

171 FERC ¶ 61,039
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Richard Glick, Bernard L. McNamee,
and James P. Danly.

Potomac Economics, Ltd.

Docket No. EL17-62-000

v.

PJM Interconnection, L.L.C.

ORDER ON COMPLAINT

(Issued April 17, 2020)

1. On April 6, 2017, Potomac Economics, Ltd. (Potomac),¹ pursuant to sections 206 and 306 of the Federal Power Act (FPA),² and Rule 206 of the Commission's Rules of Practice and Procedure,³ filed a complaint (Complaint) against PJM Interconnection, L.L.C. (PJM) asserting that PJM's requirement that external resources obtain a pseudo-tie to participate in PJM's capacity market is unjust and unreasonable. As discussed below, we deny the Complaint for failure to demonstrate that PJM's pseudo-tie construct is unjust and unreasonable under section 206 of the FPA. We also deny PJM's Motion to Dismiss and find that Potomac has authority to file this Complaint against PJM.

I. Background

2. Resources have used pseudo-ties for years to serve load located in other balancing authority areas.⁴ In recent years, changes to the PJM capacity market rules have

¹ Potomac serves as the independent market monitor (IMM) for the Midcontinent Independent System Operator, Inc. (MISO), the New York System Operator, Inc. (NYISO), and ISO New England, Inc. (ISO-NE).

² 16 U.S.C. §§ 824e, 825e (2018).

³ 18 C.F.R. § 385.206 (2019).

⁴ A pseudo-tied resource is a resource that is physically located in one BAA but treated electrically as if it were in another BAA. See, e.g., *Integration of Variable Energy Res.*, Notice of Inquiry, 130 FERC ¶ 61,053, at P 32 n.23 (2010) ("Pseudo-ties are

increased the number of pseudo-tied resources, and in particular, have increased the number of resources located in the Midcontinent Independent System Operator, Inc. (MISO) region that are pseudo-tied into PJM.

3. In 2014, the Commission approved a PJM proposal that established limits on the amount of capacity from external generation resources that could be reliably committed in the PJM forward capacity auctions,⁵ known as the Capacity Import Limit.⁶ The Capacity Import Limit enables PJM to ensure the amount of capacity from external resources that can be reliably committed in the PJM forward capacity auctions.⁷ External generation resources that wish to participate in the PJM Base Residual Auction can obtain an exception to the PJM Capacity Import Limit if: (1) they are committed to being pseudo-tied generation resources prior to the start of the Delivery Year; (2) they have long-term firm transmission service confirmed on the complete transmission path from their resource into PJM; and (3) they agree to be subject to the same capacity must-offer requirement as PJM's internal resources.

4. In accepting the Capacity Import Limit, the Commission rejected arguments opposing the pseudo-tie requirement, including arguments by Potomac that pseudo-tying inefficiently raises congestion and prices, and degrades reliability. The Commission also highlighted that a pseudo-tied resource is not subject to curtailment in a Level 5 Transmission Loading Relief (TLR-5) event⁸ because it is not tagged as an interchange

defined as telemetered readings or values that are used as 'virtual' tie line flows between balancing authorities where no physical tie line exists.”).

⁵ PJM relies on a three-year forward capacity market construct to ensure resource adequacy at a reasonable cost through the use of an annual auction and subsequent Incremental Auctions held closer in time to the relevant delivery year.

⁶ *PJM Interconnection, L.L.C.*, 147 FERC ¶ 61,060 (2014) (CIL Order), *order on reh'g*, 150 FERC ¶ 61,041 (2015).

⁷ *Id.* P 25.

⁸ According to the North American Electric Reliability Corporation (NERC), a TLR-5 event calls for the transmission provider to reallocate transmission service “by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a pro rata basis to allow additional Interchange Transactions using Firm Point-to-Point” or to “curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate a [System Operating Limit] or [Interconnection Reliability Operating Limit] Violation.” North American Electric Reliability Corporation, *TLR Levels*, <http://www.nerc.com/pa/rrm/TLR/Pages/TLR-Levels.aspx>.

transaction, and emphasized PJM's explanation that interregional congestion management arrangements can address any inefficiencies resulting from the pseudo-tie.⁹

5. Later, as part of PJM's Capacity Performance Reforms,¹⁰ PJM took the Capacity Import Limit a step further. In 2015, the Commission accepted PJM's proposal that, in order to qualify as a Capacity Performance Resource, an external generation resource must meet the criteria for obtaining an exception to the Capacity Import Limit.¹¹ In accepting these eligibility requirements, the Commission was persuaded by PJM's argument that the eligibility thresholds—including the pseudo-tie requirement—were necessary to ensure that external resources are accountable for their individual performance when PJM's system is experiencing Emergency Actions.¹²

6. After implementing the pseudo-tie requirement as part of PJM's Capacity Performance Reforms, the number of resources pseudo-tied from MISO into PJM significantly increased, from approximately 155 MW in June 2015 to approximately 2,160 MW by June 2017.¹³ In addition, PJM reported that the nature of pseudo-tied

⁹ CIL Order, 147 FERC ¶ 61,060 at PP 50-51.

¹⁰ PJM proposed the Capacity Performance Reforms after determining that its capacity construct failed to fully ensure that capacity resources would perform when called upon in the event of an emergency. PJM proposed to establish the Capacity Performance Resource product with enhanced capacity resource performance requirements, charges for poor performance, credits for superior performance, a must-offer requirement as applicable to Capacity Performance Resources, and a transition mechanism. *PJM Interconnection, L.L.C.*, 155 FERC ¶ 61,157, at PP 4-5 (2016) (Capacity Performance Rehearing Order).

¹¹ *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208, at PP 96-97 (2015) (Capacity Performance Order), *order on reh'g*, 155 FERC ¶ 61,157.

¹² PJM specifically explained that without the pseudo-tie requirement, PJM must evaluate the availability of external capacity resources based on the quantity of energy scheduled as an external interchange transaction into PJM (or reported on outage by an external capacity resource owner). Because interchange schedules cannot be tied to any specific external resource, absent the pseudo-tie requirement, PJM would not have the unit-specific visibility of external resource performance. Capacity Performance Order, 151 FERC ¶ 61,208 at P 97; *see also* Capacity Performance Rehearing Order, 155 FERC ¶ 61,157 at P 44.

¹³ *See* PJM, Proposed Revisions to Joint Operating Agreement at 3, Docket No. ER17-2218-000 (filed Aug. 1, 2017) (PJM JOA Filing). PJM and MISO separately

resources has changed. Prior to 2016, pseudo-tied resources and load were generally located near the MISO/PJM border. PJM has stated that the new pseudo-tie requests that PJM began receiving from 2016 forward involved generation and load located farther from the seam.¹⁴ PJM has acknowledged that relying on a large number of external pseudo-tied Capacity Performance Resources has created modeling and congestion management issues.¹⁵

7. To address these issues, PJM proposed Pseudo-Tie Enhancements in March 2017 which included criteria to determine the eligibility of a generator to pseudo-tie into PJM. PJM proposed a number of specific reforms, restated here, which the Commission adopted in its Pseudo-Tie Enhancements Order.¹⁶

PJM proposes that a seller of an external resource may submit a Sell Offer in a PJM capacity auction only if it demonstrates to PJM—five days prior to the auction—that the resource meets the following pseudo-tie requirements: (1) meets the minimum electrical distance requirements established in the PJM manuals; (2) meets a market-to-market flowgate eligibility test that will only require PJM to coordinate a new flowgate with an external Balancing Authority when the flow impact of a PJM internal generation resource on that flowgate meets a certain threshold; (3) receives approval from an external Balancing Authority that an external Capacity Market Seller's resource does not require NERC tagging and that firm flow allocations associated with any coordinated flowgates applicable to the external resource be allocated to PJM; (4) ensures that each external entity with which PJM may be required to coordinate flowgates maintains a network model that produces results that are within two percent of the results produced by PJM's model; (5) has arranged for long-term firm point-to-point transmission service that is evaluated for deliverability from the unit-specific physical

filed identical proposed revisions to the Joint Operating Agreement between PJM and MISO to address pseudo-ties.

¹⁴ *Id.*

¹⁵ See PJM, *Problem Statement and Issue Charge, External Capacity Performance Enhancements*, <http://www.pjm.com/~media/committees-groups/task-forces/urmstf/20160602/20160602-item-12-external-capacity-performance-enhancements-problem-statement-and-issue-charge.ashx>.

¹⁶ *PJM Interconnection, L.L.C.*, 161 FERC ¶ 61,197 (2017) (Pseudo-Tie Enhancements Order).

location to PJM load; and (6) retains the same must-offer requirement as required under the Capacity Import Limit exemption.

For pseudo-tied resources approved prior to the Capacity Import Limit exception, PJM proposes requirements that the external resource must remain “operationally deliverable” and that the resource be tested for operational deliverability each year. PJM also proposes to phase in these new requirements for pseudo-tied resources that have cleared a previous Base Residual Auction over a five-year transition period. In the event that a pseudo-tied resource cannot meet the operational deliverability standards, PJM will notify the seller of the resource no later than October 1 immediately preceding the Delivery Year. PJM will then give the external resource the option to: (1) take any necessary steps to meet the new requirements; (2) be relieved of its capacity obligation and must-offer obligation, forgoing any capacity market revenues; or (3) procure, purchase, or replace the capacity.¹⁷

8. In the Pseudo-Tie Enhancements Order, the Commission found that PJM had demonstrated: (1) The pseudo-tie enhancements are needed to help ensure that external resources are treated comparably to internal resources and (2) external resources have operational and deliverability concerns that differ from internal resources.¹⁸ The Commission also found that the pseudo-tie requirement addressed the operational and deliverability concerns of external resources, and in doing so, do not create unreasonable barriers to entry.¹⁹

9. On rehearing, the Commission affirmed its finding in the Pseudo-Tie Enhancements Order that PJM’s “requirement for long-term firm transmission rights with rollover rights for external resources is just and reasonable because it treats external and internal resources comparably under PJM’s Capacity Performance construct, by requiring that these resources be similarly responsible for the delivery of capacity to the PJM market.”²⁰ The Commission found that without firm transmission rights to the PJM

¹⁷ *Id.* PP 7-8.

¹⁸ *Id.* P 27.

¹⁹ *Id.*

²⁰ *PJM Interconnection, L.L.C.*, 170 FERC ¶ 61217, at P 42 (2020) (Pseudo-Tie Enhancements Rehearing Order) (citing Pseudo-Tie Enhancements Order, 161 FERC ¶ 61,197 at P 114), The Commission also found on rehearing that requiring that generation used to serve a generator’s capacity requirements meet an “Operationally Deliverable” requirement is not a violation of section 217 of the FPA; and that the Tariff changes accepted by the Commission in the Pseudo-Tie Enhancements Order and in various sections of the PJM *pro forma* agreements did not unlawfully abrogate parties’

border, PJM cannot be assured that the external resource will not be subject to curtailments based on the internal requirements of the other Balancing Authority.

II. Complaint Overview

10. In the Complaint, Potomac argues that PJM's pseudo-tie requirement for participation in its capacity market is unjust, unreasonable, and unduly discriminatory due to the economic and reliability costs imposed on MISO and projected to be imposed on NYISO. Potomac also argues pseudo-ties threaten reliability, asserting that since the new pseudo-ties have been established, MISO has had to seek emergency market-to-market coordination with PJM or request that transmission owners reconfigure breakers to manage transmission system conditions. Potomac further argues that the pseudo-tie requirement in PJM, coupled with the restrictions proposed in the Pseudo-Tie Enhancement filing, unnecessarily restricts the ability of external resources to participate in the PJM capacity market, thus unnecessarily inflating PJM capacity market prices. Potomac urges the Commission to direct PJM to eliminate the pseudo-tie requirement for resources that seek to participate in PJM's capacity auctions and replace it with an "alternative mechanism" for addressing PJM's underlying operational and reliability concerns.²¹

11. Potomac argues that PJM's pseudo-tie requirement creates substantial and unjustified inefficiencies in neighboring RTOs.²² According to Potomac, the justness and reasonableness of a practice must be evaluated by considering the benefits and burdens that the practice imposes; in the context of RTOs, this evaluation must take into account significant impacts the RTOs have on one another.²³ Potomac contends that the Commission, in the *Capacity Import Limit Order* and the *Capacity Performance Order*,

contract rights under their Network Integrated Transmission Service Agreements or Dynamic Transfer Agreements. *Id.* PP 54 & 59.

