139 FERC ¶ 61,170
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Philip D. Moeller, John R. Norris,
and Cheryl A. LaFleur.

PJM Interconnection, L.L.C. Docket No. ER12-1422-000

ORDER ACCEPTING PROPOSED TARIFF CHANGES

(Issued June 1, 2012)

1. On April 2, 2012, PJM Interconnection, L.L.C (PJM) filed revisions to the Accounting and Billing Operating Reserves provisions provided for in Section 3.2.3 of Schedule 1 (Schedule 1) of the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. (PJM Operating Agreement), and parallel provisions of the Attachment K Appendix of the PJM Open Access Transmission Tariff (PJM Tariff), to provide lost opportunity cost to wind generators under certain circumstances.[1]

2. PJM states that currently lost opportunity cost compensation rules for wind generators are not comparable to that of traditional dispatchable conventional generators because wind generators are paid lost opportunity costs based on their Day-Ahead commitment while conventional generators are not similarly tied to their Day-Ahead commitment. The existing rules applied to wind generators require these units to request lost opportunity costs before PJM will consider compensating them for lost opportunity costs. PJM states that the proposed revisions will provide lost opportunity costs compensation to qualifying wind generators on the infrequent instances when Locational Marginal Prices (LMPs) are not commensurate with the dispatch instruction irrespective of the unit's Day-Ahead commitment. PJM requests that these proposed revisions become effective on June 1, 2012.

[1] PJM Interconnection, L.L.C., FERC FPA Electric Tariff, Intra-PJM Tariffs - OATT ATT K Appx Sec 3.2, OATT Attachment K Appendix Section 3.2 - Market Buyers., 11.0.1 A - OA Sch 1 Sec 3.2, OA Schedule 1 Section 3.2 - Market Buyers, 11.0.1 A.

3. We accept PJM's Filing, effective June 1, 2012 as requested. We reject the modifications to this filing suggested by the PJM Independent Market Monitor, Monitoring Analytics, LLC (Market Monitor). As discussed below, we are not persuaded by the argument presented by the Market Monitor and find that the proposed revisions submitted by PJM are just and reasonable.

I. Background and Description of Filing

4. PJM states that the revisions to Schedule 1 of the PJM Operating Agreement and Attachment K of the PJM Tariff were developed in response to a concern raised by a PJM Member with dispatchable wind generators, an increase in wind generators participating in PJM energy markets and stakeholder feedback. PJM found that its existing tariff did not contain a specific provision governing lost opportunity costs for wind generators. Currently, PJM only compensates wind generators that are cleared in the PJM Day-Ahead Energy Market for lost opportunity costs upon request by these generators pursuant to section 3.2.3(f-3) of the PJM Operating Agreement.[2] This default provision applies to all Market Sellers, and not specifically wind generators, that believe that they were not accurately compensated for lost opportunity costs when they followed PJM's dispatch instructions and reduced output for reliability issues. In the instant proposal, PJM argues that a wind generator "should be compensated for the injections it would otherwise have made but for the PJM directive to reduce injections in order to address a reliability issue."[3]

5. PJM states, however, that compensating wind generators under section 3.2.3(f-3) is not commensurate with the treatment of conventional generators because conventional generators are automatically paid lost opportunity costs based on the difference between their output during the reduction requested by PJM and their otherwise economic output in real-time had PJM not requested the reduction. PJM states that the current lost opportunity cost payments to a wind generator are predicated on a wind generator's participation in the Day-Ahead Energy Market and there is no incentive for these wind generators to follow PJM's dispatch instruction in real-time unless these generators have cleared in the Day-Ahead Energy Market. Further, if these wind generators have cleared in the Day-Ahead Energy Market, and there is any excess generation above and beyond the day-ahead committed megawatts (MWs), those MWs will be netted against any reduced MWs thus reducing lost opportunity costs compensation. PJM notes that this

---

[2] Sections 3.2.3 (f-1) and (f-2) of the PJM Operating Agreement provide lost opportunity costs to combustion turbine or combined cycle units and hydroelectric resources, respectively.

[3] PJM Answer at 3.

daily netting of lost opportunity cost does not occur for a conventional generator as its real-time compensation is not similarly tied to its Day-Ahead position.

