



California ISO


Demand and Distributed Energy Market Integration Working Group

July 8th, 2025

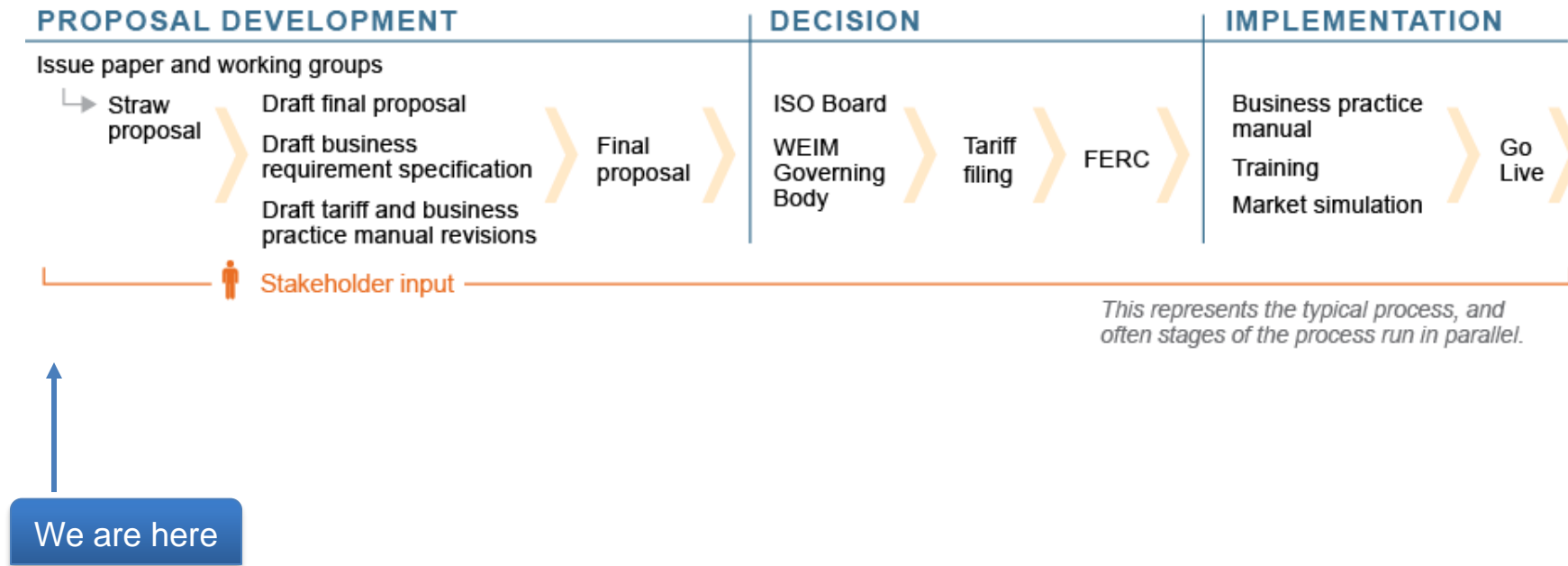
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- These collaborative working groups are intended to stimulate open dialogue and engage different perspectives.
- Please keep comments professional and respectful.
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- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon  located on the bottom of the participant panel.
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CAISO Policy Initiative Stakeholder Process

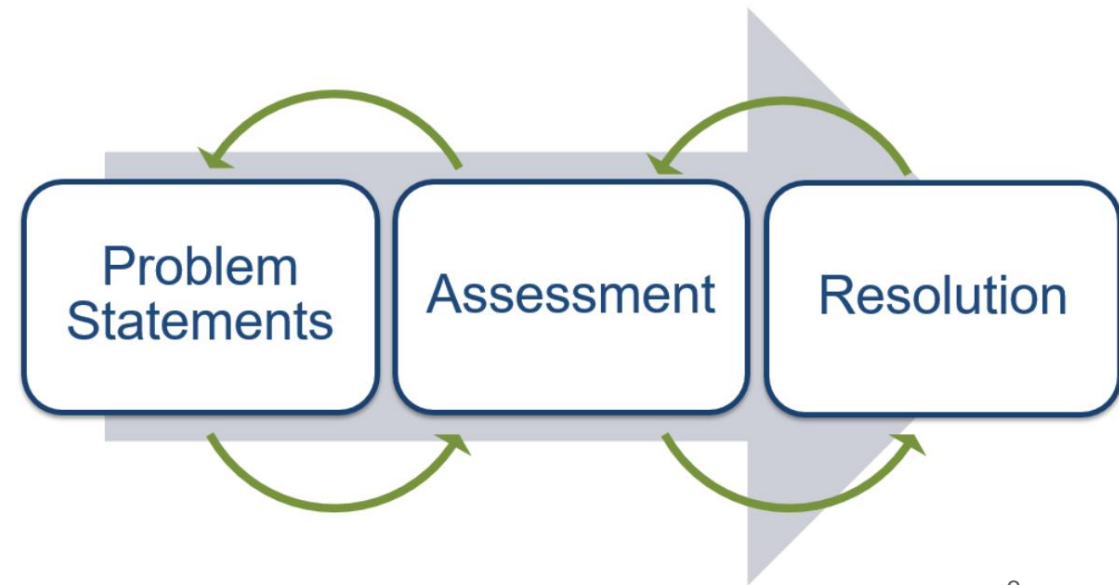


Today's agenda

Time	Topic	Presenter
1:00 – 1:05	Welcome, Today's Agenda	Christina Guimera
1:05 – 1:30	Revisit Last Problem Statements <ul style="list-style-type: none"> Hydrogen/Electrolyzer Participation Representation of Demand Response (DR) through Base Schedules Participating Load Modifications 	Juan Buitrago
1:30 – 2:00	<ul style="list-style-type: none"> Introducing Reliability based Demand Response 	Jill Powers
2:00 – 3:00	Reliability based DR <ul style="list-style-type: none"> Methods to Consider Fixed Cost in Economic Dispatch Decisions for RDRR Allow RDRR to Reflect Min On Time > 1 hour Eliminate 100 MW Cap or Change Exception Criteria for RDRR Allow RDRR Bid Option to Utilize Startup-Time 	CLECA SCE
3:15 – 3:55	Stakeholder Discussion Draft Problem Statement Formulation	Juan Buitrago
3:55 – 4:00	Next Steps	Christina Guimera

Working Group Progress to date

- Frame/Level Set on Policy Area **[Complete]**
- Issue/Challenge Identification **[Complete]**
- Problem statements **[In progress]**
 - Problem Statements translate issues into actionable items
- Assessment **[Starting]**
 - Validate problem statements as represented
- Resolving the issues **[Based on Working Group progress/discussion]**
 - Identify existing opportunities
 - Develop solutions



Goal of Today's Working Meeting

The Working Group structure is meant to embrace flexibility to allow organic and robust conversation on the topics at hand – it is key for us to drive towards solutions collaboratively

- **Review what we've heard and finish last conversation**
 - During the previous working group (June 17), CAISO heard from stakeholders on Enhancing Demand Flexibility Market Options and how it compares with the ISO's current participating load models. We would like to refine the problem statements from that discussion today
- **Reliability based Demand Response Overview**
 - The ISO would like to provide a high-level overview of current reliability based demand response participation as a primer for the upcoming problem statement discussion
- **Hear stakeholder viewpoint on current reliability based demand response**
 - Review items submitted and hear stakeholder perspectives on current issue/challenge areas
- **Formulate problem statements from today's discussion**
 - Community discussion to draft problem statements relate to reliability based DR

Demand and Distributed Energy Market Integration

REVIEW LATEST DRAFT PROBLEM STATEMENTS

Draft problem statement formation: Hydrogen/Electrolyzer Participation

- Current CAISO market participation models may not best account for the unique components/characteristics of certain large loads that operate in a non-linear fashion
- Certain large loads, which produce and store fuel for later use, do not fit well with current energy storage models
- *Seeking stakeholder input to confirm*

Draft problem statement formation: DR inclusion into Base Schedules

Supply side option problem statements

- Economic signals for PDR may not align with temperature dependent DR capacity
- Current manual load forecast adjustment process is cumbersome and does not align with DR program timelines

Demand side option problem statements

- Current Performance Evaluation Methodology (PEM) options do not recognize alternative measurement methods used by WEIM entities for performance evaluation
- *Seeking stakeholder input to further confirm*

Draft problem statement formation: Participating Load modifications

- Participating Load (PL) resources cannot submit energy bids in the RTM to decrease/increase consumption. This does not allow full participation due to constraints imposed by the current PL model and wholesale Demand Response (DR) market.
- Allowing PL's full participation to bid energy and respond to real-time market signals, without limiting it to DR events, would allow it to better respond with providing greater system flexibility by shifting demand and additional slope to the demand curve.
- *Seeking confirmation from stakeholder as to bidding restrictions*

