Net Energy & Ancillary Services Revenue Offset Methodology Review

MIC Special Session – Quadrennial Review

April 22, 2022

Overview

For the purposes for the Quadrennial Review, PJM has calculated the Net Energy & Ancillary Services Review Offset using:

- The forward-looked “Projected EAS Dispatch” method, developed in 2020;
- Updates to the Projected EAS Dispatch model accounting for Brattle’s recommendations, in order to reflect the impacts of those recommendations on Net CONE.

This presentation provides a review of the Projected EAS Dispatch methodology

PJM will provide updates with regard to PJM’s position on the historical vs forward-looking approach at a future Quad Review MIC Special Session.

Forward Looking Dispatch Methods

Optimal-based Dispatch at Forward LMPs

- CT
- CC
- Coal
- Storage

Calculated Net EAS Offset with updated assumptions based on Brattle Recommendations

Assumed Output Model Applied to Forward LMPs

- Nuclear
- Solar (Fixed and Tracking)
- Wind (Onshore)
- Wind (Offshore)

Projected EAS Dispatch

Optimized dispatch with the objective of committing and dispatching a resource for the purpose of maximizing its net energy and ancillary services revenues, subject to operating parameters and cost of the resource.

Original Input Assumptions	Updates to Simulate Brattle Recommendations		
	Combined Cycle	Combustion Turbine	Battery Energy Storage
Resource parameters	Ramp Rate, Max Capacity, Min Stable Level, Heat Rates, Time to Start, VOM, Start Fuel	Ramp Rate, Heat Rate at Max Capacity, VOM, Start Fuel	
Energy Prices: Prior 3 calendar years of LMP scaled using forward LMPs for the Delivery Year.			
Prior 3 calendar years of **Regulation Market Clearing Prices** scaled using forward energy prices for the Delivery Year.	Removed Regulation		
Prior 3 calendar years of **Reserve Market Clearing Prices**	Scale using forward energy prices for the Delivery Year.*		
Natural Gas: Prior 3 calendar years of natural gas prices, scaled using forwards. Included variable transportation cost.	Variable transportation costs removed		N/A
Emissions Costs: Prior 3 calendar years of SO2 and NOx allowance prices scaled to delivery years. RGGI ECR prices for delivery year until historical			N/A
10% adder on VOM for CT	N/A	Include 10% adder on natural gas cost only	N/A

* Not included in preliminary simulations

Historical Approach Currently Uses Peak-Hour Dispatch

The Reference Resource is committed in the Day-ahead Energy Market in four distinct blocks of four hours of continuous output for each block from the peak-hour period beginning with the hour ending 0800 EPT through to the hour ending 2300 EPT for any day when the average day-ahead LMP for the area for which the Net Cost of New Entry is being determined is greater than, or equal to, the cost to generate (including the cost for a complete start and shutdown cycle), plus 10% of such costs only for the 2022/2023 Delivery Year, for at least two hours during each four-hour block, where such blocks shall be assumed to be committed independently; provided that, if there are not at least two economic hours in any given four-hour block, then the Reference Resource shall be assumed not to be committed for such block; and to the extent not committed in any such block in the Day-ahead Energy Market under the above conditions based on Day-Ahead LMPs, is dispatched in the Real-time Energy Market for such block if the Real-Time LMP is greater than or equal to the cost to generate, plus 10% of such costs only for the 2022/2023 Delivery Year, under the same conditions as described above for the Day-ahead Energy Market.

Contact

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