implement effective public safety practices • Operational excellence (Pursue project delivery excellence; enable employees to execute operations systematically)

Integrated Safety & Operational Management System LUMA will centralize policy and procedure creation by using a fully integrated, efficiently managed internal safety and operational management system that will allow communication of requirements to all employees and monitor health, safety and environmental compliance organization wide. The system will have clear operational procedures and controls and will be easy to use and easily updated.	-Develop and carry out site-specific health and safety programs, including employee training. Section 5.7(a). -Take all actions which may be required in order to bring the T&D System into and maintain compliance with the applicable Commonwealth and federal requirements in accordance with and related to OSHA. Section 5.7(b). -Manage an effective health and safety program. Annex I, Section I(D).	Act 17: **-It is a public policy that the energy infrastructure be maintained in optimal conditions to ensure reliability, resilience and safety. See Section 1.5(9)(e).** -Electric service companies to address energy and environmental challenges using available scientific and technological advances and incorporating best practices in the energy industry in other jurisdictions (see Section 1.10(c)) and to comply with all applicable environmental laws and regulations (see Section 1.10(g)).	
Act 57: -It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure the reliability and safety of the electric service. See Section 1.2(f).	• Prioritize safety (Promote safe workplace) • Operational excellence (Enable employees to execute operations systematically)		
Public Safety LUMA will introduce an organizational strategy to engage and educate the public on safety around electric equipment and installations, thereby reducing public safety incidents. The program will include the procurement of public safety related materials for training awareness and public outreach, the development and complete roll out of a communications plan and a continuing maintenance plan for the program.	- Develop public outreach and education campaigns designed to inform customers generally and first responders specifically, about the scope, nature and extent of the T&D System programs and operations. Annex I, Section IX(D). -Maintain, improve and develop a culture of safety. Annex I, Section I(B)(1). -Use strategies and risk optimization to achieve safety, among other things. Annex I, Section II(A)(1). -Take all reasonable precautions for the health and safety of, and provide all reasonable protection to prevent physical damage, bodily injury or loss as a result of the operation of the T&D System to members of the public. Section 5.7.	Act 17: **-It is a public policy that the energy infrastructure be maintained in optimal conditions to ensure reliability, resilience and safety. See Section 1.5(9)(e).** **It is a public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable. See Section 1.5(10)(a).** Act 57: **-It is a public policy, among other things, that the electricity infrastructure be maintained in optimal conditions to ensure the reliability and safety of the electric service. See Section 1.2(f).** -All energy companies must provide an adequate, reliable, safe, efficient service, among other things. See Section 6.21(a).	• Prioritize safety (Promote safe workplace; implement effective safety practices • Improve customer satisfaction (Deliver positive customer experience; increase service reliability; deliver electricity at reasonable prices) • Operational excellence (Enable systematic management of business; pursue project delivery excellence; enable employees to execute operations systematically) • System rebuild and resilience (Effectively deploy federal funding; restore damaged grid infrastructure; improve resilience of vulnerable infrastructure) • Sustainable energy transformation (Modernizing the grid; enable the digital transformation; enable the sustainable energy transformation) Other (Environmental)

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210326-PREB-013

Request:

To the extent it is not included in responses to the data requests above, provide supporting workpapers and analyses developed by LUMA in evaluating the SRP initiatives and in assessing those initiatives for compliance with public policy including, but not limited to, the Integrated Resource Plan and Modified Action Plan approved by the Energy Bureau on August 24, 2020 and the Renewable Portfolio Standards.

Response:

For the review of regulatory, legal, and contractual requirements, completed by LUMA in Phase I development of the SRP please refer to the respective SRP program briefs within subsection 2.0. Please refer to RFI-LUMA-MI-20-0019-210406-PREB-012 for SRP program applicable OMA provisions, applicable laws and public policy goals.

For further information regarding LUMA's assessment of compliance with the IRP and Modified Action plan and the Renewables Portfolio Standards, please refer to the following portions of the Gap Assessment included in RFI-LUMA-MI-20-0019-210406-PREB-001 Attachment 1:

Regulatory Gap Assessment (PDF Page 526)

- XII. IRP Coordination: Load Forecast (PDF Page 573)
- XIII. IRP Coordination: Energy Efficiency (PDF Page 577)
- XIV. IRP Coordination: Renewable Generation/Energy Storage (PDF Page 580)
- XV. IRP Development (PDF Page 583)

Utility Transformation Gap Assessment (PDF Page 97)

- XII. Business Transformation (PDF Page 133)

Included in LUMA's Initial Budgets filing (but not included in the SRP as it did not meet the SRP criteria) LUMA identified the Renewables Integration, Minigrids & Generation Studies improvement program. This program involves completing technical studies to inform generation and system planning to support compliance with the IRP requirements related to renewable integration, minigrids, energy efficiency and generation. The activities conducted in this program will lead to a coordinated, data-driven approach to implementing the energy transition. LUMA will also be active in the planning analyses, including interconnection studies, for new projects that will help comply with the RPS. We note that LUMA will be providing planning and other activities to enable and support future renewable energy procurement efforts. In accordance with the System Operation Principles and the OMA, LUMA will not manage

implementation of generation projects with federal funding, and "[P3 Authority] (or any other entity required by Applicable Law to undertake such procurement) shall manage all aspects of the procurement process with the support of [LUMA], as necessary." (OMA, Section 5.13 (d)).

To enable the IRP implementation, the SRP proposes foundational activities (as discussed within the Recovery and Transformation Framework prioritization and sequencing within RFI-LUMA-MI-20-0019-210406-PREB-003) which will facilitate an increasing reliance on renewables.

As discussed in response to RFI-LUMA-MI-21-0001-210406-PREB-004 within the System Operation Principles (Docket ID: NERP-MI-2021-0001), to facilitate renewable integration, a streamlined process will be defined for timely processing of interconnection applications.

Further, and as part of the Resiliency Optimization proceeding (Docket ID: NEPR-MI-2020-0016), LUMA response to PREB questions filed April 14, 2021, LUMA is currently committed to activities that support the integration of renewable resources. A key LUMA effort to support integration of DERs is interconnection process and standards, for efficient and agile processing of customer applications. To facilitate renewable integration, a streamlined interconnection process is required to efficiently process the high volume of applications. Providing an efficient system that maintains the safety and reliability of the grid while responding quickly to customer and developer applications is an important part of reaching the renewable goal. LUMA is currently reviewing the existing interconnection process to look for improvements that will help to quickly resolve the backlog and help expedite the adoption of renewable energy sources.

