



## Stakeholder Comments Template

### Energy Storage and Distributed Energy Resources Phase 4 – Work Shop

Submitted by	Organization	Date Submitted
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**Please provide your organization's comments on the following issues and questions.**

#### 1. Default Energy Bids for Energy Storage

It is unclear whether the CAISO intends to mitigate bids for energy storage located behind the utility meter (BTM), whether that resource participates in the market as a Proxy Demand Response (PDR) resource or Non-Generating Resource (NGR). Sunrun agrees that storage development has accelerated in recent years, however we do not see a scenario in which BTM storage resources could exercise generator market power, now or in the foreseeable future. BTM storage resources operate very differently than in front of the meter (IFOM) resources, and are fundamentally situated to provide customer-level service as well as capacity and market service.

As for cost categories, any BTM storage resource that Sunrun would cause to participate in the market would be coupled with a BTM solar resource and would charge entirely from that solar resource. We generally agree with DMM's recommendation to consider opportunity costs for energy storage projects, and note that the opportunity cost considerations for energy storage operating BTM are diverse, given that many of these systems currently provide multiple values across multiple service and grid domains. For example, a BTM storage resource subject to this policy could be providing: resource adequacy capacity, wholesale energy and/or ancillary services, and demand charge management and peak load shaving to its host.

If the CAISO does intend for market power mitigation to apply equally to storage operating both BTM and IFOM, Sunrun recommends that the CAISO both further substantiate why developing a default energy bid (DEB) for BTM storage is necessary now, and to hold a separate working group meeting on this topic.

## 2. NGR State-of-charge parameter

Similar to the prior topic, Sunrun seeks clarification as to whether the CAISO intends for a state of charge (SOC) parameter to apply to storage operating BTM and participating in an aggregation, in NGR. If the CAISO does intend to apply the SOC parameter to storage operating BTM, and thus inherently providing multiple services, Sunrun recommends that the CAISO pursue focused discussion of this topic with stakeholders in a dedicated working group meeting, as is our recommendation for the prior topic.

## 3. Variable Output Demand Response

Sunrun has no comment on this issue at this time.

## 4. Maximum Run Time Parameter for DR

Sunrun has no comment on this issue at this time.

### Additional comments:

### Amending 24/7 Participation Rules for NGR Resources

Sunrun participated actively in the CPUC-led working group on multiple use applications (MUAs) for energy storage resources required by Commission Decision 18-01-003. Sunrun also contributed to the Working Group report. While we await further action on that report at the CPUC, it was our clear understanding from the working group discussions that the CAISO intended to take up any issues within its jurisdiction that would enable storage MUAs in Phase 4 of this initiative. This is the only MUA-related topic in staff proposals in Phase 4 of ESDER, and per the discussion at the June 27<sup>th</sup> meeting, Sunrun is concerned that it will not be considered. We do appreciate the inclusion in the Straw Proposal of the following questions to guide consideration of this topic. Sunrun submits the following initial responses, below, and notes that these issues are not insurmountable.

- 1. As a behind the meter resource under the non-generator resource model, any wholesale market activity will affect the load forecast. How will load serving entities account for changes to their load forecast and scheduling due to real time market participation of behind the meter resources?*

The simple answer here is accurate forecasting. BTM hybrid solar + storage resources participating in NGR may or may not also be serving on-site load at the same time. For BTM hybrid resources that serve onsite load as well as participate in the market, we do not see how BTM resources participating in NGR create new and unique issues to an LSE's load forecasting process. Demand response resources participating in the market today carry similar issues, as do BTM resources that are not participating in the market. For BTM hybrid resources that serve onsite load as well as participate in the market, the forecasting should be simple, if not eliminated, as the storage resource will charge from

the solar and then discharge in response to a market dispatch with no changes to underlying load.

2. *How would a utility distribution company prevent settling a resource at the retail rate when the behind-the-meter device is participating in the wholesale market?*

AND

3. *If a behind-the-meter resource is settled only for wholesale market activity, what would prevent a resource from charging at a wholesale rate and discharging to provide retail or non-wholesale services? How would this accounting work?*

Sunrun questions how significant an issue this really is, practically speaking. There are a number of different configurations under which BTM storage would participate in NGR:

- *Hybrid solar + storage configuration operating BTM and exporting to the grid:* Sunrun pairs BTM storage systems with solar resources, and thus the storage charges from that solar resource, thus eliminating any needed settlement for charging at either retail or wholesale, whether or not these systems export. This brings an interesting challenge for the NGR model, as it would be improper for the CAISO to dispatch any BTM storage + solar resource aggregation participating in NGR for charging as well as discharging.
- *Storage or hybrid resources operating BTM and not exporting to the grid:* These systems would always charge at retail, per station power rules developed jointly, and adopted, by the CAISO and CPUC in 2017.
- *Aggregations of storage resources operating BTM at multiple locations and exporting to the grid:* This is a scenario in which the issue of reconciling wholesale and retail charging and discharging may be relevant. In this scenario, the development of an estimation methodology that each DERP or NGR resource could use is the most useful and efficient path. This estimation methodology would estimate the amount of charging and discharging to meet wholesale dispatches over the course of a year, and could be followed by a true up process. Permitting an estimation methodology is consistent with current station power tariffs for IFOM energy storage, which allow for such a methodology in lieu of direct metering. It is also the most practical approach for an aggregation, as each individual storage device will operate differently when not responding to a wholesale market dispatch.
- *Stand alone storage resources operating BTM and exporting to the grid:* The issue of reconciling wholesale and retail charging and discharging may be relevant here, too. Given that the minimum capacity for any resource participating in NGR is currently 500 kW, this scenario is unlikely.

With the netting rules that were adopted for station power for IFOM storage resources, even IFOM resources are unlikely to ever actually pay retail for any station power loads. This is because, if the cumulative wholesale charging and discharging is greater than station power load in a 15 minute interval, any obligation to purchase retail power for station power loads is eliminated. It would likely be consistent and fair to apply these same netting rules to BTM storage participating in the wholesale market.

This issue is ultimately a retail matter, and thus is within the jurisdiction of the CPUC, which chose to defer this issue in D.17-04-039 and D.18-01-003. That said, in the absence of any current forum at the CPUC to consider and adopt a policy associated with this particular configuration, Sunrun encourages the CAISO to consider enabling the first two resource configurations on this list to participate in NGR on a non-continuous basis while holding eligibility of BTM storage exporting to the grid until appropriate accounting methodologies are established. We also submit that nothing precludes the CAISO from using the ESDER forum to discuss this issue, for later adoption by the CPUC. To avoid doing this means holding up the market for DER participation in the CAISO market. While the issue that the CAISO raises should be sorted out for a subset of storage resource configurations, it is not the only consideration in permitting non-continuous participation in NGR, and the CPUC's lack of rules for this subset of configurations is not sufficient justification for the CAISO to simply do nothing.

### **Conclusion**

In stepping back and looking through the issues outlined in ESDER 4 that are relevant to Sunrun, and are the subject of these comments, we are concerned that this initiative is far more focused on penalizing distributed energy resources than actually facilitating their participation in the wholesale market. Therefore, we encourage the CAISO to adopt Sunrun's recommendations herein.