²¹ Complaint at 3.

²² *Id.* at 9.

²³ *Id.* at 10 (citing *Ill. Commerce Comm'n v. FERC*, 576 F.3d 470, 476 (7th Cir. 2009) and *N. Ind. Pub. Serv. Comm'n v. Midcontinent Indep. Sys. Operator, Inc.*, 155 FERC ¶ 61,058 (2016)). Indeed, Potomac argues, MISO's and PJM's compliance with requirements of Order No. 2000 was expressly conditioned upon them "working together to eliminate seams and administer well-functioning markets." *Id.* (citing *Regional Transmission Organizations*, Order No. 2000, FERC Stats. & Regs. ¶ 31,089 (1999) (cross-referenced at 89 FERC ¶ 61,285), *order on reh'g*, Order No. 2000-A, FERC Stats. & Regs. ¶ 31,092 (2000) (cross-referenced at 90 FERC ¶ 61,201) *aff'd sub nom. Pub. Util. Dist. No. 1 v. FERC*, 272 F.3d 607 (D.C. Cir. 2001)).

implied a balancing test in evaluating PJM's proposals.²⁴ In the Capacity Performance proceeding, Potomac asserts, there was limited record evidence of the harm that pseudo-ties would cause to PJM and its neighbors, and the Commission accepted the pseudo-tie requirement with an understanding that harms would be ameliorated by PJM's collaboration with neighbors.²⁵ Potomac argues that, based on a growing body of evidence, the pseudo-tie requirement imposes both economic and reliability costs that far exceed its benefits.²⁶ The Complaint is addressed in greater detail below.

III. Notice of Filing and Responsive Pleadings

12. Notice of the Complaint was filed in the *Federal Register*, 82 Fed. Reg. 17,987 (Apr. 14, 2017), with answers, interventions, and comments due on May 8, 2017.

13. Timely motions to intervene were filed by the following parties: Alliant Energy Corporate Services, Inc.; American Electric Power Service Corporation; American Municipal Power, Inc. (AMP); American Public Power Association; Brookfield Energy Marketing LP; Buckeye Power, Inc.; Consumer Power Advocates; The Dayton Power and Light Company; DC Energy, LLC; Duke Energy Corporation; Dominion Resource Services, Inc.; Dynegy Marketing and Trade, LLC and Illinois Power Marketing Company; Entergy Services, Inc. (Entergy); East Kentucky Power Cooperative, Inc.; Electric Power Supply Association (EPSA); Exelon Corporation; Hoosier Energy Rural Electric Cooperative, Inc. and Southern Illinois Power Cooperative; FirstEnergy Service Company; ITC Lake Erie Connector, LLC; LS Power Associates, L.P.; Illinois Industrial Energy Consumers (IIEC); Illinois Municipal Electric Agency; MISO; MISO Transmission Owners; Missouri Joint Municipal Electric Utility Commission (MJMEUC); New York Independent System Operator, Inc. (NYISO); New York Transmission Owners; Northern Illinois Municipal Power Agency; North Carolina Electric Membership Corporation; NRG Power Marketing LLC and GenOn Energy Management, LLC; Organization of MISO States (OMS); PJM Power Providers Group (P3); Powerex Corp. (Powerex); PSEG Companies; Southern Company Services, Inc.; Tatanka Wind Power, LLC (Tatanka); Tilton Energy LLC; Wabash Valley Power Association, Inc.; Wisconsin Electric Power Company and Wisconsin Public Service Corporation; and Xcel Energy Services, Inc. The Illinois Commerce Commission filed a motion to intervene out of time.

²⁴ *Id.* at 11.

²⁵ *Id.* (citing Capacity Performance Order, 151 FERC ¶ 61,208 at P 96).

²⁶ *Id.*

14. Notices of intervention were filed by Arkansas Public Service Commission; Council of the City of New Orleans, Louisiana; Mississippi Public Service Commission; and New York State Public Service Commission (New York Commission).

15. On May 8, 2017, PJM filed its answer (PJM First Answer). On May 8, 2017, AMP, Brookfield, Entergy, Illinois IEC, MJMEUC, New York Commission, NYISO, OMS, Powerex and Tatanka filed comments, and P3 and the PJM Utilities Coalition²⁷ filed protests.

16. On May 26, 2017, Potomac filed an answer (Potomac Answer). On May 31, 2017 the PJM IMM filed comments. On June 7, 2017, the PJM IMM filed an answer (PJM IMM Answer) in response to PJM's motion to dismiss. On June 20, 2017, PJM filed an answer (PJM Second Answer).

17. On June 19, 2018, PJM filed a Notice of Recent Appellate Precedent on Market Monitor Standing (PJM Notice of Appellate Precedent). On June 26, 2018, the PJM IMM filed a response to PJM's Notice of Appellate Precedent. On July 2, 2018, Potomac filed a response to PJM's Notice of Appellate Precedent.

IV. Discussion

A. Procedural Matters

18. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2019), the timely, unopposed motions to intervene serve to make the entities that filed them parties to the proceedings in which they were filed.

19. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2019), prohibits answers to a protest or answer unless otherwise ordered by the decisional authority. We accept the answers to the protests and answers because they have provided information that assisted us in the decision-making process.

²⁷ The Public Utilities Coalition includes: American Electric Power Service Corporation; Buckeye Power, Inc.; The Dayton Power and Light Company; East Kentucky Power Cooperative, Inc.; and FirstEnergy Service Company, each on behalf of itself and affected affiliates.

B. Substantive Issues**1. Ability of Market Monitor to File Complaint Against PJM****a. PJM Motion to Dismiss**

20. PJM asserts that the pseudo-tie issues addressed in the Complaint are already before the Commission in several other proceedings.²⁸ PJM also asserts that MISO and PJM are actively coordinating on pseudo-tie issues, including developing processes to relieve congestion issues and negotiating possible JOA changes to address implementation issues.²⁹

21. PJM characterizes the Complaint as an inappropriate demand by a market monitor for market design changes in a market it does not monitor—a demand that exceeds its authority in the market it does monitor.³⁰ PJM argues that the Complaint is contrary to the limited, advisory role established for market monitors in Order No. 719.³¹ PJM notes that Potomac is not alleging any rule or tariff violation or an exercise of market power.³² PJM acknowledges that Potomac, like any person, can express its market design advice through avenues such as stakeholder presentations or comments/protests in Commission proceedings, noting Potomac’s protest “on substantially the same issues” in Docket No. ER17-1138-000.³³

22. PJM asserts that Potomac appears to have filed the Complaint in its role as market monitor for MISO or NYISO but lacks tariff authority to file a complaint seeking to rewrite PJM’s market design. PJM argues that nothing in the MISO Tariff empowers

²⁸ PJM First Answer at 14 (citing Docket Nos. EL17-37-000, EL17-31-000, EL17-29-000, EL16-108-000, ER17-1061-000, and ER17-1138-000).

²⁹ *Id.* at 15.

³⁰ *Id.*

³¹ *Id.* at 15-16 (citing *Wholesale Competition in Regions with Organized Elec. Mkts.*, Order No. 719, 125 FERC ¶ 61,071, at PP 354, 357 (2008), *as amended*, 126 FERC ¶ 61,261, *order on reh’g*, Order No. 719-A, 128 FERC ¶ 61,059 (2009), *reh’g denied*, Order No. 719-B, 129 FERC ¶ 61,252 (2009)).

³² *Id.* at 16.

³³ *Id.* at 16-17 (citing *Cal. Dep’t of Water Res.*, 120 FERC ¶ 61,248, at P 13 (2007)).

Potomac to do more than “recommend” changes to MISO actions and market rules.³⁴ Similarly, PJM notes that Potomac’s role in recommending rule or tariff changes in NYISO is “advisory in nature.”³⁵ PJM also asserts that, to the extent that Potomac does not rest its Complaint on its market monitor role, the Complaint fails due to a lack of showing of harm, adverse effect, or injury that is a predicate for relief under FPA section 206.³⁶

b. Potomac’s Answer to Motion to Dismiss

23. Potomac argues that PJM’s motion to dismiss lacks basis in the FPA or Commission’s regulations and precedent, and is contrary to the public interest, because it seeks to block Potomac from raising concerns with the Commission regarding the severe adverse impacts of PJM’s pseudo-tie requirement.³⁷ Potomac contends that under Commission Rule 206, “any person” may file a complaint against any other person, and neither the FPA nor Rule 206 establishes or references any restrictions on which “persons”—which is a broadly defined term—may file complaints.³⁸ Potomac states that, in *American Electric Power Service Corporation*, the Commission reiterated the traditional understanding that “[t]he plain language of the FPA and the Commission’s implementing regulations allow broad participation in proceedings before the Commission” including complaint proceedings.³⁹

³⁴ *Id.* at 17-18 (citing MISO Tariff, §§ 50.2, 62(d)).

³⁵ *Id.* at 18 (citing NYISO Tariff, Attachment O, §§ 30.4.5.1, 30.4.5.1.2, 30.4.5.1.3).

³⁶ *Id.* at 18-19 (citing *Appalachian Power Co.*, 153 FERC ¶ 61,299, at P 15 (2015); *Sw. Gas Corp. v. El Paso Nat. Gas Co.*, 61 FERC ¶ 61,368, at 62,464 (1992), *reh’g denied*, 63 FERC ¶ 61,111 (1993), *pet. for review denied*, *Sw. Gas Corp. v. FERC*, 40 F.3d 464 (D.C. Cir. 1994); *Appalachian Power Co.*, 137 FERC ¶ 61,065, at P 17 (2011); *Capital Legal Found. v. Commodity Credit Corp.*, 711 F.2d 253, 258 (D.C. Cir. 1983); *Deutsche Bank Nat’l Tr. Co. v. FDIC*, 717 F.3d 189, 195 (D.C. Cir. 2013)).

³⁷ Potomac Answer at 3.

³⁸ *Id.* at 4 (citing 18 CFR § 385.206 (2016)).

³⁹ *Id.* at 4-5 (citing *American Elec. Power Serv. Corp.*, 153 FERC ¶ 61,167, at P 13 (2015) (*American Elec.*)). Potomac states that the order also indicated that there is no difference between the types of “persons” who may file complaints and those who may file protests. *Id.* n.42.

24. Potomac states that to the best of its knowledge, the Commission has never before taken the position that market monitors are not permitted to file complaints, but has only denied market monitor complaints on the merits.⁴⁰ Potomac points out that the Commission itself recently suggested that it expected PJM's market monitor to file complaints against PJM under certain circumstances, which prompted PJM to seek clarification regarding its market monitor's authority to file complaints against it, resulting in strong objections by PJM state regulators and other.⁴¹

25. Potomac states that it is uniquely well-positioned to identify and substantiate the adverse effects that these requirements are increasingly having within MISO and threaten to have in the NYISO.⁴² Potomac argues that the issues it raises in the Complaint are "directly relevant to [Potomac's] responsibility to monitor the performance of the Commission jurisdictional markets in" MISO and NYISO and that "PJM's pseudo-tie requirement therefore has a fundamental impact on [Potomac's] core mission as a market monitor"⁴³

26. Potomac contends that the only way that Order No. 719 could have taken away market monitors' existing right, as "persons," to file complaints would have been to expressly deny them that right, but did no such thing.⁴⁴ Similarly, Potomac explains, it is no surprise that the MISO and NYISO tariffs do not explicitly address Potomac's filing rights, as there was no need to repeat widely understood filing-eligibility requirements. According to Potomac, the mere fact that PJM's tariff identifies a circumstance in which the PJM IMM may file a complaint does not mean that Potomac may not file complaints in the absence of such language in the MISO and NYISO tariffs.⁴⁵

⁴⁰ *Id.* at 5.

