NEPR

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

IN RE: REVIEW OF THE PUERTO RICO ELECTRIC POWER AUTHORITY INTEGRATED RESOURCE PLAN	**CASE NO.:** NEPR-AP-2023-0004 **SUBJECT**: Motion Submitting Preferred Resource Plan Modeling Modification

MOTION SUBMITTING PREFERRED RESOURCE PLAN MODELING MODIFICATION

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 October 6, 2026, the Puerto Rico Energy Bureau ("Energy Bureau") entered a Resolution and Order ("October 6th Order") directing LUMA to file its response to the requests for information included in Attachment A of said order, within ten (10) business days. On October 8, 2026, the Energy Bureau issued a Resolution and Order, notified on October 9, 2026, modifying the October 6th Order ("October 8th Order"), ordering LUMA to file on or before October 30, 2026, any Preferred Resource Plan ("PRP") modeling modification that LUMA has completed since the October 17, 2025, filing, along with associated and appropriate workpapers, including any "solution spreadsheets" in support of the updated modeling.

2. In compliance with the October 8th Order, LUMA hereby submits its October 2026 modeling modification results, as *Exhibit 1*, to this Motion. LUMA also submits the workpapers relied on in developing the October 2026 modeling modification results as *Exhibit 2* to this Motion.

3. As explained in more detail in *Exhibit 1*, since the filing of the 2025 Integrated Resource Plan ("October 2025 IRP"), the planning environment has evolved significantly.

Multiple changes have occurred to the assumptions and inputs underlying the October 2025 IRP, including changes regarding planned generating energy storage resource size and cost and changes to the planned additions and retirements included in the October 2025 IRP as "Fixed Decisions," as well as changes to the existing generation fleet. These changes materially change the resulting resource plans as compared to the resource plans presented in the October 2025 IRP. In addition, LUMA developed an updated customer load and distributed photovoltaic forecast and used those updates, along with the other changes described above, to model two scenarios: Scenario 1 Constrained and Scenario 1 Unconstrained.

4. Scenario 1 Constrained is similar to the prior PRP with respect to the Renewable Portfolio Standard ("RPS") and reliability parameters, while incorporating the updated assumptions and forecasts discussed above. The Scenario 1 Constrained results confirm that the changed "facts on the ground" significantly altered the resulting portfolio from the PRP proposed in the October 2025 IRP. In contrast, the Scenario 1 Unconstrained analysis incorporates the same updated assumptions and forecast but treats Fixed Decisions scheduled to occur after 2026 as optional rather than forcing them into the model. This analysis was performed to assess the impact of allowing the model greater flexibility to optimize both resource selection and timing. The results are encouraging, as they generally support the Fixed Decisions and indicate some changes may be economically beneficial if they can be contractually negotiated.

5. However, at this time, LUMA does not recommend either Scenario 1 Constrained or Scenario 1 Unconstrained as the new PRP. Rather, LUMA recommends completing additional data updates, modeling, and sensitivity runs before selecting a PRP. LUMA intends to file with this Energy Bureau, in the near future, a proposed modeling plan and schedule to complete the

recommended updates and additional modeling runs that would enable LUMA's recommendation of a new PRP.

6. LUMA respectfully submits that certain information included in the October 2026 modeling modification results, specifically in *Exhibit 2*, should be designated as confidential material protected from disclosure, as it is protected from disclosure as trade secrets, *see, e.g.*, Act 80-2011, P.R. Laws Ann. tit. 10, §§ 4131-4144 (2023), as well as Critical Energy Infrastructure Information ("CEII"), *see e.g.*, 6 U.S.C. §§ 671-674; 18 C.F.R. §388.113 (2020), and pursuant to the Bureau's Policy on Management of Confidential Information. *See* Energy Bureau's Policy on Management of Confidential Information, CEPR-MI-2016-0009, issued on August 31, 2016, as amended by Resolution dated September 20, 2016.

7. Under separate cover and expediently, within the next ten (10) days, as allowed by Section A.2 of the Energy Bureau's Policy on Management of Confidential Information, LUMA will submit a memorandum of law in support of this request to file certain information included in the October 2026 modeling modification results, specifically in *Exhibit 2*, under seal of confidentiality.

WHEREFORE, LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned and **accept** the October 2026 modeling modification results and the related workpapers, as *Exhibits 1 and 2* to this Motion.

WE HEREBY CERTIFY that this Motion was filed using the electronic filing system of this Energy Bureau and that electronic copies of this Motion will be notified to the Puerto Rico Electric Power Authority: Alexis Rivera, alexis.rivera@prepa.pr.gov, and through its counsel of record, Natalia Zayas Godoy, nzayas@gmlex.net, Richard Cruz Franqui, rcruzfranqui@gmlex.net,

and Mirelis Valle Cancel, mvalle@gmlex.net, and Genera PR, LLC, through its attorney of record Luis R. Román Negrón, lrn@roman-negrom.com.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, on October 30, 2026.

DLA Piper (Puerto Rico) LLC
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/s/ Yahaira De la Rosa Algarín
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PR Bar No. 18,061
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Exhibit 1

October 2026 Modeling Modifications

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October 30, 2026

October 2026 Modeling Modifications

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Legal Notice / Disclaimer

The updated materials submitted herein have been developed to provide guidance and facilitate the evaluation of current trends. They are not intended to represent, nor should they be construed as a final outcome or recommendation. The results presented are preliminary in nature and are subject to change based on further analysis by LUMA, the Energy Bureau and its Consultants.

Furthermore, the assumptions and inputs related to the October 2026 modeling modifications are subject to review and approval by the Energy Bureau. The October 2026 modeling modifications should be evaluated in conjunction with other scenarios and sensitivity analyses and should not be considered in isolation. Final conclusions and the ultimate Preferred Resource Plan (PRP) will be based on the comprehensive assessment of all relevant scenarios, data, and final determinations of the Energy Bureau.

List of Acronyms

ACRONYM	DEFINITION
BESS	battery energy storage system
COD	commercial operation date
DBESS	distributed battery energy storage system
DPV	distributed solar photovoltaic
EIA	Energy Information Agency
EUE	expected unserved energy
FOM	fixed operation and maintenance cost
FOR	forced outage rate
GW	gigawatt
GWh	gigawatt-hour
IRP	Integrated Resource Plan
kW	kilowatt
LNG	liquefied natural gas
LOLE	loss of load expectation
LOLP	loss of load probability
LT	long-term
MT	medium-term
MW	megawatt
MWh	megawatt-hour
PASA	projected assessment of system adequacy
PRP	Preferred Resource Plan
PV	solar photovoltaic
PVRR	present value revenue requirement
RFI	request for information
R&O	resolution and order
SJ	San Juan
ST	short-term
TPA	transmission planning area

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ACRONYM	DEFINITION
USE	unserved energy
VOM	variable operation and maintenance cost

1.0 Introduction

On October 8, 2026, the Puerto Rico Energy Bureau (Energy Bureau) issued a Resolution and Order (October 8 R&O)[1] modifying its October 6, 2026 Resolution and Order[2] and, directing LUMA to submit by October 30, 2026, any Preferred Resource Plan ("PRP") modeling modification that LUMA has completed since the October 17, 2025 filing, along with associated and appropriate workpapers, including any "solution spreadsheets" in support of the modeling. In accordance with the October 8 R&O, LUMA is providing this report outlining the recently completed modeling runs, identified as Scenario 1 Constrained and Scenario 1 Unconstrained.

