

**COMMONWEALTH OF PUERTO RICO
PUERTO RICO ENERGY COMMISSION**

IN RE: ENERGY COMMISSION
INVESTIGATION REGARDING THE STATE
OF PUERTO RICO'S ELECTRICAL
SYSTEM AFTER HURRICANE MARÍA

CASE NO.: CEPR-IN-2017-0002
Subject: Request for Public Comments

Issue: Implementation of regulatory actions
to facilitate the tasks of restoring electric
service and encourage the deployment of
new technologies.

Sunnova Energy Corporation ("Sunnova") hereby presents its comments to the Honorable Energy Commission's ("Commission") request in proceeding CEPR-IN-2017-0002 through Resolution and Order dated November 10, 2017.

On November 22, 2017, Sunnova requested an extension to file comments.¹

Sections in these comments are organized in accordance with their numbering in the Exhibit A of the Resolution and Order.

**Appendix I
Microgrids in Unserved Areas**

3. Microgrid Regulation

The Commission asked:

3.2.2 What are the advantages and disadvantages of requiring inspections? If the Commission requires inspections, what types of professionals and entities should be responsible for conducting them and certifying compliance? Considered registered engineers (working for the developer, for the Commission or for some other independent entity, municipal construction permit inspectors, others). What technical specifications should apply to the process of interconnecting a microgrid to PREPA's transmission or distribution systems?"

Sunnova's Response:

The requirements of inspections have the advantage of ensuring a system complies with PREPA, NEC, and industry standards. The inspections should be performed by Puerto Rico certified engineers. It is not recommended that PREPA engineers perform inspections, as that would delay the interconnection of microgrids.

The Commission asked:

¹ The deadline to submit comments was November 20, 2017.

3.2.3 Based on what factors should the Commission determine whether microgrids be interconnected to PREPA's distribution systems vs. PREPA's transmission or sub-transmission system?

Sunnova's Response:

The determining factor should be stability of the system. Based on the recent outage events transpired during the efforts to restore power Island-wide, where power was interrupted in sectors of the metropolitan area, the Commission should look to places in PREPA's system where interconnection would be more stable.

The Commission asked:

3.4.2.1 What are the advantages and disadvantages of the Commission establishing standard contract terms for retail and wholesale (to PREPA) sales?

Sunnova's Response:

For companies currently attempting to develop a renewable energy industry in Puerto Rico, such as Sunnova, the establishment by the Commission of standard contract terms could hinder electric companies' ability to offer their products or services in the best way they see fit, since each installation is unique and that should be reflected within a specific contract.

The Commission asked:

3.4.2.2 How does the answer to the preceding question [see above] vary by customer group? For example, should standard terms be required only for residential and non-commercial customers?

Sunnova's Response:

For companies currently attempting to develop a renewable energy industry in both the residential sector (such as Sunnova) and the commercial sector in Puerto Rico, the establishment by the Commission of standard contract terms could hinder electric companies' ability to offer their products or services in the best way they see fit, since each installation is unique and that should be reflected within a specific contract.

The Commission asked:

3.4.2.4 Should contract provisions be subject to Commission review?

Sunnova's Response:

The review of contract provisions by the Commission would hold up the execution of contracts and consequently the development of resources of renewable energy.

The Commission asked:

3.4.2.5 Should the Commission set limits on contract duration?

Sunnova's Response:

The Commission should not set limits on contract duration, as such limitations could present a constitutional violation of the Contract Clause. See Article I, Section 10, Clause 1 of the U.S. Constitution.

The Commission asked:

3.5 Must all microgrids (at least those serving multiple customers) charge for services by metering delivered energy, or are other pricing structures acceptable?"

Sunnova's Response:

Sunnova has found that the metering of delivered energy is a reliable pricing structure with potential of further improvement in Puerto Rico, including application of net metering to microgrids. Thus, net metering should be the principal pricing structure. Sunnova nevertheless recommends that the Commission explore other types of pricing structures.

The Commission asked:

3.6 To ensure that a microgrid project is cost-effective, safe and reliable, what information should the Commission receive from a microgrid developer prior to its connecting customers? For example, should the Commission require developers to specify:

- 3.6.1 Maximum set of customers to be served? Type of customers to be served?
- 3.6.2 Maximum generation and storage capacity anticipated?
- 3.6.3 Costs?
- 3.6.4 Pricing?

