



Decision on resource adequacy enhancements phase 1

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Management's proposed phase one elements will drive greater resource adequacy fleet operability and dependability

Management proposes three resource adequacy enhancements:

1. Minimum state of charge requirement;
2. Planned outage process enhancements; and
3. Capacity procurement authority to cure identified local capacity area energy deficiencies

Management proposes an interim minimum state of charge requirement to ensure storage resources are available to meet reliability needs across critical hours

- Optimized day-ahead schedules can be undone given real-time dispatch only considers system conditions one hour in the future
- Management proposes an interim minimum state of charge requirement to ensure availability for evening peak periods
 - Requirement imposed only on tightest supply days to a set of critical hours determined by operators
 - Operators will have ability to drop requirements in real-time if conditions change
 - Minimums will be imposed on hours directly prior to discharge schedules, and not in hours earlier in the day

Stakeholders concerned that the minimum state of charge requirement would limit real-time market participation

- Stakeholders expressed concerns that frequent use of the minimum state of charge requirement would adversely impact their real-time market participation
 - Management responded by significantly restricting the use of the requirement and placing a sunset on the proposal
- Management committed to starting a new energy storage enhancements initiative this spring to replace this requirement by no later than 2023

Management proposes to require resource adequacy resources to provide substitute capacity for planned outages

- Provides enhanced reliability and better assures suppliers can take planned outages
 - planned outages are not included in the resource adequacy planning reserve margin
- The ISO cannot evaluate planned outages far in advance
 - final resource adequacy resources are not known until 45-days before the operating month
- Providing substitute capacity upfront with planned outages minimizes reliability and supplier risk

Stakeholders raised concerns about Management's planned outage process proposal

- Certain stakeholders concerned resources may not be able to find substitute capacity to take a planned outage
- Certain stakeholders argue substitution should not be required in months when the system has excess capacity to cover the outage
- Management believes the proposal is justified:
 - Resources should not count towards resource adequacy in months that the resource has a planned outage and cannot find substitute capacity
 - Market should not bare the risk of insufficient capacity due to planned outages
 - Majority of planned outages occur in off-peak months, when there is substitute capacity available
 - Resource should be available during the month it is providing resource adequacy or it should compensate another generator for meeting its obligation

Management proposes new capacity procurement mechanism authority to cure identified local capacity area energy deficiencies

- Increasing reliance on availability-limited resources to meet local area resource adequacy capacity needs
- The ISO expanded its local capacity technical studies to ensure sufficient capacity and energy to meet reliability needs
- Management proposes new capacity procurement mechanism authority for local collective deficiencies where local areas or sub-areas fail the energy sufficiency evaluation
- Stakeholders largely support this new authority

Management requests the Board approve the resource adequacy phase 1 enhancements

- Minimum state of charge requirement will increase the operability of storage resources to meet reliability needs
- Proposed planned outage substitution enhancements will provide greater resource adequacy resource availability
- Enhanced capacity procurement mechanism authority will ensure sufficient energy is available to meet local reliability needs