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# Proposal to Correct the Calculation of Opportunity Cost in the Regulation Market

The Independent Market Monitor for PJM

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The MMU recommends that the December 1, 2008, modification to the calculation of opportunity cost for regulation be reversed and that the correct definition of opportunity cost for regulation be added to the tariff as part of the changes currently being made to the design of the regulation market to provide better performance incentives. The proposed definition is both consistent with economic logic and consistent with the way in which opportunity cost is defined elsewhere in the PJM tariff. The definition of opportunity cost currently in the tariff is incorrect as it is inconsistent with the definition of opportunity cost and it is inconsistent with the way in which opportunity cost is calculated elsewhere in the PJM tariff.<sup>1</sup>

Under the December 1, 2008, tariff modifications related to the regulation market, opportunity cost for regulation is defined as the difference between the LMP, and the lesser of the available price-based energy schedule or the most expensive available cost-based energy schedule.

The PJM tariff defines opportunity cost in a number of places. For example, the PJM tariff provides for the payment of opportunity costs to units which reduce output at the request of the Office of the Interconnection due to a transmission constraint or other reliability issue.<sup>2</sup> The tariff states that the payment will equal the difference in MW output required to provide the requested reliability, multiplied by the difference between LMP and the offer price for energy of the resource. The tariff states that this offer price: “equals the offer price for the unit, determined according to the schedule on which the unit was committed day-ahead, unless such schedule was a price-based schedule and the offer associated with that price schedule is less than the cost-based offer provided for that unit, in which case the offer for the unit will be determined from the cost-based schedule.”

The MMU recommends that a closely related~~this~~ definition of opportunity cost ~~also~~ be used for the calculation of opportunity cost for regulation. The corresponding definition of opportunity cost for regulation would calculate opportunity cost based on the difference between LMP and the unit’s offer price for energy, where that offer price is defined to be the actual offer price used in the dispatch at the megawatt level of the regulation set point for the resource in the PJM Interchange Energy Market. higher of the price-based offer or the cost-based offer for the unit.

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<sup>1</sup> For a history of these issues and discussion of their impact, see the *2010 State of the Market Report for PJM*, Volume II, Section 6, “Ancillary Service Markets.”

<sup>2</sup> See PJM OA Schedule 1 § 3.2.3(f)