UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM TARIFF REVISIONS TO IMPLEMENT TRANSMISSION OWNERS’ FUNDING OF NETWORK UPGRADES

Docket No. ER21-2282-000

PROTEST OF THE AMERICAN CLEAN POWER ASSOCIATION, ADVANCED ENERGY ECONOMY, NATURAL RESOURCES DEFENSE COUNCIL, SUSTAINABLE FERC PROJECT, AND SIERRA CLUB

Dated: June 28, 2021.
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I. SUMMARY OF PROTEST

The Filing proposes to revise PJM’s open access transmission tariff to grant PJM TOs a unilateral option to fund transmission system upgrades associated with the generation interconnection process (“Network Upgrades”) so as to enable a return on those assets. The bulk of the filing contends that because PJM TOs presently earn no rate of return on Network Upgrades, the current Tariff is unjust and unreasonable. However, that is not in question here—PJM TOs have filed under Section 205, not 206, of the FPA making arguments regarding the current Tariff largely irrelevant. The proposed Tariff revisions, therefore, must simply be evaluated on their own merit.

For numerous reasons presented herein, the Filing fails that test. As a threshold matter, the Filing exceeds the authority PJM Interconnection LLC’s (“PJM”) Tariff grants to PJM TOs to make Section 205 filings. The Filing also impermissibly changes terms for interconnection customers who have already begun the interconnection process.

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2 PJM Tariff Revisions to Implement Transmission Owners’ Funding of Network Upgrades (June 30, 2021) (“Complaint” or “Filing”), Accession No. 20210630-5116.
4 Id. at 1–2.
5 Id. at 2–20.
Looking beyond those threshold failures, Joint Protestors respectfully request that the Commission reject the Complaint as unjust and unreasonable and unduly discriminatory for the reasons further explained herein, which include the following:

- The Filing fails to provide a factual basis to support the proposed changes:
  - The “risks” PJM TOs cite as justifying increased returns are pure speculation. PJM TOs do not identify a single risk from the application of generator funding of Network Upgrades (referred to collectively as “Existing Funding Approach”) that has ever impaired their ability to attract capital or resulted in a rating agency downgrade that might impair their ability to serve the public interest. Further, the examples of risk that the PJM TOs identify have no relation to Network Upgrades, have never involved Network Upgrades (or other network upgrades in other regions of the United States), and are of the type of risks that are regularly recovered in rates approved by a state commission. Hence, these “risks” are “baked-in” and are already accounted for by prospective investors in the PJM TOs.
  - Publicly available information clearly demonstrates that, notwithstanding the Existing Funding Approach in the PJM region since at least 2004, no PJM TO has had an issue attracting capital to serve the public interest. This shows that the standards of *Bluefield Waterworks & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923), and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944), are not implicated.
• The Filing would increase costs for interconnection services without providing a corresponding increase in benefit and therefore result in with unjust and unreasonable rates (i) for interconnection customers and (ii) for consumers in PJM who would bear the increased costs in power purchase rates.

• By allowing PJM TOs to discretionarily impose financing costs on Interconnection Customers, the Filing enables undue and anti-competitive discrimination.

• The Court decisions the PJM TOs cite do not support the relief they request:
  o None of the Ameren, Bluefield, and Hope decisions provide an unqualified right for the PJM TOs to earn a rate of return on network upgrades;
  o PJM TOs provide no evidence to satisfy the standards in Bluefield and Hope; and
  o PJM TOs ignore express determinations from the Commission that Ameren does not apply to all regions.

• The Filing would cause particular harm for projects that remain in the project queue as a result of delays and would be subject to increased costs and further delay under the new funding rules.

• PJM TOs ignore that the reason they no longer earn a rate of return on Network Upgrades is because they requested it. Following Order No. 2003, PJM, with the support of the PJM TOs, asked the Commission to approve “participant funding” in the PJM region. Under this approach, the PJM TOs no longer were required to reimburse an interconnection customer for amounts provided to fund Network Upgrades, and thereby asked that they no longer have an opportunity to earn a rate of return, as Order No. 2003 provided, by rolling the cost into the transmission rate
base. Should the PJM TOs wish to return to the Order No. 2003 paradigm and earn that rate of return, they are free to seek approval to unwind the independent entity variation, but the Commission should not indulge a collateral attack on that decision here.

If the Commission does not fully reject the filing, the Joint Protestors request that the Commission should institute a paper hearing, technical conference, or other proceeding on its own initiative to comprehensively review and make a fact-specific determination about the justness and reasonableness of the proposed funding method generally.

II. BACKGROUND

The Commission’s evaluation of the PJM TOs’ Filing and the requested relief requires context.

Order No. 2003 set national standards for generation interconnection.6 Utilities were required to allow new, often independently owned, electric generation to connect to the transmission facilities of transmission-owning utilities without undue discrimination. In Order No. 2003, the Commission initially identified two methods for funding Network Upgrades through the generation interconnection process. Under the “Generator Funding” option, the interconnection customer would provide funds upfront to the transmission owner to cover all the costs of engineering, procurement, construction, and installation until the upgrades were fully constructed and operational. Thereafter, because those Network Upgrades would be integrated with (and fortify) the transmission owner’s transmission system, the transmission owner was required to repay the interconnection customer. The transmission owner would either credit back

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to the interconnection customer the amounts funded against the cost of transmission service taken or provide a cash reimbursement if the interconnection customer did not take transmission service. The transmission owner then would earn a rate of return on the now-reimbursed amounts by including the amount in its transmission rate base. The Commission indicated that it “would expect that the Transmission Provider would want to roll-in the costs of any Network Upgrades necessary to interconnect the new generator to enable its existing transmission customers to benefit from this overall lower average embedded cost rate.” The Commission adopted this scheme recognizing that the Network Upgrades are integrated with the transmission grid and thus provide benefits to all uses of the grid.

Second, under the “Transmission Owner Funding” approach, Order No. 2003 allowed the transmission owner to initially fund the costs of engineering, procurement, construction, and installation of the required network upgrades. The transmission owner could then roll that cost into its transmission rate base and develop a corresponding charge that would be assessed to the interconnection customer. Under that approach, the transmission owner also earns a rate of return on the capital it has invested.

However, Order No. 2003 and its successor orders also allowed Regional Transmission Organizations (“RTOs”) and Independent System Operators (“ISOs”) to seek an “independent entity variation” from the requirements of Order No. 2003. As detailed below, the PJM TOs supported giving up the opportunity to earn a rate of return on Network Upgrades. PJM, with

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7 See Order No. 2003 at P 28 and Appx. 6 11.4.1.
9 Order No. 2003 at P 694; see also Order No. 2003-A at P 581 (Commission stating “would expect that the Transmission Provider would want to roll-in the costs of any Network Upgrades necessary to interconnect the new generator to enable its existing transmission customers to benefit from this overall lower average embedded cost rate”).
10 See, e.g., id. at P 756.
11 See infra, Section III.D.1.
the support of the PJM TOs, sought and was granted an independent entity variation from Order No. 2003, under which the PJM TOs would not provide reimbursement for amounts initially funded by interconnection customers for Network Upgrades. Under this “participant funding” model, the interconnection customer must provide all of the funds up front for network upgrades; upon commercial operation, no reimbursement is provided to the interconnection customer and the newly built Network Upgrades are treated as assets donated to the PJM TO. The result is that the PJM TO does not earn a return because donated assets have a cost of zero to the PJM TO, and so do not increase the transmission rate base. This is the Existing Funding Approach in PJM. As detailed below, the PJM TOs supported forgoing the opportunity to earn a rate of return on Network Upgrades.

III. PROTEST

A. THE PJM TOs DO NOT HAVE THE RIGHT TO FILE THE SELF-FUNDING PROPOSAL, AND THE COMMISSION MUST REJECT THE PROPOSAL

The PJM Tariff expressly sets forth and describes the rights of both PJM and the PJM TOs to submit filings pursuant to Section 205 of the FPA. A careful examination of the Tariff’s applicable language makes clear that the Filing far exceeds the PJM TOs’ limited rights to submit FPA Section 205 filings, and the Commission must accordingly reject the Filing on this basis alone.

1. The PJM TOs’ Proposal is Not Within the TOs’ Limited Filing Rights Set Forth in the PJM Tariff

PJM Tariff Section 9.2(a) provides that:

PJM shall have the exclusive and unilateral right to file pursuant to Section 205 of the Federal Power Act and the FERC’s rules and regulations thereunder to make changes in or relating to the terms and conditions of the PJM Tariff (including

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12 *PJM*, 108 FERC ¶ 61,025 (July 8, 2004).
13 See infra, Section III.D.1.
but not limited to provisions relating to creditworthiness, billing, and defaults) as well as all charges for recovery of PJM costs.\textsuperscript{15}

When the provisions pertaining to the existing generation interconnection process ("GIP"), including those related to funding Network Upgrades, were initially filed by PJM it was pursuant to this authority and the approval of the PJM Members Committee.\textsuperscript{16} As noted in that filing, PJM has the "responsibility to administer the entire interconnection process and to facilitate or impose resolutions of disputes if and when they arise."\textsuperscript{17}

Section 9.2(a) goes on to limit PJM’s exclusive filing rights by stating that “PJM shall not have any Section 205 filing rights with respect to the subject matters described in the first sentence of Section 9.1(a) of this Tariff.”

Section 9.1 of the PJM Tariff sets forth Transmission Owners filing rights. The relevant section states in its entirety:

The Transmission Owners shall have the exclusive and unilateral rights to file pursuant to Section 205 of the Federal Power Act and the FERC’s rules and regulations thereunder for any changes in or relating to the establishment and recovery of the Transmission Owners’ transmission revenue requirements or the transmission rate design under the PJM Tariff, and such filing rights shall also encompass any provisions of the PJM Tariff governing the recovery of transmission-related costs incurred by the Transmission Owners.\textsuperscript{18}

The PJM TOs’ Filing proposes to alter the funding mechanism for Network Upgrades under PJM’s GIP and does not relate to a “transmission revenue requirement” or “transmission rate design” within the meaning of Section 9.1(a). Indeed, the overarching purpose of the Filing is to address the PJM TOs’ position that “the Existing Funding Model, adopted in 2004, failed to compensate PJM Transmission Owners for owning and operating Network Upgrades,”\textsuperscript{19} and

\textsuperscript{15} Tariff § 9.2(a) (emphasis added).
\textsuperscript{17} Id. at 9.
\textsuperscript{18} Tariff § 9.1(a) (emphasis added).
\textsuperscript{19} Filing at 5.
must therefore be changed. As such, the Filing does not fall within the limited “subject matters described in the first sentence of Section 9.1(a)” for which the PJM TOs’ narrow filing rights pertain.

Rather, the Filing proposes “a new section 217.8 to the PJM Tariff that sets forth the process and rules governing how and when a transmission owner could elect to fund Network Upgrades”20 in the GIP, as well as proposing to establish a new “pro forma Network Upgrade Funding Agreement” as a “new Attachment O-2” that would be part of the GIP.21 The Filing therefore goes well beyond the PJM TOs’ limited rights to address their own “transmission revenue requirements or the transmission rate design under the PJM Tariff”22 and instead proposes to create out of whole cloth an entirely new construct that seeks to increase the PJM TOs’ revenues (notably without any corresponding increase in the quality of interconnection service provided by the PJM TOs) while impermissibly interfering with the GIP and the rights of interconnection customers, both of which are well beyond the PJM TOs’ limited Section 205 filing rights under the PJM Tariff.

For example, under the current terms of the Tariff, interconnection customers are “obligated to pay for 100 percent of the costs of the minimum amount of Local Upgrades and Network Upgrades necessary to accommodate its New Service Request and that would not have been incurred under the Regional Transmission Expansion Plan but for such New Service Request, net of benefits resulting from the construction of the upgrade,”23 but are entitled to receive “[Financial Transmission Rights] and [Auction Revenue Rights] in exchange for

20 See id. at 4 (emphasis added).
21 See id. at 20 (emphasis added).
22 Tariff § 9.1(a).
23 Id. § 217.3(a).
payments for Network Upgrades.”24 However, the PJM TOs’ proposal would eliminate these rights and obligations belonging to interconnection customers by permitting an “Interconnected Transmission Owner . . . [to elect] to fund the Network Upgrades” and then force the relevant interconnection customer into a Network Funding Agreement where the transmission owner can “recover the return of and on the initial capital cost of the following Network Upgrade(s) from [the] Interconnection Customer.”25 The PJM TOs’ proposal would represent a fundamental change to how Network Upgrades are funded by interconnection customers, and as discussed below in Section III.B.2., will significantly increase the cost of Network Upgrades. This in turn would drastically impact the rights of interconnection customers and fundamentally change the generator interconnection process, and thus far exceeds the PJM TOs’ narrow filing rights set forth in Section 9.1(a) which only allows “changes in or relating to the establishment and recovery of the Transmission Owners’ transmission revenue requirements or the transmission rate design under the PJM Tariff.”26

Moreover, the PJM TO’s proposal would also infringe on PJM’s exclusive and unilateral right to make changes to terms and conditions related to billing and cost recovery, as the Filing proposes changes to the manner in which PJM issues invoices and collects payments related to Network Upgrades.27 The PJM TOs have no right under the Tariff to unilaterally propose such

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24 See PJM, 108 FERC ¶ 61,025, at P 20 (2004); see also Filing at 4-5.
25 See Filing, Attach. A, Clean Tariff at Attach. O-2 (Form of Network Upgrade Funding Agreement), Preamble.
26 Tariff § 9.1(a) (emphasis added).
27 See, e.g., Filing, Attach. A, Clean Tariff at Attach. PP § 217.8(e) (“Transmission Provider shall invoice the Interconnected Transmission Owner on behalf of the Interconnection Customer for the estimated amount to be expended by the Interconnection Customer to construct any Network Upgrades for which the Interconnection Customer has exercised its Option to Build. Transmission Provider shall invoice Interconnected Transmission Owner on a quarterly basis for the costs estimated to be expended in the subsequent three months. Interconnected Transmission Owner shall pay Transmission Provider within twenty (20) calendar days of receipt of the invoice. Upon receipt of Interconnected Transmission Owner’s payments, Transmission Provider shall remit to the Interconnection Customer.”); id. (“After completion of the construction of Network Upgrades by the Interconnection Customer, Interconnection Customer shall provide an invoice of the final cost of the Network Upgrades and shall set forth such costs in sufficient detail to enable the Interconnected Transmission Owner to compare the actual costs with the estimates and to ascertain deviations, if any, from the cost estimates.”).
revisions pursuant to Section 205 of the FPA because PJM has the unilateral and exclusive right to make such revisions “including but not limited to provisions relating to creditworthiness, billing, and defaults] as well as all charges for recovery of PJM costs.”