More than a year has passed since the filing of the 2025 Integrated Resource Plan (October 2025 IRP) on October 17, 2025[3] and the planning environment has evolved significantly. Specifically, multiple changes have occurred to the assumptions and inputs underlying the October 2025 IRP, including (among others) changes to existing generation resources and changes to the previously planned firm additions and retirements included in the October 2025 IRP as "Fixed Decisions". These changes materially affect the resource plans presented on the October 2025 IRP.

In light of these changes, LUMA took the initiative to conduct new modeling that incorporates the updated customer load and distributed photovoltaic (DPV) forecast as well as the changes to the current and planned energy resources noted above. This report describes and discusses the results of two new Scenarios that incorporate these changes, Scenario 1 Constrained and Scenario 1 Unconstrained which are described below.

Scenario 1 Constrained and Scenario 1 Unconstrained meet the constraints of the prior PRP with respect to the Renewable Portfolio Standard (RPS) and reliability parameters, and use the updated assumptions discussed above and are provided in more detail in this report. The Scenario 1 Constrained results confirm that the changed "facts on the ground" significantly altered the PRP proposed in the October 2025 IRP.

The Scenario 1 Unconstrained analysis LUMA conducted uses the same parameters and makes the Fixed Decisions scheduled to occur after 2026 optional for selection rather than "forced" into the model to show the impact that change would have. The results of that analysis are encouraging in that the general direction of the Fixed Decisions is appropriate and indicate some changes may be economically beneficial if they can be contractually negotiated and further confirm the outdated nature of the October 2025 IRP.

A significant number of other assumptions in the October 2025 IRP are now outdated. For instance, the fuel cost assumptions, including biodiesel, and the capital and operating cost assumptions for generic generation and storage resources have not been updated since 2023. LUMA also recently received

[1] P.R. Energy Bureau, Resolution and Order, No. NEPR-AP-2023-0004, (October 8, 2026) https://energia.pr.gov/wp-content/uploads/sites/7/2026/10/20261009-AP20230004-Resolution-and-Order.pdf

[2] P.R. Energy Bureau, Resolution and Order, No. NEPR-AP-2023-0004, (October 6, 2026) https://energia.pr.gov/wp-content/uploads/sites/7/2026/10/20261006-AP20230004-Resolution-and-Order.pdf

[3] LUMA's 2025 IRP Revised Report (October 29, 2025) https://setpr.com/wp-content/uploads/2025/10/0.00_IRP-Report_Main-Report_Revised_Redacted.pdf

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updated macroeconomic information from the FOMB that is likely to further alter the load forecast and, in turn, the resource modeling results.

The assumptions, inputs, and results reflected in the Scenario 1 Constrained and Scenario 1 Unconstrained are subject to review by the Energy Bureau. The analysis should be considered alongside alternative scenarios, sensitivities, and other planning evaluations, delivered in future filings, as part of a comprehensive assessment. Final conclusions, resource recommendations, and the ultimate PRP should be based on the collective evaluation of all relevant scenarios, updated data, stakeholder feedback, and final determinations.

LUMA will develop and file an updated modeling plan, including any additional scenarios or other assumptions requested by the Energy Bureau, and a schedule for those filings that will enable determination of an updated PRP.

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2.0 Assumptions and Forecasts

2.1 General Assumptions

The following are general assumptions used in the scenarios presented in this report:

1. The planning period and the years included in the Present Value of Revenue Requirements (PVRR) calculations changed from 2025-2044 in the October 2025 IRP to 2026-2045 as the proposed updated period of the October 2026 modeling modifications.

2. The reference year for discounting PVRR results is updated to 2025$ as compared to 2023$ in the October 2025 IRP.

3. Where no current commercial operation date (COD) is available for a new unit with an existing contract, the unit is treated as an optional addition with the latest potential date for addition as 2032. The year 2032 (5-years in the future) is estimated as the latest reasonable date when existing contract pricing could remain applicable.

4. Since this report is one year after the October 2025 IRP, the first year that new generic Battery Energy Storage System (BESS) projects can be added is 2028, compared to 2027 assumed in the October 2025 IRP.

5. Renewable Portfolio Standard (RPS) requirements start in 2035 and increase linearly to 100% by 2050.

6. The modified model uses LUMA's most recent load and Distributed Photovoltaic (DPV) forecasts.

7. Scenario 1 Unconstrained is similar to Scenario 1 Constrained, except:

    a. Any formerly Fixed Decision project with a Commercial Operating Date (COD) after 2026 is treated as an optional addition.

    b. For formerly Fixed Decision projects, the listed COD is the earliest possible date for optional installation.

    c. For formerly Fixed Decision projects added after 2026, 2032 is the latest date for their addition.

2.2 Load and Distributed Photovoltaic (DPV) Forecasts Changes

Among other things, Scenario 1 Constrained and Scenario 1 Unconstrained include an updated forecast for the core customer load, and an updated forecast for distributed photovoltaics.

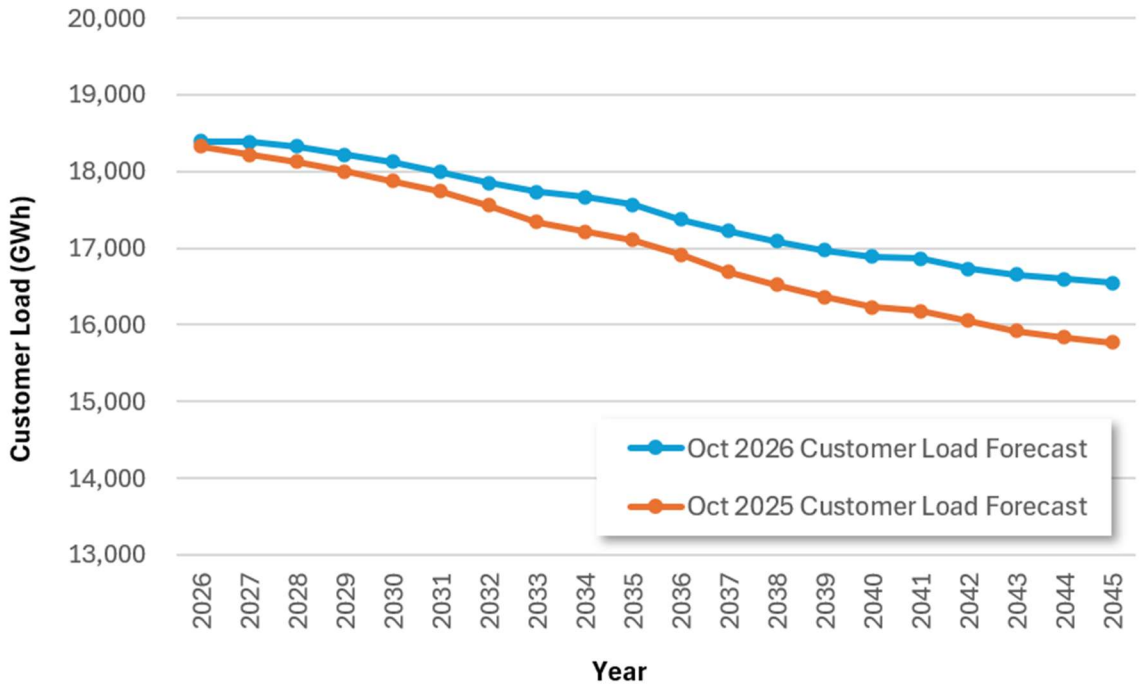
The revised customer load (October 2026 Load Forecast) is shown in Figure 1 compared to the customer load forecast in the October 2025 IRP (October 2025 Customer Load Forecast). The October 2026 Load Forecast uses the same FOMB supplied economic drivers as were used in LUMA’s rate case filings. The