LUMA has recently become directly and actively involved in the advancement of the Demand Response proceeding (NEPR-MI-2019-0015), collaborating directly with PREPA, which is a direct outcome of the IRP. LUMA staff have extensive experience developing demand response and energy efficiency programs in other US jurisdictions. LUMA has reviewed the Energy Bureau's recent Order on demand response and is applying our knowledge of best-practice demand management program design and implementation to the development of a 3-Year Plan for demand response programs. As discussed above, LUMA's Renewables Integration, Minigrids & Generation Studies program also includes research that will enable more accurate assessment of cost-effective opportunities for energy use reductions.

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210326-PREB-014

Request:

In Table 6-1 of the SRP Customer Service Portfolio (on page 54), approximately $1.23 Billion of customer service program spending is identified as non-attributable to the SRP. Provide a breakdown of those spending requirements and anticipated funding sources.

Response:

The following table provides a breakout of the major non-SRP activities within the SRP Customer Service Portfolio:

Table 14-1: Non-SRP Activities (by Program)

Program	Non-SRP Estimate	Funding Source	Focus
Distribution Streetlighting	**$1,087.0M**	**Federally Funded**	Repair, replace or upgrade all 343,000 damaged lights over a 10-year period (It has been estimated that approximately 51,500 will be assessed as 'high-risk' assets and the work to remediate will be within the SRP. The remaining 292,500 will be addressed outside of the SRP as it is estimated that those assets will not be assessed as high risk. These estimates will be refined as data from the inspection programs are collected.)
			Enter and monitor all 490,000 lights through GIS over a 6-year period.
			Replace all HPS lamps with LEDs
			Complete evaluation of a smart streetlight system
Billing Accuracy and Back Office	**$126.2M**	**Non-Federally Funded**	When the billing, print and delivery function is outsourced and the billing exception backlog is addressed, the third-party vendor will provide a comprehensive solution to print, batch, render, sort (hard copy printed bills and electronic bills), store images, enable bill image access, etc. The vendor will also provide address standardization and returned mail services. and have a disaster mitigation and disaster recovery plan to manage disaster-related risk.
			Remove redundant bill printing and enveloping equipment.
			Centralize dispatch and closeout of back-office service order work. In the short-term, the initial preparation of the service orders and field returns of their completion (with notes) will be manually entered in the appropriate system of records,

Program	Non-SRP Estimate	Funding Source	Focus
			recognizing that a long-term digital solution will be implemented later.
			Develop and operationalize the processes and procedures to address root causes related to the backlog of estimated, unbilled, and other billing exception-related accounts.
			Develop a complete set of metrics (dashboard) to provide transparency into performance (e.g., YTD actuals vs. monthly / annual targets) and gaps from which to develop performance improvement plans.
			Develop a workforce management solution for back-office work to automate the dispatch and closeout of work and track productivity.
			Acquire technologies and/or implement upgrades to the current billing solution to address gaps in customer billing and compliance.
Standardized Metering and Meter Shop Setup	**$2.1M**	**Non-Federally Funded**	Equip the fully capable meter shop (part of SRP funding) with a full contingent of test equipment capable of supporting business needs on the metering front.
			Develop and implement a process for meter sample selection and meter testing verification.
			Develop and implement a Quality assurance / control (QA/QC) for handling new meters.
			Improve / expand processes related to inventory, work orders, and head end system updates.
			Develop and implement processes / procedures for installing instrument meters
Modernize Customer Service Technology	**$18.7M**	**Non-Federally Funded**	Continue to refine and improve the ability for contact center agents to work remotely during storm or emergency situations (initial capability part of the SRP funding)
			Implement a quality assurance (QA) program to review agent interactions (through call and screen recording) and provide coaching and feedback on a regular basis.
			Continue to refine and improve First Contact Resolution monitoring and management (initializing effort part of the SRP funding)
			Develop process for / implement / conduct post-interaction customer surveys following phone / chat interactions.
			Improve upon customer use of other digital channels (e.g. chat, social media) (initializing effort part of the SRP funding)
			Develop consistent reporting protocols to support our OMA commitments for average speed of answer and abandon rate
Total	**$1.23B**		

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-015

Request:

For transmission lines, substations, transformers, and distribution circuits that were inspected by LUMA in developing the SRP, provide electronic copies of inspection reports, or alternatively, provide any tabulations of inspection data (e.g., scoring and comparison matrices) developed by LUMA in preparing the SRP.

Response:

As discussed in Section 2.0 of the Inspection of Transmission Lines program brief, PREPA does not have a health assessment of the transmission system and the condition of the transmission lines is not documented.

LUMA has conducted visual inspections of the 230kV/115kV transmission lines through flyovers and helicopter patrols to get a general understanding of the condition of the assets. LUMA estimates that approximately 25 percent of the assets will be assessed as high-risk and will require safety and hazard mitigation. A comprehensive inspection of the transmission lines is time consuming and was not part of the scope of Front-End Transition Period. However, it is planned to begin following commencement and is outlined in the Inspection of Transmission Lines program brief.

For all other inspection data, please refer to RFI-LUMA-MI-20-0019-210406-PREB-001 Attachments 2 – 6.

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-016

Request:

Explain in detail how the proposed SRP, the PREPA 10-Year Infrastructure Plan, and any other strategic plan are synchronized and/or aligned.

Response:

As discussed in RFI-LUMA-MI-20-0019-210406-PREB-003, the ultimate outcome of LUMA's prioritization and sequencing of improvement programs within the Recovery and Transformation Framework, was informed from various inputs known at the time, such as the 2017 Final Rate Order, LUMA's gap assessment, LUMA's experience and professional judgement, discussions with PREPA, as well as the Modified Action Plan of the IRP, and 2020 Fiscal Plan. LUMA notes that the SRP and the PREPA 10-Year plans are based on different criteria and therefore do not provide consistent plans.

As discussed within Section 1.4.3 of the SRP, LUMA has reviewed PREPA's 10-Yr Infrastructure Plan and found the near-term federally funded projects related to the T&D System to generally align with LUMA's federally funded projects for the same time period, as both were based third-party damage assessments and cost estimates previously prepared for the obligation of funds under Section 428 of the Stafford Act. Many of these activities LUMA views as foundational and enabling to the core recovery of the grid. LUMA is working to ensure activities PREPA undertakes prior to LUMA's commencement of services will remain aligned with LUMA's post-commencement recovery and remediation activities, preventing duplication of work.

