



California ISO

# EIM Resource Sufficiency Evaluation Enhancements

## Straw Proposal

Market Design Policy

August 23, 2021

# Agenda

Topic	Presenter
Welcome and stakeholder process	Kristina Osborne
Stakeholder Comments and Changes to the Proposal	Brittany Dean
Proposal	Danny Johnson
EIM Classification and Next Steps	Kristina Osborne

# Stakeholder Process

## PROPOSAL DEVELOPMENT

Issue paper and working group

↳ Straw proposal

Draft final proposal

Draft business requirement specification

Draft tariff and business practice manual revisions

Final proposal

## DECISION

ISO Board

EIM Governing Body

Tariff filing

FERC

## IMPLEMENTATION

Business practice manual

Training

Market simulation

Go Live



Stakeholder input

We are here

*This represents the typical process, and often stages of the process run in parallel.*

# STAKEHOLDER COMMENTS AND CHANGES TO THE PROPOSAL

## After feedback from stakeholders the CAISO proposes the following principles for the RSE

Leaning is participation in the EIM without sufficient capacity and ramping capability to meet expected load

The resource sufficiency evaluation should **accurately and transparently** measure the capacity and ramping capability of a balancing authority area

The consequences of resource sufficiency evaluation failures should not cause operational or reliability issues

The resource sufficiency evaluation does not dictate resource adequacy or integrated resource plans in individual balancing authority areas

Generally stakeholders supported first focusing on making design changes to the RSE before discussing potential consequences of test failures

- Some stakeholders raised concerns regarding whether financial consequence were appropriate all together given the voluntary nature of the EIM
- CAISO agrees with stakeholders and proposes to defer additional policy development on this topic to a second phase of this initiative
  - Phase 2 will review the performance of RSE and then determine appropriate test failure consequences

## Stakeholders expressed a need for greater transparency in the RSE test results

- CAISO proposes to provide each BAA with more granular RSE input data
- Additionally, to provide increased assurance that ongoing analysis of RSE performance is objective, the CAISO proposes the DMM assumes the primary role of analyzing and reporting on general RSE performance

# Consideration of intertemporal constraints in capacity test

- Generally, stakeholders supported adding intertemporal constraints to ensure the supply that is tested is truly available for dispatch by the real-time market
  - Stakeholders differed on the maximum start-up time of offline resources the RSE should consider
  - Two stakeholders disagreed with enhancement on the following grounds:
    - Flex ramping test already considers a resource's availability
    - Would make the test more complicated and less transparent
- While aware of the additional complexity, CAISO agrees with the majority of stakeholders and proposes a method to consider resources' start-up times in determining whether they are available



# Consideration of reliability of CAISO import schedules in the capacity test

- Stakeholders believe speculative import awards cleared by the CAISO market could be incorrectly credited as available capacity to CAISO in RSE
  - This may lead to over-representation of available import supply in the hour under evaluation
- CAISO agrees with stakeholders and proposes to only count imports as available capacity, if there is a reasonable assurance of delivery

# Stakeholders believe the CAISO balancing test should be applied to the CAISO

- The test is intended to prevent potential strategic submission of under or over-scheduled supply and demand schedules, to game differences in real-time market imbalance energy prices
  - The CAISO does not submit base schedules to the real-time market
- The CAISO disagrees with stakeholders, but believes the test can be enhanced to ensure more equitable revenue allocations

# Consideration of operator load adjustments in addition to the demand forecast in the RSE

- Generally stakeholders expressed this practice under represents the CAISO's actual load need and allows the CAISO to inappropriately pass RSE
  - CAISO acknowledges this issue, but believes the RSE is not the appropriate venue to address these concerns
- A few stakeholders sought additional clarity on the definition of leaning during emergency events
  - CAISO proposes to limit BAA's incremental transfers, when a emergency energy alert is in place

# Unanimous stakeholder support of incorporating EIM entities' demand response programs in the RSE

- EIM entities are not able to appropriately account for demand response events in their base schedules, which in turn doesn't accurately reflect their system load reduction
  - Proposes to allow demand response programs to be represented in the base scheduling process for the purpose of participating in the EIM

