



# Commitment Cost Enhancements Tariff Clarification

Stakeholder Web Conference

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# Discussion Topics

- CCE3 background
  - Use limited resources
  - Conditionally available resources
  - Run of river resources
- Bidding obligations
- Applicability of RAAIM and obligations
- Notification of outages
- Tariff clarifications

# 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 a use-limited default energy bid adder
  - Adders calculated from expected market revenues so that the market dispatches the resources considering the value of its use limitations

# 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, that ensure are at least \$55/MWh, can create an optimal dispatch for the resource driven by market price signals

## 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 in full resource adequacy capacity
  - Conditionally available capacity is not the bidding requirement
  - Outage cards are available for resources with conditional available reasons for unavailable capacity
- Applicable RAIM penalties will apply if a conditionally available resource is unable to provide energy to the market because of an applicable condition
  - For example: Noise limitations are in place during an availability assessment hour
- Resources can potentially be use limited and conditionally available

# Run of river hydro resources will be treated like 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 VER resources, run of river resources will need to transmit data to the ISO on how much they are capable of generating in advance of the resource running
  - The ISO will not be generating forecasts for these resources



# Run of river resources are not subject to RAAIM because capacity is calculated by historic output

- Like variable energy resources, run of river resources are not subject to RAAIM
- Run of river resources will have a historic output methodology to calculate capacity values for the resources based on past availability
  - Resource that are online more will have higher future capacity value
- These resources can apply for flexible status, if the resource is able to ramp down from forecasts
- Going forward the ISO may apply an ELCC calculation for these resources to calculate RA credit
  - New counting conventions may account for low hydro years/low snowpack, so that hydro resources are not over-valued

# Summary of tariff clarifications and amendments

- Clarifying section 40.6.4 so that the RA obligation to bid “expected available Energy” applies only to CARs
  - Hydro, pumping load, and non-dispatchable resources must register as CAR if they need section 40.6.4
- Section 40.9.2(b)(1)(C) creates RAAIM exemption for run-of-river hydro and Appendix A defines run-of-river
- Section 40.9.3.1(b)(2) clarifies that CARs are assessed RAAIM based on their shown RA capacity during AAHs
- Non-substantive clarifying edits in sections 40.9.3.6.4 and 40.9.3.6.5 on RA substitution
- Clarifications in 40.10.4 on flexible capacity processes

# Next Steps

- Stakeholder written comments requested by October 14, 2019
  - Submit to [initiativecomments@caiso.com](mailto:initiativecomments@caiso.com)
  - All related meeting material is available at:  
<http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx>