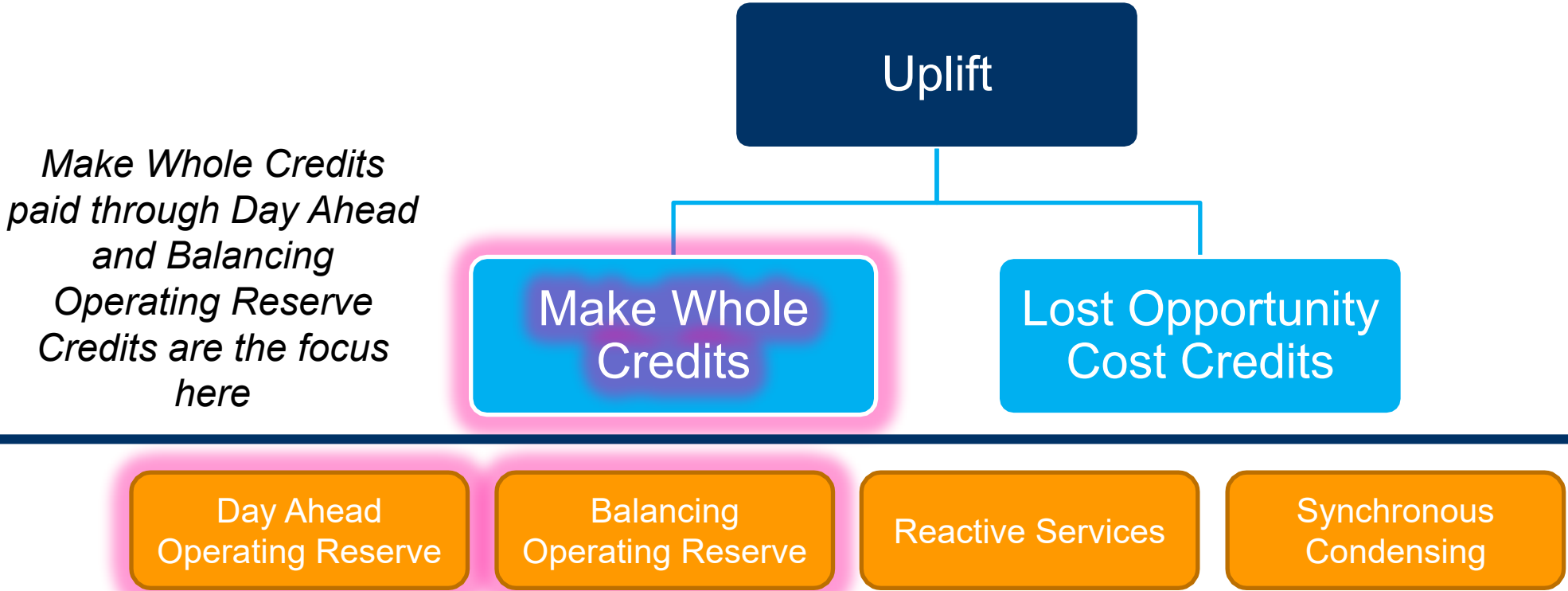


Advanced Pre-Scheduling Make Whole Education

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Uplift is a general term that refers to additional credits paid to units to ensure resources operating at PJM's direction do not operate at a loss. Uplift in the energy market is paid through several sets of credits.

