

**GOVERNMENT OF PUERTO RICO
PUERTO RICO PUBLIC SERVICE REGULATORY BOARD
PUERTO RICO ENERGY BUREAU**

NEPR

Received:

Jun 14, 2021

4:56 PM

IN RE:
IN RE: DEMAND RESPONSE PLAN
REVIEW, IMPLEMENTATION AND
MONITORING

CASE NO. NEPR-MI-2021-0006

SUBJECT: Motion Submitting Revised Presentation
for the June 15th Technical Conference on Three-
Year Demand Response Plan.

**MOTION SUBMITTING REVISED PRESENTATION FOR TECHNICAL
CONFERENCE SCHEDULED FOR JUNE 15, 2021**

TO THE PUERTO RICO ENERGY BUREAU:

COME NOW, LUMA ENERGY, LLC as Management Co., and **LUMA ENERGY
SERVCO, LLC** (collectively, LUMA), through the undersigned legal counsel and respectfully
state and submit the following:

1. On June 11, 2021, LUMA filed before this honorable Puerto Rico Energy Bureau
("Energy Bureau"), the Power Point™ presentation to be offered by Guidehouse consultants
during the June 15th Technical Conference scheduled in this proceeding.

2. Today, June 14, 2021, the Energy Bureau issued an order directing LUMA to file
on or before 5:00 pm, a revised presentation removing the logo of the Energy Bureau ("June 14th
Order").

3. In compliance with the June 14th Order, LUMA hereby submits a revised
presentation to be offered in the Technical Conference scheduled for June 15th in this proceeding.¹

¹ The proceeding identification number was included in the first slide.

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned, **accept** the revised Power Point™ presentation to be offered by Guidehouse at the June 15th Technical Conference and **deem** that LUMA complied with the June 14th Order.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 14th day of June 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 attorneys for the Puerto Rico Electric Power Authority, Joannely Marrero-Cruz, jmarrero@diazvaz.law; and Katiuska Bolaños-Lugo, kbolanos@diazvaz.law.



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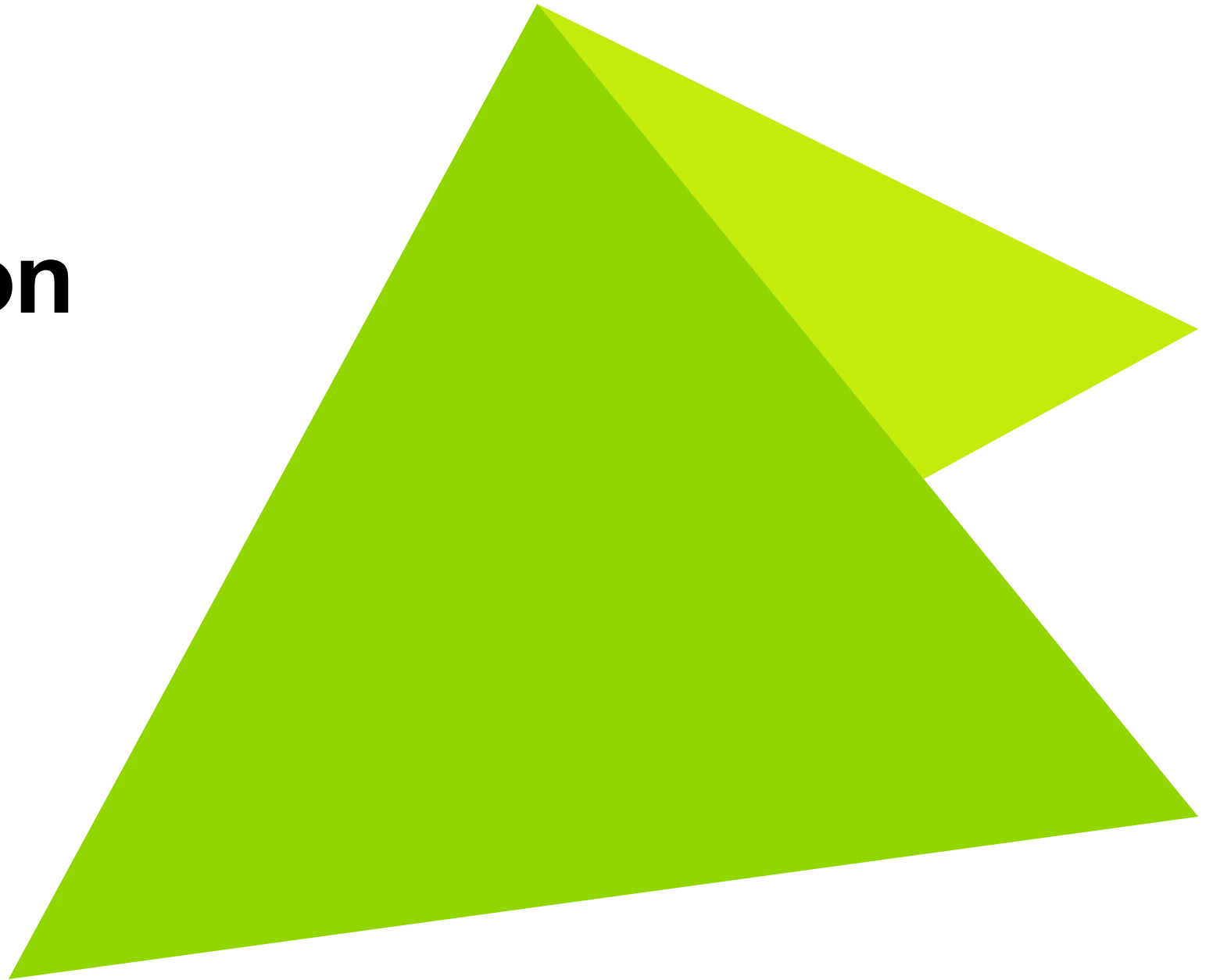


Presentation on Status of DR Planning

Technical Conference



NEPR-MI-2021-0006
June 15, 2021





Agenda

1. Introductions

2. Current Status of DR and EE Planning

- a. Overview of Proposed Phased Approach to DR Planning
- b. Coordination of DR and EE
- c. Responses to Energy Bureau Questions
- d. Past Activities & DR Work in Progress

3. Discussion and Q&A

Introductions





Professional Summary

Judy Simon, a Director in Guidehouse's Energy, Sustainability and Infrastructure practice and with over 35 years of EE/DR planning, program design and associated regulatory experience, is a Guidehouse lead of Clean Energy Programs.

As regulatory utility commissioner with the Ontario Energy Board (OEB) for 10 years, adjudicating over 100 proceedings, she was instrumental in creating Ontario's first DSM framework and guidelines for demand-side management (DSM) plans. As a consultant, Judy has advised more than 25 electric utilities on the design and approval of their 3-year and 5-year DSM plans, which included collaborations with the gas utility. She has advised Enbridge Gas on their DSM portfolio and testified successfully on their behalf before the OEB on DSM framework improvements, including the appropriate shareholder cost recovery and incentive mechanisms, and stakeholder engagement. She has also developed DSM Plans for ATCO Electric and testified before the regulator on their behalf.

