



Technical Session: LUMA Performance Metrics

Docket NEPR MI-2019-0007



November 4, 2021



Agenda

- Goals of Technical Session
- Background
 - Procedural History
- Review of Selected LUMA Filed Metrics



Goals of Technical Session



Goals of Technical Conference and Procedural History

- Share reporting metrics provided by PREPA through June 2021
- Share reporting metrics provided by LUMA since June 2021
- Address issues related to individual metrics
 - Transition issues observed in metrics
 - Questions regarding deferred metrics
 - Clarifications regarding specific metrics
 - Questions regarding metrics proposed to be excluded



Highlighted Procedural History



Goals of Technical Conference and Procedural History

- The Energy Bureau's Resolution and Order from May 14, 2019 (Docket NEPR MI-2019-0007)
 - Commencement of data gathering process to help develop "appropriate measures, metrics and targets"
 - Metrics for reporting purposes (Docket NEPR MI-2019-0007)
 - Metrics that will be the subject of Targets (Docket NEPR MI-2019-0007)
 - Metrics that will be subject to Financial incentives (Docket NEPR AP-2020-0025 will establish the specific Targets and Performance Incentives Mechanisms)



Goals of Technical Conference and Procedural History

- The Energy Bureau's Resolution and Order from May 21, 2021 (Docket NEPR MI-2019-0007)
 - Established baselines for approximately 96 individual metrics
 - Eliminated approximately 36 metrics
 - Required reporting of 16 additional metrics



Metrics: Performance Reporting Requirements

- On June 1, 2021, LUMA Energy LLC and LUMA Energy Servco, LLC (collectively, LUMA) assumed transmission and distribution operations of PREPA
- On June 21, 2021, LUMA filed the quarterly metrics for the months of March, April, and May 2021 when the transmission and distribution operations were still under PREPA
- On September 20, 2021, LUMA filed the quarterly metrics for the months of June, July and August 2021, when the operations of the transmission and distribution system were under LUMA



PREPA and LUMA Filed Metrics: June 2020 – August 2021

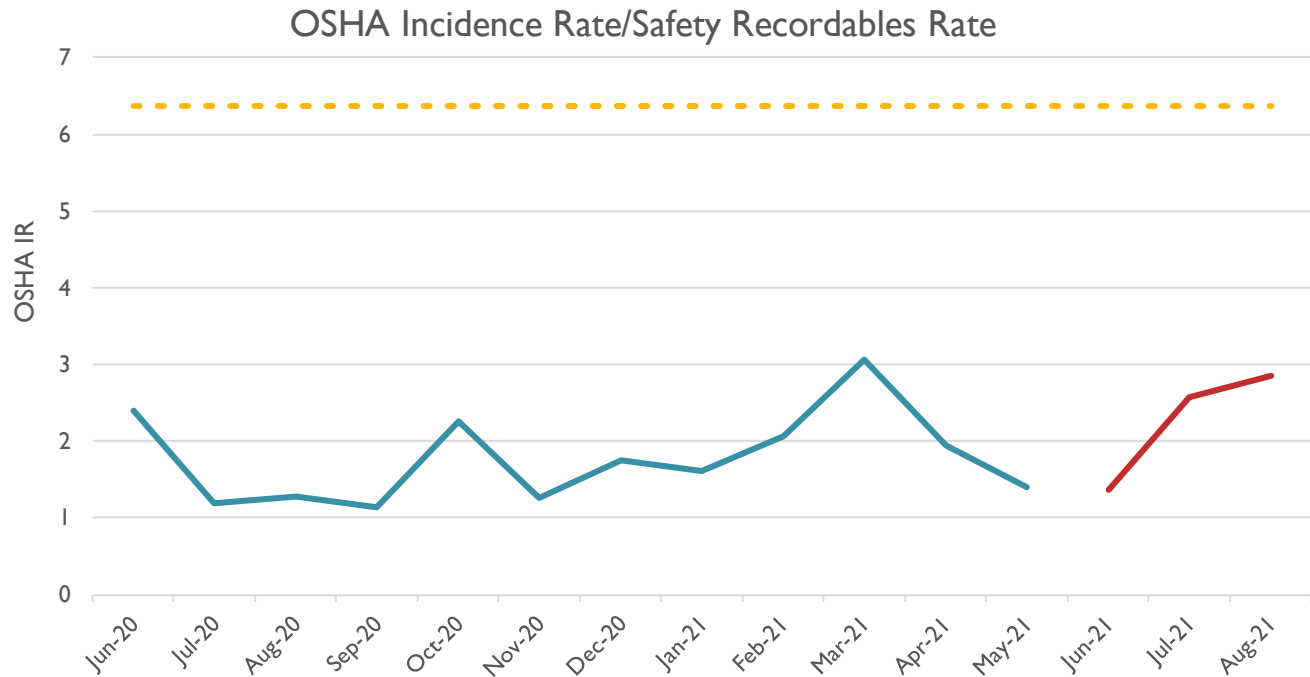


Overall System



Overall System

- Explain increasing trends in OSHA incidence rates
- What actions are LUMA taking to address employee safety?



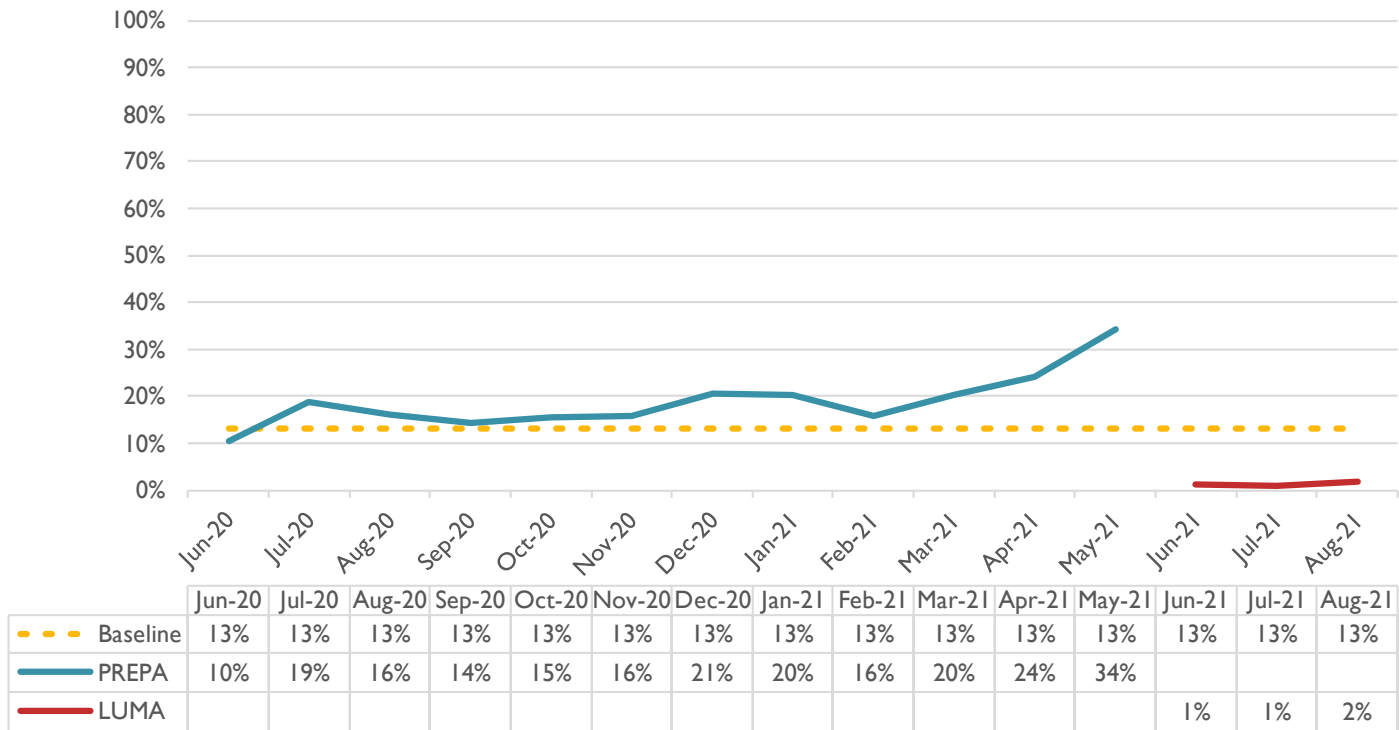
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
Baseline	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
PREPA	2.4	1.2	1.3	1.1	2.3	1.3	1.8	1.6	2.1	3.1	1.9	1.4			
LUMA													1.4	2.6	2.9



Overall System

- What is causing the observed decrease in the percent of absenteeism?

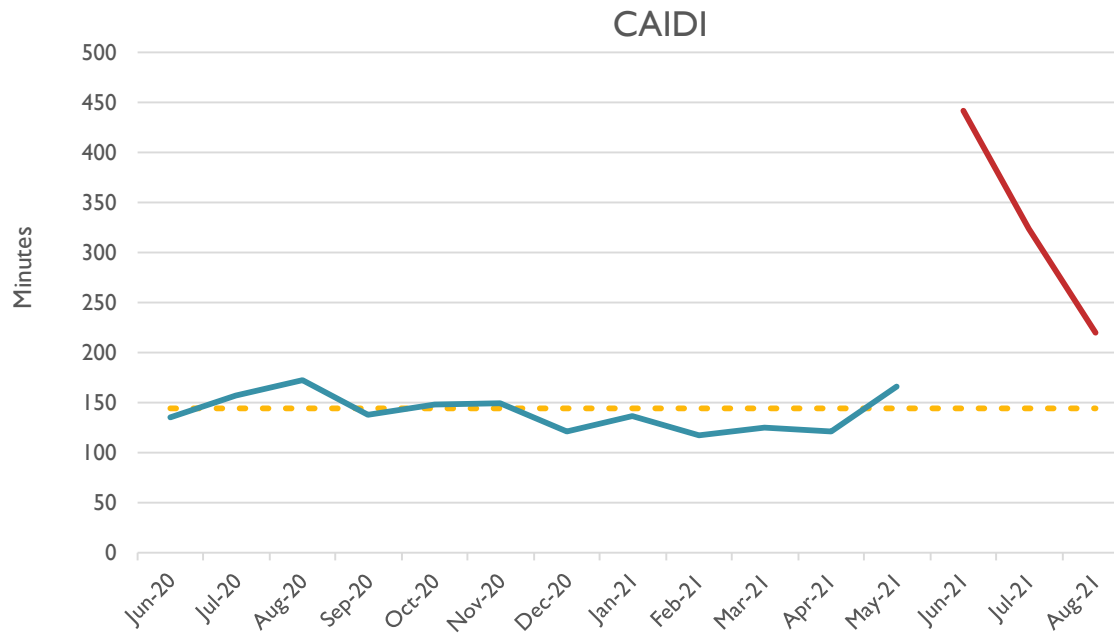
Absenteeism





Overall System

- What portion of the increased CAIDI reflects the difference in reporting SAIDI and SAIFI?
- What would be the CAIDI if the PREPA historical monthly values were restated to be consistent with IEEE 1366 methodology?



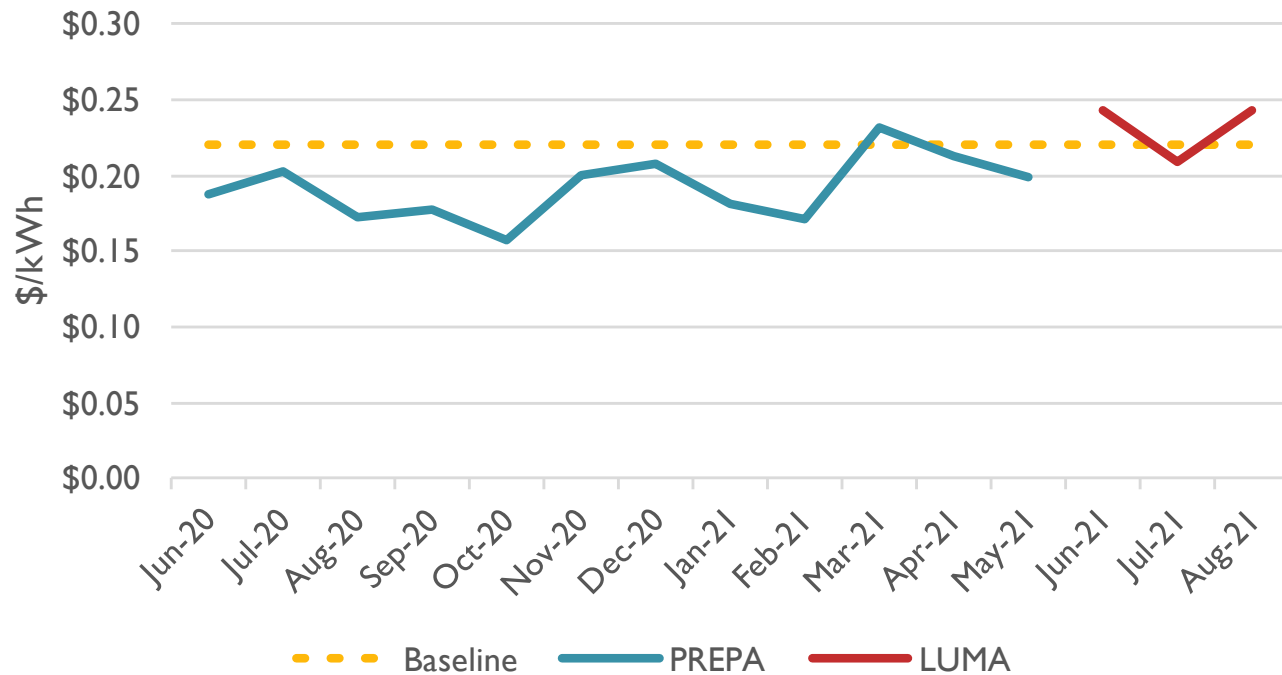
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
--- Baseline	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145
— PREPA	135	157	172	138	149	150	122	137	118	125	122	166			
— LUMA													442	324	220



Overall System

- How is the revenue calculated if financial books are not closed?
- How much of the observed increase is attributable to increased fuel costs?

Average Revenue per kWh Sold





Overall System

Deferred Metrics

- Operational expenses vs. budget (excluding fuel) (system)
- Capital expenses vs. budget (excluding fuel) (by directorate)
- Cost of generation per customer (system)

Questions

- Why is LUMA unable to close financials within a month?
- What is LUMA doing to improve the bookkeeping process?



