

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

Order Instituting 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

**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION TO THE ORDER INSTITUTING RULEMAKING**

In accordance with the Order Instituting Rulemaking (“OIR”) issued on April 2, 2015 by the California Public Utilities Commission (“CPUC”), the California Independent System Operator Corporation (“CAISO”) respectfully submits these comments on the preliminary matters pertaining to the scope of this proceeding, as described in the OIR.

**COMMENTS**

The OIR reflects the CPUC’s commitment to refine the policies and programs regarding energy storage applications and procurement. The CAISO is eager to continue to work with the CPUC and California energy industry participants in this effort. As the CPUC is aware, the CAISO has already begun to address the highest priority action items outlined in the Energy Storage Roadmap.<sup>1</sup> On April 16 and 23, 2015, the CAISO publicly held education forums on energy storage and aggregation of distributed energy resources (“DER”) to clarify existing CAISO requirements, rules, and market products for these

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<sup>1</sup> [https://www.aiso.com/Documents/Advancing-MaximizingValueofEnergyStorageTechnology\\_CaliforniaRoadmap.pdf](https://www.aiso.com/Documents/Advancing-MaximizingValueofEnergyStorageTechnology_CaliforniaRoadmap.pdf).

resources to participate in CAISO markets.<sup>2</sup> Later this spring the CAISO will begin its stakeholder process to identify needs for any specific enhancements to its requirements, rules, and market products for these resources to participate in CAISO markets.

The CAISO generally supports including the matters proposed in the OIR in the scope of this proceeding, and makes the following recommendations to refine the scope.

**Issue 3: Address action plan items raised in the California Energy Storage Roadmap**

- a) *Examine and clarify opportunities for storage to defer/displace transmission and distribution upgrades*

While the CAISO supports the CPUC's efforts to encourage or facilitate the development of storage and other preferred resources in response to an identified need, the CAISO has some suggestions for the transmission aspect of this issue. Opportunities and requirements for alternative technologies to defer or displace infrastructure upgrades are situationally specific on the transmission grid. Through its annual transmission planning process, the CAISO provides information on the requirements that alternatives to transmission infrastructure would have to meet. For this reason, the CAISO and the CPUC should work together to avoid duplication or inconsistencies with the CAISO transmission planning process.

Further, when the CAISO identifies a potential opportunity for preferred resources such as storage to meet a grid need, the CAISO does not have a

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<sup>2</sup> <http://www.caiso.com/informed/Pages/MeetingsEvents/PublicForums/Default.aspx>.

mechanism to encourage those preferred resources to be developed. The CPUC may wish to explore in this OIR process the mechanisms by which the CAISO could inform the CPUC, and how the CPUC could then act on such opportunities. In addition, the CPUC and the CAISO may wish to explore other ways to encourage or facilitate the development of storage and other preferred resources in response to an identified need. For example, this OIR process could include how certificate of public convenience and necessity proceedings could address this issue.

*b) Define and develop models and rules (e.g., cost recovery, cost allocation, operations) for multiple-use applications that cross different jurisdictions*

The OIR notes that this issue was raised in the Energy Storage Roadmap, and identifies multiple-use applications that include wholesale market participation as significant. In the CAISO's April 16 and 23 public education forums on energy storage and aggregation of DER, this issue was described to include aggregated resources comprised of diverse DER, which may include energy storage, but also could include other DER types such as distributed generation ("DG") and electric vehicle ("EV") charging. Based on indications from some of the participants in the CAISO education forums, there is considerable emerging interest in developing aggregated resources comprised of non-homogenous DERs. It would therefore be preferable to address the subject of multiple-use applications more generally to apply to these other resource types as well as energy storage.

The CAISO's education forums concluded with the observation that existing rules allow limited opportunity for the kinds of multiple-use applications identified in the Energy Storage Roadmap. The CAISO is therefore preparing to start a stakeholder initiative this spring to examine possible enhancements to existing rules to enable multiple-use applications that are of interest to resource developers and other participants, including the ones specifically called out in the OIR. One of the main questions relating to multiple uses identified in the education forums was how to structure dispatch coordination and prioritization for resources that have agreed to provide services to more than one entity, such as the distribution company and the CAISO. The CAISO intends to take up this issue in an upcoming CAISO stakeholder process.

