

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

NEPR Received: Aug 13, 2021 5:11 PM
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IN RE: THE IMPLEMENTATION OF THE
PUERTO RICO ELECTRIC POWER
AUTHORITY INTEGRATED RESOURCE
PLAN AND MODIFIED ACTION PLAN

CASE NO.: NEPR-MI-2020-0012

SUBJECT: Motion to Submit Responses in
Compliance with Resolution and Order
Entered on August 6, 2021

**MOTION TO SUBMIT RESPONSES IN COMPLIANCE WITH
RESOLUTION AND ORDER ENTERED ON AUGUST 6, 2021**

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COMES NOW the Puerto Rico Electric Power Authority (PREPA), through its counsel of record, and respectfully submits responses to *Attachment A – Questions for PREPA on Tranche 1 RFP Submission and Revised Procurement* as ordered by the Energy Bureau Public Service Regulatory Board (“Energy Bureau”) in the *Resolution and Order* entered on August 6, 2021 (“August 6 Order”).

WHEREFORE, PREPA respectfully request the Energy Bureau to determine that PREPA has complied with the August 6 Order.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 13th day of August 2021.

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CERTIFICATE OF SERVICE

It is hereby certified that, on this same date, I have filed the above motion with the Office of the Clerk of the Energy Bureau using its Electronic Filing System at <https://radicacion.energia.pr.gov/login>, and a courtesy copy of the filing was sent to LUMA through its legal representatives at margarita.mercado@us.dlapiper.com and laura.rozas@us.dlapiper.com.

In San Juan, Puerto Rico, this 13th day of August 2021.

s/ Katuska Bolaños-Lugo

Katuska Bolaños-Lugo

ANNEX

PREPA’s Responses to Energy Bureau Questions Posed by August 6, 2012 Resolution and Order in Case No. NEPR-MI-2020-0012

August 13, 2021

1. For all proposals selected for Phase 2 evaluation on July 15, 2021, please provide the following:
 - a. A high-level description of the selected proposals, the rejected proposals, and the reasons for selection or rejection.

PREPA Response:

In total, 79 proposals were submitted in response to Tranche 1 of the RFP. Of the 79 proposals, 78 were selected for further evaluation in Phase II. One proposal, Naguabo Energy Park, failed to submit pricing information on or before the RFP submittal deadline.

- b. A listing by proposal technology, and by proposal, of the total MW (or MWh for energy storage) selected for evaluation.

PREPA Response:

See Table 1-1.

Table 1-1 Summary of Proposals by Project

Technology and Project Name	Solar PV Capacity (MW)	Energy Storage Capacity (MW)	Energy Storage Generation (MWh)	Max of VPP Capacity (MW)
Energy Storage Resource - ITC Compliant				
Anasco Storage 1		45.5	182	
Guerrero Storage 1		45.5	182	
Pozo Hondo Storage 1		45.5	182	
Energy Storage Resource - Standalone				
Aguirre Energy Storage (2hr MTR)		100	200	
Aguirre Energy Storage (4hr Base)		100	400	
Aguirre Energy Storage (4hr MTR)		100	400	
Caguas Energy Storage (2hr MTR)		25	50	
Caguas Energy Storage (4hr Base)		25	100	

Technology and Project Name	Solar PV Capacity (MW)	Energy Storage Capacity (MW)	Energy Storage Generation (MWh)	Max of VPP Capacity (MW)
Caguas Energy Storage (4hr MTR)		25	100	
Hatillo II BESS		60	250	
Jobos BESS		80	320	
Mayaguez Energy Storage (2hr MTR)		25	50	
Mayaguez Energy Storage (4hr Base)		25	100	
Mayaguez Energy Storage (4hr MTR)		25	100	
Barceloneta Storage - 25 MW		25	100	
Barceloneta Storage - 50 MW		50	200	
Carolina Storage - 25 MW		25	100	
Carolina Storage - 50 MW		50	200	
Hatillo Storage - 25 MW		25	100	
Hatillo Storage - 50 MW		50	200	
Pastillo Storage - 25 MW		25	100	
Pastillo Storage - 50 MW		50	200	
Santa Isabel Storage - 25 MW		25	100	
Santa Isabel Storage - 50 MW		50	200	
Penuelas Energy Storage (2 hr MTR)		100	400	
Penuelas Energy Storage (2hr MTR)		100	200	
Penuelas Energy Storage (4hr Base)		100	400	
Ponce Energy Storage (2 hr MTR)		25	50	
Ponce Energy Storage (4 hr Base)		25	100	
Ponce Energy Storage (4 hr MTR)		25	100	
Salinas BESS		120	480	

