



EIM Body of State Regulators Monthly Update Call

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Alaine Ginocchio
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Teleconference
October 8, 2021

Agenda

- Welcome
Commissioner Letha Tawney, BOSR Chair
- EIM Resource Sufficiency Evaluation: Capacity Test Proposal
Woori Lee, Market Analyst, Western Interstate Energy Board (WIEB)
- Next Steps
Alaine Ginocchio, Program Manager, Wholesale Electricity Markets, WIEB

Welcome & Announcements

- BOSR Budget
 - Email sent September 29
 - Vote by close of business today
- BOSR Leadership Election
 - Email sent September 29
 - Vote by close of business today
- Public Power Liaisons

Agenda

- **What is the EIM Resource Sufficiency Evaluation?**
 - *EIM RSE Overview*
 - *EIM RSE Enhancements initiative*
- **What is the Bid Range Capacity Test?**
 - *Bid Range Capacity Test Overview*
 - *What changes are discussed to be made?*
 - *What is the impact of the change?*
- **Next Steps**

EIM RSE Introduction

EIM RSE Overview

- EIM RSE determines whether each EIM BA has procured, prior to each operating hour, **sufficient resources and flexibility** to serve their load

In the EIM,
forward resource adequacy requirements
or **obligations** for bids
do not exist!

Goal

- ✓ Ensure each EIM entity can meet their demand with their own net-supply
 - ✓ Prevent BAs from leaning on each other in real-time via the EIM
- ➔ Maintain Reliability in the region

Components

- There are 4 tests in the EIM RSE

1. Transmission Feasibility Test

- Test whether the base schedules result in transmission constraint violation

2. Balancing Test

- Evaluates how well the EIM BA scheduled to meet the EIM BA load forecast

3. Bid Range Capacity Test **Today's focus**

Evaluates whether the EIM BA has sufficient bid range capacity

4. Flexible Ramp Sufficiency Test

Ensures that the EIM BA has sufficient ramping flexibility over an hour to meet the forecasted change in demand as well as uncertainty



Not Binding
Advisory
Not Applied to CAISO



Binding
Applied to CAISO

EIM RSE Enhancements Initiative

Background

Outages in Summer 2020 (August 14-15, 2020)

Passed the RSE's capacity test & Failed Flex test for a limited number of intervals during the afternoons



Market enhancements for summer 2021 readiness (Jan, 2021)

Stakeholders raised concerns that the CAISO inappropriately passed the RSE test during these intervals



EIM RSE Enhancements Initiative kicked off (May, 2021)

CAISO's Phased Approach

- CAISO proposed two phased approach to the EIM RSE initiative to cover comprehensive topics

Phase 1 (~ spring 2022) Accuracy Improvement

- Test Design Change
- Application of balancing test
- Emergency operator actions
- Data **transparency** and availability

Phase 2 (Fall 2022~) Consequence Enhancements

- Financial consequences for test failure
- Additional physical consequences

Capacity Test Overview

What is the Capacity Test?

- The capacity test measures whether each entity has **sufficient available capacity** in real-time to meet its demand forecast prior to participating in the EIM
- If **Bid Range Capacity** is greater than **Capacity Test Requirement**, BA will pass the test
- The test will be conducted prior to trading hour for each 15-minute interval

> Consequences

PASS

- No restrictions are placed on EIM Transfers

FAIL

- EIM Transfers for the interval will be frozen at the level of previous EIM transfer

Capacity Test Requirement

- The Capacity Test requires BA to have resource capacity to account for uncertainty as well as load forecast

