



California ISO

Commitment Cost Enhancements Tariff Clarifications

Draft Final Proposal

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ISO PUBLIC

ISO Policy Initiative Stakeholder Process



Discussion Topics

- CCE3 background
 - Use limited resources
 - Conditionally available resources
 - Bidding and RAIM treatment
- Proposal for conditionally available resources
- Proposal for run of river resources
- Next Steps

Timeline for previous work related to this policy

- 2015 – Reliability services initiative
 - RAIM tools developed with AAH for RA resources
- 2015 – Policy work for commitment costs 3 began
 - Opportunity cost adder were a critical design element
- 2017 – Tariff development for CCE3 began
- April 2019 - Policy implemented
 - ISO made BPM modifications shortly after implementation for outage cards relating to CAR resources and announced that tariff clarifications would quickly follow
- September 2019 – Tariff clarifications published
 - Stakeholder expressed concern regarding implications of clarifications
- December 2019 –Clarifications initiative launched

The objective of CCE3 was to receive greater market participation from use limited resources

- Resources that have a limited amount of energy, starts or run hours can qualify as use-limited
 - A gas resource with a certain number of starts
 - A storage resource with a pond that provides a limited amount of stored energy
- Concern was ISO might deplete these use limitations before an optimal time of use
- Use-limited resources are eligible for bid adders to prevent depletion of limited availability
 - Adders calculated from expected future market outcomes

Opportunity cost example for energy limitations

- Consider a hydro resource that can only be dispatched 3 hours during one day
 - Highest prices are \$70, \$60, and \$55/MWh
 - Resource has ~\$0/MWh marginal operating costs
 - If resource dispatched in hour when price is \$20 has it could be dispatched in hours before the price reaches \$55/MWh
 - The opportunity cost for a resource to run, is then \$55/MWh, what it would be giving up if run during another hour
- Applying opportunity cost adders ensures an optimal dispatch for the resource driven by market price signals
- Ensures full (24x7) availability to the ISO markets

Applying opportunity cost bid adders allows for these resources to provide high levels of flexibility

- With the appropriate bid adders applied to use limited resources, these resources will be able to bid into the real-time market 24x7
 - Resources are subject to RAIM if not bidding into the market
 - These resources remain exempt from RA bid insertion
- Risk: if prices are higher than modeled, then use limited resources could be used too early
 - ISO offers use limited resources RAIM exempt outage cards to manage these issues

Not all limitations can be modelled with the use limited framework

- Some resources are not able to bid into the market during specific times
 - Gas resource that cannot operate in certain hours because of noise restrictions
 - Hydro resource with regulatory water flow restrictions
- These constraints are different and distinct from use limitations
- Conditionally available resources (CARs) were created to account for these resources
 - Opportunity costs cannot capture conditionally available limitations

Conditionally available resources are required to bid into the market for RA obligations

- Conditionally available resources are required to bid all capacity shown for resource adequacy
 - “Conditionally available” capacity is not the bidding requirement
 - Outage cards are available for resources with conditional available reasons for unavailable capacity
- Applicable RAAIM penalties will apply if a CAR is unable to bid into the market
 - For example: Noise limitations are in place during an availability assessment hour
- Resources may potentially be use limited and conditionally available

Run of river hydro resources will have similar treatment to variable energy resources (VERs)

- Run of river resources cannot influence their output
 - Resources are generally price takers in the market, but may be able to ramp down in response to price signals
 - I.e. A run of river resource with 10 MW of capacity may be only able to produce 7 MW for a specific hour
- Like variable energy resources, run of river resources will not be subject to RAAIM
- Run of river resources will continue to use counting rules in place today
 - These resources will likely use the rules for “non-dispatchable” hydro, which includes three years of historic availability
- These resources can be shown for flexible RA

The ISO uses forecast data for the variable energy resources on the system today

- Run of river resources will not receive a variable energy resource designation in Master File
- A third party software generates forecasts for VERs
 - Hydro facilities are very complex and the ISO will not be receiving forecasts for their output
 - These values limit the dispatch instructions received in the RT market
- VERs may supply their own forecasts to the ISO today
 - The ISO is not proposing that this feature be extended to run-of-river resources in this proposal
 - This is a feature that may be implemented at a later time
 - This feature could potentially be used by run-of-river resources to limit real-time dispatch instructions

Run of river resources will continue to have access to tools to indicate availability to the ISO

- Run of river resources will have the following tools available to indicate reduced availability:
 - Bidding parameters (price/MW pairs)
 - Self-schedules
 - Outage cards
- These are the same set of tools available to these resources today

Summary of proposed tariff changes

- Clarify tariff language that resources can be both use-limited and conditionally available
- Clarify that conditionally available resources should submit outage cards when unavailable
 - No requirement to bid in conditionally available capacity 24x7
- Change the conditionally available outage cards so that they are subject to the availability incentive mechanism
- Provide definition for run of river resources and specify that they have similar treatment to VER resources

Next Steps

- Engage in the CPUC process to develop a new counting methodology for hydro resources with storage
 - Updates through the CPUC RA proceeding and workshop process
 - Addresses concerns raised by PG&E in comments
- File comments to initiativecomments@caiso.com by Tuesday February 18, 2020.

Date	Action
4-Feb	Draft Final Proposal – Stakeholder Call
18-Feb	Final Comments Due
25-Mar	ISO Board of Governors Meeting
1-Apr	Tariff filing at FERC