

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

IN RE: REGULATION ON WHEELING

CASE NO.: CEPR-MI-2018-0010

SUBJECT: Request for Public Comments

To the Honorable Energy Bureau:

Comes now Sunrun, to submit comments as per the *Request for Public Comments* notified on March 1st, 2019 regarding the above captioned matter.

Introduction

Sunrun is the leading residential solar, storage, and distributed energy services company in the United States with more than 200,000 customers in 22 states, the District of Columbia and the Commonwealth of Puerto Rico.

Sunrun is, has been, and will continue being directly involved in Puerto Rico's solar industry and clean energy future. Hurricanes Irma and Maria caused unprecedented damage to Puerto Rico's electric grid, including the destruction of transmission and distribution lines, as well as extensive wind and flood damage to generation and substation facilities. The damage resulted in the longest duration blackout in American history. In the aftermath of Hurricane María, Sunrun saw, firsthand, the suffering and destruction caused by power outages and a fragile, obsolete energy system. Sunrun was one of the first stateside solar companies with boots on the ground, donating and installing solar and battery systems at fire stations in Puerto Rico.

Sunrun formally entered the Puerto Rico market in 2018, in partnership with local solar and storage companies Maximo Solar Industries, Windmar Home, and New Energy. We are already installing our residential solar plus storage systems, growing local jobs, and helping to rebuild the grid, one home at a time. And we deploy the same smart and advanced solar and battery systems in Puerto Rico as we do across leading market states like California, Hawaii, Florida, and New York.

As expressed by this Honorable Energy Bureau (hereinafter "PREB") "the purpose of this draft regulation is to facilitate the introduction of competitive pressures into the

generation sector, ensure that competitive generators have open and non-discriminatory access to the transmission and distribution infrastructure, and enhance transparency of prices. Furthermore, through the implementation of a wheeling mechanism, benefits such as a potential reduction on energy costs, the maximization of energy efficiency, as well as fostering the investment in renewable resources at competitive costs may be achieved by wheeling participants.” The stated purpose is to facilitate the introduction of competition in generation, ensure that competitive generators have open and non-discriminatory access to transmission and distribution infrastructure and enhance price transparency. In the context of this draft regulation “wheeling” generally refers to the transfer of electrical power from private generators to customers via the electric grid.

In general, the draft regulation introduces several players to the energy ecosystem:

- The Default Service Provider would be the provider for customers who are not served by an Energy Service Company. The Puerto Rico Electric Power Authority (“PREPA”) would act as such Default Service Provider as long as it has sufficient generation either its own or via PPAs.
- The Transmission and Distribution Provider would be tasked with grid maintenance and investing in the grid, subject to PREB’s approval, and would also operate the Distribution System in a least-cost, non-discriminatory fashion.
- The System Operator would enable wholesale exchanges of electricity, would see that T&D and generation operates reliably and economically, ensures sufficient availability of generation capacity meeting resource adequacy goals and guarantees open access to T&D, in coordination with the Transmission and Distribution Provider.
- Energy Service Companies would compete to provide service only to industrial and large commercial customers.

The draft regulation requires unbundling proceedings to ascertain and allocate individual costs correctly to the various functions currently carried out by PREPA, including determining which generation-related costs are non-bypassable and must be paid by all customers whether or not they remain PREPA customers or opt for an Energy Service Company. PREPA would therefore have to submit an unbundling plan at PREB which includes (a) an embedded cost-of-service study; (b) a marginal cost-of-service study; (c) a plan for fully unbundled generation and T&D rates; and (d) a proposal regarding non-bypassable charges.

Sunrun congratulates the PREB on its initiative to carry out a mandate that has been in force since Act 73 of 2008, yet never executed. As the pioneer of the “solar-as-a-service” model, our systems are characterized by their accessibility and we believe there is a better, less expensive, and cleaner way for families to power their homes via rooftop solar, storage and energy services. Sunrun is committed to ensuring that all customers have a viable choice in how they procure and consume electricity, with the best photovoltaic and storage technology.

Specific questions posed by the PREB:

1. Are the proposed rules adequate to support non-discriminatory open access to the transmission network in support of wheeling transactions?

