LS Power Stakeholder Comments

Submitted by	Company	Date Submitted
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Please use this template to provide your comments on the ESDER Phase 2 stakeholder initiative Issue Paper posted on March 22 and as supplemented by the presentation and discussion during the stakeholder web conference held on April 4, 2016.

Submit comments to InitiativeComments@CAISO.com

Comments are due April 18, 2016 by 5:00pm

The Issue Paper posted on March 22 and the presentation discussed during the April 4 stakeholder web conference may be found on the ESDER Phase 2 webpage.

Please provide your comments on the Issue Paper topics listed below and any additional comments you wish to provide using this template.

NGR enhancements

The CAISO is proposing to explore two possible areas of NGR enhancement: (1) representing use limitations in the NGR model, and (2) representing multiple configurations in the NGR model.

The CAISO is requesting stakeholders provide comments and consider the following:

- Are these two possible areas of NGR enhancement the highest priority NGR enhancements to pursue in ESDER Phase 2?
- Are there other areas of NGR enhancement that are of higher priority that should be pursued instead? If yes, which ISO-proposed NGR enhancement should be omitted from the scope?
- Please provide examples of use cases that support the NGR enhancements you view are of the highest priority and should be pursued in ESDER Phase 2.

Comments:

To begin, we thank you for the opportunity to respectfully provide these comments on the topics in the ESDER stakeholder process.

LS Power believes that representing multiple configurations in the NGR model is the highest priority enhancement to pursue for ESDER Phase 2. Specifically, the ability to change parameters of the wholesale offer including Price and MW being offered as a function of the unit's present State of Charge will allow energy-limited resources such as energy storage devices to more accurately represent to CAISO both their full range of capabilities and marginal costs of operation, as well as to optimize state of charge management which will enhance system reliability.

Demand response enhancements

The CAISO is proposing to explore two possible areas of demand response enhancement: (1) Exploring the ability for PDR to be dispatched to both curtail and increase load, and provide regulation service; and (2) developing alternative baselines to assess the performance of PDR and RDRR.

The CAISO is requesting stakeholders provide comments on these two areas of enhancement and consider the following:

Demand response enhancement topic area #1 – Ability for PDR to both curtail and consume energy:

- What issues does this working group need to address and resolve to enable load consumption capability? For example:
    - How would financial settlements work given wholesale bids cause an increase in retail consumption and demand?
    - What does consumption mean? Is consumption when a load exceeds its "normal" maximum consumption at certain times or under certain conditions?
    - What are appropriate baselines/Performance Evaluation Methods?
    - Is there any differences if load consumption results from a BTM device versus true load consumption?
    - Retail and wholesale impacts of over or under performance?
    - CAISO Grid Management Charges for load consumption?

- Are any state policies impacted by wholesale-directed retail load consumption?
- Suggest a proposed schedule and milestones for working group to deliver a Draft Final Proposal by September 8, 2016 (use the stakeholder process schedule on pages 22-23 of the March 22 Issue Paper as a guide).

Comments:

LS Power has no comments on this topic at this time.

Demand response enhancement topic area #2 – Alternative baselines to assess the performance of PDR/RDRR:

- What baseline methods should the CAISO add and why?
- If a performance method is recommended that requires a control group, how would third parties be able to cost-effectively set-up and operate control groups? Are there services the UDC could provide in this area?
- What tools and capabilities will the CAISO require to assess best fit for different types of PDR aggregations?
- Suggest a proposed schedule and milestones for working group to deliver a Draft Final Proposal by September 8, 2016 (use the stakeholder process schedule on pages 22-23 of the March 22 Issue Paper as a guide).

Comments:

LS Power has no comments on this topic at this time.

Multiple-use applications

To avoid redundant and potentially divergent efforts the CAISO will initially address this topic by participating in the CPUC Order Instituting Rulemaking (R.) 15-03-011, Track 2. The CPUC and CAISO are planning to hold a joint workshop May 2-3, 2016. If the CPUC proceeding identifies issues that should be addressed in a CAISO initiative, or develops proposals the CAISO should consider formally adopting, the CAISO can open a new initiative or expand ESDER Phase 2.

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

Comments:

LS Power is also participating in R.15-03-001 OIR Track 2 with the CPUC, and supports CAISO's participation. We have no additional comments on this topic at this time.

Distinction between charging energy and station power

Under this topic the CAISO intends to resolve the distinction between wholesale charging energy and station power. Although this is also a topic in Track 2 of the CPUC's energy storage proceeding, station power is specifically addressed in the CAISO tariff and the CAISO will primarily address this issue in ESDER Phase 2. However, because the question of station power is inherently jurisdictional, the CAISO intends to also contribute to this topic in Track 2 of the CPUC's energy storage proceeding as may be necessary. In doing so the CAISO will seek to economize its staffing resources where possible and avoid redundant efforts, and will also seek to avoid the conflicts that have arisen in the past over the wholesale/retail line.

