

 California ISO	Market and Infrastructure Policy	Template Version:	1
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Policy Initiatives Catalog Submission Form		Date Created:	6/1/2017

California ISO Policy Initiatives Catalog Submission Form

This purpose of this form is to propose potential policy initiatives that require a stakeholder process and typically require tariff changes. Do not use this form to request or propose process improvements or administrative changes. Such requests should be made through your Customer Service Representative or Account Manager.

Date: 8/21/2017

Submitter Information

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Please provide a title for the issue.

Market Enhancements to identify and access flexible capacity

Please provide a summary description of the issue (i.e. 500 words)

Explore market enhancement in the day-head timeframe that are consistent and support a durable long-term Flexible Resource Adequacy proposal. Explore tools to understand the need for and provide appropriate market incentives for the ISO to access existing resource flexibility. Specific needs for both the short-term market and the long-term Flexible RA solutions include:

- **Additional metrics to assess the flexibility needs of the system in the day-ahead, hour-ahead and real-time timeframes.**
- **Market structure and financial incentives for flexible capacity to be set-aside in the day-ahead and longer-term time frames to meet real-time uncertainty.**
- **Market rules that allow for all qualifying loads and resources – including imports – to be eligible as a day-head capacity product in addition to bids required from resources receiving flexible resource adequacy capacity payments.**

Please provide any data/information available that would characterize the importance or magnitude of the issue.

Please see attached document



Market Enhancements to Make More Flexible Capacity Available to the ISO

Submitted to ISO Policy Initiatives Catalog Process - September 15, 2017

PURPOSE:

- ***To describe the new flexibility challenges facing California's renewable build out,***
- ***Outline the near-term need for a day-ahead capacity product that identifies resources that can be committed to a 15-minute real-time market, and***
- ***Describe the needs for a long-term Resource Adequacy solution.***

CALIFORNIA'S CHANGING SYSTEM NEEDS: California is leading the nation in renewable energy development. Solar generation is now the predominant source of renewable energy, adding to a large existing wind fleet. As a result, California is experiencing different types of uncertainty and variability on its interconnected grid. As the resources on the grid change, the resources that are needed to support grid reliability must change.

In 2014, the ISO and the Public Utilities Commission (PUC) developed a new interim category of Resource Adequacy (RA) called Flexible RA to address the new uncertainty and variability on the system. The new requirement was developed and implemented based on a forecasted three-hour net load ramp. System conditions indicate that now is the time to find the more durable approach to managing the uncertainty and variability on the system.

- The net load ramps currently occurring on the ISO system are steeper, have greater day-to-day variability, and require more within-hour flexibility than forecasted. ⁱ
- From January to April 2017, the ISO has had challenges maintaining within-hour load-resource balance and was consistently leaning on other Balancing Authority Areas within WECC during the evening ramp, exposing the limitations on the amount of available intra-hour flexibility.ⁱⁱ

LACK OF MARKET SIGNALS: Many current flexible resource providers suggest that there is sufficient flexibility available, but the current Flexible RA requirements, CAISO market design, and price signals do not ensure access to that flexibility in the proper time periods.

- Insufficient flexibility requirements for RA. The current Flexible RA qualification and deployment requirements are not specific enough to ensure that the ISO has sufficient within-hour flexibility.
- Overreliance on 5-minute market and Regulation. Without an established 15-minute standby market, the ISO relies on the 5-minute market or regulation. Although the EIM is a useful contributor, it only meets a portion of the need.
- Limited Participation from NW Resources. Current RA requirements limit the participation of NW resources because the AC intertie is limited to 400 MW of Dynamic Transfer Capability which is the required transmission product to support 5-minute dispatch.
- No incentive or ability to offer flexible capacity. The current ISO market design does not provide the ability to offer or be compensated for flexible capacity to be held for real-time. Without some form of compensation for transmission or lost opportunity, resources have a greater incentive to sell hourly energy rather than to hold their flexibility for a 15-minute sale.

MARKET ENHANCEMENTS NEEDED: The following solutions are offered for discussion as tools to understand the need for and provide appropriate market incentives for the ISO to access existing resource flexibility. Specific needs for both the short-term market and the long-term Flexible RA solutions include:

- Additional metrics to assess the flexibility needs of the system in the day-ahead, hour-ahead and real-time timeframes.
- Market structure and financial incentives for flexible capacity to be set-aside in the day-ahead and longer-term time frames to meet real-time uncertainty.
- Market rules that allow for all qualifying loads and resources – including imports – to be eligible as a day-ahead capacity product in addition to bids required from resources receiving flexible resource adequacy capacity payments.