A. Open-access should allow behind-the-meter resources to provide market services comparably to front-of-the-meter resources.

Sunrun believes that all market services that can be provided by energy supply companies (“ESCs”) should be available to Demand-side Management Providers (“DMPs”). However, as currently defined there seems to be an ambiguity with regard to how DMPs that supply energy to customers and to the grid will be defined. Sunrun encourages PREB to clarify that the definition of demand side management services should include behind-the-meter distributed generation and that the definition of demand-side management provider should include entities that manage behind-the-meter generating resources. As stated in the Filing, the definition of a Demand-side Management Provider “refers to the provision of any service directly to a Customer besides generation, such as the provision of energy efficiency and demand response services...).”¹ Sunrun argues that Demand-side Management Providers should be able to provide energy supply services via behind-the-meter generation. PREB should clarify this inclusion in the next draft.

B. DMPs should be able to provide energy services as well as load reduction services to customers

Additionally, if a Demand-side Management Provider provides energy supply to both the customer and to the grid, the Energy Bureau should clarify what certifications are necessary for a Demand-side Management Provider to provide energy and capacity

¹ Reference to above mentioned quote.

services directly to a customer as well as providing energy and capacity services to the system operator. The Third-party Administrator, should also be equipped to manage these situations.

C. Load reductions and grid injections from BTM resources should be valued as reliable capacity

Moreover, the distributed generation that is managed by demand side management providers should be allowed to provide services to the system operator with the full capacity of their resources, which would include load reductions and exports to the grid, as long as those services are technically feasible. This means that the full capacity of behind-the-meter resources should be able, but not required, to provide energy and capacity services to the system operator, and it should not just be the value of load reduction during a given hour. Said differently, the value of load reductions plus exports should be the basis upon which the performance of a BTM resource is evaluated. Limiting BTM DER to load reduction value is discriminatory because it bases the value of a BTM resource according to the amount of load being consumed or not at that moment. Moreover, the BTM resource may or may not be owned by the customer accounting for that load, thereby influencing one controllable resources (the BTM DER, e.g. energy storage) performance with the performance of a non-controllable load (e.g. residential load). To enable the full capacity of the resource to provide its value to the SO, BTM resources should have the option to be metered directly, separately from onsite load, to quantify their contribution to the grid. This could be done via metering in inverters, for example. Importantly, this avoids the need for inexact baselining methodologies to be used with BTM generation, which do not accurately measure the output from resources because they combine performance with variable onsite load, which can be particularly difficult to control at a residential level (not to mention undesirable from a customer experience perspective).

D. Distribution and transmission systems topology should be modeled to dispatch BTM resources according to their full capacity

Additionally, the System Operator should be able to generally assess if there are system limitations that would prevent a BTM DER from using its full capacity to provide value to the grid, and if that limitation exists, to curtail that resource capacity as necessary. PREPA's draft IRP included references of eight mini-grids that would be designed across Puerto Rico, requiring operational management of the grid in numerous configurations.

In order to ensure this is allowed, the System Operator must identify system constraints that might prevent BTM resources from being able to inject their energy onto the grid. As noted, the full capacity of the BTM resources should be able to provide these services.

E. Solar+storage should be treated as an individual, hybrid, resource

Resources that consist of multiple BTM technologies should be able to be viewed as one hybrid resource and metered based on their exports. For example, a solar+energy storage system should be viewed by the system operator as though it is one hybrid resource. This enables an aggregator to manage how the BTM resources respond to dispatch instructions and simplifies the operational complexity from a system operator perspective. The alternative of the system operator attempting to manage all elements of BTM resource (including the load itself) would unnecessarily increase complexity. Aggregators are much better suited to manage the output of the BTM resource and meet system operator dispatch instructions at the resource level.

F. Performance of aggregations should be measured at the aggregator level

Finally, performance of BTM resources should be measured at the aggregator level. This is to say that an aggregation can manage its resources and deliver its promised amount of capacity without every individual resource being dispatched at the same level. It should be up to the aggregator to manage its resources without being required to ensure that every individual resource in an aggregation is generating the same amount when responding to a dispatch by the system operator. The only thing that should matter is the total response, which can be managed on a localized manner to account for local system constraints.

