

147 FERC ¶ 61,045
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Acting Chairman;
Philip D. Moeller, John R. Norris,
and Tony Clark.

PJM Interconnection, L.L.C.

Docket No. ER14-381-000

ORDER ACCEPTING IN PART AND REJECTING IN PART PROPOSED TARIFF
REVISIONS

(Issued April 17, 2014)

1. On November 12, 2013, PJM Interconnection, L.L.C. (PJM) submitted proposed revisions to sections 13.8 and 14.6 of its Open Access Transmission Tariff (OATT) to comply with the requirements of Order No. 764.¹ PJM also amends its *pro forma* Interconnection Service Agreement (ISA) to add specific meteorological data requirements applicable to Variable Energy Resources (VERs). In this order, we accept in part and reject in part PJM's proposed tariff revisions to comply with Order No. 764.

I. Background

2. On June 22, 2012, the Commission issued Order No. 764, which requires each public utility transmission provider to: (1) offer intra-hourly transmission scheduling at 15-minute intervals; and (2) incorporate provisions into the *pro forma* Large Generator Interconnection Agreement (LGIA) requiring interconnection customers whose generating facilities are VERs² to provide meteorological and forced outage data to the public utility transmission provider for the purpose of power production forecasting. The Commission also provided guidance regarding the development and evaluation of

¹ *Integration of Variable Energy Resources*, Order No. 764, FERC Stats. & Regs. ¶ 31,331, *order on reh'g and clarification*, Order No. 764-A, 141 FERC ¶ 61,232 (2012), *order on clarification and reh'g*, Order No. 764-B, 144 FERC ¶ 61,222 (2013).

² Order No. 764 defined a VER as a device for the production of electricity that is characterized by an energy source that: (1) is renewable; (2) cannot be stored by the facility owner or operator; and (3) has variability that is beyond the control of the facility owner or operator. Order No. 764, FERC Stats. & Regs. ¶ 31,331 at n.1.

proposals related to recovering the costs of regulation reserves associated with VER integration.³

3. The reforms adopted in Order No. 764 were designed to remove barriers to the integration of VERs and to ensure that the rates, terms, and conditions for Commission-jurisdictional services provided by public utility transmission providers are just and reasonable and not unduly discriminatory or preferential.⁴ Upon noting the increasing number of VERs being brought online, the Commission found that reforms were needed to ensure that transmission customers are not exposed to excessive or unduly discriminatory charges, and that public utility transmission providers have the information needed to efficiently manage reserve-related costs.

4. On December 20, 2012, the Commission issued Order No. 764-A, largely affirming the reforms adopted in Order No. 764. Among other things, Order No. 764-A extended the deadline for compliance with Order No. 764 to November 12, 2013.⁵ On September 19, 2013, the Commission issued Order No. 764-B, which granted in part and denied in part the requests for clarification and denied the requests for rehearing of the Commission's determinations in Order No. 764-A.⁶

II. Notice of Filing and Responsive Pleadings

5. Notice of PJM's filing was published in the *Federal Register*, 78 Fed. Reg. 70,031 (2013), with interventions and protests due on or before December 3, 2013. Timely motions to intervene were filed by FirstEnergy Service Company and New York Independent System Operator, Inc. No comments or protests were filed. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2013), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to the proceedings in which they were filed.

³ *Id.* P 4.

⁴ *Id.* P 1.

⁵ Order No. 764-A, 141 FERC ¶ 61,232 at P 8.

⁶ Order No. 764-B, 144 FERC ¶ 61,222.

III. Discussion

A. Intra-Hour Scheduling

1. Order No. 764

6. In Order No. 764, the Commission amended the *pro forma* OATT to provide all transmission customers the option of using more frequent transmission scheduling intervals within each operating hour, at 15-minute intervals.⁷ The Commission found transmission customers' inability to adjust their transmission schedules within the hour to reflect changes in generation output can cause charges for Schedule 9 generator imbalance service to be unjust and unreasonable or unduly discriminatory. Thus, this reform was designed to allow transmission customers the flexibility to adjust their transmission schedules, in advance of real-time, to reflect the variability of output in generation, more accurate power production forecasts, and other changes in load profiles and system conditions.⁸ It was also designed to allow public utility transmission providers, over time, to use fewer reserves to maintain overall system balance.⁹ Finally, the Commission implemented this reform to ensure that charges for generator imbalance service under Schedule 9 of the *pro forma* OATT and for other ancillary services through which reserve-related costs are recovered are just and reasonable and are not unduly discriminatory.