Line Items



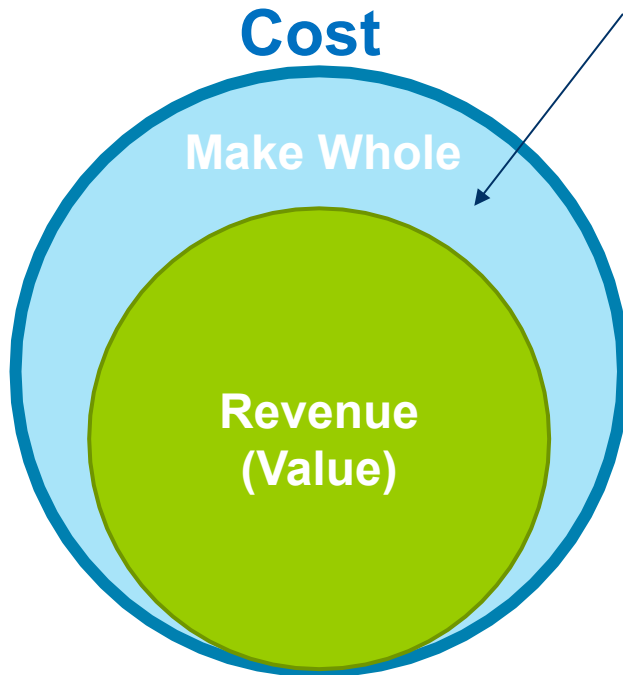
Make whole credits are calculated separately for the day-ahead and real-time markets.

- Day-ahead credits are paid to units committed in the day-ahead market.
- Balancing credits are paid to:
 - Units not committed in the day-ahead market.
 - Units committed in the day-ahead to cover any differences from the day-ahead commitment.
 - They are made whole for buy back from the day-ahead commitment when producing less than day-ahead MW and additional MW produced in real-time when producing more than the day-ahead MW.

- There are currently no rules that specifically address make whole credits for units pre-scheduled in advance of the Day-Ahead market. Therefore the standard make whole provisions apply to these units.
- The tariff prescribes make whole calculations for units committed in Day-Ahead and running in Real-Time
 - OA, Schedule 1, 3.2.3 (b) and (e)

Make whole credits are paid for pool-scheduled resources when their revenues do not cover the costs represented in their offers.

Make Whole Credit = **Cost** minus **Value** (floored at zero)



Cost = Total resource offer amount for generation, including startup and no-load costs as applicable

Value = Amounts credited in the energy markets and net profit from the ancillary services markets

Resources are made whole to the cost of the RT MW produced

- However, if they produce more than 110% of Operating Reserve Desired MW they are only made whole to the cost of the desired MW
- The cost of gas procured but not burned is not covered through make whole credits
 - This applies to additional days of gas that had to be procured due to weekend gas package definition, as well as gas that was procured for days that were prescheduled in advance of the day-ahead market, but which the unit was not dispatched to burn

The cost of the MW the resource is made whole for is the cost from the lesser of the Committed Offer and Final Offer

- Committed Offer: Offer in place at time of Day-Ahead or Real-Time commitment
- Final Offer: offer in place in Real-Time during the operating hour (locked down 65 minutes prior to start of hour)
 - This differs from the Committed Offer only if the unit updates its offer subsequent to commitment or if the schedule on which the unit is running changes

- The forecasted prices at which a Market Seller expects to offer for units with a Startup or Notification Time less than 24 hours are not considered binding offers until the close of the day-ahead market
 - The time of the advanced pre-scheduling directive therefore cannot be used as the time of commitment for Balancing Operating Reserve Credit purposes
 - Committed Offer for units committed Day-Ahead: Offer reflected when Day-Ahead bidding window closes
 - Committed Offer for units not committed Day-Ahead: Offer reflected when unit is logged by PJM Dispatch subsequent to day-ahead market clearing

This issue charge presents an opportunity to create rules that specify a different time of commitment for advanced pre-scheduled units than would apply to all other units committed outside the DA market.

- Uplift Credits are calculated and paid for each operating segment within an operating day
 - Revenues earned in an operating day do not offset costs incurred in other operating days
 - For advanced pre-scheduled units that are committed for multi-day periods, a unit could receive credits in excess of what is actually needed to make it whole to its costs for the entire run due to the daily nature of this calculation.
 - This happens when the units earns net profits on some days but requires make whole on other days within the run.

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