Subsequent to the SRP filing, and through continued collaborative efforts, PREPA and LUMA are aligned with the identification and prioritization of projects in the March 31, 2021 submission provided by PREPA within the PREPA 10 year plan (Docket Number NEPR-MI-2021-0002).

System Remediation Plan
Docket ID: NERP-MI-2020-0019

Information Response Round 1 to: PREB

Reference: RFI-LUMA-MI-20-0019-210406-PREB-017

Request:

Provide specific and detailed examples or scenarios and/or data supporting or showing the SRP's compliance with each of the principles stated by the Energy Bureau in the Resolution and Order issued on December 31, 2020 in the instant case.

Response:

Please refer to RFI-LUMA-MI-20-0019-210406-PREB-017 Attachment 1 for the specific and detailed examples of SRP programs which comply with principles beneficial to the public interest in PREB's Resolution and Order of December 31, 2020.

SRP Compliance with Principles Beneficial to the Public Interest in Puerto Rico Energy Bureau's ("PREB") SRP Order[1]

Principle	How it is met/examples
a. **Advance the Earlier Compliance with Public Policy**- The proposed plan shall discuss and show how it helps achieve the accelerated implementation of public policy such as reliability, resiliency, safety and other similar mandates.	As can be observed in the table prepared by LUMA titled "SRP Program Briefs- OMA Provisions, Applicable Laws and Public Policy Goals," included as Attachment 1,all SRP Programs advance at least one energy public policy goal and a majority of these programs advance one or more public policies related to achieving reliability, resiliency, safety and other similar goals. The programs were prioritized in order to address the more critical issues identified during the Front-End Transition Period immediately after service commencement and thereby help advance an earlier implementation of public policy. The following are specific examples of programs that would be commenced within the first year and reach remediated state within 2 to 5 years of commencement of operations and would achieve this accelerated implementation: **I. IT OT Cybersecurity Program** This program centers on enabling the business and protecting key organizational assets, including people, resources and technology to ensure that cyber risk, internal and external threats, vulnerabilities, and natural disasters are identified and mitigated based on risk and readiness factors. Improving cybersecurity is a critical part of hardening the Transmission and Distribution (T&D) system and ensuring business continuity. Cyber risks could severely impact T&D operations to the extent of widespread failure. This program will design and implement the people, processes, and technologies essential for effective cybersecurity governance, cybersecurity operations and monitoring, vulnerability identification and management, and cloud security. The benefits of this program include: -The risk of safety related incidents will be reduced by maintaining applications and the underlying infrastructure that provide access to business-critical information including the electrical network. This relates to the "Availability" pillar within the Confidentiality, Integrity and Availability (CIA) triad, a foundation for cybersecurity programs. -Identify and improve the confidentiality of sensitive data, including customer and PII in accordance with applicable law and the OMA. -Ensure customers have access to accurate and timely information provided by secure and reliable applications and infrastructure (availability pillar). -Service reliability will improve with improved and resilient technology systems that enable the O&M Services. -Ensure secure and reliable applications that support the T&D System infrastructure (integrity and availability pillars). -Enable the digital modernization and transformation of the electrical grid and supporting technologies through improved integrity and availability. Energy transformation will be built and operated on systems that require secure networks and systems.

[1] PREB's Resolution and Order of December 31, 2020 in case NEPR-MI-2020-0019.

	These objectives will advance the public policy, as well as initial objective to be reached under Act 17-2019, as amended ("Act 17"), that all electric service companies design options for mitigation adapted to their information and operative technology networks, including adoption of concrete cyber security measures to prevent and effectively manage cyber-attacks. *See* Act 17, Sections 1.5(8)(d) and 1.6(6)). These objectives also advance the public policy of incentivizing grid modernization incorporating technology as appropriate to attain the transformation goals without incurring excessive spending. *See*, Act 17, Section 1.5(9)(g). **II. HSEQ and Technical Training** This program provides health, safety, environmental and quality (HSEQ) and technical training to field personnel. During the initial stage, basic technical training will be provided through the LUMA College and HSEQ training conducted by internal subject matter experts and external providers. Personnel will gain technical skills training for field employees to become fully qualified to complete their work safely and efficiently. Subsequent enhanced technical training will be provided through the LUMA College. Enhanced training modules will be developed and administered based on operational needs for the type of technology being implemented but could include areas such as operation of smart grids, work on energized lines (e.g., hot line and barehand programs), splicing of conductors and helicopter work for transmission repairs. This program will help to instill a new safety culture across the T&D System, thus reducing safety incidents, bringing the T&D System into compliance with Contract Standards, including but not limited to OSHA and broader industry standards and improving overall employee efficiency. The benefits of this program include: -Basic HSEQ training across the workforce leads to a safer workplace. Improving safety culture results in a reduction in incidents and OSHA reportable claims. -Technical training programs will increase safe work processes and efficiency by upskilling all skilled labor employees through delivering training focused on knowledge, skills and behaviors of LUMA employees. Courses include grounding, bucket truck rescue, OSHA, and others. A better trained work force will also allow for more timely identification of public safety issues. -This program will enable employees to respond to outages and customer needs more efficiently, delivering both better service and an improved customer experience. -Properly trained employees will be able to deliver higher quality project work in a more systematic manner. Better trained employees through this program will also reduce downtime and overtime requirements and increase employee productivity, along with reducing the amount of error and re-work. Training programs will further help improve work quality which will translate into better project delivery. -Increasing data tracking and reporting on HSEQ training will lead to increased accuracy of performance metrics. Clarifying training expectations and requirements will increase accountability and contribute to better causal analysis and follow-up. -Improving workforce development will allow LUMA to comply with industry standards. -Better trained employees will help to restore damaged infrastructure and allow for greater resilience in the event of an emergency. These objectives advance the public policies that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Act 17, Section 1.5 (9)(e); *see* also Act 57-2014, as amended (Act 57"), Section 1.2(f).

