Resource Adequacy Availability Assessment Mechanism (RAAIM) Exemption Option

Final Proposal

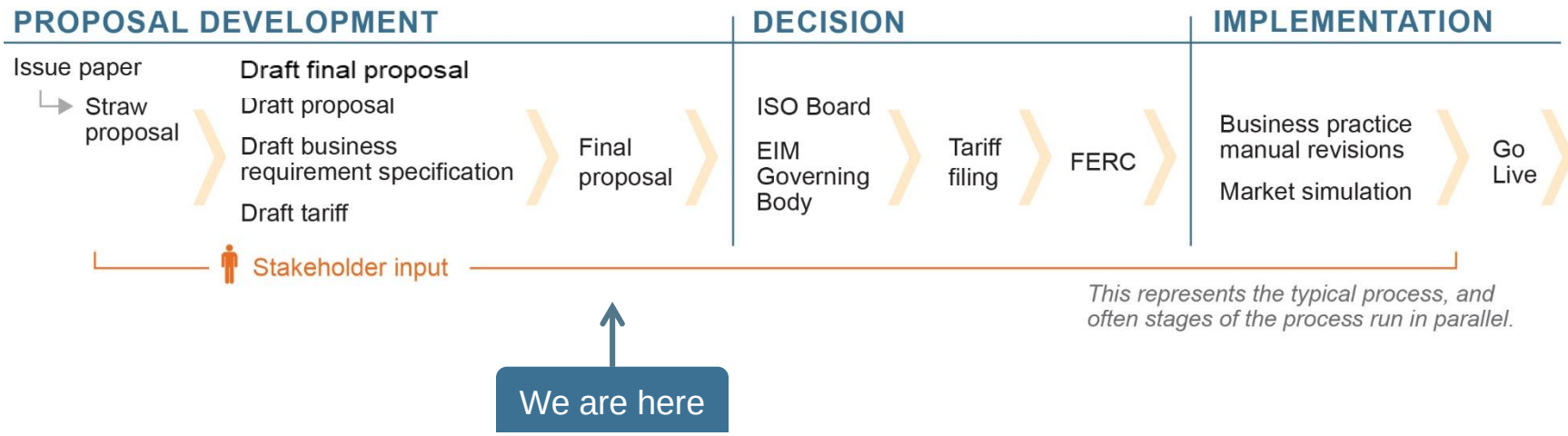
Web Conference

June 15, 2021

Agenda

Time	Topic	Presenter
1:00 – 1:10	Welcome and Introduction	James Bishara
1:10 – 1:20	Background	Jill Powers
1:20 – 2:00	Final Proposal	Jill Powers
	Q&A	
2:00 – 2:40	Tariff Changes	David Zlotlow
2:40 – 2:55	ELCC Study – 2020 Data Rerun Update	Jill Powers
2:55 – 3:00	Next Steps	James Bishara

ISO Policy Initiative Stakeholder Process



BACKGROUND

Background on variable-output demand response discussions

Supply Side Working Group (2018 to 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 2020)

- Conducted stakeholder process to explore and demonstrate ELCC as a viable qualifying capacity valuation methodology, as well as modifications to must offer obligation fulfillment
- E3 performed ELCC study on existing DR programs to inform stakeholders

Background on variable-output demand response discussions

CPUC RA Proceeding (2020)

- CAISO proposed commitment in track 2 of the adoption of ELCC by the end of track 4

CPUC RA Proceeding (2021)

- CAISO enters E3 ELCC study results into the CPUC's RA Program Track 3B.1 proceeding
- CAISO submits Proposal 2 requesting the Commission adopt an ELCC methodology to calculate QC values for variable-output demand response resources beginning in the 2022 RA year.

The ISO identified principles that capacity assessment of demand response must follow for a RAAIM exemption

1. Assesses DR's contribution to reliability across the year or seasons as a variable-output resource
   - Should evaluate its contribution to system reliability as a variable resource beyond the monthly peak day during peak hours, especially given the growing need for "energy sufficiency" as fuel-backed resources retire from the grid.
2. Assesses DR's interactive effects with other similarly-situated resources
   - Use- and availability-limited resources, like DR, can saturate when adding similarly-situated resources to the grid
   - Incremental amounts of the same resource type adds less and less additional reliability value to the system.