7. In Order No. 764, in response to concerns regarding the cost of implementing intra-hour scheduling and possibly required changes in settlement procedures, the Commission stated that to the extent a public utility transmission provider believes that aligning the imbalance settlement with the intra-hour scheduling interval or implementing sub-hourly dispatch will result in more efficient operations, provide appropriate price signals to customers, or address other potential issues, it may seek any authorizations necessary from the Commission to do so under section 205 of the FPA. Such proposals could be submitted contemporaneously with the compliance filing in response to Order No. 764.¹⁰ In addition, in response to requests for regional variation in scheduling protocols, the Commission acknowledged that future market enhancements in addition to existing 30-minute scheduling practices and other tools might yield equivalent or greater

⁷ Order No. 764, FERC Stats. & Regs. ¶ 31,331 at P 91.

⁸ *Id.* P 92.

⁹ *Id.* P 95.

¹⁰ *Id.* P 105.

benefits to transmission customers and public utility transmission providers when reducing the scheduling interval from 30 to 15 minutes and thus could be consistent with or superior to the Final Rule's intra-hour scheduling requirements. Thus, the Commission affirmed the ability of a public utility transmission provider to submit alternative proposals that are consistent with or superior to the intra-hour scheduling requirements. Specifically, the Commission required that a public utility transmission provider demonstrate on compliance how its proposal provides equivalent or greater opportunities for transmission customers to mitigate Schedule 9 generator imbalance charges, and for the public utility transmission provider to lower its reserve-related costs, compared to market practices already in place within the region.¹¹

2. PJM's Compliance Filing

8. PJM proposes to amend sections 13.8 (Firm Point-to-Point Transmission Service) and 14.6 (Non-Firm Point-to-Point Transmission Service) of the PJM OATT to add the option for transmission customers to submit intra-hour transmission (four intervals consisting of 15-minute schedules) and require a 20-minute notification period prior to each operating hour for the submission of transmission schedules. PJM explains that its existing business rules, as embodied in its Manuals and Regional Practices, already comply with the Commission's rules, but it is making these tariff amendments to bring its tariff into compliance with Order No. 764.

9. PJM states that, although it is not part of its compliance filing, it relies on the "consistent with or superior to" standard under Order No. 764 to retain a rule implemented on May 1, 2008 in its Regional Practices which requires that all PJM interchange transactions be at least 45 minutes in duration in order to ensure against market abuses.¹² PJM explains that, prior to 2008, PJM included in the Regional Practices a 15-minute scheduling interval and duration rule; however PJM adopted the 45-minute duration requirement to address reliability and pricing issues caused by the 15-minute scheduling and duration rule.¹³ PJM explains that in 2007, the Midcontinent

¹¹ *Id.* PP 106-107.

¹² Transmittal at 5 (citing Regional Practices at p. 38).

¹³ According to section 1.2.2 of Manual 41, "[a]ll PJM interchange transactions are required to be at least 45 minutes in duration. Market participants may not submit transactions that do not meet this minimum duration requirement, nor may they adjust an implemented schedule's end time below this minimum threshold. Additionally, each non-zero interval of the scheduled energy profile (i.e., each MW value) must remain constant for 45 minutes. However, via the use of reliability adjustments, PJM system

(continued...)

Independent System Operator, Inc. (MISO) Independent Market Monitor (Potomac Economics) examined intra-hour transactions between MISO and PJM, which accounted for most intra-hour schedules, and determined, *inter alia*, that nearly 60 percent of intra-hour schedules occurred in the final 15 minutes of the hour. According to PJM, this activity was due “to market participants’ ability to see price differences between the two RTO markets for the first third of the hour, and thereby predict with relative certainty the direction of the price separation between the two RTOs when the hourly integrated prices were calculated.”¹⁴ Because of this activity, PJM states that it experienced both market timing issues due to price difference between the RTOs and reliability issues due to area control error (ACE) problems.

10. PJM states that it does not assess imbalance penalties on any generators, including VERs, because virtually no market participants use point-to-point transmission services to serve loads in PJM. PJM notes that under dynamic scheduling into and out of PJM, VERs internal to PJM appear electrically outside PJM and are not subject to balancing operating reserve (BOR) deviation charges. Likewise, VERs external to PJM appear electrically inside PJM and, therefore, are treated identically to internal generator resources and will not be subjected to BOR deviation charges to the extent they follow PJM dispatch instructions. PJM states that, while a generator will be allocated BOR charges if it chooses not to participate in the day-ahead energy market but self-schedules its output in the real-time energy market, the resulting BOR charges are not substantial and generators can further mitigate or avoid these costs.