	III. Vegetation Management This program includes work to abate or mitigate immediate vegetation risk in the most critical locations, along with an ongoing program to clear and re-establish rights-of-way (ROWs) to standard widths. This includes an immediate response for the highest risk sites, along with reclaiming rights-of-way corridors (especially those impacting the transmission and distribution systems). The program will also use a field enabled IT tool to manage the vegetation management program, along with ongoing line clearance, pruning, tree removal, herbicides, etc. and vegetation management training. In addition, the program will evaluate and pilot an advanced artificial intelligence (AI) remote sensing project to improve vegetation management. The benefits of this program include: -Correcting the backlog of untrimmed trees will mitigate public safety risks due to power outages, fallen wires and people climbing onto energized lines. -The primary benefit of effective vegetation management is to reduce outages caused by vegetation-caused line faults. This is a substantial contributor to the current poor reliability of the system. Improved reliability will improve customer experience. -- Cleared ROWs will also make it easier to assess storm damage and access sites to make repairs, shortening the duration of outages. -Current vegetation management practices are focused on reactive and corrective work, i.e., addressing problems after they arise. A well-functioning program will trim vegetation systematically, increasing the efficiency of the workforce and the reliability of the system. A clear VMP will also enable employees to work more effectively and efficiently. -Current vegetation management practices are focused on reactive and corrective work, i.e., addressing problems after they arise. A well-functioning program will trim vegetation systematically, increasing the efficiency of the workforce and the reliability of the system. A clear VMP will also enable employees to work more effectively and efficiently. -The poor current conditions of ROWs hamper access to much of the T&D System. By reclaiming these ROWs, access will be improved, thus making Utility Transformation projects financed by federal funds easier and cheaper to build. -Rights of way currently contain debris deposited during the hurricanes which will be cleared through a better vegetation management process. Reclaiming rights of way will reduce outages in future hurricanes or weather events. These objectives advance the public policy of maintaining the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See,* Act 17, Section 1.5 (9)(e). **IV. Materials Management** This program covers all aspects of materials management and includes management of: Asset recovery**;** oil containment**;** inventory management; asset suite reconfiguration; demand training; implementation and measurement of KPIs related to materials; capital plans for material handling and warehousing storage and facility improvements; logistics function and related equipment; and material evaluation and disposition. The benefits of this program include:

	-Standardized procedures for inventory management, asset recovery, etc. will help to ensure safe working practices across the organization, both for a safer workplace and better public safety practices. -Availability of equipment and tools ensure that work tasks can be performed effectively and efficiently, and with reduced safety risk. -Effective materials management and asset recovery processes support rapid restoration in case of a major event such as hurricane, thereby reducing safety impacts of power outages. -Better processes for logistics, inventory management, asset recovery, etc. will help streamline internal operations, thus improving service reliability. These processes will also help to make spending on these areas more efficient, thus allowing for electricity to be delivered at more reasonable prices. -Standardization of processes will help to systematize business operations, both for overall management, and as applied to how employees conduct themselves within functions under Materials Management. As a whole, this will help to improve major outage event readiness and emergency materials management, thus contributing to improved project delivery -Measurement of process efficiency will track progress to performance targets and identify gaps in process, fostering continuous improvement and improving project delivery. -A robust Materials Management framework will ensure that all material purchases and deployment to federally funded projects will be at the lowest possible cost while maintaining quality and service, utilizing existing materials agreements established for regular operations requirements. -The improvements in materials management supported under this program will help to restore damaged grid infrastructure by ensuring construction materials are available for use, follow specifications and quality requirements, and efficiently and effectively deployed to project sites. These objectives advance the public policies, among others and in pertinent part, that the electricity infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of the electric service (*see* Act 17, Art 1.5(9)(e)); guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response, among other things (*see* Act 17, Section 1.5(10)(a); *see also* Act 57, Section 1.2(f)). **V. Critical Energy Management System Upgrades** This program will replace an obsolete and unsupported EMS and add relevant technology to operate the electric system safely and reliably. This program will also implement an Advanced Distribution Management System (ADMS). The EMS is a computer-based system that is used by operators to monitor, control and optimize the performance on the generation, transmission and distribution system. The benefits of this program include: -The program will enable systematic management of the business and employees to execute operations systematically by providing modern tools for better visibility of equipment operations, which will help to improve decision making. -By modernizing the electric transmission and distribution systems, this program will improve overall resiliency of the T&D infrastructure.

	-The implementation of new digital technology into the T&D System supported by this program will allow the overall system to better adapt to new energy sources and energy storage systems. As such, this program will help to enable more efficient integration and management of new more sustainable energy sources. These objectives advance the public policies, among others and in pertinent part, that incentivize grid modernization incorporating technology as appropriate to attain the transformation goals without entailing excessive spending (*see* Act 17, Section 1.5(9)(g)); and that the safety and reliability of the electricity infrastructure shall be guaranteed by integrating clean and efficient energy and using modern technological tools that promote economic and efficient operations. Act 57, Section 1.2(e). **VI. T&D Fleet Program** This program includes a range of activities and investments to bring the current fleet up to industry standards including vehicles, aircraft and equipment. Additionally, activities will be focused on initializing and improving processes for data collection, repair and maintenance of these assets. The benefits of this program include: -Reduced risk of safety related incidents since vehicles are routinely inspected and properly maintained, operator and mechanic training is improved, and the oldest and worst condition fleet assets are retired. -Fewer accidents and equipment malfunctions due to better maintained fleet assets and well-trained operators. -Improved response time for customer service due to more efficient routing via telematics (e.g., routing of the closest available crew to address a customer outage). -Reduced service restoration times, as measured by SAIDI (average customer minutes out of service) and improved fleet responsiveness, particularly during major events. -Proper maintenance and fleet lifecycle replacement practices will reduce required spending on fleet maintenance as well as decreasing the labor downtime associated with inefficient means of transportation for line crews. -The implementation of a Fleet Management Information System provides visibility to key elements that define the operability (current state) of fleet assets. -Improve crew operating efficiency by providing the right vehicle and/or equipment for the job. -Reduced overtime due to availability of functioning fleet assets during regular working hours. Current work rules allow line workers to go home with pay when their trucks are undergoing repairs since spares are not available to use while trucks are in repair. By bringing vehicles up to industry standards, truck downtime will be reduced, thereby increasing efficient use of standard working hours for line crews. -Improve crew operating efficiency by providing the right vehicle and/or equipment for the job. These objectives advance, among others and in pertinent part, the public policies of guaranteeing every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response (*see* Act 17, Section 1.5(10)(a)); and that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service (*see* Section 1.5 (9)(e); *see also* Section 1.2 (f)).