# PROPOSAL

# Purpose and scope of initiative

## Phase 1

### **Accuracy Improvements**

- Intertemporal constraints
- Reliability of interchange schedules
- Inclusion of demand response
- Flexible ramping sufficiency improvements
- Application of balancing test
- Emergency operator actions
- Data transparency and availability

## Phase 2

### **Consequence Enhancements**

- Consideration of financial consequences for test failure
- Consideration of additional physical consequences to address system leanings

### **Accuracy Improvements**

- Consideration of operator load adjustments

The CAISO proposes to have the DMM assume all reporting responsibilities relating to EIM RSE performance

Proposal: CAISO will halt its regular reporting on RSE performance and instead will support the DMM in obtaining any data they need to assume all reporting duties. This includes additional metrics on RSE performance as well as quarterly reports at the EIM governing body meetings

- DMM already does significant reporting on RSE performance as part of their duties as the market monitor
- Removes the CAISO from its oversight/reporting role
- The CAISO will also work to automate agreed upon metrics that allow EIM entities to assess the accuracy of the RSE

## Performance reporting metrics for all EIM entities that are under consideration for automation:

- Unloaded capacity versus EIM transfers during tight system conditions
- Capacity considered as available in the RSE versus what is available in real-time
- Renewable forecast used in the RSE versus renewable forecast used in real-time pre-dispatch
- Load forecast used in the RSE versus load forecast used in real-time dispatch



The CAISO proposes to provide EIM entities additional data transparency to enhance their ability to engage with the RSE

Proposal: The CAISO will provide detailed information on advisory and binding RSE results through CAISO Market Results Interface (CMRI) for both the capacity and ramp sufficiency tests

- Detailed results will increase EIM entities understanding of how their resource fleet is positioned and is being evaluated by the RSE

# CAISO proposes to provide each BAA their detailed RSE advisory and binding results for their capacity and flexible ramp sufficiency tests

- Enables EIM BAA's to spot check their own RSE performance and validate how their inputs are being consumed by the tests
- BAA specific data to be provided through CMRI for each hour:
  - Trade Date
  - Resource's Master File ID
  - MW quantity of capacity available
  - MW ramping capacity
  - Ramping type
  - Test time
  - Load forecast
  - Export Quantity
  - Uncertainty Requirement
  - Diversity benefit