More recently, in 2020 she led the development of the design of a DSM residential portfolio of programs for Abu Dhabi Department of Energy, which included behavioral as well as resource acquisition programs. She is currently advising Efficiency Nova Scotia on the development of their 2023-2025 DSM Plan, which will include DR programs.

Expertise

- **EE/DR Planning Frameworks:** Leads and advised on development of regulatory frameworks and guidelines for EE, DR and DER Plans
- **EE/DR Planning:** Leads and advises on development of EE, DR, integrated DSM and DER Plans and associated programs and pilots, including program design and stakeholder engagement. Experience in preparing filings and related testimony
- **EE/DR Program Delivery:** Leads delivery of EE and DR programs covering residential, commercial, institutional, industrial, and agricultural sectors
- **EE/DR Evaluation:** Served for several years on Union Gas' and on Enbridge Gas' DSM Evaluation Committees which involved review of their DSM programs and making recommendations for improvements to planning, program design and delivery

Education

- 2012 Mini-MBA (EDC – Cycle 1) McGill University Executive Institute
- 1980 Master of Environmental Design (Environmental Science), University of Calgary
- 1977 Bachelor of Science, University Scholar, Great Distinction, McGill University

Clients





Professional Summary

Debyani Ghosh is an Associate Director with Guidehouse's Energy Practice with over 15 years of consulting experience working with clients in the areas of Demand Response (DR), Energy Efficiency (EE), and Distributed Energy Resources (DERs).

She has extensive expertise in DR/DER and leads studies in the areas of potential and cost-effectiveness assessment, program design, plan development, resource acquisition, DR/DER emerging technology and program roadmaps, and program evaluation. Additionally, she is experienced in EE and has been leading EE/DR integration in recent studies. Her recent research has focused on load flexibility and requirements for scaling up deployment of smart home and building technologies for providing flexible grid services.

She has led several studies in these areas for Public Utility Commissions, utilities, and third-party program administrators. She led the DR potential assessment study for the Hawaiian Electric Companies and assisted Hawaiian utilities in their regulatory filings. She recently led potential studies and Plan development for utilities in the Northeast, Southwest, California, Pacific Northwest, Midwest, and for utilities and EE program administrators in Canada.

Debyani teaches "Evolution from DR to DERs" and "Demand Response Program Design and Implementation" courses offered by the Peak Load Management Alliance (PLMA) to load management practitioners and has presented her work at recent conferences.

Expertise

- **DR/DER Potential Studies:** Leads DR/DER potential studies including market and technology characterizations, customer surveys, development of supply curves and cost-effectiveness assessment of DR/DER programs and technologies
- **EE and DR Integration.** Recently led EE and DR potential integration for a state-wide EE potential study for the California PUC. Additionally, leading EE-DR potential integration in other ongoing studies.
- **DR/DER Planning:** Leads development of DR/DER portfolio and plans for utilities, with a roadmap for rolling out a mix of DR/DER programs and rates and supported utilities with resource acquisition.
- **Load Flexibility Research:** Leads load flexibility research and related barriers and opportunities for scaling up deployment smart home and building technologies for flexible grid services.
- **Program Evaluation:** Experienced in conducting DR/DER Program process evaluation studies.

Education

- Ph.D., Public Policy, Indian Institute of Management-Ahmedabad, India
- BS, Chemical Engineering, Jadavpur University, India.

Clients



Current Status of DR and EE Planning



Overview of Proposed Phased Approach to DR Planning

Overview of Proposed Phased Approach to DR Planning

Guidehouse proposed two parallel phases to meet DR Plan requirements set forth by regulation. Baseline and potential study data are critical to inform the Three-Year DR Plan.

Phase 1 – DR Strategic Plan

An interim DR Strategic Plan could be delivered earlier, to facilitate dialogue among stakeholders. This high-level plan would lay the groundwork for the more detailed Three-Year DR Plan that incorporates baseline and potential study data. The Strategic Plan would:

- Describe the different DR regulation requirements and objectives that can be addressed now or in Phase 2.
- Include a suggested portfolio of DR programs and pilots that could help fulfill Puerto Rico's DR objectives.
- Provide top-down savings, cost and cost-effectiveness estimates for the suggested DR programs, relying on secondary data from other jurisdictions.
- Further identify and assess additional primary data collection needs.

Phase 2 – Three-Year DR Plan

A Three-Year DR Plan first requires Baseline and Potential Studies with primary research to meet all requirements in the Regulation. This Plan would:

- Collect primary data on end-uses, DR-enabling technology and saturation data, and customer willingness to enroll in DR programs.
- Specify LUMA's targets for acquiring cost-effective demand response resources.
- Justify program designs based on cost-effectiveness to the Puerto Rico energy system.
- Establish the required budget, by year, for DR programs.
- Estimate reductions in peak demand.
- Demonstrate that the system savings from the DR programs will exceed the costs.

Why A Phased Approach?

- **To begin working towards a DR Plan in the near-term** that reflects the type and level of data that are currently available.
- To engage stakeholders in a structured process in the near-term.
- To better understand program objectives, implementation capabilities and constraints.

The phased approach was developed to meet the Energy Bureau's timeline requirements, but different approaches can be taken.

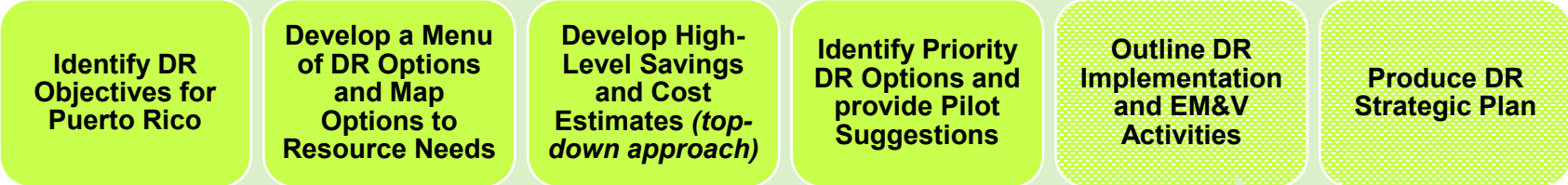
For example, the interim DR Strategic Plan filing can be eliminated in favor of waiting for the baseline and potential study data to inform a robust three-year DR Plan. Either approach requires that a DR Plan include:

- Planning and potential launching pilot programs in the near-term (2021).
- Conducting detailed analysis required for a Three-Year DR Plan using relevant Puerto Rico specific data through the completion of baseline data collection and analysis and potential study (2021-2022).
- Providing actionable medium and long-term DR program recommendations and design based on the data collection and analysis (2021-2022).

