CESA
CALIFORNIA ENERGY STORAGE ALLIANCE

Comments of the California Energy Storage Alliance on the ESDER 3 Technical Working Group Meeting

Submitted by	Company	Date Submitted
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Introduction:

CESA offers these responses to the CAISO's "Comments-Response Template" regarding the CAISO's Energy Storage and Distributed Energy Resources Phase 3 Technical Working group meeting held on March 29, 2018. The working group meeting covered technical issues with EVSE sub-metering and with the load-shift product design.

CESA appreciates the CAISO's industry-leading thought-work on these matters and looks forward to continued collaboration on these important market design enhancements.

About CESA:

CESA is an industry advocacy association focused on grid-connected energy storage. CESA's mission is to make energy storage a mainstream resources that accelerates the adoption of renewable energy and promotes a cleaner, more efficient, reliable, affordable, and secure electric power system. The CAISO's ESDER initiative specifically addressed market participation pathways for energy storage in select applications and is a core priority of CESA's.

CESA is a 501(c)(6) non-profit that represents over 65 member companies and leaders in the energy storage industry.[1] www.storagealliance.org.

[1] INSERT CESA Member-Company list

CESA Responses:

1. Measurement of EVSE Performance

In addition to the overall design elements of the EVSE measurement, please provide comments to the specific questions below:

- Does the current CAISO "Metering BPM Appendix G" requirements apply to EVSEs?
- Does the 10-in-10 customer baseline methodology capture an EVSE performance, or does the CAISO need to consider another baseline?
    - If the load point adjustment is not applied, is there another adjustment that should be considered?

CESA supports the development of a CAISO market participation structure for EVs, as these resources are an important component of California's clean energy goals and also currently lack a participation path that works for many EV fleets and configurations.

The CAISO design should reasonably identify 'typical use' for BTM EV charging and should differentiate market responses from typical use. For performance measurement, the CAISO should allow and support an array of approaches and should explicitly avoid costly or excessive metering arrangements.

2. Load Shift Product

In addition to providing comments on the overall design elements of the Load Shift Product, please provide comments to the specific topics/questions below:

- Please comment on the CAISO's proposal to establish two resource IDs and the bidding requirements for the load curtailment and consumption.
- Please provide comments on the Metered Energy Consumption (MEC) methodology
    - The CAISO presented an example that measured typical use with consideration of only the load consumption in "non-event hours" during the 10-in-10 baseline calculation and an example that considered both load curtailment and consumption; please comment on either calculation.
    - Are there other calculations that could measure typical use?

Comments:

CESA does not oppose the use of two resource IDs at this time. CESA understands this approach is designed to leverage the existing participation models in a practical way. CESA seeks further examples or assurances of how actual dispatches could occur. In practice, dispatches should not be unworkable, and the CAISO should assess if problematically

contradictory dispatches could occur. The CAISO should also vet and ensure that a resource's ramp-rates are factored in to dispatches so that dispatches are viable. While energy storage generally can have extremely fast ramp rates, CESA recommends consideration of the role of ramp rates in case some energy storage-backed PDRs have ramp rates that are less than infinite.

CESA recommends the load-shift bidding range be from <0 to negative ranges, while the load reduction (wherein a storage device is discharging) range from ≤0 to positive numbers. This way, the load-shift range is always negative, befitting the intent and logic of the load shift product in which the resource only seeks to participate during periods of negative generation.

The MEC calculation and determination of the baseline are crucial components of the load-shift product design. All parties should strive to develop a baseline that is accurate so that the design doesn't 'leave capacity on the table' so to speak. This is very important. CESA's comments here focus on the role of a baseline in determining dispatch and performance, not in 'counting' eligible capacity for monthly resource adequacy purposes.

These below comments also apply to the traditional MGO baseline, where CESA recommends consideration of changes as part of this ESDER initiative.

Historically, two factors led in part to baselines that may be overly conservative and are thus leaving 'capacity on the table'. These two factors are i) concerns of gaming the baseline and ii) concerns of inappropriate payments for resource responses (e.g. energy dispatches) that were not truly in response to market needs. CESA agrees that these are both crucial considerations and strongly recommends that any baseline solutions satisfactorily address these concerns.

For the Load shift (and MGO-adjusted) baseline, CESA believe a more accurate baseline should be explored. This more accurate, or "true average approach" baseline would be calculated based on the average energy use of the applicable period, rather than through the oddly adjusted average where certain periods are not factored in or where storage discharging activities (in the case of the load shift baseline) are excluded from baseline formulas.

CESA believes this "true average approach" is superior to other approaches for the following reasons. Again, CESA believes this approach can apply for Load-Shift baselines and for traditional demand response MGO-adjusted baselines.

