



California ISO

Extended short-term unit commitment issue/straw proposal

Stakeholder Conference Call

May 22, 2018

Megan Poage & Brittany Dean

Market Design Policy

Agenda

Time	Topic	Presenter
9:00 – 9:15	Welcome	Jody Cross
9:15 – 9:45	Introduction and purpose	Brittany Dean
9:45 – 10:30	Proposal	Megan Poage
10:30 – 11:00	EIM classification & next steps	Jody Cross

Extended STUC

INTRODUCTION AND PURPOSE

Commitment and dispatch processes of the real-time market

- The security constrained unit commitment (SCUC) is the algorithm used to determine commitments
 - Short-Term Unit Commitment (STUC) = runs 52.5 minutes prior to the operating hour and has a 4.5 hour horizon
 - Real-Time Unit Commitment (RTUC) = runs 15 minutes prior to the operating hour and has a 105 minute horizon
- The security constrained economic dispatch (SCED) clears supply against demand to determine dispatch instructions and financially binding schedules
 - Fifteen Minute Market (FMM) = 15 minute dispatch
 - Real-Time Dispatch (RTD) = 5 minute dispatch

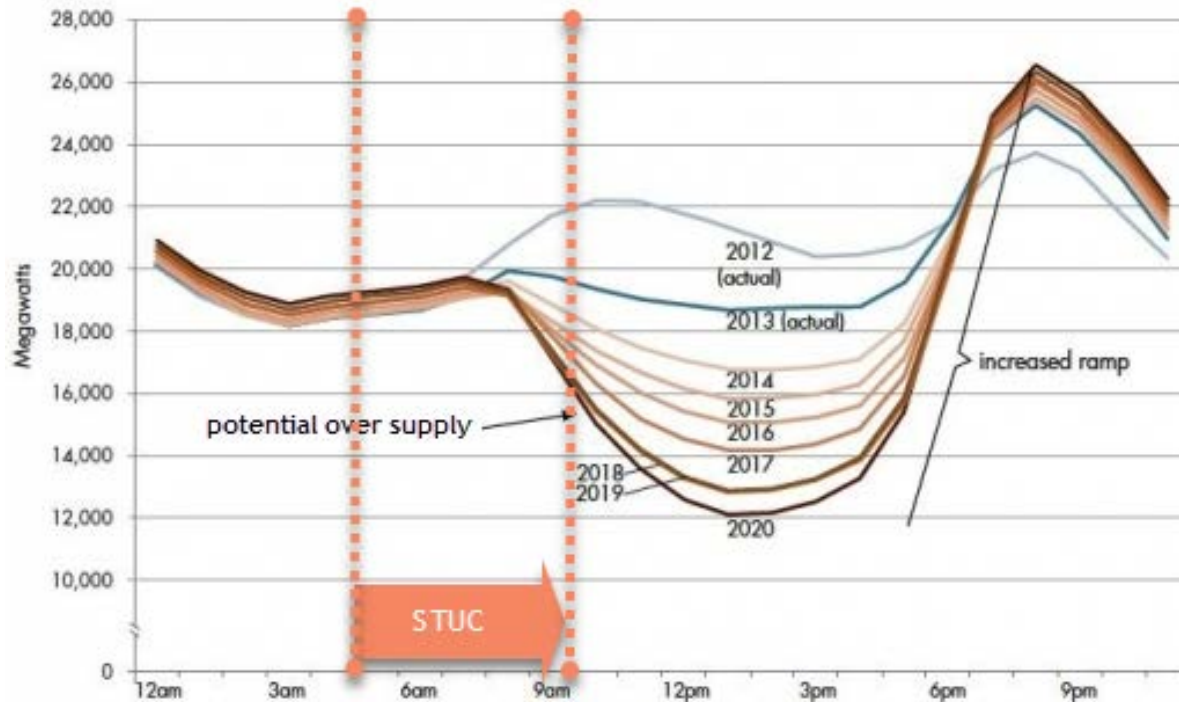
The CAISO markets make commitment decisions based on resource types

- **Short-Start** = start-up time < 2 hours
- **Medium-Start** = start-up time between 2 and 5 hours
- **Long-Start** = start-up time between 5 and 18 hours
- **Extremely Long-Start** = start-up time greater than 18 hours

