Monitoring Analytics

DATE:	**September 26, 2018**
TO:	**PJM**
FROM:	**IMM**
SUBJECT:	**Opportunity Cost Operating Procedure and Agreement**

MA agrees to explain the inputs and logic of MA's OCC to PJM in sufficient detail to demonstrate that it is compliant with Schedule 2 of the OA. MA agrees to explain the calculation of any unit specific opportunity cost to PJM, at PJM's request, in sufficient detail to demonstrate compliance with Schedule 2 of the OA.

MA will:

- Develop a MIRA application to permit participants to provide opportunity cost related information.
- Make the MIRA data available to PJM. The MIRA opportunity cost application will include the same access details as the MIRA fuel cost policy application.
- Inform PJM of all input data used in the calculation of opportunity costs for any specific unit.
- Provide the calculated opportunity cost to PJM.
- Inform PJM of the constraints applied in the opportunity cost calculation, e.g. minimum run times, minimum down times, start times, remaining tons of emissions under the relevant permit.
- Provide to PJM, upon request, margins and run hours for specific calculations of opportunity costs for specific units.
- Notify PJM of any significant changes to the calculation method.

PJM Interconnection LLC ("PJM") agrees that Monitoring Analytics, LLC's ("MA") Opportunity Cost Calculator (OCC) is MA's intellectual property. This agreement is not a license and gives PJM no right to use MA's OCC. PJM agrees that it will not attempt to reverse engineer MA's OCC and will not engage others to attempt to reverse engineer MA's OCC.

Understood and agreed.

Joseph Bowring

Frederick S. Bresler