

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

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IN RE:

**REGULATION FOR ENERGY
EFFICIENCY AND DEMAND
RESPONSE**

CASE NO.:

NEPR-MI-2019-0015

SUBJECT:

PREPA's Comments;
Regulation for Demand Response

**COMMENTS OF THE PUERTO RICO ELECTRIC POWER AUTHORITY
REGULATION FOR DEMAND RESPONSE**

COMES NOW the Puerto Rico Electric Power Authority, through the undersigned counsel, and respectfully submits its comments to the Regulation for Demand Response published by the Puerto Rico Energy Bureau of the Public Service Regulatory Board on September 21st, 2020. Exhibit A.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 22nd day of October 2020.

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EXHIBIT A

**Comments of the Puerto Rico Electric Power Authority
Regulation for Demand Response**

COMMENTS OF THE PUERTO RICO ELECTRIC POWER AUTHORITY REGULATION FOR DEMAND RESPONSE

After initial submission of comments on behalf the Puerto Rico Electric Power Authority (PREPA) and stakeholders. The Puerto Rico Energy Bureau (PREB) approved a Resolution and Order on September 21, 2020 which includes a revised version of the Regulation for Demand Response.

Regarding the modifications to the Regulation, PREPA has the following comments:

- Article 1 - PREPA agrees with eliminating reference to IPP and Wheeling, as well as with the definition given to Demand Response and DR Aggregators. To maintain definitions in alphabetical order, “Demand Response Aggregators” should be moved to after “Demand Response”.

- Article 2 was modified in order to allow participation in programs from more than one provider as long as there is no risk that a resource will be double counted and/or double compensated. This could allow, for example, a household to enroll its water heater in a direct load control program from PREPA, while also having a battery system that is aggregated by their solar and storage vendor which participates in a different program, as long as the DR responses can be independently verified. PREPA recommends maintaining the initial proposal. Customers should not be able to enroll in multiple Demand Response programs, since this could complicate its implementation.

- Article 3 - Section 3.01 also clearly establishes that, in order to avoid encouraging the use of fossil fuel resources for DR when the island is on a path to 100% renewable power, fossil fuel backup generators may only be used for DR in situations where they are necessary to avoid an outage event, rather than for only economic dispatch. However, coordinated, economic dispatch of generation and

DR during all periods, whether normal or emergency, must be conducted given the critical requirement to maintain system reliability.

Section 3.03 will include requiring the Three-Year Plan to include DR programs to be deployed in the event of an Emergency Situation. This should ensure that emergency program planning happens in advance of an emergency, hence include DR resources that could be ready to aid in resolving imbalances between generation and demand promptly after these types of events, which could help diminish the time forced outages are maintained. The corresponding compensation may take into account the benefits brought by the DR resource depending for example when the Emergency Situation occurred (e.g. on or off peak periods). Also, DR resources should be used as long as load shedding is beneficial to the Transmission and Distribution system thus other end-customers. PREPA's selected customers who are deemed capable of having their own generation and have already been instructed to be prepared to be disconnected during major events, should also be provided the opportunity to generate electricity, when deemed cost-effective and secure, into the grid, and be designated as a potential participant in the DR program.

- Article 4 - The PREB proposes a two-step process consisting of initially establishing a Utility Cost Test and then a Puerto Rico specific test (Puerto Rico test). The process of the latter must begin six months after the approval of the final Regulation, instead of twelve months, as originally established. The concepts of Interim Cost Benefit Test and Puerto Rico Test suggest a test and readjustment phase, according to the development of metrics established by the PREB. These metrics are generally mentioned and very little detail is provided. Although PREB will conduct the process of the Puerto Rico Test, both tests entail providing multiple information from different areas of PREPA. As mentioned in other motions, it is important and critical for the PREB to consider that, most of the submittal of data and analyses requested to PREPA regarding regulatory matters, fall mainly upon the same limited personnel who at the same time is handling various tasks, which

hinders complying with all the dispositions in Resolutions and Orders in the restricted period usually provided.

- Article 7 - PREB requires that PREPA develop rate designs that are consistent with customer implementation of Demand Response. Even though this Article does not require that PREPA develop DR-specific rate designs, the rate design should not be inconsistent with successful DR resource implementation. PREPA is currently in the process of contracting an expert to assist us with developing a study for a new rate case, that must consider the different schemes PREPA must comply with, such as: Wheeling, Smart Grid, and rates that support DR programs implementation.

