



California ISO

Energy Storage and Distributed Energy Resources Initiative: Second Revised Straw Proposal, Day 1

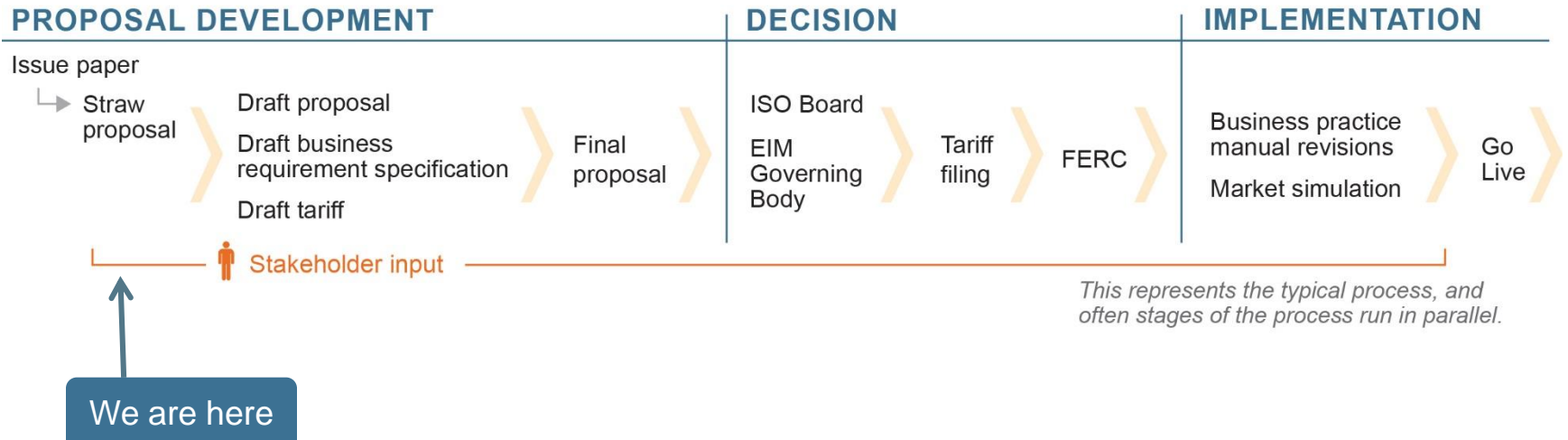
March 2, 2020

ISO Public

Day 1 Agenda – March 2

Time	Agenda Topic	Presenter
10:00 – 10:05	Welcome and Introduction	James Bishara
10:05 – 10:10	Background on Variable Output DR	Lauren Carr
10:10 – 12:00	ELCC Study	E3
12:00 – 1:00	Lunch	
1:00 – 3:00	ELCC Study (Continued)	E3
3:00 – 3:20	Operational Processes and Must Offer Obligations for Variable Output DR	Lauren Carr
3:20 – 3:50	Other DR Policy Updates	Jill Powers
3:50 – 4:00	Next Steps	James Bishara

ISO Policy Initiative Stakeholder Process



Background on Variable-Output DR

- Supply Side Working Group (2018-2019)
 - Stakeholders requested modifications to treatment of demand response resources with variable load curtailment capabilities
 - CPUC presented on current ELCC approach for wind and solar
 - CAISO proposed ELCC approach for variable-output DR
- ESDER 4 (2019 to Present)
 - Began stakeholder process to explore ELCC as a qualifying capacity valuation methodology, as well as modifications to must offer obligation fulfillment
 - **CAISO contracted E3 to perform ELCC on existing DR programs to inform stakeholders**
- CPUC RA Proceeding (Present)
 - CAISO proposed commitment in track 2 of the adoption of ELCC by the end of track 4

ELCC STUDY PRELIMINARY RESULTS

(SEE E3 PRESENTATION)

OPERATIONAL PROCESSES AND MUST OFFER OBLIGATIONS FOR VARIABLE OUTPUT DR

CAISO proposes variable-output DR bid what it can physically provide to fulfill its must offer obligation

- The CAISO considered two options for real-time data submission to reflect capability
 - Option 1: Reflect capability through bids (submitted hourly at T-75)
 - Option 2: SCs submit forecasted capability on a 15- or 5-minute basis to reflect updates to real-time capability after bid submission
 - Ensures feasible dispatch of resources whose maximum capability changes after bid submission
- Stakeholder feedback indicated:
 - Capability can be reflected under the existing timeline for bid submission
 - Requiring more stringent data submission would likely be cost prohibitive, without providing additional benefits

Given stakeholder feedback, the CAISO is considering option 1

- This option assumes resource availability will not change after bid submission and throughout the course of the hour
- Resources would be exempt from RAIM
- It is important to establish adequate controls to limit opportunities to submit bids that are not reflective of actual capability for strategic purposes
- The CAISO is considering ways to eliminate any incentives for submitting bids that do not accurately reflect availability
 - These could include auditing provisions, testing procedures, and performance penalties
 - The CAISO welcomes stakeholder feedback on such controls that should be put in place

CAISO proposes to align demand response must offer obligations with proposed must offer obligations for other resources (1 of 2)

- In the Resource Adequacy Enhancements and Day-Ahead Market Enhancements initiatives, the CAISO is proposing modifications to must offer obligations
 - All RA resources will have day-ahead must offer obligations, with the exception of RDRR*
 - All resources with day-ahead awards will have real-time must offer obligations