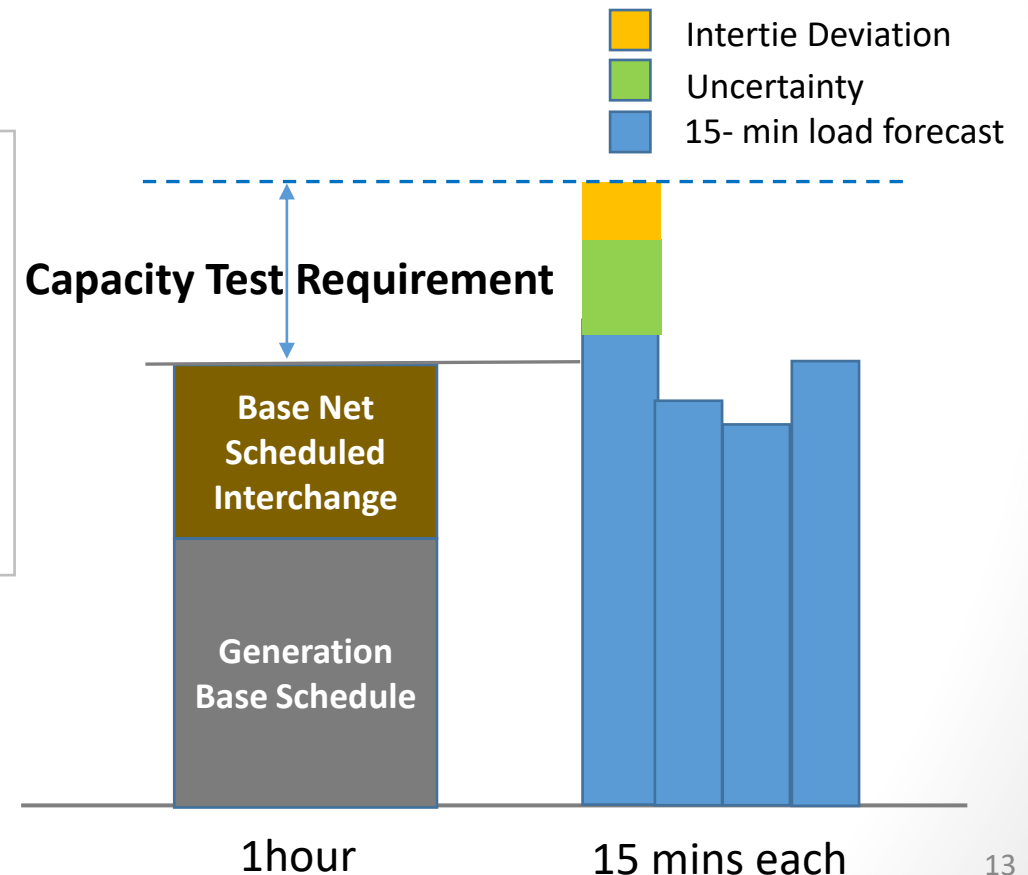
Capacity Test Requirement Formulation

① *Generation base schedule + Import Base Schedule – Export Base Schedule*

② *Load Forecast + Uncertainty + Intertie Deviation*

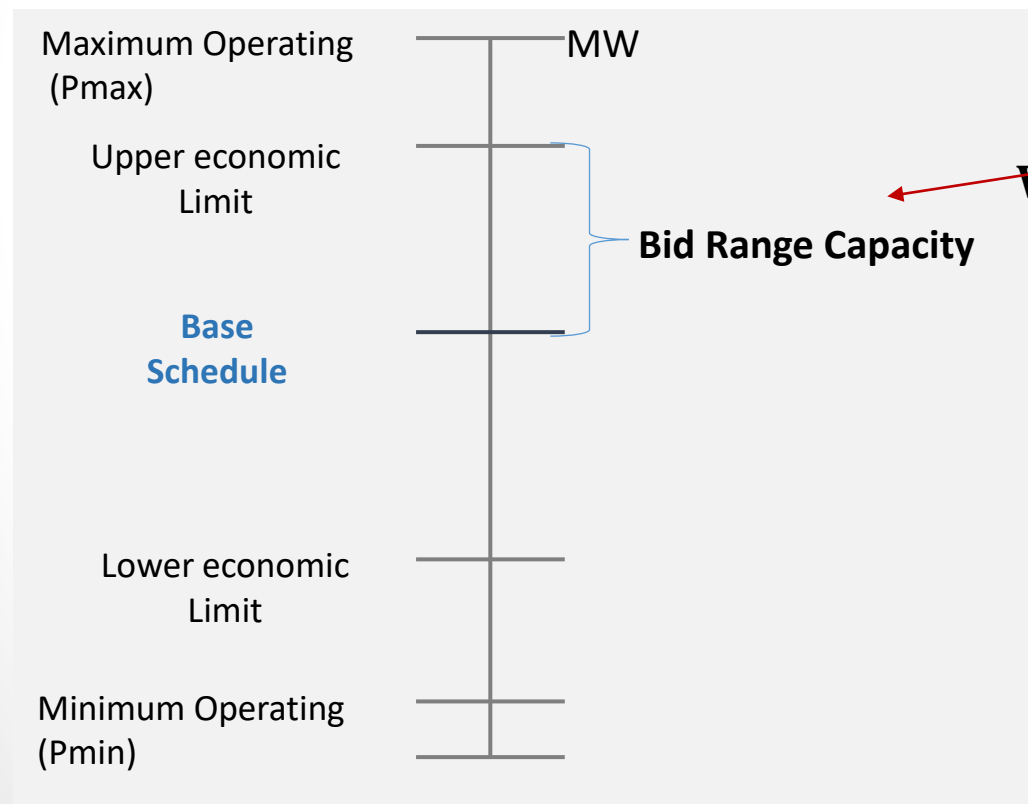
Capacity Test Requirement: ② - ①