⁴¹ *Id.* at 5-6 (citing *PJM Interconnection, L.L.C.*, 158 FERC ¶ 61,133, at P 86 (2017) (stating that disputes between PJM and its market monitor regarding generators' fuel cost policies should not be referred to the Office of Enforcement but should instead be addressed through complaint or alternative dispute resolution procedures)).

⁴² *Id.* at 6.

⁴³ *Id.* (citing Complaint at 47).

⁴⁴ *Id.* at 7.

⁴⁵ *Id.*

27. Potomac rejects PJM's assertion that it lacks standing because it has not shown harm to itself.⁴⁶ Potomac argues that market monitors have unique expertise regarding the impacts of market rules on the markets that they oversee. Potomac contends that market monitors' independence and effectiveness is a prerequisite to a transmission operator's ability to qualify as an RTO in the first place, and that effective market monitoring is also a foundational component of the legal framework that allows market-based pricing in RTO-administered markets to be just and reasonable.⁴⁷ Potomac asserts that it is untenable to suggest that its interest is too limited to file a complaint, noting that "Supreme Court precedent is clear that consumers and advocacy groups may do so."⁴⁸

28. Potomac argues that, although PJM claims that Potomac already provided its "advice" on pseudo-tie matters in the Pseudo-tie Enhancement proceeding or that the issues raised by the Complaint are already before the Commission in other dockets, there is no pending Commission proceeding addressing the fundamental question of whether PJM's pseudo-tie requirement has proven to be unjust and unreasonable.⁴⁹ Potomac also argues that PJM's claim that Potomac has become involved in implementing rule and tariff changes lacks merit. Among other things, Potomac states that the Complaint does not ask the Commission to impose the alternative Capacity Delivery Procedures on PJM but presents them as an example of a viable alternative to the pseudo-tie requirement.⁵⁰

29. Potomac insists that even if the Commission were to embrace PJM's restrictive interpretation of the procedural rules, the Complaint should not be dismissed. Instead, Potomac explains the Commission could exercise its discretion⁵¹ to treat the filing as a

⁴⁶ *Id.* at 8.

⁴⁷ *Id.*

⁴⁸ *Id.* at 9.

⁴⁹ *Id.* at 9 (citing Complaint at 48).

⁵⁰ *Id.* (citing Complaint at 3 and 12).

⁵¹ *Id.* at 10 (citing *Blumenthal v. ISO New England, Inc.*, 128 FERC ¶ 61,182 (2009) (although complainant alleging market manipulation in organized markets invoked FPA Section 206, the Commission treated the complaint as one under FPA Section 306); *Seminole Elec. Coop., Inc. v. Fla. Power & Light Co.*, 153 FERC ¶ 61,037, at P 11 & n.16 (2015) (exercising discretion to treat filing as a request for rehearing); *Stowers Oil & Gas Co.*, 27 FERC ¶ 61,001, at n.3 (1984) ("Nor does the style in which a petitioner frames a document necessarily dictate how the [the] Commission must treat it.")).

petition asking that it initiate an FPA section 206 investigation of its own or, at a minimum, as a request for a technical conference.⁵²

c. Other Pleadings

30. The PJM IMM asserts that, although the Complaint should be denied for lack of merit, PJM's motion to dismiss also should be denied.⁵³ The PJM IMM challenges PJM's argument that filing a complaint is the equivalent of effectuating a market rule. The PJM IMM argues that complainants must prove the existing rules are unjust, unreasonable and/or unduly discriminatory and may advocate for desired changes, but the Commission's determinations define the rules and approved tariff language, which the RTO ultimately effectuates. According to the PJM IMM, under PJM's flawed theory, any prevailing complainant would be effectuating a market design.⁵⁴

31. The PJM IMM also argues that a market monitor need not explicitly be granted authority to file complaints, as PJM argues, because such authority originates in the FPA.⁵⁵ The PJM IMM argues that PJM is wrong in asserting that Potomac lacks standing to file complaints about market design issues because, the PJM IMM states, Potomac experiences harm related to its institutional mission and purpose.⁵⁶ In response to PJM's argument that dismissal is appropriate due to other pending proceedings, The PJM IMM contends that "[s]uch proceedings or discussions would not constitute grounds for dismissal even if the relief requested were within the scope of such proceedings or discussions," which PJM has not demonstrated.

32. PJM claims Potomac mistakenly ignores the requirement—recognized in the *AEP* case on which Potomac relies—that a "person" only has standing if it can allege an "injury in fact."⁵⁷ PJM claims that Potomac does not allege it has been harmed in its capacity as a customer, but rather filed its complaint in its capacity as a market monitor,

⁵² *Id.* at 10.

⁵³ PJM IMM Answer at 1.

⁵⁴ *Id.* at 2.

⁵⁵ *Id.* (citing 16 U.S.C. §§ 824e & 825e (2012)).

⁵⁶ *Id.* at 3 (citing *Alfred L. Snapp & Son v. Puerto Rico*, 458 U.S. 592, 611–612 (1982) (citing *Havens Realty Corp. v. Coleman*, 455 U.S. 363, 378–379 (1982); *Arlington Heights v. Metro. Hous. Dev. Corp.*, 429 U.S. 252, 263 (1977); *NAACP v. Button*, 371 U.S. 415, 428 (1963))).

⁵⁷ PJM Second Answer at 2.

“presumably using resources intended to support the function of market monitoring and relying on some theory of authority derivative from the [RTO] entity.”⁵⁸ In contrast to state attorneys general or consumer advocate offices, which have statutory authority to act on behalf of consumers, PJM maintains that nothing permits a market monitor to file a complaint except as specified in the RTO’s tariff. PJM characterizes the market monitor as a contractor hired to perform functions that the RTO must perform pursuant to Order No. 2000, but lacking a legally recognized status distinct from the RTO.⁵⁹ PJM notes the Commission could consider creating independent market monitors that are legally distinct from the RTOs, which could empower market monitors to bring legal actions and resolve governance and accountability issues arising from the current arrangement.⁶⁰

d. Commission Determination

33. We deny PJM’s Motion to Dismiss. We find that Potomac, as the market monitor for MISO and NYISO, has authority to file a complaint and that its complaint meets the Commission’s filing requirements.

34. We address first PJM’s argument that a market monitor is not allowed to file a Complaint under FPA section 206. PJM argues that Commission Order No. 719 provides certain specific outlets for market monitors to report issues, and that those outlets do not include filing complaints to the Commission under FPA section 206.⁶¹

35. In a proceeding related to PJM’s Fuel Cost Policy, the Commission determined that the market monitor had authority under the PJM tariff to file a complaint against PJM related to its Fuel Cost Policy.⁶² In that proceeding, the Commission declined to reach the issue of a market monitor’s general right to file complaints. We reach that issue here and find that the market monitor has the ability to file a complaint under FPA section 206 provided the market monitor meets the corresponding requirements of the Commission’s regulations, including Commission rule 206(b).

36. We note first that FPA section 306 broadly authorizes “[a]ny person, electric utility, State, municipality, or State commission” to file a complaint under FPA

⁵⁸ *Id.* (citing *American Elec.*, 153 FERC ¶ 61,167 at P 15).

⁵⁹ *Id.* at 2-3.

⁶⁰ *Id.* at 3.

⁶¹ PJM First Answer at 17.

⁶² *PJM Interconnection, LLC*, 167 FERC ¶ 61,084, at P 70 (2019).

section 206.⁶³ Similarly, Commission Rule 206 permits “[a]ny person [to] file a complaint seeking Commission action.”⁶⁴ FPA section 3 broadly defines “person” under the act to mean “an individual or corporation.”⁶⁵ Commission Rule 102(d), which implements FPA section 3, is similarly sufficiently broad to encompass market monitors.⁶⁶ The Commission has applied this expansive definition of a valid complainant in *American Electric Power Service Corp.*⁶⁷ There the Commission held that retail customers of Commission-jurisdictional public utilities may file complaints addressing Commission-jurisdictional transmission rates.⁶⁸ The Commission reinforced the understanding that “the plain language of the FPA and the Commission’s implementing regulations allow broad participation in proceedings before the Commission,” including complaints.⁶⁹

37. Given the broad definition of persons allowed to file complaints under the FPA, we next consider whether any legal or contractual provisions prevent the market monitor

⁶³ 16 U.S.C. § 824e (2018).

⁶⁴ 18 C.F.R. § 385.206(a) (2019).

⁶⁵ 16 U.S.C. § 796(4) (2018).

⁶⁶ Rule 102(d) defines a person as an:

individual, partnership, corporation, association, joint stock company, public trust, an organized group of persons, whether incorporated or not, a receiver or trustee of the foregoing, a municipality, including a city, county, or any other political subdivision of a State, a State, the District of Columbia, any territory of the United States or any agency of any of the foregoing, any agency, authority, or instrumentality of the United States (other than the Commission), or any corporation which is owned directly or indirectly by the United States, or any officer, agent, or employee of any of the foregoing acting as such in the course of his or her official duty

18 C.F.R. § 385.102(d) (2019).

⁶⁷ *American Elec.*, 153 FERC ¶ 61,167.

⁶⁸ *Id.* P 14.

⁶⁹ *Id.* P 13.

from filing its Complaint in this proceeding.⁷⁰ The record here identifies no such provision. There is no statutory provision prohibiting a complaint by a market monitor, nor any contractual abdication on the part of the market monitor in this proceeding. Instead, the MISO Tariff states that “[t]he IMM may, at any time, bring any matter to the attention of... Interested Government Agencies... as the IMM may deem necessary or appropriate for achieving the purposes, objectives and effective implementation of this Plan.”⁷¹

38. PJM points to the Commission’s Order No. 719, which sets forth the core functions of market monitors and which, it argues, did not allow for complaints by the market monitor.⁷² PJM notes that the Commission stated in Order No. 719 that “MMU’s role in recommending proposed rule and tariff changes is advisory in nature, and... the MMU should not become involved in implementing rule and tariff changes.”⁷³ However, a restriction on implementing rule and tariff changes is not the same as a prohibition on filing complaints with the Commission, and PJM points to no such prohibition in Order No. 719.⁷⁴

39. With regard to PJM’s identification of potential problems with allowing complaints to the Commission by market monitors,⁷⁵ we find that these concerns are

⁷⁰ See, e.g., *Atl. City Elec. Co. v. FERC*, 295 F.3d 1, 10-11 (D.C. Cir. 2002). (“Of course, utilities may choose to voluntarily give up, by contract, some of their rate-filing freedom under section 205.”).

⁷¹ MISO Tariff, Module D, Section 52.3 Core Functions and Responsibilities of the IMM (32.0.0). Attachment S-1 to the MISO Tariff - the retention agreement between MISO and Potomac Economics, Ltd. - states “[a]s the Independent Market Monitor and consistent with the requirements of Module D, you will notify the Commission upon determining that the Independent Market Monitor has identified a significant market problem that may require: 1) further investigation; 2) a change in the MISO Tariff or market rules or practices; or 3) action by the FERC and/or one or more state commissions.” MISO Tariff, Attachment S-1, IMM Retention Agreement (0.0.0).

⁷² PJM First Answer at 15-17.

⁷³ Order No. 719, 125 FERC ¶ 61,071 at P 357.

⁷⁴ *PJM Interconnection, LLC*, 167 FERC ¶ 61,084 at P 72 (“the inclusion of an express right to bring a complaint does not necessarily foreclose an entity’s general right to file complaints under section 206 of the FPA.”).

⁷⁵ PJM First Answer at 19 (stating the Commission should “discourage such attempted market-design-by-complaint.”) *Id.*

insufficient to overcome the broad definition of persons allowed to file complaints under the FPA.

40. In its Notice of Appellate Precedent, PJM argues that the United States Court of Appeals for the District of Columbia Circuit's holding that a market monitor does not have standing to intervene in a proceeding on judicial review of Commission orders supports its argument here.⁷⁶ The Commission has previously addressed this argument,⁷⁷ and will not further address it here.