Proposed DR Plan Development Process

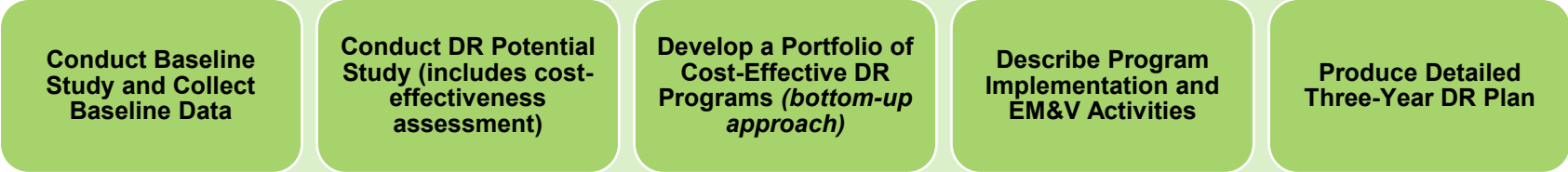
Phase 1 Process Flowchart

To produce an interim plan until the baseline and potential studies are completed.

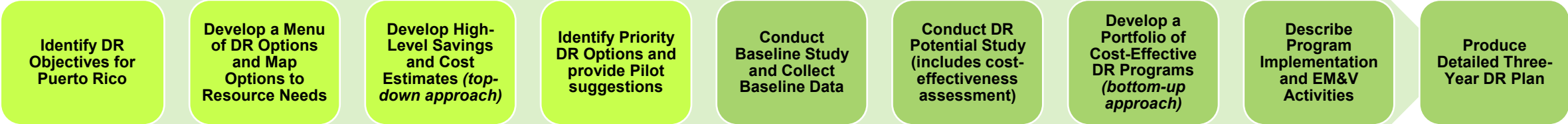


Phase 2 Process Flowchart

To develop a comprehensive plan in alignment with when the baseline and potential studies are completed.

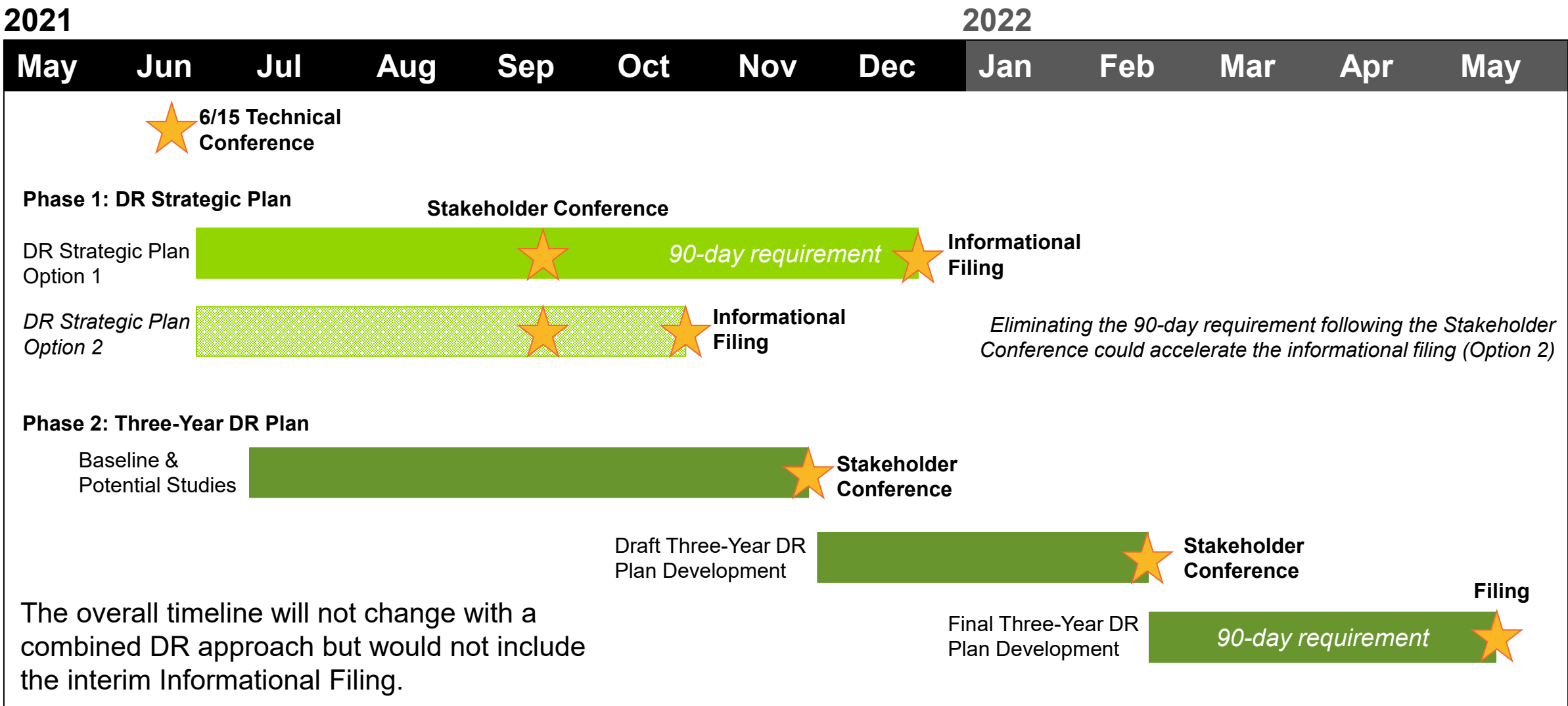


Combined DR Process Flowchart



Note: The steps in the Phase 2 and Combined DR processes are predicated on Guidehouse conducting the baseline and potential studies.

Proposed DR Plan Schedule



Coordination of DR and EE

Coordination of DR & EE Regulation Key Components

Key Common Components

- DR and EE programs to provide the most cost-effective resources, ultimately based on the Puerto Rico Test (PR Test)
- Three-Year Plans
 - Three-year program implementation period
 - Plans should include targets for resources, cost-effectiveness, budget, savings, evaluation plan, etc.
 - Filing no more than 6 months after effective date of the regulation
 - Stakeholder meeting 90-days before filing the Plan
 - Annual Update the first and second years of implementation of each Three-Year Plan
 - Annual report on performance
 - Quarterly public reports
- Pilot or quick start programs encouraged

