



**DATE:** September 24, 2018  
**TO:** PJM and PJM Members  
**FROM:** IMM  
**SUBJECT:** Opportunity Cost OA Language

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PJM recently posted draft modifications to the Operating Agreement, Schedule 2 to address the calculation of opportunity costs.

The IMM has attached draft modifications to the Operating Agreement, Schedule 2 to address the calculation of opportunity costs. The IMM's draft modifications address both the concerns of the MRC and of PJM. The draft language is fully consistent with FERC Order 719 and the FERC's subsequent order on the calculation of opportunity costs.<sup>1 2</sup> The draft language fully recognizes PJM's role as the ultimate decision making authority and provides PJM the option to approve or not approve any opportunity cost calculation based on PJM defined criteria.

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<sup>1</sup> See Wholesale Competition in Regions with Organized Electric Markets, Order No. 719, FERC Stats. & Regs. ¶ 31,281 at P 154 (2008), order on 8 CFR § 35.28(g)(3)(ii); see also Wholesale Competition in Regions with Organized Electric Markets, Order No. 719, FERC Stats. & Regs. ¶31,281 (2008) ("Order No. 719"), order on reh'g, Order No. 719-A, FERC Stats. & Regs. ¶31,292 (2009), reh'g denied, Order No. 719-B, 129 FERC ¶ 61,252 (2009) ("We also determine that the IMM may provide the inputs required by the RTO or ISO to conduct prospective mitigation, including determining reference levels, identifying system constraints, cost calculations and the like. This will enable the RTO or ISO to utilize the considerable expertise and software capabilities developed by their IMM, and reduce wasteful duplication.").

<sup>2</sup> Order in EL08-47-005 states: "With regard to the participation of the PJM IMM in providing input into such determinations, Order No. 719 permits the PJM IMM to have a role in providing the inputs for such a process as long as PJM retains the ultimate decision making authority.<sup>2</sup> [fn omitted] As the Commission stated in Order No. 719, this would enable PJM to utilize the expertise and software capabilities that the PJM IMM can provide. 133 FERC ¶ 61,081 at P 22 (2010)."

## SCHEDULE 2 - COMPONENTS OF COST

### 1. GENERAL COST PROVISIONS

#### 1.1 Permissible Components of Cost-based Offers.

(a) Each Market Participant obligated to sell energy on the PJM Interchange Energy Market at cost-based rates may include the following components or their equivalent in the determination of costs for energy supplied to or from the PJM Region:

For generating units powered by boilers

Firing-up cost

Peak-prepared-for maintenance cost

For generating units powered by machines

Starting cost from cold to synchronized operation

For all generating units

Incremental fuel cost

Incremental maintenance cost

No-load cost during period of operation

Incremental labor cost

Emission allowances/adders

Maintenance Adders

Ten percent adder

Other incremental operating costs

For a generating unit that is subject to operational limitations due to energy or environmental limitations imposed on the generating unit by Applicable Laws and Regulations, the Market Participant may include in the calculation of its “other incremental operating costs” an amount reflecting the unit-specific Energy Market Opportunity Costs expected to be incurred. Such unit-specific Energy Market Opportunity Costs are calculated by forecasting Locational Marginal Prices based on future contract prices for electricity using PJM Western Hub forward prices, taking into account historical variability and basis differentials for the bus at which the generating unit is located for the prior three year period immediately preceding the relevant compliance period, and subtract therefrom the forecasted costs to generate energy at the bus at which the generating unit is located, as specified in more detail in PJM Manual 15. If the difference between the forecasted Locational Marginal Prices and forecasted costs to generate energy is negative, the resulting Energy Market Opportunity Cost shall be zero.

Participants may use the Energy Market Opportunity Cost determined by the opportunity cost calculator maintained by the Office of the Interconnection or by the Market Monitoring Unit, provided that use of the Market Monitoring Unit’s opportunity cost calculator is conditioned upon PJM’s approval of the opportunity cost as compliant with this Schedule prior to use by a participant.

Notwithstanding anything hereinthe foregoing, a Market Participant may submit a request to PJM for consideration and approval of an alternative method of calculating its Energy Market Opportunity Cost if the standard methodology described herein does not accurately represent the

For a generating unit that is subject to operational limitations because it only has a limited number of starts or available run hours resulting from (i) the physical equipment limitations of the unit, for up to one year, due to original equipment manufacturer recommendations or insurance carrier restrictions, or (ii) a fuel supply limitation, for up to one year, resulting from an event of Catastrophic Force Majeure, the Market Participant may include in the calculation of its "other incremental operating costs" an amount reflecting the unit-specific Non-Regulatory Opportunity Costs expected to be incurred. Such unit-specific Non-Regulatory Opportunity Costs are calculated by forecasting Locational Marginal Prices based on future contract prices for electricity using PJM Western Hub forward prices, taking into account historical variability and basis differentials for the bus at which the generating unit is located for the prior three year period immediately preceding the period of time in which the unit is bound by the referenced restrictions, and subtract therefrom the forecasted costs to generate energy at the bus at which the generating unit is located, as specified in more detail in PJM Manual 15. If the difference between the forecasted Locational Marginal Prices and forecasted costs to generate energy is negative, the resulting Non-Regulatory Opportunity Cost shall be zero.

Participants may use the Energy Market Opportunity Cost determined by the opportunity cost calculator maintained by the Office of the Interconnection or by the Market Monitoring Unit, provided that use of the Market Monitoring Unit's opportunity cost calculator is conditioned upon PJM's approval of the opportunity cost as compliant with this Schedule prior to use by a participant.

- (b) All fuel costs shall employ the marginal fuel price experienced by the Member.