41. Further, Commission Rule 206(b)⁷⁸ sets forth the requirements that any complaint must meet, and we find that Potomac's complaint has satisfied those requirements. Most of the Rule 206(b) requirements call for certain showings in a complaint, which Potomac satisfies in its filing.⁷⁹ We provide further discussion on two of those requirements.

42. Rule 206(b)(3) requires that a complaint "[s]et forth the business, commercial, economic or other issues presented by the action or inaction as such relate to or affect the complainant."⁸⁰ Potomac states its business interests are directly affected because the issues raised in this Complaint are directly relevant to Potomac's responsibility to monitor the performance of MISO and NYISO, the markets most affected by PJM's pseudo-tie requirement.⁸¹ As the market monitor for MISO and NYISO, among Potomac's core functions is to monitor those markets, which are adjacent to PJM.⁸² Moreover, Module D of MISO's tariff requires the market monitor to evaluate "the competitive performance and efficiency of the Transmission Provider's Markets and Services, including identification of opportunities to promote operational efficiency improvements; ... the operation, use, and congestion of the Transmission System as such

⁷⁶ PJM Notice of Appellate Precedent at 1.

⁷⁷ *PJM Interconnection, L.L.C.*, 167 FERC ¶ 61084, at P 76 (2019) (finding that the Article III requirement discussed in *Old Dominion Elec. Coop. v. FERC*, 892 F.3d 1223 (D.C. Cir. 2018), does not apply to proceedings before federal agencies (citing *Gardner v. FCC*, 234, 530 F.2d 1086, 1090-91 (D.C. Cir. 1976)); see also *Pa Solar Park, LLC*, 164 FERC ¶ 61,118, at P 14 n.25 (2018).

⁷⁸ 18 C.F.R. § 385.206(b) (2019).

⁷⁹ 18 C.F.R. § 385.206(b)(1, 2, 5-11) (2019).

⁸⁰ 18 C.F.R. § 385.206(b)(3) (2019).

⁸¹ Complaint at 46-47.

⁸² 18 C.F.R. § 35.28(g)(3)(ii)(B) (2019).

system affects competitive conditions in the region.”⁸³ The MISO tariff also provides that Potomac’s functions include notifying the Commission “upon determining that the [market monitor] has identified a significant market problem that may require... further investigation.”⁸⁴ Because the complaint alleges in detail that PJM’s pseudo-tie requirement adversely affects congestion and efficiency in MISO and NYISO, we find that the complaint meets the requirements of Rule 206(b)(3), as the issues presented in the complaint relate to Potomac’s specific market monitoring responsibilities.

43. With regard to Rule 206(b)(4), in a complaint, a complainant must “[m]ake a good faith effort to quantify the financial impact or burden (if any) created for the complainant as a result of the action or inaction.”⁸⁵ Potomac satisfies this regulation. Potomac serves as the Commission-approved independent market monitor for both MISO and the NYISO, both of which, as Potomac explains, are impacted by PJM’s pseudo-tie requirement. In describing that impact in its Complaint, Potomac made a good faith effort to quantify the financial impact of the pseudo-tie requirement on the MISO and NYISO markets.⁸⁶

44. Our holding in this regard is based on the specific facts of this proceeding, *i.e.* that Potomac’s complaint is directed to a PJM requirement that Potomac asserts has a direct adverse effect on the operation and efficiency of the markets where Potomac serves as the market monitor. We do not make any holding here as to whether a market monitor would satisfy the requirements of Rule 206 if it does not allege such direct effects when filing a complaint regarding markets where it does not serve as the market monitor.

2. Whether Potomac Demonstrated that the Pseudo-Tie Requirement Is Not Just and Reasonable

45. The Commission finds that Potomac has not demonstrated that PJM’s pseudo-tie requirement is unjust and unreasonable and thus we deny the Complaint. Potomac argues that PJM’s pseudo-tie requirement is unjust and unreasonable because it has caused increased market inefficiency; made grid operations and management more difficult and

⁸³ MISO/FERC Electric Tariff, 50.1, Purposes and Objectives, 31.0.0.

⁸⁴ *See supra* n.71 (citing MISO Tariff, Attachment S-1, IMM Retention Agreement (0.0.0)). While such notification could occur in other forms, *see* 18 C.F.R. § 385.202 (2019); 18 C.F.R. § 35.28(g)(3)(iv-v) (2019), Potomac has brought this complaint to the Commission based on what it has identified as a significant market issue.

⁸⁵ 18 C.F.R. § 385.206(b)(4) (2019).

⁸⁶ Complaint at 22-24 and 29-32.

reduced grid reliability; and will cause similar market, operational and reliability problems in the future in NYISO. As discussed in this section, the Commission finds that Potomac's arguments with respect to: (1) market inefficiency; (2) grid operations; management and reliability; and (3) potential future harm to NYISO fail to demonstrate that PJM's pseudo-tie requirement is unjust and unreasonable.

a. Efficiency Impacts

i. Complaint

46. As one of its main arguments, Potomac asserts that PJM's pseudo-tie requirement is not just and reasonable because it has caused increased market inefficiency. Further, Potomac asserts that the costs of the requirement outweigh its benefits. Specifically, Potomac asserts that the requirement: (1) increased dispatch inefficiency, (2) increased congestion costs, and (3) increased capacity market prices.⁸⁷ Potomac further asserts that the then-proposed pseudo-tie enhancements would result in economic barriers to entry to import capacity to PJM⁸⁸ and would lead to unjust and unreasonable capacity market outcomes in PJM, such as increased capacity market prices.⁸⁹ To underscore that growth in pseudo-ties decreases efficiency, Potomac describes dispatch and market-to-market coordination at an RTO seam without pseudo-tied resources⁹⁰ and with pseudo-tied resources.⁹¹ According to Potomac, a pseudo-tied resource can create new market-to-market constraints, resulting in less efficient congestion management and responses to congestion that can be delayed by 20 to 25 minutes.⁹² Potomac also argues

⁸⁷ Complaint, Attachment I (Testimony of Dr. David Patton) (Patton Test.).

⁸⁸ Complaint at 14.

⁸⁹ *Id.* at 14.

⁹⁰ *Id.* at 16-18.

⁹¹ *Id.* at 18-20. Potomac explains that market-to-market coordination is essential and allows two RTOs to coordinate their energy market dispatch to jointly manage constraints. *Id.* at 17. Potomac provides several figures to depict market-to-market coordination between two RTOs and affected flowgates.

⁹² *Id.* at 19. Potomac explains that the native RTO partially optimizes dispatch (without the pseudo-tied unit), resulting congestion is conveyed to the neighboring RTO, which then produces a dispatch solution and provides dispatch instructions to the pseudo-tied unit; as a result, the pseudo-tied unit moves to address congestion more than 20 minutes after the congestion arose. As a result of this time lag, by the time the pseudo-tied unit moves, its relief may no longer be required. Potomac contends that it has commonly observed these outcomes and these lags "make it impossible for the RTOs

that a pseudo-tied resource can result in constraints that are not coordinated under the market-to-market procedures, leading to greater inefficiencies.⁹³ Potomac states that the 12 units that pseudo-tied into PJM in 2016 created 114 new market-to-market constraints on the MISO system, and Potomac estimates that additional units that have pseudo-tied will create 100 more market-to-market constraints in 2017.⁹⁴

47. Potomac argues that market-to-market coordination does not solve issues caused by pseudo-tied resources and does not substitute for dispatch control. Potomac contends that it would not be possible for PJM to model the current market-to-market constraints in its day-ahead market and to have the day-ahead model solve in a reasonable amount of time—even before the June 2017 pseudo-tied resources begin operation in PJM.⁹⁵

48. In the Complaint, Potomac presents three analyses to demonstrate that the pseudo-tie requirement has negatively affected the efficiency of the MISO market: (1) dispatch inefficiency, (2) increases in congestion costs, and (3) potential market impacts of the pseudo-tie requirement on PJM capacity market prices.⁹⁶

49. Potomac analyzed the alleged dispatch inefficiencies associated with 12 units pseudo-tied from MISO into PJM in 2016.⁹⁷ Potomac calculates the economic value of each unit's "output deviation," which is the difference between the unit's output as dispatched by PJM and the output that, according to Potomac, MISO would have dispatched from the unit, taking into consideration the unit-specific costs and ramp rates. Potomac then determined "net inefficiency" as the resource's value to MISO (based on MISO's locational marginal prices (LMP)) less the production costs resulting from the change in output. Potomac specifically analyzed the net inefficiency for each of the pseudo-tied units during hours when they affected congestion (i.e., hours when congestion was greater than \$5/MWh at the units' locations), and calculated the net inefficiency as a percent of production cost for each unit.⁹⁸ Based on this analysis, Potomac asserts that eight of the 12 pseudo-tied units had inefficiencies greater than 20%.

to achieve truly efficient and optimal real-time market outcomes." Complaint at 21-22.

⁹³ *Id.* at 19-20.

⁹⁴ *Id.* at 20. Potomac posits that this is double the amount of constraints that would need to be coordinated absent the pseudo-ties.

⁹⁵ *Id.* at 21.

⁹⁶ Complaint, Attachment I (Testimony of Dr. David Patton) (Patton Test.).

⁹⁷ Complaint at 22.

⁹⁸ *Id.* at 22-23.

Potomac claims that when the analysis takes into account units not committed by PJM during periods in which the units would have been economic based on MISO LMPs, the weighted-average inefficiency would exceed 26%.⁹⁹

50. Potomac argues that since the 12 units have begun operating as pseudo-ties, congestion costs have increased. Potomac compared the cost of congestion at constraints that became market-to-market constraints because of the 12 pseudo-tied units before and after the initiation of new pseudo-ties in March and June of 2016. Potomac asserts that congestion charges increased by \$38.5 million, or 93%, after the pseudo-ties were in place.¹⁰⁰ Potomac argues that the trend of increasing congestion charges will continue into 2017. Potomac adds that its analysis does not include other potential costs and inefficiencies, including conservative actions and parameters used by MISO in response to resources pseudo-tied into PJM. Potomac argues that these analyses provide evidence that pseudo-tied resources are decreasing the efficiency of the day-ahead and real-time markets in MISO and substantially raises costs, ultimately producing unjust and unreasonable market outcomes.¹⁰¹

51. Potomac alleges that the pseudo-tie requirement (in combination with more restrictive pseudo-tie rules that PJM proposed in the Pseudo-tie Enhancement filing), creates a barrier to interregional capacity transactions. As a result of these requirements, Potomac argues that PJM will set inflated capacity prices to motivate investment in new internal resources while it would be more efficient to import capacity from an adjacent region. Potomac alleges that PJM's pseudo-tie requirement and proposed restrictions on pseudo-ties could reduce or eliminate imports of external capacity resources into PJM, resulting in the reduction of 2,000 MW to 3,000 MW of external capacity resources clearing in PJM's capacity market. Based on this reduction, Potomac calculates a potential range of price effects, given the variability in quantity of external capacity that would clear in the 2019/2020 Base Residual Auction (BRA). Potomac concludes that a reduction in the supply of capacity imports into PJM may cause an increase in capacity

⁹⁹ *Id.* at 22-24 & Fig.5. Potomac argues that its dispatch inefficiency analysis is likely understated because it does not include other inefficiencies, such as instances when units would not have been economically committed by MISO or when MISO dispatched other units inefficiently because it did not know how the pseudo-tied units would have been dispatched.

¹⁰⁰ *Id.* at 24-25 Fig.6.

