



## Stakeholder Comments Template

### Energy Storage and Distributed Energy Resources (ESDER) Phase 4

This template has been created for submission of stakeholder comments on the Straw Proposal Working Group Meeting for ESDER Phase 4 that was held on August 21, 2019. The paper, stakeholder meeting presentation, and all information related to this initiative is located on the [initiative webpage](#).

Upon completion of this template, please submit it to [initiativecomments@caiso.com](mailto:initiativecomments@caiso.com). Submissions are requested by close of business **September 4, 2019**.

Submitted by	Organization	Date Submitted
<i>Naor Deleanu</i>	<i>Olivine</i>	<i>9/4/2019</i>

**Please provide your organization's general comments on the following issues and answers to specific requests.**

#### 1. Discussion on non-24x7 settlement of BTM Resources

*Which areas will require the local regulatory authority to change its rules or provide clarification to load serving entities?*

There are currently no rules in place that would stop double payment and/or double charges of behind-the-meter resources that are bid into the wholesale market. Even if CAISO allows non-24/7 participation, there are no clear guidelines on what can be considered wholesale and what can be considered retail, meaning any current implementation of a CAISO DER Aggregation (DERA) would lead to likely double compensation *and* double charges for all load and generation. Thus, it will be critical that LSEs (and/or UDCs), CAISO, and LRAs collaborate on any accounting methodology used to settle BTM DERs. Three options are presented below to consider:

1. Storage and/or generation that is part of a DERA is separated into retail and wholesale services in order to maximize CAISO value and prevent double compensation or market manipulation. If typical generation/load is predictable, it could be scheduled along with day-ahead and/or real-time market wholesale bids. All load in the day-ahead schedule would be settled at retail. Availability could be communicated through bidding for reduction and/or export. LRAs would need to set standards for LSE/UDCs to change billing and accounting systems to properly net out any wholesale activity from a customer's bill. This will ensure that there is no double counting or double charging customer load or

generation. This would be more difficult for aggregations or customers with less predictable load that would need to submit updated real-time “retail” schedules that would be netted out for wholesale settlement purposes.

For storage resources (or resources that could be modeled as storage), daily generation plus round-trip efficiency losses must be equal to daily load to ensure that there is no net wholesale charging in order to facilitate retail discharging against premise load. LRAs could work with resource owners/aggregators to develop estimation methodologies on round-trip efficiency to ensure that there is no double compensation and resolve any related concerns regarding station power. For permitted non-storage DERA, resources can be fully compensated for exports or choose to fully participate in CAISO markets and forgo any retail compensation. Participation could be limited to customers not participating in a DERA and not getting Net Energy Metering or other retail credit for exports.

2. All exports could be wholesale, while all corresponding load increase is charged at retail rates. Then it could be up to the LSE, and not CAISO to offer any relief for potential increased load for additional charging in other hours. Compared to a full load and generation participation model outlined in the first option, this would require much less complicated accounting and potentially billing system modifications. It does mean, however, that without any LSE program, energy storage would need to charge at retail rates in order to discharge at wholesale rates. LRAs would need to develop rules with LSEs/UDCs in order to provide compensation for DERs that are providing wholesale generation services. This may also require collaboration regarding establishing estimates of round-trip efficiency losses but would not entail any direct CAISO market settlement for load increase. LRAs could also work with CAISO to develop a framework to allow BTM DERs to provide Resource Adequacy in the future.

A benefit of Option #2 for aggregators is that if CAISO allows, customers could still participate in Demand Response programs for load reduction, subject to LRA regulations. All load reduction could be measured against a customer baseline, excluding any net generation. This would require CAISO to allow for two registrations at the same service account, although only one would be for a demand response resource, and the other would be generation as part of a DERA.

This option is similar to PJM’s working proposal<sup>1</sup> for compensating BTM DERs in only compensating DERs for net export. It does not allow CAISO to fully optimize behind-the-meter resources for both charging and discharging (thus would not permit an aggregation of NGRs), but it does provide a relatively simple participation model that is similar conceptually to Demand Response with a baseline of 0. Since customers participating in a Net Energy Metering

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<sup>1</sup> <https://www.pjm.com/-/media/committees-groups/subcommittees/ders/20190610/20190610-item-07-pjm-w-der-draft-proposal-summary.ashx>

program are not allowed to participate in DERAs, there would not be any concern over double payment for retail export.

3. Extend Demand Response models to allow for exports. This would simply be an extension of the PDR model to allow for exports to be counted for performance relative to an approved CAISO baseline. This would further simplify calculations and in contrast to Option #2, would not require separate accounting of export versus load reduction. CAISO has, however, previously expressed concerns that this may not be allowable under the Federal Power Act<sup>2</sup>. Olivine suggests that this could be discussed further in the CPUC's Demand Response proceeding if it could be a legally viable option.

We believe that in order for some commonly envisioned DER use cases to be at all plausible, issues regarding wholesale/retail compensation need to be resolved. For example, commercial EVSE chargers are often separately metered, and as such, are not able to participate in the wholesale energy market for any exports utilizing Vehicle-to-Grid (V2G) technology under the current PDR construct. This is a large barrier to any consideration of large EV fleets providing energy storage capabilities with idle capacity. Pilot projects to date have largely relied on non-standardized utility compensation without providing further regulatory clarity.

## 2. Market Power Mitigation for energy storage resources

*The two options proposed in the calculation of cycling costs.*

No comment.

## 3. Variable Output Demand Response resources

Olivine appreciates the attention taken to evaluate the RA value and must-offer obligations for variable output Demand Response resources. We understand CAISO's focus on meeting resource adequacy needs for all hours rather than simply looking at Availability Assessment Hours. However, given the complexity involved in evaluating all different iterations of possible program hours and energy limits for Demand Response, we suggest that CAISO at least consider a minimum viable RA product for DR programs, such as an assumption for full availability during assessment hours and CPUC's minimum RA requirements regarding dispatch availability. CAISO's recent comments in CPUC's IRP indicate that the greatest reliability need in the near term is still projected to be during peak hours between 5 PM and 9 PM<sup>3</sup>. If modeling allows, CAISO and the CPUC can work together to develop different tiers of RA compensation for different types of DR programs, such as weather-sensitive programs and DR programs with fewer operational limitations and/or expanded availability hours.

Regarding CAISO questions about data provision:

<sup>2</sup> Slide 44 <http://www.caiso.com/Documents/Presentation-Energy-Storage-DistributedEnergyResourcesPhase4-Mar18-2019.pdf>

<sup>3</sup> Page 10 <http://www.caiso.com/Documents/Aug12-2019-ReplyComments-PotentialReliabilityIssues-IRP-R16-02-007.pdf>

*Could capability be provided to the CAISO through an automated, real-time process?*

*Is it feasible and not cost prohibitive for variable-output demand response to provide resource capability as real-time data?*

Real-time telemetry requirements similar to VERs would almost certainly be cost-prohibitive for all but potentially the largest customers. Updated hourly availability forecasts may be feasible for variable-output DR without overburdensome operational cost beyond initial development. If more detailed telemetry is required for large aggregations, then we suggest an option for statistical sampling to estimate resource availability rather than requiring expensive devices for every site in an aggregation. We also suggest that CAISO and CPUC work together to decide whether day-ahead only DR programs can still qualify for supply-side RA and potentially only submit a single daily forecast.

#### **4. Additional comments**

Please offer any other feedback your organization would like to provide from the topics discussed during the working group meeting.