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 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.

A. Further NGR enhancements and functionality should be established as part of ESDER 2.

ESDER 2 contemplates two enhancements to the Non-Generator Resources (NRG) model. CESA supports these enhancements but also recommends additional enhancements.

CESA believes these additional enhancements should be pursued for several reasons. The enhancements should increase the viability and utility of the NGR model. These enhancements can also be included with presumably lower incremental investment and software development requirements. The scope of ESDER 2 may allow for these additional enhancements as some of the planned ESDER work is being addressed at the California Public Utilities Commission (CPUC).

CESA recommends two additional NGR enhancements as part of the ESDER 2. First, the CAISO should establish a 'field' in the bid template or Masterfile for NGR resources for declaring start-up costs. While NGR resources like energy storage differ from conventional resources in many ways, these resources can incur commitment costs and need an avenue to both reflect and recoup these costs, if not recovered through bids for energy and Ancillary Services. For example, energy storage commitment costs may reflect thermal management loads involved in 'readying' a battery to provide services. Sodium Sulfur, Li-Ion, and Flow batteries, for instance, typically require heating and or cooling to

[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] http://www.caiso.com/Documents/StrawProposalforEnergyStorageandDistributedEnergyResourcesStakeholderInitiativePhase2.pdf

maintain operations within the allowable operating temperature range, guaranteeing some commitment costs. Other energy storage technologies may need to prime pumps, creating commitment costs. The ability to recover costs is a necessary part of CAISO markets and the CAISO should establish this ability for resources participating in the NGR model. Without a commitment cost 'field', these resources may face discriminatory rules with the NGR model.

The second enhancement to include in the ESDER 2 NGR enhancements is the ability to include additional 'bid-stacks' based on real-time updates to the State-of-Charge (SOC). In Real-Time, an energy storage resource's SOC is determined by telemetry. Such information, however, may be unknown or uncertain when submitting Real-Time bids, typically 75 minutes prior to an operating hour. As energy storage resources at times operate economically based on energy spreads, rather than on marginal cost bids, the linkage between bids and SOC is critical to represent in the NGR model. By allowing schedulers to submit three bid-stacks, the optimization can select the most appropriate bids based exclusively on SOC. In each hour's sets of Real-Time bids, an NGR resources could represent their economic costs base on high, medium, and low SOCs. The definitions of these terms should be established in the CAISO Business Practice Manuals. CESA believes the inclusion of this functionality will better unlock the capabilities of NGRs in Real-Time to offer competitive ramping, energy, and other services.

CESA appreciates consideration of these ideas and looks forward to CAISO and stakeholder development of these ideas. Where appropriate, CESA or CESA members can present ideas at Stakeholder meetings.

B. Further review of Working Group efforts on PDR is needed.

CESA appreciates the leadership and efforts of the Working Group members to develop and assess ideas for PDR enhancements. CESA is active in both Working Groups. Several Working Group ideas appear feasible and fit with ESDER. These ideas should be further incorporated into the next revision of the Straw Proposal as more developed parts of the Straw Proposal.

PDR Regulation Energy Management (REM) capability should be authorized. The zero-net energy nature of REM seems to fit with the (presumed) limited energy resource capabilities of PDRs. Product details described in the Straw Proposal appear sufficient to further develop design enhancement. The CAISO and stakeholders should develop dispatch and settlement examples for this concept to further identify and address and complexities with the product. Through the examples, the effectiveness of a zero-energy settlement product for PDRs could be evaluated while potential jurisdictional issues could be identified and resolved. Examples should also assess settlements under Regulation Down versus Regulation Up intervals. As this model results in net-zero energy, the CAISO should establish that WDAT requirements do not apply. Details about starting and finishing (load) set-points should be identified through examples too. Potentially, PDRs should be able to direct a starting and or ending set-point, in concert with baselines and or telemetry and sub-metering measurements. Ramp rates for PDRs should also be developed, if such capability does not yet exist.

Finally, CESA supports work to assess the ESDER 1 MGO Baseline. Adjustments to this methodology to allow shorter different 'look-back periods', different requirements for the number of non-event days, and counting for event days based on a different bid level than the Net Benefits Test may all reveal how capacity for PDRs is being stranded through an overly conservative methodology. Such stranded capacity creates inefficiencies and should be avoided through less conservative rule structures.

Furthermore, the MGO Baseline was developed prior to the full consideration of Multi-Use Application issues being conducted within Track 2 of the CPUC Storage OIR. The baseline and Net Benefits Test methodology are thus temporary solutions for concerns about "overlap" and "double compensation". Resolution of these concerns within the Storage proceeding will likely have implications for the MGO Baseline and thus CESA recommends that the scope of ESDER Track 2 remain open to addressing those implications.

C. Efficiency Losses should be treated as wholesale and further station power reforms should be considered.

CESA supports the CAISO's clarifications that wholesale charging energy, including efficiency losses occur at wholesale rates for in front of the meter (IFOM) resources. This is an important step and is necessary to position all storage similarly with pumped storage facilities where energy used for pumping is treated as wholesale.

Positioning the CAISO to incorporate further changes to the treatment of auxiliary loads is an important second step. CESA understands that CPUC input will be important in these matters. The CAISO should affirm that charge and discharge netting at at-least the 5-minute resolution is allowed as well as self-supply of station load by the storage system.

CESA also believes the CAISO can do more. The basis of the current 5-minute netting remains unclear, and CESA believes clarifying treatment of the vast middle ground between the current rules and the former 30-day netting period may hold promise. Additionally, CAISO tariff rules should ensure Utility-Owned Generation (UOG) is treated equivalently from a station-power perspective. Rules for UOG resources should be included in future ESDER papers on this matter to ensure uniform treatment.

D. Removing the TAC allocation matters from ESDER 2 makes sense.

CESA supports clear groupings and structures to stakeholder processes. The TAC allocation proposal suggested by the Clean Coalition may fit better and receive more appropriate review outside of ESDER. CESA supports a separate stakeholder process for this sub-topic of the original ESDER 2 scope.