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data in the chart includes system losses to reflect the amount of utility scale generation needed to serve the load, the reduction in metered energy from the contribution of distributed photovoltaic generation consumed behind meter, the reduction from energy efficiency programs (EE), and the impact of electric vehicle charging (EV). It does not include the impacts of Combined Heat and Power (CHP) since CHP is treated as generation in LUMA's resource modeling. Figure 1 shows that the forecast is higher than the October 2025 IRP Load Forecast in each year of the forecast and shows a substantial increase in the later years of the forecast. The October 2026 Load Forecast continues to show a downward trend. The downward trend would hold even prior to the inclusion of the impacts of EE and EV. The October 2025 IRP Customer Load Forecast was based on historical data through December 2023. The October 2026 Customer Load and DPV forecast are based on historical data through July 2026.

Figure 1: Revised Customer Energy Forecast (with EE, EV and excluding CHP)



The revised customer peak load forecast, with the impacts of DPV, EE and EV, is shown in Figure 2. The chart shows a substantial increase in the peak load forecast, over that in the October 2025 IRP, reflecting an increase in peak load of almost 1 GW by 2044. In the load forecast, the load factor is declining over time, and the load peaks in the late evening, which implies an increasing need for dispatchable energy resources to follow the load.

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Figure 2: Annual Customer Peak Load

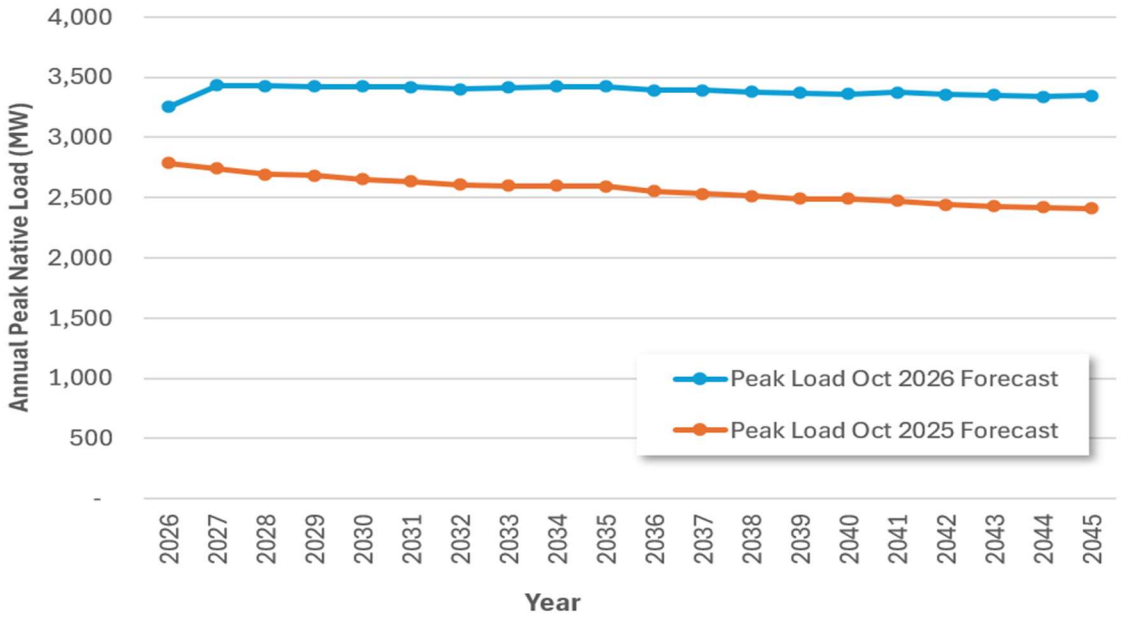
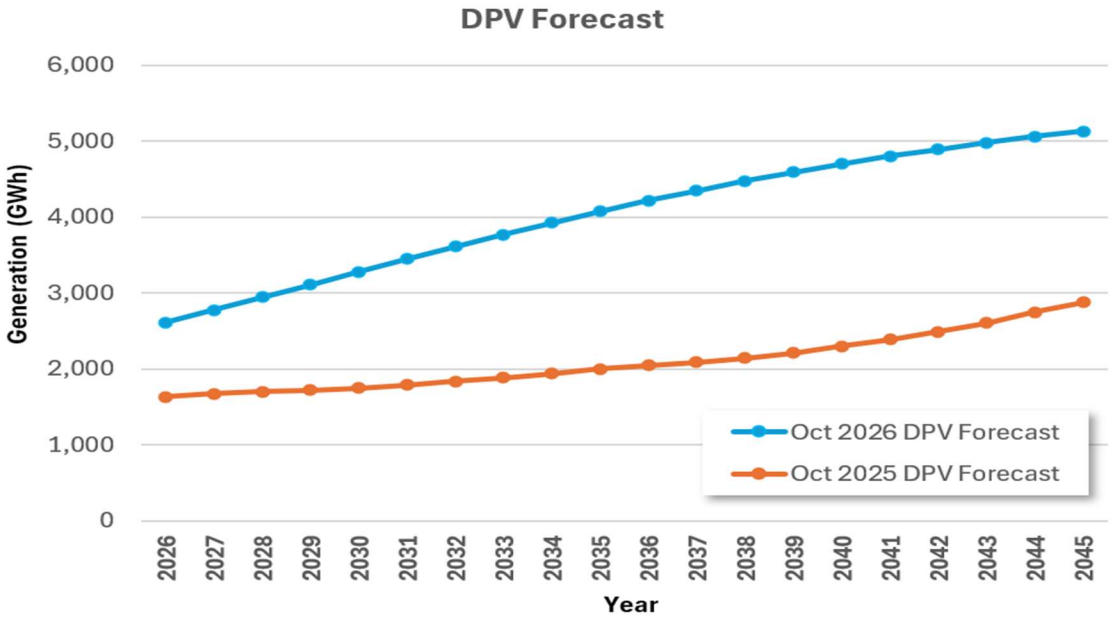


Figure 3 shows the October 2026 DPV Forecast compared to the DPV forecast included in the October 2025 IRP. This updated DPV forecast is also a substantial change to the inputs with almost 1 GW higher value in 2026 growing to over 2 GW higher forecast by 2044.