The PJM TOs’ unilateral attempt to propose such changes to the Tariff directly violates the express assignment of rights and responsibilities set forth in the Tariff.

Because PJM retains exclusive rights to propose changes with respect to all aspects of the GIP pursuant to Section 205 of the FPA, and because the PJM TOs’ proposal would drastically impact the rights of interconnection customers and fundamentally change the GIP, the Filing is hopelessly procedurally defective and must be dismissed.

2. The Self-Funding Proposal Usurps PJM’s Ability to Consider Public Policy Objectives in the RTEP Process

PJM has exclusive rights to prepare the RTEP and to plan for the expansion and enhancement of transmission facilities and administer the RTEP. As part of this responsibility, PJM is tasked with looking at Public Policy Objectives to evaluate transmission needs for the purposes of preparing the RTEP. The PJM Operating Agreement defines “Public Policy Objectives” as “Public Policy Requirements,” as well as public policy initiatives of state or federal entities that have not been codified into law or regulation, but which nonetheless may

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28 Tariff § 9.2(a) (emphasis added).
29 PJM Operating Agreement, Schedule 6 § 1.4(c) (“[t]he Regional Transmission Expansion Plan shall, at a minimum, include a designation of the Transmission Owner(s) or other entity(ies) that will construct, own, maintain, operate, and/or finance each transmission enhancement and expansion and how all reasonably incurred costs are to be recovered.”) (emphasis added); CTOA § 4.1.4 (June 12, 2013) (“[e]ach party [i.e., participating transmission owner] shall transfer to PJM, pursuant to this Agreement and in accordance with the Operating Agreement, the responsibility to prepare a Regional Transmission Expansion Plan and to provide information reasonably requested by PJM to prepare the Regional Transmission Expansion Plan and shall otherwise cooperate with PJM in such preparation.”) (emphasis added), https://www.pjm.com/~media/documents/agreements/toa.ashx.
30 “Public Policy Requirements” are “policies pursued by: (a) state or federal entities, where such policies are reflected in duly enacted statutes or regulations, including but not limited to, state renewable portfolio standards and requirements under Environmental Protection Agency regulations; and (b) local governmental entities such as a municipal or county government, where such policies are reflected in duly enacted laws or regulations passed by the local governmental entity.” PJM Operating Agreement § 1 (Definitions).
have important impacts on long term planning considerations.” The Operating Agreement provides further that:

The Transmission Expansion Advisory Committee and the Subregional RTEP Committees shall each facilitate a minimum of one initial assumptions meeting to be scheduled at the commencement of the Regional Transmission Expansion Plan process . . . to provide an open forum to discuss . . . Public Policy Objectives identified by stakeholders for consideration in the Office of the Interconnection’s transmission planning analyses.

PJM has the sole responsibility to “document and publicly post its determination for review” and “[s]uch posting shall include an explanation of those Public Policy Requirements and Public Policy Objectives adopted at the assumptions stage to be used in performing the evaluation and analysis of transmission needs.”

Despite these express delegations of responsibility to PJM, the PJM TOs freely admit that their proposal is in response to certain public policy considerations, in particular, “[g]rowing [p]ublic [p]olicy [s]upport” from the states, creating a significant increase in the number of renewable projects seeking to interconnect to the grid. Accordingly, the PJM TOs’ proposal improperly usurps PJM’s responsibility to address and consider these types of Public Policy Objectives when evaluating transmission needs and administering the RTEP.

3. The PJM TOs’ Concerns Can Only be Addressed in an FPA Section 206 Complaint Proceeding

In view of the discussion above, if the PJM TOs believe that the “increase in Network Upgrades required to interconnect those generators to the transmission system has exacerbated a

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31 Id.
32 Id. at Schedule 6, Section 1.5.6(b) (emphasis added).
33 Id.
34 See Filing at 5 (“Growing Public Policy Support Has Driven A Significant Increase in the Number of Renewable Projects Seeking to Interconnect to the PJM Transmission System.”); id. at 5–6 (“Many states have adopted public policies that promote the development of renewable energy resources, and the states in the PJM footprint are no exception. Indeed, some states within the PJM footprint have some of the most aggressive Renewable Portfolio Standard (RPS) in the country.”).
flaw with the funding model in PJM for Network Upgrades” the PJM TOs’ only avenue for relief is through an FPA Section 206 complaint proceeding. This is indeed the approach that the NYISO transmission owners took in submitting their own proposed self-funding proposal which is currently pending before the Commission. The PJM TOs’ attempt to bypass the Section 206 process by requesting changes through an FPA Section 205 filing is procedurally improper and must accordingly be rejected.

B. THE COMMISSION SHOULD REJECT THE COMPLAINT AND TARIFF FILING AS UNJUST, UNREASONABLE, AND UNDULY DISCRIMINATORY UNDER SECTION 205

If the Commission nonetheless entertains the PJM TOs’ Filing, it should still reject the Filing as unjust, unreasonable, and unduly discriminatory.

1. The Commission Should Reject the Filing as Unsupported and Patently Deficient

The Filing should be rejected outright because it is completely unsupported and does not meet the requirements of FPA Section 205. Under FPA Section 205, PJM TOs bear the burden of proving that the proposed tariff change is just and reasonable and not unduly discriminatory or preferential. Where, as here, the Filing is devoid of supporting factual information, and there is competing factual information that rebuts the PJM TOs’ claims, the Commission should reject the Filing as patently deficient. PJM TOs have failed to provide sufficient supporting factual information to enable the Commission to make a determination that the proposal is just and

35 Id. at 3.
37 See, e.g., Tariff § 9.2(c) (“Nothing herein is intended to limit the rights of any Party or other person to oppose such a Section 205 filing pursuant to Section 206 or any other applicable provision of the Federal Power Act or to limit the right of any Party or other person to make filings under Section 206 of the Federal Power Act.”).
reasonable and not unduly discriminatory or preferential. As explained herein, the Complaint is completely devoid of supporting facts and consists completely of unsupported—and often inaccurate—generalizations. Further, Joint Protestors’ witness, Mr. Michael Goggin, explains that the “examples” of risk identified in the testimony of PJM TOs’ witnesses Weaver, Hunger, and Adamson are entirely inapposite. In sum, Mr. Goggin explains:

- The facilities associated with Network Upgrades do not pose any incremental operational and safety risk, and any risk would be covered by insurance that transmission owners are required to carry for these risks. PJM TOs fail to present a single example of transmission owners being held liable for the failure of Network Upgrade equipment. Additionally, replacing older equipment which is more prone to risk with newer equipment ultimately reduces operational and safety risks to transmission owners.

- The PJM TOs’ allegations of reliability or cybersecurity penalties being imposed by the North American Electric Reliability Corporation rely on examples from generators and other parts of the electric system unrelated to Network Upgrades. In failing to adequately support a meaningful increase of these types of risks, the PJM TOs’ fail to account for the reliability improvements associated with Network Upgrades or the fact that cybersecurity risks do not scale proportionally with the size of the transmission system.

40 NRG Power Mktg., LLC v. FERC, 862 F.3d 108, 114–15 (D.C. Cir. 2017) (The Commission may accept or reject a proposal under Section 205 of the FPA in its entirety but may not unilaterally impose a new rate scheme under FPA Section 205.).
41 Aff. of Michael S. Goggin at PP 6–8 (July 28, 2021) (attached hereto as Attachment B).
42 Id. at PP 9–14.
• Any environmental risks associated with Network Upgrades are most salient for transformers, which would typically either remain the responsibility of generators or would have a reduced risk profile as a result of upgrading older facilities. Additionally, PJM TOs rely on a single example of environmental risks caused by building on contaminated soil and fail to present a credible argument that this risk is widely applicable to new renewable generation or would ultimately be a cost absorbed by transmission owners.43

• PJM TOs fail to demonstrate that Network Upgrades are particularly vulnerable to climate change and severe weather impacts or support the claim that regulators would deny full recovery for these costs. Additionally, PJM TOs fail to recognize that Network Upgrades improve grid resilience and reliability.44

• The resilience and reliability benefits of Network Upgrades also mitigates risks associated with increased complexity of outage coordination.45

• There is no evidence of financial risk distinct to Network Upgrades, or of transmission operation and maintenance and training costs being disallowed.46

• Investors are fully aware of the negligible risks associated with Network Upgrades, and this assessment is “baked in” to the PJM TOs’ existing financing costs.47 Indeed, Mr. Goggin notes that, if the risks PJM TOs identify in regard to Network Upgrades truly were material, the PJM TOs would have had an obligation to disclose this to investors in Securities and Exchange Commission (“SEC”) reports; yet to his

43 Id. at PP 15–19.
44 Id. at PP 20–22.
45 Id. at PP 23–24.
46 Id. at PP 25–28.
47 Id. at P 29.
knowledge, and the knowledge of the Joint Protestors, none has done so since the Existing Funding Approach began.48

In addition to failing to support the individual claims of various types of increased risks, the PJM TOs fail to provide any evidence to show that any of these purported increased risks are not already compensated through the ratemaking process.49 Furthermore, the PJM TOs projections for the costs and demand for Network Upgrades are unreasonably and ineffectively supported by poor and inaccurate assumptions about the success rates of projects, the driving power of renewables and emissions goals, and the applicability of data on out-of-region resources.50 Consequently, PJM TOs’ fundamental assertions about a need to adapt funding mechanisms to account for the change in the amount of Network Upgrade investments is inadequately supported.

In addition to the PJM TOs failing to provide supporting evidence that Network Upgrades present risk, evidence collected from PJM TOs’ financial filings undermines the assertion. PJM TOs’ argument that they are unable to attract capital under the Existing Funding Approach is undercut by the fact that the PJM TOs have attracted billions of dollars of capital in recent years. A cursory review of recent applications submitted to the Commission by individual PJM TOs pursuant to Section 204 of the FPA51 reveals that the PJM TOs have collectively received authorization from the Commission to issue over $19.9 billion dollars of new securities since 2019 alone.52 Further, in each instance in which each respective PJM TO requested

48 Id. at P 29–35.
49 Id. at 36–38.
50 Id. at 39–47.
authorization from the Commission under Section 204 of the FPA since 2019, the Commission authorized the full amount of securities requested by each PJM TO. The PJM TOs’ publicly available SEC filings further demonstrate the PJM TOs’ borrowing capabilities by showing that the companies have been issued hundreds of millions of dollars of debt in recent years.

As another indicator of financial health under the Existing Funding Mechanism, PJM TOs have strong credit profiles. Credit rating agencies and equity analysts reflect regulatory risk in their ratings. The Joint Protestors are unaware of any credit downgrade to any PJM TO based upon the absence of a return for network upgrades since the Commission approved the Existing Funding Approach. The table in Attachment A to this protest lists information on each PJM TO’s credit rating as reported in their credit reports going back two years. This information and the affidavit of Michael Goggin, included as Attachment B, indicates that each of the transmission owners has a high level of creditworthiness (as acknowledged by PJM TOs55) and has been capable of borrowing sufficient amounts needed to meet their needs. This data also shows that investors have not been deterred from investing in each PJM TO even though the PJM TO does not earn a rate of return on Network Upgrades through the Existing Funding Approach. Indeed, since 2004 when the PJM TOs asked to no longer recover a rate of return on Network Upgrades via the GIP, investors have still continued to invest in each PJM TO.

Finally, the Joint Protestors’ review of PJM TOs’ SEC filings—which by law, must disclose any material risk to investors56—found no evidence supporting the PJM TO’s claim of financial risk associated with Network Upgrades. The Joint Protestors are unaware of any filing

55 Filing, Attach. D, Aff. of David Hunger and Seabron Adamson of Charles River Assoc. at 19 (June 30, 2021) (Hunger & Adamson Affidavit”).

in which any of the PJM TOs have identified the lack of a rate of return on Network Upgrades as a material risk—or any level of risk for that matter. Instead, PJM TOs have repeatedly cited the investments associated with attaining those state renewable energy targets as revenue opportunities.

All of this data undermines the premise of the PJM TOs’ Filing. Notably, this data starkly contrasts the PJM TOs avoidance of offering any data to support the claims in their Filing. Because the Filing is unsupported by facts in evidence, the Commission should reject the Filing outright.