Demand and Distributed Energy Market Integration

REVIEW CURRENT RELIABILITY BASED DR



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Reliability Demand Response Resource (RDRR) -background information for WG discussion

July 8, 2025

RDRR enables emergency responsive demand response resource participation

RDRR participation options:

- Day-Ahead Market
- Offer uncommitted capacity and respond to a reliability event for the delivery of “reliability energy” in Real-Time

RDRR may not:

- Submit RUC availability or Ancillary Service bids.
- Self-provide Ancillary Services.

RDRR Resource Characteristics

Can bid in 10kW increments

Minimum load curtailment $\geq 500\text{kW}$ for energy

Cannot participate in AS

Smaller loads may be aggregated to achieve minimum targets

Telemetry is not required

Additional RDRR resource specific characteristics

Must be capable of delivering reliability energy in real-time, reaching full curtailment within 40 minutes

May elect to receive discrete dispatches

- Size limited to 100MW

- Cannot participate in Day-Ahead Market

Minimum on (run) time cannot be greater than one (1) hour

Must have sustained response period of at least four (4) hours

RDRR participation expectations

RDRRs are not required to participate economically therefore day ahead market participation is optional.

All uncommitted RDRR capacity must be offered as energy in the real-time market

- Bids between \$950 - \$1000/MW
- Used for reliability-only purposes

RDRR resources are required to register in MasterFile with:

- Pmin Value = 0MW
- \$0 minimum load cost compensation value

Background: RDRR treatment in real time market

CAISO operators can either enable RDRR bids for optimal market dispatch within the real-time market or to manually “force” a response through an Exceptional Dispatch.

- initial design only accommodated bid enablement into the Real-Time Dispatch (RTD) process with an advisory horizon extending approximately sixty-five minutes
- Only considering these resources in RTD required them to have a more restrictive startup and minimum on time.

Background: Changes through the years since the 2014 RDRR policy implementation

In its 2021 Summer Readiness initiative, the CAISO proposed and obtained FERC approval to dispatch RDRRs in real-time pre-dispatch (RTPD).

- Now that RDRRs are enabled into RTPD, there is flexibility as to what the resources' minimum on time could be within limits.
-

In its 2022 RDRR bidding enhancements, the CAISO proposed and obtained FERC approval to:

- automatically re-rate the Pmin of a discrete dispatch RDRR below the resource's upper economic limit and input a default minimum load cost;
- increase the discrete RDRR cap from 50 MW to 100 MW;
- allow discrete RDRRs above 100MW, if
 1. the RDRR resource is located at a single site;
 2. the RDRR load cannot be safely or operationally split;
 3. the RDRR does not have the ability to operate continuously based on the source of load providing curtailment; **and**
 4. Attest to the type of load or technology providing load curtailment during RDRR events. **and**

Background: Changes through the years since the 2014 RDRR policy implementation

In its 2022 RDRR bidding enhancements, the CAISO proposed and obtained FERC approval to:

- to align RDRR bidding rules with real-time price conditions consistent with FERC Order No. 831 by requiring that RDRRs must bid at least 95% of the hard energy bid cap (\$1,900/MWh) when specific conditions are satisfied to raise the energy bid cap to \$2,000/MWh.
 - ✓ Through this initiative, the ISO has updated the bidding rules in Scheduling Infrastructure and Business Rules (SIBR) to automatically adjust the submitted RDRR bids based on the change in energy bid cap by maintaining the percentage of the bid cap originally submitted by the Scheduling Coordinator.

Tariff Requirements on RDRR Minimum On [Run] Time

4.13.5.3 Dispatch Parameters for RDRRs

Each Reliability Demand Response Resource shall be capable of reaching its maximum Load curtailment within forty (40) minutes after it receives a Dispatch Instruction, and shall be capable of providing Demand Response Services for at least four (4) consecutive hours per Demand Response Event. **Each Reliability Demand Response Resource shall have a minimum run time of no more than one (1) hour.**

Tariff Requirements on RDRR lack of start-up costs

Tariff section 30.7.9 Format and Validation of Start-Up Bids and Shut-Down Costs

For a Generating Unit or a Resource-Specific System Resource, the submitted Start-Up Bid expressed in dollars (\$) as a function of down time expressed in minutes must be a staircase function with up to three (3) segments defined by a set of one (1) to four (4) down time and Start-Up Bid pairs. The Start-Up Bid is the cost incurred to start the resource if it is offline longer than the corresponding down time. The last segment of the Start-Up Bid will represent the cost to start the resource from cold Start-Up and will extend to infinity. The CAISO will validate the submitted Start-Up Bid as follows:

(h)The Start-Up Bid for a Reliability Demand Response Resource shall be zero (0).