Key Differences

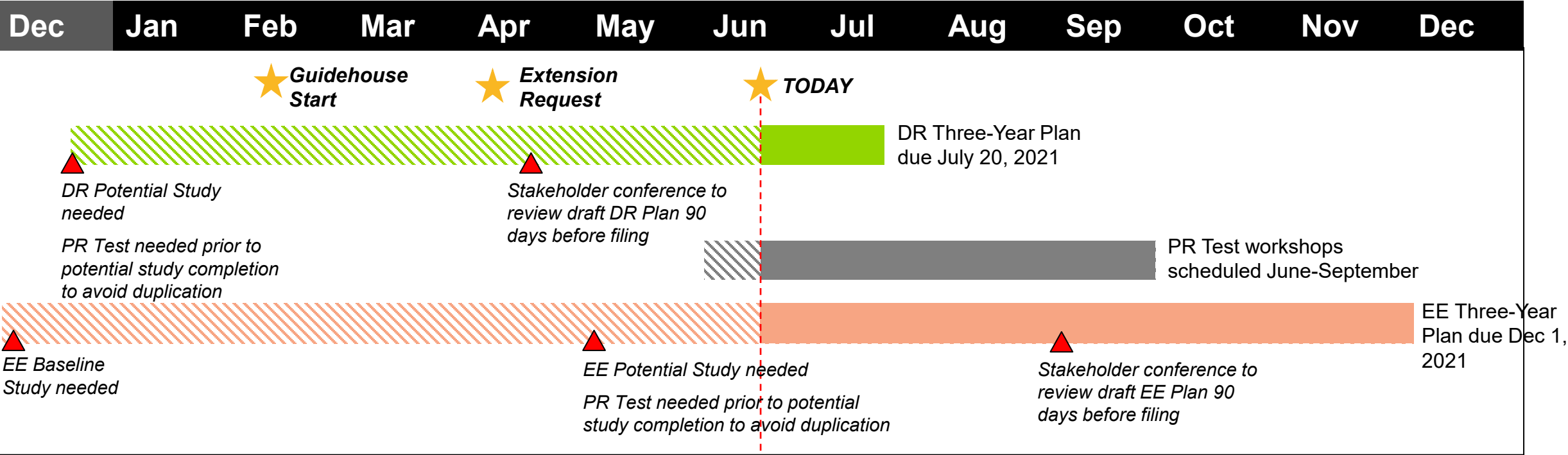
- Cost-effectiveness test
 - **DR:** To use the Utility Cost Test (UCT) in the interim, until the PR Test is established
 - **EE:** To use the UCT in the interim until PR Test is established, but if Baseline and Potential Studies are completed and the PR Test is not finalized, to use the Total Resource Cost Test (TRC)
- Timing of Three-Year Plans
 - **DR:** Three-Year Plan due July 20, 2021, and triennially
 - **EE:** Three-Year Plan due December 1, 2021, and triennially thereafter on March 1, starting March 1, 2024
- Measurement and Verification
 - **DR:** Conducted by LUMA (procedures approved by Energy Bureau)
 - **EE:** Conducted by Energy Bureau
- Stakeholder Working Group
 - **DR:** No stakeholder working group
 - **EE:** Stakeholder working group that meets at least quarterly

Reconciling key differences and harmonizing the EE and DR planning process would result in increased efficiency and a more cost-effective process.

Timeline Conflicts

2020 2021

- Assumptions:
- 3-6 months to complete a baseline study
 - 3-6 months to complete a potential study
- ▲ Completion date



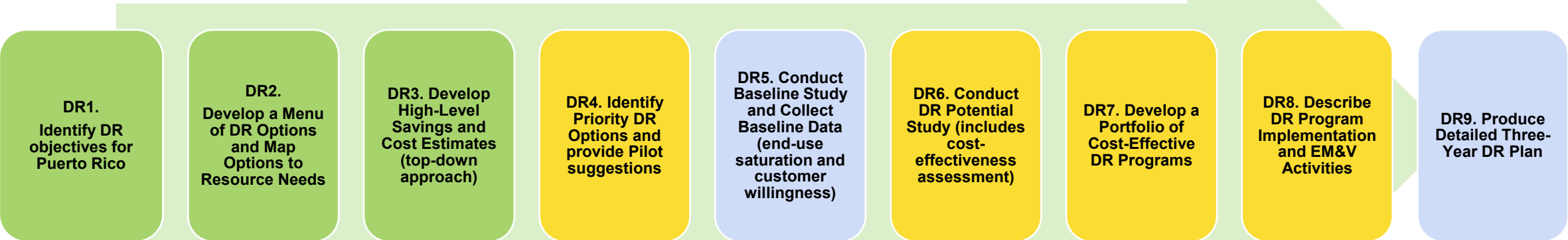
- Both EE and DR Plan are dependent on baseline and potential studies, which have not yet been completed, making the current due dates not achievable
- Risk of delays if multiple subcontractors are responsible for baseline and potential studies
- Overall timing of completion of the EE and DR Plans do not align
- The PR Test will not be available for the DR Plan and is unlikely to be available in a timely manner for the EE Plan, to avoid duplication in cost-effectiveness testing as part of the potential studies

Discussion Question

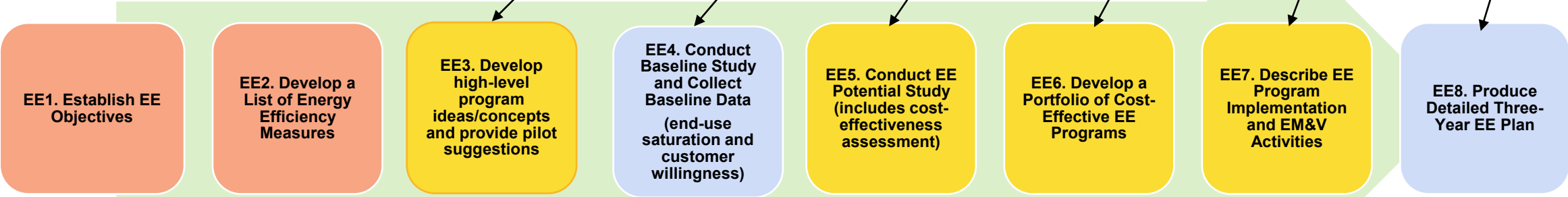
By when is the PR test expected to be approved?