58 See Attach. B at PP 30–32. See also AEP Form 10-K, at 12, 26, 34 (“AEP has committed significant capital investments to modernize the electric grid and integrate these new resources. Transmission assets of the AEP System interconnect approximately 16,300 MWs of renewable energy resources. AEP’s transmission development initiatives are designed to facilitate the interconnection of additional renewable energy resources.”); “Additional transmission facilities will be needed based on changing generating resources, such as wind or solar projects, generation additions or retirements, and additional new customer interconnections. The State Transcos will continue their investment to enhance physical and cyber security of assets, and are also investing in improving the telecommunication network that supports the operation and control of the grid.”; “A significant portion of AEP’s earnings is derived from transmission investments and activities. FERC policy currently favors the expansion and updating of the transmission infrastructure within its jurisdiction. If the FERC were to adopt a different policy, if states were to limit or restrict such policies, or if transmission needs do not continue or develop as projected, AEP’s strategy of investing in transmission could be impacted.”; ITC Holdings Corp. Form 10-K at 24 (“Our capital expenditures of $885 million at our Regulated Operating Subsidiaries during the year ended December 31, 2020, as described below under ‘— Capital Investment and Operating Results Trends’ resulted primarily from our focus on improving system reliability, increasing system capacity and upgrading the transmission network to support new generating resources, which included electric transmission asset acquisitions from Consumers Energy of $58 million, of which $29 million was an acquisition premium that was excluded from rate base.”); Dominion Energy Form 10-K at 13 (“Virginia Power’s growth capital plan includes spending approximately $24 billion from 2021 through 2025 to upgrade or add new transmission lines, distribution lines, substations, and other facilities, as well as maintain existing and construct new generation capacity to meet its renewable generation targets and growing electricity demand within its service territory in order to maintain reliability and regulatory compliance.”).
2. The PJM TOs’ Requested Relief Would Result in Unjust and Unreasonable Rates, Terms, and Conditions of Service for Interconnection Customers and Ratepayers

The Joint Protestors strenuously object to the Filing because Transmission Owner Funding would prove far more costly to generation developers, with no corresponding benefit. Increased costs in transmission upgrades will be rolled into generation costs and rates under a higher power purchase agreement price. Evidence in the instant proceeding, as well as other dockets, shows that on a net present value basis, the cost to the generation developer can increase by 30–50% and the initial investment cost can double with self-funding. When costs increase, proposed generation becomes uneconomic. Additionally, generators can build Network

60 See Decl. of Jennifer Ayers-Brasher, at P 9 (July 28, 2021) (“The total costs for network upgrades necessary to interconnect a typical generation project approximately double as a result of Transmission Owner self-funding being elected.”) (attached hereto as Attach. C); Decl. of Kate O’Hair, at P 4 (July 28, 2021) (“From EDFR’s experience, total payments over a 20 year period are easily exceeding twice the ‘sticker price’ of the network upgrades, and with an impact of over 30% on a net present value [] basis. With the majority of larger transmission owners in MISO now electing Transmission Owner Funding, the effective cost of all anticipated network upgrades allocated to generation developers in MISO has increased exponentially.”) (attached hereto as Attach. D); Protest of the ACP et al., Attach. B, Decl. of Stephane Desdun, at P4, Docket Nos. EL21-66 and ER21-1647 (May 7, 2021) (“Desdun’s Notice”); Mot. to Intervene and Protest of NextEra Energy Resources, LLC, Ex. A, Decl. of Matt Pawlowski on Behalf of NextEra Energy Resources, LLC, at P 7, Dockets Nos. EL21-66 and ER21-1647 (May 7, 2021) (“With a 20-year payment term and carrying charges that include the transmission owner’s return on equity [], the total amount paid by the project owner for network upgrades can double.”) (“Pawlowski Declaration”), Accession No. 20210507-5172. See also Motion to Intervene Out-of-Time and Req. for Reh’g of Apex Clean Energy Management, LLC, at Attach. I, Docket No. EL15-68 et al. (Oct. 1, 2018), Accession No. 20181001-5389 (showing that Transmission Owner Funding in MISO for four projects would increase costs by 39.3% relative to generator funding, from $30.1 million to roughly $49.6 million); Otter Tail Power Co. v. MISO, 153 FERC ¶ 61,352, at P 33 (2015) (“Border Winds compared the net present value of its own cost of capital to the net present value of Otter Tail's cost of capital . . . . Border Winds stated that, at Otter Tail's proposed fixed rate of 15.8% applied over a 20-year term, Border Winds' approximately $3.9 million in network upgrades would result in total costs of nearly $6.6 million. However, if Border Winds were applying its own cost of capital to the network upgrades under Option 2 funding, Border Winds stated that it would save over $1.8 million as compared to Otter Tail electing the initial funding option . . . . Therefore, the case record in Border Winds provided evidence that, under the unilateral election of the initial funding option by a transmission owner, a transmission owner's cost on capital could significantly increase costs to an interconnection customer relative to the interconnection customer’s cost on capital under Option 2.”) (citing Motion to Intervene and Protest of Border Winds Energy, LLC, Docket No. ER14-2464-000, at 5 (Aug. 8, 2014)), case vacated and remanded on other grounds in Ameren Servs. Co. v. FERC.
61 Attach. C at P 12 (“RWERA is developing numerous early to mid-stage projects active in the PJM interconnection queue which have not yet executed Interconnection Service Agreements, and therefore have upgrades which are not yet finalized by the technical study process. For each of these projects, self-funding would
Upgrade projects more quickly when exercising greater control over timing of construction.

Indeed, increased cost and longer build times will impair the development of new generation and has impaired the development of new generation in MISO.62

The PJM TOs argue that it is less expensive to the generation developer to allow the transmission owner to fund the investment and earn a return because the PJM TO has a lower Cost of Equity.63 PJM TOs have not supported their argument. First, no direct comparison to a generation developer’s cost of capital has been made to demonstrate the cost may be lower to the generation developer.64 Second, even if the Complainants’ claim was accepted, there is no denying that the overall cost to the generation developer on a net present value basis will be more than the generation developer now pays for Network Upgrades. Third, if Complainants truly believe their cost of capital is less expensive to the generation developer, then they should seek to make Transmission Owner Funding available if mutually agreed with the interconnection customer. After all, if a transmission owner’s cost of capital is truly less than the interconnection

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62 See Attach. C at P 8 (“An election of self-funding can significantly increase the projected costs that RWERA calculated when it first proposed to develop a particular generation project and entered PJM’s interconnection study process, to the point of making the project no longer economically viable.”); see also Attach. D at P 8 (“Transmission Owner Funding in MISO has had a tremendous and deleterious impact on EDFR’’); see also Desdunes Declaration at P 5; see also Pawlowski Declaration at P 7 (“Hence, the self-funding proposal submitted in these dockets will add to the cost of power purchased by New York consumers or introduce significant risk for the project developer, or both, and could lead to the termination of a project altogether.”).


64 Id. at 20 (“Q. Have you made direct comparisons of the WACC for the PJM TOs and those of interconnecting new generators? A. No…”).
customer’s cost of capital, common sense dictates that the interconnection customer would gladly elect Transmission Owner Funding every time.

Fourth, the proposal will increase costs to consumers in PJM. PJM TOs propose to collect the Transmission Owner Funding rate through a *pro forma* Facilities Service Agreement (“FSA”) similar to what has been adopted in MISO. However, that type of FSA is not based on a fixed carrying charge, but allows for a variable carrying charge that can change from year to year over the 20-year term. That means the amount that the generation owner actually will pay is not known, and that cost could increase. The generation owner will have to account for this unknown by adding to the rate in a power purchase agreement or in bids when participating in programs administered by PJM states. Further, the PJM TOs’ Network Upgrade Facilities Agreement would require the interconnection customers to post security over the full term of the agreement. This too is costly to the generation owner and is unjust and unreasonable in its own right. Independent generation owners do not have a regulatory backstop of their costs from the state commission; hence, by necessity, each generation owner will have to account for any FSA payment variability which will result in increased rates to PJM consumers. It is not just and reasonable to subject consumers to increased costs on this basis.

Fifth, Network Upgrades are integrated with the transmission grid. PJM TOs fail to explain why it is just and reasonable for only an interconnection customer to bear the cost of these upgrades, with an additional rate of return for the local PJM TO, when it is undeniable that these integrated upgrades bring benefit to load and users of the grid. As the affidavit of Michael

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65 Filing at 24.
66 See MISO, 171 FERC ¶ 61,075 at PP 36, 49 (2020).
67 Attach D. at P 6.
68 *Id.* at P 7.
69 Attach B. at 48–50.
Goggin makes clear, the new equipment associated with Network Upgrades frequently result in a more reliable and resilient grid, reducing risk to transmission owners while providing means for interconnection consumers to access a competitive market.\footnote{Id. at P 10 (reduced reliability risks); PP 20–22 (weather risks); PP 23–24 (outage risks); PP 6–8 (operation risks).} It is precisely because of these benefits that, in Order No. 2003, the Commission determined that the interconnection customer could bear the burden to initially fund the upgrades—but would then be reimbursed with the cost borne in transmission rates among all who benefit.\footnote{See Order No. 2003-A at P 696.}

3. The PJM TOs’ Filing Leaves the Door Open for Unlawful Undue Discrimination or Preference, and the So-Called “Transparent Selection Process” Does Not Remedy This Problem

The PJM TOs assert, with little explanation or supporting evidence, that their proposal raises no concerns regarding affiliate abuse or undue discrimination or preference.\footnote{Filing at 29.} Their cursory explanations fail to acknowledge that a transmission owner’s decision to elect to fund Network Upgrades under their proposal will result in cost increases for the generator in question that will cause disparate treatment among generators and put the subject generator at a competitive disadvantage in the PJM markets. The PJM TOs’ summary reliance on prior Commission precedent and on the generic process they will use to provide “transparency” of Network Upgrade funding decisions fails to demonstrate that interconnecting customers will be protected from undue discrimination or preference as Section 205 of the FPA requires.\footnote{FERC, Comm’r Allison Clements Concurrence Regarding MISO, Statements (Feb. 8, 2021), https://www.ferc.gov/news-events/news/commissioner-allison-clements-concurrence-regarding-midcontinent-independent.}

The risk that PJM TOs’ election to fund Network Upgrades could discriminate against one generator (and result in undue preference for a competing generator) is not abstract. All generation with PJM is similarly situated. Generation developers in PJM compete to sell their
output at market-based rates, and the costs they incur to fund upgrades factors into the rates they can offer in the market—the higher the interconnection costs, the higher their rates, and the less competitive they are. Subjecting all generation developers to the same methodology for funding Network Upgrades would ensure a level playing field in this regard, but there is no assurance that will occur.

A simple hypothetical example shows the disparate treatment among similarly situated generators that results. Consider a situation in which two developers propose identical projects, with developer A connecting to transmission owner Y and developer B connecting to transmission owner Z. Transmission owner Y elects to fund the necessary Network Upgrades to connect developer A, while developer B funds its own interconnection under the Existing Funding Approach. The result is that the total interconnection cost to developer B will be less than developer A. This provides developer B with a competitive advantage vis-à-vis developer A, for reasons that developer A cannot control. This disparate treatment of similarly situated transmission customers is unduly discriminatory.74

This disparate treatment could also be used by a transmission owner to favor its own generation or the generation of an affiliate by giving it the competitive advantage in the market illustrated above. Where a competitor of its owned or affiliated generation seeks to interconnect, a transmission owner could, under the PJM TOs’ proposal, freely opt to fund the Network Upgrades and increase that competing generation’s total interconnection costs and rates. If the

74 16 U.S.C. § 824d(b) (“[No public utility may] make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage [nor] maintain any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.”); Dynegy Midwest Generation, Inc. v. FERC, 633 F.3d 1122, 1127 (Feb. 11, 2011) (defining undue discrimination as "creat[ing] arbitrary differences in the competitive position of [different] generators."); St. Michaels Municipal Utilis. Comm’n v. FPC, 377 F.2d 912 (4th Cir. 1967) (“[D]ifferences in rates are justified when they are predicated upon differences in facts – cost of service or otherwise – and where there exists a difference in rates which is attacked as illegally discriminatory, judicial inquiry devolves on the question of whether the record exhibits factual differences to justify classifications among customers and differences among the rates charged them.”).
cost is too high, the independent generation may withdraw from the queue, leaving an open path for the PJM TOs’ unregulated affiliate or the PJM TO to fill the need. Thus, the PJM TOs will have submitted a proposal that will give them preference.

Chairman Glick and Commissioner Clements recently highlighted the concern that a transmission owner option to fund Network Upgrades can lead to undue discrimination or preference in response to a proposal to allow such an option in MISO. The PJM TOs briefly acknowledge these concerns, but claim that they are somehow irrelevant in the PJM region. They rely almost exclusively on the Commission’s prior approval of MISO’s transmission owner self-funding proposal, stating that “[w]hile concerns have been raised” regarding the potential for discrimination or affiliate abuse in that region, such concerns do not exist within PJM because “many PJM Transmission Owners have already divested their generation assets.” But as this statement readily admits, not all PJM TOs have divested their generation assets. Several large PJM TOs still directly own generation assets and many PJM TOs have unregulated affiliates that compete in the market (or could file to compete in the market).

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75 Missouri River Energy Servs. v. FERC, 918 F.3d 954, 958 (Mar. 15, 2019) (“undue discrimination occurs . . . if the entities are ‘similarly situated,’ such that ‘there is no reason for the difference.’”) (citing State Corp. Comm’n v. FERC, 876 F.3d 332, 335 (D.C. Cir. 2017) & Transmission Access Policy Study Grp. v. FERC, 225 F.3d 667, 721 (D.C. Cir. 2000)); New England Power Pool, 67 FERC ¶ 61,042, 61,132 (1994) (“the standard for undue discrimination [is] whether factual differences justify differences in rates charged to and terms and conditions applicable to similarly situated customers.”).

76 Filing at 29 (emphasis added).


incentive to engage in discriminatory application of the proposed transmission owner option to elect to fund Network Upgrades as a tool to increase the costs assigned to competitors to their owned or affiliated generation assets. PJM TOs’ filing fails to address this potential for undue discrimination or preference. The Commission recognized this scenario in Order No. 2003-A:

We disagree that it is unduly discriminatory to allow an independent Transmission Provider to propose innovative cost recovery methods, including participant funding, while requiring a non-independent Transmission Provider to continue to use more traditional pricing required by Order No. 2003 for new interconnections. This different treatment is fair because the two types of Transmission Providers are not similarly situated. As we have explained, when implemented by an independent Transmission Provider which does not have an incentive to discourage new generation by competitors, new cost recovery methods including participant funding can yield efficient competitive results. However, because of their inherent subjectivity, new approaches such as participant funding [or TO Self-Funding] could allow a non-independent Transmission Provider to propose methods that frustrate the development of new generating facilities that will compete with its own [or its unregulated affiliates].