Figure 3: DPV Forecast



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2.3 Energy Resource Changes

In addition to updated forecasts, LUMA revised assumptions for the existing generation fleet and new energy resources. The most substantial of these changes include:

1. Aguirre ST 1 (300 MW) and ST 2 (340 MW) are included as resources in Scenario 1 Constrained and Scenario 1 Unconstrained. Aguirre ST 2 is now assumed to operate from 2026 through its retirement. Unit 1 remains on forced outage through the end of 2027 and then operates until its retreiment. Both units were assumed out of service for the entirety of the 2025 to 2044 planning horizon of the October 2025 IRP.

2. The emergency generators are included as optional additions, rather than as fixed additions as in the October 2025 IRP.

3. There is a substantial increase in the DPV which also increases the excess generation (net energy metered generation “NEM”) that is exported to the system.

4. The Energiza unit capacity was increased from 478 MW to 528 MW and the operational date was delayed from 2028 to the end of 2029.

5. All the existing unit capacities, forced outage rates, heat rates and startup costs were updated based on the latest performance estimates.

2.4 Treatment of Other Planned Resources

1. LUMA did not include the 3,000 MW Request for Proposal (RFP), ordered by the Energy Bureau, as specific resources since it did not have any detailed information to support its inclusion in the updated modeling. However, the resulting expansion plans presented here define the least cost plan of additional resources which could be selected from the bids received from the 3,000 MW RFP.

2. LUMA also did not include the Puerto Rico Electric Power Authority (PREPA) Accelerated Projects as specific resources since LUMA did not have sufficient detailed information to support their inclusion in the updated modeling. However, the resulting expansion in Scenario 1 defines the least cost plan of additional generic solar and battery resources that serve as an equivalent for the PREPA Accelerated Projects.

3.0 Results

3.1 Scenario 1 Constrained Modeling Results

The Scenario 1 Constrained modeling results show:

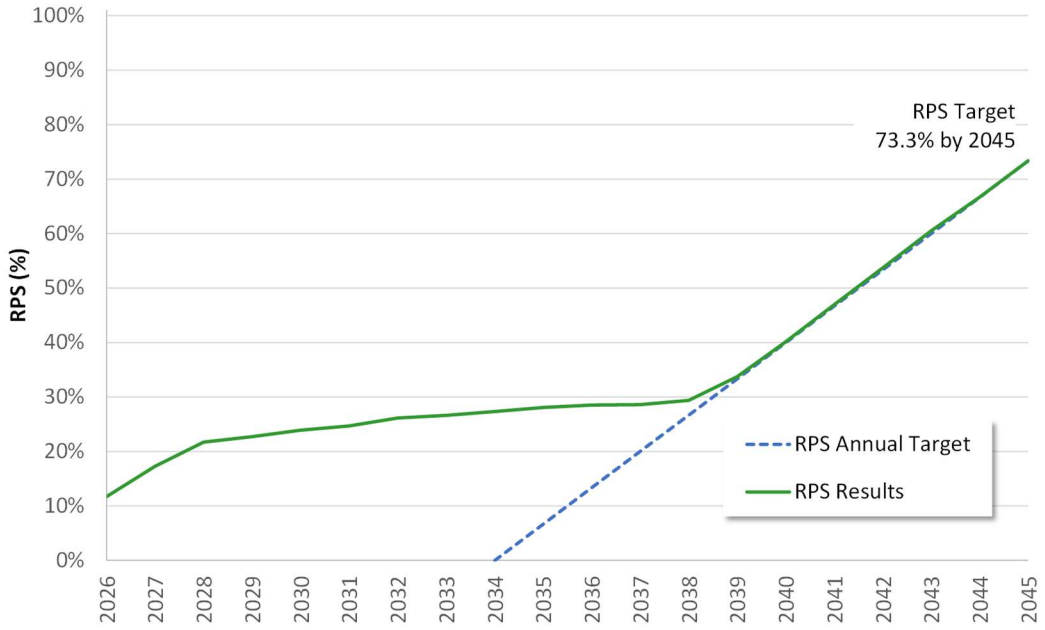
1. The Present Value Revenue Requirement (PVRR) results of Scenario 1 Constrained are shown in Table 1, with the PVRR shown for two basis years (i.e., 2023$ as used in the October 2025 IRP and the recommended change to 2025$), and for two 20-year planning periods (i.e., 2025 to 2044 as used in the October 2025 IRP and the proposed updated period of 2026 to 2045).

Table 1: Scenario 1 Constrained / PVRR Results

PVRR 2025 to 2044 - 2023$ ($000)	PVRR 2025 to 2044 - 2025$ ($000)	PVRR 2026 to 2045 - 2023$ ($000)	PVRR 2026 to 2045 - 2025$ ($000)
30,658,312	**35,759,855**	**29,542,659**	**34,458,557**

2. Scenario 1 Constrained meets the annual RPS requirements, as shown in Figure 4.

Figure 4: Scenario 1 Constrained RPS Results



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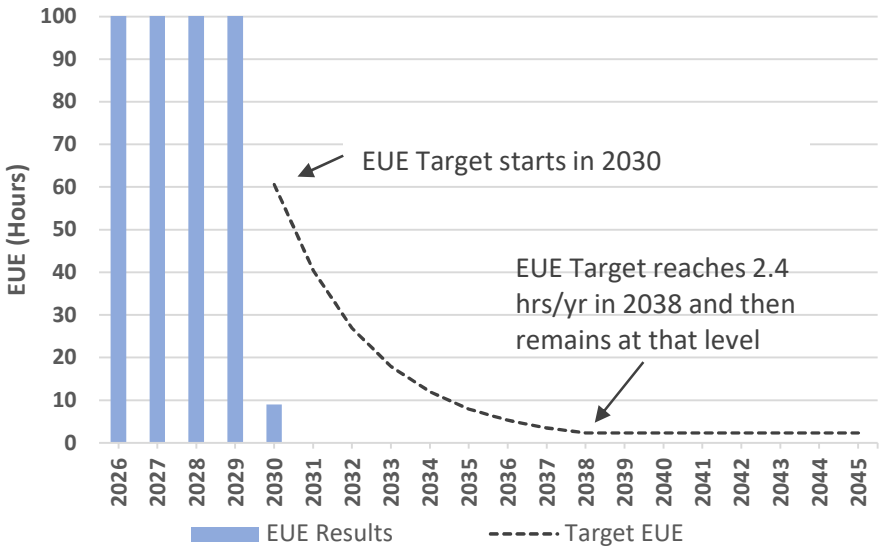
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3. Scenario 1 Constrained meets the annual Expected Unserved Energy (EUE) targets that begin in 2030 and reach an industry standard of less than or equal to 2.4 hours/year, as shown in Table 2 and in Figure 5.