6. PJM proposes to provide lost opportunity costs compensation to dispatchable wind generators that are pool-scheduled or self-scheduled and follow PJM dispatch instructions, and for which the hourly integrated, real-time LMP is higher than the unit's offer corresponding to the level of output requested by PJM. Under PJM's proposal, the calculation for the amount of lost opportunity costs that can be provided to wind resources will be the same as the calculation for other conventional dispatchable generators, except that, to account for the intermittent nature of wind resources, the amount of MWs for which the wind unit will be made whole is the lesser of either the desired MW[4], the Economic Maximum[5] or the wind forecast. According to PJM, to account for the intermittency of wind generators, the reduced MWs from following PJM dispatch instruction to back down will be determined by the lesser of the forecasted output for the wind generator, or the level of output for the wind generator determined according to the point on the scheduled offer curve on which the wind generator was operating corresponding to the hourly integrated, real-time LMP. The lesser of these two values is used to ensure that PJM only pays wind generators up to either the economic output of the wind generator had it not been for the reduction in output requested by PJM or the wind forecast. This requirement prevents payment to a unit for output that the wind generator could not achieve due to its intermittent nature.

7. Pursuant to PJM's proposed revisions, the forecasted capability of the wind generator will be determined by PJM using PJM's own wind forecasting tool. This wind forecast will be calculated for each unit, and will be available to Market Participants via a PJM web interface. If PJM experiences a technical issue with its wind forecasting tool that results in an erroneous forecast for a wind generator during a period of time for which the wind generator is eligible for lost opportunity costs, PJM and the relevant Market Seller will determine a mutually agreeable wind forecast value for settlement purposes pursuant to guidelines provided in PJM Manual 28. If PJM and the relevant Market Seller do not come to a mutual agreement on an acceptable wind forecast value, then PJM shall utilize the forecast value that it determines is appropriate.

8. PJM asserts that the proposed revisions to the PJM Operating Agreement and the PJM Tariff were developed, vetted and largely endorsed by the PJM stakeholders.

---

[4] Desired MW is the expected unit output according to the unit's scheduled offer curve.

[5] Economic Maximum is the highest output on a generating units bid curve that the unit is offering for economic dispatch. PJM Manual 11: Energy & Ancillary Services Market Operations.

However, throughout the stakeholder process, PJM notes that the Market Monitor opposed the proposal.

II. Notice of Filing and Responsive Pleadings

9. Notice of PJM's Filing was published in the *Federal Register*, 76 Fed. Reg. 63,291 (2012), with interventions and protests due on or before April 23, 2012. Timely-filed motions to intervene were filed by American Municipal Power, Inc., American Wind Energy Association, Dominion Electric Cooperative, EcoGrove Wind LLC, EverPower Wind Holdings, Inc., Iberdrola Renewables, LLC, E-ON Climate & Renewables, Duke Energy Corporation, Invenergy Wind Development, LLC, Shell Energy North America, L.P., Exelon Corporation, Edison Mission Energy, American Electric Power Service.

10. Timely-filed comments were submitted by E-ON Climate & Renewables North America, LLC (E.On), Invenergy Wind Development LLC, EverPower Wind Holdings, Inc and Iberdrola Renewables (Invenergy, EverPower and Iberdrola), the American Wind Energy Association and Mid-Atlantic Renewable Energy Coalition (AWEA/MAREC) and the Market Monitor.

11. AWEA/MAREC states that it supports PJM's proposal because the proposal provides for comparable treatment of wind generators and conventional generators. AWEA/MAREC also notes that the proposal provides an economic incentive to a dispatchable wind generator to make available as much of its economic output as is needed, knowing it will be compensated if it is later directed to reduce its output.

12. The Market Monitor filed comments in support of the proposed revisions but requested the Commission condition its approval on certain modifications. The Market Monitor states that in some cases the proposed rules are not economic and in others the rules are not explicitly defined. The Market Monitor continues that, in order to ensure logical and transparent market rules, approval of PJM's Filing should be conditioned on fixing the defects.

13. The Market Monitor states that wind generators have capacity interconnection rights (CIRs)[6] equal to 13 percent of their maximum output or demonstrated capacity factor during Reliability Pricing Model (RPM) peak periods. The Market Monitor argues that wind generators do not have the right to inject energy above their CIR level and have

[6] Capacity Interconnection Rights – rights to input generation as a Generation Capacity Resource into the Transmission System at the Point of Interconnection where the generating facilities connect to the Transmission System. PJM Tariff, Section I. Common Services Provisions Definitions C-D at 32.

not paid for needed transmission upgrades to have those rights. The Market Monitor notes that when PJM directs a resource to curtail to a level at or below its CIR, the resource has not lost an opportunity to inject power and that resource is not entitled to compensation for any lost opportunity. As such, the Market Monitor asserts, lost opportunity costs recovery for wind generators should be based on the lower of PJM's forecast value, desired MWs or the unit's CIR MWs.[7]