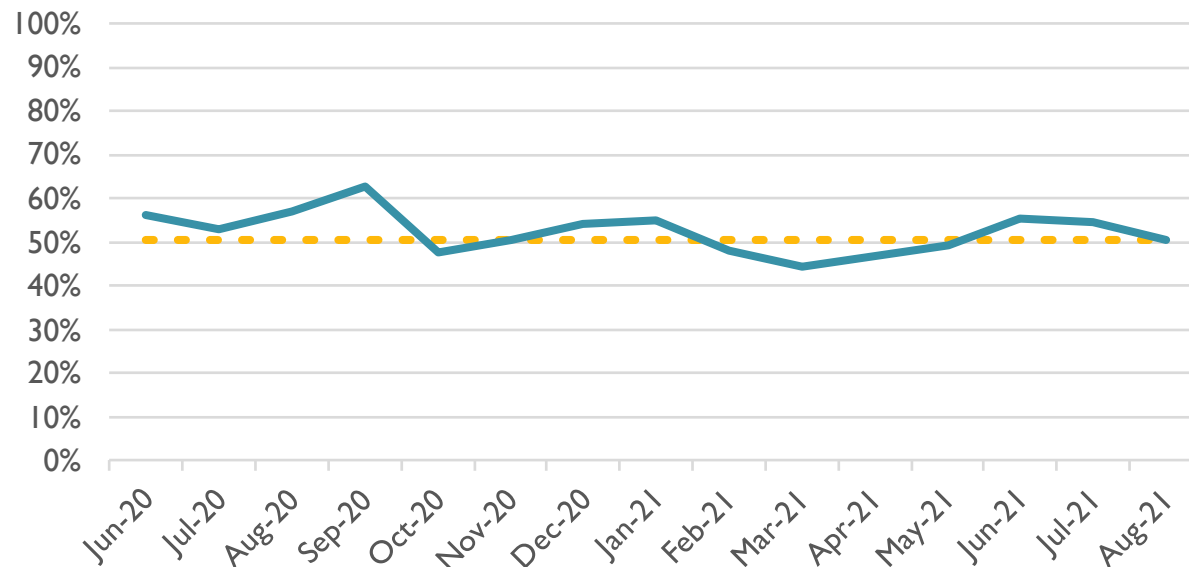
Generation



Generation

- What steps are being undertaken to improve plant availability?
- How are LUMA and PREPA integrating coordination of the plant operations with system operations?

System-Level Plant Availability



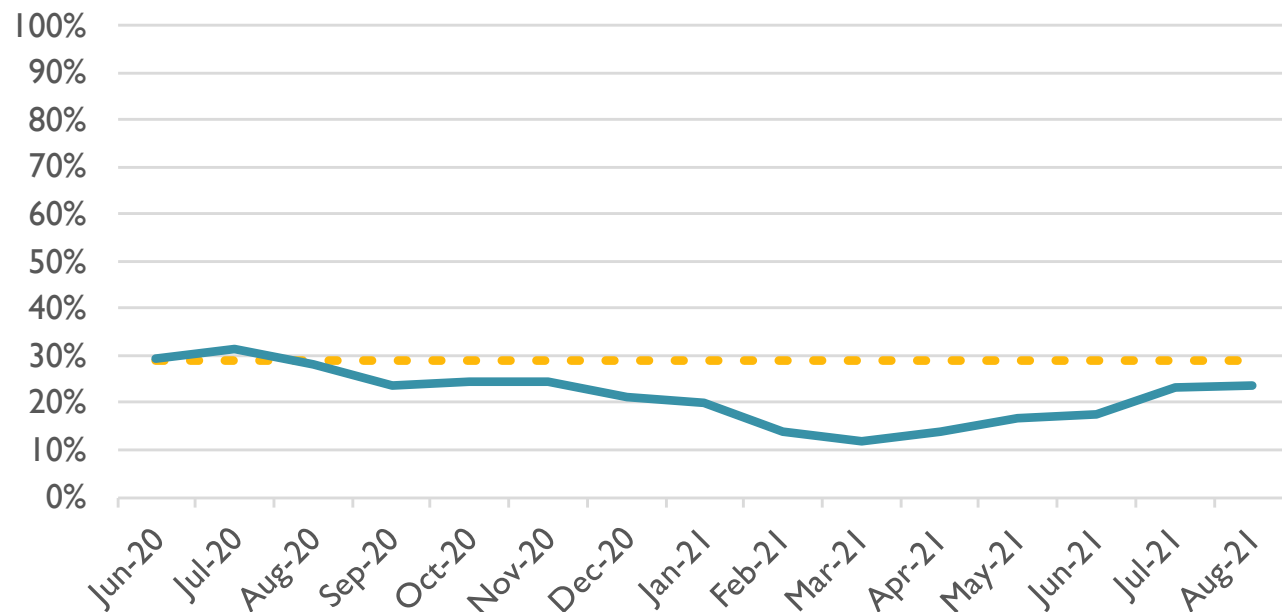
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
Baseline	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%	51%
PREPA	56%	53%	57%	63%	48%	51%	54%	55%	48%	44%	47%	49%	55%	55%	51%



Generation

- What steps are being undertaken to decrease forced outage rates?

System-Level Forced Outage Rate

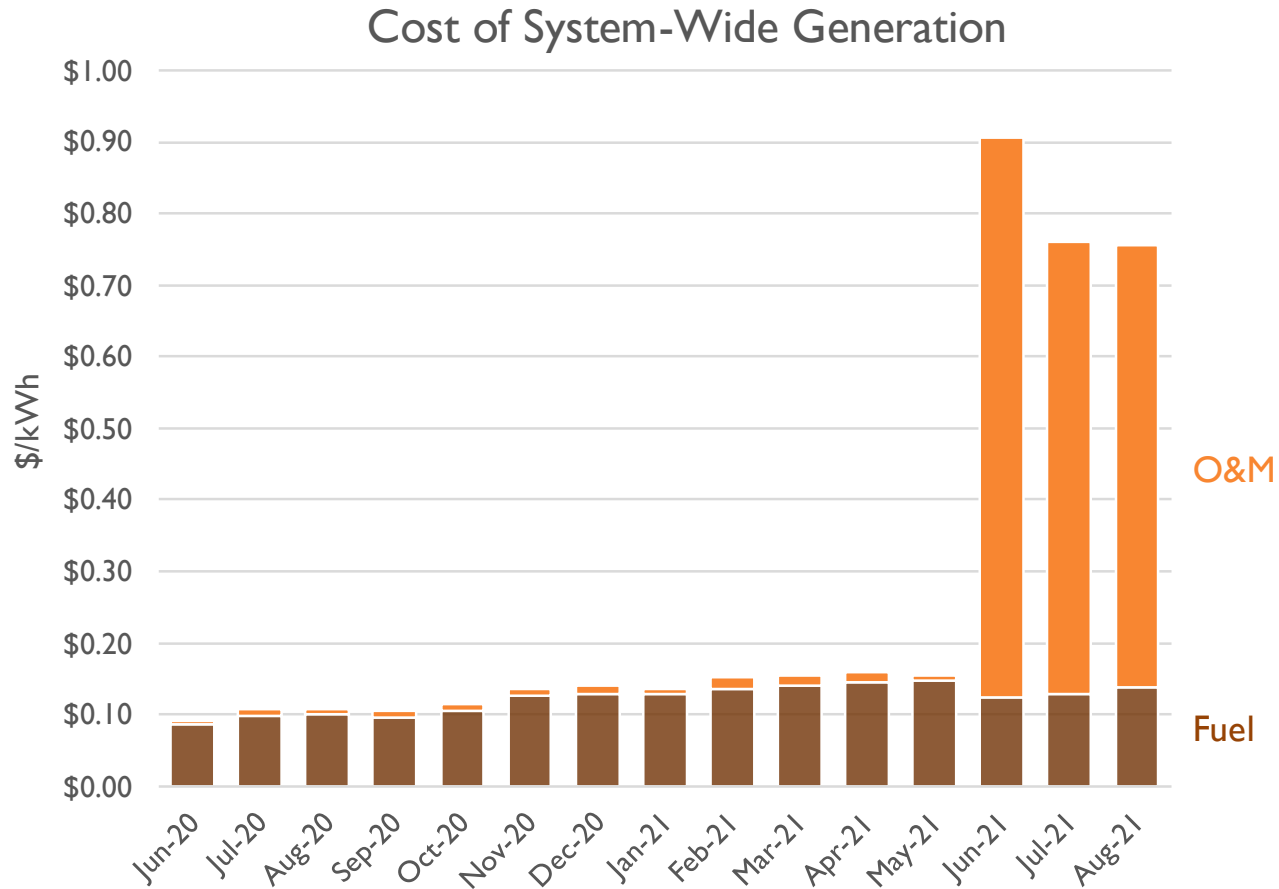


	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
Baseline	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%	29%
PREPA	29%	31%	28%	24%	24%	25%	21%	20%	14%	12%	14%	17%	17%	23%	24%



Generation

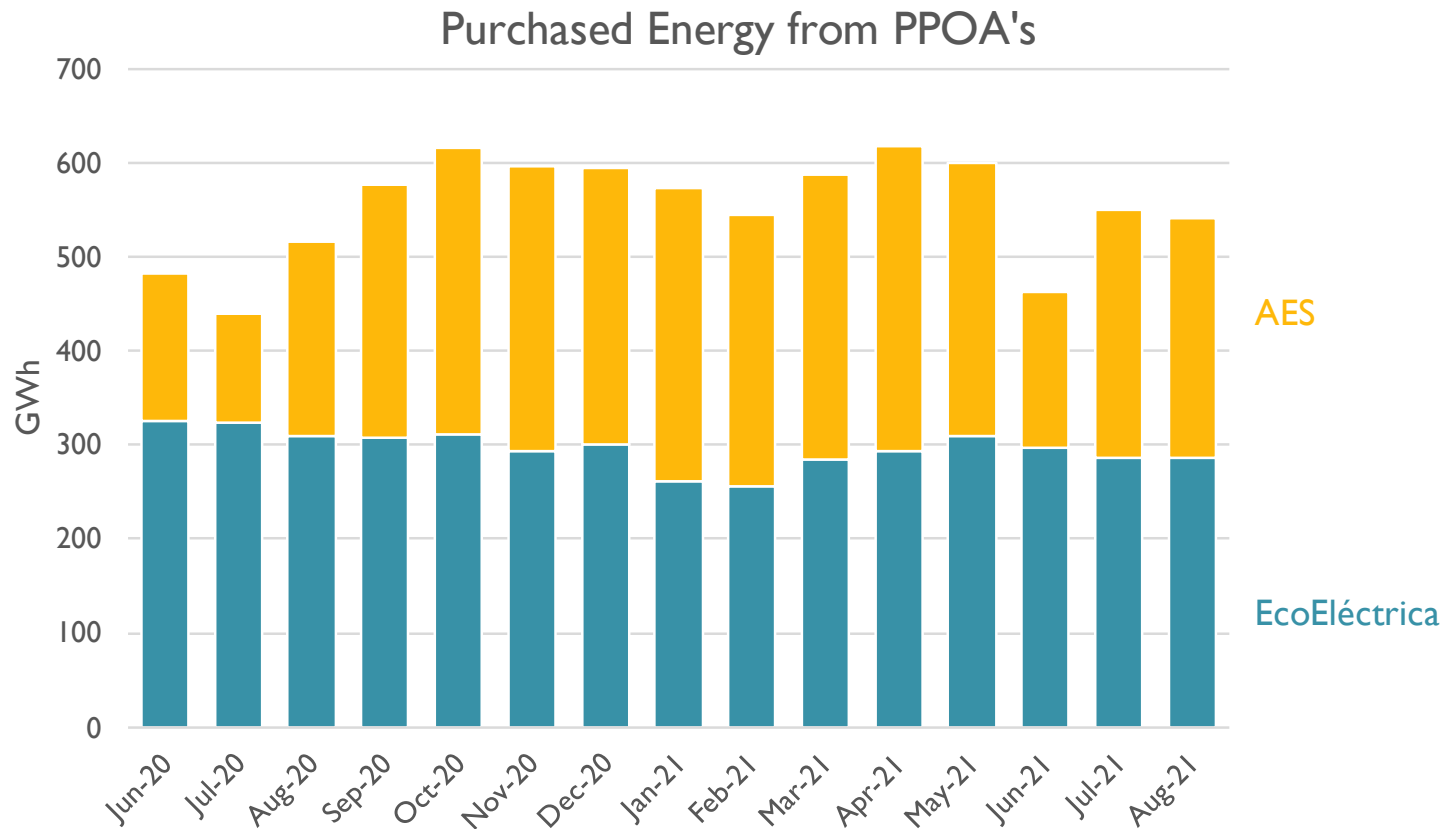
- What has changed that results in the observed increase in O&M costs?





Generation

- What is driving the decrease in purchases in AES in June through August
- Are there planned outages for the two plants in the near future?

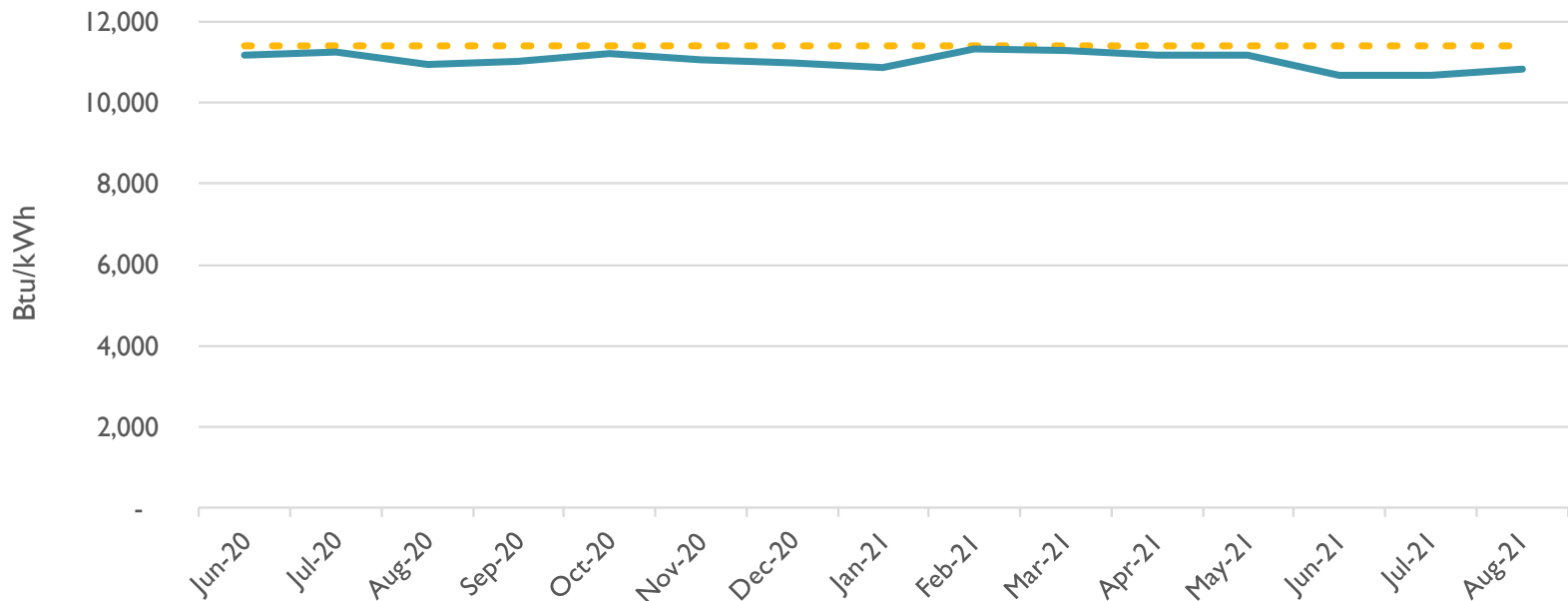




Generation

- It appears that the average system heat rate has decreased over the summer. To what does PREPA and LUMA attribute the decrease?