- Uncertainty includes net load uncertainty plus net diversity benefit
- Intertie deviation is historical deviation in import and export

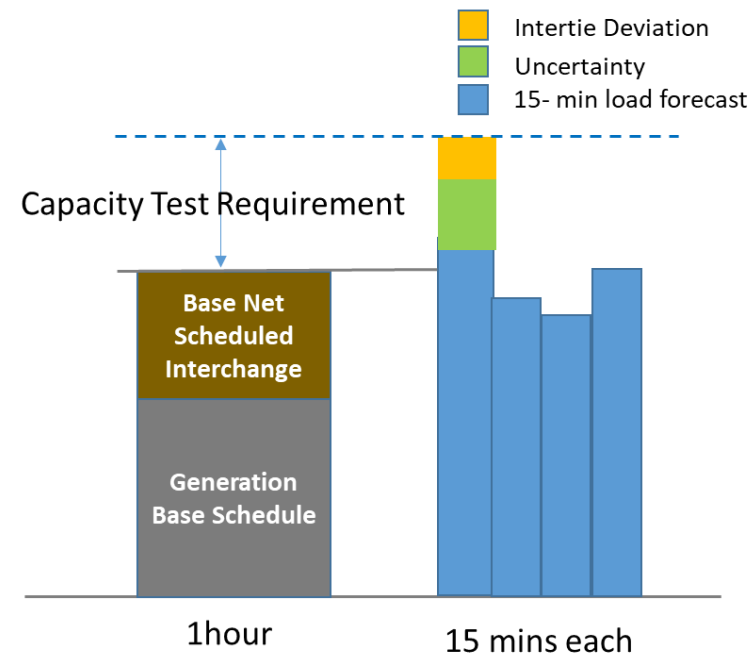


Bid Range Capacity

- The BA's Bid Range Capacity is the capacity the BA can utilize within its footprint



