



California ISO

RA Enhancements Phase 2 Straw Proposal

October 12, 2021

Housekeeping reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO's permission.
- Meeting is structured to stimulate dialogue and engage different perspectives.
- Please keep comments professional and respectful.
- Please try and be brief and refrain from repeating what has already been said so that we can manage the time efficiently.

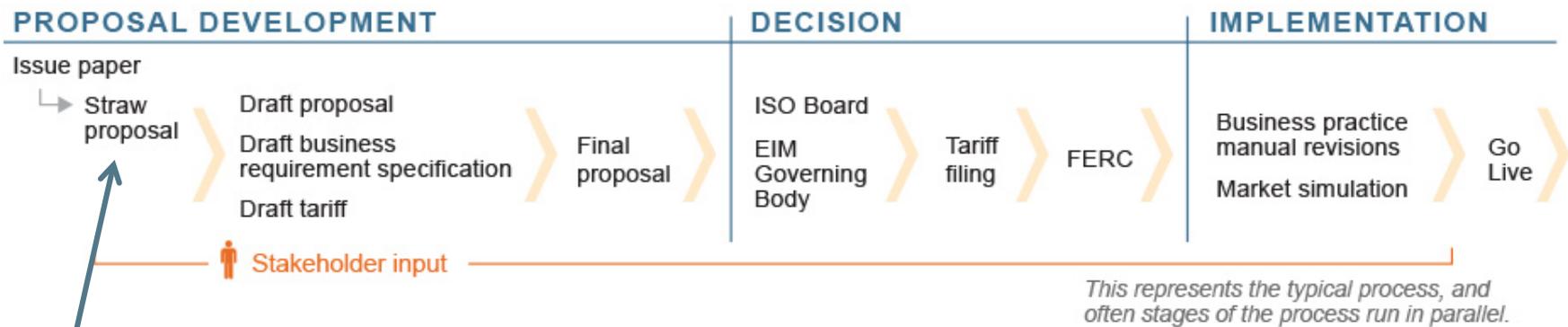
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- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon  above the chat window located on bottom right corner of the screen. **Note:** #2 only works if you dialed into the meeting.
- If you need technical assistance during the meeting, please send a chat to the event producer.
- Please remember to state your name and affiliation before making your comment.
- You may also send your question via chat to the meeting host – Isabella Nicosia.

Agenda

Time	Topic	Presenter
1:00-1:10	Welcome and Introduction	Isabella Nicosia
1:10-2:10	Must Offer and Bid Insertion	Anja Gilbert
2:10-3:10	Flexible RA	Bridget Sparks, Ph.D.
3:10-3:30	Implementation and EIM Governing Body Role	Bridget Sparks, Ph.D.
3:30-3:50	Additional Q&A	
3:50-4:00	Next Steps	Isabella Nicosia

Stakeholder Process



We are here

Resource Adequacy Enhancements Policy Development Schedule

Date	Milestone
Oct. 5, 2021	Phase 2 Straw Proposal
Oct. 12, 2021	Stakeholder Meeting on Phase 2 Straw Proposal
Oct. 26, 2021	Stakeholder Comments on Phase 2 Straw Proposal
Oct.-Dec. 2021	Develop BRS and Tariff
Nov. 2021	Phase 2 Draft Final Proposal and Draft Tariff
Nov. 2021	Stakeholder meeting and comments on Phase 2 Draft Final Proposal
Dec. 2021	Phase 2 Final Proposal
Jan. 2022	Stakeholder meeting and comments on Phase 2 Final Proposal
Feb. 2022	Present proposal on Phase 2 elements to CAISO Board

* Dates are tentative and subject to change

MUST OFFER OBLIGATIONS AND BID INSERTION

Background

As a refresher, CAISO's RA Enhancements Phase 1 Sixth Revised Straw Proposal proposed:

- 1.) A standard 24 x 7 day ahead and real time must offer obligation with bid insertion for use limited and conditionally available resources, with limited exceptions
- 2.) Setting the must offer obligation as equal to the deliverable qualifying capacity

Stakeholder Feedback: Real Time Must Offer Obligation Removal

- Some stakeholders highlighted concern that it was premature to remove the real-time must offer obligation prior to testing DAME and the imbalance reserve product.
- CAISO proposes to:
 1. Maintain the real-time must offer obligation
 2. Observe results during a transition period in which DAME is implemented and resource adequacy resources are still required to meet their real-time must offer obligations, regardless if the resource has received a reliability capacity or imbalance reserve award.

Stakeholder Feedback – Storage and Investment Tax Credit (ITC) Considerations

- Stakeholders raised concerns that the proposed must offer obligation could cause a storage resource to diminish or lose its ITC when the resource charges from the grid.
- CAISO continues to assert that availability must not be limited by contractual limitations.
- Storage resources are able to reduce charging from the grid by:
 - self-scheduling their resources in real time after receiving day-ahead awards, to align with hours when solar is online or utilizing the minimum and maximum end of hour state of charge parameters to match day-ahead awards
 - submitting economic bids, as market prices today imply that charging could happen when solar is online

Stakeholder Feedback – Must Offer Obligations Equal to Deliverable Qualifying Capacity

- In response to the scoping of the CPUC decisions related to Track 3B.2, as well as stakeholder feedback, CAISO is pausing its update to set the MOO on the amount of DQC shown for RA.
- CAISO will review this capacity counting enhancement in Phase 3 to maintain alignment with the timing and decisions in the CPUC's Track 3B.2 workshops.

Stakeholder Feedback – Redlines to the Reliability Requirements BPM

- In response to stakeholder requests, CAISO has provided a redlined version of changes to Table 7.1.1 from the BPM for Reliability Requirements.

Must Offer Obligations and Bid Insertion

Purpose: Increase the number of resources available and eligible for bid insertion (use limited resources and conditionally available resources).

- Must Offer Obligations
 - Day Ahead: 24 x 7 must offer obligation
 - Real Time: 24 x 7 must offer obligation
- Resources will receive bid insertion, unless exempt.

Must Offer Changes: Resource Specific Changes

Storage and hybrid resources:

- The DA and RT must offer obligation should reflect both the charge and discharge capabilities of the resource so the CAISO can fully utilize the resource's full range of operation.

Use-limited and conditionally available resources:

- The DA and RT must offer obligation applies to use-limited resources and conditionally available resources, unless the underlying technology has a different offer obligation.

Must Offer Changes: Resource Specific Clarifications

Eligible Intermittent Resources:

- While no change is being proposed, the CAISO clarifies that any energy above the resources' NQC cannot be used to support an export from non-RA capacity.

Demand Response:

- While no change is being proposed, the CAISO clarifies that the days and hours in which DR resources are obligated to bid into the market must be clearly communicated through LRA-approved documentation, such as contract provisions, approved program designs, or decisions.

Bid Insertion Changes: Resource Specific

- **Use-limited and conditionally available resources:**
 - The CAISO proposes to apply bid insertion to use-limited resources and conditionally available resources, unless the underlying technology is exempt.

FLEXIBLE RA

How to align Flex RA with DAME design?

- Prior straw proposals sought to align the Flex RA product with the new imbalance reserves proposed in DAME
- The flex RA requirement moves to an uncertainty product from a predictable and set ramping product
- Proposing the flex requirement be based on the largest expected imbalance reserve need plus a monthly adder
- EFC would be calculated as the largest 15 minute ramp capability of the RA resource
 - Requires flex RA resources to be 15 minute dispatchable
- Rely on system, local resources and the inerties to meet the predictable 3-hour daily net load ramp and pivot the flex RA requirement to address uncertainty needs

Stakeholder Feedback on 3rd Revised Straw Proposal

- While many stakeholders supported the CAISO's efforts to simplify Flex RA, there were diverging perspectives on how this should be accomplished
- SDG&E and CESA commented that they did not think the CAISO should get rid of the three hour net load ramping requirements, and that the CAISO should get more experience with imbalance reserves before modifying the Flex RA program to align with this new product
- CPUC-Energy Division and SCE, wanted more data on what the new Flex RA requirements and effective flexible capacity (EFC) values of the existing RA fleet would look like under the CAISO's proposal

Stakeholder Feedback cont.