## The application of uncertainty within the RSE

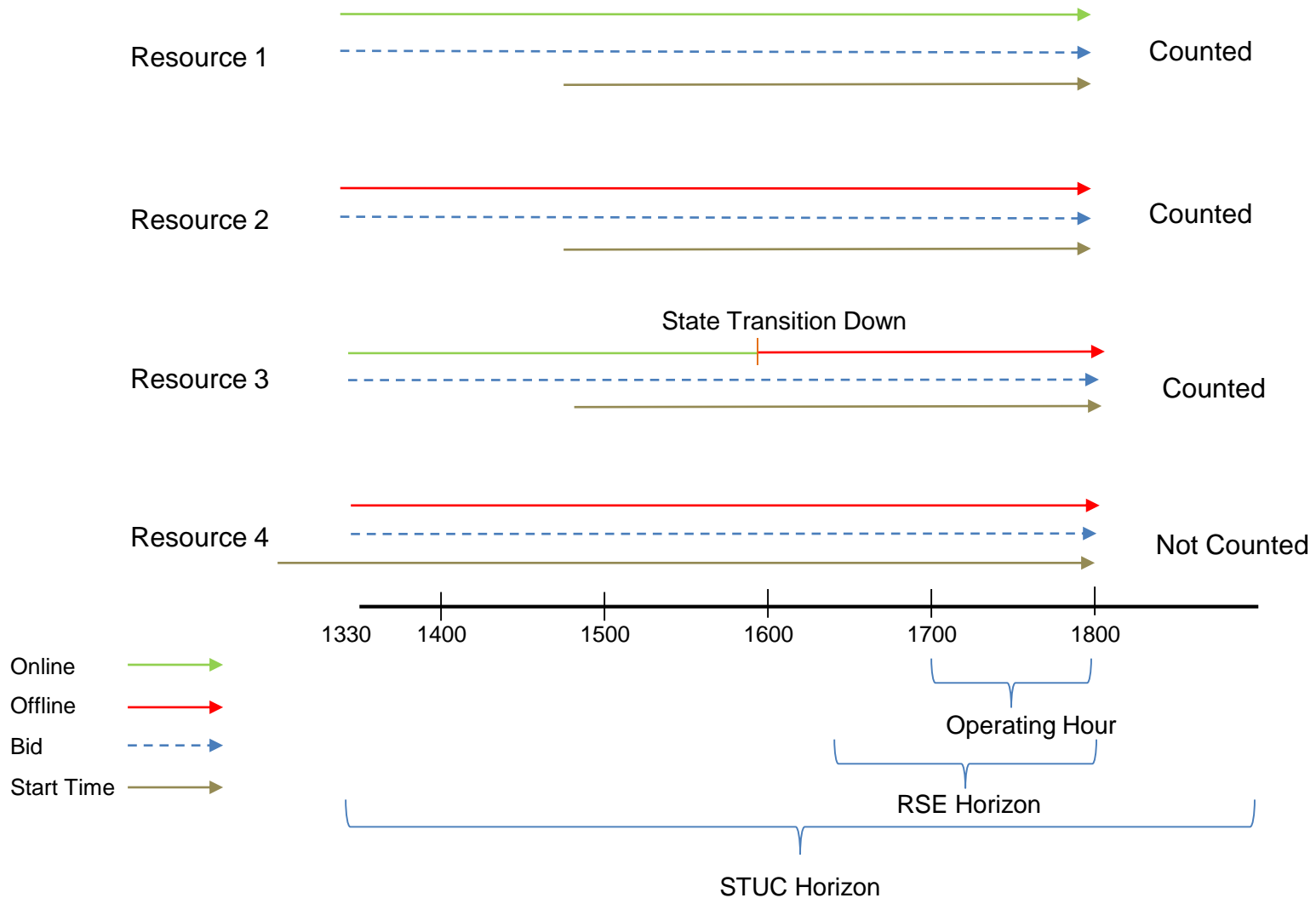
- The CAISO plans to report on how the addition of the uncertainty requirement, as specified in the *market enhancements for summer 2021* initiative, is impacting the capacity test at an upcoming MSC meeting
- Any metrics or additional inputs relating to the histogram calculation are outside the scope of this initiative as the quantile regression methodology implementation is prior to phase 1 of this initiative
- CAISO requests feedback on if the largest 2.5% of under delivery for the historic intertie deviation calculation is appropriate in light of the ability to exclude outlier data

The CAISO proposes to only credit capacity that is available to the EIM for dispatch in the real-time horizon

Proposal: Credit capacity that is online in the hour under evaluation as well as capacity that was made available to the EIM through the STUC horizon that ends on the hour under evaluation

- Proposal achieves the objective of limiting the crediting of offline capacity that resulted in the RSE over crediting capacity available in real time
- Credits capacity that was made available to start-up, but was not utilized due to economic decisions
- Credits capacity that was online but is offline during the hour under evaluation due to economic decisions

# The following example illustrates how the CAISO proposes to credit capacity utilizing the STUC horizon



The proposal to consider the STUC horizon in the RSE achieves the following objectives:

- Limits capacity crediting to what was made available to the real-time market
- Consideration of previous economic decisions made by the EIM will limit the incentive to base schedule resources near minimum load, or to not follow EIM commitment decisions for purposes of passing the RSE in future intervals

The CAISO proposes to allow demand response programs that do not qualify as a resource to participate through forecast adjustments

Proposal: Allow demand response program's expected load reduction to be accounted for by demand forecast adjustments

- Adjustments will be made at CLAP using load distribution factors provided by the EIM entity
- Adjustments will be accounted for in load base schedule calculation
- Auto application of over/under scheduling test
  - Is the 5% under scheduling trigger and the 150% of LMP penalty still the correct thresholds to prevent misuse?