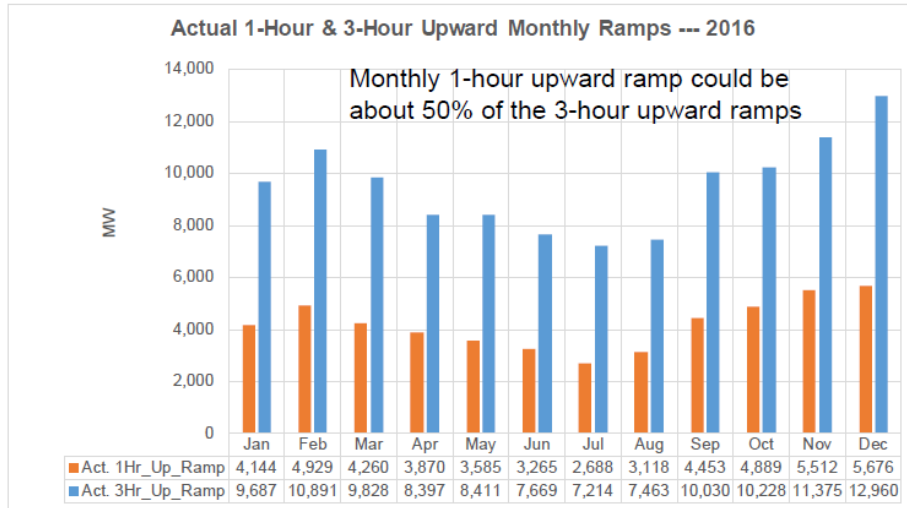
NEAR TERM: Develop a day-ahead flexible capacity market that identifies resources that can be committed to the 15-minute market if they are needed in real-time.

- Define the need: ISO identifies the amount of uncertainty between day-ahead and real-time; including the amount of within-hour flexibility needed.
- Ensure adequate liquidity: ISO assures that sufficient bids are made in the fifteen-minute energy market through purchases in the day-ahead capacity market from resources not receiving resource adequacy payments to cover the uncertainty and intra-hour flexibility. The market is open to all loads and resources, including external resources.
- Acquire what is needed: A day-ahead award is made for flexible capacity that includes a capacity payment to cover the providers transmission costs and opportunity costs for resources not receiving resource adequacy capacity payments.
- Ensure it is made available when needed: Awarded capacity must offer into the real-time market and be dispatchable in 15-minute increments.

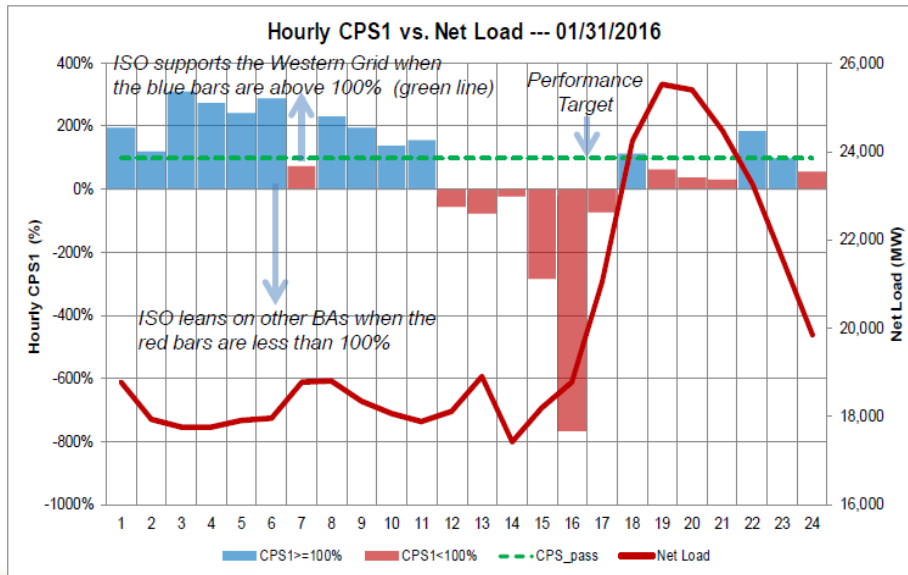
LONG TERM: Develop a long-term durable Flexible Resource Adequacy proposal

- Define the need: Define forecasted net load ramping requirements and define Flexible RA standards to require hourly shaped deliveries to meet those requirements. Forecast within-hour variability and uncertainty and demonstrate sufficient within-hour standby resources.
- Ensure adequate liquidity: Ensure any future Flexible RA or revised RA requirements allow for the expanded participation of external resources.
- Acquire what is needed: Require all load-serving entities serving retail loads under CPUC jurisdiction in the CAISO to procure the amount and type of resources required.
- Ensure it is made available when needed: Ensure procured resources are made available for planning in the day-ahead time period and available to the ISO for real-time dispatch.

3-hour flex capacity is important but is insufficient to meet all flexible ramping needs going forward, additional speed is needed



At certain times, ISO has persistent challenge balancing real-time supply and demand



ⁱ CAISO FRACMOO 2 Working Group presentation, August 2 2017. Slides 14 and 16, http://www.caiso.com/Documents/Agenda_Presentation_FlexibleResourceAdequacyCriteria_MustOfferObligations.pdf

ⁱⁱ CAISO FRACMOO 2 Working Group presentation, August 2 2017. Slides 17 – 21, http://www.caiso.com/Documents/Agenda_Presentation_FlexibleResourceAdequacyCriteria_MustOfferObligations.pdf