Why these principles were established

The RA program must evolve to ensure the RA fleet can meet capacity and energy needs all hours of the year

- We must assess the ability of preferred resources to displace traditional thermal generation while maintaining system reliability
  - Decarbonizing the energy supply requires replacing both the capacity AND energy provided by the gas-fired fleet; not just capacity substitution focused only on the gross peak demand hour
- Majority DR resources have variable output and energy limitations that must be considered when setting DR's qualifying capacity value
  - Need to assess DR similar to how we assess other variable energy resources and their ability to support system reliability all hours of the year
- An ELCC methodology informs DR's contribution to system reliability, considering its variable nature and availability- and use-limitations
  - Effective Load Carrying Capability (ELCC) is an industry accepted methodology to compare the amount of equivalent perfect capacity that an intermittent or energy-limited resource must provide to sustain a set level of reliability- often a minimum loss of load expectation.

Proposal will require tariff clarifications needing CAISO Board and FERC approval

Recent decisions recognizes need for change

- The proposed decision in the Commission's RA proceeding recognizes DR as a variable resource and proposes that the qualifying capacity methodology be re-evaluated for RA year 2023 and beyond.
- The recent ruling from Commission President Batjer allows the CAISO and IOUs to file a refreshed ELCC study for use as the qualifying capacity methodology for RA year 2022, subject to Commission review and approval.

The anticipated changes by the Commission enable the CAISO to seek tariff revisions to treat demand response as a variable output resource before FERC.

Final proposal is a result of work significantly vetted in the CAISO's ESDER 4 stakeholder process

Topic: "vetting qualification and operational processes for variable-output demand response resources."

- Demonstrated a new and more appropriate qualifying capacity valuation method applicable to the variable-output nature of demand response resources
- Study and methodology produced by Energy and Environmental Economics, Inc. (E3) that proposed a framework for evaluating the resource adequacy value of demand response using an effective load carrying capability (ELCC)
- Initially presented and discussed study results in May 2020 for stakeholders review and feedback
- Released an update of the study in December 2020 to include updated bid data

Proposal provides Demand Response resources with a RAAIM exemption option

The CAISO is proposing to formally exempt PDR and RDRR resources having their QC value assessed using an ELCC or similar methodology from the Resource Adequacy Availability Incentive Mechanism (RAAIM)

- The RAAIM exemption option requires the resources qualified capacity to have been valued under an ELCC or similar methodology that accounts for the contribution to reliability and saturation effects of the resources variable-output nature
- PDRs and RDRRs that continue to use another valuation methodology (i.e., load impact protocol) will continue to be subject to RAAIM

Provides viable path for variable-output demand response resources to be shown on supply plans

Use of an ELCC or similar methodology

- Resolves concerns in initiating PRR1280 by having pathway for all demand response counting as RA capacity to be shown on supply plans.
- Establishes a QC value that takes into account the variable nature and limitations in the use and availability of variable-output DR resources.
- Allows for variable-output demand response resources to meet their RA tariff and must offer obligations by bidding their forecasted “true” availability into the DA and RT markets which may vary from their established QC value.
  - not expected to always be bid at their shown RA QC value; can bid above or below their established QC value
  - bids should reflect the actual capabilities of the resource in those market timeframes, whether above or below the shown RA QC value

Proposal Questions?

TARIFF REVISIONS

Proposed Tariff Revisions

To implement the RAAIM exemption, the CAISO proposes to amend section 40.9.2(b)(1) of its tariff and add a sub-section (D) to include proxy demand resources and reliability demand response resources, in the list of resource types that are exempt from RAAIM when providing local and system RA capacity so long as these demand response resources have their QC set through ELCC or a substantially similar methodology.

Amendments to Section 40.9.2

40.9.2 Exemptions

(a) Capacity Exempt from RAAIM – All Provisions. The entire capacity of a resource in any of the following categories is exempt from the RAAIM provisions in Section 40.9 –

(1) Resources with a PMax less than 1.0 MW;

(2) Non-specified resources that provide Resource Adequacy Capacity under contracts for Energy delivered within the CAISO Balancing Authority Area;

(3) Participating Load that is also Pumping Load; and

(4) Legacy RMR Units.