¹⁰¹ *Id.* at 26.

market prices by \$7/MW-day to \$80/MW-day, or an annual cost increase within the range of \$0.5 billion to \$4 billion.¹⁰²

ii. PJM Answer

52. Regarding alleged inefficiencies caused by the pseudo-tie requirement, PJM asserts that Potomac's analysis is flawed for three primary reasons: (1) it ignores the benefits of pseudo ties and does not provide a benefits analysis, (2) the dispatch inefficiencies analysis is narrowly focused on the MISO perspective, and (3) Potomac's congestion cost and capacity price analyses are irrelevant and invalid, and are not a substitute for a PJM cost analysis.¹⁰³

53. In particular, PJM argues that Potomac's dispatch inefficiency analysis is the only effort to quantify economic costs on MISO loads. PJM also argues that the analysis measures "the difference between the pseudo-tie units' actual output (based on PJM's dispatch) and where MISO would have dispatched them (given their costs and ramp rates)."¹⁰⁴ PJM argues that the "analysis' assumptions dictate the outcome"¹⁰⁵—where the dispatch is efficient if MISO dispatches the PJM pseudo-tied resource but inefficient if PJM dispatches the resource.¹⁰⁶

54. Regarding Potomac's analysis of the impact of pseudo-ties on congestion costs, PJM asserts that congestion is not the appropriate measure of the costs of pseudo-ties, reasoning that congestion costs arise when transmission is constrained, thus congestion costs may signal a need for a transmission expansion but are not in and of themselves a measure of inefficiency.¹⁰⁷

55. PJM affiant Mr. Keech specifically asserts that the dispatch inefficiency analysis rests on a definition of "efficiency" tied to what is most beneficial to MISO, ignoring any value to PJM of the dispatch.¹⁰⁸ According to PJM affiants Mr. Keech and Dr. Chao, this

¹⁰² *Id.* at 14-15; Patton Test. at 11-13.

¹⁰³ PJM First Answer. at 21-22.

¹⁰⁴ *Id.* at 22 (citing Complaint at 22).

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ PJM First Answer, Chao Affidavit at P 13.

¹⁰⁸ *Id.* n.62 (citing Keech Aff. at ¶ 18).

analysis “ignores the economic choice embodied in the value that the Native Balancing Authority places on capacity” and the Capacity Market Seller’s response to that choice.¹⁰⁹

56. PJM compares the \$120/MW-day BRA price for the 2017/2018 Delivery Year, with the \$1.50/MW-day PRA price for the 2017/2018 Planning Year. PJM states that electric capacity is an option to call on the delivery of energy from a resource.¹¹⁰ PJM argues that a region paying \$1.50/MW-day for capacity is placing a lower value on it than the region that pays \$120/MW-day. Therefore, PJM argues, loads in the lower-paying region face the risk that the option to call on resources will be sold to the higher-paying region. PJM argues that its long-standing rules for resources (e.g., daily must-offer obligation, and scheduling and dispatch rights), which define the “essential nature” of the option that PJM is buying, make no distinction between internal and external resources.¹¹¹

57. According to PJM, the risks faced by MISO loads when MISO does not buy a resource’s capacity is that the resource may sell to PJM, which uniformly defines the capacity product, or option, as entailing must-offer obligations, PJM dispatch rights, and performance requirements on any day of the year. PJM explains that these conditions imply some loss of MISO’s ability to dispatch in a manner that is optimal for MISO loads, but the sub-optimal dispatch cannot be divorced from the choice within MISO to not purchase the option on delivery of energy from that resource which instead sold to PJM in a transaction governed by PJM’s Tariff.¹¹²

58. Regarding alleged impacts on PJM capacity market prices, PJM asserts that eliminating the pseudo-tie requirement would skew market outcomes by permitting external resources to provide a lower-quality, lower-cost capacity product in competition with internal PJM resources.¹¹³

59. PJM asserts that its critique of Potomac’s analyses does not imply indifference to the practical consequences of MISO resources’ choices to sell capacity in PJM, which is why PJM is actively coordinating with MISO to address implementation and

¹⁰⁹ *Id.* at 22-23 (citing *Keech Aff.* at ¶ 18; *Chao Aff.* at ¶ 12).

¹¹⁰ *Id.* at 23 (citing *NRG Power Mktg., LLC v. Me. PUC*, 558 U.S. 165, 168 (2010)).

¹¹¹ *Id.* at 23-24.

¹¹² *Id.* at 24.

¹¹³ *Id.* at 21.

management concerns.¹¹⁴ PJM states that its ongoing communication and coordination with MISO specifically aimed at promoting visibility of PJM scheduling and dispatch directly addresses certain dispatch-inefficiency concerns raised by Potomac.¹¹⁵

iii. Other Pleadings

60. Entergy argues that Potomac has demonstrated that the pseudo-tie requirement has caused economic harm to MISO.¹¹⁶ Entergy urges the Commission to rely on the expertise of Potomac regarding the future effects of resources that potentially will pseudo-tie into PJM from MISO and NYISO, listing additional potential detrimental effects of pseudo-tie resources on reliability and secure operations in MISO and the Eastern Interconnect.¹¹⁷ According to Entergy, although Potomac has presented evidence of actual harm caused by pseudo-tied resources, should the Commission determine there is insufficient evidence of actual harm, it can act pursuant to FPA section 206 to address a theoretical threat posed by existing processes.¹¹⁸

61. According to the PJM Utilities Coalition, the disparity in export/imports between MISO and PJM “is straightforward economics” and, contrary to Potomac’s assertion, PJM’s market rules do not need revisions to ensure the efficient allocation of resources across seams.¹¹⁹ P3 and EPSA also contend that the Complaint fails to acknowledge that MISO’s market rules encourage capacity exports to PJM.¹²⁰

62. As to the Complaint’s claim that absent interregional capacity transactions, an RTO can set inflated capacity prices, the PJM IMM contends that permitting inferior capacity imports could harm reliability and could “suppress the PJM price and result in uneconomic retirements in PJM, or requests for subsidies, as well as a lack of economic

¹¹⁴ *Id.* at 24-25.

¹¹⁵ *Id.* at 24-25.

¹¹⁶ Entergy Comments at 11-13.

¹¹⁷ *Id.* at 14-15. Entergy also claims that market inefficiencies due to pseudo-ties could be exacerbated if natural gas prices rise in the future. *Id.* at 17.

¹¹⁸ Entergy Comments at 17 (citing *S. Carolina Pub. Serv. Auth. v. FERC*, 762 F.3d 41, 64 (D.C. Cir. 2014)).

¹¹⁹ PJM Utilities Coalition Protest at 5.

¹²⁰ P3 and EPSA Protest at 3.

new entry. The PJM market would be dependent on external resources without a long-term commitment to PJM”¹²¹

iv. Answers

63. Potomac asserts that PJM’s claims that its analysis ignored the congestion management benefits to PJM from pseudo-tying are not meaningful. Potomac concludes that, while some congestion benefits on PJM constraints from dispatching the pseudo-tied MISO units may be possible, it is “inconceivable” that such benefits would provide a meaningful offset to the sizable inefficiencies that it quantified in the Complaint.¹²²

64. Potomac argues that the pseudo-tied units are on the MISO system and thus the constraints affected by these units are generally on the MISO system; if there are PJM constraints affected by the pseudo-tied resources, the effects are likely much smaller because they more are electrically distant. Therefore, Potomac contends it is reasonable and sufficient to focus the dispatch efficiency analysis on the MISO prices and congestion.¹²³

65. Potomac argues that because the increase in congestion value shown in the Complaint accurately indicates a substantial increase in production costs and an associated loss in efficiency, the sizable increase in congestion on MISO’s constraints that are affected by the pseudo-tied units cannot be dismissed.¹²⁴

66. In response to PJM’s assertion that the market will continue to clear with competition causing the offer prices of the external resources to reflect the pseudo-tie costs and restrictions, Potomac explains that the restrictions proposed by PJM are absolute barriers that cannot be reflected in the pseudo-tied resource’s offer prices.¹²⁵

v. Commission Determination

67. We find that Potomac’s dispatch inefficiency analysis does not demonstrate that PJM’s pseudo-tie requirement is unjust and unreasonable. Not only does Potomac’s analysis suffer from analytic flaws, discussed below, but its underlying premise merely presents an alternative way to accommodate external resources. Potomac’s primary

¹²¹ *Id.* at 8-9.

¹²² Potomac Answer at 13-15.

¹²³ *Id.* at 15.

¹²⁴ *Id.*

¹²⁵ *Id.* at 16.

argument is that individual external resources should not be responsible to PJM for delivery, but that the entirety of the MISO system should be responsible for these deliveries. However, PJM's capacity market is not unjust and unreasonable because it requires external resources to be responsible for their own capacity obligations, just as internal resources are responsible for their capacity obligations. Such a model is also consistent with the Capacity Performance construct in PJM. Also, Potomac's arguments here fail to recognize that, under PJM's approach, MISO must consent to a pseudo-tie so MISO could refuse to provide consent in circumstances where it believes the pseudo-tie would be too detrimental to the MISO system.¹²⁶

68. We find that Potomac's congestion cost analysis fails to demonstrate that PJM's pseudo-tie requirement is unjust and unreasonable. Potomac's congestion cost study includes only total congestion cost numbers between PJM and MISO. Potomac's data does not delineate the amount of congestion costs directly attributable to pseudo-ties and the amount attributable to normal system operations that would exist without a pseudo-tie requirement for capacity resources. We also find that Potomac's analysis has not demonstrated that a reduction in external capacity, or the corresponding increase to capacity market prices would be unjust or unreasonable, because, as discussed above, these data do not refute PJM's showing that the pseudo-tie requirement is just and reasonable as it helps ensure that external resources are as reliable as internal resources when PJM needs to call upon them.

69. We also are not convinced that Potomac's analysis shows that the costs of PJM's pseudo-tie requirement outweigh the benefits. The analysis only focuses on the existence of less expensive resources in MISO, which are not subject to PJM's control, have not been studied for deliverability by PJM under PJM's deliverability criteria, and are not subject to PJM's unit-specific non-performance penalties under the Capacity Performance construct. The analysis therefore ignores any potential economic benefits from dispatch by PJM.

¹²⁶ PJM, OA Schedule 1 Sec 1.12, OA Schedule 1 Sec 1.12 Dynamic Scheduling, (3.0.0). (An entity seeking to utilize a Pseudo-Tie shall execute a mutually agreeable interregional congestion management agreement as contemplated in Section 2.6A of this Schedule). Section 2.6A of Schedule 1 of the PJM OA states that PJM shall negotiate in good faith with any external balancing authority that seeks to enter into an interregional congestion management agreement with PJM, and will file such agreement, upon execution, with the Commission. PJM, OA, Schedule 1 Sec 2.6A, OA Schedule 1 Sec 2.6A - Interface Prices (7.0.0).

b. Operational, Management, and Reliability Impacts

i. Complaint

70. Potomac also claims that the pseudo-tie requirement is not just and reasonable because it causes operational and reliability harms to MISO. Potomac argues that actual operational experience during the thirteen months since the new MISO-to-PJM pseudo-ties were implemented in 2016 demonstrates that pseudo-ties have harmed MISO's ability to reliably operate its system.¹²⁷ Potomac asserts that on several occasions in 2016, MISO requested that PJM commit or de-commit pseudo-tied resources to manage local constraints in MISO. Potomac further contends that delays caused by pseudo-tying resources and the loss of control by MISO resulted in constraints exceeding their operating limits by as much as 40%.¹²⁸

71. According to Potomac, due to MISO's loss of dispatch control over pseudo-tied units, MISO had to seek emergency market-to-market coordination with PJM or request that MISO transmission owners reconfigure breakers to manage transmission system conditions.¹²⁹ Potomac states that it is aware of at least 10 days in 2016 where MISO operators had to take "multiple extraordinary actions" involving multiple units to manage system conditions because MISO lacked visibility on the future commitment status or dispatch level of resources controlled by PJM. Potomac states that MISO had operated "more conservatively, increasing the costs to MISO's customers, to account for its lack of commitment and dispatch control of the pseudo-tied units and the uncertainty regarding their commitment and dispatch by PJM."¹³⁰

72. Potomac argues that PJM conceded in its Pseudo-Tie Enhancement proposal that the requirements and modeling obligations for pseudo-tied resources are much larger than anticipated, and further argues that PJM identified substantial congestion management concerns.¹³¹ Specifically, Potomac highlights PJM's statements that the current process of approving pseudo-ties does not ensure that external resources are fully deliverable to PJM load and may overlook some external system impacts, and statements that raise

¹²⁷ Complaint at 28-29.