There is nothing independent with PJM TO Self-Funding. PJM is not involved whatsoever in the decision to apply the funding and cost variation. The decision to apply Self-Funding is chosen solely by the non-independent PJM TO. Thus, the Commission stated that it “would find any policy that creates opportunities for such discriminatory behavior to be unacceptable.”

More broadly, PJM TOs claim, without explanation, that the Commission should approve their proposal because they are “similarly situated to the transmission owners in MISO,” where the Commission approved a similar proposal. This claim fails for several reasons. First, the undue discrimination (“similarly situated”) clause of the FPA is not applied by comparing one

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79 Order No. 2003-A at P 691.
80 Order No. 2003 at P 696.
81 Filing at 29.
public utility (PJM TO) to another public utility (MISO TO). The clause is applied to ensuring that a public utility does not impose an undue preference on similarly situated customers. Second, this claim directly contradicts their assertion that the discrimination and affiliate abuse concerns raised in MISO are not relevant in PJM because Transmission Owners in PJM are not similarly situated with respect to generation ownership. Many PJM TOs do own generation. In any event, if there is any similarity, it is that at least some transmission owners in MISO and PJM also own generation, which shows why Self-Funding is unduly discriminatory in both RTOs. Beyond this inconsistency, though, simply pointing to the Commission’s decision in MISO (which is currently pending an appeal before the United States Court of Appeals for the D.C. Circuit), and stating that it is “not aware” of any FPA Section 206 complaints alleging discrimination in MISO, does not serve to support its proposal here or explain why that proposal does not create undue discrimination or preference concerns. The PJM TOs must support their own case and they have not done so. If accepted, the Filing would create an opportunity for undue discrimination in PJM.

Perhaps recognizing that these claims do not address the real potential for undue discrimination or preference in their proposal, PJM TOs contend that their “transparent process to govern the option to fund Network Upgrades” would somehow serve to mitigate affiliate abuse and discrimination concerns. But they identify no actual tariff provisions or procedural mechanisms that apply to the transmission owner option to fund and would limit or condition that option in situations where discrimination or undue preference concerns could arise. Indeed, an incentive to raise the cost of Network Upgrades for all interconnection customers with an intent to force independent generation out of the market, is not overt behavior that can be
identified or regulated by PJM through a Tariff provision. That is why the Commission has stated the mere “opportunity” for such a result is enough not to allow such a variation from the Order No. 2003 base. Nonetheless, PJM TOs suggest that PJM’s generic “involvement in the interconnection process,” including its coordination of the planning process and studies, status as a party to study agreements, and its involvement in “administering the [Network Upgrade Funding Agreement]”, provides sufficient protection and independent oversight.84 While PJM’s involvement in these processes is important, it would not give PJM any authority to “govern” a transmission owner’s option to elect to fund Network Upgrades; the transmission owner would have the sole discretion to elect this option, and its election would occur before many of the steps of the interconnection process take place and before the Network Upgrade Funding Agreement is administered by PJM. Even if PJM’s independent oversight of these processes were to reveal discriminatory or preferential conduct, there are no Tariff provisions detailing what PJM would be obligated to do to mitigate or prevent that conduct (and PJM TOs provide no explanation). Accordingly, those processes and PJM’s involvement in them have not been shown to provide any real protection against discriminatory or abusive use of transmission owner self-funding.

PJM TOs further assert that affiliate abuse and discrimination concerns are mitigated by certain “transparency” provisions, such as the posting of a “non-binding statement of general intent on the PJM website of how each Transmission owner plans to treat Network Upgrades on its system” and the requirement that a transmission owner “provide its binding intent to fund each specific Network Upgrade prior to the completion of the Facilities Study.”85 Transparency is always welcome, but PJM TOs fail to explain how posting their “general intent” or providing binding intent of their decision actually guards against discriminatory or preferential outcomes.

84 Id.
85 Id. at 29–30.
Although such intent might ensure that a single PJM TO applies a uniform application of Self-Funding, that intent does not address the undue discrimination that would result when independent generation is driven from the marketplace because of increased costs for network Upgrades, opening a path for the PJM TO or its affiliates to fulfill the region’s needs.

4. The Transmission Owners’ Proposal Would Cause Particular Harm to Generators Currently Awaiting Long-Delayed Interconnection Agreements in PJM’s New Services Queue

The Filing is not just and reasonable for another reason: the Filing would add significant uncertainty and delay to PJM’s already severely backlogged queue. The PJM TOs have requested that the Commission “approve the Proposed revisions without hearing, modification or condition, to be effective . . . August 30, 2021.”86 The PJM TOs also propose that they be allowed to unilaterally elect self-funding at any point before completion of an interconnection customer’s Facilities Study. This is problematic, to say the least. PJM has fallen extremely behind in its obligation to timely process New Service Requests, with a particular delay at the Facilities Study phase.

PJM shared with the Commission in a February 2021 compliance filing that PJM received 1,029 New Service Requests in 2020, and only issued 1% of Facilities Studies tied to those and previous requests on time. As a result of this surge in requests and PJM’s inability to keep up, PJM currently has 1,618 active projects “at various points in the study process.”87 PJM’s inability to timely complete Facilities Studies has been a major bottleneck in the New Services Queue process.88 The surge in requests is largely driven by the demand for renewable

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86 Filing at 2.
88 Id. at 2 (“PJM remains concerned with the backlogs in the Facilities Study segment of its New Services Queue.”).
projects, and the bottleneck at PJM’s New Services Queue—including a wide-scale cancellation of projects—has been widely cited as a major barrier to development of new energy resources. PJM has been working to improve the New Services Queue process, but a final resolution of that problem is still underway and has been the subject of a series of discussions and workshops between PJM and the relevant stakeholders including the PJM TOs. The three main drivers for the current delay that need to be addressed are “(1) PJM analysis delays; (2) customer modification requests or data changes; and (3) delays in receiving the information from the Transmission Owners.”

The Filing would exacerbate conditions in PJM. The Filing would significantly increase the cost of upgrading transmission to service individual new generators. Hundreds of projects that may have reasonably expected to have signed a Generation Interconnection Agreement by August 30, 2021, but who were delayed by the analytical backlog at PJM and among the PJM TOs, could thus find themselves subjected to a new set of rules that exposes them to massive and unanticipated (and completely unforeseeable) increases in upgrade costs, through no fault of their own. These new costs could tip the balance for many proposed projects from profitable to unprofitable. If these projects withdraw, it will cause a massive need for restudies, adding delay upon the already backlogged queue. It would be unjust and unreasonable to change the rules for generation developers that invested significant amounts to progress through the PJM queue. But even beyond that, projects that still want to move forward will still face further delays and potentially additional costs to their ultimate interconnection. It is impossible to say exactly how

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90 PJM Facilities Studies Compliance Filing at 15–16.
91 Id. at 10.
many of the 1,618 queued projects could end up impacted by this transition, but the impacts could amount to gigawatts of lost new generation capacity.

Joint Protestors respectfully submit that the Commission has an obligation not to take action that will exacerbate PJM’s queue and impede the timely interconnection of new generation. To safeguard an already burdened queue, the Commission should reject the Filing. In the event the Commission decides otherwise, it should at least insulate all existing New Service Requests from the new financing rules to avoid ensnaring the historically backlogged PJM New Services Queue. Forcing existing projects to meet new rules partway through would be challenging in the best of times; imposing new rules and financing structures on over 1,600 pending requests would incite chaos. Projects in the queue are at a very advanced stage and any change in rules will have a big impact on costs and feasibility. PJM does not have the resources to process the current state of its queue; how much more will PJM’s resources be taxed when there is a wholesale exodus from its queue, causing the need for cascading restudies? Last, if the Commission determines that the new rules should apply to at least some portion of the existing New Service Requests currently in the PJM queue, it should at least protect late-stage projects—including any project whose Facilities Study should have been completed by August 30, 2021, per the terms listed under the PJM Tariff and business practices. Otherwise, these projects would be unfairly punished by PJM’s failure to meet its obligations.

C. JUDICIAL PRECEDENT, COMMISSION PRECEDENT, AND THE FACTS DO NOT SUPPORT THE FILING

PJM TOs characterize their Filing as consistent with judicial and Commission precedent. This is flatly incorrect. Court decisions, Commission orders, and the factual record—as supplemented in this filing and additional protests filed in these dockets—clearly show that the
PJM TOs have failed to make their affirmative case required as the proponent of a rate change under Section 205 of the FPA.

1. **The Holding in *Ameren* is Limited to MISO and its generator up-front funding option**

In 2015, several transmission owners in the Midcontinent Independent System Operator, Inc. ("MISO") region sought a further variance from Order No. 2003. Under Transmission Owner Funding in MISO, a transmission owner could elect—at its sole discretion—to fund Network Upgrades up-front and collect a return of and on the funded capital not through the transmission rate base, but *solely* from the interconnection customer.\(^\text{92}\) The Commission held that it was unjust and unreasonable and unduly discriminatory to allow a transmission owner in MISO to unilaterally choose between the Transmission Owner Funding option and the Generator Funding option, and it therefore ordered MISO to revise its tariff so that Transmission Owner Funding would be an option only if mutually agreed to by the interconnection customer. Among other things, the Commission noted that costs would increase to the interconnection customer, but with no increase in service.\(^\text{93}\) Certain MISO transmission owners appealed the Commission’s decision.

On appeal, in *Ameren Servs. Co. v. FERC*,\(^\text{94}\) the D.C. Circuit remanded the Commission’s orders. The Court in *Ameren* found that the Commission had failed to adequately consider whether denying unilateral Transmission Owner Funding was consistent with the principles in *FPC v. Hope Natural Gas Co.* ("Hope").\(^\text{95}\) However, contrary to the PJM TOs’ representation,\(^\text{96}\) the Court made no determination regarding how rates should be structured. Instead, the Court specifically

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\(^{92}\) See MISO, 149 FERC ¶ 61,224, at P 13 (2014) ("MISO states that this is the first time a transmission owner has requested the self-fund option…").


\(^{94}\) 880 F.3d 571 (D.C. Cir. 2018).

\(^{95}\) See id. at 585.

\(^{96}\) See Complaint at 3.
found that there was “no need to reach the merits” of the funding issues the MISO transmission owners petitioners had raised, in part because the Commission failed to address petitioners’ arguments about Hope. The Court’s decision thus directed the Commission to further develop the record.97 The Commission confirmed this in Order No. 845-B. There, utilities in PJM claimed that Ameren stands for the proposition that transmission owners are entitled to a rate of return on network upgrades through the generation interconnection process, so long as the RTO has adopted some form of participant funding.98 The Commission disagreed, explaining the “salient findings in Ameren were that the Commission did not adequately justify its removal of the option for transmission owners in MISO to fund network upgrades and did not adequately respond to transmission owners’ concern with the lack of opportunity to earn a return of, and on, the cost of network upgrades to the relevant transmission system.”99

After the issuance of Ameren, the Commission also emphasized that “the concerns the D.C. Circuit identified in Ameren are present only in MISO because MISO’s interconnection pricing policy is a unique variation from the Order No. 2003 crediting policy under which MISO directly assigns 90 or 100 percent of the network upgrade cost responsibility to interconnection customers.”100 When asked to apply the Ameren case outside of MISO, in American Elec. Service Corp. v. PJM, the Commission again stated that the holding in that case was inapplicable because the PJM Tariff did “not include a generator up-front funding option like was at issue in Ameren.”101

97 Ameren, 880 F.3d at 582.
99 Id. at P 26.
2. *Ameren* Does Not Support Accepting the PJM TOs’ Tariff Filing

The PJM TOs rely heavily on the D.C. Circuit’s decision in *Ameren* for the proposition that they are entitled to earn a rate of return on Network Upgrades. However, PJM TOs fail to tell the whole story. In *Ameren*, the D.C. Circuit found that the Commission did not adequately consider the transmission owner petitioners’ argument “that all costs, and risks, are not baked in – that, in fact, shareholders are forced to accept incremental exposure to loss with no corresponding benefit” from the network upgrades.\(^{102}\) The Court emphatically did not find that the Commission must grant the relief that the *Ameren* petitioners had sought; instead, the *Ameren* panel found that the Commission had failed to respond to the argument that “generator-funded upgrades draft [transmission owners] into service to manage non-profit appendages to their network.”\(^{103}\) The Court found there was “no need to reach the merits” of the funding issues that were raised because the Commission had not done its job. Thus, the Court in *Ameren* vacated the underlying orders and remanded the matter to FERC to “provide reasoned consideration of these arguments by explaining whether all risks are truly ‘baked in,’ responding to the transmission owners’ ‘entire enterprise’ argument and addressing the effect of these orders on the ability of transmission businesses to attract future capital.”\(^{104}\) Hence, *Ameren* does not stand for the proposition the PJM TOs contend.

On remand, the Commission reviewed the prior record and summarily reversed its decision, determining that there “was not enough evidence in the record to sustain the Commission’s findings in the vacated orders.”\(^{105}\) However, in doing so, the Commission never

\(^{102}\) *Ameren*, 880 F.3d at 581.

\(^{103}\) *Id.* at 584.

\(^{104}\) *Id.* at 582.

\(^{105}\) *MISO*, 164 FERC ¶ 61,158, at P 28 (2018).
squarely addressed the transmission owners’ ‘enterprise risk’ argument or responded to the Court’s charge. The factual record in regard to MISO remains undeveloped to this day.

