Comments of the California Energy Storage Alliance (CESA)

on

CAISO ESDER 3 Issue Paper

Submitted by	Company	Date Submitted
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CESA appreciates the opportunity to comment on the Energy Storage and Distributed Energy Resources (ESDER) Phase 3 scoping workshop and discussion on January 16, 2018.[1]

ESDER remains a critically important stakeholder initiative to the Energy Storage industry. The CAISO is working to incorporate and leverage stakeholder input into determining key priorities and scoping items for ESDER 3.

CESA recognizes that the CAISO has repeatedly shown a strong interest and willingness to support non-discriminatory market access for would-be market participants, including from energy storage resources, and CESA appreciates this ongoing leadership role from the CAISO. CAISO staff have been hardworking, thoughtful, and creative in developing reasonable solutions, and CESA acknowledges these essential efforts. Likewise, CESA seeks to be a credible partner to the CAISO and other stakeholders in thoughtfully assessing and structuring market design enhancements (or other changes) needs to fully unleash fair and reasonable market access and compensation by energy storage resources. To this end, CESA actively participates in numerous CAISO stakeholder initiatives[2], with ESDER remaining a key priority.

[1] http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=263724F0-4524-4B2B-9497-1C56AA541F0D

[2] These include: Frequency Response, FRACMOO, CPM and Risk of retirement matters, Interconnection Process Enhancements, the Transmission Planning process, Commitment cost matters, and others.

CESA's Comments:

CESA disagrees with some key aspects of the prioritization plan laid out at the workshop. CESA believes several of the so-called 'low priority' items should be high-priority. CESA's position is based on a concern that 'low priority' items may not be included in ESDER scope, although CAISO may not have intended this. Nevertheless, the meaningful point of prioritization for these purposes, to CESA, is whether an item will be 'in scope' or not, not necessarily if it is high vs low priority.

CESA is concerned that the CAISO's assessment may reflect 'votes' in the form of the number of comments. To counter a case where CESA's comments count as one vote akin to any others' comments, CESA reminds the CAISO that CESA represents around 60 member-companies that embody the diverse and varied energy parties involved in the emerging energy storage industry. These companies include large energy storage developers, behind-the-meter energy storage developers, energy technology manufacturers, systems integrators, industry advisors and consultants, scheduling coordinators, and more. CESA's positions reflect consensus views of the energy storage industry and often are built through lengthy deliberations amongst CESA members. Further, CESA's positions are guided by core 'policy principles' to ensure CESA's voice is supportive of overall grid efficiency and reliability, clean energy goals, and affordability. As such, CESA's positions should be afforded 'weight' reflective of this substantial process and society-oriented viewpoint. This 'weight' should also be reflected in any process for determining priority issues.

ESDER prioritizations should reflect how energy storage is an emerging industry sector and that participation structures for energy storage may be i) non-existent, ii) flawed or limited iii) out of line with key policy goals, iv) discriminatory, or v) otherwise inadequate. To address these issues, much work may be needed. CESA greatly appreciates the efforts of the CAISO and the large staff presence being made available to these priorities.

CESA evaluates the potential ESDER scoping items in the following way:

- Load-Shift: High priority and needed due to non-existent market access. CESA agrees that we shouldn't 'boil the ocean' with this first iteration of this product design and should keep the participation parameters narrow. The scope should also include consideration of how to support market participation by energy storage participating in other retail programs where appropriate, e.g. no inappropriate double-compensation. While some parties may seek to expand access to this yet-to-be-developed new product, CESA notes that the CPUC has launched a load shift working group, and that the CAISO may offer for any expansions of eligibility for a load shift product, pending tools or rules to combat the wasting of energy, could be addressed in a later stakeholder

initiative. Given this, the CAISO should be able to move forward with the ESDER 3 Load Shift scope as developed to date.