RDRR dispatch option treatment

- RDRRs registered as discrete dispatch option
 - Dispatched at or near maximum economic bid quantity over minimum on time
- RDRRs registered as non-discrete (continuous) dispatch option
 - Dispatched between their P_{min} (0 MW) and their maximum economic bid quantity over minimum on time
 - Minimum length of dispatch from P_{min} over minimum on time dependent on the resources registered bid dispatchability
 - 60-, 15- or 5-minute dispatch options

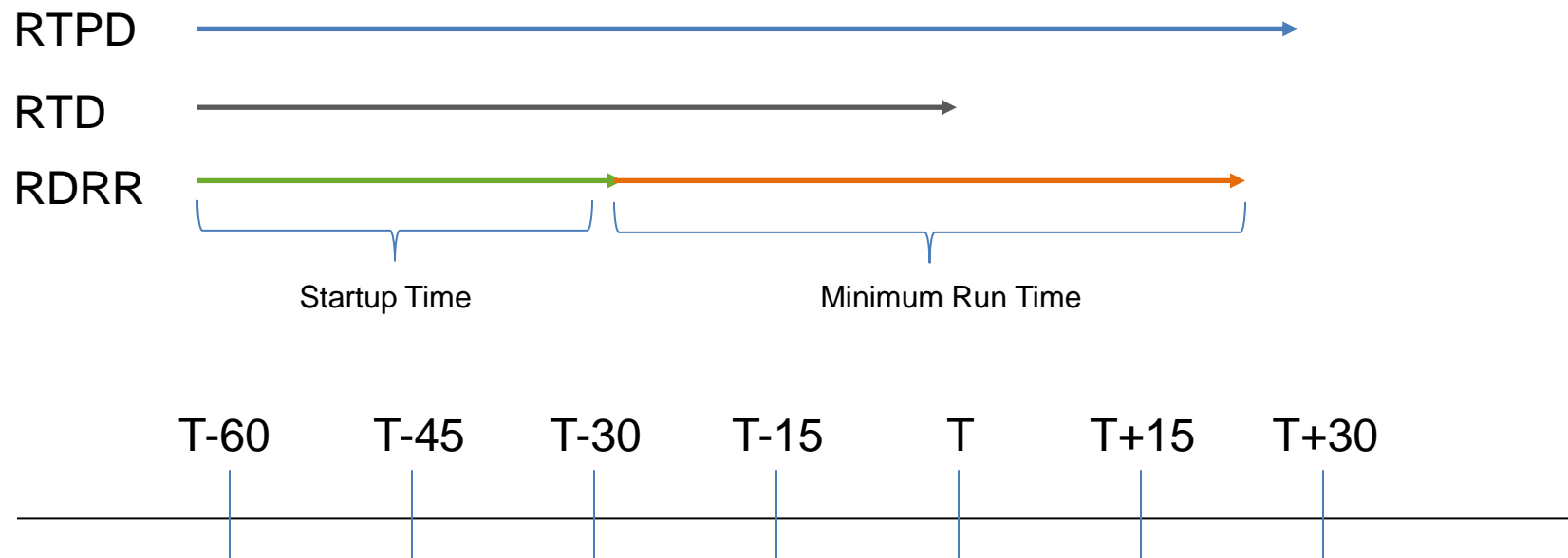
RDRR real-time market treatment

RTPD optimization use of start up time (SUT) and minimum on time (MOT)

- Economically evaluated based on real-time bid MW quantity and price
- If economic in RTPD time horizon, will be dispatched
- Once dispatched, will be kept on in remaining intervals respecting its minimum on time
- A longer minimum on time may marginally decrease its likelihood of dispatch

Example of the RDRR dispatch horizon

- Optimization horizon looks out up to seven 15-minute intervals in RTPD and thirteen 5-minute intervals in RTD
- RTPD optimization horizon considers the maximum startup time of 40 minutes as well as the minimum run time of no more than 1 hour within more optimization intervals