Integrated EE-DR Plan Development Approach

Demand Response



Energy Efficiency

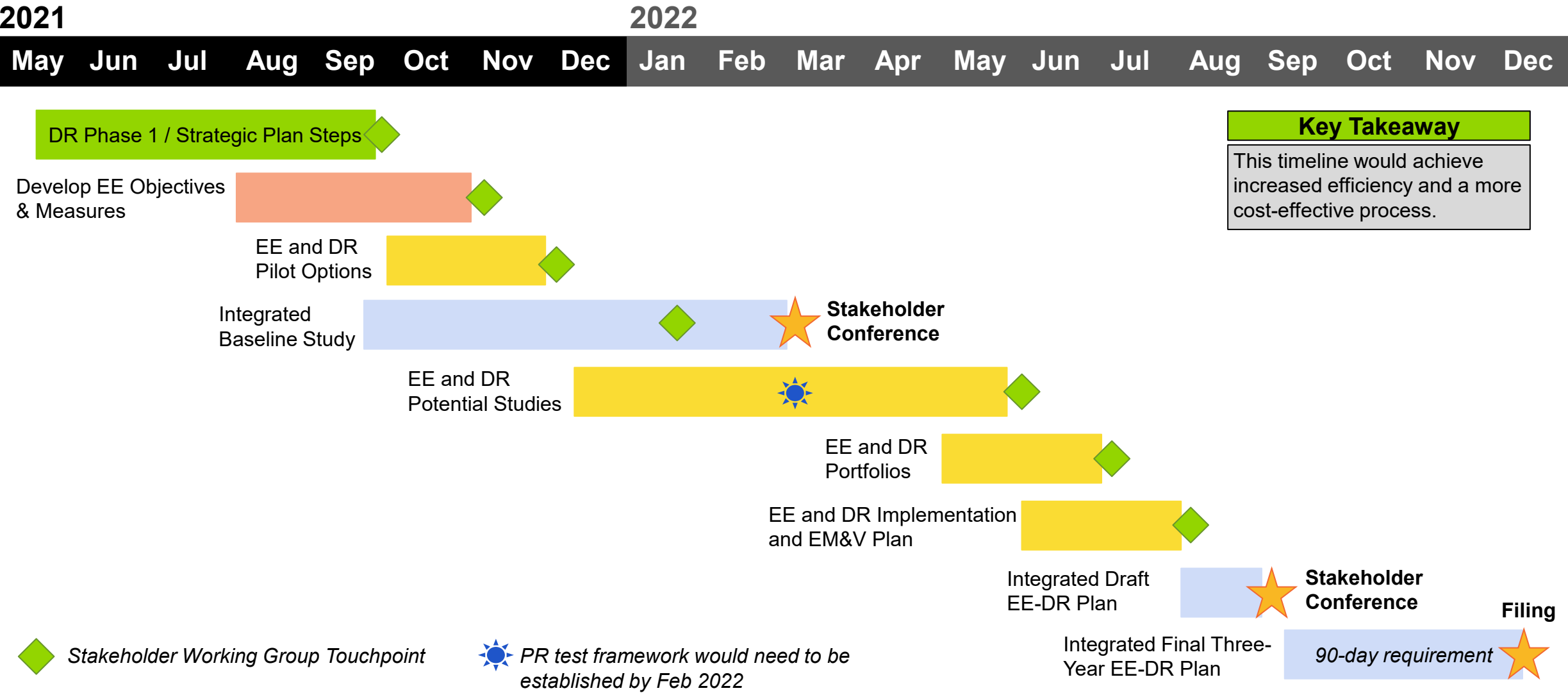


↔ Represents interactions and points of coordination between EE and DR

- DR specific
- EE specific
- Single step that covers both EE and DR
- Incorporates EE-DR interactions and considers an IDSM perspective.

Note: The steps in this Integrated EE-DR approach are predicated on Guidehouse conducting the baseline and potential studies for both EE and DR.

Proposed Integrated EE-DR Plan Schedule



Benefits and Considerations of Combined EE & DR Planning & Program Development*

Benefits: Process alignment in developing EE and DR Plans and Programs

- **Alignment on approach and timelines** for developing both EE and DR Plans
- Allows for representation of **EE-DR interactions** during planning stages and adoption of an **Integrated Demand Side Management (IDSM) approach** in developing programs
- Allows **coordination in launch of quick start EE and DR pilots/programs**
- Allows for **streamlining of the stakeholder engagement process** (e.g., one stakeholder working group for providing advice for both EE and DR)

Benefits: Methods alignment for both baseline and potential studies (Coordinated and Integrated Analysis Framework)

Single comprehensive baseline and customer willingness study covering both DR and EE

- Single comprehensive baseline study covering both EE and DR avoids duplication in customer outreach efforts for primary data collection
- Attains alignment in segmentation and sampling methods for EE- and DR-related baseline data collection efforts
- Helps assess customer willingness to enroll in potential future IDSM program offers and assess customer propensity from an integrated perspective

Coordination between EE and DR potential studies

- Allows consideration of IDSM measures (e.g., smart thermostats, lighting controls) and representation of benefits and costs from an integrated EE and DR perspective
- Allows representation of EE-DR interactions during measure characterization, developing baseline projections, and customer adoption of efficient and DR-enabling technologies

Considerations: Shift in roles and responsibilities

- Modified role of PREB consultant reviewing EE and DR baseline and potential studies, rather than conducting these studies
 - However, baseline and potential studies are typically conducted by the utility, with regulatory oversight

Discussion Questions

- When will the decision on having one integrated EE and DR Plan be made?
- Will either LUMA or PREB lead the baseline and potential studies?
- If PREB leads baseline and potential studies, what is the timeline for completion of these studies?

*Assumes LUMA's consultant conducts both baseline and potential studies for both EE and DR

Funding for DR and EE

Discussion Question

What are the planned funding sources for EE and DR?

Funding Options for DR and EE Plans and Program Delivery

- We assume cost recovery / funding is made available on a timeline that aligns with the future EE/DR program schedules, and that funding is consistent / recurring
 - Funding options include rate riders (either on distribution or generation charges), system benefits charge, and federal funds. Federal funds are unlikely to provide consistent, recurring annual funding source.
 - Funding sources for EE and DR Plan and Program Delivery to be decided by PREB
 - There is a risk to these activities being completed if funding is not identified and available

Responses to Energy Bureau Questions

Responses to Energy Bureau Questions

Question 1

What is PREPA's current thinking regarding how it will promptly capture the value of the existing distributed battery energy storage resource?

- a. Does PREPA intend to capture storage value via DR programs?
- b. Does PREPA know which customers have BESS resources?

Conceptually, battery storage offers significant promise as a demand response resource. Potential opportunities include:

- A program to promote shifting load to battery storage instead of on-site backup generators.
- A program to utilize batteries for DR to dispatch batteries during DR events.

However, very little customer/market research has been completed to understand which customers have BESS resources or to gauge their interest and willingness to participate.

PREPA, through its web portal, had been registering storage information of clients that apply for the Net Metering Program since July 2020. However, before that date, PREPA did not have reliable numbers, since the portal did not have provisions to insert energy storage availability. Additionally, there were significant number of clients that were not registered and installed their storage right after Hurricane María, as part of Executive Order OE-2017-64.

Responses to Energy Bureau Questions

Question 1 (continued)

c. Does PREPA expect this resource to be reflected as a virtual power plant (VPP) resource via its current procurement solicitation?

Yes. As part of the RFP, VPPs can be represented as DR resources.

The RFP defines VPPs as: “VPP means (i) a Demand Response Resource, or (ii) any combination of a Renewable Energy Resource, Energy Storage Resource and Demand Response Resource, in each case with an aggregated net capacity of at least five (5) MW, connected to the distribution system, which a Proponent aggregator or its agent, assembles, registers, contracts to call upon and control, monitors, control and makes available for direct or indirect dispatch by PREPA or its successor through a software-based central control system in accordance with the terms of the VPPA.”