- CalCCA and Calpine, generally supported the proposal to re-align Flex RA with imbalance reserves, but questioned whether Flex RA was even necessary and that the CAISO should consider getting rid of the Flex RA program entirely, especially if the requirements were non-binding
- Other stakeholders had specific questions and comments on various details of the proposal, such as the specific must offer obligation, resource characteristics that would make them eligible or ineligible to provide Flex RA capacity, and upfront showing requirements

Response to Stakeholder Feedback

- Given this mixed stakeholder feedback, and additional concerns raised internally, the CAISO has decided to adopt a staged approach to modifying the Flex RA Program
- This staged approach will allow the CAISO to:
 - meet the immediate need to develop complementary RA program requirements to align with DAME
 - additional time to gain operational experience with the new imbalance reserve product
 - retain the three hour net load ramp requirements of the existing Flex RA program to allow time for more analysis on how well DAME is scheduling resources to meet the three hour net load ramp

Flex RA Staged Approach

- **Stage 1: RA Y 2023** (implemented in step with DAME)
 - Flex RA Program would remain unchanged
 - CAISO is not proposing any modifications to the Flex RA study, requirements, EFC methodologies, etc. at this time
 - Modify the Must Offer Obligations to ensure sufficient bids for Imbalance Reserves
 - Modify Must Offer Obligations to require all imbalance reserve eligible RA resources (whether they are shown as flex, system or local) to economically bid for energy, AS, and submit \$0 bids for imbalance reserves
 - Resources would still be able to self schedule energy awards in real time, but would be obligated to economically bid in any imbalance awards
 - Imbalance reserve obligation will be subject to RAAIM

Seeking Stakeholder input on modifications to the Must Offer Obligation to align with Imbalance Reserves

- CAISO recognizes that changes to the must offer obligation to align with imbalance reserves may not be appropriate for all resources types eligible to provide imbalance reserves
- CAISO seeks stakeholder feedback on if we need to consider exemptions to the new economic bidding requirements
 - For instance, CAISO has heard from storage resources that the real-time market may make it difficult to manage their resource's cycling costs, and subjecting them to economic bidding day-ahead could exacerbate these, so the CAISO may consider delaying modification to the Storage MOO to provide imbalance reserves until policies developed under the Energy Storage Enhancements initiative are implemented

Flex RA Staged Approach- Preview

- **Stage 2: RA Y 2023-2024**
 - The purpose of stage 2 is to allow the CAISO time to gain operational experience with imbalance reserves and additional modifications to the day-ahead Market processes.
 - For RA year 2023, the CAISO will collect data on the performance of imbalance reserves under a variety of grid conditions.
 - The CAISO will also evaluate how well the day-ahead market optimizes the resource fleet to meet the predictable ramping needs of the system, including the morning and evening net load ramps.