VS



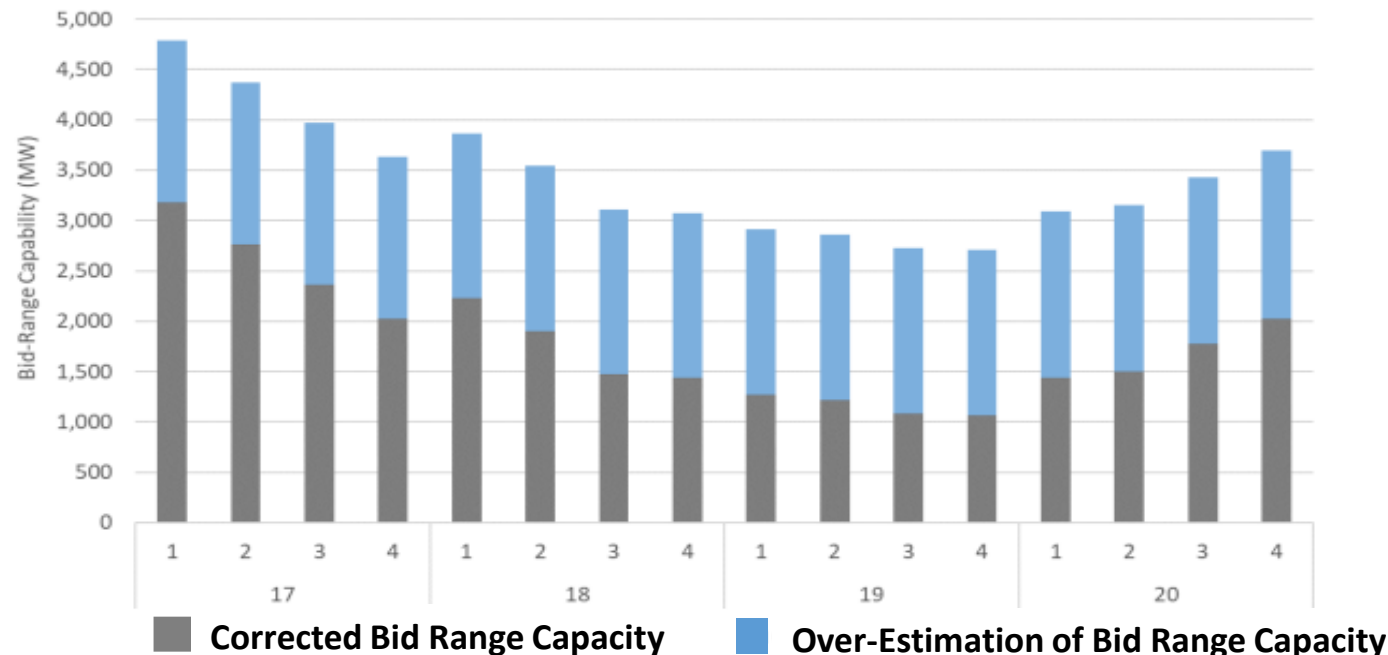
- Pass condition for the Capacity Test**
 Bid range capacity > Capacity Test requirement

Capacity Test Modification

August 2020 Events

- During the rotating outages, CAISO passed the capacity test for all intervals indicating there was overestimation of Bid Range Capacity

Figure 2 - August 14, 2021 Overestimation of Bid Range Capacity in the CAISO balancing authority area



“CAISO’s Analysis”

- Due to combination of;
 - Defect of the software
 - **Start-up and ramp limited supply**
 - Undelivered interchange transactions
 - An over-forecasted supply of variable energy resources

CAISO's Proposal

- Intertemporal constraints should be considered to improve the accuracy

Current Design

- Assumes all supply in base schedules and bids are available

Shortcomings

- Potentially overestimate the supply in the real time market
- Supply that is not real and/or not capable of performing is included