Discrete RDRR RTPD enabled dispatch testing scenarios

- Economic startup decision for discrete RDRR in enable dispatch mode considers the impact of the total cost over the RTPD time horizon

Discrete dispatch scenario results:

1. No intervals economic, No Start up
 2. More than one interval LMP economic, No startup
 3. All intervals LMP economic, dispatched
- MOT is respected in both economic evaluation and when dispatched in RTPD

RDRR optional forced dispatch in real-time treatment

- When manually forced through an Exceptional Dispatch, RDRR will be kept at its P_{max} *rerate* over its MOT
- If operators un-force the RDRR dispatch, it will remain dispatched over its MOT

Demand and Distributed Energy Market Integration

STAKEHOLDER SUBMISSIONS & PRESENTATIONS



California ISO

D-DEMI Working Group Proposals

Reliability Demand Response Resource (RD RR)

Minimum On Time (MOT)

Fixed Dispatch Cost (FDC)



CALIFORNIA LARGE
ENERGY CONSUMERS
ASSOCIATION

Agenda

CLECA Members

RDRR Context

Dispatch Background

Dispatch Changes

Proposals to Improve Dispatch Accuracy

Minimum On Time (MOT)

Fixed Dispatch Cost (FDC)

Questions / Discussion

CLECA Members

- CLECA member companies
 - Produce goods essential for daily life including critical infrastructure, oxygen for hospitals and food distribution
 - Represent the steel, cement, industrial and medical gas, beverage, minerals processing, cold storage, and pipeline transportation industries
- Operations are large and complex with high energy intensity
- Products require precise process controls, extreme temperatures, and tight chemical tolerances
- CLECA members are active participants in demand response – comprising a large portion of RDRR capacity

RDRR Context

- Reliability Demand Response Resource (RDRR) consists primarily of utility retail programs such as:
 - Base Interruptible Program (BIP)
 - A/C Cycling program
 - Agriculture and Interruptible Pumping program
- RDRR has historically been dispatched during system wide emergency conditions or local transmission emergencies
- RDRR has been highly reliable over many years
- RDRR was dispatched repeatedly during the 2020 and 2022 grid events and was helpful in preventing rolling outages
- RDRR is typically dispatched for several hours across the entire duration of a grid stress event

RDRR Background

- The majority of MWs participating in these programs are large Commercial and Industrial (C&I) customers:
 - Primarily interested in producing their “widget” but enroll in demand response programs to offset high energy costs and help the grid prevent rolling outages
 - Often have high opportunity costs for each curtailment event due to lost production, lost wages, unproductive energy, maintenance costs, and restart costs
 - Run large complicated operations that often require several hours or more to restart, regardless of the duration of a curtailment event
- Enrollment in RDRR programs has declined in the last several years resulting in reduced RDRR capacity, partially due to high frequency of dispatch in recent years, and concern about increased frequency and uncertainty about future dispatch protocols
- Improving the accuracy of RDRR physical operating characteristics would help in **CAISO resource dispatch optimization accuracy** and **mitigate program attrition to retain RDRR capacity**

Dispatch Background

- RDRR has historically been dispatched primarily via forced or exceptional dispatch at the discretion of CAISO operators under specified operating conditions
- RDRR may also be enabled for economic dispatch at the discretion of CAISO operators
 - Once enabled, RDRR may be dispatched economically considering prescribed bid price and operational characteristics
 - Economic dispatch parameters aligned with emergency conditions
- The Minimum On Time (MOT) and Fixed Dispatch Cost (FDC) proposals would only impact economic dispatch
- Whether or not RDRR is enabled for economic dispatch, CAISO operators retain their discretion for forced dispatch

Dispatch Changes

- RDRR had historically been available for economic or forced dispatch under AWE Warning conditions
- Upon CAISO implementation of the NERC EEA standard in 2022, RDRR was available for dispatch under EEA 1 conditions
- In June 2023, a CPUC resource adequacy (RA) decision ruled that RDRR should be available for dispatch in EEA Watch conditions
- The ruling resulted in CAISO changing its emergency procedures 4420 from allowing dispatch of RDRR in EEA 1 to allow dispatch of RDRR in EEA Watch conditions
- The possibility of **enablement for economic dispatch during EEA Watch** prior to emergency conditions caused great concern by participating RDRR customers and **increases the importance of accurate reflection of operating characteristics** in economic dispatch optimization