¹²⁸ *Id.* at 28-29.

¹²⁹ *Id.* at 29.

¹³⁰ Complaint at 29.

¹³¹ *Id.* at 32-33.

concerns regarding required tagging under NERC's standards.¹³² Potomac argues that pseudo-tying resources reduces the overall deliverability of external supply to PJM by locking in the source of the export, which may load a constraint and prevent additional energy from being imported into PJM. Potomac states that this could also restrict emergency transfers, which MISO has routinely made to PJM in emergency conditions.¹³³

ii. PJM Answer

73. PJM argues that Potomac's references to operational or reliability impacts are undefined, unsupported and simply appended to allegations of adverse economic effects or inefficiencies.¹³⁴ PJM argues that the only substance the Complaint suggests for these allegations are passing references to MISO visibility of PJM dispatch of pseudo-tied resources, and lag times inherent in cross-regional coordination of dispatch of external resources.¹³⁵

74. PJM asserts that coordination, rather than litigation, is the appropriate means to address any reliability concerns.¹³⁶ PJM responds to Potomac's "passing references" to MISO visibility issues by asserting that its interests and MISO's interests are aligned on that concern. PJM contends that Potomac ignores the significant coordination that is occurring, and that the Electrical Distance requirement "ensures that PJM does not become dependent on generators located so deep within MISO that PJM models and systems cannot assure continuous PJM visibility of those resources."¹³⁷

75. PJM asserts that MISO has implemented with PJM a "Pseudo-Tied Units Operating Procedure" since January 2016 and is engaged in ongoing efforts to constructively address pseudo-tie issues.¹³⁸ PJM also underscores that in

¹³² *Id.* at 34.

¹³³ *Id.* at 35.

¹³⁴ PJM First Answer at 25.

¹³⁵ *Id.* at 25.

¹³⁶ *Id.* at 5-6.

¹³⁷ *Id.* at 25-26 (citing PJM Transmittal in Docket No. ER17-1138-000 at 4 (filed Mar. 9, 2017)).

¹³⁸ *Id.* at 4-5.

November 2016, PJM and MISO advised stakeholders that they “have implemented pseudo-ties without any reliability issues.”¹³⁹

76. PJM also addresses Potomac’s references to time lag in PJM dispatch of pseudo-tie resources in response to congestion on the MISO system in the context of operational and reliability concerns. Specifically, PJM asserts that the Complaint acknowledges that a comparable 20-minute time lag would apply under Potomac’s proposed alternative capacity delivery procedures, where MISO dispatches external resources on which PJM is relying for capacity.¹⁴⁰ According to PJM, a case can be made that if such time lags are inherent, the most prudent course is to permit the region relying on that resource for capacity to have direct dispatch control to avoid delays during times of emergencies and system stress.¹⁴¹ PJM also contends that this issue is amendable to inter-RTO coordination, as opposed to Potomac’s proposed solution of redesigning PJM’s capacity market to exclude external capacity generation resources from compliance with essential capacity product attributes.¹⁴²

77. With respect to Potomac’s concerns about NERC tagging, PJM explains that because resources that are not pseudo-tied are subject to curtailment under NERC’s TLR procedures,¹⁴³ pseudo-tying provides “a level of firmness” for external resources that is commensurate with internal resources in PJM, and enables external resources to comply with the PJM requirements.¹⁴⁴ PJM also characterizes the Complaint as an attack on PJM’s dispatch control of external Generation Capacity Resources.¹⁴⁵

¹³⁹ *Id.* at 25 (citing *PJM Interconnection, L.L.C. and Midcontinent Indep. Sys. Operator, Inc.*, Joint and Common Market: Item 4 – Pseudo-Ties, at 3 (Nov. 15, 2016), <http://www.miso-pjm.com/~media/committees-groups/stakeholdermeetings/pjm-miso-joint-common/20161115/20161115-item-04-pseudo-tie.ashx>).

¹⁴⁰ *Id.*

¹⁴¹ *Id.* at 26.

¹⁴² *Id.*

¹⁴³ *Id.* at 12.

¹⁴⁴ *Id.* at 12-13 (citing *Keech Aff.* at ¶ 7).

¹⁴⁵ *Id.* at 13.

iii. Other Pleadings

78. Entergy asserts that the pseudo-tie requirement causes operational, reliability, and economic harm to MISO, and should be replaced.¹⁴⁶ Entergy asserts that Potomac has demonstrated that pseudo-tied resources caused actual reliability harm, and emphasizes the Commission's holding in Order No. 2000 that RTOs must have the right to order the redispatch of any generator connected to the transmission facilities it operates, if necessary for reliability¹⁴⁷ and prior Commission actions pursuant to FPA section 206 to ensure reliability.¹⁴⁸

79. To illustrate its concerns, Entergy points to two generators located within MISO in Louisiana and Texas that have firm point-to-point transmission rights to sell into PJM at 1,000 MWs or above. Should these generators be pseudo-tied into PJM, Entergy asserts, MISO would lose visibility of them and PJM would dispatch them with imperfect knowledge of impacted constraints and MISO's plan for managing local reliability.¹⁴⁹ Entergy also describes how it experienced degraded reliability in July 2015 when a load shed warning was issued, while a generator that was pseudo-tied from MISO into SPP could have resolved the issue had MISO had dispatch control over it.¹⁵⁰

80. Entergy also contends that the pseudo-tie requirement should be eliminated because the assumption underlying the Commission's approval of the rule—that PJM would reach agreement with external Balancing Authorities ensuring reliable and economic operation of the pseudo-ties—has not occurred.¹⁵¹

81. Powerex supports the Complaint because of its concerns regarding the ability of external suppliers to compete to provide critical reliability services in RTO/ISO markets.¹⁵² According to MJEMUC, pseudo-ties should be voluntary, as the current

¹⁴⁶ Entergy Comments at 7.

¹⁴⁷ *Id.* at 7-9 (citing Order No. 2000, FERC Stats. & Regs., ¶ Regs., ¶ 31,089 at 31,104).

¹⁴⁸ *Id.* at 9-10 n.20-23.

¹⁴⁹ *Id.* at 15.

¹⁵⁰ *Id.* at 16.

¹⁵¹ *Id.* at 19.

¹⁵² Powerex Comments at 6.

mandatory structure leads to reduced reliability and creates operational issues resulting in out-of-merit order resource commitments in the day-ahead market.¹⁵³

82. The PJM Utilities Coalition, P3 and EPSA, and the PJM IMM all urge the Commission to reject the Complaint. They assert that granting the Complaint would undermine the PJM Capacity Market by eliminating the core obligations of capacity resources and altering PJM's framework for ensuring it can rely on external resources to the same degree PJM can rely on internal capacity.¹⁵⁴ The PJM Utilities Coalition contends that the Complaint ignores PJM's legitimate needs to ensure sufficient control over when and how pseudo-tied external resources will provide capacity on demand during peak periods into PJM.¹⁵⁵

iv. Answers

83. Regarding PJM's assertion that the Complaint did not provide evidence for operational or reliability harms, Potomac asserts that the support for these reliability concerns is fully established in the Complaint based on direct evidence from confidential MISO Operator Logs, which PJM does not meaningfully rebut. Potomac concedes that PJM did assert that the Capacity Delivery Procedures would introduce comparable delays in PJM's calls on the capacity resource's energy. However, Potomac asserts that this comparison is invalid. Potomac explains that the market-to-market delay is an ongoing lag that affects the efficient and reliable coordination of flows over binding transmission constraints.¹⁵⁶ Potomac continues that the delay PJM cites is a one-time delay in scheduling the delivery of aggregate quantities of energy from MISO to PJM. Potomac asserts that the scheduling process should not meaningfully affect PJM's ability to satisfy its reliability needs under emergency conditions.¹⁵⁷

84. In response to PJM's emphasis on the fact that PJM and MISO advised stakeholders that they have implemented pseudo-ties without reliability issues,¹⁵⁸ Potomac counters that even though a reliability event has not yet occurred, the fact that the pseudo-ties are creating risks that must be managed by PJM's neighbors is the very

¹⁵³ MJMEUC Comments at 2-3.

¹⁵⁴ PJM IMM Comments at 3-5; PJM Utilities Coalition Protest at 7; P3 and EPSA Protest at 2-3.

¹⁵⁵ PJM Utilities Coalition Protest at 8.

¹⁵⁶ Potomac Answer at 17.

¹⁵⁷ *Id.* at 17-18.

¹⁵⁸ *Id.* at 18 (quoting PJM First Answer at 4-5).

definition of an adverse reliability or operational effect.¹⁵⁹ Potomac rejects PJM's suggestion that PJM provides its day-ahead generation commitment to MISO, including pseudo-ties and its expected dispatch for the operating day and that MISO uses that PJM commitment information to enhance MISO's reliability analysis. Potomac insists that, in practice, MISO is not able to use this data as PJM suggests because it is not timely, and MISO must simply make assumptions regarding the commitment and dispatch of the pseudo-tied units as Potomac describes in the Complaint.¹⁶⁰

85. In response to PJM's argument that if the requirement is eliminated it would lose visibility of the external resource and the resource owner would not be accountable for its performance, Potomac asserts that pseudo-ties are not the only means to achieve this benefit. Potomac explains that if other alternative means to achieve the asserted benefits exist without the attendant harm, whether or not that alternative selected is the Capacity Delivery Procedures, then the unnecessary harm caused by the pseudo-tie requirement renders it unjust and unreasonable.¹⁶¹ Potomac concludes that Capacity Delivery Procedures are comparable to the procedures that NYISO and ISO-NE use to deliver capacity to one another, which is instructive because ISO-NE has capacity performance rules that are comparable to PJM's rules.¹⁶²

86. PJM asserts that Potomac's broad references to "confidential MISO Operator Logs" and "extraordinary actions" taken by MISO are insufficient to make a showing that PJM's pseudo-tie requirement for external resources is unjust and unreasonable.¹⁶³ PJM notes that MISO itself has not made this allegation. Instead, PJM explains, PJM and MISO have implemented and relied upon a "Pseudo-Tie Units Operating Procedure" since January 2016 and have worked together to address and manage pseudo-tie implementation issues. PJM points out that its comments in the Pseudo-Tie Enhancements proceeding explain that "PJM and MISO have been making significant progress toward mutual agreement on issues related to pseudo-tie implementation, operation and congestion charges."¹⁶⁴

¹⁵⁹ *Id.* at 18.

¹⁶⁰ *Id.* at 18-19.

¹⁶¹ *Id.* at 21.

¹⁶² *Id.* at 27.

¹⁶³ PJM Second Answer at 4.

¹⁶⁴ PJM Second Answer at 5 n.12 (citing PJM Interconnection, L.L.C., Motion for Leave to Respond and Response to Motion for Leave to Comment Out-of-Time and Comment Proposing Technical Conference of Midcontinent Independent System

v. Commission Determination

87. We find that Potomac has not demonstrated that the pseudo-tie requirement creates operational or reliability harms in MISO that render the requirement unjust and unreasonable. While Potomac alleges economic and reliability harm, it does not refute the need for PJM's pseudo-tie requirement as a means to ensure reliability in light of the potential for curtailment of pseudo-tie resources under NERC TLR-5 procedures.

88. Prior to the institution of the pseudo-tie requirement, PJM required that external resources only maintain firm transportation to the PJM border.¹⁶⁵ However, PJM demonstrated that even with firm transmission service, such resources may be curtailed under the NERC Level 5 TLR-5 procedures.¹⁶⁶ PJM identified and detailed 151 separate TLR-5 events involving external resources from January 2009 through July 2013. Based partially on this support, the Commission found just and reasonable PJM's enhancement of its pseudo-tie rules, needed to ensure that external resources are treated comparably to internal resources and to achieve a level of reliability assurance including PJM's requirement that an external resource seeking to pseudo-tie to PJM shall not be subject to NERC tagging.¹⁶⁷ We find that Potomac has not demonstrated that PJM's unit-specific dispatch construct is an unreasonable means of addressing TLR-5 conditions.