The CAISO recognizes that this issue intersects CPUC jurisdictional areas as well as wholesale market areas, and therefore our coordination and collaboration is of utmost importance. At the same time, the CAISO also believes that this issue should be addressed for diverse DER types; not just for energy storage. The CAISO therefore suggests that the OIR scope explicitly provide for coordination on this topic between CPUC staff and CAISO staff.

**Issue 4: Address emerging policy and implementation issues not covered in D.13-10-040, D.14-10-045, or the Energy Storage Roadmap**

- a) *Provide guidelines, as appropriate or necessary, to distinguish station power from wholesale charging energy taken in by distribution connected storage assets participating in the wholesale markets*

The Storage Roadmap identified rate treatment as a high priority action issue for both the CAISO and CPUC. The CAISO supports the CPUC's efforts to

examine the issue of station power. As with issue 3(b), the CAISO recognizes that this issue intersects CPUC jurisdictional areas as well as wholesale market areas, and therefore our coordination and collaboration is of utmost importance.

Although the terminology and rules regarding station power are well-defined for conventional generation, greater clarification is needed for energy storage resources. Under the CAISO tariff, station power is

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. Station Power includes the Energy associated with motoring a hydroelectric Generating Unit to keep the unit synchronized at zero real power output to provide Regulation or Spinning Reserve.<sup>3</sup>

For an energy storage facility, station power would be any energy actually consumed—either in real-time or stored for later consumption—and not energy that is used to charge the storage device for purpose of resale. Because the CAISO tariff treats Non-generator Resources (“NGRs”) as resources comparable to generators, the rules for settlement of station power are the same as for conventional generators. For traditional gas generators, it is relatively simple to distinguish what portion of station power should be treated as retail station power consumption. Because the CAISO tariff allows for simultaneous netting of consumption against output within a five-minute interval, station power for gas-

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<sup>3</sup> See Appendix A of the CAISO tariff.

fired resources is measured as the amount of consumption that exceeds output within a five-minute interval. Although NGRs are treated as generators, it may be difficult to distinguish station power consumption from charging for storage facilities unless the two activities are metered separately. As part of its new resource implementation (“NRI”) process, the ISO reviews whether new resources have station power service arrangements in place prior to commercial operation to ensure that arrangements are in place to serve station power needs.

Accordingly, the CAISO will undertake a stakeholder initiative to examine station power for energy storage and other NGR types. The CAISO recommends that CPUC staff coordinate with CAISO staff in developing the scope of the upcoming CAISO stakeholder initiative and identifying questions or issues that require CPUC evaluation and action in this proceeding.

*b) Explore use of non-utility storage assets by third parties to provide permitted services to multiple customers*

As described in the OIR, this issue appears to be focused on distribution-connected storage that may serve multiple retail customers. The CAISO’s only comment on this issue is that if any specific applications are identified that would include wholesale market participation, the CPUC should refer such applications the upcoming CAISO stakeholder initiative on energy storage and aggregation of DER, as discussed with regard to 3(b). If the purpose of this issue is to address demand side management use of storage that does not participate in the wholesale market, then the CPUC should decide this issue.

## CONCLUSION

The CAISO supports the CPUC's efforts in this proceeding and will continue to work with the CPUC and California energy market participants to procure and implement energy storage effectively. The CAISO respectfully requests that the CPUC refine the proceeding's scope consistent with the CAISO's recommendations.

Respectfully submitted,

**By: /s/ William H. Weaver**

Roger E. Collanton

General Counsel

Anthony Ivancovich

Deputy General Counsel

William H. Weaver

Counsel

Jordan Pinjuv

Counsel

California Independent System

Operator Corporation

250 Outcropping Way

Folsom, CA 95630

T – 916-608-1225

F – 916-608-7222

[bweaver@caiso.com](mailto:bweaver@caiso.com)

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