(b) Capacity Exempt from RAAIM – Local/System

(1) The entire capacity of a resource in any of the following categories is exempt from the RAAIM provisions in Section 40.9 applicable to local and system Resource Adequacy Capacity –

(A) Variable Energy Resources;

(B) Combined Heat and Power Resources; ~~and~~

(C) Run-of-River Resources~~.~~; and

(D) Demand Response Resources whose Qualifying Capacity is established using an effective load carrying capability methodology (as that term is used in Section 399.26(d) of the California Public Utilities Code, or a successor provision) or a methodology that the CAISO determines in its sole discretion is substantially similar to the effective load carrying capability methodology.

Proposed Tariff Revisions

To note that demand response resources with an ELCC-based QC value will have a must-offer obligation based on their availability, the CAISO proposes to amend section 40.6.4.1 of its tariff to grant the “expected energy” must-offer obligation to these resources.

- This is the same must-offer obligation that conditionally available resources and run-of-river hydro hold today.

Amendments to Section 40.6.4.1

40.6.4.1 Must-Offer Obligation in DAM and RTM

Conditionally Available Resources (irrespective of Use-Limited Resource qualification) and, Run-of-River Resources, and Demand Response Resources subject to 40.9.2(b)(1)(D) that provide Resource Adequacy Capacity and that are physically capable of operating must submit Self-Schedules or Bids in the Day-Ahead Market for their expected available Energy or their expected as-available Energy, as applicable, in the Day-Ahead Market and RTM up to the quantity of Resource Adequacy Capacity the resource is providing. Such resources shall also revise their Self-Schedules or submit additional Bids in RTM based on the most current information available regarding Expected Energy deliveries.

An Eligible Intermittent Resource providing Resource Adequacy Capacity may, but is not required to, submit Bids in the Day-Ahead Market.

E3 ELCC STUDY REFRESH

(USING 2020 BID DATA)

CAISO contracts with E3 to refresh ELCC study using 2020 bid data

- E3 was retained to refresh the ELCC study performed in the ESDER 4 initiative
  - E3 has obtained CAISO 2020 bid data from the California investor-owned utilities (IOUs), reviewed this data for any quality issues and run the RECAP model with the 2020 and 2030 CAISO system using the updated bid data.

- This month, June 2021, E3 will publicly release an update of the study, quantifying the ELCC based on DR bids submitted into the markets by PG&E, SCE and SDG&E in 2020

July 1, 2021 ELCC Report Filing Requirements for Commission submission

1. Refreshed study results based upon 2020 bid data from PG&E, SCE, as well as from San Diego Gas & Electric Company (SDG&E).
2. Thorough documentation of study methodology and assumptions, and explanation of how data from Load Impact Protocol (LIP) filings, if any, were utilized in or informed the study, as well as updated runs of the study (as needed).
3. A summary of the key differences between LIP inputs and calculations versus the proposed ELCC method.
4. A workshop report that summarizes parties' comments on the study methodology and results and attaches parties' comments.

Milestones to meet the ELCC report filing deadline

Date	Milestone
April 29, 2021	Energy Division Staff issues DR Proposal
May 21, 2021	Energy Division Staff issues RA Proposed Decision
June 3, 2021	Commission President Batjer's Ruling in RA proceeding setting July 1 deadline for Report
June 10, 2021	Opening Comments filed on Proposed Decision
June 12, 2021	Initial study results completed
June 14, 2021	Reply Comments filed on Proposed Decision
Week of June 14, 2021	Initial study results reviewed; feedback provided to E3
June 24, 2021	Commission Business Meeting: likely vote on RA Proposed Decision
June 24, 2021	Stakeholder workshop to review results
June 28, 2021	Stakeholder comments due
July 1, 2021	ELCC report due to Commission

NEXT STEPS

Next Steps

- The final proposal and all related meeting material is available at: http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx
- Information vetted in the Energy Storage and Distributed Energy Resources Phase 4 (ESDER4) initiative stakeholder process (including the E3 studies) is available at: http://www.caiso.com/StakeholderProcesses/Energy-storage-and-distributed-energy-resources
- Please submit stakeholder written comments on today's discussion on the final proposal by end of day June 23, 2021
  - Submit to InitiativeComments@caiso.com

Accelerated schedule to obtain Board and FERC approval for 2022 RA year showings

Date	Milestone
June 10, 2021	Final proposal published
June 15, 2021	Stakeholder call on final proposal
June 23, 2021	Stakeholder comments due
July 13-14, 2021	Board of Governors
Late July	FERC tariff filing
Late September	FERC Order
October 2021	Proposal applies to 2022 RA showings