COMMENTS OF
THE CALIFORNIA ENERGY STORAGE ALLIANCE:

Energy Storage and Distributed Energy Resources Enhancements
Phase 2 Straw Proposal

Submitted by	Company	Date Submitted
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The California Energy Storage Alliance (CESA)[1] offers these comments on the California Independent System Operator's (CAISO's) Energy Storage and Distributed Energy Resources 2 (ESDER 2) Initiative's Revised Straw Proposal.[2]

CESA appreciates the scope and work to date on ESDER. Many of the proposed enhancements appear supported and will improve participation avenues for energy storage resources competing in CAISO markets. To build on the initiative's work to date, further enhancements and refinements are recommended on several parts of the proposal.

CESA's comments are provided in the CAISO's Comments Response Template.

NGR enhancements

The CAISO has been focused on two areas of potential NGR enhancement: (1) representing use limitations in the NGR model and (2) representing throughput limitations based on a resource's state of charge (SOC).

The CAISO is requesting stakeholders provide comments in each of these two areas.

Comments:

CESA appreciates the CAISO's commitment to refining the NGR model.

[1] The views expressed in these Comments are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. (http://storagealliance.org)

[2]

CESA plans to join the Working Group on NGR refinements.

The Working Group should provide sufficient opportunity to clarify and potentially quantify use-limitations. The NGR Working Group should also be used to detail NGR Commitment costs, and a representation of commitment costs in NGR should also be pursued.

The idea of also developing NGR capabilities to represent marginal costs and manage through-put or other limitations based on state-of-charge remains important. CESA understands that the CAISO plans to address this issue, including the idea of different bid-stacks or 'multi-stage generator' type of ramping and bid complexities, at a later time. CESA recommends, however, that some further consideration of these functionalities be given now. Such consideration may save considerable time by recommending 'fields' to be created in the CAISO optimization, even if such fields are not ultimately 'turned on'. Such steps in this initiative could presumably save thousands of dollars in programming costs.

Demand response enhancements

Two stakeholder-led work groups are up and running within ESDER 2 to explore two areas of potential demand response enhancement:

- Baseline Analysis Working Group – Explore additional baselines to assess the performance of PDR when application of the current approved 10-in-10 baseline methodology is sufficiently inaccurate. The Working Group has completed its first phase of analysis on topics including alternative baselines and control groups.
- Load Consumption Working Group – Explore the ability for PDR to consume load based on an ISO dispatch, including the ability for PDR to provide regulation service. The working group has recommended bi-directional PDR modelling.

The CAISO is requesting stakeholders provide comments in each of these two areas.

Comments:

CESA appreciates the leadership and input from team members of the PDR Working Groups.

CESA believes the detailed ideas of the Load-Consumption Working Group should be approved. These ideas include: i) PDR regulation approaches and ii) load increasing baseline methodologies and resource response.

Per the Working Group's discussion, these PDR functions can be developed and will bolster market efficiency and market access from the PDR category of resources. These forms of

additional market participation should boost liquidity and, by extracting more utility from resources, lower system costs. CESA supports these types of market enhancements.

The CAISO's default position regarding PDRs should be that jurisdictional concerns have been addressed. Per FERC and a recent court decision, PDR participation and the use of baselines are legitimate and established avenues for market participation. Any improvements to the PDR design to allow for greater resource participation in the CAISO that do not deviate from the basic jurisdictional basis for PDRs are therefore allowable. Jurisdictionally, the authority for PDRs seems settled.

With respect to the Baseline Analysis Working Group, CESA supports further consideration of alternative baselines. CESA believes all such alternative baselines should be designed to work as stand-alone or as 'meter-adjusted baselines' which could be used in PDR configurations with energy storage or other distributed energy resources. As with all baseline approaches, the approach should serve to ensure the CAISO grid compensates only unique and incremental actions and dispatches. However, while some degree of conservatism is understandable in establishing new baseline approaches, the CAISO should not unduly err on the side of undercompensating resource actions. Overly conservative approaches are thus problematic and should be avoided.

Multiple-use applications

The ISO has not yet identified specific MUA issues or topics that require treatment in ESDER 2. The ISO proposes to continue its collaboration with the CPUC in this topic area through Track 2 of the CPUC's energy storage proceeding (CPUC Rulemaking 15-03-011). If an issue is identified that should be addressed within ESDER 2 the ISO can amend the scope and develop a response.

The ISO is requesting stakeholders provide comments on this topic area as well as this proposed approach.

Comments:

CESA supports this approach. CESA requests the CAISO continue to affirm that multiple-use applications are authorized.