In addition, Ameren dealt only with the specifics of Transmission Owner Funding in MISO and is therefore inapposite. After the issuance of Ameren, the Commission has repeatedly held that the concerns articulated in Ameren were “only [applicable] in MISO because MISO’s interconnection pricing policy is a unique variation from the Order No. 2003 crediting policy.”\(^\text{106}\) The Commission has consistently held, “an approach that is just and reasonable in one RTO is not necessarily just and reasonable in another.”\(^\text{107}\) Despite PJM TOs suggestions, the result in Ameren does not “compel” PJM TOs to implement unilateral Transmission Owner Funding in PJM. Even under the most charitable reading of the precedent the PJM TOs cite, the Commission must make a de novo determination based on the facts of this particular proceeding and PJM TOs have failed to demonstrate with facts that their proposal is just and reasonable, not unduly discriminatory, and satisfies the Hope and Bluefield standards. Indeed, as discussed below, the PJM TOs have failed to show that any alleged risks from applying the Existing Funding Approach with Network Upgrades (1) are actually occurring, (2) are not already compensated, \(i.e.,\) “baked in,” to rates and capital costs, and (3) have impeded (or even plausibly might impede) the ability of any PJM TO to attract capital (and thereby impeded their ability to serve the public interest).

\(^{106}\) Order No. 845-A at P 20; see also Am. Elec. Power Serv. Corp., 167 FERC ¶ 61,121, at P 56; see also PJM, 167 FERC ¶ 61,120, at P 67 (2019).

\(^{107}\) E.g., PJM, 126 FERC ¶ 61,152, at P 13 (2009).
3. **PJM TOs can readily attract capital and have not shown harms that meet the legal or factual standards of *Hope* and *Bluefield***

PJM TOs claim that the Existing Funding Approach for Network Upgrades is unjust and unreasonable under the *Hope* and *Bluefield* standard. Witnesses Hunger and Adamson cite to the cases in support of their claim that “the Existing Funding Model forces the PJM TOs to operate a substantial (and growing) portion of their business on a ‘non-profit’ basis.” The witnesses further state that “compelling PJM TOs to offer a non-profit service for Network Upgrades also has implications for the financial stability and ability to attract capital central to the regulatory policies established from the *Hope* and *Bluefield* decisions . . . .” Witnesses go onto claim that “PJM TOs bear the risk associated with any costs not recovered in transmission rates . . . [including] reliability regulatory, cybersecurity and environmental costs associated with constructing, operating, and finally decommissioning Network Upgrades.”

There are several problems with the PJM TOs’ claims. First, as noted above, PJM TOs cannot truthfully claim that they have been “forced” to integrate network upgrades on into the transmission grid without earning a rate of return. Witnesses Hunger & Adamson lament that “[T]he Existing Funding Model has zero potential profits for PJM TOs.” But PJM TOs do not earn a return on network upgrades because they asked the Commission to move away from the Order No. 2003 paradigm and use the Existing Funding Approach. If the PJM TOs want to earn a rate of return on network upgrades, they can seek to revert to the Order No. 2003 base, reimburse the interconnection customers for amounts funded upfront, and roll the amount into

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108 See Hunger & Adamson Affidavit at 7; Filing at 11, 12, 16.
109 Hunger & Adamson Affidavit at 6.
110 *Id.* at 7.
111 *Id.* at 8.
112 *Id.* at 9.
transmission rate base. The absence of the claimed compulsion makes *Hope* and *Bluefield* a poor fit for PJM TOs’ arguments.

Next, PJM TOs’ supporting testimony shows that their arguments fail to meet the standard set forth in *Hope* and *Bluefield*. Witnesses Hunger & Adamson argue that the Existing Funding Model amplifies risk without increasing potential benefits for shareholders and would impact investor expectations and perception of transmission owners.\(^{113}\) What is missing in this testimony, or elsewhere in the Filing, is any evidence whatsoever that PJM TOs lack revenue for operating expenses or capital costs, or that they cannot maintain their credit or attract capital—let alone that the Existing Funding Approach has harmed or would harm their ability to attract capital. The best PJM TOs can offer is speculation. Rates that are just and reasonable, and not unduly discriminatory or preferential, must have a foundation in substantial evidence and cannot be based on speculation. This is especially the case under the high standards listed in *Hope* and *Bluefield*.

The PJM TOs present no actual evidence that “PJM TOs will become increasingly thinly capitalized . . . . [and the current mechanism] could impact their ability to raise capital on reasonable returns” as they allege.\(^{114}\) In fact, PJM TOs have not shown that the Existing Funding Approach is impeding the satisfaction of *Hope* and *Bluefield*. Nor have they provided any evidence that Transmission Owner Funding is needed to satisfy *Hope* and *Bluefield*. The Supreme Court in *Hope* explained that, in determining rates, “the fact that the method employed to reach that result may contain infirmities is not then important . . . . It is the product of expert judgment which carries a presumption of validity. And he who would upset the rate order under the Act carries the heavy burden of making a convincing showing that it is invalid because it is

\(^{113}\) *Id.* at 15–17.

\(^{114}\) *Id.* at 21.
Hope is an important case in which the Supreme Court held that the Federal Energy Regulatory Commission (FERC) has the authority to regulate the rates charged by public utilities. The Court held that FERC has the power to regulate rates charged by public utilities to ensure that those rates are just and reasonable in their consequences. Hope therefore requires the Commission to render a decision that is “the product of expert judgment” that results in just and reasonable consequences.” That expert judgment must be based on facts. Here, PJM TOs have not provided any facts to enable the Commission to make that assessment and determine that the Existing Funding Approach of network upgrades is actually causing—or will cause—unjust and unreasonable consequences to PJM TOs that impair their ability to attract capital to serve the public interest. PJM TOs have not met the “heavy burden” with any “convincing showing.”

Additionally, Hope does not merely focus on the ability of a regulated entity to attract new capital, but also focuses on the financial health of the entire enterprise and whether its ability to serve the public interest will be impaired. Even if a transmission owner’s returns are meager, as the Court pointed out in Hope, that is sufficient for a finding that the entity does not face enterprise risk. An entity challenging a rate cannot merely state that a rate threatens its financial integrity, it has to meet a “heavy burden” in showing that a rate actually does so. Indeed, courts have rejected Commission orders that set rates or practices premised on the need to attract capital that lacked sufficient evidence.

In reviewing enterprise risk, courts ask “whether [the price] is high enough to both maintain the producer’s credit and attract capital” and, to do this, it must “yield to equity owners a return ‘commensurate with returns on investments in other enterprises having corresponding

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115 Hope, 320 U.S. at 602 (internal citations omitted) (emphasis added).
116 Id.
119 P.R. Tel. Co., 665 F.3d at 323.
120 See, e.g., Farmers Union Cent. Exch., Inc. v. FERC, 734 F.2d 1486, 1503 (D.C. Cir. 1984) (rejecting oil pipeline rates where “FERC failed to forecast or otherwise estimate the dimensions of the need for additional capacity, and did not even attempt to calibrate the relationship between increased rates and the attraction of new capital.”).
risks,’ as well as cover the cost of debt and other expenses[.]” 121 PJM TOs put forth no evidence whatsoever that this standard is not being met under the Existing Funding Approach. Indeed, PJM TOs’ argument that they are unable to attract capital under the Existing Funding Approach is undercut by the many indicators of financial well-being outlined above including attracting billions of dollars in capital in recent years, receiving authorization from the Commission to issue over $19.9 billion of new securities, and maintaining strong credit-ratings. 122

PJM TOs also argue that their proposal is justified due to the increase of projects in the PJM queue stemming from state clean energy targets in the PJM region, which allegedly increases their risk. 123 However, as outlined above that risk is not reflected in PJM TOs’ SEC filings and many of the TOs cited investments associated with attaining these clean energy targets as revenue opportunities. 124 This marked inconsistency may explain why Complainants offer no evidence that rating agencies have downgraded ratings (or might downgrade them in the future) because of an increase of generation in the queue that would result in increased amounts of network upgrades. Instead, RTOs that have a form of the Exiting Funding Approach have experienced similar increases in interconnection requests from clean energy developers, 125 and Joint Protestors are unaware of any occasion when transmission owners in those regions have suffered any rating downgrade or an inability to attract capital linked to a lack of a rate of return on Network Upgrades.

In short, the PJM TOs broadly assert that the Existing Funding Method causes them financial harm, but have offered no evidence that actually identifies the absence of a rate of

121 Id. at 1502.
122 See supra notes 78–82.
123 Hunger & Adamson Affidavit at 10–15.
124 See supra notes 57–58.
return on Network Upgrades as impairing their ability to attract capital. Moreover, the PJM TOs’ SEC filings show that the very factors they cite as “risks” before this Commission are framed as revenue opportunities elsewhere, and their securities filings and credit ratings reflect healthy enterprises with an ongoing ability to attract capital.\footnote{See 2021–2019 Credit Ratings (As Available) of the Parent and Affiliate Companies for Voting Members of the PJM Transmission Owners as Reported by Fitch and S&P (citing credit reports of PJM TOs) (attached hereto as Attach. A).} PJM TOs have not met their factual or legal burden under \textit{Hope} and \textit{Bluefield}, nor under the FPA as discussed next.

\textbf{D. THE TRANSMISSION OWNERS’ PROPOSAL HAS WIDER IMPLICATIONS ON THE GREATER DISCUSSION ON COST ALLOCATION FOR GENERATOR INTERCONNECTION}

1. \textbf{The PJM TOs’ Proposal Would Exacerbate a Situation They Voluntarily Created, and Any Commission Action Should Focus on the Root Cause}

The Filing at issue in this proceeding is an unusual one, because it would build upon a purely voluntary policy that the PJM TOs historically supported. However, accepting the Filing would significantly worsen the flaws inherent in that policy for other market participants.

The PJM TOs note that their alleged “problem” has deep roots, as PJM had already adopted a “participant funding” model—requiring generators to fully fund network upgrades without reimbursement—prior to Order No. 2003.\footnote{Filing at 4–5.} PJM’s compliance filing for Order No. 2003 largely reflected this pre-existing framework\footnote{See PJM submits PJM Open Access Transmission Tariff in compliance with FERC’s Final Rule issued on July 24, 2003, at 3–4, Docket No. ER04-457-000 (Jan. 20, 2004) (discussing stakeholder review leading up to compliance filing), Accession No. 20040123-0087.} and emphasized that the filing was the result of stakeholder consensus—including the PJM TOs.\footnote{Id. at 5–6 (“PJMs current interconnection provisions are the result of extensive deliberations by PJM’s stakeholders. Following the July 12 RTO Order, PJM created a stakeholder group to implement the Commission’s directive regarding generation interconnection. This group met regularly throughout the period from October 2001 through February 2002. The stakeholders’ efforts culminated in the unanimous endorsement of extensive tariff changes by the PJM Members Committee on March 4, 2002.”). The PJM TOs, as PJM’s footprint was then constituted, were part of the PJM Members Committee.} However, Order No. 2003 made
quite clear that participant funding was not required, and was instead an “independent entity variation” which RTOs could seek. The PJM TOs acknowledge as much in their filing—but then reach precisely the wrong conclusion. In the face of a self-created problem, the PJM TOs could seek to unwind the independent entity variation, but instead ask the Commission to allow them to impose their own form of a variation from Order No. 2003 and earn additional returns from interconnection customers without addressing the underlying problem.

The Order No. 2003 pro forma approach—which is presumptively just and reasonable both in and out of RTOs—allows transmission owners to earn a rate of return on network upgrades because the interconnection customer is reimbursed with the transmission owner’s capital. In regions without participant funding that use Order No. 2003’s crediting policy, generators fund network upgrades and are reimbursed in full over 20 years by the transmission provider. Although generators initially fund network upgrades, these upgrades are treated as part of the transmission owner’s system and are included in the transmission plant for rates. In contrast, the PJM Generator Funding approach—which, once again, is in no way required by Order No. 2003—requires interconnection customers to shoulder the burden of Network Upgrade costs, with no prospect of reimbursement. The PJM TOs now present this

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130 See Order No. 2003 at PP 676 (describing cash refund approach as the default), 694 (adopting this approach)  
131 See id. at P 827; see also id. at PP 695–700.  
132 Filing at 4 (“Order No. 2003’s Crediting Policy Allows Transmission Owners to Earn a Return on the Costs of Network Upgrades but the Existing Funding Model in PJM Does Not.”).  
133 Order No. 2003-B at P 3 (“[I]f the Transmission Provider chooses not to fully reimburse the Interconnection Customer after five years, it must continue to provide dollar-for-dollar credits to the Interconnection Customer, or develop an alternative schedule that is mutually agreeable and provides for the return of all amounts advanced for Network Upgrades not previously repaid. However, full reimbursement shall not extend beyond twenty (20) years from the Commercial Operation Date.”).
voluntary variation as a “problem,” that has somehow been present but unacknowledged for two decades.\textsuperscript{134}

The Filing elides the fundamental truth that PJM, with the unanimous support of the PJM TOs, \textit{voluntarily sought the variation and impact that is the subject of the Filing}. The fact that the PJM TOs’ problem with the status quo is self-inflicted further demonstrates that \textit{Ameren} does not apply. The \textit{Ameren} Court expressed concern with shareholders being “\textit{forced} to accept incremental exposure to loss with no corresponding benefit.”\textsuperscript{135} If the PJM TOs’ shareholders are suffering any risk (and that has not been proven by the PJM TOs), it is due to the voluntary adoption of a framework that relies upon interconnection customers to fully fund Network Upgrades. To the extent that the PJM TOs take their own argument seriously, the simple solution would be for them to file a complaint with the Commission under FPA Section 206 to eliminate the independent entity variation they supported 17 years ago; doing so would result in reimbursement to generators and would place the Network Upgrades at issue in the TOs’ respective transmission rate bases from which they will earn a return. Such a change would clearly be just and reasonable under existing regulations (as it would simply revert to the Order No. 2003 baseline), and would demonstrate appropriate concern for the PJM TOs’ shareholders and any “incremental exposure to loss” they actually face. Indeed, this is the path of least resistance for the Commission and PJM TOs. Without any actual evidence of harm or an inability to actually attract investors, there is no record from which the Commission might grant the relief the PJM TOs seek. Such a revision would be especially just and reasonable because Network Upgrades are integrated into the grid and benefit all users of the grid.