As mentioned in the past, current Time of Use (TOU) rates offered by PREPA to its larger “primary and transmission voltage” customers, do not reflect current on and off peak periods. If updated accordingly, TOU rates could incentivize those customers to reduce electricity usage actively during peak periods and other periods when beneficial to the system to help reduce system costs and costs to the customer. The PREB should explore with PREPA the expansion of TOU rates to other customers as an implementable DR program to help achieve energy usage reductions during peak periods. Also, it is essential that the PREB recognize the importance of approving a cohesive Rate Design, that ensures that the rates are fair and consistent with many other mandates and policies governing the development of just and reasonable rates for all consumers, instead of only updating one or few charges (e.g. energy charge) because this will not provide an accurate price signal. PREPA would first need to re-run its marginal costs studies and better identify peak and off-peak periods for the system, which have shifted over the last several years for different customer groups. The PREB should guarantee the capacity, reliability, safety, efficiency, and reasonability of the rates of Puerto Rico’s electrical system.

- Article 8 – establishes that PREPA shall include in all planning processes changes in energy consumption and peak load that result from the activities of PREPA and DR Aggregators. PREPA agrees that DR should be part of the *Integrated Resource Planning* (IRP) process. Indeed, PREPA and Siemens as part of its past IRP submission incorporated a fixed amount of EE into its demand forecast and DR capacity target level.

Previous comments include:

Behind-the-meter battery storage program should be explored and that such programs not only provide load flexibility but also can act as a distributed generation resource to inject power into the grid when available and useful. Deployment of battery storage requires study to identify cost-effective programs and to account for potential impacts on the system. For example, Section 4.10 of Act 17-2019 (amending Act 82-2010, Section 2.12, Energy Storage Systems), indicates that (emphasis added):

On or before December 31, 2019, the Puerto Rico Energy Bureau with the assistance of the Program, *shall conduct a study to determine the specific goals of the energy storage systems at all levels*, as a mechanism to facilitate the integration of sustainable and alternative renewable energy sources into the grid and achieve compliance with the Renewable Portfolio Standard. To conduct this study, the Bureau and the Program shall consider, without limitation, the following:

- a) the associated costs and long-term benefits,
- b) the stability and resilience of the grid resulting from energy storage,
- c) the type, useful life, and flexibility of the technology available to withstand changes in the grid's infrastructure;
- d) the capacity to be used as a generation resource by eliminating the need to build new infrastructure; and
- e) the efficiency in the use thereof to facilitate demand response programs.

DR implement success could be enhanced by a slightly longer start up and implementation timelines that would help address the steep learning curve for, but not limited to the vendors and consumers regarding the programs and grid operations and dispatch.

An integrated demand-side and supply-side cost evaluation needs to be performed for planning purposes and for operation goals.

Battery storage systems are one of key DR elements; nevertheless, an optimization of size (kW and kWh) and expected application profile (1hr vs 2hr vs 3hr vs 4hrs), on a mini-grid and system wide basis, needs to be evaluated to assure supporting the DR goals and network operation and cost.

A similar optimization is needed for other DR measures, including customer-side storage and control algorithms.

Determining network probabilistic LOLP and LOLE along with the implementation of the DR program in year 0 and every three years.

A robust load forecasting program needs to be in place, depending on collected historical daily load profiles and customer information systems, and be fully integrated into the DR program and its advancement.

Specific comments:

Scope and Definition of Demand Response (DR):

We suggest broadening the objectives to aim for developing DR as one of the flexible loads and non-conventional alternatives along with energy storage.

Paragraph J), subparagraph 1): we suggest timely notice is required, and that the operator of the T&D system be allowed to set a reasonable maximum time period for notice of un-enrollment of a customer.

Program Implementation:

We recommend that the Energy Bureau considers a phased implementation of the DR program. An initial phase would build on existing programs and capabilities while assessing potential improvements and opportunities to broaden the programs as necessary to better meet Puerto Rico consumers' needs. The recommendations could then be pursued in the next phase of DR implementation.

We recommend a phased approach:

Phase 1: Build on existing programs

Phase 2: Develop a requirements document

Phase 3: Develop a roadmap for implementation

Phase 4: Develop a gap assessment, initiatives to cover gaps and then define the timeline for implementation.

Clarify whether interface with plug-in electric vehicles (PEV) program, if any, would potentially become part of the DR effort

Although there are four (4) types of potential sources of demand response; (1) PREPA, (2) DR aggregators, (3) Cooperatives and (4) IPP; in principle those who seem to have a short-term interest in the implementation of the program are the domestic or commercial renewable energy companies (i.e. Windmar, Sunnova, Sunrun) those who have access to a significant amount of batteries.