Operator, Inc., Docket Nos. ER17-1061-000 and ER17-1138-000, at 2 (filed June 12, 2017)).

¹⁶⁵ *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Servs. by Pub. Utils.*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 (1996) (cross-referenced at 75 FERC ¶ 61,080) *order on reh'g*, Order No. 888-A, FERC Stats. & Regs. ¶ 31,048 (cross-referenced at 78 FERC ¶ 61,220), *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in relevant part sub nom. Transmission Access Policy Study Grp. v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. N.Y. v. FERC*, 535 U.S. 1 (2002).

¹⁶⁶ CIL Order, 147 FERC ¶ 61,060, P 8, *aff'd on reh'g*, 150 FERC ¶ 61,041 at P 4. According to NERC, a TLR-5 event calls for the transmission provider to reallocate transmission service "by curtailing Interchange Transactions using Firm Point-to-Point Transmission Service on a *pro rata* basis to allow additional Interchange Transactions using Firm Point-to-Point" or to "curtail Interchange Transactions using Firm Point-to-Point Transmission Service to mitigate a [System Operating Limit] or [Interconnection Reliability Operating Limit] Violation." North American Electric Reliability Corporation, *TLR Levels*, <http://www.nerc.com/pa/rrm/TLR/Pages/TLR-Levels.aspx>.

¹⁶⁷ Pseudo-Tie Enhancements Order 161 FERC ¶ 61,197 at PP 27, 60 & 99-102.

89. Similarly, Potomac does not refute the need for PJM to have sufficient unit-specific visibility to be able to assess resource performance for pseudo-tied resources and accurately apply non-performance charges in accordance with the Capacity Performance requirements. PJM's ability to assess resource performance would be consistent with the Commission's previous finding that PJM's application of the unit-specific performance construct for internal resources is just and reasonable as applied to external resources,¹⁶⁸ and Potomac has failed to show that these requirements have become unjust and unreasonable.

90. Next, we find that Potomac fails to provide clear evidence that the instances it describes where constraint limits were exceeded by 40% were attributable to pseudo-tied resources. As to those incidents, Potomac failed to include any details of these incidents in its complaint, nor document why these incidents are solely attributable to pseudo-tied resources.¹⁶⁹ In addition, we find that the RTOs have worked together since the Complaint was filed and they filed a number of enhancements to address modeling and coordination issues. The Commission accepted these targeted solutions proposed by PJM and MISO to improve coordination of reliability and operational issues raised by the proliferation of pseudo-ties between them. We describe these solutions next, as these solutions address the very issues raised by Potomac in this complaint.

91. For example, PJM's modeling consistency requirement accepted by the Commission in Pseudo-Tie Enhancements requires that in order for an external resource to pseudo-tie to PJM, the relevant coordinating network models produce results that are within two percent of one another for any coordinated flowgate in order to improve consistency, certainty, and transparency.¹⁷⁰

92. The Commission also accepted PJM's Electrical Distance requirement, which serves to limit the burden on PJM's expansion to its State Estimator model by requiring that any resource seeking to pseudo-tie to PJM must have a minimum electrical distance impedance equal to or less than 0.065 per unit.¹⁷¹ In addition to limiting PJM's operational and compliance risk, this requirement ameliorates the concerns raised by

¹⁶⁸ See Capacity Performance Order, 151 FERC ¶ 61,208 at PP 96-97, *order on reh'g*, 155 FERC ¶ 61,157 at P 44.

¹⁶⁹ Rule 206 of the Commission's Rules of Practice require the complainant to include all documents that support the facts in the complaint in possession of, or otherwise attainable by, the complainant. 18 C.F.R. § 385.206(b)(8) (2019).

¹⁷⁰ Pseudo-Tie Enhancements Order, 161 FERC ¶ 61,197 at PP 87-88.

¹⁷¹ *Id.* PP 60-62.

Entergy in this proceeding regarding possible reliability issues associated with delivery of energy from distant resources that are beyond the electrical distance impedance threshold.

93. In addition, since the Complaint was filed, the Commission accepted identical revisions by MISO and PJM to their JOA to improve the administration and coordination of pseudo-tied resources between the two Balancing Authorities.¹⁷² The JOA Revisions were designed to provide greater clarity on the roles between the Balancing Authorities and the specific actions that should or may be taken to ensure reliability.¹⁷³ In that proceeding, the RTOs clarified that “the Native Transmission Operator directs output for local transmission issues similarly to what would be required of a generator if it were located in the Attaining Balancing Authority Area.”¹⁷⁴

94. These recent rule changes and ongoing coordination between MISO and PJM have addressed many of the outstanding operational and reliability concerns for their respective systems due to the operation of pseudo-ties.¹⁷⁵ To the extent a pseudo-tied resource from MISO into PJM compromises reliability in MISO, MISO can—and should—modify its rules or take other steps to address those concerns, e.g., suspending or terminating the pseudo-tie consistent with the PJM-MISO JOA.¹⁷⁶

¹⁷² See *PJM Interconnection, L.L.C.*, 161 FERC ¶ 61,313 (2017) (JOA Revisions Orders).

¹⁷³ Among other things, the JOA Revisions accepted by the Commission provide that: the RTOs will coordinate modeling and technical details of pseudo-tied resources; each Balancing Authority will send dispatch instructions to the unique share of a partial pseudo-tied resource that is committed to that Balancing Authority; the RTOs will not recall a pseudo-tied resource that is committed to the attaining Balancing Authority as a capacity resource in order to serve load in the native Balancing Authority; and the native Reliability Coordinator can commit, de-commit or redispatch the pseudo tied resource under certain circumstances pursuant to the PJM–MISO Pseudo-Tied Units Operating Procedure or Safe Operating Mode.

¹⁷⁴ Midcontinent Independent System Operator, Inc. and PJM Interconnection, L.L.C., Joint Answer, Docket Nos. ER17-2218-000 and ER17-2220-000 at 19 (filed Sept. 12, 2017).

¹⁷⁵ PJM First Answer at 32 n.87.

¹⁷⁶ PJM and MISO shall each have the right to terminate a pseudo-tie between their respective Balancing Authorities in accordance with the respective Tariffs and certain notice provisions. PJM Interregional Agreements, PJM-MISO JOA, § 11.37 - 11.3.9, Pseudo-Tie Coordination (0.0.0).

c. Potential Future Impacts on NYISO

i. Complaint

95. Potomac further argues that NYISO also faces potential negative consequences—potentially worse than in MISO—arising from the new PJM pseudo-tie requirement but acknowledges that no resources are currently pseudo-tied from NYISO into PJM.¹⁷⁷ Potomac explains that the NYISO system is more congested than the MISO system and is subject to a wider array of transmission security and other local reliability requirements. For example, Potomac explains that NYISO must coordinate the dispatch of its generation with the operation of the numerous phase angle regulators on its transmission system, which allow it to govern the system flows. As a result, Potomac states that losing operational control of resources in NYISO could raise serious economic and reliability concerns.¹⁷⁸

96. Potomac reiterates points made in the protest NYISO filed in response to the Pseudo-tie Enhancement filing, which focuses on pseudo-tied resources' potential to negatively impact the unique coordination required in NYISO, the reliability rules developed by the New York State Reliability Council, and the efficiency of NYISO's day-ahead and real-time markets if NYISO's ability to forecast congestion is reduced. Potomac also points to the many other concerns NYISO had with PJM's new pseudo-tie requirement, including the concern that the new requirements: (1) prevent NYISO from dispatching pseudo-tied resources when they are needed for reliability in NYISO and not being used by PJM; (2) do not address units that provide capacity in multiple markets; (3) apply PJM deliverability rules in New York; and (4) require the use of physical, rather than financial, transmission rights.¹⁷⁹

ii. PJM Answer

97. PJM states that coordination among regions is the appropriate means to manage operational issues that may arise from market participants' decision to participate in a neighboring RTO's market. According to PJM, such coordination provides an opportunity for developing and implementing rules that can minimize the operational and other impacts that may arise from pseudo-tying resources into PJM.¹⁸⁰ In the case

¹⁷⁷ Complaint at 29-30.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.* at 30-32.

¹⁸⁰ PJM acknowledges that there are grandfathered arrangements in New York (e.g., the transfer of hydro-power to certain PJM public power customers) that preceded PJM's capacity market and are not classified as pseudo-ties. PJM First Answer

of NYISO, PJM states that while there are no current generators in NYISO that are pseudo-tied as PJM's capacity resources, PJM is open to working with NYISO to develop procedures to accommodate resources that desire to pseudo-tie across the PJM-NYISO seam.¹⁸¹

iii. Other Pleadings

98. NYISO and the New York Commission address the impact of the pseudo-tie rule specifically on the New York market. NYISO asserts that the complaint demonstrates that PJM's pseudo-tie requirement decreases efficiency and increases costs incurred to serve load and will tend to degrade reliability, and also validates and confirms NYISO's concerns that market-to-market coordination is not an adequate substitute for NYISO retaining dispatch control of New York Control Area (NYCA) generators.¹⁸² NYISO notes that any agreement permitting a resource to become pseudo-tied would need to contain provisions to deal with deactivation of the resource in its native BAA.

99. The New York Commission argues that pseudo-ties could have particularly severe consequences in the NYISO market.¹⁸³ The New York Commission points out that PJM's pseudo-tie requirement does not specify that a capacity resource not scheduled by PJM will remain available for commitment and dispatch by its native RTO/ISO when needed for reliability, in contrast with market rules adopted in other control areas such as ISO-New England, Inc. (ISO-NE).¹⁸⁴ The New York Commission describes the specific reliability standards that apply to NYISO and make coordination essential, particularly in light of the operating challenges associated with New York City.¹⁸⁵ The New York Commission asserts that PJM's existing and proposed pseudo-tie requirement fails to

at 31 n.84.

¹⁸¹ *Id.* at 31.

¹⁸² NYISO Comments at 4-5. Attachment A to NYISO Comments contains NYISO's protest filed in Docket No. ER17-1138-000.

¹⁸³ New York Commission Comments at 4. New York Commission contends that the incremental requirements proposed in the PJM OATT Filing would exacerbate these concerns. *Id.* at 4 n.7.

¹⁸⁴ *Id.* at 5 (citing NYISO's Comments, Attachment A at 13 (Motion to Intervene One Day Out of Time and Protest of the New York Independent System Operator, Inc., Docket No. ER17-1138 (filed Mar. 31, 2017))).

¹⁸⁵ *Id.* at 5-6.

explain how PJM would account for, and comply with, applicable reliability requirements when committing and dispatching NYCA capacity resources.

100. The New York Commission notes that the existing and proposed pseudo-tie requirement similarly fails to address whether outages of pseudo-tied resources are scheduled by PJM or NYISO, thereby increasing the risk that sub-optimal outage scheduling may impair reliable system operation.¹⁸⁶ The New York Commission further contends that the seams issues created by these rules would be exacerbated if incremental pseudo-tie rules proposed by PJM in its Pseudo-Tie Enhancement Filing are implemented.¹⁸⁷

101. The New York Commission contends that the NYISO system generally experiences greater congestion than the MISO transmission system. The New York Commission notes the seven phase angle regulators (PAR) and three scheduled lines that operate at the NYISO/PJM border, asserting that PJM pseudo-tie rules “ignore, and in some instances, contradict” the rules that govern interchanges at that border, and would make it virtually impossible to sustain the efficient and reliable operation of the PARs and scheduled lines.¹⁸⁸ The New York Commission also contends that the pseudo-ties would adversely affect the NYISO’s day-ahead and real-time markets, as efficient market outcomes depend on the NYISO’s ability to forecast congestion on its system.¹⁸⁹ Further, the New York Commission states that transferring operational control of NYCA resources to PJM would impede the NYISO’s ability to dispatch units on an economic basis.¹⁹⁰

iv. Commission Determination

102. We find the concerns regarding the effect of the pseudo-tie requirement on NYISO speculative. As noted above, Potomac, the New York Commission and NYISO list a number of concerns with PJM’s pseudo-tie rules related to economic efficiency, operations and reliability in NYISO. However, such concerns are speculative because, as Potomac acknowledges, NYISO currently does not have any resources pseudo-tied with PJM. Moreover, under PJM’s tariff, NYISO must agree to any pseudo-tie, at which point

¹⁸⁶ *Id.* at 7.