\textsuperscript{134} Filing at 5 (“[T]he Existing Funding Model, adopted in 2004, failed to compensate PJM Transmission Owners for owning and operating Network Upgrades.”).

\textsuperscript{135} \textit{Ameren}, 880 F.3d at 581 (emphasis added).
2. If the Commission Does Not Reject the PJM TOs’ Filing Outright, it Should Closely Evaluate Whether the Assumptions Underlying Participant Funding in PJM Remain Just and Reasonable in a Separate Proceeding

The Joint Protestors note that this proceeding coincides with the Commission’s welcome Advance Notice of Proposed Rulemaking, Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection, issued on July 15. The ANOPR expressly requests comment on the overarching question of whether the independent entity variations allowing participant funding, including PJM’s, remain just and reasonable. Recent reports have made clear the numerous problems with this model, making the Commission’s inquiry timely and germane to the instant proceeding as well. The Joint Protestors look forward to working with the Commission to resolve these problems.

However, the PJM TOs’ requested relief would layer further damage onto an already-broken “participant funding” system. Therefore, absent full rejection of the Filing, the Commission can and should institute a fact-specific inquiry into whether PJM’s underlying Existing Funding Approach is just and reasonable.

Joint Protestors have demonstrated that the PJM TOs have failed to provide any evidence to support their claim legally and factually. However, even if the Commission finds that PJM TOs might have legal bases to *conceivably* apply Transmission Owner Funding at

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137 ANOPR at P 119 (“We seek comment on whether it is appropriate to eliminate or reduce participant funding for interconnection-related network upgrades in RTOs/ISOs…”).
some future date (in a manner that does not disturb the financial expectations of New Service Requests currently in PJM’s queue, and does not exacerbate the current study processing delays), the Joint Protestors submit that the Commission should institute a paper hearing, technical conference, or other proceeding on its own initiative to comprehensively review these issues. Joint Protestors note that a proceeding initiated by the New York Transmission Owners—seeking similar tariff changes, with similar rationale—remains active before this Commission.\textsuperscript{139} The NYISO and PJM proceedings raise extremely similar issues of law and fact, which also dovetail with the Commission’s inquiry in the ANOPR. Given this, a combined proceeding would allow for greater economy of stakeholder and Commission resources in determining disputed issues of material fact and would potentially inform any subsequent rulemaking resulting from the ANOPR. Such a process would address multiple issues including:

- Whether each PJM TO has shown any actual harm, such as an inability to attract capital as needed to serve the public interest, under the current Existing Funding Approach;

- How much capital each PJM TO has actually raised each year since the Commission accepted the PJM Independent Entity Variation;

- Whether any PJM TO has ever disclosed in a SEC filing that cost responsibility for network upgrades could impair the financial viability of the overall ‘enterprise,’ and whether that deterred any investment or harmed any PJM TO’s creditworthiness;

- Whether any PJM TO has actual evidence that investors failed to acquire new securities of the transmission owner specifically because of the Existing Funding

\textsuperscript{139} See generally FERC Docket No. ER21-1647.
Approach and network upgrade treatment, or even considered the Existing Funding Approach and network upgrades as anything other than “baked in” to each PJM TO’s overall business;

- Whether there will be an increased cost to interconnection customers, and what impact that may have on the development of new generation in PJM, on competition in PJM-administered markets, and on costs to consumers; and
- Whether PJM should revert to the baseline Order No. 2003 reimbursement policy—particularly because of the integrated nature of the network upgrades at issue, which benefit all users of the transmission grid in the form of reliability, resiliency, and access to lower cost generation.

The Commission has initiated similar processes with complex issues.140

III. CONCLUSION

Joint Protestors respectfully urge the Commission to deny the Complaint outright and reject the Tariff Filing. If the Commission deems the matters raised in the Complaint worthy of further inquiry, Joint Protestors request that the Commission establish a technical conference or paper hearing (or both) where the factual issues can be fully explored. As evidenced by the MISO proceedings, which have spanned eight years and two rounds of appeals to the D.C. Circuit, implementation of Transmission Owner Funding is extremely

140 See, e.g., Anbaric Development Partners, LLC v. PJM, 171 FERC ¶ 61,241 (2020) (denying complaint against PJM, and initiating technical conference to explore issues raised by complaint); EDF Renewable Energy, Inc. v. MISO, 162 FERC ¶ 61,085, at P 69 (2018) (establishing technical conference to develop a more complete record concerning complex RTO issues); N. Ind. Pub. Serv. Co. v. MISO, 149 FERC ¶ 61,248, at P 1 (2014) (directing Commission staff to convene a technical conference to explore issues raised in complaint related to MISO-PJM seam); Ass’n of Bus. Advocating Tariff Equity v. MISO, 165 FERC ¶ 61,118, at P 1 (2018) (establishing a paper hearing on whether and how new precedent on calculating ROE should apply to the proceedings pending before the Commission involving MISO TOs’ ROE).
complex and can only be assessed by scrutinizing the facts—which show conclusively that the Commission should reject the PJM TOs’ Filing for the reasons detailed above.

Dated: July 28, 2021. Respectfully submitted,

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ATTACHMENT A

2021–2019 Credit Ratings (As Available) of the Parent and Affiliate Companies for Voting Members of the PJM Transmission Owners as Reported by Fitch and S&P
ATTACHMENT A

2021–2019 Credit Ratings (As Available) of the Parent and Affiliate Companies for Voting Members of the PJM Transmission Owners as Reported by Fitch and S&P

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ATTACHMENT B

Affidavit of Michael S. Goggin (July 28, 2021)
UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM TARIFF REVISIONS TO IMPLEMENT TRANSMISSION OWNERS’ FUNDING OF NETWORK UPGRADES


AFFIDAVIT OF
MICHAEL S. GOGGIN

Docket No. ER21-2282-000
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I. INTRODUCTION

1. My name is Michael Goggin. I am Vice President at Grid Strategies, LLC, a consulting firm based in the Washington, D.C. area.

2. I have served as an expert on transmission and renewable energy issues for over fifteen years. At Grid Strategies, I consult on these topics for a range of clients interested in clean energy. For the preceding ten years, I was employed by the American Wind Energy Association (“AWEA”), which has since merged with the American Clean Power Association. At AWEA I provided technical analysis and advocacy on renewable energy and transmission matters, including leading AWEA’s research and analysis team from 2014–2018. Prior to that, I was employed at a firm serving as a consultant to the U.S. Department of Energy, and at two environmental groups before that.

3. I have testified before state regulatory commissions across the United States and at the Federal Energy Regulatory Commission (“FERC”) several dozen times on topics related to transmission and renewable energy. I have also served as a technical reviewer for over a dozen national laboratory reports, academic articles, and renewable integration studies, and have published academic articles and conference presentations on renewable energy, transmission, and policy. I have also served as an elected member of the Standards, Planning, and Operating Committees of the North American Electric Reliability Corporation (“NERC”). I hold an undergraduate degree with honors from Harvard University.

4. My testimony explains that the “uncompensated risks” that the PJM Interconnection, LLC Transmission Owners (“PJM TOs”) claim are associated with their ownership of network upgrades are immaterial, and in many cases these upgrades actually...
reduce those risks. This is confirmed by the PJM TO’s Securities and Exchange Commission (“SEC”) filings, which do not discuss any risks associated with ownership of network upgrades. Regardless, even if the claimed risk increases were real, the PJM TOs would already be compensated for these risk increases through standard state ratemaking processes. As a result, there is no merit to the PJM TOs’ claims that the current system of ownership for network upgrades is not just and reasonable. I also explain why the PJM TOs’ projections for network upgrade costs are grossly overstated. Finally, I explain how the self-funding of network upgrades will increase the cost and risk associated with the interconnection of new generation resources, to the detriment of PJM Interconnection, LLC (“PJM”) ratepayers.

II. Network upgrades do not pose material risks for the PJM Transmission Owners

5. The PJM TOs’ filing,¹ and particularly the affidavit of David Weaver, claims the following categories of uncompensated risks associated with PJM TOs’ ownership of network upgrades: (1) operational and safety risks, (2) reliability and cybersecurity compliance risks, (3) environmental risks, (4) weather and climate risks, (5) outage coordination risks, and (6) financial risks. In the following sections I explain how each of these claimed additional risks are immaterial, and how in most cases network upgrades actually reduce the claimed risks on net.

¹ PJM Tariff Revisions to Implement Transmission Owners’ Funding of Network Upgrades (June 30, 2021) (“PJM TOs’ Filing”), Accession No. 20210630-5116.
A. Operational and Safety Risks

6. The PJM TOs point to the risk of failures of transmission equipment in which a transmission owner “could potentially be liable.” However, the PJM TOs fail to present a single example of a transmission owner actually being held liable for the failure of transmission equipment, let alone network upgrade equipment. The PJM TOs also fail to note that they are required to carry insurance that covers such accidents, and never present an argument for why that insurance provides inadequate protection or why state regulators would deny the recovery of insurance premium or deductible costs.

7. Moreover, older transmission equipment is more prone to failure. Most network upgrades include the interconnecting generator paying to replace older equipment with newer equipment, thereby reducing the transmission owner’s risk in owning and operating the transmission system on net.

8. For example, at pages 8–10 of PJM TOs’ witness David Weaver affidavit, he extensively discusses risks related to transformer failures, describing the safety and environmental risks that can result from transformer leaks, fires, explosions, and other failures. These arguments are actually a compelling argument that network upgrades reduce transmission owners’ risk. The risk of a transformer failing is almost entirely driven by its age, with minimal failures during the first 30 years of transformer operation.

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2 PJM TOs’ Filing, Attach. C, Aff. of David W. Weaver, P.E., at P 16 (June 30, 2021) (“Weaver Affidavit”).
3 Under the PJM tariff, transmission owners are required to carry commercial general liability insurance coverage of more than $1 million per occurrence and umbrella insurance coverage on top of that of more than $20 million per occurrence. Attachment O, Interconnection Service Agreement, Appendix 2, sections 13.1 and 13.2; Attachment P, Interconnection Construction Service Agreement, Appendix 2, sections 11.1 and 11.2. Steve Huntoon, Counterflow: New Ball and Chain for Renewable Energy, RTO Insider, at PJM TOs Ignore Insurance, n.12 (July 13, 2021).
operations. In particular, leaks from transformers and switches are driven by the age-related failure of rubber components like gaskets and O-rings. Thus, even if existing network transformers and switches need to be replaced or otherwise upgraded to allow for the interconnection of new resources, this would reduce the risk of failure relative to the status quo of the older equipment continuing to operate. As explained in the following sections, replacing older equipment with new equipment through network upgrades not only reduces operational and safety risks, but also reliability, environmental, weather and climate, and outage coordination risks.

B. Reliability and Cybersecurity Risks

9. Weaver attempts to argue that network upgrades increase the risk of reliability or cybersecurity penalties being imposed by NERC. As explained here and at greater length in the weather and climate risk section below, network upgrades make the transmission system more reliable and resilient, not less.

10. For this and each of the categories of risk discussed in his affidavit, Weaver argues that network upgrades increase risk because they make the transmission system more complex. However, by modernizing equipment and reducing congestion on transmission system elements, network upgrades actually make operating the transmission system less complex. On weak or congested transmission systems, operators must more extensively rely on what are known as “remedial action schemes,” which are a range of

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5 Weaver Affidavit at PP 19–24.

automatic control actions to maintain reliability in the event of the loss of a single
transmission element or generator. These actions are highly complex, require extensive
coordination, and themselves are prone to failure. Network upgrades reduce congestion
and provide redundant transmission paths, making the system more resilient to the failure
of single components, and therefore tend to reduce the complexity of operating the
transmission system and the need for remedial action schemes. Network upgrades also
involve the addition of modern equipment, which can provide transmission operators with
greater visibility and control, as well as a reduced failure rate.

11. Weaver acknowledges that nationally in 2020, NERC penalties for all
violations of standards, including reliability and cybersecurity, totaled only $2.5 million. 7
The NERC enforcement database reveals that a large share of these violations were not of
transmission-related standards, but rather standards that apply to generation and other
parts of the electric system. 8

12. Most NERC requirements apply to transmission system control room
operators, and the required activities must be conducted regardless of the size of the
transmission system. PJM itself has explained that NERC audit costs are fixed and do not
scale with the size of the system. 9 Moreover, as PJM notes, many of the NERC
compliance activities related to transmission are handled by PJM and not the transmission

7 Weaver Affidavit at P 21.
9 PJM, PJM Value Proposition, at 5 (2019) (noting that “[t]he approximate cost for PJM to complete an
audit is $2 million. Because PJM is registered as the transmission operator and is audited by
ReliabilityFirst, NERC and SERC, individual transmission owners do not have to participate in the audits
on their own. The cost for an audit for a transmission owner would vary but could total more than $2
million for one individual transmission owner alone.”), https://www.pjm.com/about-pjm/~imedia/about-
pjm/pjm-value-proposition.ashx.
owners, so the transmission owner does not incur the cost or risk to begin with.\textsuperscript{10} Thus, there is no reason to expect that a marginal expansion of the transmission system from network upgrades will increase a transmission owner’s risk of a violation of the NERC standards that relate to the transmission system. It should also be noted that even a relatively large NERC fine is not material to utilities whose shareholder profits are typically in the hundreds of millions or even billions of dollars per year.

13. Weaver’s claim of increased risk for NERC cybersecurity penalties is similarly specious, given the low level of penalties levied by NERC and the fact that the risk of a violation does not scale with the size of the transmission system. Moreover, most network upgrades are mostly comprised of components like transmission lines, transformers, and other equipment that is not electronically controlled. Any communication and control equipment associated with operating the generator would be owned by, and be the responsibility of, the generator and not the transmission owner.