	VII. Permit Processes and Management This program will introduce new systems for managing operational permits to enable the system to comply with permit obligations and to provide support for federal funding requirements. The program will develop new procedures so that responsible parties have the tools to meet permit obligations and identify additional necessary permits, along with introducing training programs to allow those procedures to be implemented effectively. As part of this program, LUMA will continue to engage with government agencies to adhere to any adjusting permitting procedures or requirements to be implemented after commencement. The benefits of this program include: -Development of a quality management system supported by work procedures is integral to a safe workplace. Such a system forms the foundation of a safety program. -More consistency of permit practices will improve the quality of related work, thereby improving public safety for any installation. -Strict compliance with permit obligations will reflect positively upon the company with the agency issuing a permit. -Improved work practices will lead to a superior quality product or installation, thereby improving the reliability of the system. -The quality management system, as supported by detailed work procedures, form a foundation for systematic management of the business. This system is also essential to the pursuit of project delivery excellence as these measures provide the baseline from which to evaluate the performance of work. The quality management system will also enable employees to consistently complete work to the necessary standards while complying with permit obligations. -Proof of compliance with permit obligations will contribute to evidence that requirements for federal funding have been met. These objectives advance, among others and in pertinent part, the public policies that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service (*see* Act 17, Section 1.5 (9)(e); *see also* Act 57, Section 1.2 (f)) and that there be compliance with applicable environmental laws and regulations (*see* Act 17, Section 1.5(6)(a)).
b. **Further Efficiencies and Savings**- The proposed plan shall discuss and show how it pursues the achievement of the highest level of efficiencies and savings for the remediation of the system.	The prioritization and sequencing framework employed by LUMA in the "Recovery and Transformation Framework" enabled LUMA to determine which initiatives identified in the gap assessments would be funded over the next three years, and in what order, to meet all goals within the available budget, that is, to maximize value while maintaining balance across all priority areas. The aforementioned process gave rise to a set of programs designed to deliver value to customers in accordance with Contract and Policy Standards and within annual budget constraints. The following SRP Programs are examples of how the SRP is designed to achieve efficiencies in conducting remediation works: **I. Billing Accuracy and Back Office-** This program includes updates to bill print and delivery and other back office systems to ensure LUMA has the ability to continue to produce customer invoices. Current technology, machines and systems are outdated, creating a financial liability in delayed

	revenue of ~$12.5M for each day invoices are not produced. This upgrade includes acquisition of new hardware and software to support billing and customer contracts, along with removing redundant bill printing and enveloping equipment. Additionally, the program supports back office processing of service order paperwork and mobilizes resources to address backlogs of estimated and unbilled accounts. The Program will Enable Systematic Management and enable Employees to Execute Operations Systematically. Efficiencies will be achieved by outsourcing Bill Print &Delivery; Removing Redundant Bill Printing and Enveloping Equipment; and Investments in General Technology Billing. **II. Vegetation Management** As explained in the Program Brief and in the Petition Submitting LUMA's Vegetation Management Plan, filed on April 11, 2021 in Case NEPR-MI-2019-0005, systematic implementation of preventive vegetation management to efficiently reduce risks posed by trees to the T&D System, coupled with deployment of a condition-based approach to identify the need for and scheduling of preventive maintenance rather than apply a rigid fixed interval maintenance, are aimed at providing efficient and cost-effective services. Performance of preventive maintenance activities in a systematic and scheduled basis will optimize, over time, the trade-off between the frequency of inspections and subsequent maintenance/total cost. Efficiencies and savings are to be achieved through implementation of LUMA's prioritization of spending that envisions a steady decline for the need to perform corrective and reactive vegetation maintenance works. The expectation is that implementation of the Vegetation Management Plan, over time, will reduce the cost and intensity of the vegetation management work while at the same time system reliability and safety will be enhanced. **III. The Tools Repair & Management Program** Will develop a tool and equipment management system that promotes cost efficiencies by securing competitive pricing for tool purchase, delivery, maintenance, refurbishment and testing. It will also implement new initiatives, such as a barcode scanning system and inventory management system (IMS) to track these items and their maintenance programs. The program will introduce efficiencies and improve utilization factors for common use items by implementing a centralized system to manage inventory levels and maintenance programs for tools and equipment. **IV. Standardized Metering & Meter Shop Setup Program** By providing proper equipment, this program will improve O&M efficiency by allowing more throughput of meters with the same number of people. **V. Transmission Substation Rebuilds Program-** This program will provide more data to support system operations, grid modeling and asset conditions- all of which improve employee productivity and efficiency.

c. **Avoidance of Duplicity or Loss Opportunities**- The proposed plan shall discuss and show how it will avoid in the short, medium and long term the duplicity of work and potential waste of monies due to misalignment of the PREPA 10-Year Plan and other work necessary but not covered by federal funds.	Among the sources reviewed by LUMA to develop the SRP was PREPA's 10-year Plan that was submitted to the Federal Emergency Management Agency (FEMA) on December 7, 2020. LUMA found that the near-term federally funded projects related to the T&D System in this plan generally align with LUMA's proposed federally funded projects for the same time period, as both were based on third-party damage assessments and cost estimates previously prepared for the obligation of funds under Section 428 of the Stafford Act. LUMA views many of these activities as foundational and enabling to the core recovery of the grid. LUMA has worked closely with PREPA since the beginning of the year to ensure that the activities PREPA undertakes prior to the service commencement are aligned with LUMA's post-commencement of recovery and remediation activities, preventing duplication of work. Through collaborative efforts PREPA and LUMA are aligned with the identification and prioritization of projects in the March 31, 2021 submission provided by PREPA within the PREPA 10-year plan (Docket Number NEPR-MI-2021-0002). After commencement, LUMA will comply and submit as required to PREB projects related to federal funding as outlined within the March 26, 2021 Resolution and Order within Docket Number NEPR-MI-2021-0002.
d. **Synergies**- The proposed plan shall discuss and show how it will maximize the use of federal funds and its alignment with other plans required under the OMA, to optimize the reconstruction of the system and ensure the most cost-effective results and lowest costs.	As discussed in more detail in the SRP, one of the primary goals against which all programs were evaluated was the goal to rebuild and make the system more resilient, by effectively deploying federal funding to restore the grid and improve the resiliency of vulnerable infrastructure. As such, priority was given to programs that could take advantage of federal funding by meeting federal requirements and to the extent possible also address other public policy goals or requirements under the OMA. Examples of Programs where this is achieved are: **I.** **Distribution Pole and Conductor Repair-** Federal funds will be used effectively and their use for this program will deliver significant value for money given the enormous benefits associated with rebuilding the system into a resilient network. **II.** **Transmission Priority Pole Replacements-** This work will be carried out with a large portion of the federal funds allocated for the rebuilding of the system. LUMA will make efficient use of these funds for this crucial aspect of system rebuild. **III.** **Vegetation Management-** By reclaiming rights of ways, access will be improved, thus making T&D System projects financed by federal funds easier and cheaper to build. Effective vegetation management helps extend the life of assets and reduces the need for other repairs that could be caused by encroaching vegetation. **IV.** **Tools Repairs and Management**- Correct and appropriate tooling is their deployment on projects that use federal funding. Increased productivity of employees, reduced time wastage and work done more effectively increases the efficiency with which funding is deployed by reducing waste and inefficiencies. **V.** **Workflow Processes and Tracking**- Work methods, vehicles and equipment will be used to complete FEMA work more safely and efficiently, one of the outcomes of which is improved outage response and system restoration timelines. Efficient deployment of the workforce will result in improved worker productivity, leading to better use of federal funding (i.e., increased productivity).Control of the workforce and efficient dispatch of available resources