Flex RA Staged Approach- Preview

- **Stage 2: RA Y 2023-2024**
- Likely starting in Q4 of 2023, the CAISO will conduct a stakeholder process to share these findings with the broader stakeholder community in order to determine:
 - whether a separate flex RA program and requirement is necessary to cover the 3-hour net load ramping requirement, and whether there are additional enhancements needed to the existing Flex RA program, such as EFC methodologies or the study methodology
 - whether a separate flex RA requirement is necessary to get sufficient imbalance reserve bids, such that the flex RA program should be redesigned to more explicitly align with the imbalance reserve product
 - whether there are additional operational challenges, not solved by DAME, that may require new RA requirements to help address or align with any additional market products or changes that result from this analysis

Flex RA Staged Approach- Preview

- **Stage 3:** RA Y 2025 or Y 2026
 - Implement or sunset the redesigned Flex RA program, in coordination with the CPUC
 - Depending on the implementation schedule for DAME, implementation burden of new Flex RA program, or speed of the stakeholder process conducted in Stage 2, Stage 3 may not go into affect until RA Y 2025 or 2026

IMPLEMENTATION SCHEDULE

Implementation Schedule

Phase One: (Completed)

- Planned outage process enhancements – phase 1
- Local studies with availability limited resources CPM clarifications (Effective RA Year 2022)
- Operationalizing storage

Phase Two: (Fall 2022 for RA year 2023)

- Must offer obligations and bid insertion rules
- Flexible RA- stage 1 (implemented in step w/DAME)

EIM GOVERNING BODY ROLE

EIM Governing Body will have an advisory role on certain elements

- “EIM Governing Body may provide advisory input over proposals to change or establish tariff rules that would apply to the real-time market but are not within the scope of joint authority” Charter for EIM Governance § 2.2.1
- CAISO staff believes that the EIM Governing Body would have an advisory role with respect to the following proposed changes:
 - Setting the resource adequacy must offer obligation for a storage resource to its full charge and discharge capability; and
 - Inserting bids for resource adequacy use-limited resources and conditionally available resources.
- These elements apply to the real-time market, the EIM Governing Body has the option of providing advisory input to the Board about those changes

Elements that fall outside the EIM Governing Body advisory role

- All other elements would fall outside the EIM Governing Body's advisory role, which includes:
 - proposed rules about use-limited resources that apply only to the day-ahead market
 - some additional policies may not require any tariff modification and thus would not require Board approval:
 - a) use-limited resources should have the standard RA obligation, and submit outage tickets to show otherwise,
 - b) RA resources must be available in real-time for exceptional dispatch, and
 - c) that resource adequacy intermittent resources may not support certain exports.

NEXT STEPS

Comments

- Stakeholders are asked to submit written comments by October 26, 2021 through the commenting tool.
- A comment template will be posted on the CAISO's initiative webpage here:
<http://www.aiso.com/informed/Pages/StakeholderProcesses/ResourceAdequacyEnhancements.aspx>

ENERGY matters

The California ISO's blog highlights its most recent news releases, and includes information about ISO issues, reports, and initiatives.



- *Energy Matters* blog provides timely insights into ISO grid and market operations as well as other industry-related news

<http://www.caiso.com/about/Pages/Blog/default.aspx>.

Click image below to read a recent article featured in the blog:



October 4, 2021
Markets

Developing an Extended Day-Ahead Market framework

By Stacey Crowley, ISO Vice President, External Affairs

The agenda for our upcoming Extended Day-Ahead Market (EDAM) Forum is set and I could not be more excited about the important conversation that will re-launch the public discussion to make EDAM a reality.

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EXTENDED DAY-AHEAD MARKET FORUM REGISTRATION

October 13, 2021 • 8:30 a.m. - 11:30 a.m.
Free Virtual Webinar

- **Objective:** Foster a regional discussion driven by the transformational changes and opportunities developing in the west. The forum discussion will focus on how the value of optimization and coordination of grid resources can be unlocked by expanding the ISO day-ahead market to entities within the Western interconnection.
- This forum will include discussion with industry leaders, including utility representatives, policymakers, and stakeholders across the west who will share their perspectives on key concepts and principles critical to the development of an extended day-ahead market framework.
- Visit *Extended Day-Ahead Market Forum* webpage on ISO's website [here](#) to access registration link, agenda and other event details. Registration is requested by October 12, 2021.
- Questions? Send to ISOSTakeholderAffairs@caiso.com