14. There is no reason to believe that ownership of network upgrades materially increases cybersecurity risk. Transmission owner cybersecurity risk does not generally scale proportionally with the size of the transmission system, in that much of the risk of intrusion, and particularly risk that can affect electricity reliability, is on centralized cyber systems with access to a significant share of the whole system. As a result, most NERC cybersecurity standards focus on cybersecurity for control rooms and computer systems, as well as employee training and cybersecurity processes. These requirements are generally fixed, in that they do not scale with the size of the transmission system. Only

\textsuperscript{10} Id.
CIP-006, which governs physical security at Bulk Electric System Cyber Systems, stands out as an example of risk that could scale with the size of the transmission system. However, even that standard only applies to equipment that sheds load to customers or Protection Systems that are “subject to one or more requirements in a NERC or Regional Reliability Standard,” making it very unlikely that a grid upgrade related to generator interconnection would create a new risk of violating the standard.

C. Environmental Risk

15. Next, Weaver attempts to argue that network upgrades increase the PJM TOs’ risk of environmental liabilities. Weaver points to costs associated with remediation due to construction activities, yet the generator currently pays for the transmission upgrade and thus covers those costs with the PJM TO having oversight. The PJM TOs discuss emissions from equipment, yet the vast majority of transmission equipment, including transmission towers and conductors, do not cause any water emissions that would increase environmental liabilities.

16. Weaver again correctly explains that transformers and other substation equipment can leak. However, the main transformer added to interconnect a new generator, the generator step-up transformer, is owned and maintained by the generator so it would not affect the PJM TOs’ risk. More importantly, as explained at length above, upgrades that involve the replacement of network transformers and switching equipment actually reduce the risk of leaks, not increase it. This is because the failure of this

12 Weaver Affidavit at PP 16–17.
equipment is almost entirely predicted by its age, with leaks typically caused by the age-related failure of rubber gaskets. Accordingly, network upgrades actually reduce the PJM TOs’ environmental risk.

17. Weaver also argues that network upgrades can be built on contaminated soil. Weaver cites a single instance of a switching station built on a contaminated refinery site in Public Service Electric and Gas Company’s (“PSE&G”) territory.\footnote{Weaver Affidavit at \textit{P} 30.} While Weaver does not provide enough information to determine what generator interconnection this resulted from, presumably it was a fossil-fired generator. It is extremely unlikely a wind or solar plant would be sited on or near a refinery or other contaminated land due to their large land requirements and the unnecessary risks involved. Thus, this example has no relevance for the renewable and storage interconnections that the PJM TOs acknowledge will account for the vast majority of generator interconnection upgrades going forward.

18. Regardless, Weaver notes that even in the single cited example, PSE&G has not yet taken control of the site or assumed liability. As with the PJM TOs’ other claimed risks, there is not a credible argument that this cost would be absorbed by the transmission owner, and not (1) the developer, engineering, or construction companies that built the upgrade, (2) an insurance company, or (3) the transmission owner’s ratepayers. Moreover, PSE&G’s SEC filings do not mention the ongoing litigation over control of that site as a material risk.\footnote{Huntoon, \textit{supra} note 3, at PJM TOs’ Nonexistent Risks, n.11.}

19. The PJM TOs also speculate, without support, that “Network Upgrades present unique risks because interconnection customers may exercise the option to build

\footnote{Weaver Affidavit at \textit{P} 30.\\footnote{Huntoon, \textit{supra} note 3, at PJM TOs’ Nonexistent Risks, n.11.}}
and in doing so may choose sites that are more cost effective for interconnection but less desirable for long-term owning and operating of the assets.”  

In reality, generation developers are not going to take the risk of project-killing litigation, permitting, or penalties from building network upgrades on contaminated land. Moreover, the option to build is exercised with a PJM TO’s full knowledge of the Network Upgrades that will be built. Indeed, PJM and the PJM TOs must confirm that the network Upgrade is stand-alone Network Upgrade. Stand-alone Network Upgrades are not the norm, showing that this claimed risk is a red herring.

**D. Weather and Climate Risks**

20. The PJM TOs discuss the legitimate risk of climate change and severe weather affecting the transmission system, but never present an argument why regulators would deny full recovery of such costs from ratepayers. The PJM TOs focus on the risk of customer outages. However, analysis of U.S. Department of Energy data reveals that over 90% of customer outage minutes are caused by failures on the lower-voltage distribution system, and thus are not caused by the transmission system including network upgrades. Even for customer outages originating from the transmission system, failures of generator interconnection upgrades are unlikely to be a causal factor. Most new interconnections are for renewable generators, which are typically electrically distant from load, relatively small, and accredited with relatively low capacity value, so the loss of

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15 PJM TOs’ Filing at 15.
16 Weaver Affidavit at PP 31–34.
17 *Id.*
transmission facilities built to interconnect these resources is unlikely to result in customer outages.

21. More importantly, as with the other risk categories, network upgrades reduce the risk of outages. As the Edison Electric Institute recently noted, “The energy grid’s value often goes unrecognized because of its amazing reliability and its contribution to resilience. . . . Transmission serves such a vital role because it provides optionality, like a robust system of highways for transportation.”\textsuperscript{19} The expanded transmission capacity, reduced congestion, modernized equipment, and network redundancy provided by network upgrades are likely to reduce customer outages, rather than increase them. As discussed earlier, the failure rate for many transmission components, like transformers and switches, increases dramatically with age. As a result, the equipment replacements and upgrades paid for by generators through network upgrades are likely to reduce reliability risks, rather than increase them.

22. In recent grid resilience proceedings at FERC, representatives of the nation’s Regional Transmission Organizations and NERC unanimously agreed that transmission expansion improves electric reliability and resilience.\textsuperscript{20} Researchers have also modeled theoretical power systems and demonstrated that strengthening the grid by adding network paths significantly increases the electric system’s overall resilience and


prevents weather-related power outages by providing greater redundancy.\(^{21}\) As another example, Kansas utility Westar has reported that recent transmission expansion has been associated with a 40% reduction in transmission-related customer outages.\(^{22}\)

### E. Outage Coordination Risks

23. Finally, Weaver argues that network upgrades increase the complexity of outage coordination.\(^{23}\) As explained in the previous sections, network upgrades reduce congestion and provide redundant transmission paths, making the system more resilient to the failure of single components and therefore tending to reduce the complexity of operating the transmission system, both during normal conditions and outage conditions.

24. Moreover, as Weaver notes, replacing a failed transformer typically takes many weeks, which presents an outage coordination challenge. As explained above, network upgrades reduce the risk of transformer failure by replacing existing transformers with new transformers, which thus reduces the risk of such unplanned outages and the need to coordinate around them.

### F. Financial Risks

25. At page 16 of their affidavit, PJM TOs’ witnesses David Hunger and Seabron Adamson walk through a hypothetical example of the impact of network upgrades on utility finance. While the hypothetical is purely conceptual and therefore does not lend real-world support to their case, it does illustrate a major flaw in their reasoning. In their hypothetical example, doubling the size of the transmission system doubles the risk of

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\(^{23}\) Weaver Affidavit at PP 35–36.
uncompensated losses, as they assume that “the scope for any losses is proportional to the total transmission assets in service.” 24 However, the PJM TOs have not demonstrated that the risk of uncompensated costs is proportional to the size of the transmission system.

26. As demonstrated at length in the preceding sections, the net incremental risk of uncompensated costs associated with network upgrades are likely negative, as modernizing and strengthening transmission through upgrades reduces the risk of failure and makes the system more resilient to all of the categories of risk claimed by the PJM TOs. At minimum, there is no reason to think that risks of uncompensated costs scale proportionally with the size of the transmission system. Operating the transmission system is associated with large economies of scale, and most risks are fixed and do not vary with the size of the transmission system. For example, a transmission owner needs the same transmission control center, NERC compliance system, and cybersecurity policy regardless of the size of their system, and the risk of a deficiency in those areas does not scale.

27. Relatedly, the PJM TOs claim that due to network upgrades, “a transmission owner also invests in employee and management time, which have opportunity costs for the transmission owners.” 25 However, these costs are fully compensated through operation and maintenance (“O&M”) pass-through rates. If anything, the staff O&M training and experience paid for by ratepayers would reduce costs for the utility’s other operations, and further reduce costs by helping realize

24 PJM TOs’ Filing, Attach. D, Aff. of David Hunger and Seabron Adamson of Charles River Assoc., at 16 (June 30, 2021) (“Hunger and Adamson Affidavit”).
25 PJM TOs’ Filing at 16.
Affidavit of Michael S. Goggin  
ER21-2282-000

economies of scale from a larger supply of employees, owned construction equipment, spare equipment inventories, etc.

28. Moreover, it is telling that the PJM TOs can only offer a hypothetical, and not a real-world example, of a transmission owner incurring uncompensated costs or risks from ownership of network upgrades. The PJM TOs have not provided an actual real-world example of uncompensated costs, or citation to a single instance in which a state regulator disallowed recovery. This is unsurprising because state regulators almost never disallow recovery of transmission O&M costs because they are widely understood to be a prudently incurred cost. For such costs to be disallowed, the state regulator would presumably have to find severe malfeasance on the part of the utility. Even in that situation, the utility action resulting in the disallowance would likely be a systemic problem across most, if not all, of its transmission fleet, making the incremental impact of any disallowed network upgrades a small share of the utility’s total costs.

29. I reviewed the most recent SEC filings for American Electric Power (“AEP”), Pennsylvania Power and Light, FirstEnergy, Rockland, ITC Transmission, Dominion, DPL Energy Resources, Inc., PSE&G, UGI Development Company, General Electric, Duke, NextEra, and Exelon. I found no mention of regulatory risk related to the recovery of costs from ownership of generator interconnection upgrades. Moreover, I found no discussion of (1) operational and safety risks, (2) reliability and cybersecurity compliance risks, (3) environmental risks, (4) weather and climate risks, (5) outage

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26 Some of the SEC filings do discuss regulatory risk related to the recovery of other types of transmission investments that are currently recovered in rates, such as potential changes to the approved rate of return on equity, but they do not discuss any risks related to the ownership of network upgrades.
coordination risks, or (6) financial risks associated with network upgrades—the six categories of risk the PJM TOs claim are not compensated. SEC rules require that all material risks be disclosed to investors in publicly-owned companies. Risks related to generator upgrades would have been discussed in the SEC filings if they were material.

30. While risks of network upgrades are not discussed, the PJM TOs’ SEC filings do discuss the financial benefits associated with rate-based transmission investments driven by the growth of renewable energy. The PJM TOs’ disclosures to investors about the financial benefits of transmission expansion driven by renewable energy growth contrast with the story they are telling FERC in this docket about the risks associated with Network Upgrades for renewable generator interconnection.

31. For example, AEP’s SEC filing states that, “A significant portion of AEP’s earnings is derived from transmission investments and activities. FERC policy currently favors the expansion and updating of the transmission infrastructure within its jurisdiction. If the FERC were to adopt a different policy, if states were to limit or restrict such policies, or if transmission needs do not continue or develop as projected, AEP’s strategy of investing in transmission could be impacted.” Earlier, the filing notes “AEP has committed significant capital investments to modernize the electric grid and integrate these new resources. Transmission assets of the AEP System interconnect approximately 16,300 MWs of renewable energy resources. AEP’s transmission development initiatives are designed to facilitate the interconnection of additional renewable energy resources.”

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29 Id. at 12.
32. As another example, Dominion’s filing states that “Virginia Power’s growth capital plan includes spending approximately $24 billion from 2021 through 2025 to upgrade or add new transmission lines, distribution lines, substations, and other facilities, as well as maintain existing and construct new generation capacity to meet its renewable generation targets and growing electricity demand within its service territory in order to maintain reliability and regulatory compliance.”

33. As indicated in Attachment A of the joint protest, 2021–2019 Credit Ratings (As Available) of the Parent and Affiliate Companies for Voting Members of the PJM Transmission Owners as Reported by Fitch and S&P, the PJM TOs have very high credit ratings, and these ratings have remained consistently high in recent years. As noted in the joint protest, PJM TOs have received authorization from FERC to issue around $20 billion in securities since 2019. This undermines the PJM TOs’ claim that owning network upgrades poses enterprise risk that will undermine their ability to raise capital.

34. The PJM TOs never attempt to quantify the impact of the risks they claim relate to ownership of network upgrades. As this claim is essential to their case, the PJM TOs have not met their burden of proof. The most likely explanation for why they were not able to provide that evidence is that there is no incremental risk associated with owning these network upgrades, or alternatively because the upgrades actually reduce the risks faced by the PJM TOs.

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31 Hunger and Adamson Affidavit at 15–17.
35. Not only do the PJM TOs fail to quantify the claimed risks, they also fail to provide a single real-world example that illustrates an incremental risk associated with ownership of network upgrades. As noted above, none of their examples identifies an unrecovered cost or risk that increases with expansion of the transmission system, presumably because they were unable to find any such examples. As a result, the PJM TOs have not met the burden of proof to establish a need for their proposed changes, and certainly not one that is sufficient to justify a policy change that would impose significant costs on ratepayers and interconnecting generators.

III. **Even if there were any incremental costs or risks associated with network upgrades, they would already be compensated through the ratemaking processes**

36. Utilities are typically financed with a mix of approximately half debt and half equity. Interest costs for utility debt is typically fully recovered through state commission-approved rates. As a result, if a utility’s interest rate increases because lenders or credit rating agencies perceive it to be riskier, that cost is recovered from ratepayers and not borne by the utility.

37. For the equity half, regulators approve a regulatory rate of return on equity that is also based on the actual rate of return set by market conditions, so investors’ perceptions of risk are also accounted for in the rate of return a utility earns on equity. If risks did increase, investors would demand a higher rate of return to make the risk/reward payoff high enough for them to continue investing, likely achieved by some of them investing their money elsewhere, reducing the share price until the return on equity increased. Thus, even if the uncompensated risks associated with ownership of network
upgrades claimed by the PJM TOs were real, the PJM TOs would also have to prove that investors and lenders were not accounting for such risks.