First, the true-average approach serves the goal of identifying typical use and ensuring resources are not compensated for wholesale purposes for regular typical, a.k.a. regular retail operations.

Second, the true-average approach likely renders a more accurate response for the CAISO system, improving system operations and efficiency. When dispatched off of a 'true average', a resource can 'move' in accordance with the dispatch need, rather than moving *more than* the

scheduled dispatch. Imagine a load-shift resource with a true average typical use of 100 kW for the applicable period that is given a schedule to increase load by 200 kW for the period. If the baseline, due to 'conservatism' overstates this baseline to be 175 kW, the resource must then directs its storage device to increase its charging to 375 kW, rather than to 300 kW, as CESA understands it. This shows how the CAISO system sees an excessive (and uncompensated) dispatch of 75 kW. This unpaid excess compensation is unreasonable, costly, and may sew system inefficiency. The CAISO can improve this.

Third, concerns about baseline gaming are already addressed through the extensive baseline averaging approach. Additional factors such as weather, seasonal changes, and customer demand changes are unpredictable and could 'swamp' any micro-baselines approaches so the possibility of intentionally and materially gaming the baseline appear to be *de minimus*.

Fourth, the energy storage dispatch may not always be already reflected in the scheduled and cleared load. While the typical-use approach assumes that the typical use amount is appropriately factored into Day-Ahead schedules (LSE schedules plus virtual demand) or real-time forecasts (ISO forecast of ISO demand), these load schedules can be inaccurate in many intervals. It thus follows that the regular retail charging as well as the incremental energy storage charging in a load shift product may be completely unfactored into the load schedules. This is undoubtedly true on the first day of operations from a behind the meter energy storage system. Even after periods of dispatches, the timeliness and accuracy by which the effects of the retail (typical) energy storage charging are 'fed' into the load schedules remains unclear. This conclusion highlights how a 'true average' baseline is reasonable. CESA is not, at this time, recommending the removal of all baselines, though would welcome discussion of that concept at a later time.

CESA welcomes the use of additional examples to vet the pros and cons of different averages. These examples help stakeholders discuss matters collectively and can highlight useful data points.

In conclusion, CESA recommends the CAISO use a 'true average' baseline for the load shift. CESA also recommends the exploration of a true average baseline for MGO-storage discharging (and for related resources) too.

3. Other comments

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

Comments:

CESA provides three additional comments.

First, the Load shift product capacity should qualify as Flexible capacity. The CAISO ESDER initiative should cement this finding so that other related proceedings like FRACMOO and the RA proceeding can be revised to grant flex RA status to load shift resources. The load shift component of a resource functions just like the charging range of an in-front-of-the-meter energy storage resource. Both the CAISO and CPUC rules recognize that there is Flex RA value in energy storage system charging. This value should be recognized for load-shift too.

Second, CESA seeks discussion and potentially confirmation that storage system located with NEM systems can be eligible for load-shift. Imagine a NEM system with storage that is exporting during a CAISO 'oversupply' period. This resource, just like stand-alone load shift resources, can time its charging to benefit the grid if signaled. While the retail rates may provide some direction for resource behavior, the main problem that load-shift solves is to address oversupply. By promoting eligibility of all BTM storage, even if NEM PV coupled, to provide load-shift, the CAISO can get a more liquid and helpful market response. It is important to differentiate load shift from normal MGO-adjusted PDR load reductions. In the latter case, the NEM PV energy is settled via the NEM formulations, and it could be construed as unreasonable to compensate the NEM system's energy via an additional wholesale payment. In the case of load shift, by contrast, the NEM resource is encouraged to *reduce export* (which also removes energy from NEM calculations), and the storage resource is actively reducing oversupply in accordance with a grid signal. So long as this effort is marginal and supra-typical, i.e. not 'typical use', based on CESA's initial assessment, this settlement for the storage load-shift from a storage-PV coupled NEM system seems reasonable. CESA welcomes deliberations on this matter.

Third, to avoid confusion, the CAISO should clarify that load shift resources will be eligible for flexible ramping product (FRP) , energy, and day-ahead flexible reserve products (DAF). The CAISO should assess and clarify that the product is eligible for both FRP and DAF down and up, rather than just 'down' directions. As CESA understands it, there may be periods where the CAISO optimization can procure FRP and DAF up and down from load shift resources. For instance, a load shift resource could 'back down' from an energy schedule and could, in so doing, provide FRP and DAF *up*.

Finally, CESA offers brief comments on the concept of bid-cost-recovery. CESA believes load-shift resources should be eligible for bid-cost recovery. If resources are never dispatched 'out of the money', this issue may be inapplicable, but CESA raises it due to its limited understanding of PDR dispatches, particularly with two resource IDs for a single resource, as well as the (perhaps small) potential for ramp rates to create infeasible dispatches.