2. Please comment on the overall industry structure outlined in Article 3 of the proposed rules. Are there key entities or elements missing? Are the roles and responsibilities of the proposed entities appropriate?

Sunrun believes that the PREB's proposal for an overall industry structure is generally consistent with the objective of creating a fair and competitive open-access and technology-agnostic market for all generation and load-reduction resources. However, Sunrun reiterates its comments above that behind-the-meter generation resources should be valued at their full value to the grid and that the structure PREB implements should

facilitate an entity, such as a Demand-side Management Provider, to manage and provide those services from BTM resources to the grid.

3. **Is it appropriate that PREPA (or its successor(s)) continue to operate as the Default Service Provider? What responsibility should the Default Service Provider have to serve load in the event that an Energy Service Provider defaults?**

Sunrun does not have comments on this question at this time.

4. **What changes need to be made to the current transmission of information between PREPA and generators to support the SO's functions?**

Sunrun does not have comments on this question at this time.

5. **Prior to the development of an independent monitor and monitoring plan, what specific actions or oversight activities should the Energy Bureau undertake to ensure the reasonableness of the market structure to be set up under the SO Protocols?**

Sunrun does not have comments on this question at this time.

6. **What additional customer protection measures should be included in the proposed rules?**

Sunrun does not have comments on this question at this time.

7. **The Energy Bureau envisions integrated resource planning to evolve to focus on both wholesale-level resources as well as distribution-level distributed energy resources. This would occur through a collaborative effort between the TDP and SO, as described in Article 7.05 of the proposed regulations. Are there any good examples of this process from other jurisdictions that Puerto Rico should consider?**

Sunrun agrees with PREB: the IRP must focus on all levels and sizes of resources, with emphasis on renewables like rooftop solar and both behind the meter (BTM) and front of meter (FTM) energy storage. Also, as unbundling occurs, it's important that

communication between the transmission operator, the distribution operator, and the generators is maintained. In many RTOs in the mainland United States, the transmission system operator has no visibility into the operations of the distribution system, which limits the ability of generating resources that are interconnected into the distribution system from participating in wholesale markets. In PREPA's case, this problem is simplified by the fact that one entity (the TDP) will be responsible for both transmission and distribution operations. Sunrun encourages the PREB to require that both transmission and distribution operations are utilized by the system operators to dispatch generation. This will enable generation that is interconnected to both the distribution and transmission systems to have equal access to the market and will allow for the greatest value to be derived from distribution sited resources.

- 8. It is possible that in the near-term, the SO will not be completely independent from other system components. This is especially true during the time that the SO is still embedded in PREPA, where it will have some affiliation with generation assets. Please comment on how the proposed rules address this issue.**

PREB should clarify how transmission, distribution, and generation costs will be separated on customer bills. Also it must clarify how the responsibilities of the T&D operators will be separated from the generator dispatch operations while the SO is still embedded in PREPA. Sunrun believes it is particularly important that, even if responsibility for the investment in transmission and distribution systems is not completely independent from the responsibility for investment in generation in the near-term, that the costs of these services be fully separated to facilitate an accurate reflection of the value of all resources on its system. This is imperative because it enables a full accounting to be taken of how to best budget the money that can be invested in Puerto Rico's generation, transmission, and distribution system.

From Sunrun's perspective, an overriding concern for the effectiveness of the Demand Side Manager concept is that the potential for avoided T&D costs, otherwise borne by the Transmission & Distribution Provider, and avoided generation capacity costs, otherwise borne by the Default Service Provider, be fully realizable. The risk is particularly acute that the Transmission & Distribution Provider may not be properly incentivized to pursue avoided T&D costs via DSM providers, and instead to incur these costs directly. It is critical that the business model and incentivization scheme for the Transmission & Distribution Provider creates a focus on the least cost solution for T&D needs regardless

of technology, architecture or asset owner.

