

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

Order Instituting Rulemaking to  
Consider Streamlining Interconnection of  
Distributed Energy Resources and  
Improvements to Rule 21

Rulemaking 17-07-007  
(Filed July 13, 2017)

**COMMENTS OF  
THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
ON THE FINAL REPORT OF WORKING GROUP ONE**

Pursuant to Working Group One's Final Report, the California Independent System Operator (CAISO) respectfully submits these comments on Issue 4: Telemetry.

The CAISO's principal interest in this topic is the need for more accurate short-term forecasting for distribution-connected resources (DERs) not otherwise participating in the CAISO wholesale markets (e.g., NEM resources).<sup>1</sup> Such DERs do not appear to the CAISO as generation or supply. This contrast can present unique forecasting, operational, and market challenges for the CAISO in effecting its reliability obligations as the balancing authority. Every day the CAISO must accurately predict the short-term load forecast conditions so that sufficient capacity can be committed at least cost to ensure the safe and reliable operation of the grid.

The challenge today is that most DERs "self-dispatch," altering the overall load shape and making actual load forecasting difficult. Without accurate, actual load readings that can account for the load being served by DERs, the CAISO and distribution operators have less certainty about whether sufficient resources are

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<sup>1</sup> The CAISO notes that there are already rules in place to address distribution-connected resources that participate in the CAISO wholesale markets. The CAISO's comments here are not intended to address those resources.

available and committed to serve load and maintain system stability. This is commonly known as the load masking problem. This uncertainty can lead to inefficient dispatch and potential reliability concerns. Without accurate and reliable load forecasts, the CAISO may need to commit excess resources or operational reserves from non-variable resources. As such, more accurate and detailed data will support California's carbon reduction goals.

The CAISO agrees that there is a real need for increased visibility of the actual load produced by the different technology types (such as behind the meter solar, electric vehicles, batteries, etc.) on the distribution system for reliable distribution operations. Although the CAISO does not support or oppose any specific proposal in the final report, the CAISO takes this opportunity to stress that some data is needed for some systems even below the 1 MW DER capacity threshold. Regardless of which MW threshold is ultimately selected, the CAISO believes that for short-term forecasting purposes, a reasonable data set could be developed from a sampling of 10% or 1,000 sites within each zip code, whichever is less. Otherwise, statistical sampling based on geospatial representation may be required. For DERs such as solar photovoltaic (PV), electric vehicles, and storage resources, online measurements should be recorded of the historical power measurements. From the CAISO's perspective, actual information would need to be transmitted in real time at a 5-minute level for forecasting purposes. The CAISO also requests a one-time information exchange among the CAISO, Commission, and utilities to document the orientation of solar PV panels and any known shading information. This information will greatly aid the parties in ensuring system reliability.

The CAISO believes that these recommendations will significantly enhance the reliability of the grid at significant benefit and little cost to ratepayers. The CAISO notes that without more granular and accurate data on DERs, the growth of load masking is likely to exacerbate short-term forecasting, frequency, and other reliability issues in the state. Without accurate and reliable load forecasts, the CAISO may need to commit excess resources or operational reserves from non-variable resources. As such, more accurate and detailed data will support California's carbon reduction goals.

Respectfully submitted,

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

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