14. According to the Market Monitor, the current rules do not explicitly limit conventional generators to a maximum payment for lost opportunity costs of their CIRs. Unlike wind generators the Market Monitor asserts, most conventional generators have CIRs at or near nameplate capacity and there was no need for any such restriction. The Market Monitor asserts that the PJM forecast value for a wind generator is comparable to the Economic Maximum MW for a conventional generator, as it reflects the maximum possible output of a wind unit in a given hour. The Market Monitor argues that providing lost opportunity costs to wind generators based on desired MW which exceed CIRs would represent an unsupported and fundamental change in the rules governing lost opportunity cost payments. According to the Market Monitor, this could result in a substantial increase in unhedgeable and out-of-market operating reserve charges, which could reduce the efficiency of PJM markets.

15. Invenergy, EverPower and Iberdrola filed comments in support of PJM's proposal and responded to the concerns raised by the Market Monitor in the stakeholder process. Invenergy, EverPower and Iberdrola note that the Market Monitor's concerns were fully addressed in the stakeholder process. They also note that a wind generator may only acquire CIRs up to its capacity value; on the other hand, they assert, the wind generator's economic maximum output is based on what the wind generator forecasts that it can produce the next day and is not capped by the its CIRs. According to Invenergy, EverPower and Iberdrola, adopting the Market Monitor's approach would result in inconsistent treatment of wind generators as compared to conventional generators.

16. E.On also filed comments in support of PJM's proposal and responded to the concerns raised by the Market Monitor. E.On notes that a wind generator's CIRs have no bearing on the amount of energy the generator injects into the PJM system in real-time. These injections are done on an as-available basis, through non-firm transmission capacity. As such, E.On asserts that a wind generator should be compensated for the energy it injects and for the actual amount of output that it is directed by PJM to reduce, regardless of its CIR level.

17. On May 9, 2012, PJM filed an answer, arguing that the Market Monitor's proposal would take away the financial incentive for a wind generator to respond to PJM's

---

[7] Market Monitor Comments at 3.

dispatch instructions when the requested MW reduction is above the wind generator's CIRs, which could potentially jeopardize system reliability. PJM also emphasizes that it does not take CIRs into account when determining lost opportunity costs compensation for conventional dispatchable generators.

III. Discussion

A. Procedural Matters

18. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure,[8] the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. Rule 213(a)(2) prohibits an answer to a protest or an answer unless otherwise ordered by the decisional authority.[9] We will accept the answer filed by PJM, because it has provided information that has assisted us in our decision-making process.

B. Substantive Matters

19. We will accept PJM's proposed revisions to Section 3.2.3 of Schedule 1 of the PJM Operating Agreement and Attachment K Appendix of the PJM Tariff. We find that these revisions provide a methodology for compensating wind generators for lost opportunity costs that is just and reasonable.

20. We do not find PJM's proposal unjust and unreasonable for not including the provisions suggested by the Market Monitor. The Market Monitor appears to be seeking significant modifications as to how all generators are compensated for lost opportunity costs and, as discussed below, we find that such modifications are not warranted. The Market Monitor proposes to calculate lost opportunity costs for dispatchable wind generators using a methodology based on CIRs. CIRs are not currently used to calculate lost opportunity costs for conventional generators. While the Market Monitor states that applying its methodology would result in comparable compensation for wind and conventional generators while respecting relevant operational differences, we note that PJM has already taken these operational differences in to account in its proposed revisions. PJM states that the calculations for lost opportunity cost compensation to wind generators will be the same as the calculation for other traditional dispatchable generators except, to account for the intermittent nature of wind generators, the amount of MWs for which the unit will be made whole is the lesser of the forecasted output for the wind generator or the level of output for the wind generator determined according to the point

[8] 18 C.F.R. § 385.214 (2011).

[9] 18 C.F.R. § 285.213(a)(2).

on the scheduled offer curve on which the wind generator was operating corresponding to the hourly integrated real time LMP.[10]

21. Further, we agree with PJM that the proposed revisions should incent wind resources to respond to PJM dispatch instructions. The modification submitted by the Market Monitor does not provide a financial incentive that will compensate dispatchable wind generators in a manner comparable to that of conventional generators. In contrast, we find PJM's proposed compensation to dispatchable wind generators for lost opportunity costs will provide the proper incentive to wind resources to follow PJM dispatch instructions.

The Commission orders:

PJM's Filing is hereby accepted, to become effective June 1, 2012, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

[10] PJM Filing at 4.