Average System Heat Rate



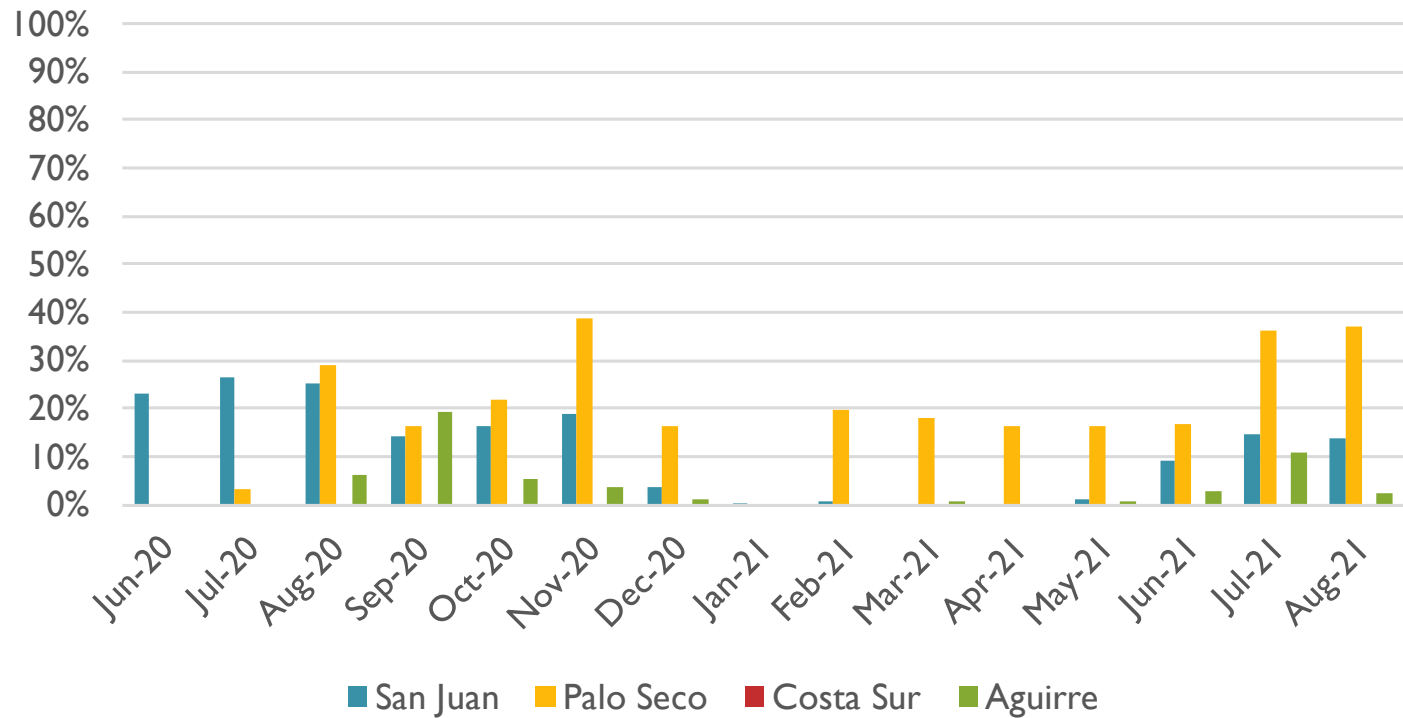
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
--- Baseline	11,410	11,410	11,410	11,410	11,410	11,410	11,410	11,410	11,410	11,410	11,410	11,410	11,410	11,410	11,410
— PREPA	11,173	11,270	10,962	11,010	11,201	11,045	10,966	10,854	11,329	11,303	11,193	11,164	10,660	10,695	10,830



Generation

- Please explain the increased forced outage rates observed this summer at Palo Seco, San Juan, and Aguirre.

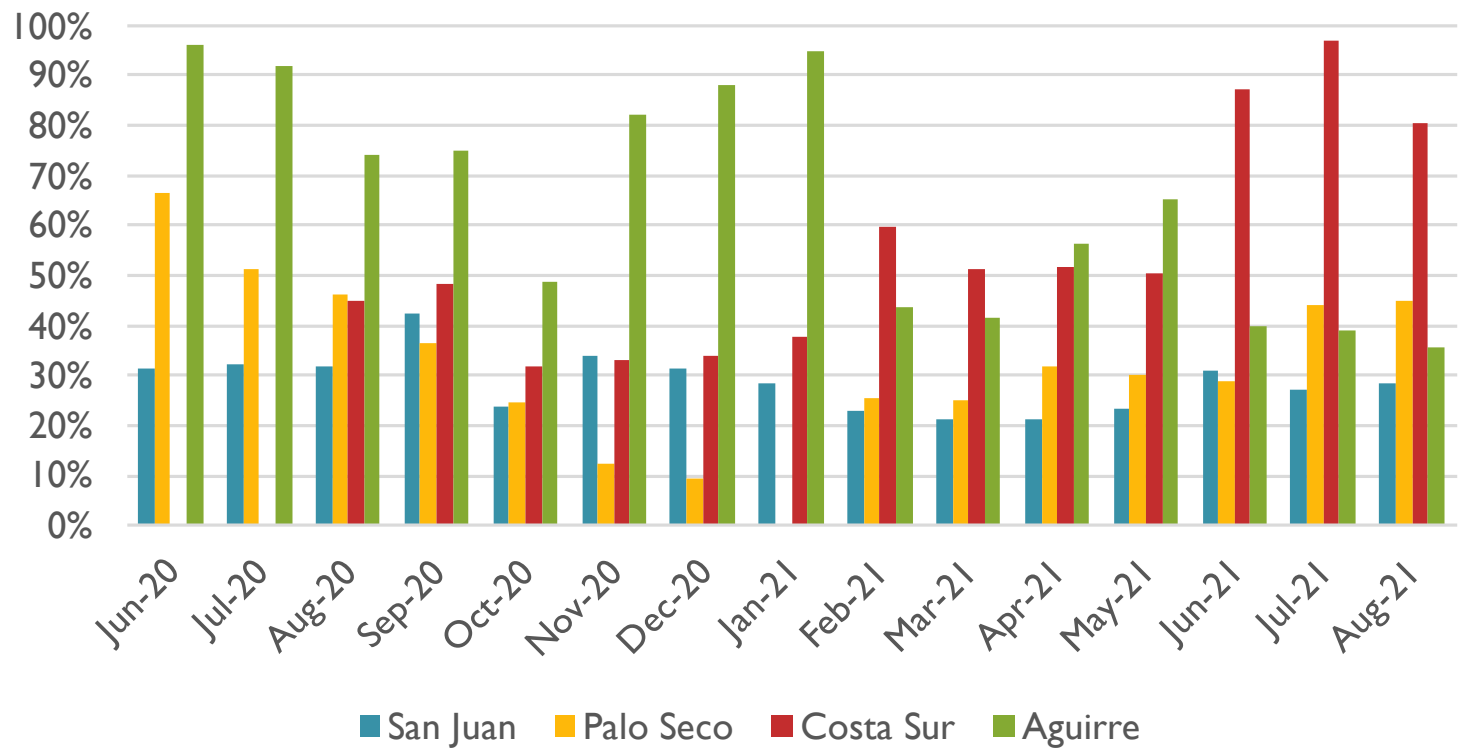
Forced Outage Rate: Steam Generators





Generation

Availability: Steam Generators



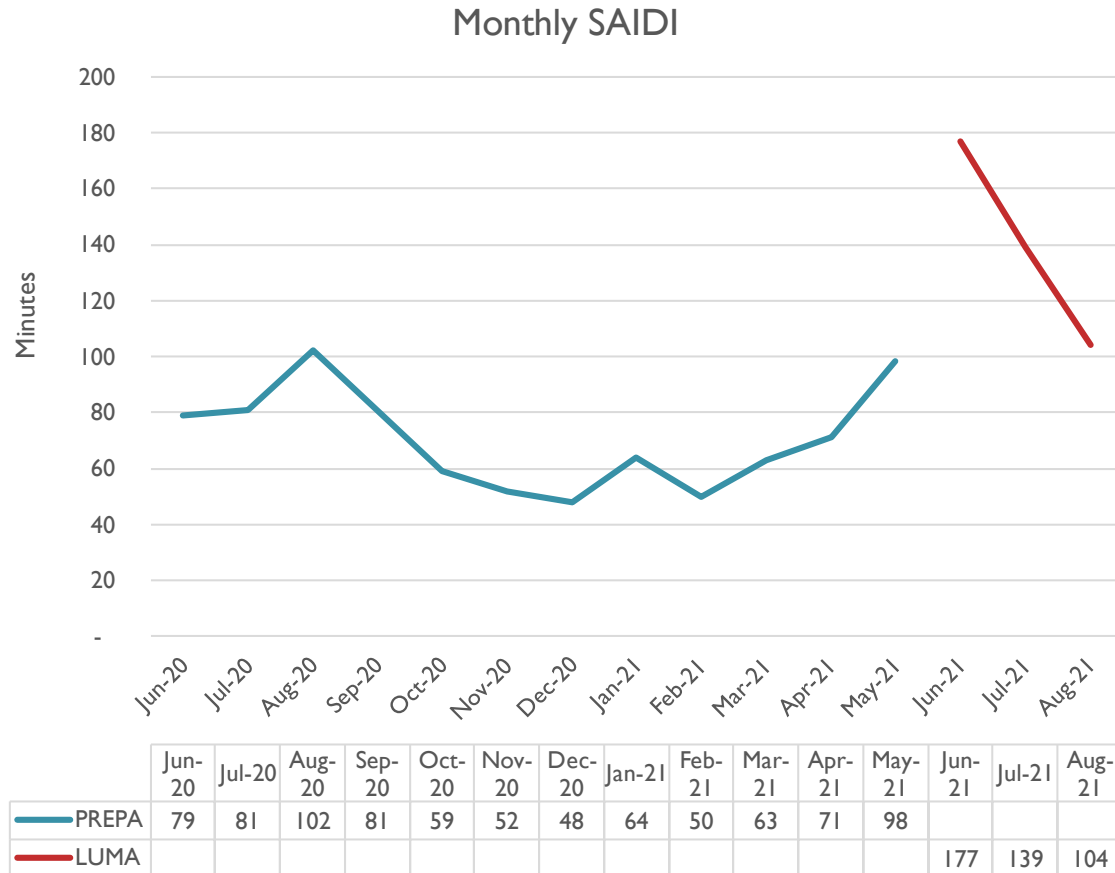


Transmission & Distribution



Transmission and Distribution

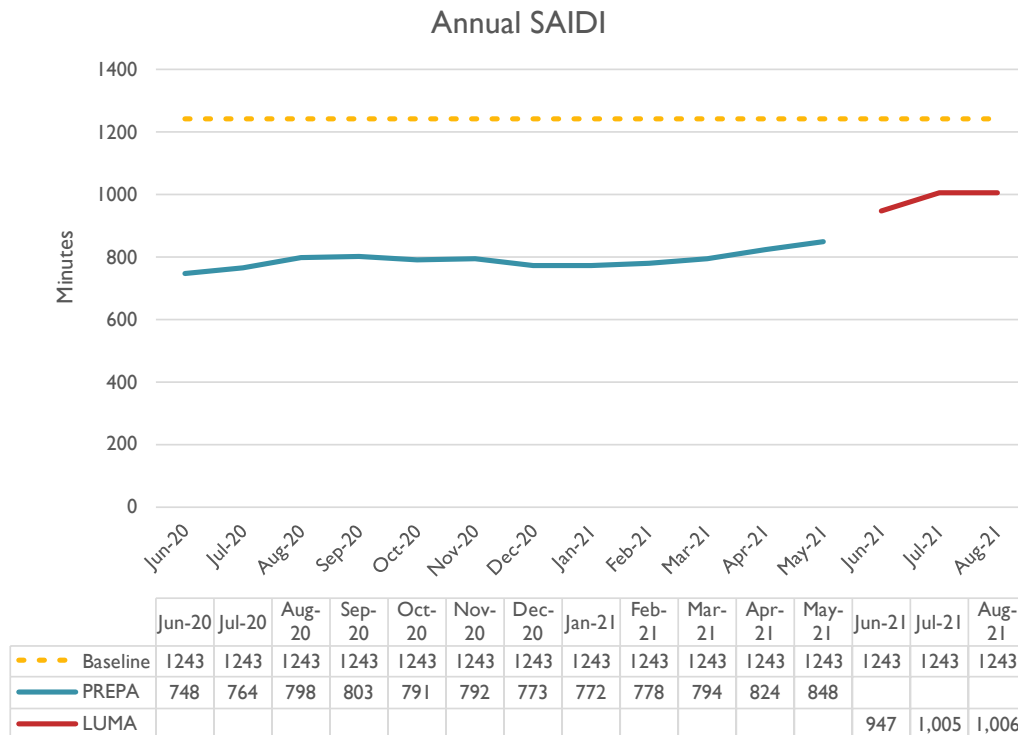
- Confirm that LUMA now reports monthly SAIDI consist with IEEE 1366 and consistent with the outage codes identified in 's May 12, 2021 Motion in this proceeding.
- Does LUMA have the historical monthly data restated to be consistent with May 12, 2021 Motion?
- Has LUMA conducted root cause analyses on outages over the summer?