Sunnova's Response:

Initially, upon request from and in coordination with the Commission, the setting of a maximum amount of customers to be served in a particular area along with a maximum generation and storage capacity for such a microgrid could be examined. The Commission and electrical service companies could subsequently modify the placement and development of microgrids as need be.

7. Use of Stranded PREPA Equipment

The Commission asked:

7.1 Should microgrids be allowed to deliver power to customers through existing PREPA metering equipment?

Sunnova's Response:

Microgrids should be allowed to deliver power to customers through existing PREPA metering equipment to the extent that it is serviceable.

The Commission asked:

7.1.1 If so, how and when should PREPA be compensated for that use?

7.1.1.1 Should the Commission set a fixed rate per meter, based on the average embedded costs of PREPA meters?

Sunnova's Response:

The Commission could set a fixed rate per meter. However, the Commission should ensure that the meters are functional with a proposed microgrid and are up to date with applicable electrical standards.

The Commission asked:

7.1.1.2 Should be microgrid pay a monthly fee, or purchase the equipment outright?

Sunnova's Response:

A monthly fee could be considered. The option of purchase of the equipment by the electrical service company should be available, as well as the option of such electrical service company to install its own equipment.

The Commission asked:

8.1 Are there technical resources (such as pile drivers for ground mount systems) in short supply in Puerto Rico? If so, what can be done to alleviate those shortages?

Sunnova's Response:

Meters have been in short supply for some time now. Sunnova has proposed to purchase and install its own meters for its customers. Meters by electrical service companies would become property of PREPA but electrical service companies could be offset through additional compensation in the monthly invoices in the net metering program.

Appendix II
Distributed Resources to Augment Northern Supply

2. What factors have been impeding deployment of behind-the-meter resources in the restored northern delivery system?

...
2.2 Has PREPA created any obstacles to behind-the-meter restoration, through either action or inaction (including lack of administrative capacity)?

Sunnova's Response:

As mentioned, lack of equipment (in Sunnova's specific case, meters) and especially lack of sufficient trained personnel to process interconnection authorizations have caused extremely long delays in the restoration of behind-the-meter systems. PREPA has also done everything they can to undermine the proliferation of distributed solar (i.e. encouraging customers not to sign contracts with distributed solar companies, charging solar customers additional fees for no reason, refusing to net-meter systems until customers complain, etc.)

General

On October 16, 2017, the Governor of Puerto Rico issued Executive Order No. OE-2017-064 ("Executive Order") for the energizing of residences with photovoltaic generation and battery systems and the acceleration of the recovery of Puerto Rico's electrical system after the passing of Hurricane Maria. The Executive Order categorizes photovoltaic systems into three (3) groups: (1) those constructed and interconnected prior to the passing of Hurricane Maria; (2) those constructed but not authorized to interconnect as of the date of the Executive Order; and (3) commercial residential systems constructed during the effectiveness of the Executive Order. The Executive order relieves the three groups from complying with the procedural requirements of the Regulation to Interconnect Generators with the Puerto Rico Electric Power Authority's Electrical Distribution System and to Participate in the Net Metering Program, Regulation No. 8915. Specifically for Group 3, the Executive Order requires that all new residential photovoltaic systems with capacity to store energy to be interconnected to the grid in virtue of the Executive Order and with capacity to export such energy through net metering have the following additional capacities: (1) the capacity for its energy storage system status to be monitored by PREPA within no more than four (4) seconds through an Application Program Interface; (2) the capacity of its energy storage system to be operated remotely by PREPA through an Application Program Interface, independently or through an aggregate system, within no more than four (4) seconds.

Sunnova believes this requirement will burden the functioning of microgrids. During a general power outage, if PREPA's servers are out of service, its Application Program Interface

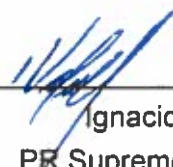
would not be able to read or operate remotely energy storage systems, which could potentially defeat the purpose of microgrids. Also, the requirement of photovoltaic systems to include remote-reading or remote operating capacities could represent additional technical and economic requirements too burdensome for the industry to effectively and rapidly deploy photovoltaic systems, also potentially defeating the purpose of development of distribution energy resources.

Sunnova requests the Commission to consider the foregoing in any regulation or standards it adopts in relation to microgrids or in relation to the operation of distributed generation systems in emergency situations.

Respectfully submitted, in San Juan, Puerto Rico, on December 26, 2017.

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