Technology and Project Name	Solar PV Capacity (MW)	Energy Storage Capacity (MW)	Energy Storage Generation (MWh)	Max of VPP Capacity (MW)
Vega Baja		60	250	
Yabucoa Energy Park		20	80	
Renewable Resource - Solar PV				
Anasco Solar 1	53.5			
Bemoga	25			
Buckeye Puerto Rico Solar	105.6	6	12	
Cabo Rojo	23.5			
Cabo Rojo Solar Project	20			
Caracol Solar Farm	25			
Ciro Two Salinas	33			
Coamo Solar	100		55	
Mayaguez	24.97	11.25		
Cabo Rojo	20.7	11.25		
Esmeralda Solar Farm	60			
Guayama Solar Energy	25			
Guerrero Solar 1	53.5			
Hatillo Solar	22		11	
Jobos Solar	80			
Juncos I PV	100			
Solar PR LLC Solar - 4	56			
Naguabo Solar A	25			
Naguabo Solar B	20			
Barceloneta Solar	60			
Carolina Solar	25			
Pastillo Solar	25			
Pozo Hondo Solar 1	53.5			
Rio Seco Solar Farm	25			
Salinas Solar	120			
Santa Elena Solar Farm	25			
Santa Isabel	128			
Sierra Solar Farm	25			
San German	35			
Fajardo	32			
Tetris Power	20			
Vega Baja PV Farm	20			

Technology and Project Name	Solar PV Capacity (MW)	Energy Storage Capacity (MW)	Energy Storage Generation (MWh)	Max of VPP Capacity (MW)
BF-1-P	135			
BG-1-P	135			
BH-1-P	100			
BI-1-P	50			
Vega Baja	25			
Viota	65			
Yabucoa	32.1			
Yabucoa Energy Park	38.7			
Virtual Power Plant				
Puerto Rico - VPP 1				15
PR Virtual Power Plant				17
Virtual Power Plant				150

c. A comparison by proposal quantity and by total MW (or MWh for energy storage) of the selected proposals, to the total quantity of proposals by technology and total MW (or MWh of energy storage) listed on slide 2 of July 6 Presentation.

PREPA Response:

Resource Type	Quantity	Solar PV Capacity (MW)	Energy Storage Capacity (MW)	Energy Storage Generation (MWh)
Energy Storage Resource - ITC Compliant	3		136.5	546
Energy Storage Resource - Standalone	31		1560.25	5732.14
Renewable Resource - Solar PV	42	2050.87	53.5	178
Virtual Power Plant	3			
Totals	79	2050.87	1750.25	6456.14

d. For virtual power plants selected for evaluation, list the number of proposals selected, the number of proposers, the MW of renewable energy resource for each proposal, and the MWh of energy storage resource for each proposal.

PREPA Response:

Three VPP proposals were selected for evaluation in Phase II. The capacity to be supplied through these VPPs is presented in Table 1-1.

2. For the four Virtual Power Plant proposals identified on slides 2 and 5 of the July 6 Presentation, provide the following information:

a. Confirm the solar PV MW amount for each proposal submitted.

PREPA Response:

- Three unique proposals were submitted for Virtual Power Plants. One VPP Proponent submitted a second pricing option which was considered a fourth proposal.
- The solar PV amount for each Virtual Power Plant is listed in Table 1-1.

b. Is there any energy storage associated with the proposals received? If so, indicate the MW and duration, or MWh, of the associated energy storage amounts.

PREPA Response:

Energy storage is included in each Virtual Power Plant proposal. The VPP Proponents did not provide details on the specific sizing and duration of the energy storage systems.

c. If there is energy storage included in the submissions, indicate if existing installed energy storage quantities (through processes outside of the RFP) are part of the submissions, and if so the MWh quantities of such storage.