The CAISO is requesting stakeholders provide comments on this proposed approach as well as respond to the following questions:

- Should the CAISO modify its definition of station power to better accommodate energy storage resources?
- Should battery temperature regulation be considered part of charging (similar to efficiency loss) and subject to a wholesale rate, or should it be considered consumption/station power subject to a retail rate (where consumption exceeds output in an interval)?
- Are there any means besides separately metering the storage device by which the CAISO should distinguish between charging and station power?

Comments:

LS Power believes that yes, CAISO's definition of station power needs to be revised to allow In Front Of Meter (IFOM) energy storage devices to be treated fairly with respect to any other type of power plant. On the question of battery temperature regulation specifically, HVAC for the purpose of maintaining the battery temperature during operation is absolutely necessary for operation, and should be classified the same way as would similarly necessary pumps or emissions related equipment in the operation of a gas turbine based power plant.

The following quotes are from ESDER Phase 2 white paper from CAISO (**emphasis added**):

> Station Use is defined in Appendix A of the ISO tariff as "**energy for operating electric equipment, or portions thereof, located on the Generating Unit site owned by the same entity that owns the Generating Unit, which electrical equipment is used exclusively for the production of Energy and any useful thermal energy associated with the production of Energy by the Generating Unit**; and for the incidental heating, lighting, air conditioning and office equipment needs of buildings, or portions thereof, that are owned by the same entity that owns the Generating Unit; located on the Generating Unit site; and used exclusively in connection with the production of Energy and any useful thermal energy associated with the production of Energy by the Generating Unit."
>
> Importantly, because the ISO tariff allows for netting of consumption against output within a five-minute interval, **station power under the ISO tariff is only measured as the amount of consumption that exceeds output within a five-minute interval.**

The status quo today is that in conventional power plants:

- Station Use is paid for at retail when the plant is not generating.
- Station Use is netted from output when the plant is generating (effectively being settled at the wholesale power rate).

For IFOM energy storage systems, Station Use should be treated the same way as it is for conventional power plants to the greatest extent possible. As such, situations where the energy storage system is either offline or online and discharging are exactly analogous to conventional power plants, and should be treated the same way.

The only unique situation for ESS Station Use is in the case that the system is operational and either commanded to be idle or to be receiving energy (charging) from the grid. An ESS still provides valuable services to the grid during charge (such as providing spinning reserves, absorbing overgeneration and preventing renewable curtailment, or providing regulation), and as such CAISO is correct to describe the ESS as providing "Negative Generation" when it is operational and absorbing energy from the grid, as CAISO has in various stakeholder processes such as Energy Storage Interconnection, ESDER Phase I, etc.. Therefore, ESS station use falls into one of the following 4 categories at any point in time:

- ESS Station Use should be paid for at retail when the plant is offline / not generating (positive or negative).
- ESS Station Use should be settled at the wholesale energy price when the plant is online and delivering energy (i.e. operating in "generation" mode)
- ESS Station Use should be settled at the wholesale energy price when the plant is online and absorbing energy (i.e. operating in "charging" mode)

- ESS Station Use should be settled at the wholesale energy price when the plant is online, but is not generating (positive or negative), but is available and has a bid in the market. In this situation, ESS may be idle but may need to stay available to either meet its Resource Adequacy obligations, or to meet its Ancillary Service obligations, or may need to stay online to respond to economic dispatch instructions from CAISO in subsequent Real Time intervals.

This treatment is consistent and fair with the treatment of any conventional power plant using renewable or fossil fuel technology.

For example, let us compare a Lithium-Ion based battery energy storage system and a gas turbine. In order to operate, the GT needs to run a set of pumps to move heat away from the turbines to maintain safe operation within the design specifications of the hardware. If the pumps are not running, the GT will need to shut down to avoid overheating very quickly. The energy required to operate these pumps is classified as Station Use, and this energy is rightly netted from the plant's output during the time that the GT is operating. Analogously, when a lithium-ion ESS is operated, some energy in the charge/discharge cycle is radiated as heat in the batteries, and the ESS must run HVAC to move this heat away from the batteries to maintain safe operation within the design specifications of the hardware. Whether the ESS is charging or discharging, the HVAC is necessary, and is properly classified as Station Use. This Station Use should be netted from plant output, and forcing the ESS to pay for HVAC load on a separate retail meter when a GT is able to net its pumping load from output at wholesale is clearly discriminatory.

Review allocation of transmission access charge to load served by DER

The CAISO is proposing to review the rules for determining load subject to the transmission access charge (TAC) to reflect the effects of utility-side distributed generation, as proposed by Clean Coalition.

The CAISO is requesting stakeholders provide comments on this topic area. In particular, please comment on the three concerns the CAISO raised in the issue paper, and if possible offer examples to help illuminate these concerns.

1. Transmission investment is mainly driven by peak load conditions, which may not be reduced by adding distributed generation (DG).

2. New DG does not offset the cost of transmission that was previously approved and is currently in service.
3. Exempting some load from TAC charges would not decrease PTO revenue requirements, so some costs would be shifted to other customers.

Comments:

LS Power has no comments on this topic at this time.

Other comments

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

Comments:

LS Power has no additional comments at this time.