¹⁸⁷ *Id.* at 8 (citing Docket No. ER17-1138-000, *PJM Interconnection, LLC*, External Capacity Enhancements at 15-16 (dated Mar. 9, 2017) (PJM OATT Filing)).

¹⁸⁸ *Id.* at 11.

¹⁸⁹ *Id.*

¹⁹⁰ *Id.* at 4.

NYISO can address any issues with particular generation units that seek to pseudo-tie to PJM.¹⁹¹

103. In addition, NYISO reiterates the same concerns that it raised earlier in the Pseudo-Tie Enhancements proceeding, and that the Commission rejected because there are no pseudo-ties from NYISO into PJM.¹⁹² As the Commission noted, “[i]f in the future, an external generator seeks to pseudo-tie from NYISO into PJM, we expect that the two regions could develop a mutual agreement for the NYISO-PJM JOA, similar to what MISO and PJM have done, and file it with the Commission.”¹⁹³ We also note that NYISO and PJM already have in place a JOA that allows the RTOs to jointly manage seams issues (e.g., congestion and reliability concerns) through market-to-market coordination.¹⁹⁴ Further, subsequent to the filing of Potomac’s complaint, the Commission issued an order accepting PJM’s tariff filing in Docket No. ER17-2291-000, which: (a) clarifies the requirements for dynamic transfers of generators into the PJM region; and (b) incorporates two *pro forma* pseudo-tie agreements and a *pro forma* system modification reimbursement agreement for adding pseudo-tied resources into the PJM region (PJM Pseudo-Tie Agreements proceeding).¹⁹⁵ In the PJM Pseudo-Tie Agreements proceeding, the Commission found that contrary to NYISO’s protest, the pseudo-tie requirement places no burdens on NYISO to change its market design, as the pseudo-tied resource must obtain NYISO’s permission to pseudo-tie and NYISO is under no obligation to approve a request that fails to accord with its market design.¹⁹⁶

¹⁹¹ PJM, Operating Agreement (OA) Schedule 1 Sec 1.12, OA Schedule 1 Sec 1.12 Dynamic Scheduling, (3.0.0) (An entity seeking to utilize a Pseudo-Tie shall execute a mutually agreeable interregional congestion management agreement as contemplated in Section 2.6A of this Schedule). Section 2.6A of Schedule 1 of the PJM OA states that PJM shall negotiate in good faith with any external balancing authority that seeks to enter into an interregional congestion management agreement with PJM, and will file such agreement, upon execution, with the Commission. PJM, OA, Schedule 1 Sec 2.6A, OA Schedule 1 Sec 2.6A - Interface Prices (7.0.0).

¹⁹² See Pseudo-Tie Enhancements Order, 161 FERC ¶ 61,197 at PP 31-34.

¹⁹³ *Id.* P 44 n.56.

¹⁹⁴ See NYISO-PJM JOA, Section 35.23, Schedule D (3.0.0).

¹⁹⁵ *PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,086 (2018), *order on reh’g*, 163 FERC ¶ 61,069 (2019).

¹⁹⁶ *PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,086, at P 41.

d. Other Issues

i. Concerns about Undue Burden

104. Several commenters offer their perspectives on PJM’s pseudo-tie requirement as market participants. For example, Brookfield asserts that its experience with the pseudo-tie process has been onerous.¹⁹⁷ AMP states that, since 2016, AMP has used a pseudo-tie arrangement for its share of the Prairie State plant to qualify as an external Capacity Performance resource to serve load in PJM.¹⁹⁸ From this perspective, AMP claims that PJM’s pseudo-tie requirement imposes unsustainable burdens on market participants seeking to import generating capacity into PJM.¹⁹⁹ Tatanka Wind describes its years-long effort to participate in the PJM Capacity market, and PJM’s ultimate refusal to establish a pseudo-tie of Tatanka Wind based on what Tatanka describes as “technical impediments not found in the PJM Tariff.”²⁰⁰

105. According to Tatanka, through its implementation of the pseudo-tie rule, PJM has implemented a *de facto* ban on participation in the PJM Capacity Markets by generators that PJM, in its sole discretion, has deemed too remote to model.²⁰¹ Tatanka characterizes PJM’s implementation of the pseudo-tie requirement, which PJM seeks to codify through its Pseudo-Tie Enhancement Filing—not the rule itself—as the problem. Tatanka argues that the pseudo-tie rule would be “salvageable” if PJM did not insist on excluding distant generation and honored MISO’s grant of firm service rather than insisting on modeling the MISO system itself; however, the fact that PJM believes the requirements proposed in Docket No. ER17-1138 are necessary indicates that the rule itself is unjust and unreasonable.²⁰² According to Tatanka Wind, “Commission rejection of the Tariff amendments and an order requiring that PJM stop using them on an informal

¹⁹⁷ Brookfield opposes PJM’s proposal then pending in Docket No. ER17-1138, on the basis that the proposed rules erect unreasonable barriers to entry and external resources that have reasonably relied on the existing rules are unduly prejudiced. Brookfield Comments at 3-4

¹⁹⁸ AMP Comments at 2.

¹⁹⁹ *Id.* at 2.

²⁰⁰ Tatanka Wind Comments at 1-3.

²⁰¹ *Id.* at 6-7.

²⁰² *Id.* at 11.

basis would have the potential to address the unjust and unreasonable aspects of PJM's pseudo-tie policy, without eliminating the pseudo-tie requirement."²⁰³

106. Illinois IEC offers an additional reason, beyond those set forth in the Complaint, to grant the requested relief: the impacts of pseudo-ties on the Local Clearing Requirement in the MISO Planning Resource Auction. According to Illinois IEC, the Local Clearing requirement for MICO's Local Resource Zone 4 is 1,940 MW more than would be necessary if there were no pseudo-tie requirement in PJM or, alternatively, if MISO had sufficient commitment and dispatch control under the requirement to allow MISO to subtract off pseudo-tied exports when determining Local Clearing Requirement values.²⁰⁴

107. The Commission has found in the Pseudo-Tie Enhancements Order that the pseudo-tie requirement is a just and reasonable means by which PJM can assure that external resources meet the same deliverability requirements as internal resources.²⁰⁵ While such rules may operate to exclude resources from participating in the PJM capacity market, that exclusion is justified as those resources would not be sufficiently reliable to meet PJM's capacity needs. All of these resources should have the ability to obtain a just and reasonable rate for capacity from the MISO market.²⁰⁶

ii. Requests for a Technical Conference

108. OMS, collectively, requests a technical conference to examine the impact of the pseudo-tie requirement on MISO and whether any remedies are appropriate.²⁰⁷

²⁰³ *Id.* at 12.

²⁰⁴ Illinois IEC Comments at 4-5.

²⁰⁵ Pseudo-Tie Enhancements Order, 161 FERC ¶ 61,197 at P 27.

²⁰⁶ *See Am. Transmission Sys., Inc.*, 129 FERC ¶ 61,249, at P 112 (2009) (finding that voluntary choices by utilities as to the market in which they choose to participate does not cause either market's methodologies to no longer be just and reasonable or not unduly discriminatory simply because each produces a different result), *reh'g denied*, 140 FERC ¶ 61,226 (2012), *aff'd sub nom., FirstEnergy Serv. Co. v. FERC*, 758 F.3d 346 (D.C. Cir. 2014).

²⁰⁷ OMS notes that the Manitoba Public Utilities Board and Montana Public Service Commission did not participate in the vote on this filing.

109. The OMS Supporting Regulators²⁰⁸ find merit in Potomac’s contention that the current PJM requirement is not just and reasonable due to decreased market efficiency and reliability within MISO, and negative impacts on the MISO resource adequacy construct and interference with the locational signals produced by the MISO Planning Resource Auction (PRA).²⁰⁹ They suggest that the Commission “require MISO and PJM to demonstrate that assumptions on deliverability are accurate” and order a technical conference to determine the best path forward.²¹⁰ The Supporting Regulators also contend that market-to-market procedures are unable to make up for the loss of the truly optimal market solutions, and question whether “workarounds and ad hoc solutions” are the best way to address some of the new seams issues that new pseudo-ties have caused.²¹¹

110. Regarding impacts on MISO’s resource adequacy construct, the Supporting Regulators describe how pseudo-ties result in a “blurring of the locational signals that are required by the Commission.”²¹² OMS asserts that MISO stakeholders have identified

²⁰⁸ The Indiana Utility Regulatory Commission, Iowa Utilities Board, Kentucky Public Service Commission, Michigan Public Service Commission, Minnesota Public Utilities Commission, Missouri Public Service Commission, North Dakota Public Service Commission, South Dakota Public Utilities Commission, Public Utility Commission of Texas, and Public Service Commission of Wisconsin endorse the comments filed by OMS in this proceeding. The Arkansas Public Service Commission, Council of the City of New Orleans, Louisiana Public Service Commission, and Mississippi Public Service Commission endorse the request for a technical conference, but do not support and endorse the additional comments. The Illinois Commerce Commission abstains. The Manitoba Public Utilities Board and Montana Public Service Commission did not participate in the vote on this filing.

²⁰⁹ OMS Comments at 5.

²¹⁰ *Id.*

²¹¹ *Id.* at 5-6.

²¹² *Id.* at 7 (citing MISO Tariff, Module E-1, Establishment of CIL and CEL Limits, Section 68A.4 and *Midwest Indep. Sys. Operator Corp.*, 139 FERC ¶ 61,199, at PP 71-73 (2012)). OMS points out that the impact of pseudo-tied resources on the locational parameters can be seen in section 69A.6 of Module E-1 of MISO’s Tariff, where the Local Clearing Requirement (LCR) for any LRZ is calculated as: $LCR = LRR - Capacity\ Import\ Limit - non-pseudo\ tied\ exports$, where LRR means Local Resource Requirement. OMS also describes the effect of pseudo-ties on the locational parameters used to represent MISO’s two Subregional Resource Zones. OMS Comment at 8 (citing MISO Tariff Module E-1, Establishment of SRRZs, SRECs, and SRICs,

this issue and plan to investigate solutions through MISO's Resources Adequacy Subcommittee.²¹³ Noting that the differences between PJM's and MISO's capacity constructs may lead to changing amounts of capacity trading between the two regions without any modifications to the physical connections, the Supporting Regulators urge the Commission to direct MISO and PJM to review the quantity of capacity each assumes can be reliably delivered during peak hours, regardless of commitment through a capacity construct.²¹⁴ They contend that the method for determining this quantity should be clearly defined in each RTO's tariff.²¹⁵

111. We find that the paper record provided by the parties is sufficient to resolve this matter and that these issues do not require a further technical conference. MISO and PJM have improved their coordination since the filing of this complaint and such efforts continue.²¹⁶

iii. Capacity Delivery Procedures

112. Because we find that Potomac has failed to demonstrate that PJM's pseudo-tie construct is unjust and unreasonable, we decline to consider Potomac's proposed Capacity Delivery Procedures in this order.²¹⁷

The Commission orders:

(A) Potomac's Complaint is denied as discussed in the body of this order.

(B) PJM's Motion to Dismiss Potomac's Complaint is denied as discussed in the body of this order.

By the Commission.

Section 68A.3.1).

²¹³ OMS Comment at 7.

²¹⁴ *Id.* at 8

²¹⁵ *Id.*

²¹⁶ *See supra* PP 90-91.

²¹⁷ *La. Pub. Serv. Comm. v. Entergy Corp., et al.*, 134 FERC ¶ 63016 at P 1 (finding that because the complainant failed to demonstrate the current rate was unjust and unreasonable, "any substantive determination regarding whether LPSC and Staff's alternative proposals are just and reasonable is unnecessary.").

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.