

**BEFORE THE PUBLIC UTILITIES COMMISSION OF  
THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to consider policy and implementation refinements to the Energy Storage Procurement Framework and Design Program (D.13-10-040, D.14-10-045) and related Action Plan of the California Energy Storage Roadmap.

Rulemaking 15-03-011  
(Filed March 26, 2015)

**CLEAN COALITION OPENING COMMENTS ON TRACK 2 ISSUES**

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**I. INTRODUCTION**

Pursuant to the January 5, 2016, *Assigned Commissioner and Assigned Administrative Law Judge’s Scoping Memo and Ruling Seeking Party Comments* and the January 14, 2016, *Email Ruling in R.15-05-011 Granting request for an extension of time to file comments on Track 2 issues in response to the Assigned Commissioner and Administrative Judge’s Joint Scoping Memorandum and Ruling Seeking Party Comments*, the Clean Coalition hereby submits these opening comments on Track 2 issues. The Clean Coalition appreciates this opportunity to comment on multiple-use applications within the energy storage program.

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise. The Clean Coalition drives policy innovation to remove barriers to procurement and interconnection of distributed energy resources (“DER”)—such as local renewables, advanced inverters, demand response, and energy storage—and we establish market mechanisms that realize the full potential of integrating these solutions. The Clean Coalition also collaborates with utilities and municipalities to create near-term deployment opportunities that prove the technical and financial viability of local renewables and other DER.

## II. COMMENTS

### 1. Multiple-Use Applications

- a. *What are the energy storage configurations or use-cases that currently exist, or may exist in the future, that provide multiple services at the transmission and/or distribution level (e.g., provide both retail or distribution services and participate in the CAISO wholesale market)? Which of these configurations/use-cases are most likely to occur and should be considered first? Please identify specific regulatory issues under the CPUC's jurisdiction that need to be resolved to enable these multiple-use applications. Explain the "procedural home" where the regulatory issues identified should be resolved.*

In general, the utilities should not establish contractual limits on an asset's use by other parties beyond the obligation to fulfill the services for which the utility has contracted. The Commission has clearly stated that "[t]o the extent the storage provider can sufficiently identify and quantify additional revenue streams that do not result in double-counting of revenue or conflicting use cases, the IOUs should consider those revenue streams in their evaluation of bids."<sup>1</sup> Through Decision 16-01-032, the Commission recognized that storage resources can provide a variety of functions and required the utilities to consider the aggregate value of the functions to the extent that they are not mutually exclusive.

One important configuration that the Commission should consider is storage interconnected at the distribution level in-front-of-the-meter ("IFOM") that provides ancillary services. The Clean Coalition respectfully urges the Commission to treat these storage systems as IFOM resources with specified metering. The utilities' current storage projects focus on storage systems interconnected to the distribution system behind-the-meter ("BTM"). This has resulted in several issues. First, the configuration conflicts with CAISO guidance requiring that round-trip efficiency losses be treated as wholesale losses. Because round-trip efficiency losses are charged at retail rates when interconnected BTM, the economics of projects providing wholesale services are

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<sup>1</sup> *Decision on Track 1 Issues*, D.16-01-032 at 16, Order Instituting Rulemaking to consider policy and implementation refinements to the Storage Procurement Framework and Design Program (D. 13-10-040, D. 14-10-045) and related Action Plan of the California Energy Storage Roadmap, R. 15-03-011 (Jan. 28, 2016).

significantly affected.<sup>2</sup> Second, the utilities have been treating storage as generation, which requires a Net Generation Output Meter (“NGOM”) that does not provide any credit for energy fed back to the grid. This will require a complicated and likely costly cross-settlement procedure between wholesale and retail metering. Therefore, it is difficult for storage resources to viably participate in the wholesale market unless they are owned and operated by the utilities. The Clean Coalition urges the Commission to resolve these issues in this proceeding.

*b. What cost-recovery issues arise from the identified multiple-use applications? How should the Commission address these? Are there any double-counting issues, such as double payments, overlapping value streams, or redundant compensation, and wholesale/retail energy charges that arise with multiple-use applications and that should be addressed by the Commission?*

The Clean Coalition does not have any comments on this prompt at this time but may address the issues in reply comments.

*c. Are existing interconnection requirements adequate to enable configurations/use cases involving behind-the-meter or in-front-of-the-meter energy storage to both provide retail and/or distribution services and participate in the CAISO wholesale market? If not, what is the applicable interconnection process that needs to be modified (i.e., Rule 21 or the Wholesale Distribution Access Tariff), and what specific modifications are needed to interconnect and enable multiple uses?*

Storage interconnection reforms for BTM non-exporting storage are in front of the Commission in the Rule 21 proceeding.<sup>3</sup> In addition to resolving pending issues in Rulemaking 11-09-011, the Commission should work to develop a streamlined

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<sup>2</sup> Round-trip efficiency losses are typically between 20-30% of all energy used for charging.