Proposals to Improve Dispatch Accuracy

- Proposals
 - Minimum On Time (MOT) – increase the tariff allowed MOT and modify dispatch to respect MOT in economic dispatch decision
 - Fixed Dispatch Cost (FDC) – incorporate documented costs that are fixed per dispatch event in the RDRR Masterfile
- MOT and FDC were both proposed and included in the final 2024 Catalog prioritization process
- Proposals are related but not dependent, and could be implemented individually at different times
- Clear conceptual link to existing operating parameters for other resource types
- Proposals would improve **CAISO resource dispatch optimization accuracy** and **mitigate program attrition to retain RDRR capacity**

Minimum On Time (MOT)

- CAISO Reliability Demand Response Resource Minimum On Time Workshop in December 2023 and Final Proposal published January 18, 2024
- Proposal recognized the **RDRR dispatch issues related to resource optimization accuracy and attrition** of participating customers **impact on RDRR capacity**, and many participating demand response customers have longer MOTs
- RDRR dispatch move from Real-Time Dispatch (RTD) process, with an advisory horizon extending approximately sixty-five minutes,” which required more restrictive startup and minimum on time to real-time pre-dispatch (RTPD) increased the efficiency of the market dispatch; and RTPD dispatch allows flexibility to resources’ minimum on time
- CAISO Proposed tariff change increasing the MOT + Start-up Time equal to or less than 255 minutes

4.13.5.3 Dispatch Parameters for RDRRs

Each Reliability Demand Response Resource shall be capable of reaching its maximum Load curtailment within forty (40) minutes after it receives a Dispatch Instruction, and shall be capable of providing Demand Response Services for at least four (4) consecutive hours per Demand Response Event. Each Reliability Demand Response Resource shall have a combined Start-Up Time and minimum on time less than or equal to of no more than one (1) hour 255 minutes.

Minimum On Time (MOT)

- However, the CAISO Proposal clarified that the tariff change alone would not impact economic dispatch, explaining that it “does not change how RDRR real time bids, if enabled in the market, are considered in RTPD for dispatch” and further explains that “RDRRs are not considered for commitment in STUC”
- RDRR resources have a Pmin of zero including “discrete” dispatch resources and therefore their MOT is not considered for economic evaluation – if economic for even a 15-minute window it will be dispatched despite current one hour MOT
- **Proposal to further the CAISO RDRR MOT Proposal** by adopting the proposed tariff change to increase allowed MOTs and investigate which system changes are required for this higher MOT to be respected for dispatch
 - Proposal to **allow** higher MOTs but not *require* higher MOTs and appropriate tariff changes – the master file should accurately reflect the resource
 - Evaluate economic evaluation of MOT for RDRR economic dispatch (eg adjust Pmin)
 - Evaluate appropriate MOTs for individual resources or resource portfolios

Fixed Dispatch Cost (FDC)

- Current rules do not allow RDRR resources to include costs other than prescribed \$/MWh bid. However, fixed costs for other resources are a long-established practice to accurately reflect cost of dispatch for more accurate dispatch optimization
- RDRR customers also have costs that are tied to a dispatch event, rather than the duration of the event, for example:
 - Some customers will lose a fixed value of “widgets” regardless of the event duration eg loss of purity or product specifications will cause product to be wasted
 - Some customers will require unproductive energy to regain process temperatures
- Does not change fundamental emergency nature of RDRR product – when not “exceptional” or “forced” dispatch, merely improves the accuracy of dispatch along with other resource characteristics eg \$/MWh bid price, MOT, discrete dispatch status, etc
- **Fixed Dispatch Cost (FDC) proposal** to include documented fixed costs per dispatch in Masterfile economic characteristics and reflect these costs in economic evaluation for dispatch
 - Evaluate any changes to dispatch that may be required if fixed costs are included in Masterfile
 - Evaluate which costs can be included and how to quantify these costs for individual resources or resource portfolios

Questions / Discussion

Demand and Distributed Energy Market Integration

RELIABILITY BASED DR PROBLEM STATEMENTS

CLECA RDRR Issue Description:

- Reliability demand response programs were not designed to consider individual customer's fixed costs within a market integrated economic dispatch; rather integration depended on a requirement for a resource's bid at 95-100% of the real time market bid cap be utilized in optimizing the dispatch of these resources.
- Current RDRR minimum on time requirement may not accurately reflect an RDRR's operational minimum on time (MOT) within the real-time market optimization horizon dispatch consideration.