Short term unit commitment process (STUC) is part of the real-time market

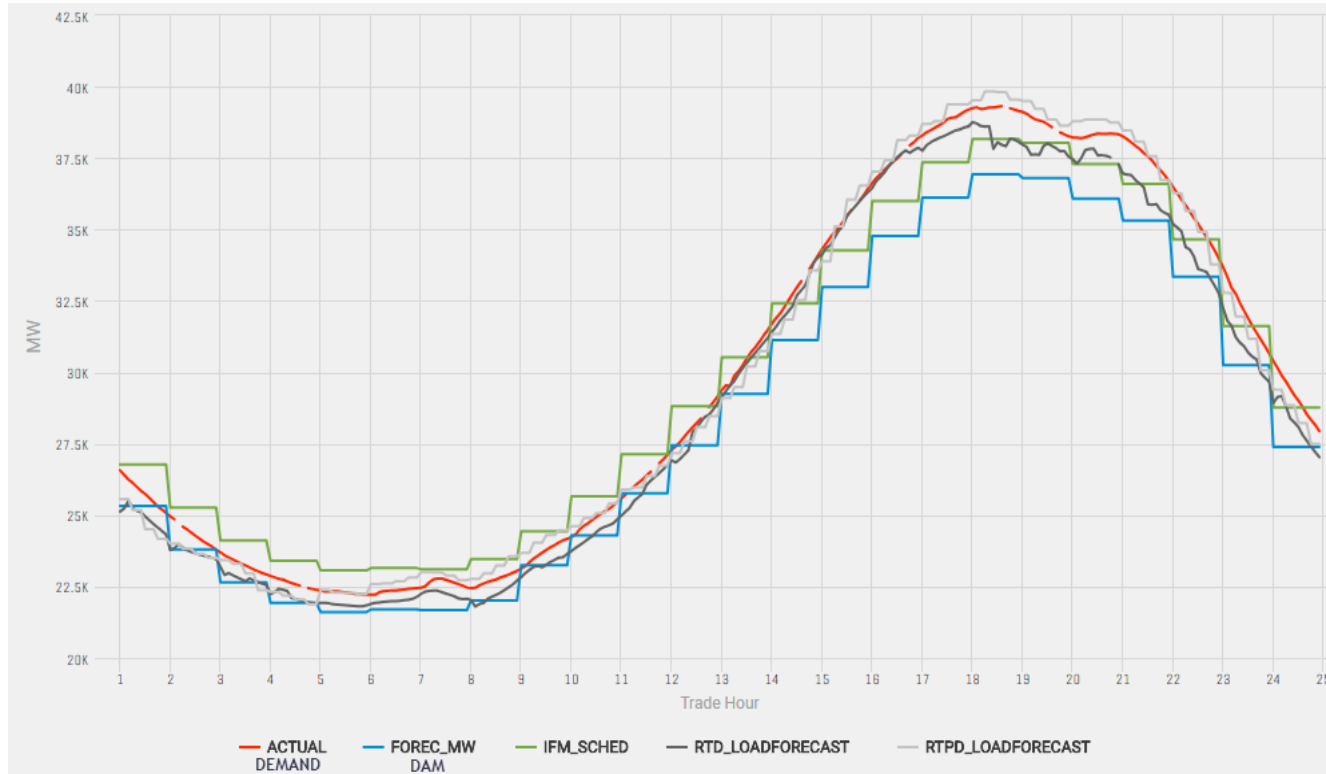
- Uses available resources to optimally meet system needs
 - Commits and optimizes short- and medium-start resources
 - May recognize the commitment of one resource is more economic than another and change commitments accordingly
- Currently, STUC uses a rolling 4.5 hour time horizon

Limitations to current short-term unit commitment process horizon



- Unable to make informed commitment and optimization decisions
 - Only considers short- or medium-start resources
 - Limited resource pool for real-time market

Example: day-ahead forecast is significantly less than actual demand during evening peak



- Even if the real-time market forecasted the shortage, STUC could only commit short and medium units to address shortage

CAISO 2018 Summer Loads and Resources Assessment

- Identified below average hydro supply and reduced generation for 2018 summer
 - 50% chance of declaring “State 2 Emergency” for at least one hour this summer
- To better address concerns the market and operators need to:
 - Reliably view daily load peaks
 - Economically optimize resources to meet system needs
- Management prioritized initiative and plans to implement proposed policy changes by fall 2018