CAISO Proposal

- Consider intertemporal constraints¹⁾ in the Capacity Test

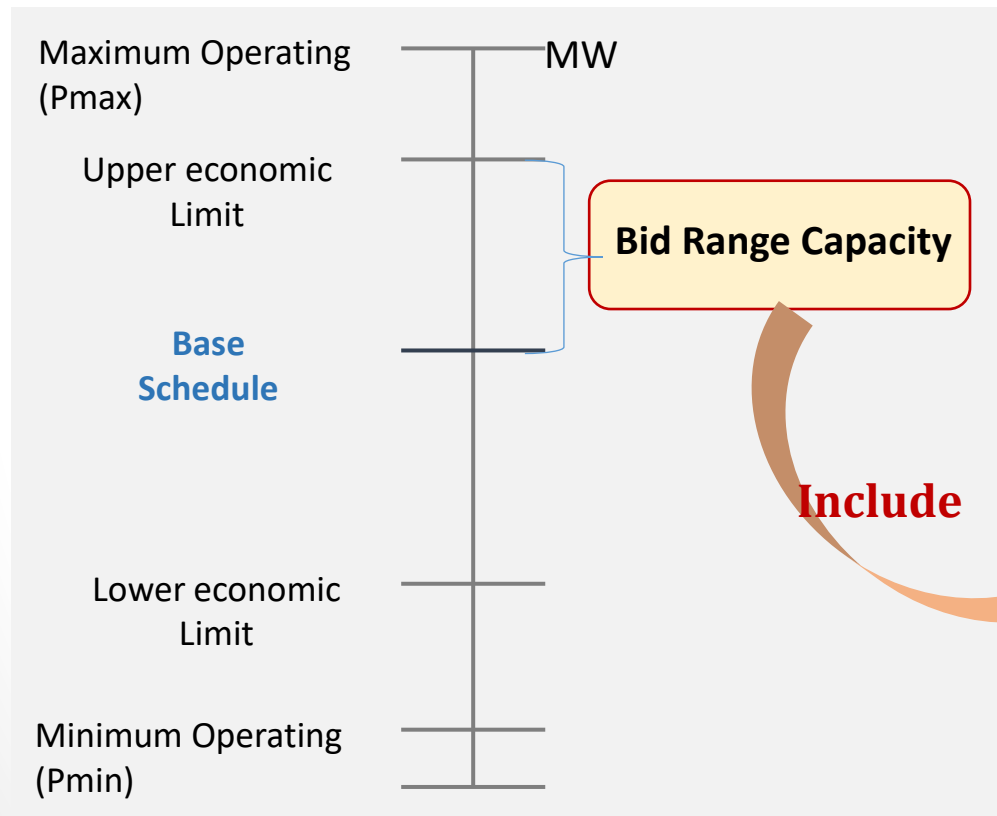
Enhancements

- Only credit capacity that is available to the EIM for dispatch in the real-time horizon

1) e.g., Start-up time, Cycling time

Proposal Details

- There will be changes in calculation of Bid Range Capacity



Key Modification

- CAISO evaluate offline bid-in resource by considering
 - (1) The resource's **start up time**
 - (2) The hours that bids were submitted
 - (3) Through the **STUC¹⁾ horizon (4.5hrs)**

Current

- All Base-scheduled & bid-in capacities
- Longer start-up time units
- Units getting back online

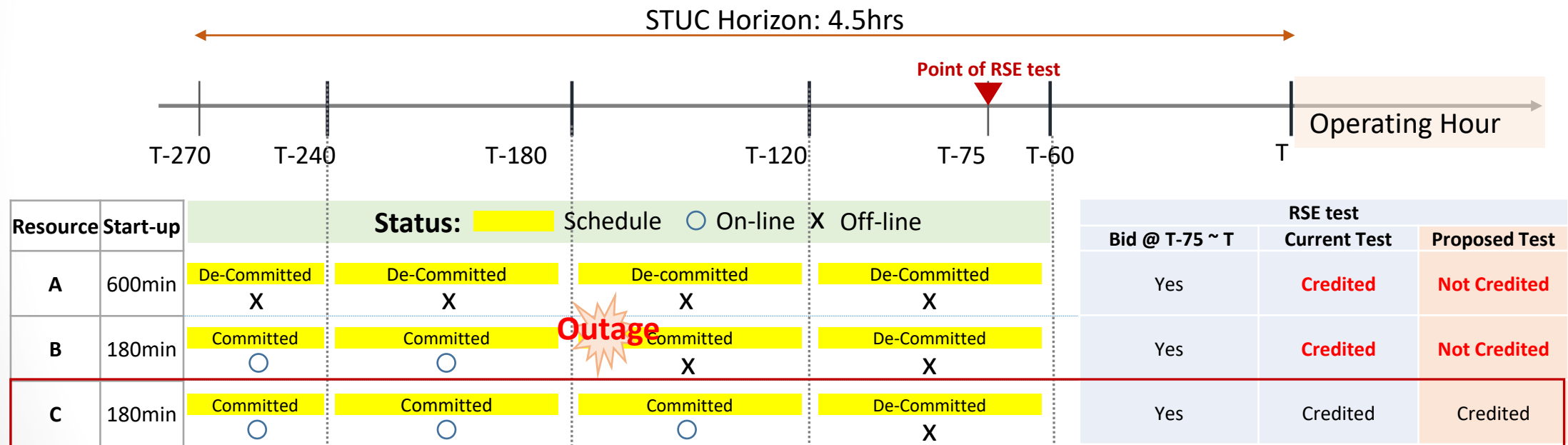
Proposed

- Capacities have start-up time shorter than 4.5hrs

1) Short-term Unit Commitment is the CAISO's longest real-time process which extends 4.5hours