3. Commission Determination

11. We find that PJM’s proposed tariff language regarding intra-hourly scheduling does not comply with the scheduling requirements of Order No. 764. PJM proposes that “[s]cheduling changes will be permitted up to twenty (20) minutes before the start of the next *clock hour*” (emphasis added).¹⁵ However, the *pro forma* OATT, as amended by Order No. 764, provides that “[s]cheduling changes will be permitted twenty (20) minutes [or a reasonable time that is generally accepted in the region and is consistently adhered to by the Transmission Provider] before the start of the next *scheduling interval*” (emphasis added). The Commission explained that it was amending the *pro forma* OATT

operators may make adjustments that cause a transaction or interval(s) of the transaction to violate this minimum duration.”

<http://www.pjm.com/~media/documents/manuals/m41.ashx>.

¹⁴ Transmittal Letter at 6.

¹⁵ Proposed PJM Tariff, Section 14.6.

“to provide all transmission customers the option of using more frequent transmission scheduling intervals within each operating hour, at 15-minute intervals.”¹⁶ PJM’s proposed language would restrict scheduling changes to 20 minutes before the hour, rather than 20 minutes before each 15-minute interval, and therefore is not consistent with Order No. 764. PJM has not sufficiently justified its variation from the *pro forma* OATT.

12. Additionally, while not codified in its tariff, PJM’s practice of requiring interchange transactions to have a minimum duration of 45 minutes is inconsistent with Order No. 764 because it does not allow a generator to schedule for less than three consecutive 15-minute intervals. PJM states that it relies on the “consistent with or superior to” standard under Order No. 764 to retain this rule because it will prevent market and reliability issues. However, in Order No. 764, the Commission discussed a new scheduling policy that contemplated not just the ability to schedule on a 15-minute basis, but also the ability to *change such schedules* sufficiently close to operating time in order to address the intermittent output of VERs and other system variations.¹⁷ PJM’s 45-minute duration requirement does not permit such flexibility in schedule changes, and therefore is not consistent with or superior to the requirements reflected in the *pro forma* OATT. This finding is consistent with the Commission’s rejection of MISO’s proposal to retain an existing requirement that schedules starting at :30 and :45 of the hour must be made by the beginning of the hour.¹⁸ The Commission explained in that order that

¹⁶ Order No. 764, FERC Stats. & Regs. ¶ 31,331 at P 2.

¹⁷ *Id.* P 22 (“implementation of intra-hour scheduling under the Final Rule will provide VERs and other transmission customers the flexibility to *adjust their transmission schedules*, thus limiting their exposure to imbalance charges” (emphasis added)), P 92 (“In this Final Rule, we take an additional step to allow transmission customers the flexibility to *adjust their transmission schedules in advance of real-time*, to reflect the variability of output in generation, more accurate power production forecasts to predict output, and other changes in load profiles and system conditions” (emphasis added)), and P 93 (“The Commission concludes that [the] *lack of ability to update transmission schedules within the hour* can cause charges for Schedule 9 generation imbalance service to be unjust and unreasonable or unduly discriminatory” (emphasis added)). *See also* Order No. 764-A, 141 FERC ¶ 61,232 at PP 4, 15.

¹⁸ *Midcontinent Indep. Sys. Operator, Inc.*, 145 FERC ¶ 61,064 at PP 19-23 (2013). Like PJM, MISO proposed to retain this requirement in order to address the 2007 studies by the MISO Independent Market Monitor showing that intra-hour schedules resulted in price volatility and inefficient transactions.

MISO's existing requirement would not have allowed for the changing of schedules sufficiently close to operating time to address the intermittent output of VERS, as Order No. 764 intended.¹⁹

B. Data Reporting to Support Power Production Forecasting

1. Order No. 764

13. The Commission amended the *pro forma* LGIA to require new interconnection customers whose generating facilities are VERS to provide meteorological and forced outage data to the public utility transmission provider with which the customer is interconnected.²⁰ Such data would only be required where it is necessary for that public utility transmission provider to develop and deploy power production forecasting. This reform was designed to facilitate public utility transmission providers' use of power production forecasts, which the Commission found can provide public utility transmission providers with advanced knowledge of system conditions needed to manage the variability of VER generation through the unit commitment and dispatch process, rather than through the deployment of more costly reserve service, such as regulation reserves. In requiring this change to the *pro forma* LGIA, the Commission specified that reporting requirements for meteorological and forced outage data would be set forth in Appendix C, Interconnection details of an LGIA, as they may change from time to time.²¹ The Commission declined to modify existing LGIAs or to require changes to the *pro forma* OATT,²² upon finding that such changes would, in effect, impose the data reporting requirements on existing interconnection customers, including small generator interconnection customers, retroactively.²³

