



Day-Ahead Market Enhancements discussion

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Imbalance reserves would be co-optimized with energy and ancillary services in the integrated forward market

- Upward and downward imbalance reserves with separate bids
- Imbalance reserve awards obligate resources to provide economic energy bids in the real-time market
- Awards limited to the resource's fifteen-minute ramping capability
 - Must be able to start in fifteen-minutes if resource is offline
- Nodally modeled and priced respecting transmission constraints
 - Ensures deliverability
 - Prices reflect bids, opportunity costs, and congestion
- Procurement requirement based on quantile regression methodology
 - Accounts for historical differences as well as actual load and VER forecasts

Overview

- Under current rules, some resource adequacy capacity that does not receive a day-ahead schedule has a must-offer obligation in real-time
 - Excludes long starts, extra long starts, and non-dynamic system resources
- ISO proposes in DAME to add an imbalance reserve product to the integrated forward market
 - Imbalance reserve awards obligate a resource to provide economic bids in real-time
- ISO proposes in DAME that imbalance reserves replace the current resource adequacy real-time must-offer obligation

ISO proposes in DAME that imbalance reserves replace the resource adequacy real-time must-offer obligation (1 of 3)

- Resource adequacy resources receive no direct market compensation for
 - Being available in real-time via a residual unit commitment schedule
 - Being available in real-time without any day-ahead schedule
- Suppliers have availability costs that are hidden from the market
- MSC has weighed in on merits of using spot market payments rather than resource adequacy contract payments for real-time availability compensation

ISO proposes in DAME that imbalance reserves replace the resource adequacy real-time must-offer obligation (2 of 3)

- If current resource adequacy real-time must-offer obligation is retained, resource adequacy resources would receive payments for imbalance reserve awards when they would have been available in real-time anyway
- Imbalance reserves economically “shape” the real-time MOO around the net demand curve rather than a flat requirement based on monthly peak
 - Efficiencies can be gained off-peak while still providing comparable reliability coverage on-peak

ISO proposes in DAME that imbalance reserves replace the resource adequacy real-time must-offer obligation (3 of 3)

- Resource Adequacy resources without a day-ahead schedule may not be offered into the real-time market
 - Operators would retain the ability to exceptionally dispatch resource adequacy resources not scheduled in day-ahead market
- Imbalance reserves compensate suppliers with market payments for real-time availability
 - Market optimization allocates real-time availability based on costs
 - Capacity is procured when and where it is needed
 - Under status quo California resource adequacy would offer capacity at \$0 into the EDAM
- These benefits expand in a regional market