- PDR – Recognition of Behind-the-Meter EVSE load curtailment. EVs are a compelling and critical part of the CA GHG policies and currently lack scalable market access to ensure the State's vision for Vehicle-Grid Integration is achieved for a significant share of the growing EV charging infrastructure. Similar to with the load-shift, the CAISO should develop an initial authorization and participation pathway for EV fleets via the PDR model. The existing MGO framework, in which CESA and its members contributed to in ESDER 1, is easily adaptable to the EVSE use case, without any material changes required to DRRS systems, current DRS or future alternative systems, SQMD plan processes or existing non-MGO DR baselines. The CAISO should note that CESA members include eMotorwerks, Honda, Mercedez-Benz, Qnovo, and others focused on EV markets and their support of grid needs.
- Improving the DERP model – the DERP model has major utilization barriers, primarily that Behind-the-Meter resources cannot pursue retail non-market functions without exposure to wholesale markets settlements such as uninstructed imbalance energy. Further, DERP resources currently cannot readily count as Resource Adequacy ("RA"), as CESA understands it. Fixing the 24x7 participation requirements of the NGR model has been teed up to support the first issue. CESA believes some parties may seek to use the DERP model, but others may also just seek to use their existing PDR functionality *along with* a load-shift product. For parties seeking to use the DERP model in full, prioritization of a resolution to the 24x7 requirement remains key. This may be easiest if the NGR DERP model is used to support the creation of the load-shift product, since the elimination of a 24x7 requirement will be developed anyway. Separately, PG&E's slides mention how dynamic use of the Outage Management System ("OMS") can help ensure capacity is available for other non-market functions[3], but CESA remains unclear on the viability of this approach for Multiple-Use Application ("MUA") DERPs.
- Managing overall usage of NGR resources, a.k.a. throughput management – resources should have the right to limit their usage in reasonable ways. There has been confusion about managing the cycling and usage of a resource with managing its state of charge. To clarify matters, CESA focuses specifically on managing throughput and usage here. Currently, a NGR resource may be 'jerked around' due to its fast ramp rate. The resource can manage this dispatch to some degree with its energy bids, which are not mitigated. Such economic signals may not, however, inform the dispatch algorithm for the provision of regulation, so the economic signaling only goes so far. Further, a resource can input a slower ramp rate which, although perversely contrary to the

[3] http://www.caiso.com/Documents/Presentation-AlvaSvobodaPG-E.pdf, slide 9

CAISO's needs for ramping, can slow the ramping and movement of the resource. Rather than accept this perverse outcome, CESA has created ideas for how to manage throughput in ways that do not drive the perverse incentive of offering slower ramp rates, including through MW-throughput constraints or restrictions or through the ability to exit the market (where reasonable and appropriate). To this latter point, CESA has indicated a need for NGRs to be eligible for use-limited status outages, likely within a given RA month. CESA of course only supports the use of use-limited status for appropriate and reasonable cases, and energy storage should not be disadvantaged versus other technology types, e.g. hydro. CESA is concerned that the rigidity of the 'exogenous factors' definition used in some of the CAISO commitment cost matters may over-restrict eligibility to use-limited status in unreasonable ways. A key goal, therefore, is to approximate what unreasonable expectations for throughput and cycling are. This should align with how hydro resources have been granted full capacity valuation based on scheduling-coordinator directed usage plans.

- Managing the Real-Time state of charge of NGRs, mostly for non-REM energy storage – as PG&E documented in its slides[4], real-time state of charge cannot be managed with much accuracy due to the nature of the CAISO's regulation dispatch algorithm. Economic signals are not well represented in the dispatch of regulation, as CESA understands it. CESA has suggested ideas for how to support management of state of charge in real-time, including by allowing Day-Ahead bidding to sell regulation in increments whereby some capacity from the resource remains available for real-time energy provisioning so that economic preferences for state of charge can be represented. PG&E's slides mention how dynamic use of the Outage Management System (OMS) can help ensure capacity is available for other non-market functions[5], but the case here is not about participation outside of the CAISO market, but about managing full participation in the CAISO market.

Additionally, CESA has raised issues about appropriately recovering commitment costs in cases where a resource is dispatched after incurring commitment costs (thus cannot recover its costs even with unmitigated bids). This issue may be rare at this time.

A key challenge for scoping NGR enhancements is that relatively few NGR users currently exist. CESA expects this will change over time. The Powin case showed how glitches appear to be occurring with the use of the NGR model.[6] CESA recognizes that 'learning curves' may mitigate some issues, but underlying flaws in the market model, if any, warrant address. The Powin case

[4] http://www.caiso.com/Documents/Presentation-AlvaSvobodaPG-E.pdf
[5] http://www.caiso.com/Documents/Presentation-AlvaSvobodaPG-E.pdf, slide 9
[6] http://www.caiso.com/Documents/Presentation-BlakeRector-MikeMcGuffinCustomizedEnergySolutions.pdf

highlights challenges with the regulation signal. To the extent that this matter is structural and not operational, CESA suggests consideration of regulation changes.

Regarding regulation reforms, the CAISO may need to evaluate if the accuracy adjustment is appropriately applied and if the formulation of mileage constraint is supporting an efficient dispatch and procurement of regulation capacity. Such an evaluation may inform whether energy storage resources continue to opt to provide slower ramp rates. Further, the role of regulation in meeting system Area Control Error ("ACE") and random variability, e.g. 'noise', versus as an intra-five-minute load following product should be clarified. The REM product as well as the role of a mileage-based product is more geared to addressing random system error, aka 'noise', vs long-term trending.

Finally, CESA supports the exclusion of both the PDR/RDRR hybrid resources and of the exploration of micro-grid issues in this ESDER Phase 3 stakeholder initiative. CESA is not commenting on the merits of these issues, just on their fit with the scope of ESDER, wherein a CAISO-directed stakeholder process should pursue topics the meet key prioritization criteria.