



December 12, 2024

To: Market Sellers Using an Opportunity Cost Adder in Cost-Based Energy Market Offers  
Re: IMM Opportunity Cost Calculator – Annual Review

**Background:**

As outlined in Section 12.7 of Manual 15, PJM has an annual obligation to review the inputs and results of the Market Monitor's Opportunity Cost Calculator to verify that it remains compliant with the requirements of Schedule 2 of the Operating Agreement.



PJM Manual 15: Cost Development Guidelines  
Section 12: Energy Market Opportunity Cost and Non-Regulatory Opportunity  
Cost Guidelines

**12.7 IMM Opportunity Cost Calculator**

The IMM Opportunity Cost Calculator is a constrained optimization software application independently developed and owned by Monitoring Analytics, LLC. Any changes to the IMM Calculator must be approved by Monitoring Analytics, LLC. The IMM will notify PJM of any significant changes to the IMM Opportunity Cost Calculator and any such changes will be reflected in updates to Manual 15 Section 12.7. PJM will review any such changes to verify that the IMM Opportunity Cost Calculator continues to meet the requirements of Schedule 2 of the Operating Agreement.

On an annual basis, PJM will review the inputs and results of the IMM Opportunity Cost Calculator in consultation with the IMM to verify that the IMM Opportunity Cost Calculator continues to meet the documented requirements.

**PJM Review of the IMM Opportunity Cost Calculator:**

Throughout the course of 2024, PJM monitored the level of OCC adders, as calculated by Monitoring Analytics, for all 117 units for which an adder is calculated. In general, the trending of adder values corresponded to what one would expect to see based on the units' remaining run hours. In a few cases, a unit's adder increased or decreased by an amount that wasn't immediately explainable. For those cases, PJM requested the calculator's input and solution data and reviewed it detail. IMM staff worked with PJM to interpret calculator inputs and results. No errors in the calculator's logic were found and the changes in adders were explainable and correct.

Additionally, the Market Monitor made several changes to their calculation methodology in 2024:

- The first was adding the ability to calculate an OCC adder on a per start basis for those units whose environmental permit is written that way.
- The second was adding the ability to calculate an OCC adder utilizing a rolling hours per year limit. Previously, units with an environmental permit written this way had their emissions limits converted to a per MWh basis. This change had a minimal impact on the OCC adders for those resources.
- The third is to change the calculator's optimization to allow for unit dispatch levels other than eco min or eco max. This change will aim to minimize some observed week-to-week volatility in OCC adders and produce more realistic and accurate solutions.

PJM and the Market Monitor will update Manual 15 to reflect these enhancements as appropriate.

**Conclusion:**

At this time, PJM believes that the Market Monitor's Opportunity Cost Calculation methodology remains in compliance with Schedule 2 of the Operating Agreement and PJM has no concerns with the IMM's Opportunity Cost Calculator methodology.

Additional questions on the PJM calculator may be addressed to Jennifer Freeman at [Jennifer.Freeman@pjm.com](mailto:Jennifer.Freeman@pjm.com).

Sincerely,  
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