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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. CEPR-AP-2018-0001

**SUBJECT: TOPICS IDENTIFIED
DURING PUBLIC COMMENT PROCESS**

SUNRUN BRIEF IN COMPLIANCE WITH ORDER

TO THE HONORABLE PUERTO RICO ENERGY BUREAU:

COMES NOW Sunrun, represented by appearing counsel and respectfully alleges and prays:

1. On March 6th, 2020, Sunrun filed its Final Substantive Legal Brief, in compliance with the schedule established by this Honorable Bureau.
2. In said Final Substantive Legal Brief, Sunrun demonstrated how the testimony and evidence in the record as a whole supported the following facts:

- A) That the services provided by aggregated/networked solar plus storage, also known as 'Virtual Power Plants' (VPPs), are indistinguishable from those of fossil generation peakers;
- B) That from an economic, resiliency, environmental, land use, permitting, general pro-renewables and anti-grid defection public policy point of view, VPPS are in many ways superior to other resource and backup options;
- C) That VPPs are simple to procure via request for proposals (RFPs) or special rates/tariffs performance and/or efficiency programs, all of which have been tested in other jurisdictions,

E) That VPPs are simple to build, and expand given their ability to be deployed in a modular, stepwise fashion, and can help defer spending on transmission and infrastructure;

D) That customers are demanding solar plus storage today, becoming prosumers today, that untapped VPP resources are thus being deployed everyday, as we speak.

3. Via Resolution of March 3rd, 2020, this Honorable Bureau provided the parties with additional opportunity to address several topics including “the alternative of using virtual power plants (*i.e. aggregators*) as a resource [...]” . Via Resolution of April 15, 2020, this Honorable Bureau granted until today, Monday April 20th, after a COVID19-related general extension, to file all final briefs.

4. Sunrun appreciates this opportunity to provide further, final comment in this critical process for Puerto Rico’s future.

5. Sunrun reiterates the arguments and prayer in our Final Substantive Brief, and takes this opportunity to a) provide more granular information on how well-scoped request for proposal (“RFP”) structures can be employed by PREPA to procure a VPPs and b) provide some information of specific and relevant utility programs that have proven to be effective means for VPP deployment.

6. In terms of RFP processes, Sunrun shares some general principles that can help PREPA correctly scope an aggregated / networked solar plus storage VPP procurement in Puerto Rico:

1. Allow bidders to propose to deliver energy and/or capacity via Behind The Meter (BTM) VPP. Allow proposals for increments of 10 MW, up to 300MW.

2. Submit indicative pricing based on assumed structure and key parameters. Some examples of key parameters that would enable bidding would be:

A, Allow bidders to select product - Utility Offtake or Net Energy Metering (NEM).

- a) If Utility Offtake - Public/governmental rooftops made available at \$0 roof rental agreement in exchange for backup power for essential loads.
- b) Excludes make-ready costs (e.g. scope of work to repair sites or electrical to make solar installable) [This is to make indicative bidding possible without site visits.]
- c) Minimum avg. roof size of 10,000 sq. ft.
- d) PREPA sets ratio of solar kW to storage kWh OR bidder proposes ratio of solar kW to storage kWh which is included in pricing. This would need to flex in the end result but would anchor bids on a clear ratio to avoid having to compare apples to oranges.
- e) They should choose to price in \$/kWh for all-in energy+capacity or in \$/kWh for energy and \$/kW-year for capacity and grid services.
- f) They should specify dispatchability requirements to earn capacity value e.g. min response time and min duration.

B. Select shortlist finalists.

C. Provide available site details and arrange site access enable Best and Final Offer pricing.

D. Award in blocks in min 10 MW blocks and if more than one successful bidder, divide public building stock to awardees on portfolio basis e.g. all eligible building stock by municipality, to avoid having to fight over individual sites.

E. If NEM (capacity only pricing) - Bidder identifies and secures rooftops on their own terms.

- a) Capacity and grid services only, priced in \$/kW-year
- b) Same dispatchability requirements
- c) Best and Final Offer pricing after negotiating details (does not include site visit, etc. because sites are secured by bidders)

7. In terms of utility programs that can maximize VPP deployments, the 2020 Hawai'i Electric Frequency Response Trigger program in Oahu is on point. There, Sunrun will deploy about 1,000 home battery systems, -one of the largest virtual power plant projects in the world-, to inject 4.3 MW of capacity and fast frequency service into Hawaii

Electric Company's (HECO) grid, granting the utility a buffer to decide whether to bring other generation sources online or whether the VPP can restabilize the grid on its own.¹ These solar-plus-storage behind-the-meter systems can be tapped to respond to grid needs faster than conventional generators, and it can be done in a more cost competitive way than adding utility-scale generation.

8. The Hawai'i PUC has approved more of these programs within HECO's service territory, creating space and opportunity for more distributed solar-plus-storage partnerships.² Increasing the amount of distributed demand response is more economical than new plant buildout and current plant O & M.