* Due to the unique characteristics of RDRR, RDRR has the option to bid in day-ahead but is required under its must offer obligation to bid in real-time regardless of whether or not it receives a day-ahead award (existing)

CAISO proposes to align demand response must offer obligations with proposed must offer obligations for other resources (2 of 2)

- The CAISO proposes variable-output proxy demand resources bid to their full capability in the day-ahead market
- Like other resources, proxy demand resources' real-time must offer obligation will be based on day-ahead market awards
 - If a resource cannot submit bids up to its full day-ahead award in real-time due to changes in load reduction capability from day-ahead to real-time, no pay provisions may apply
- If a resource does not have variable-output and can provide consistent load reduction throughout the RA month and year, the resource must bid its full shown RA value into the day-ahead market (current practice today)
 - Consistent with the standard 24 by 7 must offer obligation proposed in RA Enhancements
 - If the resource receives a day-ahead award, the resource must bid that capacity into the real-time market

MAX DAILY RUN TIME PARAMETER

Max Daily Run Time Parameter

- Summary of parameter components and threshold requirements for use by PDR and RDRR
 - Parameter in master file representing a daily maximum number of hours the resource can be committed and/or dispatched.
 - Optional master file parameter, not a requirement
 - Minimum 1 MW curtailment capability with registered $P_{max} \geq 1$ MW
- Examples of how the parameter would be used in the market's optimization for various use cases included in Revised Draft Proposal
 - With Day Ahead Commitments
 - Contiguous dispatch in real-time
 - Non-contiguous dispatch in real-time
 - Interaction between day-ahead and real-time market awards/dispatched

OTHER DR POLICY UPDATES

Setting Test-Based Effective Flexible Capacity Values (EFC) for PDR

Tariff 40.10.4.1 (c): Provides that the EFC is “based on the resource’s actual MWs of load modification in response to a dispatch by the CAISO during a test event.” The CAISO must “conduct the test at a random time during the flexible capacity must offer obligation period for the resource” and “use the applicable baseline load data . . .

Issue:

- CAISO practice of calculating PDR EFCs used the general formula in section 40.10.4.1(a)

CAISO Actions:

- 4/26/2019 waiver filed requesting time to establish testing
 - Internal assessment concluded inability to develop effective/timely tests for 2020 due to volume and characteristics of PDRs
- 12/31/19 petitioned for limited waiver to base 2020 PDR EFC value under general formula
 - 2/28 limited waiver granted by FERC
- Issue paper/straw proposal under development to begin abbreviated stakeholder process

ESDER 3A provided PDR Market Dispatch Options

10/1/2019 ESDER 3A implemented

- Hourly and 15 Minute Bid/Dispatch Options for PDR
- Defaulted resources to 5 minute dispatchable

Issue:

DMM monitoring identified issues with PDR resources not reflecting accurate operational characteristics

- Inability to respond to 5 minute dispatches
- Displacing 5 minute dispatch capable capacity from being awarded flexible ramping product (FRP) and potentially suppressing FRP prices

CAISO Actions:

- Outreach to SCs to ensure PDR resources accurately reflect operational capabilities
- Requirement to provide confirmation that resource is 5 minute dispatchable
- Changes to tariff in **Flexible Ramping Product Refinement Initiative** to default PDR to hourly bid dispatch option without attestation of 5 minute dispatch capability

FRP Stakeholder Initiative Link:

<http://www.caiso.com/StakeholderProcesses/Flexible-ramping-product-refinements>

Reminder ESDER 3B – Implementation Phase In Progress

- **Scope for Phase 3B**
 - Load Shift Product
 - EVSE Baseline
- **Scheduled for Fall Release – 10/1/20 Deployment**
 - External Training 6/22
 - Market Simulation 7/27 – 9/4
 - Communications through release planning user group meetings
<http://www.caiso.com/informed/Pages/MeetingsEvents/UserGroupsRecurringMeetings/Default.aspx#RUG>

NEXT STEPS

Next Steps

Milestone	Date
Second Revised Straw Proposal posted	February 24
Stakeholder meeting	March 2 & 3
Stakeholder comments due	March 16

Written stakeholder comments on the second revised straw proposal are due by end of day March 16 to initiativecomments@caiso.com.

- Comments template will be available on the ESDER4 initiative webpage under today's meeting header at <http://www.caiso.com/StakeholderProcesses/Energy-storage-and-distributed-energy-resources>

All material for the ESDER initiative is available on the ISO website at http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyStorage_DistributedEnergyResources.aspx.

Day 2 Agenda – March 3

Time	Agenda Topic	Presenter
10:00 - 10:05	Welcome and Introduction	James Bishara
10:05 - 10:10	Background	Gabe Murtaugh
10:10 - 10:45	Bidding for storage resources	Gabe Murtaugh
10:45 - 11:15	End-of- day state-of-charge parameter	Gabe Murtaugh
11:15 - 11:45	End-of-hour state-of-charge parameter	Jill Powers
11:45 - 12:45	Lunch	
12:45 - 2:15	Minimum charge requirement	Gabe Murtaugh
2:15 - 3:20	Default energy bid for storage resources	Gabe Murtaugh
3:20 - 3:30	Next Steps	James Bishara