

5.1 Operating Reserve Accounting Overview

Accounting for Operating Reserve is performed on a daily basis. A pool-scheduled resource of a PJM Member is eligible to receive credits for providing Operating Reserve in the day-ahead market and, provided that the resource was available for the entire time specified in its offer data, in the balancing market. The total resource offer amount for generation, including startup and no-load costs as applicable, is compared to its total energy market value for specified operating period segments during the day (including any amounts credited for day-ahead scheduling reserve in excess of the day-ahead scheduling reserve offer, any amounts credited for synchronized reserve in excess of the synchronized reserve offer plus opportunity cost, and any amounts credited for resources providing reactive services). If the total value is less than the offer amount, the difference is credited to the PJM Member.

Credits are also provided for pool-scheduled energy transactions, for generating units operating as synchronous condensers (not for synchronized reserve nor for reactive services) at the direction of PJM, for cancellation of pool-scheduled resources, for units whose output is suspended or reduced due to a transmission constraint or other reliability reason, for units performing an annual black start test, and for units providing reactive services at the direction of PJM.

5.2.6 Credits for Resources Reduced or Suspended due to a Transmission Constraint or for Other Reliability Reasons

At the end of each Operating Day, PJM calculates the credits due to each PJM Member for resources incurring lost opportunity costs associated with following PJM's request to reduce or suspend the output of a generating resource due to a transmission constraint or for other reliability reasons.

Pool-scheduled generators whose output is reduced or suspended and the hourly integrated real-time LMP at the unit's bus is higher than its offer corresponding to the level of output requested by PJM are credited hourly in an amount equal to: $(\text{Desired MWh} - \text{Actual MWh}) * (\text{Real-time LMP} - \text{Incremental Offer Rate at Actual MWh})$. The Desired MWh used in this calculation is based on the hourly integrated real-time LMP at the generator's bus and adjusted for any regulation or synchronized reserve assignments.

Pool-scheduled combustion turbine units scheduled to produce energy in the day-ahead market, but are not called on by PJM and do not operate in real-time, are credited hourly in an amount equal to the higher of: $(\text{Real-time LMP} - \text{Day-ahead LMP}) * \text{Day-ahead scheduled MWh}$; or $(\text{Real-time LMP} - \text{Incremental Offer Rate at Day-ahead scheduled MWh}) * \text{Day-ahead scheduled MWh}$.

Pool-scheduled or self-scheduled wind generators whose output is reduced or suspended at the request of the Office of the Interconnection and the hourly integrated, real-time LMP at the unit's bus is higher than the unit's offer corresponding to the level of output requested by PJM are credited hourly in an amount equal to: $(\text{Desired MWh} - \text{Actual MWh}) * (\text{Real-time LMP} - \text{Incremental Offer Rate at Actual MWh})$. The Desired MWh used in this calculation is the lesser of the point on the unit's offer curve corresponding to the hourly integrated real-time LMP at the generator's bus adjusted for regulation or synchronized reserve assignments or the PJM forecasted output for the unit.

Pool-scheduled or self-scheduled wind generators are only eligible for the above-referenced credit if they:

- Submitted offer data in accordance with the PJM Tariff requirements for interconnection services for generation resources
- Operated the resource according to PJM Tariff and PJM Manual requirements for wind resources

If a technical issue (e.g. computer system failure or disruption or failure of communications equipment) occurs resulting in an erroneous forecast, PJM and the market participant will determine a mutually agreeable settlement value. Recommendations for reconciliation include but are not limited to:

- Using the average forecast values as determined by PJM wind forecasting tool from before and after the technical issue to determine forecast value during the issue
- Using the forecast value as determined by PJM wind forecasting tool from before the technical issue for the first half of the duration of the technical issue and forecast value from after the technical issue from the latter half of the duration of the technical issue
- Using Market Seller's forecast value during the technical issue

PJM Actions:

- PJM retrieves the following information:
 - list of units and timeframes reduced or suspended for a transmission constraint or other reliability reason (dispatcher logs and Market Operations eligibility data)
 - resource offer data
 - scheduled MWh for generation offers cleared in day-ahead market
 - state estimator generation MWh, trued-up to match revenue meter generation MWh from PJM eMTR (if available)
 - scheduled MWh for eSchedules —GenerationII contracts, if applicable
 - generator day-ahead and real-time LMPs
 - assigned regulation MWh and regulation bias factors
 - assigned synchronized reserve MWh
 - hourly integrated wind forecast from PJM's wind forecasting tool

- PJM sums the Balancing Operating Reserve lost opportunity cost credits for all reduced or suspended generating resources for each PJM Member.