Responses to Energy Bureau Questions

Question 2

The Guidehouse proposal, included as Exhibit A to the Motion, does not identify a timeframe for the launch of DR programs, whether as pilots, quick start programs, or full-fledged programs.

- a. What is PREPA's current expectation regarding when it will launch any DR programs?
- b. What is LUMA's current expectation regarding DR programs? Will LUMA continue programs that PREPA launches before the transition? When will LUMA launch DR programs if PREPA has not launched them by the time of the transition?

PREPA did not launch any DR programs prior to the transition to LUMA on June 1, 2021. LUMA is focused on working with Guidehouse to develop a portfolio of DR programs that is practical, provides effective implementation and ultimately complies with established regulations. LUMA intends to launch one or more pilots to test certain measures and delivery strategies with one or more types of customers, once the Energy Efficiency (EE) Regulation is approved, enabling LUMA to effectively integrate its DR planning with energy efficiency planning to prepare one integrated DR and EE Plan.

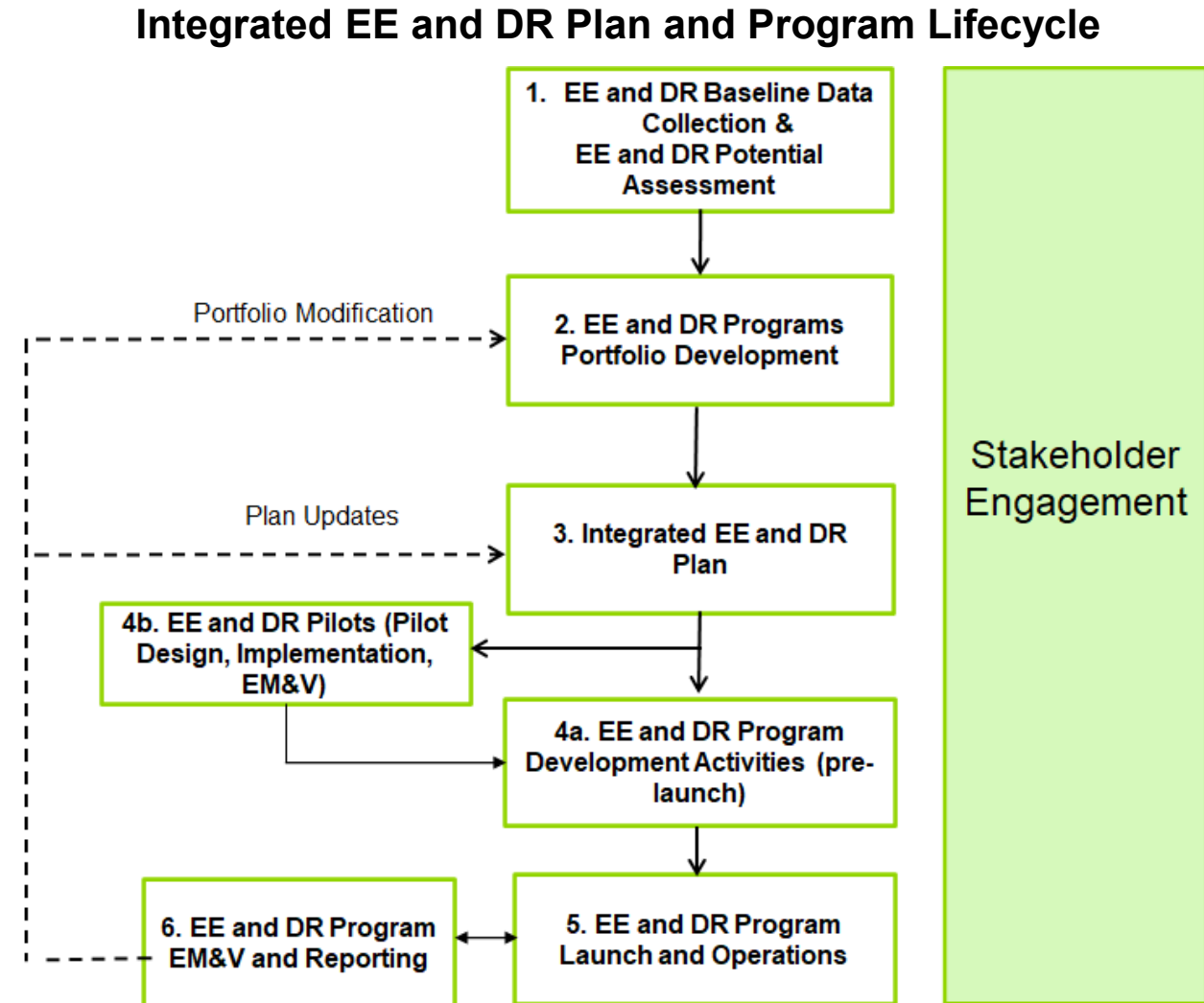
Timelines were not included in the Guidehouse proposal for several reasons:

- We expect the regulatory and funding process will take time to complete and there is uncertainty around this timing.
- Research and planning are required first before we can establish the timing for program launch.
- Research, analysis and planning is needed to understand which types of programs will be successful in Puerto Rico.

The proposed integrated EE-DR approach for Plan and Program development will allow for coordination in design and launch of both EE and DR pilots and programs and consideration of an integrated (IDSM) perspective, with certain programs and pilots having both EE and DR components.

Question 2 (continued)

The benefits associated with an integrated approach for EE and DR Plan and Program Development, plus Program Launch and Operations could potentially be realized through following the stages represented in the flowchart.



Responses to Energy Bureau Questions

Question 2 (continued)

c. What specific steps must be completed before pilot or quick-start DR programs could be launched? What steps could be completed in parallel while pilot or quick-start DR programs are in operation?

The **specific steps to complete before launching pilot or quick-start DR programs are:** 1) develop a broad **menu of possible DR options** and map these to eligible customer classes; 2) **characterize these options** to determine high level savings and cost estimates using a top-down approach; 3) **prioritize the options** based on savings and cost estimates and identify those that could be considered as pilots or quick-start DR programs; and 4) **design pilot and quick-start programs** and EM&V Plan; 5) detail DR pilot and quick-start program **implementation steps**; and 6) **launch** pilot and quick-start DR programs.

The **steps to complete while pilot or quick-start programs are in operation are:** 1) **prepare baseline study** to collect PR-specific data on end-use equipment saturation and customer willingness; 2) carry out **bottom-up potential study** with detailed market and measure characterization using the baseline data; 3) detail itemized program cost calculations and **cost-effectiveness assessment** using the required cost-effectiveness tests; 4) **develop roadmap** for rolling out further pilots and programs based on potential study and cost-effectiveness assessment results; 5) **incorporate learnings from pilots and quick-start programs**, where applicable, in future pilot and program design and implementation plans.