Transmission and Distribution

- Confirm that LUMA now reports monthly SAIDI consist with IEEE 1366 and consistent with the outage codes identified in PREPA’s May 12, 2021 Motion in this proceeding.
- Does LUMA have the historical monthly data restated to be consistent with May 12, 2021 Motion?

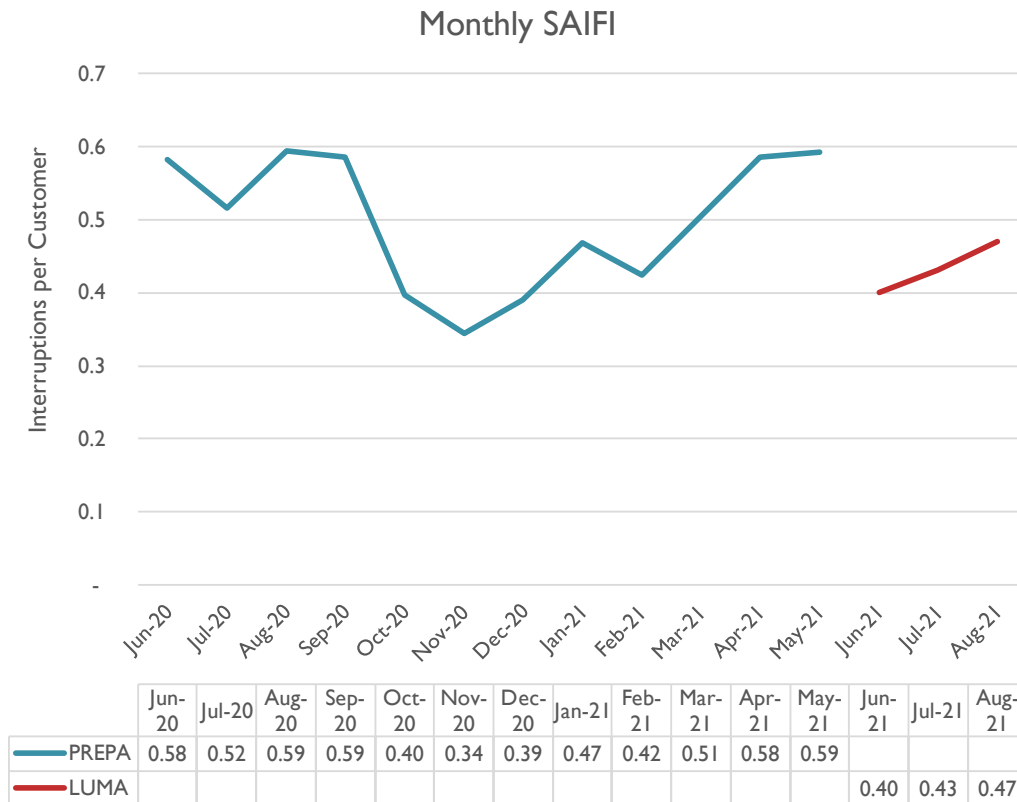


Annual SAIDI: This converts PREPA and LUMA’s monthly values to annual on a 12-month rolling basis. We note that PREPA and LUMA have used different outage definitions in their reliability calculations, so these annual values may not be fully comparable to the baseline, which was corrected.



Transmission and Distribution

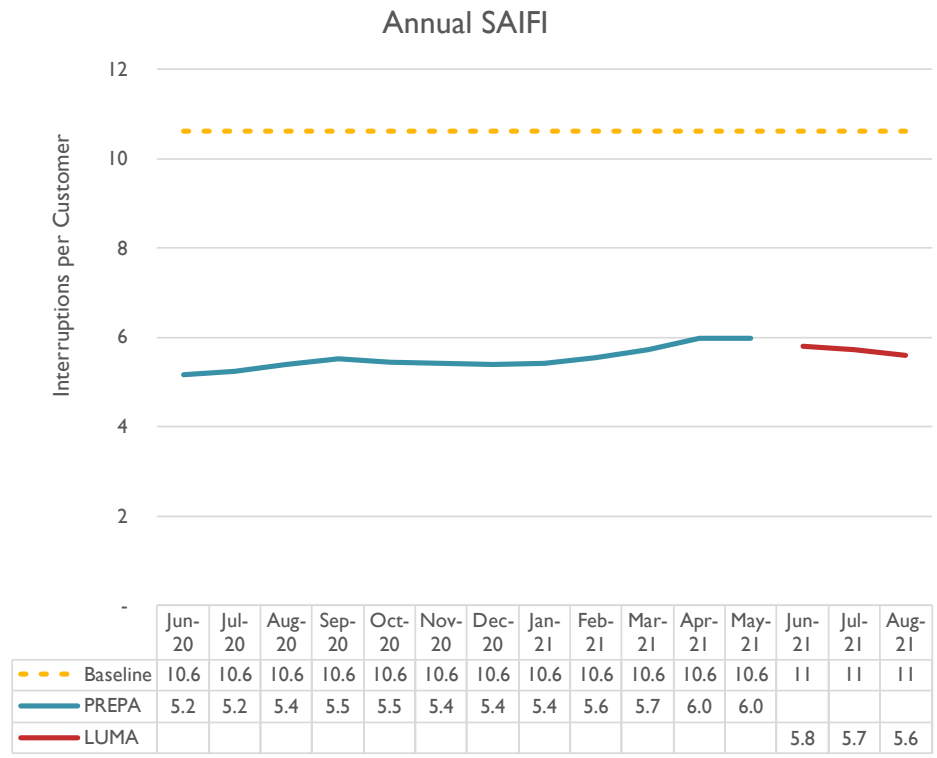
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- Does LUMA have the historical monthly data restated to be consistent with May 12, 2021 Motion?
- Has LUMA conducted root cause analyses for outages?





Transmission and Distribution

- Confirm that LUMA now reports monthly SAIFI consist with IEEE 1366 and consistent with the outage codes identified in PREPA’s May 12, 2021 Motion in this proceeding.
- Does LUMA have the historical monthly data restated to be consistent with May 12, 2021 Motion?

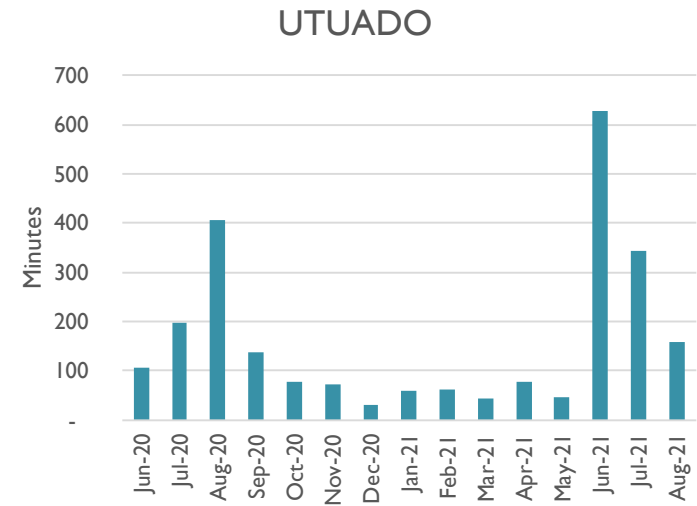
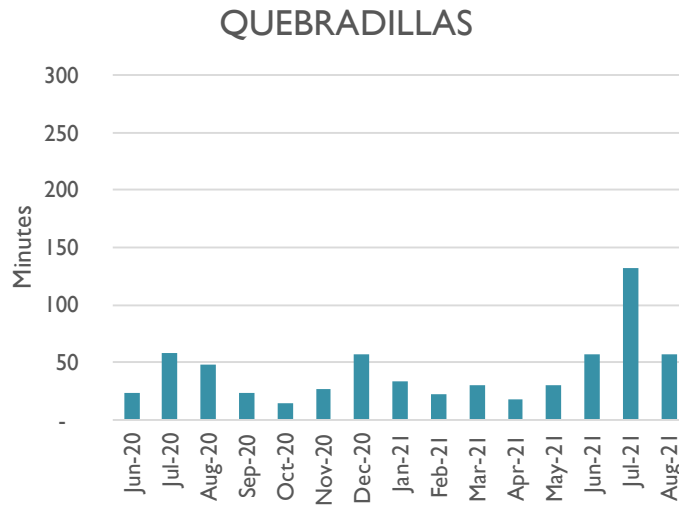
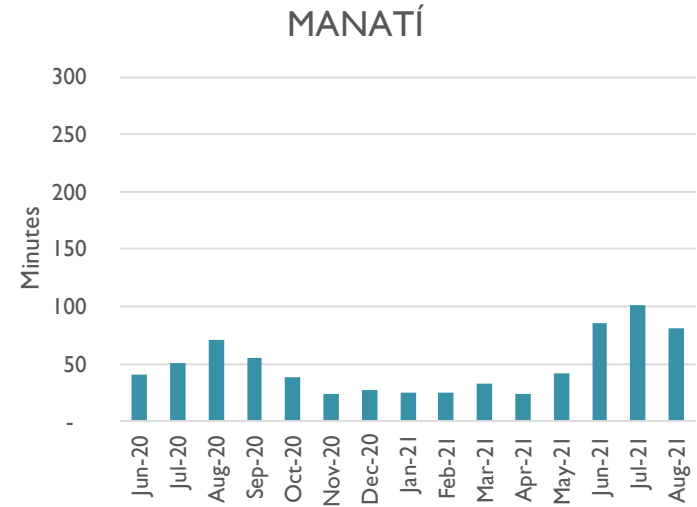
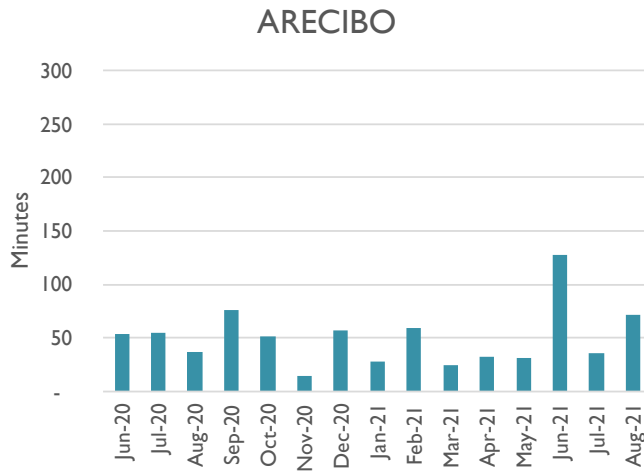


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Transmission and Distribution

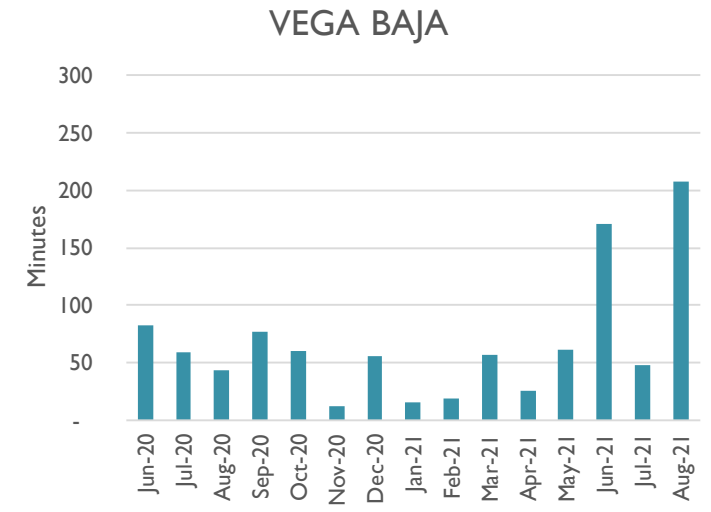
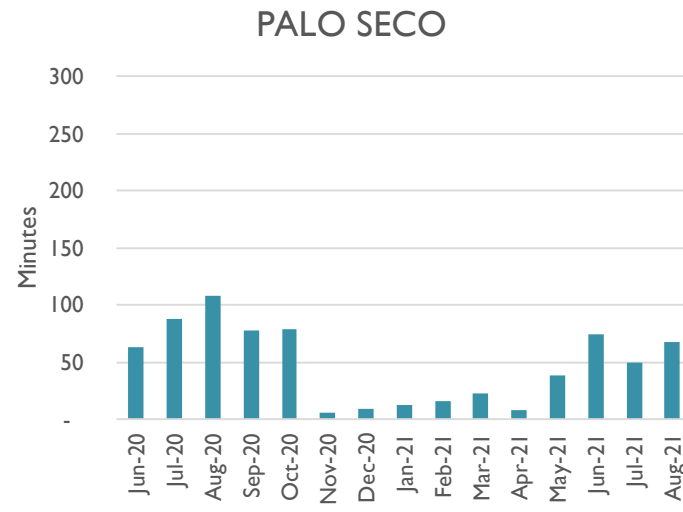
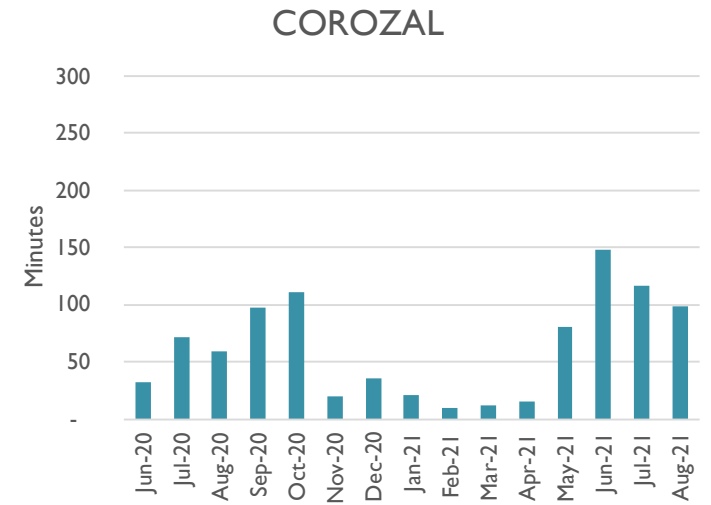
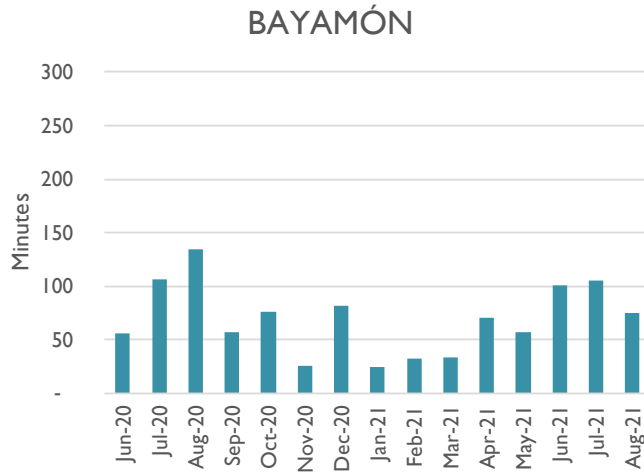
Monthly SAIDI by Region- Arecibo