PREPA Response:

Energy storage is included in the VPP proposals. The specific sizing and duration of the energy storage systems was not provided by the VPP Proponents.

d. Summarize at a high level the VPP providers' proposals for communicating with the T&D operator for any control or dispatch considerations for the resources.

PREPA Response:

VPP Proponents plan to use a distributed energy management system (DERMS) as the communication and control method with the T&D System Operator, but only limited technical details about the DERMS were provided with the VPP proposals.

- e. What are the estimated timelines for completion (in whole, or in part) of each of the VPP proposal submissions?

PREPA Response:

VPP Proponents listed in-service dates of 2023 but specific timelines or milestones were not provided with the proposals.

- f. Summarize at a high level the implementation plans for each VPP submission.

PREPA Response:

- One VPP Proponent is proposing installation of thousands of residential-sized batteries and solar PV (specific amount not stated). This Proponent will rely on its existing sales channels and co-marketing partnership with PREPA for customer outreach. Total installation count in this VPP Proponent's capacity plan includes a total of 17 MW with 8000 installs to be completed by 2023. Dispatching and control will be via the DERMS over an interface to be agreed upon by the parties. This includes telemetry, forecasting, dispatch, and dispatch cancellation.
- Another VPP Proponent has proposed a VPP that will rely heavily on distributed BESS in addition to load-based DR resources (specific amounts not given). This Proponent proposes to deliver 15 MW of Demand Reduction Service and 10 MW of Demand Build Service from the combined VPP portfolio. The Proponent's proposed strategy is to build its VPP portfolio through use of its sales, account management, and marketing teams along with PREPA to leverage its existing customers with facilities already within PREPA territory that are interested in additional opportunities to participate in VPPs in new territories. This VPP Proponent states that it will work closely with PREPA to ensure seamless integration and provide real-time visibility into dispatch performance through its centralized network operations center.
- A third VPP Proponent is offering behind-the-meter residential solar and storage assets with the ability to allow for increased load curtailment via home energy management devices and electric vehicle chargers as part of this Proponent's VPP portfolio. It proposes that the framework for supplying capacity and energy from third parties will be provided by its sole and exclusive ownership of Grid Services for its solar and storage offerings. Under this VPP Proponent's approach, the end-user will assign to the Proponent the rights to manage energy and capacity for Grid Services programs. The Proponent states that it and PREPA will work together to co-market the program to constituents. This Proponent intends to utilize its Grid

Services integration layer and software capabilities to manage and control the VPP resource. This, according to this Proponent, will include a secure cloud-based architecture for the remote monitoring and dispatch of the fleet. Software integration is to be agreed upon with PREPA and the VPP resources based on API standards. This Proponent's VPP network would be managed and controlled by the Proponent's DERMS and Grid Services integrating layer that, it states, will ensure that all resources are capable of delivering value to PREPA. The Proponent states that this will include behind-the-meter time of use optimization, behind-the-meter backup and resiliency support, grid stabilization and ancillary services.

- g. Summarize the locations or planned locations for the VPP resources, by technology type, and by major Puerto Rico geographical region (island quadrant as per slide 7 of the July 6 Presentation). To the extent this is uncertain in the VPP submissions, provide a best estimate for the probable locational distribution of VPP resources.

PREPA Response:

Specific locations were not provided in the three VPP proposals. VPP Proponents noted that the VPPs would be in various locations across the island.

3. For the utility-scale solar PV and energy storage projects listed in the July 6 Presentation:
- a. For the 29 stand-alone storage projects and 30 solar PV projects (slide 2), to what extent are the proposed interconnection points for solar PV projects the same as the proposed interconnection points for the energy storage projects? Summarize how the proposed interconnection locations for these projects overlap, or do not overlap.

PREPA Response:

- For standalone Energy Storage, the unique list of proposals comes to 14 sites interconnected to 13 POIs. So, there are 2 proposing connection to same POI (Jobos TC).
 - For solar PV, the unique list of proposals comes to 31 projects interconnected at 25 POIs.
- b. Provide the MW (solar PV) and MWh (energy storage) amounts for the 3 proposals indicated as “Energy Storage Resource - ITC Compliant” on slide 2.