It should be noted that PREPA's last DR status report provided insights on customer concerns associated with DR program participation (from high demand industrial and commercial customers). This lack of "market readiness" likely means additional time and effort up front will be needed for education and communications campaigns to overcome barriers toward active participation in DR programs and to craft the right value-proposition. Without experience in the market with DR programs to date, there is significant uncertainty in the level of participation to expect from different DR program types. Accordingly, the timeline for launch and delivery may also vary across program types.

Responses to Energy Bureau Questions

Question 2 (continued)

c. What specific steps must be completed before pilot or quick-start DR programs could be launched? What steps could be completed in parallel while pilot or quick-start DR programs are in operation?

If PREB were willing to allow for uncertainty in outcomes in any pilots that are launched before the Three-Year DR Plan, LUMA would consider launching a pilot from Phase 1 of Guidehouse's proposal (DR Strategic Plan) to test curtailment strategies, collect data on DR impacts, and gather insights on customer preferences for program parameters; this would help identify where most DR opportunities may lie once a full program is launched.

Under an **integrated EE and DR approach**, the steps for **DR pilot and quick-start program launch would be coordinated with EE pilot and quick-start program launch**. This would allow testing of technology performance and pilot/program delivery strategies from an IDSM perspective. For example, if the pilots/quick-start programs were to test technologies that provide dual EE and DR benefits (e.g., smart thermostats), it may be possible to design a single pilot that tests both energy savings and DR performance and assess customer willingness to enroll in a future IDSM program with smart thermostats.

Responses to Energy Bureau Questions

Question 3

Please describe how PREPA, LUMA, and Guidehouse plan to handle the PREPA to LUMA transition regarding DR.

a. Does Guidehouse's contract transition to LUMA?

Guidehouse's contract with PREPA was assumed by LUMA.

LUMA has become actively involved in DR planning with PREPA and Guidehouse and has carried out a smooth transition regarding these ongoing activities.

Responses to Energy Bureau Questions

Question 4

Please describe in more detail the stakeholder engagement that PREPA/Guidehouse and LUMA believe are appropriate at different stages of DR program development and implementation.

Guidehouse addresses stakeholder engagement in the DR planning stage as follows:

- **Phase 1** would produce a DR Strategic Plan with one stakeholder conference approximately 3-4 months after preliminary data collection and plan development begins.
 - This stakeholder conference would involve sharing information and soliciting feedback about the initial suggested portfolio of DR programs, top-down savings and cost estimates, and indicative cost-effectiveness.
- **Phase 2** would produce the final Three-Year DR Plan with two stakeholder conferences.
 - The first Phase 2 stakeholder conference would occur approximately 5 months after primary research and data collection begins and would involve sharing information and soliciting feedback about the DR baseline study.
 - The second stakeholder conference would occur approximately 2-3 months later and would involve sharing information and soliciting feedback on the draft Three-Year DR Plan.
- **Integrated EE-DR Plan development** would produce the final Three-Year integrated DR and EE Plan with two stakeholder conferences and involvement throughout the planning of the Stakeholder Working Group.
 - The first stakeholder conference would occur after the completion of the baseline studies (February 2022) and the second after the preparation of the draft DR and EE Plan (September 2022)
- **The Stakeholder Working Group would meet throughout the planning process at each of the key steps to provide advice on portfolio and program design - technologies, markets, trade ally needs, incentive levels, customer support services among other items.**

Responses to Energy Bureau Questions

Question 5

The Energy Bureau has published a Proposed Regulation for Energy Efficiency ("EE") that contains a Three-year EE planning obligation. The Energy Bureau's goal is to align the schedules for the three-year plans between EE and DR. Due to the financial implications, the Energy Bureau considers that the three-year plans should be aligned with fiscal years (i.e., July 1 to June 30).

- a. What would be required regarding DR planning and analysis to begin a three- year DR period on July 1, 2022?
- b. Would those requirements be changed in any way if the Energy Bureau were to explicitly allow for a revised plan to cover the second and third years of the Three-year plan?

a. The requirements for DR planning and analysis to begin a three-year DR period on July 1, 2022 are the following:

- LUMA conducts both **EE and DR baseline and potential studies**.
- The workstreams associated with conducting both baseline and potential studies are initiated in July 2021.
- Elimination of the 90-day stakeholder review and comment period before final submission.

b. We don't expect the requirements to change in any way because the baseline and potential studies need to be conducted prior to submitting the EE and DR Plans in the first year.

We have begun to develop the DR Plan while we await approval on timing and integration with the EE planning. LUMA and Guidehouse would like to confirm what the "three-year DR period" means in this context and what it would entail. For example, which stages of DR program development and implementation are included?

Responses to Energy Bureau Questions

Question 6

The Energy Bureau intends to conduct an EE and DR market baseline study between summer 2021 and spring 2022. Guidehouse suggests it would undertake a similar DR study by the fall of 2021, to inform the Three-year DR plan to be filed in 2022. The Energy Bureau sees value in both a faster study (as proposed by Guidehouse), to inform initial program planning, and a more comprehensive study (that could support program refinement and expansion beyond early pilots/quick start programs).

a. Could Guidehouse provide more detail regarding its proposed DR study? Could Guidehouse collect limited information regarding EE as part of its research?

With a DR-only approach, Guidehouse plans to collect end-use equipment saturation information relevant for DR in the baseline study. The end-use equipment saturation data will be common for both DR and EE (e.g., saturation of Ductless Mini Split Heat Pumps among residential customers). In addition to the end-use equipment saturation data, the DR baseline study would collect information on the penetration of energy efficient technologies that also enable DR (e.g., programmable thermostats, lighting controls, energy management system). As a result, Guidehouse will collect limited information regarding EE as part of its research.

A DR-only baseline study will not include EE measures that do not enable DR. For example, data on building envelope measures that are EE only and are not relevant for DR will not be included in the baseline data collection. In addition to data collection on applicable end-uses and equipment saturations for DR-enabling technologies, Guidehouse will include questions to assess customer willingness to enroll in DR programs in the primary research.

Responses to Energy Bureau Questions

Question 6 (continued)

The Energy Bureau intends to conduct an EE and DR market baseline study between summer 2021 and spring 2022. Guidehouse suggests it would undertake a similar DR study by the fall of 2021, to inform the Three-year DR plan to be filed in 2022. The Energy Bureau sees value in both a faster study (as proposed by Guidehouse), to inform initial program planning, and a more comprehensive study (that could support program refinement and expansion beyond early pilots/quick start programs).

a. Could Guidehouse provide more detail regarding its proposed DR study? Could Guidehouse collect limited information regarding EE as part of its research?

With an **integrated EE-DR approach**, Guidehouse would undertake comprehensive saturation data collection covering EE- and DR-relevant end-uses and end-use equipment. This would offer the following advantages:

- Single comprehensive baseline study covering both EE and DR avoids duplication in customer outreach efforts for primary data collection
- Attains alignment in segmentation and sampling methods for EE- and DR-related baseline data collection efforts
- Helps assess customer willingness to enroll in potential future IDSM program offers and assess customer propensity from an integrated perspective.