Table 2 Scenario 1 Constrained / EUE Results

Year	Unserved Energy, GWh	Unserved Energy Hours	Max Unserved Energy, MW	Target Hours
2026	195	1,657	1,002	
2027	244	3,021	1,363	
2028	87	1,669	845	
2029	58	1,426	495	
2030	1	9	226	60.6
2031	-	-	-	40.4
2032	-	-	-	26.9
2033	-	-	-	18.0
2034	-	-	-	12.0
2035	-	-	-	8.0
2036	-	-	-	5.3
2037	-	-	-	3.5
2038	-	-	-	2.4
2039	-	-	-	2.4
2040	-	-	-	2.4
2041	-	-	-	2.4
2042	-	-	-	2.4
2043	-	-	-	2.4
2044	-	-	-	2.4
2045	-	-	-	2.4

Figure 5: Scenario 1 Constrained / EUE Results



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4. The first optional BESS units are added in 2028, the first year they are able to be added.
5. The first optional thermal units are added in 2031, one year after the first year they are able to be added.
6. A number of the new LNG fueled units, including Energiza, are converted to biodiesel fuel between 2037 and 2043 to meet RPS requirements.
7. 300 MW of new generic solar is added in 2039.
8. The emergency generators are not selected. The emergency generators are not built since the EUE occurs mainly in other Transmission Planning Areas (TPAs) for which the emergency generators cannot provide power due to transmission congestion between the emergency generator locations and the TPAs experiencing EUE. The emergency generators are available to be built in the Ponce ES and San Juan TPAs only, due to fuel availability, and depend on transmission availability to export power to other TPAs. By the time new transmission can be built, in 2030, other generation options are also available.
9. The economic capacity additions for Scenario 1 Constrained are shown in Table 3.

Table 3: Scenario 1 Constrained / Economic Additions (MW)

Units Built	2028	2029	2030	2031	2032	2035	2036	2037	2039	2040	2041	2042	2043
LNG				**452**	**487**	**825**	**35**						
New Gas Gen				**452**	**487**	**825**	**35**						
7F.05 1x0_Ponce OE				226	226	226							
7F.05 1x0_S Juan				226	226	226							
7F.05 1x1_S Juan						373							
LM2500 1x0_S Juan					35		35						
LNG - Trucked					**244**								
18V50DF 1x0_Mayaguez					18								
7F.05 1x0_Ponce ES					226								
Biodiesel Conversions of Prior LNG Additions								**226**		**373**	**226**	**244**	**528**
Gas Gen Biodiesel								**226**		**373**	**226**	**244**	
18V50DF 1x0_Mayaguez Biodiesel												18	
7F.05 1x0_Ponce ES Biodiesel								226					
7F.05 1x0_Ponce OE Biodiesel												226	
7F.05 1x0_S Juan Biodiesel											226		
7F.05 1x1_S Juan Biodiesel										373			
Biodiesel Conversion Energiza													528
New Solar									**300**				
Solar Caguas									150				
Solar Carolina									150				

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Units Built	2028	2029	2030	2031	2032	2035	2036	2037	2039	2040	2041	2042	2043
Tranche 2 Solar					**60**								
Marisol Power					40								
Solar Project San Juan					20								
4 HR BESS	**80**												
BESS-CLNA-4HR	80												
6 HR BESS	**40**												
BESS-CLNA-6HR	40												
Tranche 2 BESS			**60**										
Vega Baja BESS			60										
Tranche 4 BESS				**50**									
Isabela BESS (6-hour)				50									
Regulation Only BESS					**100**								
Aguadilla					25								
Barceloneta					25								
Manati					25								
San Juan					25								
Non-Tranche BESS		**50**	**125**										
Ciro ONE 4hr BESS Phase 1			90										
Ciro ONE 4hr BESS Phase 2		25											
Ciro Two BESS_Phase2			35										
Guayama Solar Energy BESS_Phase2		25											

8. Economic retirements for Scenario 1 Constrained are shown in Table 4.

Table 4 Scenario 1 Constrained / Economic Retirements (MW)

Units Retired	2030	2031	2033	2037	2038	2039	2040	2041	2042	2043	Bio Conversion
Thermal Gen								**150**			
AGUIRRE 1 CC								150			
Heavy Diesel - FO6	**610**	**470**	**90**	**680**							
AGUIRRE ST_1		300									
AGUIRRE ST_2	340										
COSTA SUR 5				330							
COSTA SUR 6				350							
PALO SECO 3		170									
PALO SECO 4	180										
SAN JUAN 7	90										

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Units Retired	2030	2031	2033	2037	2038	2039	2040	2041	2042	2043	Bio Conversion
SAN JUAN 9			90								
Diesel - Peaker				**156**							
CAMBALACHE CT_2				78							
CAMBALACHE CT_3				78							
LNG						**25**	**373**	**351**	**301**	**528**	
Energiza										528	Conversion
FEMA Gen						**25**		**125**	**75**		
FEMA SJ Gen+ 6 #1								25			
FEMA SJ Gen+ 6 #10								25			
FEMA SJ Gen+ 6 #2								25			
FEMA SJ Gen+ 6 #3								25			
FEMA SJ Gen+ 6 #4								25			
FEMA SJ Gen+ 6 #5									25		
FEMA SJ Gen+ 6 #7									25		
FEMA SJ Gen+ 6 #8									25		
FEMA SJ Gen+ 6 #9						25					
New Gas Gen (LNG Unit Converted to Biodiesel)							**373**	**226**	**226**		
7F.05 1x0_Ponce OE									226		Conversion
7F.05 1x0_S Juan								226			Conversion
7F.05 1x1_S Juan							373				Conversion
Diesel - GT				**125**	**25**						
MAYAGUEZ GT 1				50							
MAYAGUEZ GT 2				50							
MAYAGUEZ GT 3				25							
MAYAGUEZ GT 4					25						
LNG - Trucked				**226**		**40**		**50**	**18**		
FEMA Gen						**40**		**50**			
FEMA PS Gen 4 #1						20					
FEMA PS Gen 4 #2						20					
FEMA PS Gen 6 #1								25			
FEMA PS Gen 8 #1								25			
New Gas Gen (LNG Unit Converted to Biodiesel)				**226**					**18**		
18V50DF 1x0_Mayaguez									18		Conversion
7F.05 1x0_Ponce ES				226							Conversion

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3.2 Scenario 1 Unconstrained Modeling Results

The Scenario 1 Unconstrained results show:

