

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

**NEPR**

**Received:**

**Aug 2, 2020**

**10:39 AM**

**IN RE:**

**REGULATION FOR ENERGY  
EFFICIENCY AND DEMAND  
RESPONSE**

**CASE NO.:**

NEPR-MI-2019-0015

**SUBJECT:**

Demand Response Regulation

Preliminary Draft

**COMMENTS OF THE PUERTO RICO ELECTRIC POWER AUTHORITY  
TO THE DEMAND RESPONSE REGULATION PRELIMINARY DRAFT**

COMES NOW the Puerto Rico Electric Power Authority, through the undersigned counsel, and respectfully submits its comments to the Demand Response Regulation Preliminary Draft published by the Puerto Rico Energy Bureau of the Public Service Regulatory Board on July 2<sup>nd</sup>, 2020. Exhibit A.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 2<sup>nd</sup> day of August 2020.

*/s Katuska Bolaños*

Katuska Bolaños

[kbolanos@diazvaz.law](mailto:kbolanos@diazvaz.law)

TSPR 18,888

**DÍAZ & VÁZQUEZ LAW FIRM, P.S.C.**

290 Jesús T. Piñero Ave.

Oriental Tower, Suite 1105

San Juan, PR 00918

Tel.: (787) 395-7133

Fax. (787) 497-9664

**EXHIBIT A**

**Comments to Demand Response Regulation Preliminary Draft**



## GOVERNMENT OF PUERTO RICO

---

Puerto Rico Electric Power Authority

### COMMENTS OF THE PUERTO RICO ELECTRIC POWER AUTHORITY TO THE DEMAND RESPONSE REGULATION PRELIMINARY DRAFT

As part of the process for the adoption of a Regulation for Energy Efficiency and Demand Response issued by the Puerto Rico Energy Bureau (PREB), in its initial comments, the Puerto Rico Electric Power Authority (PREPA) recommended that PREB revise its proposed rules to recognize that Energy Efficiency (EE) and Demand Response (DR) have materially different technical implementation issues; among others. PREB determined that it would be beneficial to split the original proposed regulation into two separate regulations: one to regulate EE and one to regulate DR. PREPA agrees with such determination.

The following comments were part of PREPA's initial and reply comments presented for the adoption of the Regulation for Energy Efficiency and Demand Response, and they are maintained.

- If PREB establishes a separate goal for DR, as it was done, then PREPA urges that it be included in that goal setting exercise to provide needed expertise regarding the system requirements and program implementation. It is critical to balance cost and energy consumption reduction goals with the impact DR program might have on the stability and security of the system.
- The delineation of roles and responsibilities should also include critical implementation issues like DR education campaigns for residential, commercial and industrial customers, potential vendors, government, and other critical stakeholders.
- 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.
- 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:




---

PO Box 364267 San Juan, Puerto Rico 00936-4267

"We are an equal opportunity employer and do not discriminate on the basis of race, color, gender, age, national or social origin, social status, political ideas or affiliation, religion; for being or perceived to be a victim of domestic violence, sexual aggression or harassment, regardless of marital status, sexual orientation, gender identity or immigration status; for physical or mental disability, for veteran status or genetic information."

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.

(Emphasis added)

- PREPA agrees that DR should be part of the *Integrated Resource Planning* (IRP) process. Indeed, PREPA, as part of its recent IRP submission, incorporated a fixed amount of EE into its demand forecast and DR capacity target level.
- 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.
- Regarding the Rate Design, instead of being focused on a single purpose of DR incentives; it should ensure that the rates are fair and consistent with many other mandates and policies governing the development of just and reasonable rates for all consumers. DR contemplates that a consumer will actively manage its energy consumption in response to dispatch, a designed rate or a price signal.
- The Time-of-Use (TOU) Rates may be a focus in the DR rulemaking docket to encourage DR programs. Appropriately updated and designed TOU rates could be used to quickly implement effective DR programs.
- For example, PREPA currently has (TOU) rates for its larger “primary and transmission voltage” customers, which 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. Here, in the absence of published hourly energy prices, the Tariff TOU rate is the price signal incentive for customers to alter usage during the day. 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. **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.** PREB should guarantee the capacity, reliability, safety, efficiency, and reasonability of the rates of Puerto Rico's electrical system.