Responses to Energy Bureau Questions

Question 6 (continued)

b. What steps are required to ensure that data collected during PREPA/Guidehouse's study is shared with the Energy Bureau's selected baseline study consultant, to avoid duplication and increase consistency between the studies?

LUMA and Guidehouse are willing to share the primary research approach and the survey instruments, and to share baseline study findings after the study is completed.

To ensure consistency between the two studies, the research approach needs to be aligned, so there needs to be coordination between LUMA/Guidehouse and the Energy Bureau's consultant at the time the research plan for the baseline studies is being developed. Guidehouse would like to provide feedback on the terms of reference for the PREB Consultant baseline study.

c. How will PREPA incorporate the results of the Guidehouse DR baseline/potential study into its programs/timing?

The baseline study information will provide direct inputs for the DR potential study, which in turn lays the groundwork for developing a portfolio of DR programs targeted to Puerto Rico. It is needed to indicate the achievable savings potential from different DR programs with an estimation of program costs and assessment of cost-effectiveness of programs.

Past Activities & DR Work in Progress

Past EE and DR Activities

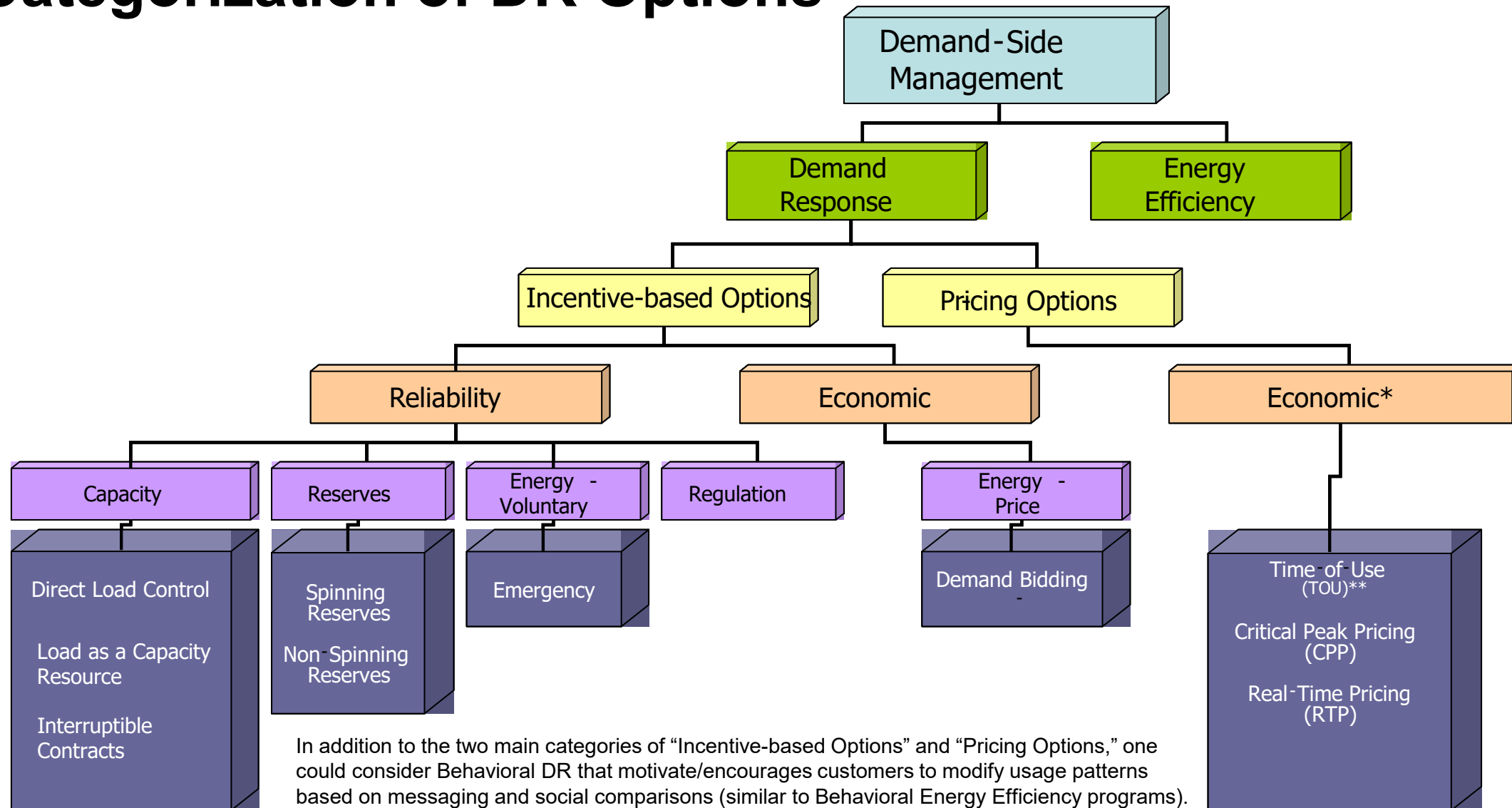
- PREPA's 2018-2019 IRP contained program examples for energy efficiency (EE) and demand response (DR):
 - Residential DR: AC control using a Wi-Fi thermostat
 - Small and medium commercial DR: AC and lighting controls
 - Residential AC and Lighting programs
 - Commercial AC and lighting programs
 - Public Street Lighting (PSL)
 - Reconstruction Efficiency
- There are two federal EE programs offered in Puerto Rico:
 - Weatherization Assistance Program (WAP)
 - Low Income Home Assistance Program (LIHEAP)
- There are currently no DR programs offered, although PREPA recently investigated a demand reduction opportunity for high-demand commercial and industrial (C&I) customers with a goal of no less than 250 MW demand reduction
 - From the C&I customer outreach, PREPA recommended close client communication and establishing customer relationships to solicit customer participation in DR; additionally, seek customer inputs/comments in the regulatory process

DR Work In Progress

Guidehouse is currently undertaking the following initial steps toward developing the DR Strategic Plan outlined under the DR Phase 1 effort:

- Review of customer and system data for customer segmentation and market characterization (baseline customer count and peak demand projections) for DR assessment, which includes:
 - Sector and rate class level customer count (current and projections)
 - Historical and forecasted load data
 - Hourly system load data
 - Available hourly rate class level data
- Preliminary considerations of DR options for Puerto Rico (shown in the next slide)
- In-depth interviews with former PREPA staff to obtain insights on DR drivers and information on PREPA's past efforts related to large C&I customer outreach related to DR.

Categorization of DR Options



Recap of Questions for PREB

- What is the funding source for both EE and DR?
- By when will the PR test be approved?
- When will the decision on having one integrated EE and DR Plan (and timeline) be made?
- Will LUMA or PREB lead the baseline and potential studies?
- If PREB leads baseline and potential studies, what is the timeline for completion of these studies?

Thank You

