

**COMMENTS OF WESTERN RESOURCE ADVOCATES,
WESTERN GRID GROUP,
AND THE NATURAL RESOURCES DEFENSE COUNCIL
REGARDING CAISO DAY-AHEAD MARKET ENHANCEMENTS
AND EXPANSION TO THE EIM –
FEBRUARY 28 ISSUE PAPER**

Western Resource Advocates, Western Grid Group, and the Natural Resources Defense Council appreciate CAISO's leadership in helping transition the West to a clean-energy future. We support CAISO's strategic vision to: (1) lead the transition to a low-carbon grid; (2) reliably manage operations during the industry's transformation; and (3) unlock regional benefits through expanded collaboration. In these comments, we specifically support CAISO's initiatives to enhance the day-ahead market to provide needed operational flexibility and to expand the day-ahead market to EIM participants to enhance reliability, reduce economic costs, and better integrate the evolving and future resource mix.

Western Resource Advocates is a non-profit conservation organization dedicated to protecting the land, air and water of the Interior West. WRA's Clean Energy Program develops and advocates policies to advance a Western electricity system that provides affordable and reliable energy, reduces economic risks, and protects the environment with expanded use of energy efficiency, renewable energy resources, and other clean energy technologies. Expanded regional coordination is a key to achieving our goals.

The mission of Western Grid Group is to develop and work to implement policies to:

- Improve the efficiency of the existing grid, through technology and market changes, to provide near-term access for clean power;
- Ensure transmission and system planning incorporates all cost-effective energy efficiency, dynamic load resources and distributed generation, and minimizes and mitigates electric sector environmental impacts; and
- Expand the grid, to access and deliver renewable energy; minimize life-cycle greenhouse gas emissions; and enhance system reliability.

The Natural Resources Defense Council combines the power of more than three million members and online activists with the expertise of some 500 lawyers, scientists and policy advocates across the globe to solve the most pressing environmental issues we face today: curbing global warming and creating the clean energy future, reviving the world's oceans, defending endangered wildlife and wild places, protecting our health by preventing pollution, ensuring safe and sufficient water, and fostering sustainable communities. NRDC staff is committed to promoting environmentally responsible renewable energy development in this country while simultaneously ensuring the protection of unique and sensitive natural resources.

Fifteen-Minute Granularity

CAISO proposes introducing fifteen-minute granularity into the Integrated Forward Market (IFM).

We support CAISO's proposal. We believe introducing fifteen-minute granularity will improve reliability, lower costs, and lower carbon emissions. Greater granularity will enhance operational reliability by reducing the level of imbalance to be managed in real-time. It will reduce the commitment of natural gas generation, thereby, lowering costs and emissions. Further, we believe greater granularity will provide an incentive for better forecasting of wind and solar generation. Finally, as technology improves to support greater computational needs, to better match supply with demand, we recommend that CAISO consider accepting bids every fifteen minutes (rather than hourly bids segmented into four fifteen-minute intervals as is currently proposed).

Combining IFM and Residual Unit Commitment (RUC) Processes

CAISO proposes replacing the two-step IFM and RUC processes with a single optimization.

We support replacing the current two-step process with a single optimization. The ability to decommit units that will not be needed in real-time is important to reduce the potential for over generation. By reducing unit commitment, the proposal has potential to reduce renewable curtailment, lower costs, decrease fuel burn, and lessen carbon emissions.

Imbalance Reserve Product

CAISO proposes developing a day-ahead upward and downward imbalance reserve product to address uncertainty between the cleared day-ahead market and real time.

We support replacing RUC awards with a day-ahead imbalance reserve product that addresses both upward and downward uncertainty. However, to gain insight into appropriate levels of imbalance reserves, we are interested in better understanding the method and data that will be used to determine the awards. We request this information be included in the April 11 Straw Proposal, and, if not already doing so, we encourage CAISO to include EIM entities in its data pool.

Advisory Role of EIM Governing Body on Day-Ahead Market Reforms

CAISO proposes that the EIM Governing Body have an "advisory" role on day-ahead market reforms.

We agree that this is appropriate given the current structure of CAISO markets. However, as part of expansion of the enhanced day-ahead market to EIM participants, we encourage CAISO to consider a stronger role for the EIM Governing Body in any changes to the day-ahead market that might occur in the future. Specifically, we envision the need for shared responsibility going

forward, and we request CAISO consider including governance as a component of its initiative to extend the day-ahead market to EIM participants.

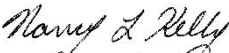
We further encourage CAISO to continue to engage EIM forums early rather than waiting for the official start of the stakeholder process related to extending the enhanced day-ahead market to EIM entities (EIM Governing Body, Body of State Regulators and Regional Issues Forum).

Other


Finally, we request that CAISO delineate a methodology that EIM entities could use to determine the benefits of participation in the enhanced day-ahead market when the day-ahead market is extended to the EIM entities.

Respectfully submitted this 22 day of March, 2018

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