- 9. If the SO and TDP are the same entity, the proposed rules would require corporate or functional separation between the SO and any other part of the organization that has an interest in any generation facility or other resource on the grid. Please comment on how the proposed rules address this issue.**

As preliminarily introduced above, Sunrun's key concern with a lack of independence between the SO and the TDP is to ensure that the value of Transmission and Distribution avoided costs be incorporated into the analysis the SO does to arrive at the necessary generating capacity for Puerto Rico's system. However, this approach could be problematic with one entity performing both analyses because it introduces the risk that the value of generation might be counted twice - that is, generation that is necessary to ensure resource adequacy on the bulk power system should be counted as generating capacity supply, but that capacity may have additional benefits, such as the ability to be used to avoid or defer investment in transmission and distribution infrastructure. Sunrun stresses that it is important for these values to be considered by the bundled TDP/SO independently when it plans its system. Sunrun can envision a variety of processes that could accomplish this goals. For example, if generation was being planned to meet resource adequacy needs, a plan for T&D investment that considered additional or targeted generation investment could be an aspect of the T&D long-term plan as opposed to traditional T&D investment. In such a case, preference would be given the generation that was able to serve two needs. Another possibility would be for the SO and the TDP to separately plan generation and T&D investment and to provide a compensation mechanism that would allow a generation resource to reduce its cost of capital investment through the expected value to the T&D system.

- 10. The proposed rules require PREPA to file an embedded cost of service study, a marginal cost of service study, and a total system long-run incremental cost (TSLRIC) study. The purpose of the embedded cost of service study is to ensure that historical costs are allocated across classes in an equitable manner. The purpose of the marginal cost of service study is to ensure that rate designs provide efficient price signals. The purpose of the TSLRIC study is to ensure that services are priced competitively. Please comment on this proposal and the associated provisions of the proposed rules.**

Sunrun supports the proposal that PREPA file an embedded cost of service study, a marginal cost of service study, and a total system long-run incremental cost (TSLRIC) study. However, Sunrun would like PREB to clarify that BTM resources will be considered on the supply side of these analyses and not simply as “invisible” reductions to load forecasts. Passive BTM generation has historically be included in load forecasts as reductions to load, which lower load curves and potentially influence decisions about future investment in the transmission and distribution infrastructure. As BTM solar only generates when the sun is shining, these calculations have historically been fairly straightforward and predictable. However, as controllable resources like BTM energy storage are integrated into PREPA’s system, it becomes less clear that these resources should simply be counted as passive load reducers versus a controllable resource that is counted as local generation.

BTM energy storage often has locational value in reducing system upgrade costs because of its ability to focus on peak-load hours and relieve high or lower-voltage system constraints instead of building out additional infrastructure to meet those peak load needs. This is commonly known as transmission or distribution deferral. Because PREPA is embarking on a holistic review of the infrastructure investments it will make to modernize its grid and increase system reliability, it should *always* be considering local generation as an alternative to additional infrastructure investment. In order to do so, it should view controllable BTM resources such as energy storage as a resource for deferring these investments akin to any FTM resource. As such, Sunrun argues that it is extremely important that these BTM resources are not incorporated as invisible load reducers in PREPA’s various planning studies. This will enable PREPA to consider BTM resources as part of the potential solution to meeting peak load hours reliably and to value the participation of BTM resources that are providing that service accurately.

11. Are the proposed sections regarding Terms and Conditions for Transmission Service and Initiating Transmission Service reasonable and comprehensive?

Sunrun does not have comments on this question at this time.

12. Should the generation sources related to wheeling be limited to renewable sources?

Yes. And battery storage, insofar as the energy stored therein comes from a renewable resource like solar power, should also be considered a renewable source. This policy

would be clearly aligned with Puerto Rico's new binding Renewable Portfolio Standard (SB1121, to be enacted within 30 days), which calls for 100% renewable generation by 2050.

Again, our thanks to PREB for this valuable opportunity to comment.

Respectfully submitted,

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Mon, Apr 1, 2019 at 11:15 AM

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To the Puerto Rico Energy Bureau:

Attached please find comments to the proposed Regulation on Wheeling, docket CEPR-MI-2018-0010.

Thank you.



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Sunrun's Comments to Wheeling Regulation CEPR MI 2018 0010.pdf
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