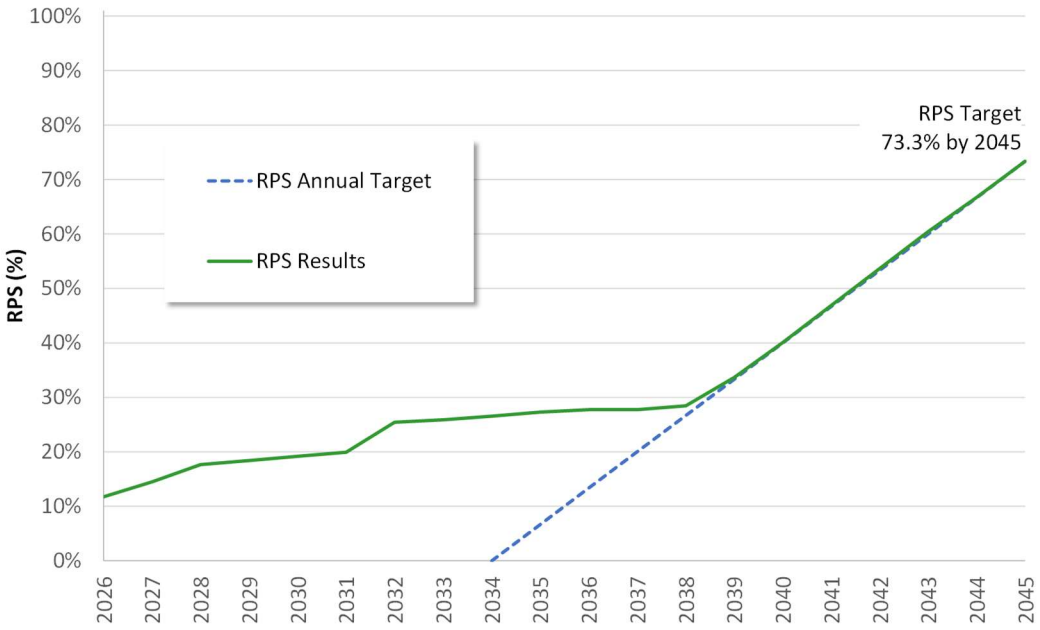
1. The PVRR results are shown in Table 5 with the PVRR shown for two basis years (i.e., 2023$ as used in the October 2025 IRP and the recommended change to 2025$), and for two 20-year planning periods (i.e., 2025 to 2044 as used in the October 2025 IRP and the proposed period of 2026 to 2045).

Table 5 Scenario 1 Unconstrained / PVRR Results

Present Value Revenue Requirement (PVRR) 2025 to 2044 2023$ ($000)	Present Value Revenue Requirement (PVRR) 2025 to 2044 2025$ ($000)	Present Value Revenue Requirement (PVRR) 2026 to 2045 2023$ ($000)	Present Value Revenue Requirement (PVRR) 2026 to 2045 2025$ ($000)
30,251,123	**35,284,910**	**29,142,823**	**33,992,189**

2. Scenario 1 Unconstrained meets the annual RPS requirements, as shown in Figure 6.

Figure 6: Scenario 1- Unconstrained RPS Results



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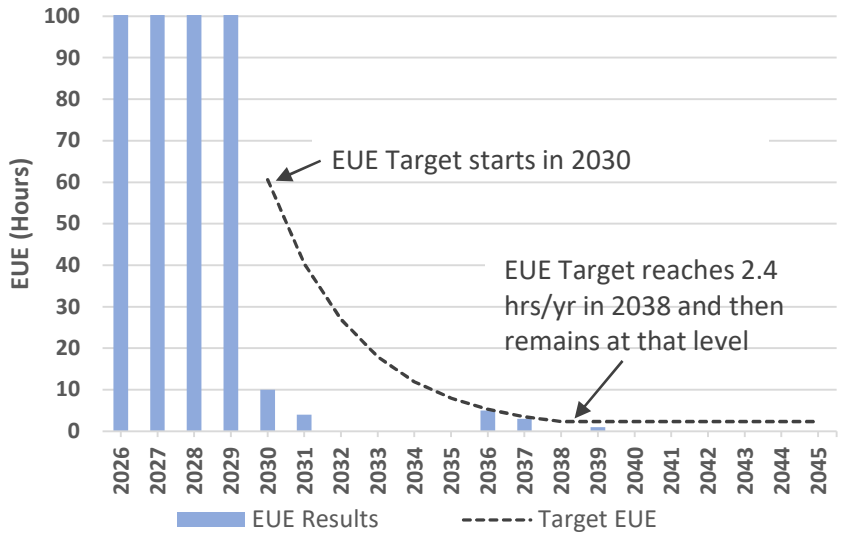
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3. Scenario 1 Unconstrained meets the annual EUE targets that begin in 2030 and reach an industry standard of less than or equal to 2.4 hours/year, as shown in Table 6 and in Figure 7.

Table 6 Scenario 1 Unconstrained / EUE Results

Year	Unserved Energy, (GWh)	Unserved Energy Hours	Max Unserved Energy, (MW)	Target Hours
2026	229	1,750	1,367	
2027	395	3,254	1,409	
2028	102	1,509	644	
2029	110	1,340	1,081	
2030	0	10	68	60.6
2031	0	4	281	40.4
2032	-	-	-	26.9
2033	-	-	-	18.0
2034	-	-	-	12.0
2035	-	-	-	8.0
2036	1	5	233	5.3
2037	0	3	17	3.5
2038	-	-	-	2.4
2039	0	1	40	2.4
2040	-	-	-	2.4
2041	-	-	-	2.4
2042	-	-	-	2.4
2043	-	-	-	2.4
2044	-	-	-	2.4
2045	-	-	-	2.4

Figure 7: Scenario 1 Unconstrained / EUE Results



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4. The first optional BESS units are added in 2028, the first year they are able to be added.
5. The first optional thermal units are added in 2031, one year after the first year they are able to be added.
6. The economic additions for Scenario 1 Unconstrained are shown in Table 7. As discussed above, many of the optional economic additions shown are Fixed Decisions in Scenario 1 Constrained.

Table 7: Scenario 1 Unconstrained / Economic Additions (MW)

Units Built	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
New Gas Gen				**226**	**452**			**652**										
18V50DF 1x0_S Juan								18										
7F.05 1x0_Ponce OE					226													
7F.05 1x0_S Juan				226	226			226										
7F.05 1x1_S Juan								373										
LM2500 1x0_S Juan								35										
New Genera Units	**100**																	
2X50MW Costa Sur	100																	
LNG - Trucked	**108**			**226**	**452**													
New Gas Gen				**226**	**452**													
7F.05 1x0_Mayaguez					226													
7F.05 1x0_Ponce ES				226	226													
New Genera Units	**108**																	
2X17MW 18V50DF Jobos	36																	
2X17MW 18V50DF Yabucoa	36																	
2X9MW 18V50DF Daguao	36																	
Biodiesel Conversions of Prior LNG Additions													**505**	**599**	**226**			**528**
18V50DF 1x0_S Juan Biodiesel													18					
7F.05 1x0_Mayaguez Biodiesel															226			
7F.05 1x0_Ponce ES Biodiesel														226				
7F.05 1x0_Ponce OE Biodiesel													226					
7F.05 1x0_S Juan Biodiesel													226					
7F.05 1x1_S Juan Biodiesel														373				
LM2500 1x0_S Juan Biodiesel													35					
Biodiesel Energiza																		528
New Solar												**375**	**300**					
Solar Caguas												150	150					