9. Another path for VPPs is via “Bring your own device” (BYOD) programs. These programs create a more stable system, a more financially healthy utility, and prevents customers from abandoning the grid and relying solely on their own resources. BYOD refers to utility programs that encourage customers to acquire pre-approved devices from a vendor of their choosing. Customers or their aggregators then enroll the devices into demand response / energy optimization / peak reduction programs usually managed through the utility. Via deployment of stored solar energy, these programs present great opportunities to manage energy usage, energy efficiency and load shifting applications.

¹<<https://www.utilitydive.com/news/sunrun-partnership-enhances-hecos-ability-to-tap-into-der-systems-wh-en-pow/562733/>>.

²<<https://www.utilitydive.com/news/hawaii-regulators-question-lack-of-non-wires-alternatives-in-hecos-integra/560470/>>.

9. One interesting and pertinent BYOD program is National Grid’s “*ConnectedSolutions*” initiative in several states.³ Batteries can be utilized year-round, enabling these programs to “peak shave” throughout the year and reduce the cost of generation and transmission capacity for all customers. Basically, by allowing utilities to draw power stored in batteries such as LG Chems or Tesla Powerwalls (both in Sunrun’s growing Puerto Rico fleet), during times of peak demand, the utility is able to balance out the electric grid and avoid the use of energy from expensive, dirty, non-renewable peaker plants. Customers with solar PV plus batteries get compensated as the utility gains the ability to tap the battery up to 60 times per summer and five times per winter, with each event lasting a maximum of three hours.⁴ The aggregator or customer reserves a minimum state of charge in their batteries for backup power.

10. PREB should integrate and adopt all the aforementioned approaches as IRP principles and ends, as they have proven quite effective to achieve VPP deployments. PREB should thus adopt an amended IRP and IRP Action Plan where aggregated/networked solar plus storage Virtual Power Plants figure prominently as short term, as well as mid and longer term paths, leveraged and enabled via pertinent well-scoped procurements and programs such as those described herein.

WHEREFORE It is respectfully requested from this Honorable Energy Bureau consider the record as a whole, our Final Substantive Brief as well as this Brief in Compliance with Order and adopt an amended IRP and IRP Action Plan where aggregated/networked

³ <<https://www.nationalgridus.com/MA-Home/Connected-Solutions/BatteryProgram>>.

⁴ Note that tranches of VPP resources could be stacked sequentially such that a VPP could provide peak shaving over a large number of hours.

solar plus storage Virtual Power Plants figure prominently as short-term, as well as mid and long term paths, forward towards Puerto Rico's, statutorily mandated, 100% renewable energy future, via pertinent procurements and programs.

CERTIFICATE OF SERVICE

We hereby certify that a copy of the filing was sent via e-mail to the Energy Bureau Clerk to secretaria@energia.pr.gov and wcordova@energia.pr.gov, and to counsel at legal@energia.pr.gov; and sugarte@energia.pr.gov.

Additionally, the instant filing was sent via email to pending or actual intervenors: Arctas, Caribe GE, League of Cooperatives and AMANESER 2025, OIPC, EcoEléctrica, Empire Gas, Environmental Defense Fund, Local Environmental Organizations, National, "Non Profits", Progression, SESA-PR, Renew, Shell, Wartsila, Windmar Group and *amici* ACONER, AES-PR, RMI, CUD, MIDA, PRMA and ICSE at the following e-mail addresses: agrait@agraitlawpr.com; sierra@arctas.com; tonytorres2366@gmail.com; cfl@mcvpr.com; gnr@mcvpr.com; info@liga.coop; amaneser2020@gmail.com; hrivera@oipc.pr.gov; jrivera@cnslpr.com; carlos.reyes@ecoelectrica.com; ccf@tcmrslaw.com; manuelgabrielfernandez@gmail.com; acarbo@edf.org; pedrosaade5@gmail.com; rmurthv@earthjustice.org; rstgo2@gmail.com; larroyo@earthjustice.org; jlubkemann@earthjustice.org; acasellas@amgprlaw.com; loliver@amgprlaw.com; epo@amgprlaw.com; robert.berezin@weil.com; marcia.goldstein@weil.com; jonathan.polkes@weil.com; gregory.silbert@weil.com; maortiz@lvprlaw.com; rnegron@dnlawpr.com; castrodierralaw@gmail.com; voxpopulix@gmail.com; paul.demound@shell.com; escott@ferraiuoli.com; mgrpcorp@gmail.com; aconer.pr@gmail.com; axel.colon@aes.com; rmurthy@earthjustice.org; rtorbert@rmi.org; kbolanos@diazvaz.law; & n-vazquez@acepr.com.

In San Juan, Puerto Rico, this 20th day of April, 2020.

Respectfully submitted,
[signed/ *Javier Rúa-Jovet*]

Javier Rúa-Jovet
Director of Public Policy,

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