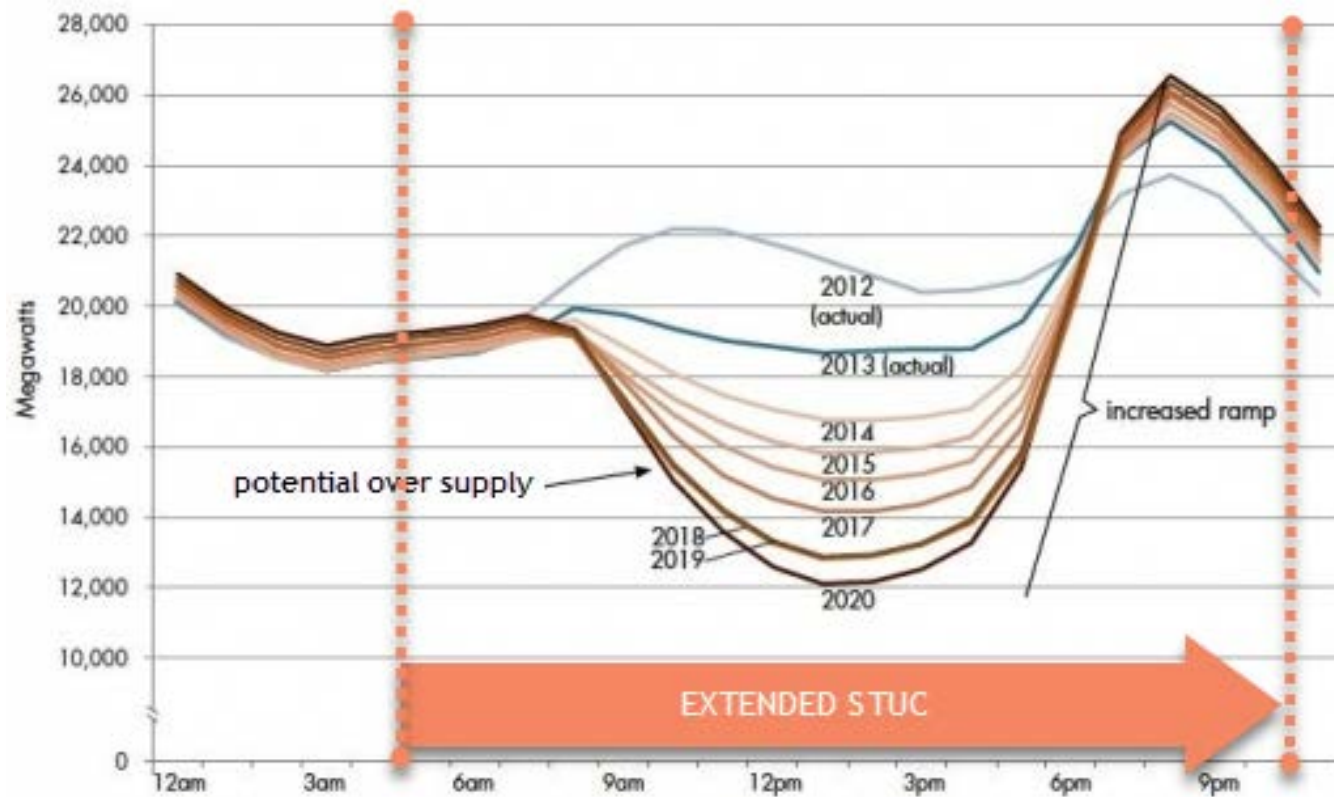
Extended STUC

PROPOSAL AND DISCUSSION

CAISO proposes the following:

1. Expand STUC time horizon from 4.5 hours to 18 hours
2. Allow the real-time market to commit long-start units while still preserving long-start day-ahead commitments
3. Revise real-time market bid cost recovery rules for long-start units
4. Extend EIM non-financially binding base schedule and bid submission requirement from 6 hours to 20 hours

Extended STUC horizon from 4.5 hours to 18 hours



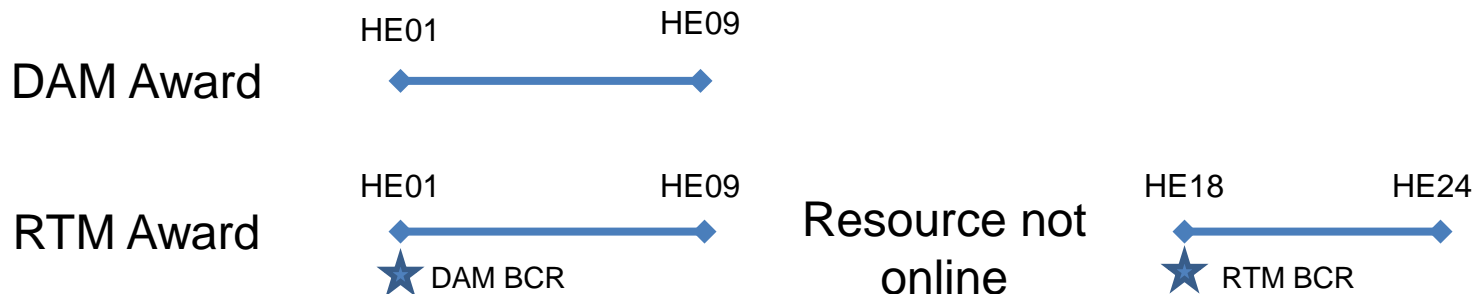
- Ensures market and operators can view all peaks and meet operational needs
- Resources will have advance notice of real-time market commitment(s)

Allow the real-time market to commit additional resources while still preserving day-ahead commitments