The CAISO proposes to limit interchange schedules it will count in the RSE to those it believes will be reliably delivered

Proposal: Reduce import schedules considered by the RSE that do not have an e-Tag transmission profile 40-minutes prior to the hour

- The positive affirmation of schedule award, and submission e-Tag transmission profile show an intent to deliver on the import schedule
- Large under-delivery penalties (greater of 75% of FMM or RTD) LMP provide further incentive for energy to be delivered



The CAISO proposes to exclude EIM participants that are not subject to the balancing and subsequent over/under scheduling tests from revenue allocations

Proposal: Continue to not apply the balancing test to any entity that does not utilize the base scheduling process. Remove said entities from penalty revenue allocation resulting from test failure

- The CAISO is differently situation on how it participates in the EIM
  - Does not possess same incentive to strategically base schedule
  - Settlement for CAISO is on day-ahead awards; convergence bidding already drives schedule alignment
- For equitability, entities who are not exposed to the tests should not derive revenue from other entities who fail the test

The CAISO does not believe that the RSE Enhancements initiative is the appropriate place to address systemic load adjustments

Proposal: If necessary, address in phase 2 of initiative after FRP refinements has been implemented (Spring 2022)

- A well designed RSE should test for a BAA's ability to meet their forecasted demand; not forecasted demand + out of market actions
- CAISO is already addressing the driver of systemic load conformance in the real-time market
- The addition of uncertainty should account for some drivers of load forecast adjustment
- Load adjustment drives additional imports, which is supply available to the EIM; similar to EIM entities ability to make bilateral transactions

## The CAISO proposes to refine the flexible ramp sufficiency test to account for market schedule relaxation

Proposal: Include the power balance constraint relaxation, excluding load conformance, as an additional requirement to ramp in the flexible ramp sufficiency test

- Ensures ramping sufficiency test is testing the actual ramping capability needed for the next hour
- Eliminates anomalous results such as a failure of the capacity test and a passing of the ramping sufficiency test

The CAISO proposes to limit additional EIM participation when a BAA is in an energy emergency and utilizing firm load as reserves

Proposal: Limit incremental EIM transfers while a BAA is utilizing firm load as reserves

- The CAISO agrees with the stakeholders that the need to utilize firm load as reserves is an indication of resource insufficiency
- Plan to revisit how this will interact with enhanced consequences during second phase of the initiative

## The CAISO proposes the scope for phase 2 to include:

- A holistic consideration of consequences for RSE failures, including both appropriate physical and financial consequences
- Consideration of load forecast adjustments as an adder to the RSE requirements to the extent other mechanisms designed to address underlying causes are not sufficient
- Tentatively begin during the Fall of 2022
  - Allows for accuracy enhancements to be in place for summer of 2022; providing all EIM entities an opportunity to review how the test is performing and how potential consequences may impact their BAA

# NEXT STEPS

## EIM Decisional Classification

- The CAISO proposes that the EIM Governing Body have **primary authority** in approval of the EIM Resource Sufficiency Evaluation Enhancements initiative (E1).
- Stakeholders are encouraged to submit feedback on the EIM classification in written comments.

# Schedule

Date	Milestone
Aug 16, 2021	Straw Proposal posted
Aug 23, 2021	Straw Proposal Stakeholder Call
Sept 8, 2021	Straw Proposal Comments Due
Oct 6, 2021	Draft Final Proposal Posted
Oct 11, 2021	Draft Final Proposal Stakeholder Call
Oct 22, 2021	Draft Final Proposal Comments due
Nov 10, 2021	Final Proposal Posted, Draft BRS, and Draft Tariff Language
Nov 16, 2021	Final Proposal Stakeholder Call
Nov 23 2021	Final Proposal Stakeholder Comments Due
December 6, 2021	EIM GB Meeting
December 15, 2021	BOG Meeting

Please submit written comments on the straw proposal using the comments template linked on the initiative webpage by close of business September 8, 2021. <https://stakeholdercenter.caiso.com/StakeholderInitiatives/EIM-resource-sufficiency-evaluation-enhancements>