Proposed Design Results

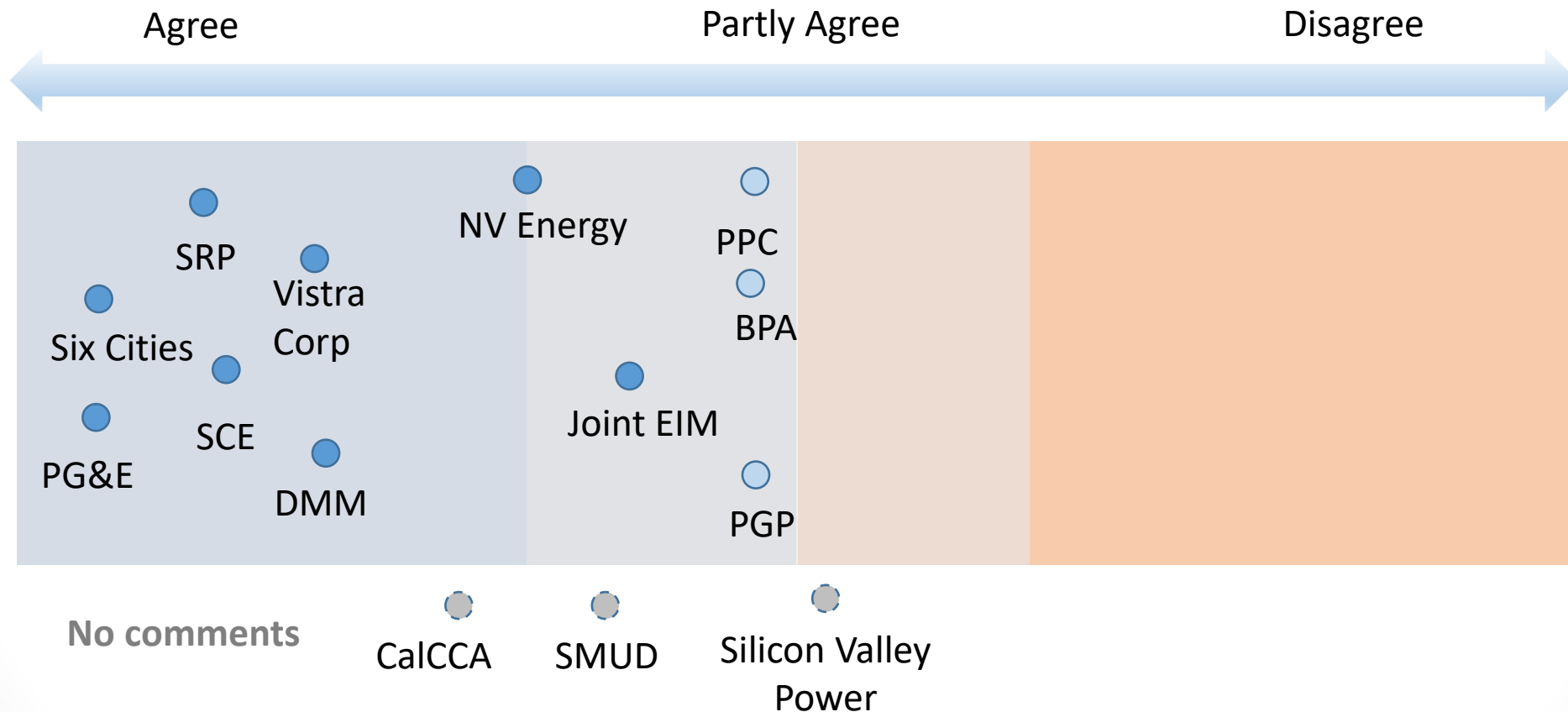
- Capacity which is not available in the real-time due to its start-up time will not be counted at the RSE test



- Resource A** has start-up time longer than 4.5hours and off-line at the beginning of STUC horizon -> Not available at trading hour
- Resource B** was scheduled to turn on throughout the STUC horizon, an outage occurred at the interval T-180 - T-120-> Not available at trading hour
- Resource C** could have been available at trading hour but, de-committed for economics at T-120 -> Available when considering in the STUC horizon