	will assist LUMA in responding to outages quicker, thus reducing the time required to restore damaged infrastructure and, as a result, service (as measured by SAIDI or SAIFI). **VI. Critical Financial Controls-** Proper controls are central to managing any organization effectively. They contribute to the ability to safeguard assets, use resources efficiently and produce accurate and reliable financial information.
e. Benefits for the Public Interest- The proposed plan shall discuss and show how its implementation will cause a clear benefit for the public interest and the ratepayers	All SRP Programs advance at least one energy public policy goal and therefore are all beneficial to the public interest. Many of these programs also result in a clear benefit to the ratepayers by advancing efficiencies and cost reductions, enhancing public safety and/or providing better and more services to customers, among other things. Specific examples of improvement programs that provide benefits for the public interest include: **I. Public Safety** LUMA will introduce an organizational strategy to engage and educate the public on safety around electric equipment and installations, thereby reducing public safety incidents. The program will include the procurement of public safety related materials for training awareness and public outreach, the development and complete roll out of a communications plan and a continuing maintenance plan for the program. This program results in the following benefits to the public interest and ratepayers, among others: -A comprehensive public safety training and awareness would be given to LUMA contractors to ensure awareness of powerline safety is top of mind. This would be a part of the contractor management requirements as well. -Educating the public on powerline safety will increase awareness and reduce public incident contacts and litigation claims. These objectives advance, among others and in pertinent part, the public policies of maintaining the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service (*see* Act 17, Section 1.5 (9)(e); *see* also Act 57, Section 1.2(f)) and guaranteeing every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable (*see* Act 17, Section 1.5(10)(a)). **II. The Distribution Streetlighting Program** This program entails upgrading and replacing distribution streetlights that are a physical safety hazard and are scheduled for repair or replacement based on their criticality. Along with increasing the number of distribution streetlights in service, this process will also include LED replacements and GIS data entry of all streetlights. This program results in the following benefits to the public interest and ratepayers, among others: -Advances the public policy of achieving a swift conversion of all public lighting to LEDs or renewable energy in order to reduce the general cost of illumination at a municipal and state level. *See* Act 17, Section 1.5(7)(b). - Results in electric consumption being fairly charged to light owners and re-establishes revenue from the lights that can also postpone or reduce future rate increases for customers. Therefore, it advances the public policy of implementing strategies geared

	toward achieving efficiency in the transmission, and distribution of electric power so as to guarantee the availability and supply thereof at an affordable, just, and reasonable cost. *See* Act 17, Section 1.5(2)(b)). -Increases public safety, as repairing failed lights can increase public safety, mitigate security risks and enables a more positive customer experience. Therefore, it advances the public policy of maintaining the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service. *See* Act 17, Section 1.5 (9)(e). -Smart streetlighting also helps modernize the grid, advancing the public policy of incentivizing grid modernization incorporating technology as appropriate to attain the transformation goals without entailing excessive spending. *See*, Act 17, Section 1.5(9)(g). **III. Billing Accuracy & Back Office** This program includes updates to bill print and delivery and other back office systems to ensure LUMA has the ability to continue to produce customer invoices. Current technology, machines and systems are outdated, creating a financial liability in delayed revenue of ~$12.5M for each day invoices are not produced. This upgrade includes acquisition of new hardware and software to support billing and customer contracts, along with removing redundant bill printing and enveloping equipment. Additionally, the program supports back office processing of service order paperwork and mobilizes resources to address backlogs of estimated and unbilled accounts. The program also implements a customer experience metrics dashboard and agent routing technology for billing services to reduce resolution time and increase customer satisfaction. This program results in the following benefits to the public interest and ratepayers, among others: -Improves efficiencies and removes billing backlogs and help improve collection metrics and reduce accounts receivable which advances the goal of ensuring reasonable prices for customers. By outsourcing the billing and back office function to a third party with reliable emergency response plan and business continuity plan, it improves resiliency of the billing system (existing equipment is vulnerable to flooding). These objectives advance the public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, a transparent and easy to understand bill, and a fast service response. *See* Act 17, Section 1.5(10)(a). -By more efficiently handling billing and back office functions and increased use of digital platforms to engage customers, the program helps ensure better customer relations and deliver more positive customer experience. The digital transformation also enables more effective management. This advances the public policy to provide incentives for grid modernization incorporating technology as appropriate to attain the transformation goals without entailing excessive spending. *See*, Act 17, Section 1.5(9)(g). **IV. Standardized Metering & Meter Shop Setup** This program is targeted at establishing a location for standardized meter testing for LUMA and the provision of appropriate internal and external meter testing equipment. Enhanced procedures are also included, along with operational support for the new facility and equipment. This program results in the following benefits to the public interest and ratepayers, among others: -Enables implementation of Advanced Metering Infrastructure to improve reliability by providing immediate alerts when outages occur. Accurate metering will also ensure customers pay their fair share thereby lowering costs to other customers. These objectives advance the public policy to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at

