



California ISO

Extended Day Ahead Market  
Working Group 1 Weekly Report

Supply Commitment and Resource Sufficiency  
Week 3 Report  
1/17/22 – 1/21/22

## Progress Tracker

Topic	Schedule
<b>Core Design Decision</b>	
Resources qualifying	Discussed 1/12,19,21; in progress
Expected granularity and detail	Discussed 1/10,12,19,21; in progress
Ancillary Services requirement	Discussed 1/12; in progress
<b>Transfer Reliability</b>	
Reliability and confidence in EDAM transfers	
<b>RSE Advisory Showing</b>	
Characteristics of 45 day ahead advisory showing	Discussed 1/5&10; on hold
<b>RSE Timing</b>	
Timing of conducting the EDAM RSE	Discussed 1/10&12; in progress
<b>EDAM RSE Components</b>	
Capacity Test	Reviewed concepts 1/12
Ramp Capability Test	Reviewed concepts 1/12
Test Constraints	
Inputs	
<b>EDAM RSE</b>	
Resource Counting Rules	Discussed 1/12,19,21; in progress
Failure Consequences	
EDAM to EIM RSE	
<b>Interaction with Western RA Programs and Reserve Sharing Groups</b>	
Reserve Sharing	
RA Programs	

## Weekly Discussion

January 19

**Scope Items Discussed:** Resource Sufficiency Evaluation

**Presenters:** Jeff Spires – Powerex Corp

### Discussion

After opening the meeting with a review of the agenda, Jeff Spires, representing Powerex Corp was introduced to present the EIM Entities Presentation on EDAM regarding the Resource Sufficiency Design previously presented on February 11, 2020. Jeff reviewed the presentation background as representing the views of the diverse group of EIM entities as of the time of the presentation approximately two years ago. Jeff covered the objectives and principles through slide 9 of the presentation including topics on the opportunity EDAM presents for regional benefits, the core objectives of resource sufficiency, and an appropriate resource sufficiency standard; then, Jeff turned to the stakeholders for questions. The definition of leaning in the market, defining uncertainty and prioritization of imports topics were discussed along with the question of whether resource sufficiency would require procurement beyond existing resource adequacy or planning programs. Responses included the notion that resource sufficiency is fundamental to ensure the market will have capacity and energy to meet reliability, and an acknowledgement that while resource sufficiency will not alter resource adequacy or planning programs, additional procurement may be required to meet the resource sufficiency evaluation. There were comments regarding a need for process related to instances of failure including capability of resolving deficiencies, and that these are related to the failure consequences topic. There were also several comments and questions regarding the definition and application of a diversity benefit and the need to require reliable transfers to avoid leaning.

Jeff continued with the EIM Entity Presentation on EDAM, Resource Sufficiency Design to cover an illustrative day ahead timeline and proposed test structure slides and then transitioned to discussion on these topics. The question of whether the test should be peak versus hourly was presented to stakeholders and responses generally indicated that a 24 hour test is necessary. Additional comments included: an importance for entities to be resource sufficient entering the day, an importance to incorporate diversity benefit providing the market is sufficient, the process should not interfere with state programs and still require all entities are resource sufficient, and to find a balance between simplicity versus accuracy tradeoffs.

Jeff then continued the presentation with a single hour example, a 24-hour example, proposed test structure, and components capacity requirements topics, then discussion continued around the question of forecast options. Several indicated support for a desire to use the best and most accurate forecast and an option to use an alternate forecast to the CAISO default such as the entities own forecast. In terms of the forecast details, it should be hourly and include load forecast plus uncertainty. While there was some discussion regarding the composition of uncertainty, there did not seem to be a clear consensus. In addition, there was a question regarding whether to include reserves and the need to be part of the uncertainty component.

The EIM Entity presentation continued on the RS Flexibility Requirements, Calculating RS Requirements, and RS Qualifying Supply slides to close out the session.

**Conclusion:**

The EIM Entity presentation generated good discussion associated with the resource sufficiency requirements and some of the details including granularity and forecast. Regarding the principles of resource sufficiency, there was agreement that while resource sufficiency should not alter existing resource adequacy or planning programs, resource sufficiency may require additional resource procurement and may be related to the consequences for failures. The question regarding the granularity of the resource sufficiency appeared to gain an agreement that a 24-hour test is the best approach. With regard to the forecast, stakeholders seemed to agree that the most accurate forecast should be used and entities desire an option to use their own forecast in the case they can provide a more accurate forecast.