The following are some additional concepts to be evaluated:

- 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.
- DR programs need to be evaluated and shared with large customers along with mandated load shedding programs during emergency situations (e.g., extreme adverse weather events, or planned load shedding) as long as load shedding is beneficial to the T&D system thus other end-customers. PREPA's selected clients 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.
- Maybe consider mandating DR programs adoption in new projects' development (residential, commercial and industrial, municipal, or agricultural) to control and shift load around real-time windows requested by T&D operator. Energy Bureau shall ensure fair compensation to participants through rate and/or market design.
- 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.
  - Accordingly, we suggest modifying the definition in 1.09.B.6 to "Demand Response" or "DR" means a mechanism to achieve changes in electric usage by end-use customers through which an end-user's load

becomes a resource option for electric system planners and operators in balancing supply and demand. This change is effected by the user, a third party, or a utility, often in return for economic compensation.

- Other Definitions:

- “Distributed Energy Resources” definition, Section 1.09.B.8, is limited to distribution system-connected facilities, while the system may have larger DR participants (industrial for example) which are connected to the transmission network. It is suggested to reflect such entities in the Regulation to cover future potential and to encourage larger impact participation. We suggest adding the word transmission in 1.09.B.8 definition: “...that is connected to the distribution or transmission system and...”
- System “Reliability” term is used throughout the Regulation, nevertheless, no probabilistic quantifiable approach is adopted supporting these requirements. It is recommended to use the term “system security” instead of Reliability.
- Section 2.01 Demand Response Roles.

In paragraph F, where it states, “...the operator of the Transmission and Distribution System shall dispatch the DR resources that participate in its programs, whether directly or through DR Aggregators, in a manner that supports the least cost operation of the Puerto Rico electric system, when viewed from a total system perspective.” We believe it is important to add, “while maintaining system security in accordance with applicable standards and Prudent Utility Practice.”

- Section 2.03 Customer Participation. Paragraph F) requires further clarification that necessary technical requirements, instructions and procedures as may be necessary for system security do not constitute undue disruption, disturbance or interference with any customer’s relationship with any IPP or DR Aggregator regarding DR services.

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.

Paragraph L: we suggest that DR Program Providers’ contractual or other arrangements must also be consistent also with the technical and security requirement of the T&D system.

- Section 2.04, paragraph A). This requirement on the operator of the T&D system must also have a corresponding requirement that DR Program Providers must meet the appropriate technical requirements to comply with system dispatch instructions and procedures.

Paragraph D). Need clarification on meaning of “facilitate the verification of” as used in this context.

Other general comments:

- PREPA respectfully requests that PREB focus only on DR programs that are viable, widely accepted, clearly cost-beneficial for consumers and that can be technically and timely implemented by PREPA from a personnel and resource perspective, and acknowledge that PREPA does not have the resources to develop DR programs on its own.
- Actually PREPA urges contracting a consulting firm for the development and offering of a DR program and to comply with the roles and responsibilities enacted in this Regulation. The implementation of a DR program requires, among others, the filing of a three-year and annual DR Plans; the assessment of the Interim Cost Benefit Test which includes the determination of avoided costs such as energy, generation capacity, transmission and distribution, line losses and environmental compliance costs; the Puerto Rico Test which includes the policy objectives of Puerto Rico regarding energy, environmental, and social impacts; and a rate design which should include the development and implementation of time-varying rates. At this moment, PREPA does not have the resources or personnel to perform these tasks.
- 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.
- Program Planning and Operation:
  - We recommend that the Regulation clarify the roles of parties other than PREPA and/or its successors, such as DR Aggregators, IPPs, and others, and designate focal points for major aspects of program operation,

including program design, dispatch (if any), settlement, and metering & verification.

- “Puerto Rico Benefit Cost Test” or “PR Test” is defined as a cost-effectiveness screening test developed in accordance with this Regulation, reflecting Puerto Rico public policy and used to evaluate whether proposed or actual DR programs or initiatives provide greater benefits than their costs. PREPA is concerned about its implementation. 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 PREB. These metrics are generally mentioned and very little detail is provided. The timeline of these tests is also unclear (it speaks of 12 months, but it is not clear what is the scope of said evaluation in 12 months)
- The development and implementation of a DR program is a complex process, which will require the help of a consulting firm. It is not clear what is the timeline for the required processes, and PREPA is really concerned for the immediate responsibilities that arise from this Regulation and will correspond to PREPA.
- 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.