- Real-time market will have a larger resource pool to meet system needs
- Resources that do not receive day-ahead awards may bid in the real-time market
- Day-ahead start-up instructions remain “binding” for resources with start-up time + minimum up time greater than or equal to 270 minutes
 - STUC will not shutdown any resource with a start-up time + minimum up time greater than or equal to 270 minutes
 - Minimum online capacity (MOC) constraints enforced in the day-ahead market

Revise bid cost recovery (BCR) rules for long-start units

- Short- and medium-start resources can receive start-up instructions in the day-ahead and real-time market
 - Start-up costs used in bid cost recovery depend on which market started the resources
 - Extend existing bid cost recovery rules to long-start units



Extend EIM base schedule and bid submission requirement from 6 hours to 20 hours

- EIM base schedules and bids are needed for real-time market optimization
 - Accurate base schedules and bids inform valid commitments through STUC
- Requirement should not affect EIM entities' OATT
 - Require submission of 20 hours of non-financially binding base schedules and bids

No changes proposed to resource adequacy or extremely long-start process

- Resource adequacy (RA) must offer obligation (MOO) and resource adequacy availability incentive mechanism (RAAIM) changes are not proposed with this initiative
 - Middle of contract year
 - Changes with day-ahead market enhancements (DAME)
- Extremely long-start process will not be changed
 - Resources with start-up times greater than 18 hours are committed by the extremely long-start commitment (ELC) process or 72-hour residual unit commitment (RUC)

Extended STUC

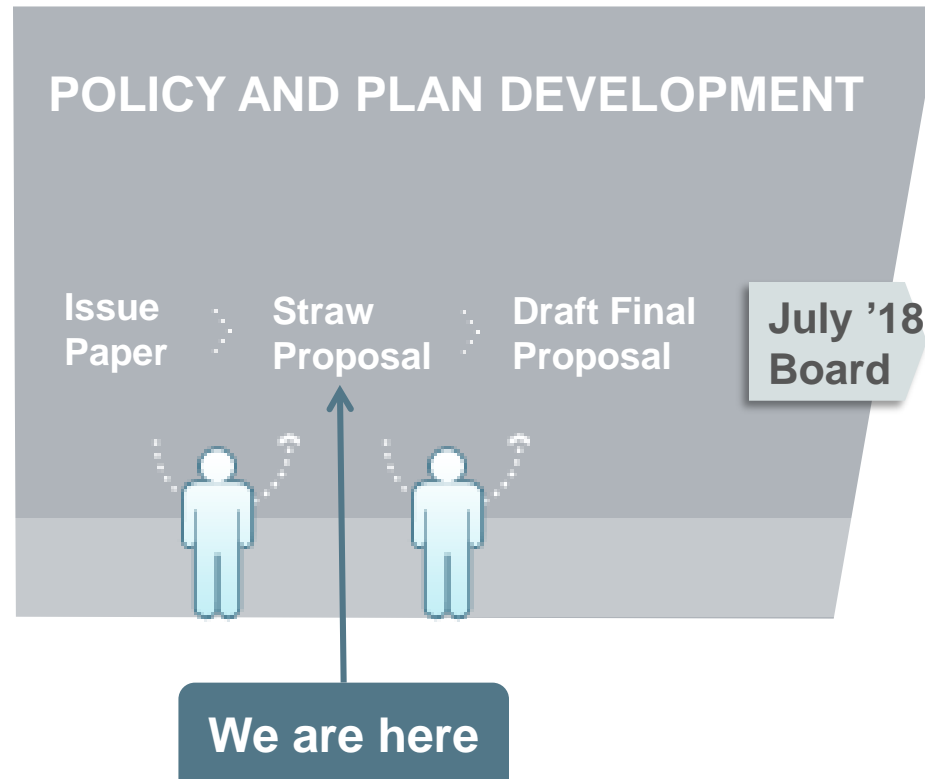
EIM CLASSIFICATION & NEXT STEPS

EIM Classification – hybrid, non-EIM specific

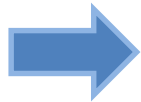
- The EIM Governing Body will have **primary authority** in approving the policy resulting from the following EIM functionality:
 - Extend EIM base schedule and bid submission requirement from 6 hours to 20 hours
- The EIM Governing Body will have **advisory authority** over the remainder of the proposal

<http://www.caiso.com/Documents/GuidanceforHandlingPolicyInitiatives-EIMGoverningBody.pdf>

ISO Policy Initiative Stakeholder Process



Initiative Schedule



Milestone	Date
Issue/Straw Proposal posted	May 15
Stakeholder call	May 22
Stakeholder comments	May 29
Draft Final Proposal posted	June 13
Stakeholder call	June 20
Stakeholder comments	June 26
EIM Governing Body	July 12
Board of Governors	July 25 - 26