SCE RDRR Issue Description:

- CAISO limits RDRR to a discrete dispatch limit of 100MW even if the resource is larger than 100MW.
- California Investor-Owned Unity Demand Response Programs are an aggregation of thousands of customers.
- It is not practical to break the aggregation of customers into sub resources to stay under 100 MW limit
- CAISO provides exceptions to this limitation, but the criteria is unrealistic to meet.

Exceptions granted if the following conditions are met:

1. The Demand Response Provider attests that the Reliability Demand Response Resources is a) located at a single site; b) cannot safely or operationally be split into multiple loads; and c) does not have the ability to operate under the Marginal Real-Time Dispatch Operation; and
2. The CAISO determines that RDRR's use of Discrete Real-Time Dispatch Option does not cause significant reliability issues.

SCE RDRR Issue Description:

- Allow 15 min and 60 minute RDRR bid option to utilize the startup-time listed in Masterfile when optimized in real-time
 - When a RDRR resource is participating under the 15-minute or 60-minute bidding options, the start-up time registered in the RDT is not utilized and instead a hard-coded start up time will be used in market clearing and generating dispatch.
 - Current start-up time will be respected only under the 5-minute bidding option.
 - Discourages participation under the 15-minute or 60-minute options

SCE RDRR Issue Description:

- Discrete Reliability Demand Response Resources (RDRR) should be allowed to be derated or rerated across the entire range between P_{min} and P_{max} .
 - RDRRs are shared resources between SCE's reliability/transmission function and SCE's scheduling coordinator/marketing function. When an RDRR is dispatched via the market, the Scheduling Coordinator (SC) must dispatch the entire resource. However, when an RDRR is dispatched by the reliability side, they do not necessarily need to dispatch the entire resource. In such cases, the SC is unable to accurately represent the remaining quantity of RDRR MW available to the market.
 - Available MWs for some RDRRs are a function of the weather. Without the ability to partially derate, this can result in a skewed representation of the quantity of MW available to the market.

SCE RDRR Proposal Scope:

- CAISO should consider eliminate the 100MW cap and address any concern thereof;
- alternatively, CAISO should change the exception criteria for discrete RDRR resources above 100MW to participate in the CAISO market without unnecessary restrictions.

Next Steps – Remaining DDEMI themes for problem statement formation

- **Enhancing demand flexibility market options [Today's Working Group & Following Working Group (7/29)]**
 - Hydrogen Electrolyzer participation
 - Utilization of NGR model by WEIM
 - Representation of DR through base schedules
- **Reliability based DR [Today's Working Group & Following Working Group (7/29)]**
 - Eliminate 100 MW cap or change exception criteria for RDRR
 - Allow RDRR bid option to utilize startup-time
 - Methods to consider fixed cost in economic dispatch decisions for RDRR
 - Allow RDRR to reflect Min on Time > 1 hour
- **Economic demand response [Following Working Group (7/29)]**
 - Refresh of PDR programs
 - Create mPDR for participants with BTM storage or Rule 21 exports
- **Expanding demand side bidding options**
 - Allow participating load resources to bid demand into real-time markets
- **Distributed energy resource participation**
 - Extend DR and DER programs within WEIM and EDAM
 - Explore BTM storage participation in wholesale markets

Next Steps

- Comments are due this Friday, July 11, regarding the posted discussion paper.
- All meeting material and notices are available on the Demand and Distributed Energy Market Integration working group webpage:
<https://stakeholdercenter.caiso.com/StakeholderInitiatives/Demand-DistributedEnergy-Market-Integration>
- If you have any questions, please contact Christina Guimera at cguimera@caiso.com, or ISOStakeholderAffairs@caiso.com

This Week at the ISO – 06/30/25

Stakeholder Meetings

All public stakeholder meetings are also listed on the [ISO calendar](#):

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- Tuesday, July 8th – [Demand and Distributed Energy Market Integration Working Group](#)
 - 9:00am - 4:00pm PT [\(link\)](#)
- Tuesday, July 8th – [Release User Group Forum](#)
 - 10:00am - 11:00am PT [\(link\)](#)
- Tuesday, July 8th – [Interconnection Customer User Group](#) (Tentative)
 - 1:00pm - 2:00pm PT [\(link\)](#)
- Thursday, July 10th – [Market Update](#)
 - 10:15am - 11:00am PT [\(link\)](#)
- Thursday, July 10th – [DAME, EDAM, and EDAM CAISO Balancing Authority PR Market Simulation Meeting](#)
 - 1:00pm - 2:00pm PT (CIDI or can email at marketsim@caiso.com)
- Friday, July 11th – [2025 Summer Tariff Clarification Filing](#)
 - 10:00am - 11:00am PT [\(link\)](#)