<sup>3</sup> See Pac. Gas & Elec. Co. et al., *Joint Motion Supporting Revisions to Streamline Rule 21 for Behind-the-Meter, Non-Exporting Storage Devices*, Order Instituting Rulemaking on the Commission’s Own Motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources, R.11-09-011 (Nov. 18, 2015); Cal. Energy Storage Alliance, *Response of the California Energy Storage Alliance to Joint Motion Supporting Revisions to Streamline Rule 21 for Behind-the-Meter, Non-Exporting Storage Devices*, Order Instituting Rulemaking on the Commission’s Own Motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources, R.11-09-011 (Dec. 3, 2015).

interconnection review process for storage systems with different operational profiles and configurations. For example, the Commission should work with parties to develop an expedited review process for exporting energy storage and wholesale participating storage. The Clean Coalition urges the Commission to review and update the fast track screens under both Rule 21 and WDAT with interested stakeholders. In the process, the Commission should seek to maintain harmonized standards across jurisdictions to the extent feasible.

- d. What jurisdictional metering and sub-metering requirements are relevant to BTM and IFOM multi-use configurations? Are existing metering and sub-metering requirements adequate to enable configurations/use cases involving BTM energy storage to both provide retail and distribution services and participate in the CAISO wholesale market? If not, what specific modifications are needed to metering and sub-metering requirements to enable multiple-use applications?*

The Clean Coalition does not have any comments on this prompt at this time but may address the issues in reply comments.

- e. Explain how dispatch coordination and prioritization should work for resources that have agreed to provide services to more than one entity (e.g. a contract to provide distribution asset deferral and resource adequacy capacity)? How should settlement be handled?*

A third-party aggregator or a Distribution Service Operator (“DSO”) should manage conflicting real-time needs or dispatches by the distribution utility and the ISO, as discussed in the White Paper circulated by the Commission in relation to the Distribution Resources Plans proceeding.<sup>4</sup> The service supplier should have its own pool of resources from which it can dispatch to meet the needs identified by the ISO. Under this approach, instead of directly controlling the resources, the ISO would purchase stand-alone services and charge Load Serving Entities for the performance required from ISO operations.

This setup works well for a number of reasons. First, ISO needs are less location specific than the needs of a DSO. Whereas a DSO would operate at or below the

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<sup>4</sup> See Lorenzo Kristov & Paul De Martini, 21<sup>st</sup> Century Electric Distribution System Operations (May 2014), available at <http://resnick.caltech.edu/docs/21st.pdf>.

substation level, the ISO operates above the substation. Therefore, the DSO would be able to utilize resources to optimize the distribution grid below the substation, and resources that were not fully utilized or that were located in other areas where the DSO is not dispatching could be utilized to meet ISO obligations per market commitments and local area dispatch signals. Second, under this scenario there would not be two competing sources buying services from one individual facility because the DSO or other aggregator would bundle services from a collection of facilities and directly manage where and when to sell them. Third, double payments should not be a concern under this scenario. The ISO would simply buy services, instead of paying for direct control of the resource. If a resource is able to meet the independent needs of both the ISO and the DSO, it may be compensated for both offerings. However, where the provision of services to meet one need has the effect of reducing a second need, the dispatch call and compensation to meet that second need is avoided.<sup>5</sup> Further, by providing for two sources of compensation, the supplier can offer the same resource at a lower price to both buyers—serving multiple value streams at lower cost. At the same time, by first meeting distribution level needs, demand for ISO capacity is generally reduced, lowering demand within the ISO market and the cost of meeting that demand.

This setup would require the prioritization of services to be determined through contracting with the ISO. For example, operational requirements should always take priority over utilizing resources for purely economic benefit. For example, energy storage should be used for voltage and frequency support, if needed, over rate arbitrage. The energy storage resource can also provide services at lower cost if its capacity is optimally utilized as an element of a portfolio rather than reserved for a low probability scenario that may be addressed by alternative contingency options.

Further, efficiency would be promoted by creating an intermediary with awareness of both distribution grid and ISO needs that is able to accomplish its objectives through both rate design and interaction with the ISO markets. If the aggregator is also the DSO, then the entity can provide pricing signals that are aligned with ISO needs. This would encourage behind-the-meter resources to operate in a way that provides services to

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<sup>5</sup> For example, in utilizing local storage to meet load on a distribution line, the DSO may also be effectively fulfilling a pending ISO dispatch to ramp up local supply at a P-node.

the ISO, reduces the need for direct ISO dispatch, and reduces the burden that the DSO or utility places on the ISO through service requirements. These actions would serve to reduce costs for all parties. Creating means for the ISO to directly dispatch resources would require more infrastructure and technical development, and the same goals could be accomplished through rate changes and pricing modifications like demand charges or time-of-use pricing.

*f. Should the Commission hold one or more joint workshop(s) with the CAISO to address any of the topics outlined above?*

The Clean Coalition urges the Commission to hold a joint workshop with CAISO to explore the DSO model described above.

### **III. CONCLUSION**

The Clean Coalition appreciates this opportunity to comment on Track 2 issues of the energy storage program.

Respectfully submitted,



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