## January 21

Scope Items Discussed: Resource Sufficiency Evaluation: Qualification and Counting

Presenters:

### **Discussion:**

After the initial meeting logistics and agenda review, Mark Rothleder, CAISO Senior Vice President and Chief Operating Officer, made opening remarks to thank stakeholders for their participation and to express that the CAISO is committed to a strong common resource sufficiency evaluation applicable uniformly to all participating entities with appropriate consequences for failures and to creating a program that will solve some of the issues in the market today. The meeting then began with a review of points the work group seems to have reached common areas of agreement: 1) the resource sufficiency evaluation will be an hourly evaluation of the full 24 hour period; 2) the resource sufficiency evaluation will be use net hourly demand, reserves and uncertainty with details to be vetted further; 3) forecast options should include using an entities own forecast; and 4) the advisory screen should include an option to execute an on-demand advisory screen up to 0900 based on latest available data. While several stakeholders made comments indicating agreement with these, there were questions and confusion regarding the “net hourly demand” component of item 2 and this will be corrected to “forecast demand” which was the intent and better reflects the discussion in previous meetings. There were a few supporting comments with suggestions to work on some of the details and commitment to work on these details in future meetings. The meeting then transitioned to resource qualification and counting rules beginning with hydro resources.

The discussion of hydro qualification and counting using example of 25 MW hydro resource with a 200 MWh daily energy limit. An option was presented to assume a profile and limit using a peak shaving energy limit to distribute the energy to the peak periods of the day. Then a suggestion to use a bid range capacity test or an assumption the capacity is available all hours did not seem to garner much support. An option in which the entity provides the profile seems to gain the most alignment. Further discussion on treatment of reserves, resource adequacy counting, bids, details of the profile and non-dispatchable resources garnered a suggestion and commitment to develop specific examples to help answer these questions. A question regarding whether SCs could under represent capability was answered with statement that bidding is voluntary. The profile submitted was confirmed not to represent a self-commitment in the market. The discussion transitioned to energy storage resources.

The energy storage qualification example included a 50 MW battery with a 200 MWh maximum storage capability. A question regarding bids and alignment with the profile gained response that a simple validation could be included with checks for the energy profile, bids and energy limits including SOC. There was a question regarding the battery energy profile and how to represent the charge component, followed by additional questions and all these were met with a commitment to consider these questions and provide specific examples in a presentation for a future meeting, then the discussion moved to variable energy resources.

The variable energy resources slide included examples for solar and wind including a 100 MW solar resource and a 50 MW wind resource and each showing an output profile. The concept that IFM principle of using the lower of the bid quantity or day ahead forecast quantity is the expected treatment

in the market, it would be reasonable to use this in the resource sufficiency evaluation. Question regarding the potential for resource to produce more was responded with statement that virtual bids can be submitted higher than the forecast. There were a few comments regarding the day ahead forecast and uncertainty. A response stated that the assumption using DAME as baseline would include imbalance reserves to cover uncertainty. Similar physical perspective concepts discussed for solar apply equally to wind. A question regarding participating and non-participating resources was responded with statement that participating is represented by submission of bids, then the discussion moved to MSG resources.

The example of an MSG resource was a 300 MW gas resource with 3 configurations was described; however, there was no time remaining for discussion, so this will continue at the next meeting. A question raised in the chat asked if the CAISO would provide an option to supply a VER forecast or will this be a BAA responsibility only? The response is the CAISO would like to see stakeholder feedback on this question.

**Conclusion:**

The work group has reached common areas of agreement as follows: 1) the resource sufficiency evaluation will be an hourly evaluation of the full 24 hour period; 2) the resource sufficiency evaluation will be use forecast demand, reserves and uncertainty with details to be vetted further; 3) forecast options should include using an entities own forecast; and 4) the advisory screen should include an option to execute an on-demand advisory screen up to 0900 based on latest available data. Discussions on the resource qualifications for hydro, energy storage and variable energy resources progressed during the meeting and will continue in future meetings with more detailed specific examples to answer questions and comments during today's meeting. The MSG, 3<sup>rd</sup> party non-contracted supply and demand response discussions will be discussed in the next meeting.