

**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

**NOTICE OF EX PARTE COMMUNICATION BY  
THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

Pursuant to Article 8 of the California Public Utilities Commission (“Commission”) Rules of Practice and Procedure, the California Independent System Operator Corporation (“CAISO”) hereby files this notice of the following written *ex parte* communication. On July 21, 2015, CAISO Chief Executive Officer and President sent the attached letter to all five Commissioners and their respective Chiefs of Staff and Energy Advisors. Although the letter addressed the Commission’s long-term procurement proceeding, Docket No. R. 13-12-010, the CAISO files the instant notice because the Scoping Memo in this proceeding specifically seeks to evaluate “whether new information and/or evolving circumstances exist such that the Commission should revisit previously excluded energy storage technologies such as vehicle-grid integration and pumped hydro storage.”

To request a copy of this notice, please contact Anna Pascuzzo at (916) 351-2212.

Respectfully submitted,

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

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Dated: July 22, 2015

ATTACHMENT A



Steve Berberich  
President & Chief Executive Officer

July 21, 2015

California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, CA 94102

Commissioners,

As you know, California is experiencing unprecedented changes in how electricity is generated, delivered and consumed. As increasing amounts of renewable resources come on line, we are encountering new challenges for operating those resources most efficiently. We are already seeing certain times of day when more renewable energy is being generated than there is demand to use it. The Commission and the California ISO have both recognized that increased reliance on renewable resources requires thoughtful changes in policy and innovations in technology.

To this end, the ISO, the Commission and stakeholders have worked together within a number of forums to facilitate the changes necessary to lead the way to a reliable, efficient, low-carbon grid. This collaboration has included joint efforts, such as the Energy Storage Roadmap, and increased alignment in the ISO, Commission and Energy Commission planning and procurement processes.

In the Commission's current LTPP, the ISO has identified over-generation and ramping concerns associated with increased renewable generation. In the spring of 2015, changes to the net load curve outpaced expectations and significant renewable generation additions scheduled for 2016 and 2017 will only expedite the need for fast-ramping and flexible resources to balance the grid that also mitigate over generation conditions.

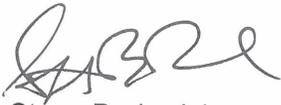
To meet these growing needs, the ISO and the Commission must be prepared to implement solutions that will allow for the reliable operation of a highly dynamic grid. Energy storage, with its unique ability to both consume excess renewable energy and to quickly inject clean energy back onto the grid to meet ramping and peak demand needs, has the potential to be a cornerstone of the new electric network.

Pumped energy storage, in particular, can be constructed at large scale, with characteristics that are necessary to meet our grid's over-generation and ramping needs. The ISO has begun a preliminary analysis of the benefits of large-scale pumped storage in regards to ramping and curtailment risk based on our 2014 LTPP modeling, and the results are promising. The ISO intends to further incorporate this initial work into its 2015-2016 transmission planning process. The ISO would be pleased to present these results in the context of the Commission's current LTPP in order to move the discussion forward.

In addition, the ISO intends to conduct further study leveraging updated LTPP and TPP standard planning assumptions and scenarios to analyze the benefits of large-scale pumped storage. The intent is to provide a solid, empirical basis to review the benefits of large-scale pumped storage to meet over-generation, ramping and other system needs in the in the 2016 LTPP. The ISO looks forward to sharing this study with the Commission and to using the results to inform potential procurement in the 2016 LTPP.

Please feel free to call me if you would like to discuss this further.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Berberich', written in a cursive style.

Steve Berberich  
President and Chief Executive Officer