PREPA Response:

For all 3 proposals: 45.5 MW solar PV / 182 MWh energy storage

- c. Confirm or explain otherwise that these “Energy Storage Resource - ITC Compliant” projects will charge the energy storage resource only from the solar PV resource associated with the energy storage resource.

PREPA Response:

For ITC compliant resources, at least 75% of the energy charged/discharged from the energy storage system must come from the connected solar PV resource.

4. In Section 3b of the Revised Procurement Plan, submitted as part of the July 23 Motion (Lessons Learned, VPP MTRs), PREPA requested VPP proponents submit MTR comments in a Communications No. 2 (June 23, 2021).

a. Provide any comments submitted by VPP proponents, or at minimum a detailed summary of the nature of comments received.

PREPA Response:

The principal points the three VPP Proponents have made in their comments are summarized in the following response.

b. Provide PREPA's assessment of these comments and how they will affect the final version of the VPP MTRs for the next Tranches.

PREPA Response:

PREPA, LUMA and their advisors are continuing to evaluate comments addressing the VPP MTRs, and expect to incorporate VPP Proponent suggestions to the extent deemed appropriate in a revised version of the VPP MTRs that will apply to VPPs selected from the proposals submitted in Tranche 1.

Among the major issues presented by the VPP Proponent comments which PREPA, LUMA and their advisors are considering are the following:

- **Whether the MTRs should exempt or treat separately VPPs made up of small scale behind-the-meter (“BTM”) participant resources** (including, for example, residential solar + storage and demand response resources connected through single phase 120/240 VAC services). All three VPP Proponents argue that the MTRs appear to have been formulated to focus on large distributed energy resources, including BESS, interconnected with the T&D System through independent grid connection facilities, not on the residential-scale resources the VPP Proponents plan to aggregate. PREPA is considering whether VPPs made up of small residential solar + storage Participant Resources may not be able to comply with some of the draft MTR requirements, including the requirement for transformer connections and requirements included in the draft VPP MTRs at Section 12 d.
- **Whether VPP Participants may also participate in Net Energy Metering (“NEM”) programs.** All three VPP Proponents have objected to this limitation, asserting that Participant Resources that participate in NEM programs should also be eligible to participate in VPPs. One VPP Proponent argues that the limitation on participation in NEM programs by VPP Participant Resources “should have been disclosed in Section 1.9 of the RFP” (PREPA notes, however, that this was disclosed in Section 1.7 of the RFP, and is specifically mentioned in Section 4.4 a of the GSA draft). Another VPP Proponent acknowledges that its proposal “includes customers that are under Net

Energy Metering and will continue to operate under the NEM tariff” and advocates that the requirement that Participants not continue to participate in NEM programs be eliminated for Tranche 1. One VPP Proponent states that if this requirement is not eliminated, SELLER bids may not be valid “since the original bid pricing assumed that customers would still receive value for energy through NEM.” It asserts that DER/VPP programs throughout New England allow participation in both NEM and VPP programs, claiming that in those markets, the DER / VPP program typically compensates for capacity, whereas NEM compensates for energy.” (PREPA notes, however, that other VPP programs do not permit VPP participants to enroll in NEM programs, and that the trend in a number of mainland U.S. jurisdictions is to move away from net metering programs that compensate participants for energy they deliver into the grid at the full retail rate, given the cross-subsidization concerns such compensation raises.)