Transmission and Distribution

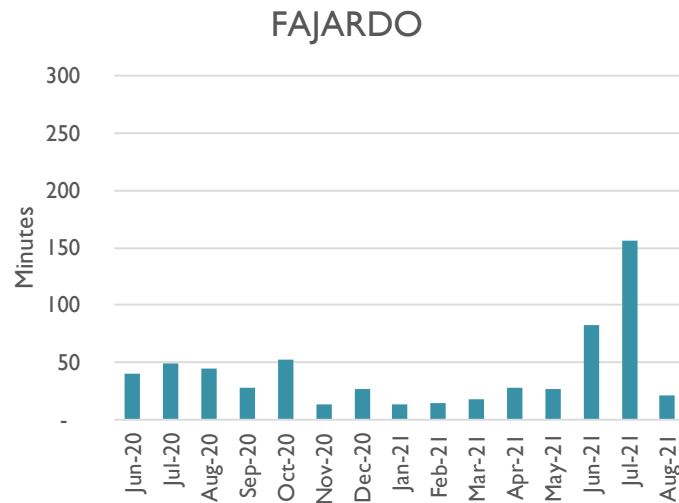
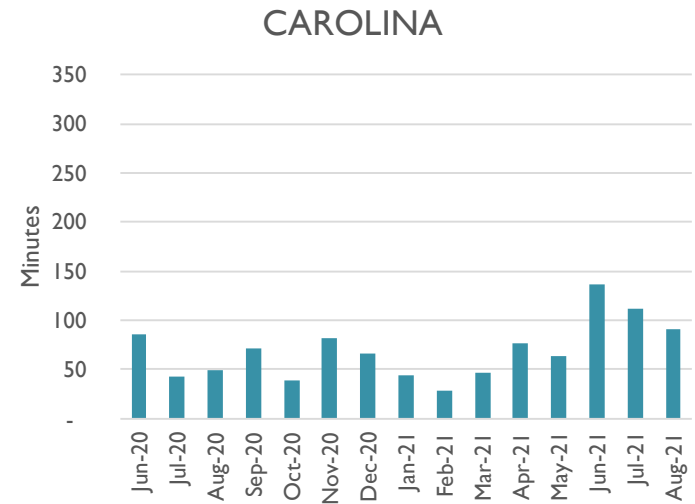
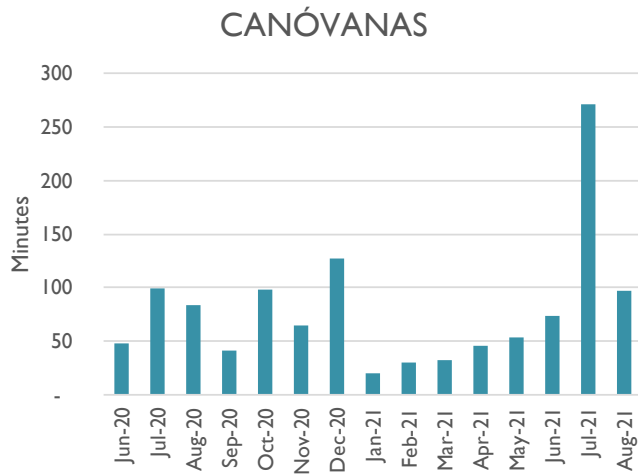
Monthly SAIDI by Region- Bayamon





Transmission and Distribution

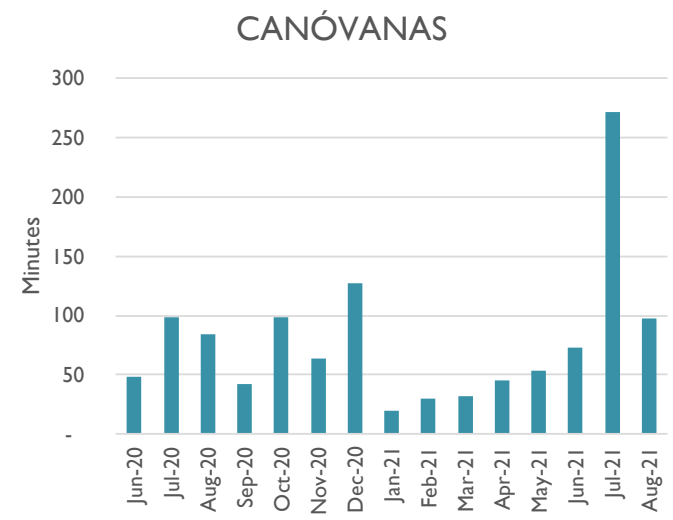
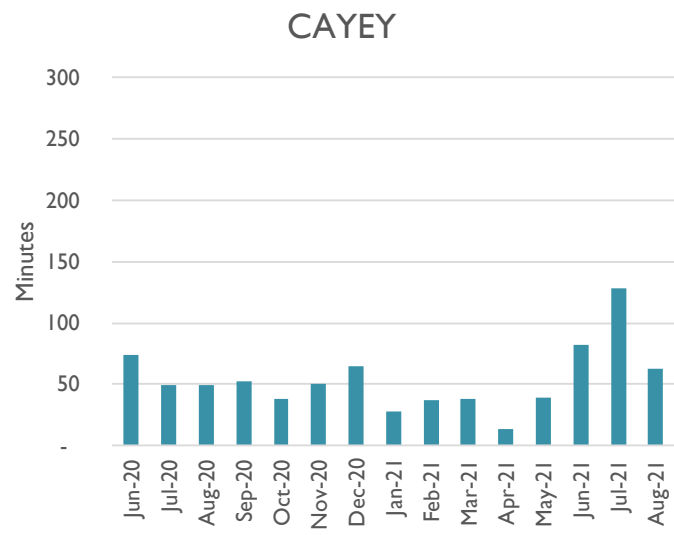
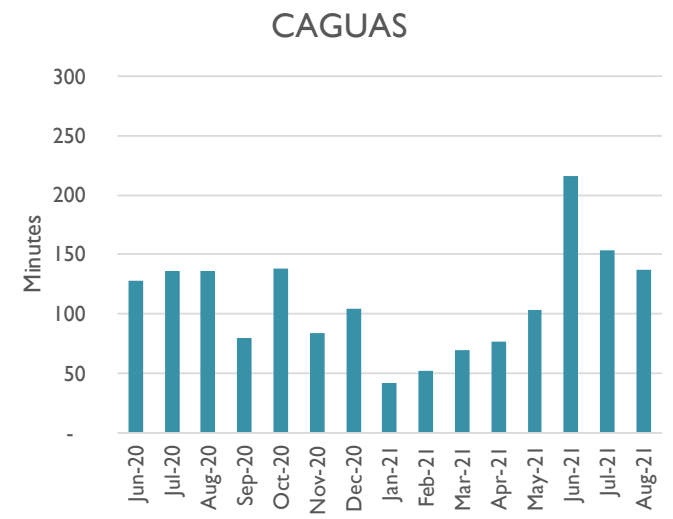
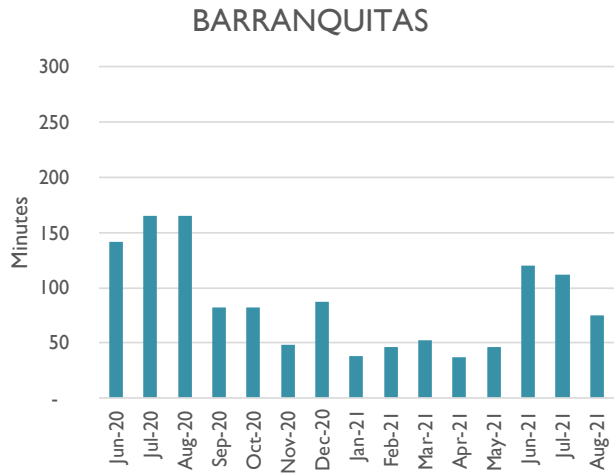
Monthly SAIDI by Region- Carolina





Transmission and Distribution

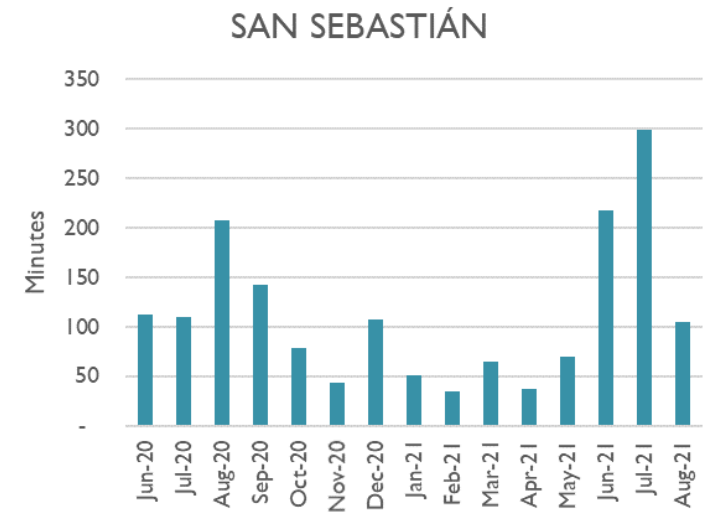
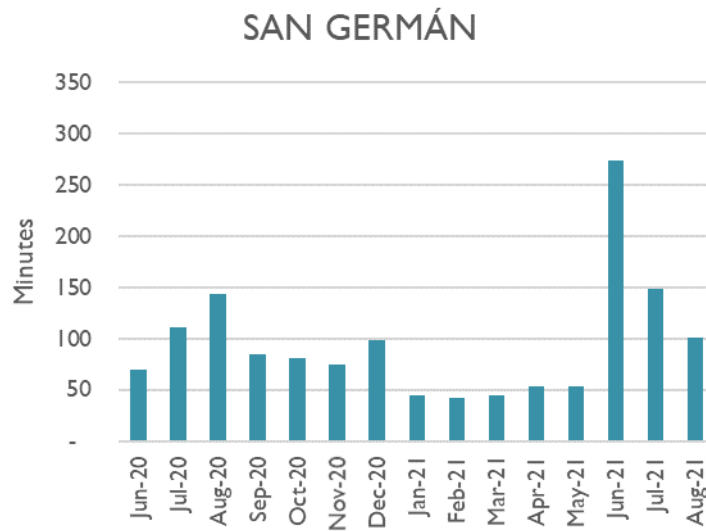
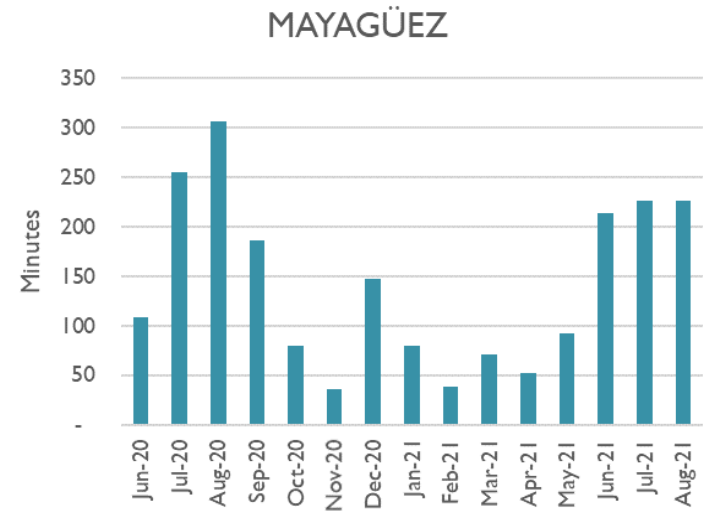
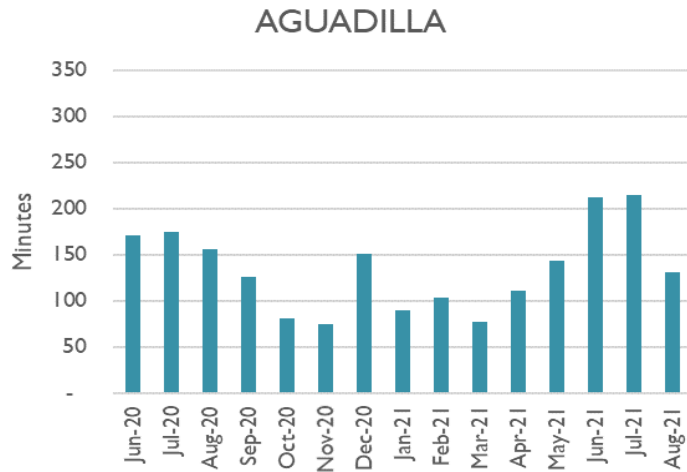
Monthly SAIDI by Region- Caguas