Comment Submission Deadlines

- Wednesday, July 9th – [Ancillary Services Focus Group 3](#) ([Commenting Tool](#))
- Friday, July 11th – [Demand and Distributed Energy Market Integration](#) ([Commenting Tool](#))

Trainings

The ISO encourages market participants to review the new training page on the [Market Participant Portal](#). In addition to the [Training Center](#), this new training page provides Scheduling Coordinators with a centralized location for accessing computer-based training videos (to learn more, please view the [High-Level Overview](#) video).

- None scheduled this week

This Week at the ISO continued

Market Simulations

Please refer to our [Release Schedule](#) for the most recent updates of initiatives scheduled for MAP- and Production- stage market sims.

The PRRs listed below have an open 10-business day comment or appeal period from July 1, 2025 through July 16, 2025.

Business Practice Manual (BPM) Updates

The status of all PRRs and updated BPMs in the [BPM Library](#) are published on the [BPM Change Management Website](#).

New ISO PRR's:

[PRR 1634](#) Outage Management BPM, Emergency PRR, Clarification on generation outage nature of work to include curtailment due to plant configuration parameters

[PRR 1633](#) Generator Interconnection and Deliverability Allocation Procedures BPM, Updates related to the Interconnection Process Enhancements Track 3 stakeholder initiative

[PRR 1632](#) Generator Management BPM, Interconnection process enhancements 2023, FERC order 2023, and miscellaneous updates

ISO Recommendations:

[PRR 1631](#) Market Operations BPM, Emergency PRR, Automated logic to achieve a market solution

[PRR 1630](#) Reliability Requirements BPM, Emergency PRR, Update regarding generating units deliverability status

ISO PRR Withdrawn:

[PRR 1626](#) Market Operations BPM, Activation of contingency-based flow gates in fifteen-minute market.

ISO Final Decisions:

[PRR 1629](#) Energy Imbalance Market BPM, Addition of seasonal opt-in for CAISO balancing authority.

[PRR 1627](#) Market Operations BPM, Emergency PRR, Adding state of charge to flexible ramping awards determination.


[PRR 1625](#) Transmission Planning Process BPM, Emergency PRR, Competitive solicitation timeline for selection of approved project sponsor.

[PRR 1624](#) Scheduling Coordinator Certification and Termination BPM, Updating affiliate information and how they are associated



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Story | Western Energy Markets

CAISO governance continues to evolve with EDAM's broadening reach

By Stacey Crowley

07/01/2025



Story | Western Energy Markets

A new way of allocating congestion revenues for EDAM

By ISO Staff

06/19/2025



Story | Operations

Strengthening reliability through year-round gas-electric coordination

By Shawn Grant

06/04/2025

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Appendix

RDRR CAISO characteristics: Masterfile Name, Code and Description

Name	Code	Unit	Description
Start-up Time	STRT_STARTUP_TIME	minutes	Startup Time is the time (in minutes) it takes a resource to achieve PMin from an off-line position
Minimum Generation Capacity	MIN_GEN	MW	For a Generating Unit, the minimum sustained operating level (Pmin or plant minimum) at which it can operate at a continuous level. For DR resources - the smallest increment that can be curtailed.
Maximum Ramp Rate	MAX_RR	MW/minute	Represents the fastest Best Operating Ramp Rate in the RAMP curve
Minimum On Time	MIN_ON	MW	The minimum amount of time that a Generating Unit must stay on-line after starting up and reaching PMin, prior to being shut down, due to physical operating constraints. If no constraint, put zero (0). For DR resources - Minimum amount of time the DR resource can maintain a curtailment, once called to be curtailed.

Background Reference Material

- Reliability Demand Response Product (RDRP) policy initiative [web page link](#)
- March 19, 2021 Final Report at page 33, paragraph 3 [Summer 2021 market enhancement final proposal link](#)
- For more information on the Pmin re-rate feature for discrete RDRRs see the RDRR Bidding Enhancements Final Proposal, April 12, 2022 starting at page 5. [RDRR bidding enhancements Final Proposal](#)