	a cost that is accessible, just, and reasonable, a transparent and easy to understand bill, and a fast service response. See Act 17, Section 1.5(10)(a). -Functioning meter shop and equipment will improve O&M efficiency by allowing more throughput of meters with same number of people. In addition to advancing the public policy of providing more reliable, stable and excellent electric service, mentioned above, this also advances the public policy that incentivizes grid modernization incorporating technology as appropriate to attain the transformation goals without entailing excessive spending. *See* Act 17, Section 1.5(9)(g). **V. Modernize Customer Service Technology** The Modernize Customer Service Technology program is primarily focused on remediating the telephony technology through the development and implementation of a new cloud-based contact center platform. Contact center software allows for the management of a high volume of inbound and outbound customer communications across a range of channels. Modernizing contact center procedures will mitigate LUMA's risk of customers being unable to report emergency situations. The program will create real time dashboards and reporting to cover key performance indicators across all of Customer Service, including the contact center, district offices and billing services. This program results in the following benefits to the public interest and ratepayers, among others: -Advances public safety by providing a reliable supported platform to enable consistent customer communication; providing faster response time for customer calls (e.g., to report dangerous situations) and providing flexible staffing/location options to provide continuous support during storms or other emergencies. -Beneficially impacts customer experience by delivering new self-service options, supporting new customer support channels, support efforts to decrease customer wait times and enables QA efforts to improve resolution of first contact by customer. -Faster response to outage calls results in faster restoration times. These objectives advance, among others and in pertinent part, the public policies of guaranteeing every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response (*see* Act 17, Section 1.5(10)(a)); to incentivize grid modernization incorporating technology as appropriate to attain the transformation goals without entailing excessive spending (*see* Act 17, Section 1.5(9)(g)); and to guarantee the safety and reliability of the electric infrastructure and maintain the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service (*see* Act 57, Section 1.5 (9)(a), (b) and (e).) **VI. Streetlight Billing** This program is an audit of streetlights and associated billing. PREPA has approximately 500,000 streetlights which should be audited on a regular cycle to be determined based on asset management procedures. This program will require LUMA to complete a physical audit of the streetlights, assigning each with a unique indicator/asset tag. Once this process is complete, updates will be made in the Customer Care and Billing (CC&B) system to ensure customers are being billed accurately for their lights. The program also includes communication with customers on corrections to the street lighting system. This program results in the following benefits to the public interest and ratepayers, among others: -Enables better streetlight management, improving traffic and pedestrian safety and personal security.

	-Customers can identify lights by unique identifiers and be able to call to report outages and streamline customer interactions. -Increased revenue from streetlighting may put downward pressure on the overall revenue requirement thereby reducing electricity customer's rates. -Increased accuracy in streetlight billing, enabling more systematic management of business. These objectives advance, among others and in pertinent part, the public policies of guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable and a fast service response. *See* Act 17, Section 1.5(10)(a). **VII. Physical Security for Distribution Facilities** This program is targeted at the physical security of distribution facilities by replacing and repairing gates and fencing around substations. It also addresses provision of locks for distribution switches and pad mounted transformers in the field and meter locks at customer metering points. This program results in the following benefits to the public interest and ratepayers, among others: -Improved security of facilities will help ensure a safer workplace. -Fence repair and lock replacement will help protect public safety and ensure safe operation of facilities. -Ring locks on meters will help reduce electricity theft and contributing to affordable rates. -Fence repair project will restore damaged infrastructure, hardening them in the process and ensuring an improvement in resiliency. These objectives advance, among others and in pertinent part, the public policies of guaranteeing every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable (*see* Act 17, Section 1.5(10)(a)); that infrastructure maintained in optimal conditions to ensure reliability, resilience and safety, among other things (*see* Act 17, Section 1.5(9)(e); and that the infrastructure be maintained in optimal conditions to ensure reliability and safety of the electric service (*see* Act 57, Section 1.2(f)). **VIII. Facilities Development & Implementation** This program is focused on the development, implementation, and maintenance of several different areas overseen by the Real Estate, Facility Services and Architectural divisions, including: (i) Construction required to remediate facilities and real property (e.g., warehouses, mechanic shops, etc.) damaged by natural disasters; (ii) Implementation of a facility capital improvement program; (iii) Implementation of an asset management system to support facility maintenance and the preventative maintenance program; (iv) deployment of robust security devices and systems; (v) development and implementation of a tenant services program; (vi) development and implementation of safety training programs for Facilities employees; (vii) Planning and construction to delineate space between LUMA and GenCo. This program results in the following benefits to the public interest and ratepayers, among others: -Enable the organization to focus on its core functions delivering service to the customer with greater reliability, at a lower cost, with greater efficiency and a lower safety risk. -Procuring materials and services through an economies of scale model, removing costs from supply chain processes and reducing material unit prices will reduce overall service costs.

	-Allows for more efficient replacement and repair of facility systems and their components to prepare for and withstand natural disasters. These objectives advance, among others and in pertinent part, the public policies of maintaining the electric infrastructure in optimal conditions to ensure reliability, resiliency and safety of electric service (*see* Act 17, Section 1.5 (9)(e); *see* also Act 57, Section 1.2(f)) and guaranteeing every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response (*see* Act 17, Section 1.5(10)(a)). **IX. Workflow Processes & Tracking** This program includes several initiatives that address gaps between current state and standard industry methods, practices, and processes to manage, track, and report progress on the performance of work in the field. Specific areas include: (i) Establishing proper and safe maintenance regimens (preventive, planned and unplanned corrective, and emergency repairs); (ii) adherence to design, maintenance, and construction standards; (iii) implementing proper inspection and testing procedures; (iv) Key Performance Indicators (KPIs) / Metric performance management with a focus on measuring and driving improvements in work quality, effectiveness, and efficiency; and (v) implementing technologies to reduce cycle time in identifying and remediating any performance anomalies while concurrently supporting the Asset Management function. This program results in the following benefits to the public interest and ratepayers, among others: -Reduces the risk of incidents and fatalities in the performance of work by building work plans that are interwoven with LUMA's emphasis on safety (including proper use of PPE), limiting injuries and avoiding fatalities. With respect to fleet and materials handling, well-planned work, planned and executed in accordance with applicable laws and regulations is analogous to these considerations for safety. -Overall improved work methods and quality will create a better constructed and maintained system; the public will be safer because the overall system operates as intended and any maintenance is planned to account for any interface with other facilities and the public at large. -A well-orchestrated work management process will alleviate several sources of customer-related issues: third-party damage, unplanned intrusions onto a customer's property, and rework resulting from poor quality. Better maintained assets, including those that support fieldwork (e.g., fleet), and improved work planning and execution translate directly to shorter, less costly outages and an overall improved customer experience. -Software solutions will support a more systematic approach to work management, thus improving quality, shifting the emphasis from reactive corrective maintenance to better planned preventive maintenance, and enabling the tracking of and resulting improvements in productivity. -Clarity of expectations with respect to work methods and mandatory standards, all part of an effective work management process, inevitably leads to improved productivity. Improved work planning leads directly to availability of equipment and tools (including less downtime on material and fleet), thus improving efficiency / increasing effectiveness of field personnel in the normal performance of work. In doing so, the organization is also better able to respond to emergencies (including system outages), with reduced reliance on overtime.