¹⁹ *Id.* In an order concurrently issued with this order, the Commission granted MISO a request for an extension of time, until June 30, 2015, to fully implement the scheduling protocols required by Order No. 764. MISO also commits to file a status report by May 1, 2014 regarding the outcome of ongoing stakeholder negotiations, and to submit its sub-hourly settlements filing by June 30, 2014. *Midcontinent Independent System Operator, Inc.*, 147 FERC ¶ 61,046 (2014).

²⁰ Order No. 764, FERC Stats. & Regs. ¶ 31,331 at P 3.

²¹ *Id.* P 193.

²² *Id.* P 195.

²³ *Id.* P 196.

14. In Order No. 764, the Commission stated that the flexibility of providing meteorological and forced outage data requirements in business practices or market rules is not a superior alternative in implementing the reforms of the Final Rule.²⁴ Rather, the Commission addressed public utility transmission providers' need for flexibility by requiring the reporting requirement to be set forth in Appendix C of the LGIA. Appreciating that public utility transmission providers in some regions have already implemented meteorological or forced outage data requirements in their business practices and market rules, the Commission allowed public utility transmission providers to demonstrate on compliance how continued use of such practices is consistent with or superior to the requirements of Order No. 764.²⁵

2. PJM's Compliance Filing

15. PJM also proposes to revise the *pro forma* ISA to include the same meteorological and forced outage data reporting requirements currently in PJM Manual 14D and bring them into the tariff.²⁶ PJM states that its current meteorological reporting requirements already satisfy the requirements of Order No. 764 using the independent entity variation standard. Specifically, PJM states that section 8 of Manual 14D already includes data reporting requirements for wind power forecasting and generator outage reporting that are consistent with Order No. 764 by requiring wind farm meteorological data to include wind speed, wind direction, temperature, and atmospheric pressure. PJM also states that section 8 allows PJM to request additional meteorological towers at a wind farm site depending upon topology and the accuracy of the wind power forecast, and section 8.2.4 of Manual 14D requires the submittal of generator outage information. Nevertheless, PJM states that it proposes to amend its *pro forma* ISA to bring the meteorological and forced outage data reporting requirements into the tariff.

16. PJM notes that, consistent with the Final Rule, it has not included in the *pro forma* ISA data reporting requirements for other VERs such as solar power resources because it does not currently have solar power production forecasting tools. PJM acknowledges that if it should adopt such additional forecasting tools in the future, it will develop and

²⁴ *Id.* P 194.

²⁵ *Id.*

²⁶ Specifically, PJM proposes to add the following to Schedule H: "Subject to specific requirements in Manual 14D, the wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including: temperature, wind speed, wind direction, and atmospheric pressure."

file with the Commission additional tariff revisions to include in the *pro forma* ISA data reporting requirement for solar power resources.²⁷

3. Commission Determination

17. We conditionally accept PJM's proposed tariff revisions regarding meteorological and forced outage data. We find that PJM has not fully complied with the meteorological reporting requirements of Order No. 764. PJM proposes to revise Schedule H of its *pro forma* ISA to include: "Subject to specific requirements in Manual 14D, the wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including: temperature, wind speed, wind direction, and atmospheric pressure." In addition, PJM's Manual 14D requires the submittal of meteorological and generator outage information. We will require PJM to revise Schedule H of its *pro forma* ISA to remove the reference "Subject to specific requirements in Manual 14D" so that PJM is not unilaterally imposing requirements not memorialized in the *pro forma* LGIA. In addition, to be consistent with Article 8.4 of the *pro forma* LGIA language, we will require PJM to include in its *pro forma* ISA a provision that addresses how any additional requirements not specified in the Tariff should be handled by the Interconnection Customer and the Transmission Provider. We further find that PJM's revision to Schedule H omits the relevant *pro forma* language in Order No. 764 that reads: "The Transmission Provider and Interconnection Customer whose Generating Facility is a Variable Energy Resource shall mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast." We direct PJM to submit a compliance filing that includes these conforming revisions within 30 days of the date of this order.

²⁷ Transmittal Letter at 13-14.

The Commission orders:

PJM's proposed tariff revisions are hereby accepted in part and rejected in part, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.