Deliverability and Resource Adequacy Counting

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TOPIC 1: DELIVERABILITY

Deliverability and Resource Adequacy

- Per ISO Tariff section 40.4.6 Reductions for Deliverability
  - The ISO will reduce the Local Regulatory Agency (LRA) established Qualifying Capacity (QC) values for any part proven to be undeliverable to the aggregate of load.
- Per ISO Tariff and CPUC rulings
  - Only fully deliverable resources (FCDS), the deliverable part of a resource (PCDS) or interim deliverable resources (IDS) can provide resource adequacy capacity.
  - Energy Only resources are not allowed to provide resource adequacy capacity.
- CPUC program transition to 24 hour accounting
  - Does not change what resources can count for resource adequacy.

CAISO's Deliverability Enforcement Process

- Transmission deliverability must continue to be enforced for any resource that uses the grid for delivery.
- ISO will continue to perform deliverability studies at the appropriate stressed system condition(s).
- Deliverability studies are done at peak and "Battery charging" is mostly done during non-peak periods:
  - Available deliverability is typically highest at peak load periods
  - Any hour with "less load" has "lower deliverability available" and therefore deliverability constraints cannot be ignored during hours outside of peak either (to the contrary)
- EO resources cannot be used for resource adequacy:
  - To serve load across the transmission system
  - To charge batteries across the transmission system

Hybrid* Co-located

- Should the EO part of "hybrid*" co-located resources be allowed to charge batteries at the same POI?
- Advantages:
  - No transmission impact
  - Would provide equal treatment vs. hybrid resources under a single market ID
- Challenges:
  - New CPUC only RA product that is not used by any other LRA
  - Other EO resources cannot be used for RA compliance and the vast majority of other co-located resources are deliverable (FC or PC)
  - Resource is not part of the RA fleet and not subject to RA rules including Must Offer Obligation
- The CAISO is open to further discussion on this issue

* = As defined by the CPUC

Hybrid* Co-located vs. Hybrid Single Market ID

- Today there are only 3 EO co-located resources.
  - See draft 2023 NQC list
- Future model choice will depend in part on new CPUC counting rules for co-located resources.
- Options for existing 3 EO co-located resources:
  - Transfer “back” small part of the current deliverability from the battery to the solar in order for both to count **fully for RA**
    - Fast and simple if done before the final NQC list is posted
    - Not possible during the year after the final NQC was posted
  - Change metering and use a single market ID
- Resources in the queue:
  - The owner can split the available deliverability (if co-located) however they want when the resources become COM/COD.

* = As defined by the CPUC

IMPORTANCE OF ACCURATE ESTIMATION OF HOURLY OUTPUT FOR ALL ENERGY LIMITED RESOURCES

Energy Limited RA Resources

- Accurate counting is critical component of any reliable resource adequacy paradigm
  - The energy available to charge storage resources and serve load should properly factor in energy limits
  - All energy limited resources including solar, wind, hydro, battery and demand response resources should have an accurate "estimation of output" within each hour
  - Hydro output (particularly from storage backed resources) is currently low during non-peak hours, generally at values far lower than the current QC values (used for peak purposes).
  - A single QC value applied to all hours may overestimate monthly available energy, particularly to both charge batteries and serve peak load needs
  - Consider establishing hourly shaped hydro QC values