Commitment Cost Enhancements
Tariff Clarifications

Draft Final Proposal

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ISO Policy Initiative Stakeholder Process

We are here

PROPOSAL DEVELOPMENT

- Issue paper
- Straw proposal
- Draft proposal
- Draft business requirement specification
- Draft tariff

DECISION

- Final proposal
- ISO Board
- EIM Governing Body
- Tariff filing
- FERC

IMPLEMENTATION

- Business practice manual revisions
- Market simulation
- Go Live

This represents the typical process, and often stages of the process run in parallel.
Discussion Topics

- CCE3 background
  - Use limited resources
  - Conditionally available resources
  - Bidding and RAAIM 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**
  - RAAIM 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 RAAIM 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 RAAIM 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.

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