Transmission and Distribution

Monthly SAIDI by Region- Mayaguez

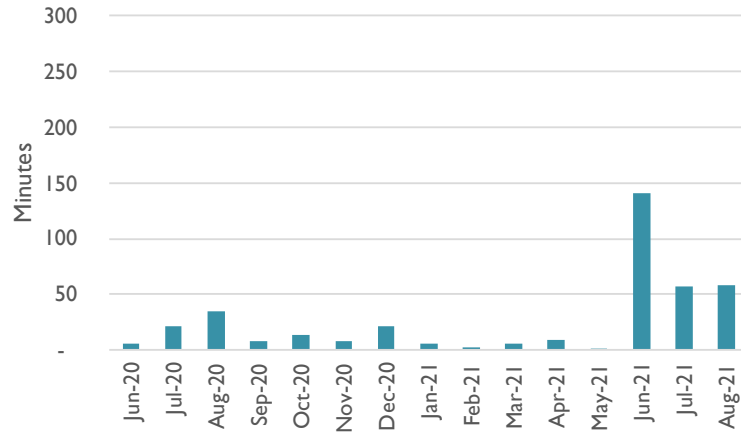




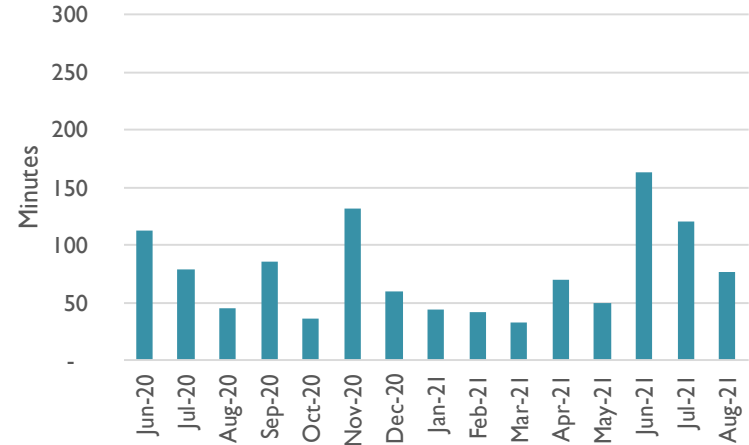
Transmission and Distribution

Monthly SAIDI by Region- Ponce

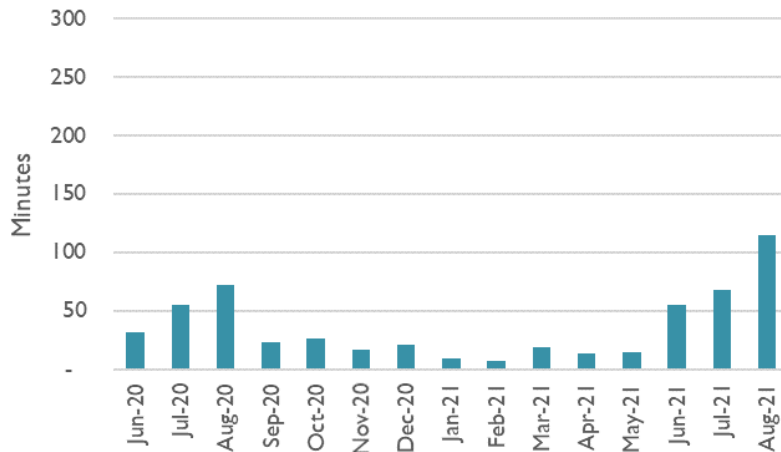
GUAYAMA



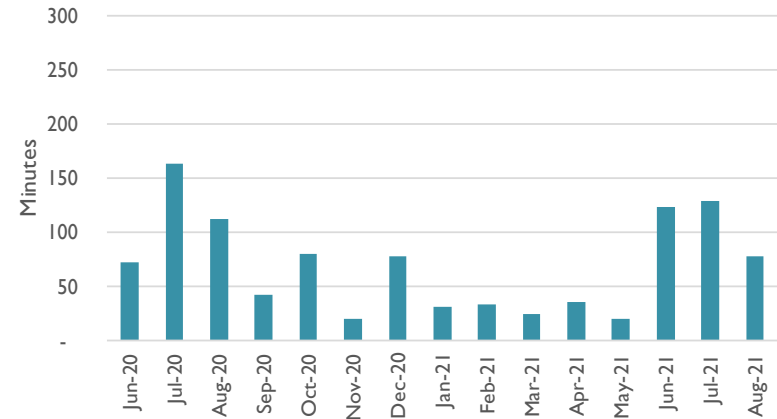
PONCE



SANTA ISABEL



YAUCO

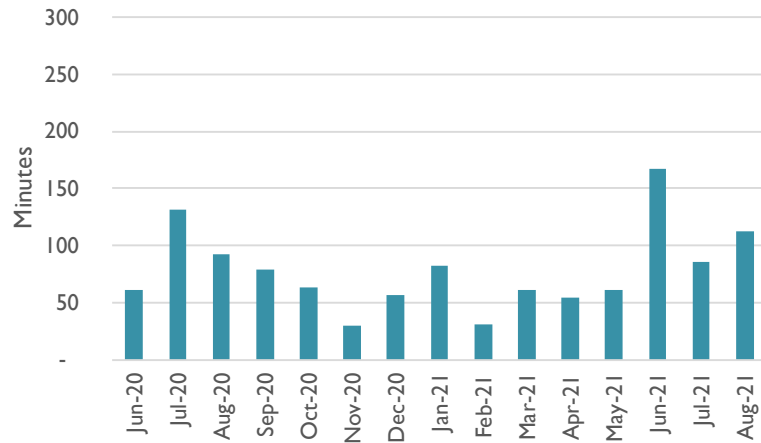




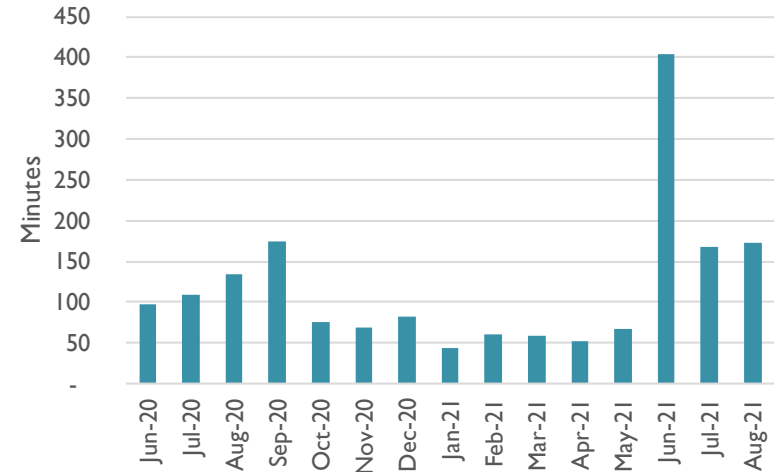
Transmission and Distribution

Monthly SAIDI by Region- San Juan

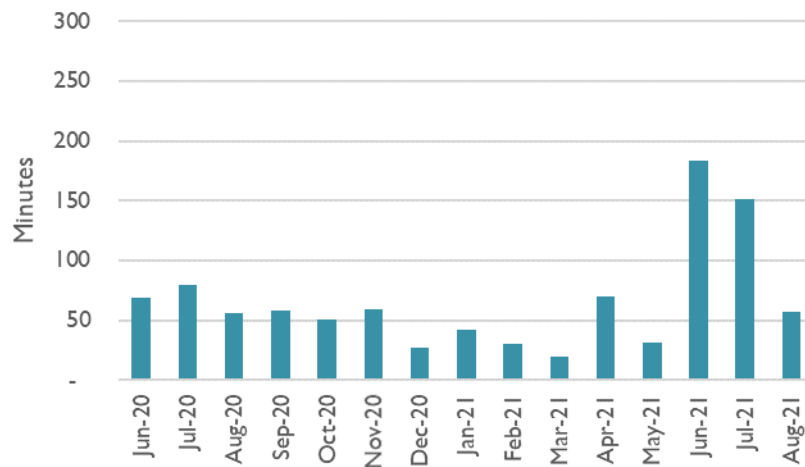
GUAYNABO



MONACILLOS



RÍO PIEDRAS

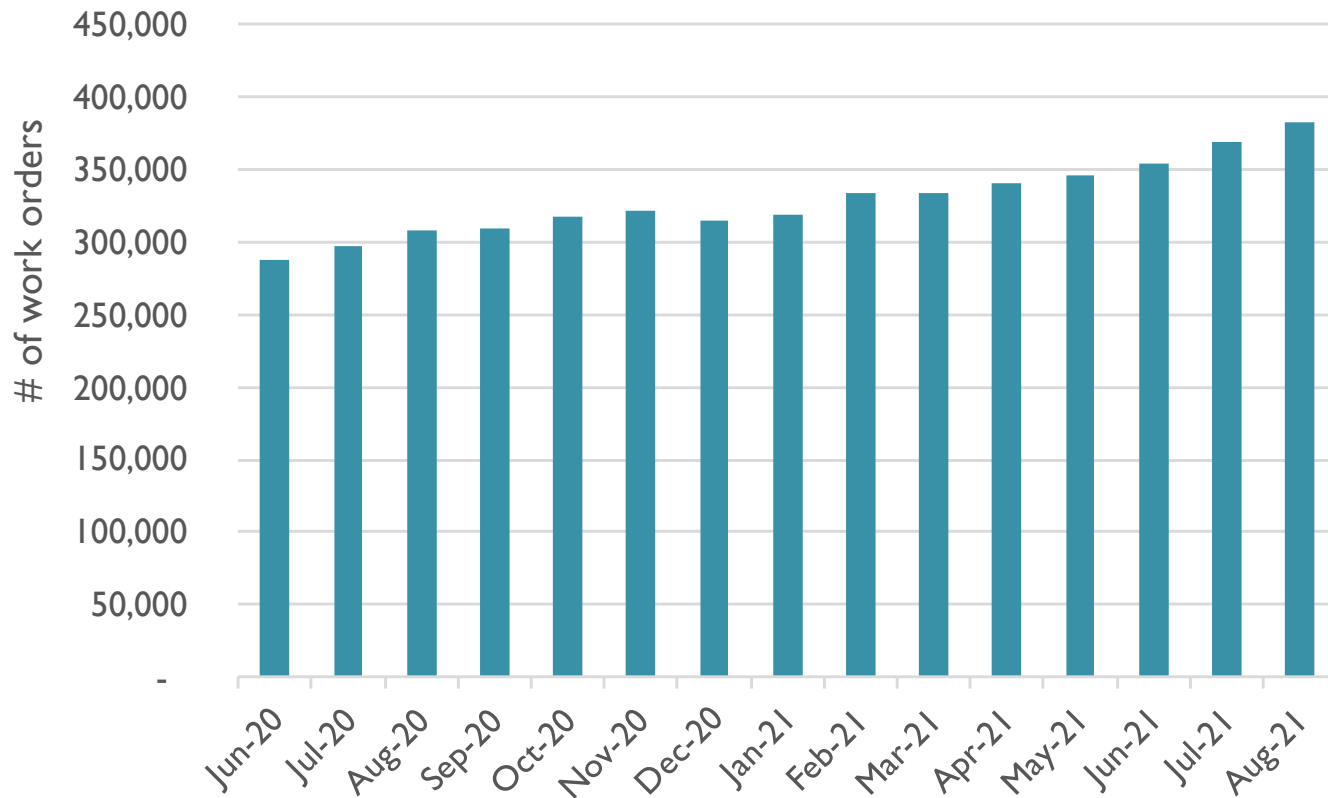




Transmission and Distribution

- Please explain the increased number of work orders observed since the transition.

Work Orders Balance





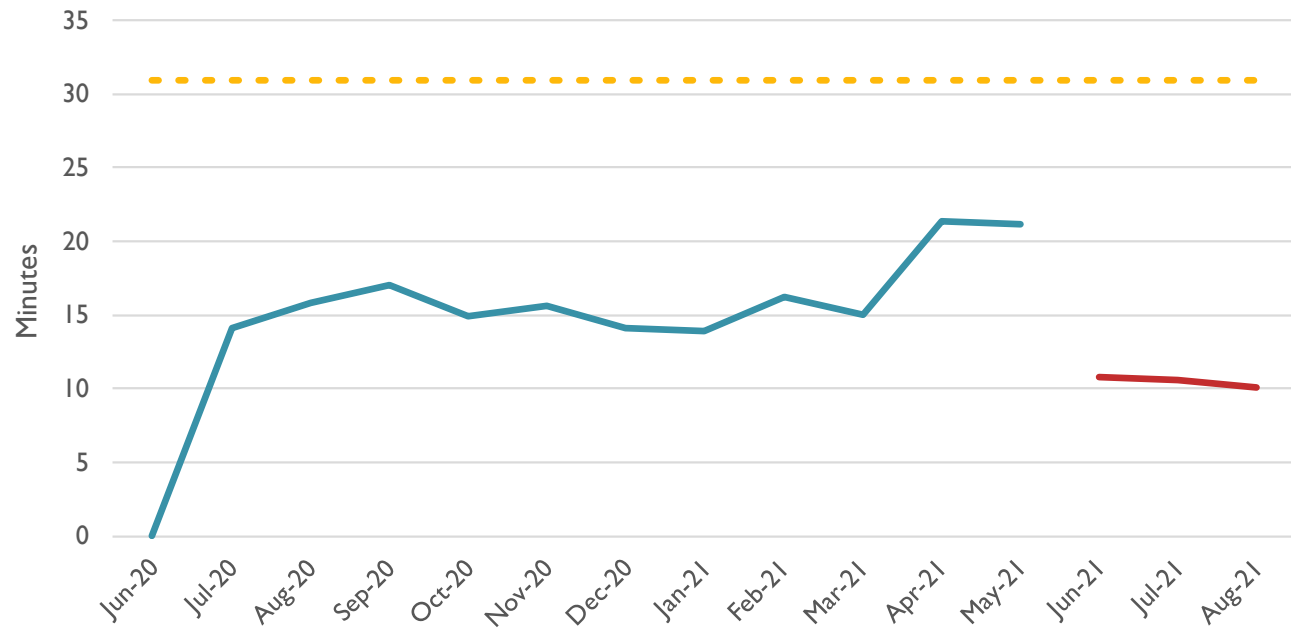
Customer Service



Customer Service

- Please explain the apparent decrease in the wait time at commercial offices since the transition.