Stakeholders' Comments

- Some stakeholders raised concerns about the CAISO's proposal



Debates in the Proposal

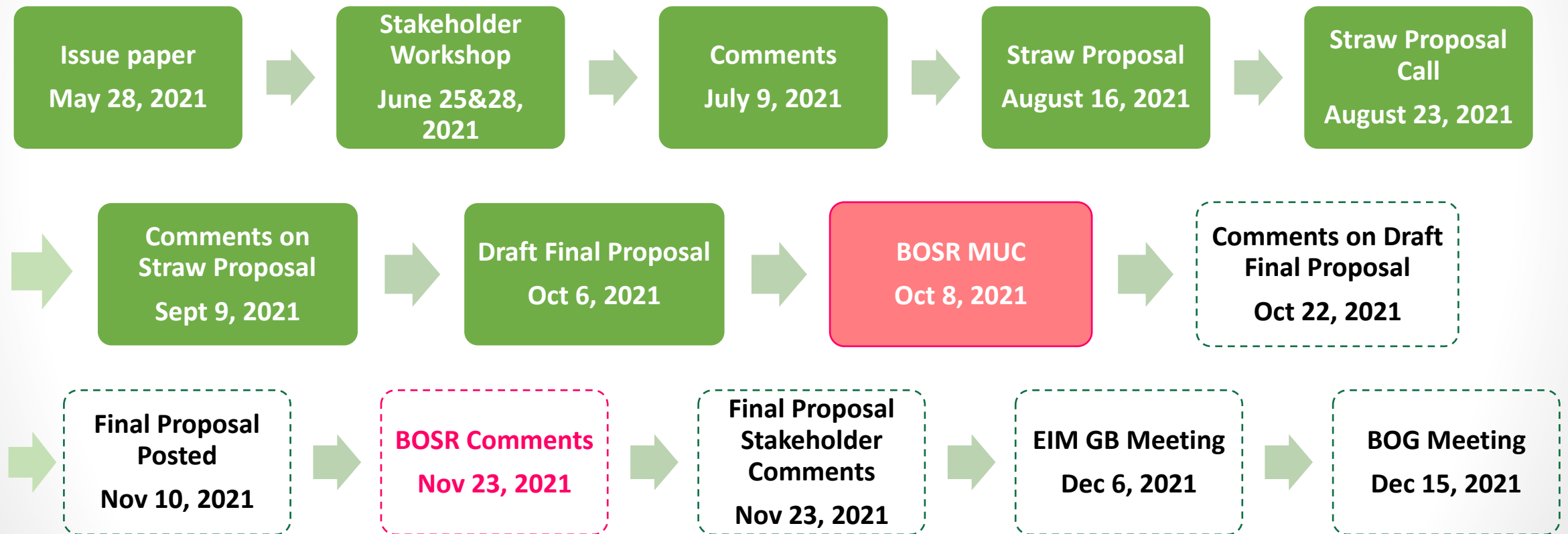
Issue) Is the Short-term Unit Commitment horizon (4.5hours) appropriate?

- **Bonneville Power Administration (BPA)**
 - Requests 2 hours -> The STUC horizon begins well before the EIM market timelines for submitting bids and base schedules
- **Joint EIM Entities**
 - Additional data and analysis is necessary to support the use of the STUC horizon.
- **Public Generating Pool (PGP)**
 - Include resources that have two hours or less start-up time -> Start-up time to be more closely aligned with the RSE time horizon
- **Public Power Council (PPC)**
 - The STUC horizon to assess these intertemporal constraints will not actually reflect the availability of resources to the EIM

EIM Resource Sufficiency Evaluation Proposal

Questions

Next Steps



Discussion: Next Steps

Topic	Date
Capacity Test Modification	October 8, BOSR Monthly Meeting
Monitoring and Reporting	October 18, Fall 2021 EIM-BOSR Meeting
Flex Test Modification	
Balancing Test Modification	
Inclusion of Demand Response	
Comments on Final Proposal	November 23, 2021

Upcoming Meetings

Fall 2021 EIM Body of State Regulators Meeting

October 18, 2021, 9:00 -11:30 AM PT (local time)

San Diego, California

Hotel and meeting information is posted on the BOSR meeting page

BOSR Monthly Update Teleconference

Second Friday of Every Month at 10:00 AM MT / 9:00 AM PT

Next Meeting: November 12, 2021, at 10:00 AM MT / 9:00 AM PT

Information or Questions

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