	-Work methods, vehicles and equipment will be used to complete FEMA work more safely and efficiently, one of the outcomes of which is improved outage response and system restoration timelines. -Efficient deployment of the workforce will result in improved worker productivity, leading to better use of federal funding (i.e., increased productivity). Control of the workforce and efficient dispatch of available resources will assist LUMA in responding to outages quicker, thus reducing the time required to restore damaged infrastructure and, as a result, service (as measured by SAIDI or CAIDI). -In the event of an emergency, disaster or catastrophic event, control of the workforce (planning and dispatch) and proper fleet and equipment (the result of effective preventative and corrective maintenance practices and enabling software), will aid LUMA employees in being better prepared to respond to outages and effect repairs to restore power quicker than previously experienced. Adherence to consistent quality standards, part and parcel to a more robust work management process and system, is consistent with and a necessary prerequisite to LUMA's objective for a more resilient grid. These objectives advance, among others and in pertinent part, the public policies of guaranteeing every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response (*see* Act 17, Section 1.5(10)(a)); that the energy infrastructure be maintained in optimal conditions to ensure reliability, resilience and safety (*see* Act 17, Section 1.5(9)(e); *see* also Act 57, Section 1.2(f)). **IX. Materials Management** This program covers all aspects of materials management and includes management of: Asset recovery**;** oil containment**; i**nventory management; asset suite reconfiguration; demand training; implementation and measurement of KPIs related to materials; capital plans for material handling and warehousing storage and facility improvements; logistics function and related equipment; and material evaluation and disposition. This program results in the following benefits to the public interest and ratepayers, among others: -Standardized procedures for inventory management, asset recovery, etc. will help to ensure safe working practices across the organization, both for a safer workplace and better public safety practices. -Availability of equipment and tools ensure that work tasks can be performed effectively and efficiently, and with reduced safety risk. -Effective materials management and asset recovery processes support rapid restoration in case of a major event such as hurricane, thereby reducing safety impacts of power outages. -Better processes for logistics, inventory management, asset recovery, etc. will help streamline internal operations, thus improving service reliability. These processes will also help to make spending on these areas more efficient, thus allowing for electricity to be delivered at more reasonable prices. -Standardization of processes will help to systematize business operations, both for overall management, and as applied to how employees conduct themselves within functions under Materials Management. As a whole, this will help to improve major outage event readiness and emergency materials management, thus contributing to improved project delivery -Measurement of process efficiency will track progress to performance targets and identify gaps in process, fostering continuous improvement and improving project delivery.

	-A robust Materials Management framework will ensure that all material purchases and deployment to federally funded projects will be at the lowest possible cost while maintaining quality and service, utilizing existing materials agreements established for regular operations requirements. -The improvements in materials management supported under this program will help to restore damaged grid infrastructure by ensuring construction materials are available for use, follow specifications and quality requirements, and efficiently and effectively deployed to project sites. These objectives advance, among others and in pertinent part, the public policies to guarantee every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response (*see* Act 17, Section 1.5(10)(a)); that the electricity infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of the electric service (*see* Section 1.5(9)(e); *see* also Act 57, Section 1.2); and that there be compliance with applicable environmental laws and regulations (*see* Act 17, Section 1.5(6)(a)). **X. T&D Fleet Program** This program includes a range of activities and investments to bring the current fleet up to industry standards including vehicles, aircraft and equipment. Additionally, activities will be focused on initializing and improving processes for data collection, repair and maintenance of these assets. This program results in the following benefits to the public interest and ratepayers, among others: -Reduced risk of safety related incidents since vehicles are routinely inspected and properly maintained, operator and mechanic training is improved, and the oldest and worst condition fleet assets are retired. -Fewer accidents and equipment malfunctions due to better maintained fleet assets and well-trained operators. -Improved response time for customer service due to more efficient routing via telematics (e.g., routing of the closest available crew to address a customer outage). -Reduced service restoration times, as measured by SAIDI (average customer minutes out of service) and improved fleet responsiveness, particularly during major events. -Proper maintenance and fleet lifecycle replacement practices will reduce required spending on fleet maintenance as well as decreasing the labor downtime associated with inefficient means of transportation for line crews. -Improve crew operating efficiency by providing the right vehicle and/or equipment for the job. These objectives advance, among others and in pertinent part, the public policies of guaranteeing every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable, and a fast service response (*see* Act 17, Section 1.5(10)(a)); and that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service (*see* Section 1.5 (9)(e); *see also* Section 1.2 (f)). **XI. Update to Third Party Use, Audit, Contract and Billing Procedures** This program is focused on updating procedures for third party use of land, use of infrastructure, audits, contracts, and billing. The program will include: Developing consistent processes and agreement templates to ensure compliance with legislation; streamlining and improving customer service for third parties who wish to use pole infrastructure; establishing annual billing to

	third parties to ensure they are paying the associated fee to attach to each individual structure (either overhead or underground); completing updates and corrections to the CC&B system to ensure data accurately reflects the current asset management joint use attachment numbers and identifies responsible billing parties; and implementing necessary changes to the billing process for joint use billing, which may include contract updates and renegotiation. This program results in the following benefits to the public interest and ratepayers, among others: -Prioritizes safety by decluttering poles making them much safer for employees as they climb them. -Standard form agreements that take into account the work to be completed and the necessary communications with Operations will also improve safety for both employees and the public. -Improved efficiency in responding to requests from outside parties will lead to improved customer experience. -Increased accuracy in third party customer billing. Potential for increased customer satisfaction as third-party customers will receive accurate billing. -Increased revenue from third party customer billing will put downward pressure on the overall revenue requirement thereby reducing electricity customer's rates. This involves a review of appropriate and justifiable rates with the advent of 5G technology. -Increased visibility to third party attachments on structures will improve ability to complete planning activities. -The procedures to complete agreements with outside parties to comply with requirements to use existing poles will increase employee effectiveness and productivity by allowing employees to make decisions within established guidelines with clear standards. -Reduced process administration by eliminating manual tracking systems for joint use data. -Improved ability to query financial data related to joint use revenue will streamline processes for employees. -This program helps to repair damage to pole integrity caused by the current system for managing third party attachments. -New processes with enforceable contracts and standards will control the proliferation of third-party attachments and make sure they are safe and do not harm pole integrity. -Potential annual revenue generated from up-to-date joint use attachments billing. These objectives advance, among others and in pertinent part, the public policies of guaranteeing every consumer's right to receive a reliable, stable, and excellent electric power service at a cost that is accessible, just, and reasonable (*see* Act 17, Section 1.5(10)(a)); and that the electric infrastructure be maintained in optimal conditions to ensure reliability, resiliency and safety of electric service (*see* Section 1.5 (9)(e); *see also* Section 1.2 (f)).