Wait time in Commercial Offices



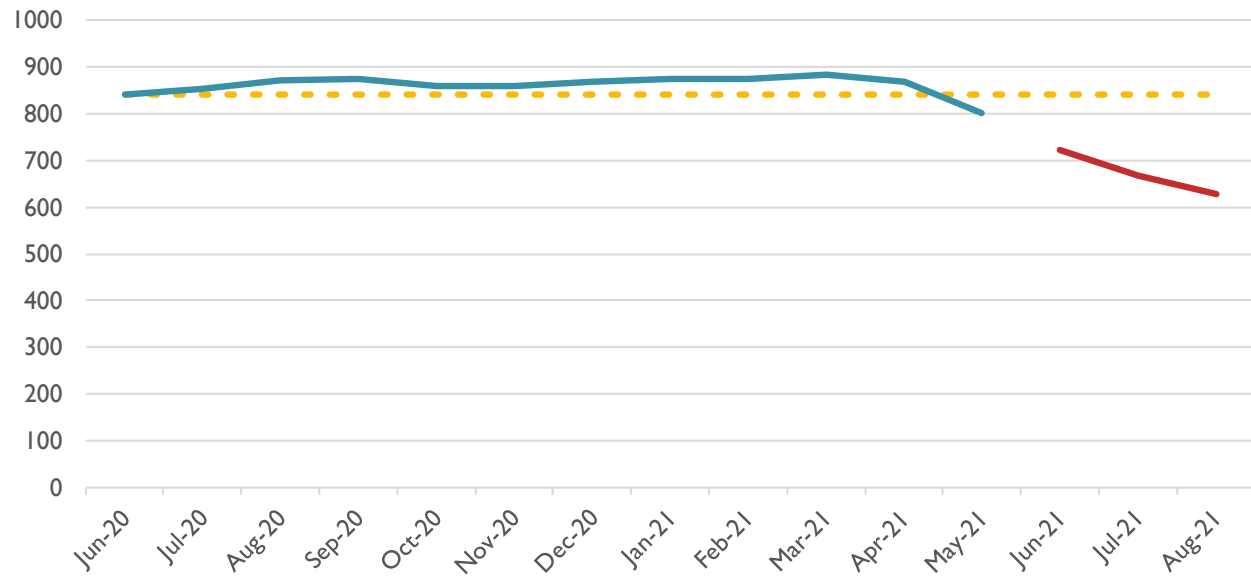
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
--- Baseline	31	31	31	31	31	31	31	31	31	31	31	31	30.9	30.9	30.9
— PREPA	-	14	16	17	15	16	14	14	16	15	21	21			
— LUMA													11	11	10



Customer Service

- Please explain the apparent decrease in the customer complaint rate since the transition.

Customer Complaints per 100,000 Customers



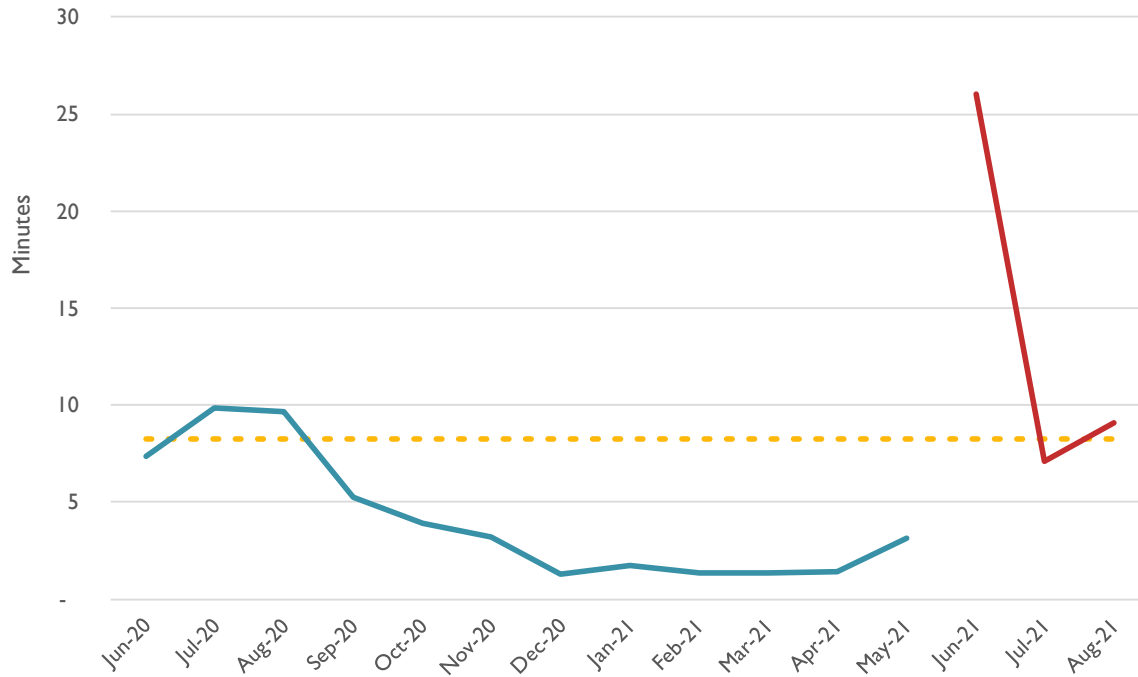
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
--- Baseline	841	841	841	841	841	841	841	841	841	841	841	841	841	841	841
— PREPA	841	852	870	874	859	859	870	874	876	885	867	803			
— LUMA													722	666	627



Customer Service

- Please describe the efforts undertaken by LUMA to reduce the average speed to answer calls.
- Is the availability of trunk lines impacting the average speed to answer?

Average Speed to Answer



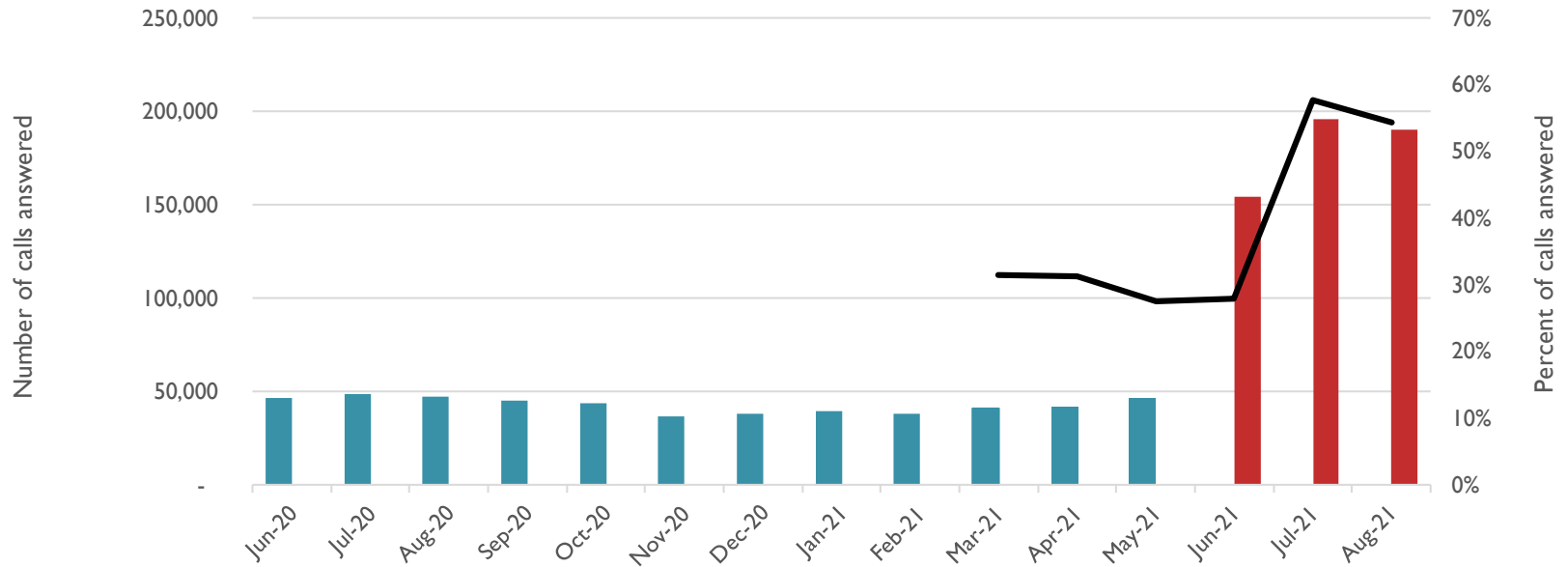
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
--- Baseline	8	8	8	8	8	8	8	8	8	8	8	8	8.3	8.3	8.3
— PREPA	7	10	10	5	4	3	1	2	1	1	1	3			
— LUMA													26	7	9



Customer Service

- Please describe LUMA’s efforts to address the observation that PREPA had reduced the number of trunk lines thus limiting the number of customer calls.

Number and Percentage of Customer Calls Answered



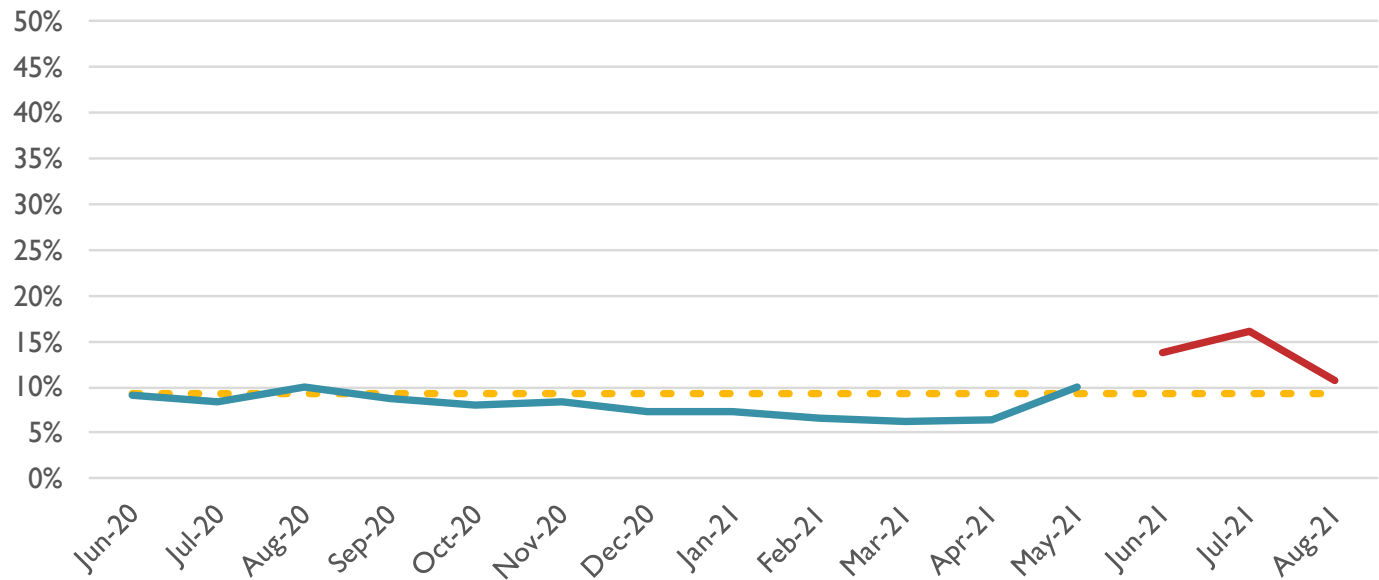
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
# of calls answered, PREPA	46,570	48,324	47,401	45,396	43,470	36,536	38,318	39,387	38,084	40,959	41,485	46,669			
# of calls answered, LUMA													154,055	195,732	190,084
% of calls answered										31%	31%	27%	28%	58%	54%



Customer Service

- Please explain the increase in percent of bills estimated since the transition

Percent of Bills Estimated vs Read



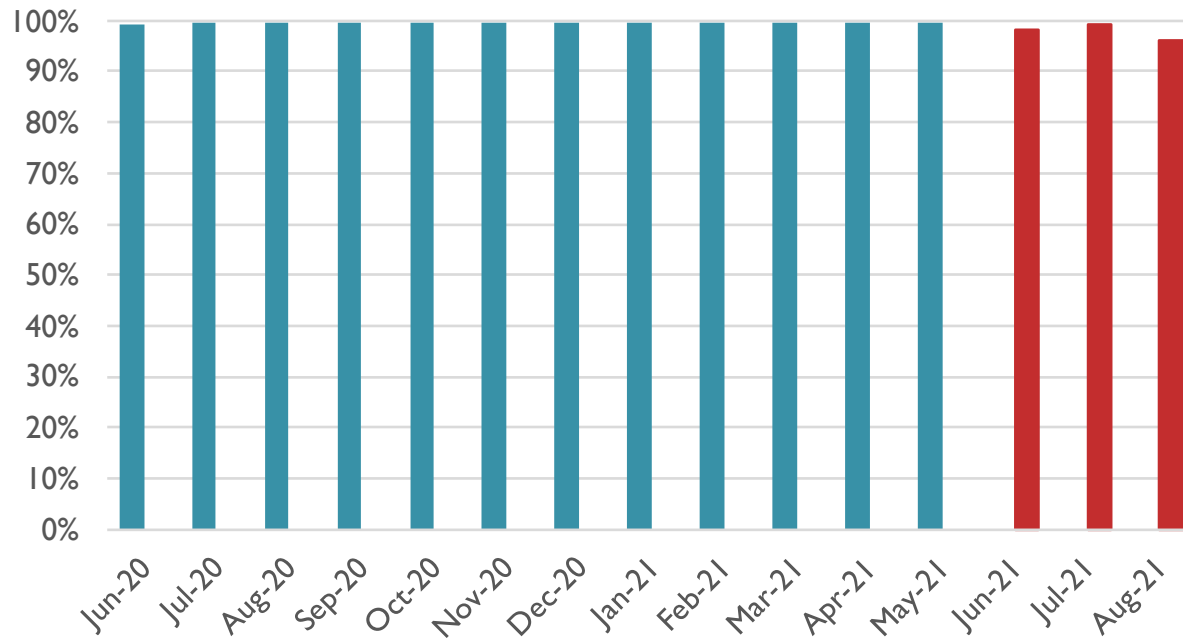
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
--- Baseline	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
— PREPA	9%	8%	10%	9%	8%	8%	7%	7%	7%	6%	6%	10%			
— LUMA													14%	16%	11%



Customer Service

- Please explain the decrease in percent of customers billed since the transition