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Units Built	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Solar Carolina												150	150					
Solar Ponce ES												75						
Tranche 1 Solar	**200**				**362**													
AES Jobos Solar	80																	
AES Salinas Solar	120																	
Juncos I PV					100													
Pattern Barceloneta Solar ITC					70													
Solaner San German					40													
Tetris Power					20													
Yabucoa					32													
Yabucoa Energy Park Solar ITC					100													
Tranche 2 Solar					**60**													
Marisol Power					40													
Solar Project San Juan					20													
4 HR BESS	**80**																	
BESS-CLNA-4HR	80																	
Tranche 1 BESS	**160**		**630**	**25**														
AES Jobos (BESS)-ITC			110															
AES Salinas (BESS)- ITC Ph1			100															
AES Salinas (BESS)- ITC_2 Ph2			75															
Caguas Energy Storage			25															
Naguabo Energy Park	80																	
Pattern Barceloneta STORAGE			120															
Pattern Santa Isabel Storage			100															
Penuelas Energy Storage			100															
Ponce Energy Storage				25														
Yabucoa Energy Park	80																	
Tranche 2 BESS			**60**															
Vega Baja BESS			60															
New Genera Units	**406**		**30**															
Aguirre - 4HR	164																	
Cambalache - 4HR	52																	
Costa Sur - 4HR			30															
Palo Seco - 4HR	101																	
Vega Baja - 4HR	49																	
Yabucoa - 4HR	40																	

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Units Built	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
ASAP Phase 1	**55**	**50**	**38**	**40**														
EcoElectrica 4hr BESS			20															
Fonroche Humacao Solar 4hr BESS				40														
Horizon Energy BESS_Phase1			18															
Punta Lima Wind Farm BESS_Phase1	35																	
San Fermin Solar Farm BESS_Phase1	20																	
Yarotek (Oriana) 4hr BESS		50																
ASAP Phase 2	**50**	**40**	**185**															
Juncos I PV BESS_Phase2			125															
Solaner BESS_PHase2		40																
XZERTA-TEC BESS_Phase2			60															
Yabucoa YFN BESS_Phase2	50																	
Tranche 4 BESS				**50**														
Isabela BESS (6-hour)				50														
Regulation Only BESS					**100**													
Aguadilla					25													
Barceloneta					25													
Manati					25													
San Juan					25													
Non-Tranche BESS			**175**															
Ciro ONE 4hr BESS Phase 1			90															
Ciro ONE 4hr BESS Phase 2			25															
Ciro Two BESS_Phase2			35															
Guayama Solar Energy BESS_Phase2			25															

7. The economic retirements for Scenario 1 Unconstrained are shown in Table 8.

Table 8: Scenario 1 Unconstrained / Economic Retirements (MW)

Units Retired	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Bio Conversion
Diesel CC										**150**	**130**				
Thermal Gen										**150**	**130**				
AGUIRRE 1 CC										150					
AGUIRRE 2 CC											130				
Heavy Fuel Oil - FO6	**270**	**900**			**330**	**350**									
AGUIRRE ST_1		300													
AGUIRRE ST_2		340													
COSTA SUR 5					330										

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Units Retired	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Bio Conversion
COSTA SUR 6						350									
PALO SECO 3		170													
PALO SECO 4	180														
SAN JUAN 7	90														
SAN JUAN 9		90													
Diesel - Peaker					**156**										
CAMBALACHE CT_2					78										
CAMBALACHE CT_3					78										
LNG					**200**			**25**	**505**	**373**				**528**	
Energiza														528	Conversion
FEMA Gen					**200**			**25**							
FEMA SJ Gen+ 6 #1					25										
FEMA SJ Gen+ 6 #2								25							
FEMA SJ Gen+ 6 #3					25										
FEMA SJ Gen+ 6 #4					25										
FEMA SJ Gen+ 6 #5					25										
FEMA SJ Gen+ 6 #6					25										
FEMA SJ Gen+ 6 #7					25										
FEMA SJ Gen+ 6 #8					25										
FEMA SJ Gen+ 6 #9					25										
New Gas Gen									**505**	**373**					
18V50DF 1x0_S Juan									18						Conversion
7F.05 1x0_Ponce OE									226						Conversion
7F.05 1x0_S Juan									226						Conversion
7F.05 1x1_S Juan										373					Conversion
LM2500 1x0_S Juan									35						Conversion
Diesel - GT					**150**										
MAYAGUEZ GT 1					50										
MAYAGUEZ GT 2					50										
MAYAGUEZ GT 3					25										
MAYAGUEZ GT 4					25										
LNG - Trucked					**25**			**20**		**226**	**226**		**20**		
FEMA Gen					**25**			**20**					**20**		
FEMA PS Gen 4 #1								20							
FEMA PS Gen 4 #2													20		
FEMA PS Gen 8 #1					25										
New Gas Gen										**226**	**226**				
7F.05 1x0_Mayaguez											226				Conversion

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Units Retired	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Bio Conversion
7F.05 1x0_Ponce ES										226					Conversion

8. 675 MW of new generic solar is added by 2040.

9. As with Scenario 1 Constrained, Scenario 1 Unconstrained does not select the emergency generators. The emergency generators are not built since the EUE occurs mainly in other TPAs for which the emergency generators cannot provide power due to transmission limitations between the emergency generator locations and the TPAs experiencing EUE. The emergency generators are available to be built in the Ponce ES and San Juan TPAs only, due to fuel availability, and depend on transmission availability to export power to other TPAs. By the time new transmission can be built, in 2030, other generation options are also available.

10. The Scenario 1 Unconstrained selects most of the units designated as Fixed Decisions even when their addition is made optional, demonstrating that they are reasonable economic choices. By making them optional, the model is able to optimize their CODs, adding some units on the same date as the Fixed Decision addition in Scenario 1 Constrained (see units with gray highlights in Table 9), delaying the COD dates on many units (see units with green highlights in Table 9), and not selecting one (see yellow highlight in Table 9). The red highlights indicate generators not selected in both Scenario 1 Constrained and Scenario 1 Unconstrained.

Table 9: Comparison of Economic Additions for Scenario 1 Constrained and Scenario 1 Unconstrained

Unit Name	Category	Max capacity (MW)	Sc1 Constrained (COD)	Sc1 Unconstrained (Year of Build)
Solar_Ciro One Phase 2	Solar	50	Optional (Not Built)	Optional (Not Built)
Solar_Xzerta-Tec	Solar	60	9/21/2029	Optional (Not Built)
AES Jobos Solar	Tranche 1 Solar	80	2/28/2027	Optional (2028)
AES Salinas Solar	Tranche 1 Solar	120	2/28/2027	Optional (2028)
Ciro Two Salinas	Tranche 1 Solar	68	Optional (Not Built)	Optional (Not Built)
Coamo Solar	Tranche 1 Solar	100	Optional (Not Built)	Optional (Not Built)
Guayama Solar Energy	Tranche 1 Solar	50	Optional (Not Built)	Optional (Not Built)
Juncos I PV	Tranche 1 Solar	100	10/30/2027	Optional (2032)
Pattern Barceloneta Solar ITC	Tranche 1 Solar	70	2/28/2027	Optional (2032)
Solaner San German	Tranche 1 Solar	40	12/20/2027	Optional (2032)
Tetris Power	Tranche 1 Solar	20	12/31/2027	Optional (2032)
Yabucoa	Tranche 1 Solar	32.1	2/28/2027	Optional (2032)
Yabucoa Energy Park Solar ITC	Tranche 1 Solar	100	12/30/2027	Optional (2032)
Marisol Power	Tranche 2 Solar	40	Optional (2032)	Optional (2032)
Solar Project San Juan	Tranche 2 Solar	20	Optional (2032)	Optional (2032)
2X17MW 18V50DF Jobos	New Genera Units	36	1/1/2028	Optional (2028)
2X17MW 18V50DF Yabucoa	New Genera Units	36	1/1/2028	Optional (2028)
2X50MW Costa Sur	New Genera Units	100	1/1/2028	Optional (2028)
2X9MW 18V50DF Daguao	New Genera Units	36	1/1/2028	Optional (2028)