Distinction between charging energy and station power

In this topic area the ISO will continue its collaboration with the CPUC through Track 2 of the CPUC's energy storage proceeding (CPUC Rulemaking 15-03-011) rather than exclusively through ESDER 2. At this time, the ISO proposes the following:

- Revise the ISO tariff definition of station power to exclude explicitly charging energy (and any associated efficiency losses); and
- Revise its tariff later to be consistent with IOU tariffs, as needed, in the event that they revise their station power rates.

The CAISO is requesting stakeholders provide comments on this proposed approach. The CAISO also seeks comments on the following:

- What rules are necessary, if any, to dictate how station power and wholesale charging energy (including efficiency losses) can be separately calculated for settlement purposes? For example, what would be the advantages and disadvantages of using meters compared to predetermined deductions?
- Assuming that station power includes all energy drawn from the grid except to charge the storage device, what specific advantages and disadvantages do storage devices have compared to conventional generators under current netting and self-supply rules?

Detailed examples comparing the generally expected dispatching of storage devices and conventional generators under current netting and self-supply rules are appreciated.

Comments:

CESA appreciates the CAISO's work on this effort. While CESA supports the plan to adopt CPUC-directed Station Power rules, CESA recommends several near-term actions which should apply to wholesale interconnected storage resources.

First, the CAISO should affirm that charging energy for in-front-of the meter interconnected (GIP or WDAT) wholesale market participants is a wholesale transaction. While this rate treatment is already expressed by the CAISO in previous matters, such affirmation may prevent wasteful efforts to burden or discriminate against energy storage resources through inappropriate costs or rate applications. A further CAISO affirmation on wholesale charging energy rate treatment will benefit and guide the energy industry in California as industry members, utilities, policy makers, developers, and others gain familiarity and experience with energy storage solutions.

Second, the CAISO should affirm that station power 'default' rules follow standard 15-minute netting practices. Such netting rules should be available to all market participants operating under wholesale interconnections or with wholesale energy settlements.

Third, the CAISO should affirm and clarify the definition of station power 'netting' for energy storage. In line with approaches for conventional resources, netting should be defined as a reduction in the generator's capability to the grid as a result of the generator 'self-serving' its station loads. In this manner, the case for wholesale rate treatment for station power, rather than retail rate treatment, is clear. To illustrate, a traditional generator operating a 100 MW resource with a station power load of 2 MW is only compensated for 98 MWs because the generation at the Point of Interconnect (POI) is lower. Energy storage should have similar treatment, and metering configurations should allow this POI-centric station power netting.

When charging, energy storage solutions warrant a similar approach. The next ESDER proposal should explicitly detail and authorize this approach by expanding the definition of Permitted Netting in the CAISO Tariff to include cases beyond only those when net output exceeds zero over a period of time. This expansion of the definition is important because, for energy storage, the positive output will never occur during periods of charging. CESA recommends the CAISO definition of Permitted Netting also include periods of "Negative Generation" or an equivalent phrasing.

To illustrate, consider a case of a 50 MW energy storage discharge/charge, with a 1 MW Station Load. When *discharging*, the resource warrants compensation for 49 MW because the discharge of 50 includes 1 MW of 'self-served' station load, *a.k.a.* 1 MW of Permitted Netting. In *charging*, the unit again will self-serve its 1 MW. This implies that 51 MW load seen by the CAISO system involves a 1 MW station load. During this period, Permitted Netting defined to include negative generation would allow the station load of 1 MW to be added to the negative generation of 50 MWs, for a total of 51 MWs, billable at wholesale. CESA's views on these matters are evolving and CESA looks forward to working out further kinks to this approach.

Based on these station power examples, any metering configurations for station power netting may warrant further discussion. CAISO should take care not to require metering configurations for storage that are more burdensome or expensive than those in use for comparably sized generation facilities using renewable or fossil fuel technologies. CESA recommends the CAISO authorize netting provisions with statements or attestations of station power loads (likely to be developed in the NGR Working Group) to allow for 'accounting based' rules in place of separate metering. Separate metering arrangements could be optional, if developers desired them and are willing to incur additional capital expenses resulting from this additional *optional* settlement arrangement. Any standalone requirement for separate metering may be

discriminatory because other CAISO resources do not have separate metering requirements for station power load.[3]

In conclusion, the CAISO should focus its efforts to expand the definition of Permitted Netting to ensure that storage generators compete non-discriminatorily with traditional generators. These approaches effectively allow a wholesale 'self-service' of station loads.

Other comments

Please provide any additional comments not associated with the topics above.

Comments:

[insert comments here]

[3] Per the CPUC/CAISO workshop as part of the Storage OIR, there is no separate meter for station use at certain solar facilities or other QFs (which have one meter configuration).