Percent of Customers Billed



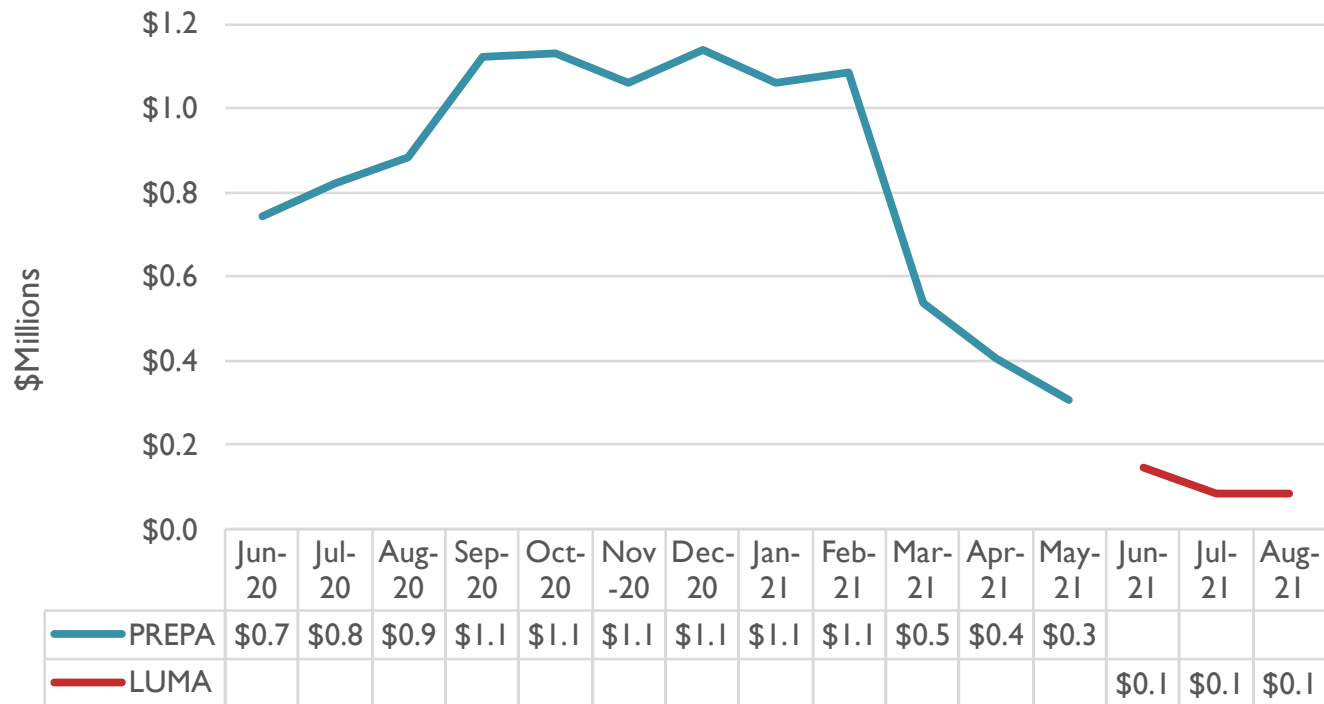
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
■ PREPA	99%	99%	99%	99%	99%	100%	100%	100%	100%	100%	100%	99%			
■ LUMA													98%	99%	96%



Customer Service

- Please explain how LUMA plans to re-establish the reporting of this metric since the information requires field activities as noted in LUMA’s September 20th Filing.
- Please explain PREPA and LUMA’s responsibilities associated with this metric.

Cash Recovered on Theft

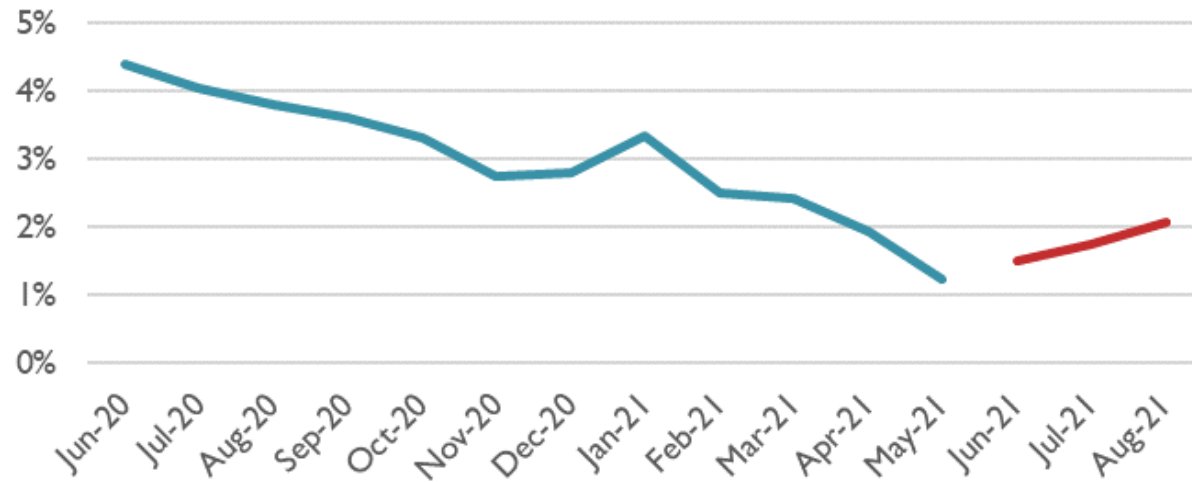




Customer Service

- Please explain LUMA’s concerns regarding the reliability of the underlying data as described in LUMA’s September 20th Filing

NTL as a % of Net Generation



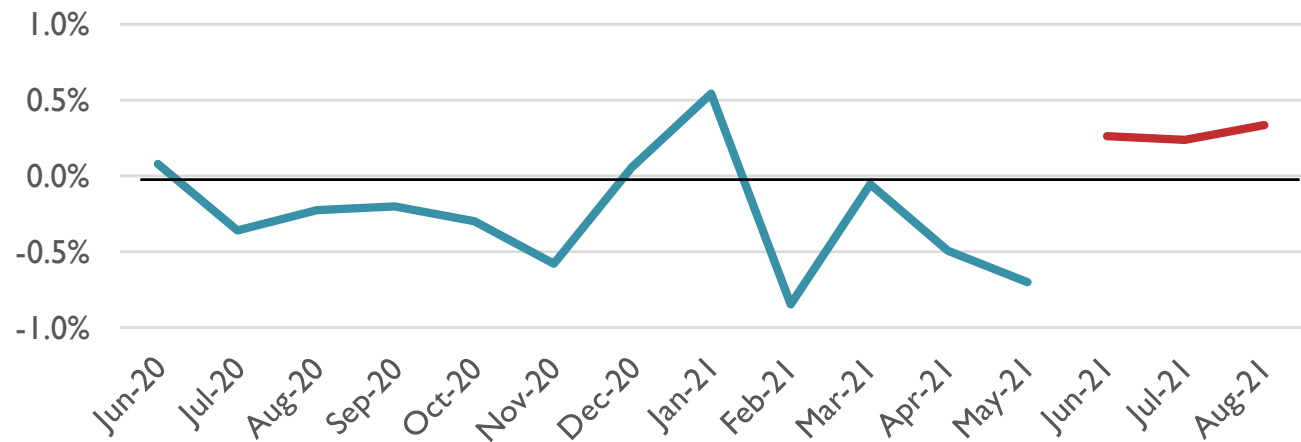
	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
PREPA	4%	4%	4%	4%	3%	3%	3%	3%	3%	2%	2%	1%			
LUMA													2%	2%	2%



Customer Service

- Please explain LUMA’s concerns regarding the reliability of the underlying data as described in LUMA’s September 20th Filing

NTL Reduction as a % of Net Generation



	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
PREPA	0.1%	-0.4%	-0.2%	-0.2%	-0.3%	-0.6%	0.1%	0.5%	-0.9%	-0.1%	-0.5%	-0.7%			
LUMA													0.3%	0.2%	0.3%



Customer Service

Deferred Metrics

- DSO (Days Sales Outstanding) - Total customers
- DSO (Days Sales Outstanding) - government customers
- DSO (Days Sales Outstanding) - general customers

Metrics Seeking Clarification

- Average length of time to resolve customer complaint appeals
- Number of formal customer complaints



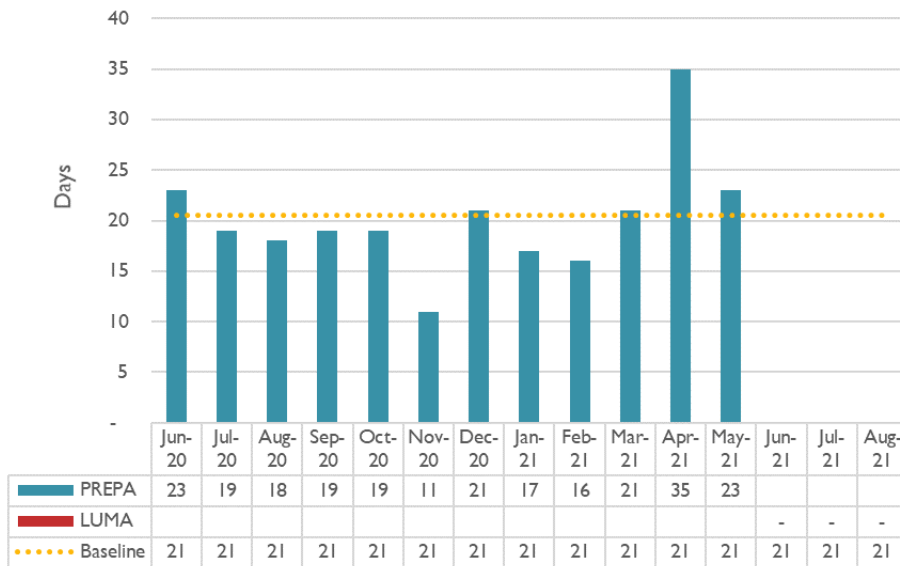
Finance



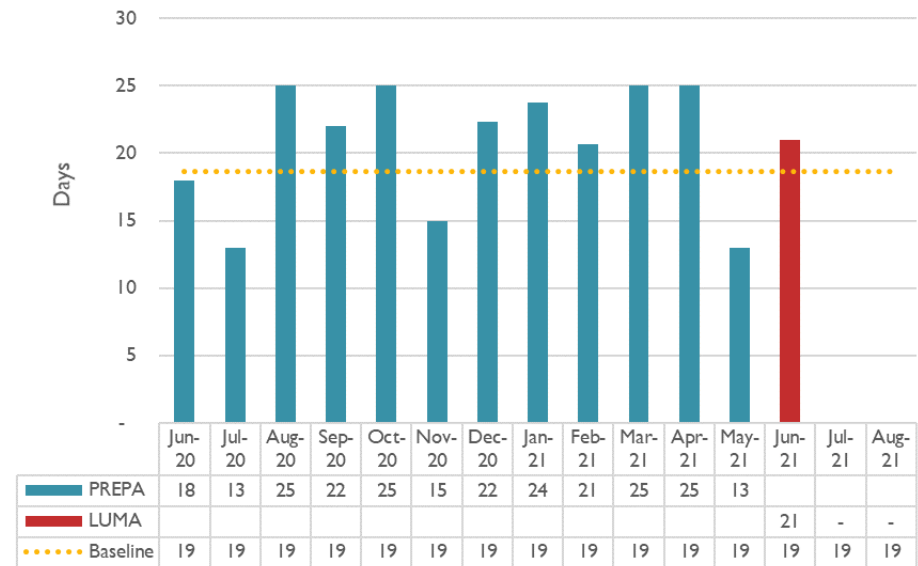
Deferred Metrics

- Timely submission of monthly operating report
- Accounts payable days outstanding

Timely Submission of Monthly Operating Report



Accounts Payable Days Outstanding





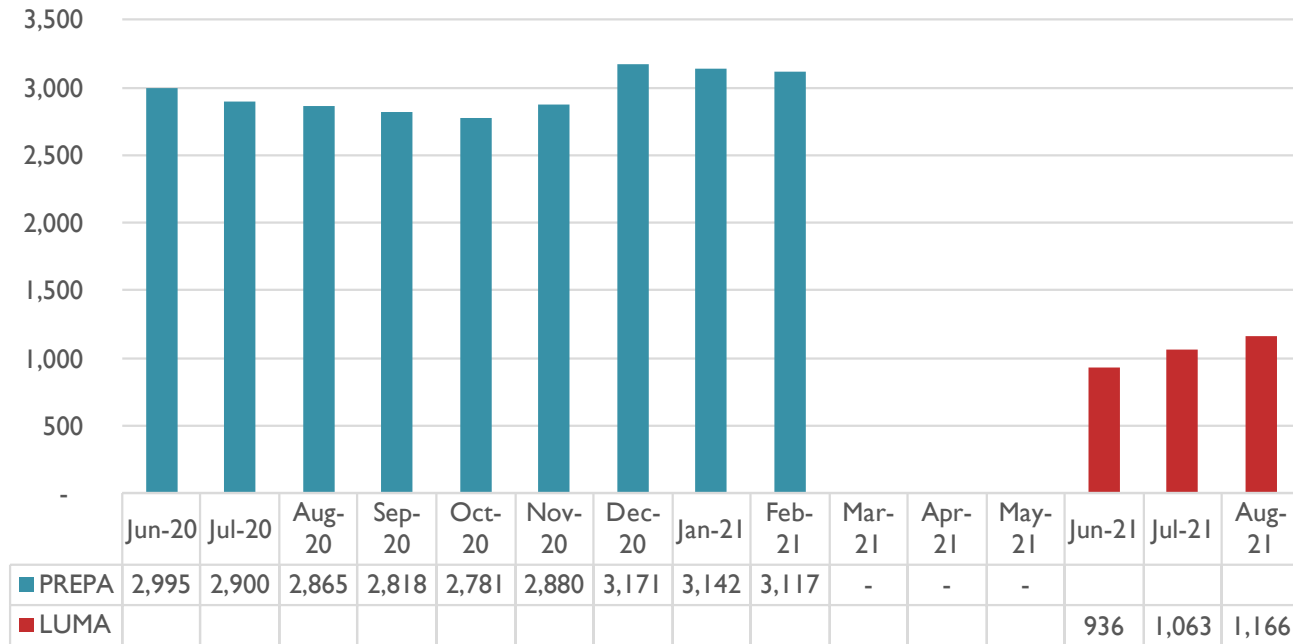
Operations



Operations

- Please explain how LUMA and PREPA have apportioned vehicles between the two entities.
- Please describe LUMA’s efforts to improve maintenance logs for the vehicle fleet as detailed in LUMA’s July 6th Filing

Total Available Vehicles in Service





Human Resources



Human Resources

Missing Metrics

- OSHA DART Rate
- OSHA Severity Rate
- OSHA Fatality Rate

Proposed Additions

- Total budgeted head counts by employee type
- Total actual head counts by employee type



Metrics Proposed to be Excluded by LUMA

- Monthly peak by customer class
- Monthly peak by district
- Number of customer complaints appealed by customer class
- Average time to resolve billing disputes
- Average time to respond to service and outage complaints
- Incremental number of distributed generation installations per year- Wind
- Total installed energy storage capacity by type (system and per district)
- Incremental installed energy storage capacity per year by type (system and per district)
- Total number of energy storage installations by type (system and per district)
- Incremental number of energy storage installations per year by type (system and per district)