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Unit Name	Category	Max capacity (MW)	Sc1 Constrained (COD)	Sc1 Unconstrained (Year of Build)
AES Jobos (BESS)-ITC	Tranche 1 BESS	110	2/28/2027	Optional (2030)
AES Salinas (BESS)- ITC Ph1	Tranche 1 BESS	100	2/28/2027	Optional (2030)
AES Salinas (BESS)- ITC_2 Ph2	Tranche 1 BESS	75	2/26/2027	Optional (2030)
Caguas Energy Storage	Tranche 1 BESS	25	4/30/2028	Optional (2030)
Naguabo Energy Park	Tranche 1 BESS	80	12/30/2027	Optional (2028)
Pattern Barceloneta Storage	Tranche 1 BESS	120	2/28/2027	Optional (2030)
Pattern Santa Isabel Storage	Tranche 1 BESS	100	4/30/2027	Optional (2030)
Penuelas Energy Storage	Tranche 1 BESS	100	4/30/2028	Optional (2030)
Ponce Energy Storage	Tranche 1 BESS	25	4/30/2028	Optional (2031)
Vega Baja BESS	Tranche 2 BESS	60	Optional (2030)	Optional (2030)
Aguirre - 4HR	New Genera Batteries	164	12/30/2026	Optional (2028)
Cambalache - 4HR	New Genera Batteries	52	9/30/2026	Optional (2028)
Costa Sur - 4HR	New Genera Batteries	30	12/30/2026	Optional (2030)
Palo Seco - 4HR	New Genera Batteries	101	7/31/2027	Optional (2028)
Vega Baja - 4HR	New Genera Batteries	49	9/8/2026	Optional (2028)
Yabucoa - 4HR	New Genera Batteries	40	10/30/2026	Optional (2028)
EcoElectrica 4hr BESS	ASAP Phase 1	20	9/30/2027	Optional (2030)
Fonroche Humacao Solar 4hr BESS	ASAP Phase 1	40	9/30/2027	Optional (2031)
Horizon Energy BESS_Phase1	ASAP Phase 1	18	9/30/2027	Optional (2030)
Punta Lima Wind Farm BESS_Phase1	ASAP Phase 1	35.2	9/30/2027	Optional (2028)
San Fermin Solar Farm BESS_Phase1	ASAP Phase 1	20	9/30/2027	Optional (2028)
Yarotek (Oriana) 4hr BESS	ASAP Phase 1	50	9/30/2027	Optional (2029)
Juncos I PV BESS_Phase2	ASAP Phase 2	125	10/30/2027	Optional (2030)
Solaner BESS_PHase2	ASAP Phase 2	40	9/30/2027	Optional (2029)
XZERTA-TEC BESS_Phase2	ASAP Phase 2	60	10/30/2027	Optional (2030)
Yabucoa YFN BESS_Phase2	ASAP Phase 2	50	9/30/2027	Optional (2028)
Isabela BESS (6-hour)	Tranche 4 BESS	50	Optional (2031)	Optional (2031)
Ciro ONE 4hr BESS Phase 1	Non-Tranche BESS	90	Optional (2030)	Optional (2030)
Ciro ONE 4hr BESS Phase 2	Non-Tranche BESS	25	Optional (2029)	Optional (2030)
Ciro Two BESS_Phase2	Non-Tranche BESS	35	Optional (2030)	Optional (2030)
Guayama Solar Energy BESS_Phase2	Non-Tranche BESS	25	Optional (2029)	Optional (2030)

Shading Legend:

- Selected by both Scenario 1 and built same year
- Selected by both Scenario 1 but Scenario 1 Unconstrained builds later
- Not selected by Scenario 1 Unconstrained
- Not selected in either Scenario 1

11. Scenario 1 Unconstrained requires one fewer transmission upgrade than Scenario 1 Constrained (two transmission upgrades are selected in Scenario 1 Unconstrained and three are selected in Scenario 1 Constrained). Table 10 below shows a comparison of the transmission plan upgrades in the two scenarios.

Table 10: Comparison of Transmission Line Upgrades

Scenario 1 Constrained Transmission Line Upgrades	Scenario 1 Unconstrained Transmission Line Upgrades
Carolina-San Juan 230kV	Carolina-San Juan 230kV
Ponce ES-Caguas 230kV	Ponce ES-Caguas 230kV
Ponce OE-Arecibo 230kV	---

12. The combination of the changes to many of the fixed decision units, and the elimination of one transmission upgrade project in Scenario 1 Unconstrained providing a PVRR that is $466M less than that of Scenario 1 Constrained.

13. Both Scenario 1 Constrained and Scenario 1 Unconstrained include new solar projects, in addition to biodiesel, as part of the expansion plans.

4.0 Conclusions and Recommendation

While the modeling results presented here provide useful information, they do not contain all the updates necessary for proposal of a new preferred resource plan. LUMA recommends that additional data updates, modeling and sensitivity runs be completed before a preferred resource plan is selected. The following list presents key conclusions and recommendations:

1. LUMA recommends that any additional modeling required to develop a revised preferred resource plan for Puerto Rico start from the modeling presented in this filing. The significant changes to energy resource assumptions, the load forecast, and the DPV forecast rendered the October 2025 IRP filing results outdated.

2. LUMA has updated both load and DPV forecasts, but key forecast assumptions included in these October 2026 modeling modifications rely on data that should also be updated. In particular the cost assumptions for the fuels, including biodiesel, and energy resource capital and operating costs should be updated to reflect the most recent market changes and future cost expectations.

3. As can be seen by comparing Scenario 1 Constrained to the Scenario 1 Unconstrained results, many of the near-term BESS and PV projects are needed. If there is flexibility with regard to CODs, or, for example, some are delayed, as demonstrated with the Scenario 1 Unconstrained results, there is room for refinement, which results in a $466M PVRR savings. In general, LUMA recommends that all projects proceed with the COD of their current schedule unless an opportunity for cost savings indicates a delayed start is possible and worth further analysis.

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4. Both the peak load and DPV growth reflected in the most recent forecast updates represent material increases in the later portion of the results for which their impacts on resource plans should be tested under sensitivity runs.