- **Whether VPPs made up of small scale behind-the-meter (“BTM”) resources should be exempted from the approval processes proposed in the VPP MTR draft** (see, e.g., VPP MTR Draft, Section 1). The three VPP Proponents assert that such processes are too cumbersome and not practical for the resources they have in mind.
- **Whether VPP Aggregators offering only Demand Build and Demand Reduction services should be required to meet reactive power, minimum power factor and similar requirements.** The three VPP Proponents all contend that if all they are doing is dispatching BTM resources up and down, and not providing any Ancillary Services, most of the detailed requirements set forth in Sections 4, 6, 9, 10, 12 and 13 of the draft VPP MTRs are not applicable.
- **Whether the requirements for protection and control equipment set forth in VPP MTRs Section 12 apply only to Participant Resources having capacity of 500 kW or more.**
- **Whether PREPA must develop a VPP tariff classification now.**

In addition, one VPP Proponent has provided comments on the draft form of Grid Services Agreement (“GSA”) which PREPA has made available for review. That Proponent’s comments present several fundamental issues which PREPA and its advisors are currently considering. Among these are the following:

- **The GSA should be revised to provide that the T&D System Operator not be permitted to dispatch a VPP “in the event that a tropical storm or hurricane is forecasted within 72 hours.”** PREPA is concerned that if accepted, this broad carve-out would make VPP resources interruptible resources, not firm sources of capacity, at

least during hurricane season (which is essentially half of the year in Puerto Rico). If the GSA were to be modified to preclude dispatching VPP resources when tropical storms or hurricanes are predicted, the T&D System Operator would have to have other resources available to be dispatched whenever VPPs are taken off the table by a tropical storm or hurricane forecast. This would most likely require entering into commitments with fossil-fueled facilities having capacity approximately equal to the capacity contracted with VPPs so that adequate resources are available when VPPs are not.

- **PREPA should eliminate the proposed requirement that VPPs deposit their Source Code into Escrow or should increase the capacity threshold below which escrowing of Source Code will not be required.** The VPP Proponent commenting on the draft GSA proposed that PREPA increase the threshold for applicability of this requirement from 100 MW to 250 MW. PREPA notes that, as a practical matter, VPPs developed in Puerto Rico are unlikely to be as large as 250 MW. The commenter claims that, in any event, it does not currently have the right to escrow Source Code.
- **PREPA should not have the right to terminate a GSA for failure on the part of the VPP Aggregator to enter into acceptable Participant Service Agreements.** The commenter objects to giving PREPA a right to terminate as a result of a consequence which, in its view, PREPA could control. PREPA notes, however, that achieving agreement on the form of Participant Agreement will be important, both to PREPA and the Energy Bureau. PREPA is considering whether one approach to this issue would be to make receipt of Energy Bureau approval to the proposed form of Participant Service Agreement a condition to the effectiveness of the GSA with any VPP Proponent.
- **The question of how to price Ancillary Services should be deferred for resolution at such time as the T&D System Operator asks for them.** All of the VPP Proponents have raised questions regarding the inclusion of Ancillary Services in the VPP MTRs; the commenter on the form of GSA proposes to deal with the uncertainty surrounding the ability of VPPs to provide Ancillary Services by agreeing to negotiate the pricing when they are actually sought. PREPA notes that this would put the T&D System Operator in a difficult bargaining position should it ever need Ancillary Services from a VPP. It is arguable, however, that BTM Participant Resources are not likely to be potential sources of meaningful amounts of Ancillary Services.
- **Requirements to transfer Green Credits in Section 9.5, the provision on foreseeability appearing in Section 11 and the local content requirement in Section 12.10 should be eliminated.** PREPA notes that similar requirements are found in other renewable energy PPOAs, and that some may be required by Puerto Rico law.

c. Based on these comments and PREPA's actions, will there be a difference between VPP MTRs for Tranche 1 and the next Tranches RFP submissions?

PREPA Response:

PREPA anticipates that, with LUMA's input, it will revise the draft VPP MTRs that have been provided to the Tranche 1 VPP Proponents for comments. In particular, PREPA expects that the VPP MTRs that will apply to VPP proposals solicited in RFP Tranche 2 and subsequent Tranches will address the question whether VPP Participants may be enrolled in NEM programs, whether VPPs made up of small-scale BTM resources may be exempted from some MTRs and approval processes, and whether VPP Proponents offering only Demand Build and Demand Reduction services need not comply with certain requirements. PREPA also anticipates that it will resolve in the version of the GSA it provides to VPP Proponents in Tranche 2 and subsequent Tranches the questions whether VPPs may be exempted from dispatch under specified circumstances, whether and how Source Code will need to be escrowed and how Ancillary Services are to be treated.