38. However, a primary point of the PJM TOs’ filing is that investors and lenders account for the risks they claim are associated with network upgrades. For example, at page 17 in their affidavit, Hunger and Adamson explain that “future rate base assets will be burdened with uncompensated risks associated with the growing number of Network Upgrades. Investors will reasonably expect that these risks will fall on shareholders and thus impact their returns.”32 They continue, “But in the future, investors will expect higher risks on returns on the rate base, as these rate base assets are absorbing risks associated with all transmission assets, both rate base and non-rate base. Logically, investors will require higher returns in the future if risks are perceived to be higher.”33 Therefore, based on the PJM TOs’ own argument, any incremental risk the PJM TOs face would be recovered by earning a higher return on equity and recovering higher interest payments in their state commission-approved rates. Thus, even if the PJM TOs were correct that network upgrades increase risks, such risks would be properly, and in many cases automatically, addressed by standard state ratemaking processes.

IV. **PJM TOs’ projections for network upgrade costs are unreasonable**

39. The PJM TOs claim generators in the PJM interconnection queue will drive $1.13 billion in network upgrade costs, based on the assumption that 23% of resources in the queue will proceed with interconnection and be built.34 This assumption is not

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32 *Id.* at 17.
33 *Id.*
34 PJM TOs’ Filing at 8, n.27.
supported by PJM data, which shows a much lower queue success rate.\textsuperscript{35} As Hunger and Adamson explain on page 14, 23% is the success rate for all projects that have fully moved through the queue to date. This inflates the number because it includes projects that entered the queue as far back as the 1990s, when the queue success rate was much higher. 23% is also the success rate of projects, not the capacity associated with those projects, which also causes the estimated success rate to be too high because smaller projects tend to have a higher success rate. Hunger and Adamson note that the success rate to date, when weighted by capacity injection rights,\textsuperscript{36} is 15%.

40. Even the 15% figure overstates the success rate for nameplate capacity because the ratio of capacity injection right MW per MW of nameplate capacity for wind, and to a lesser extent solar resources, is low relative to conventional resources that have a higher capacity value and higher queue success rate. However, the PJM TOs incorrectly multiply the 23% project success rate by the nameplate capacity in the interconnection queue, which causes them to greatly overstate the nameplate capacity that will successfully interconnect and overestimate the future cost of network upgrades at $1.13 billion.\textsuperscript{37} The PJM market monitor notes that the historical success rate for renewable


\textsuperscript{36} The capacity injection right of a resource is based on its contribution to meeting peak load. As explained below, the capacity injection rights of wind and solar resources are typically only a fraction of their nameplate capacity because they are often not fully available during times of peak load. Hunger and Adamson Affidavit at 14.

\textsuperscript{37} PJM TOs’ Filing at 8, n.27.
resources is 12.7% on a nameplate capacity basis, but the figure is likely to be even lower than this going forward.

41. Hunger and Adamson claim that the queue success rate has increased recently, but PJM’s interconnection queue shows the opposite trend, and a much lower nameplate capacity success rate for renewable and storage resources. Specifically, only 3.4% of renewable and storage nameplate capacity that entered the queue in 2017 are under construction or have been at least partially placed in service (735 MW nameplate capacity out of 21,346 MW nameplate capacity that entered the queue). For renewable and storage projects that entered the queue in 2018, the success rate to date drops further to 1.2% (602 MW/49,414 MW), and even further to 0.27% for 2019 projects (193 MW/70,838 MW). While some of the projects that entered the queue in those years and remain in the queue may still become operational, the majority of renewable capacity that entered the queue in 2017 and 2018 has already withdrawn.

42. Hunger and Adamson focus on the growing size of the queue backlog, but this is mostly a byproduct of the declining queue success rate. Facing lengthy queue study backlogs, uncertain study outcomes, and stiff competition for a declining number of feasible interconnection points, many generation developers have rationally responded by submitting more speculative interconnection requests, including submitting multiple potential interconnection points for individual projects. This in turn drives more

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40 *Id.*
reshuffling of the queue as projects drop out, further increasing queue backlogs and the uncertainty about study results, in turn driving even more queue dropouts in a vicious feedback cycle. If the changes proposed by PJM TOs are adopted, the queue success rate will drop even further, as interconnection costs for generators will increase as discussed below.

43. Hunger and Adamson’s assumed 23% success rate is simply out of step with reality. PJM TOs note that there are currently over 100 GW of wind and solar nameplate capacity in the queue,\(^ {41}\) so a 23% success rate implies the addition of over 23 GW of wind and solar in the near term. However, PJM has added less than 1 GW of new renewable capacity annually on average over the last decade, including in recent years.\(^ {42}\) Hunger and Adamson’s claim that PJM’s generation mix will fully decarbonize by 2035, requiring 183 GW of new renewable resources,\(^ {43}\) is similarly out of step with the rate at which renewable resources are currently interconnecting. Achieving such a drastic change in the generation mix will almost certainly require most new transmission to be planned and paid for through a regional transmission planning process, in which transmission owners can invest in and earn a rate of return on transmission, and not the current interconnection process in which generators pay for upgrades. In sum, all available data indicate that Hunger and Adamson’s projections for the interconnection of new renewable resources are many times too high.

\(^{41}\) PJM TOs’ Filing at 7.


\(^{43}\) Hunger and Adamson Affidavit at 14–15.
44. Hunger and Adamson next point to federal and state renewable and emission goals as a driver of new renewable interconnection. However, most of the proposed federal renewable and emissions targets Hunger and Adamson list on pages 10–11, like fully decarbonizing the power system by 2035, are aspirational goals, and not legislation or regulations that would have the force of law. The only proposed federal law in their list is a potential extension of the existing tax credits for wind and solar. As an extension and possible revision of existing policy, this is unlikely to drastically change the outlook for wind and solar that exists under current federal policy.

45. Some of the state renewable and emission targets Hunger and Adamson list on page 11 are also only goals, not legally binding policies. Many state policies also contain cost caps or other provisions that void or reduce the requirements if compliance costs exceed a relatively low level.\footnote{Galen Barbose, \textit{U.S. Renewables Portfolio Standards, 2021 Status Update: Early Release}, Lawrence Berkeley Nat’l Lab’y, at 42 (Feb. 2021), \url{https://eta-publications.lbl.gov/sites/default/files/rps_status_update-2021_early_release.pdf}.}

46. Moreover, to date a large share of PJM state renewable portfolio standard (“RPS”) demand has been met by out-of-region resources that are delivered to strong points on the edge of the PJM system, and thus are unlikely to trigger large network upgrades within the PJM system. This trend is likely to continue with the completion of the Midcontinent Independent System Operator (“MISO”) Multi Value Projects that enable the delivery of additional MISO wind to PJM, as well as proposed transmission additions including Soo Green, Grain Belt Express, and other lines.\footnote{MISO, \textit{Regionally Cost Allocated Project Reporting Analysis 2011 MVP Portfolio Analysis Report} (Jan. 2021), \url{https://cdn.misoenergy.org/MVP%20Dashboard%20Q4%20202117055.pdf}.} In addition, biomass and other renewable facilities that are not as location-constrained as wind and solar
resources, and therefore are less likely to trigger significant grid upgrades, have historically accounted for a large share of RPS compliance. Hunger and Adamson also warn about costs for interconnecting battery resources, but batteries are highly modular so they can be deployed at optimal points on the grid, and are highly flexible. So, when deployed near new wind or solar resources they tend to reduce interconnection costs, not increase them.

47. Even if the PJM TOs were correct that the cost of future network upgrades is $1.13 billion, based on the inflated 23% queue success rate, this would be a trivial share of the total assets of PJM TOs. The PJM TOs claim that if $1.565 billion in historical and $1.13 billion in future network upgrades are summed, that would comprise about 4% of PJM TOs’ current combined transmission assets. However, a better metric of enterprise risk is the share of network upgrades to the total enterprise assets of the PJM TOs. For example, Commonwealth Edison’s transmission plant is only 19.2% of its total assets, mostly because distribution assets are so much larger than transmission assets. Even with the inflated claim that network upgrades are 4% of total transmission assets, that means that in the case of Commonwealth Edison, network upgrades would be less than 1% of total assets (19.2% times 4%). The cost of future network upgrades is less than half of that, as most of the total upgrade costs included in the 4% figure are historical. Even if ownership of network upgrades did increase and not decrease risks to TOs, the impact on

46 Hunger and Adamson Affidavit at 12.
47 PJM TOs’ Filing at 18.
49 Huntoon, supra note 3.
total enterprise risk would be immaterial. This would explain why ownership of network upgrades is not disclosed as a material risk in any of the PJM TOs’ SEC filings.

V. The self-funding of upgrades will undermine the interconnection of new resources, to the detriment of PJM ratepayers

48. If the PJM TOs’ proposal is adopted, the cost of interconnecting generators will increase, to the detriment of ratepayers. The generation developer will continue to pay for the upgrades, as they do today. On top of that they will also pay the transmission owner a rate of return over time. This increased cost of the transmission upgrades will be rolled into the cost of the generation project, resulting in a higher Power Purchase Agreement (“PPA”) price that will flow to utility ratepayers as a higher cost of energy.

49. In addition, self-funding adds risk stemming from uncertainty about the future regulated cost of capital for the utility. The rate of return the generation developer pays to the transmission owner will vary over time depending on the utility’s regulated cost of capital. This risk is not hedged or compensated by the fixed PPA price, so the risk translates into a higher cost for investors in the generation project that similarly flows through to ratepayers as a higher cost of energy.

50. For renewable projects, these higher costs and risks translate into higher costs for ratepayers through two mechanisms. First, as explained above, the higher cost flows directly through to ratepayers. In addition, the higher risk and cost of renewable interconnection deters renewable project development, reducing the supply of renewable energy and increasing the cost to ratepayers of state RPS compliance. PJM state RPSs are satisfied by load serving entities acquiring renewable energy credits (“RECs”). By reducing the supply of RECs while the demand stays high, self-funding increases the price of all RECs sold in the market. This cost also directly flows through to ratepayers.
Affidavit of Michael S. Goggin  
ER21-2282-000  

I declare under penalty of perjury that, to the best of my knowledge, information, or belief, the foregoing is true and correct.


Michael Goggin  
Vice President, Grid Strategies, LLC
ATTACHMENT C

Declaration of Jennifer Ayers-Brasher on Behalf of RWE Renewables Americas, LLC (July 28, 2021)
I, Jennifer Ayers-Brasher, do hereby declare as follows:

1. I have personal knowledge of the information set forth herein and, if called upon as a witness, am competent to testify hereto.

2. My name is Jennifer Ayers-Brasher, and I am the Senior Director, Transmission and Interconnection, for RWE Renewables Americas, LLC (“RWERA”). I have been employed by RWERA and its predecessor company since 2008 and have served in my current position since 2014. I have been in the renewable generation industry since 2007 and prior to that I worked at PPL Utilities from 2000-2007. I am a registered Professional Engineer in PA and graduated from Colorado School of Mines in 2000 (BS Engineering, Electrical) and Drexel University 2005 (MS Engineering Management).

3. The purpose of this Declaration is to briefly describe RWERA’s experience and perspective related to the issues raised by the tariff revisions proposed in the above-captioned docket. I am providing this Declaration in support of the Protest of the American Clean Power Association, of which RWERA is a member.

4. RWERA is a wholly-owned subsidiary of RWE AG, a global energy headquartered in Germany. RWERA develops, owns and operates electric generation and storage resources in nine states with a combined nameplate capacity of more than 5,000 MW.

5. My responsibilities include overseeing RWERA’s generation project interconnection activities from early stage development through commercial operation. My work for RWERA is throughout the United States, both in Independent System Operator / Regional Transmission Organization (“RTO/ISO”) regions and in transmission queues administered by transmission owners outside of RTO/ISOs. I have participated in the development of numerous renewable generation projects with varying degrees of interconnection costs and construction obligations. My direct
reports and I are active on behalf of RWERA in stakeholder processes nationwide, and regularly advocate for policy initiatives and process improvements to improve the equity and efficiency of generator interconnection.

6. RWERA, through its subsidiaries, is a market participant in the markets administered by the PJM Interconnection LLC (“PJM”) and owns and operates more than 800MW of nameplate generation capacity within PJM. RWE is currently engaged in the development of numerous renewable generation facilities—including wind, solar and battery storage—within the PJM footprint.

7. Like other independent generation developers, RWERA engages in a protracted and complex interconnection process for each of its development projects, and incurs significant costs to interconnect and integrate our projects with the PJM system. Interconnection costs are a material determinant of whether a prospective generation project will be economically viable and will ever reach construction and commercial operation.

8. PJM’s proposed tariff revisions which initiated the above-referenced docket relate to self-funding transmission network upgrades, which are a significant contributor to the capital costs of most generation projects. An election of self-funding can significantly increase the projected costs that RWERA calculated when it first proposed to develop a particular generation project and entered PJM’s interconnection study process, to the point of making the project no longer economically viable.

9. RWERA’s experience, particularly with projects developed in the interconnection queue administered by the Midcontinent Independent System Operator Inc. (“MISO”), is that self-funding of network upgrades significantly increases project costs despite providing no additional benefits to the transmission system. In all cases, the high rate of return charged by a Transmission Owner is out-of-market, meaning that it exceeds a competitive developer’s cost to finance and construct exactly the same upgrades. The total costs for network upgrades necessary to interconnect a typical generation project approximately double as a result of Transmission Owner self-funding being elected.

10. RWERA is developing two generators in PJM which have executed Interconnection Service Agreements: Scioto Ridge Wind Farm (Queue Position U2-072) is directly incurring interconnection costs of $13,317,500, and Willowbrook Solar (Queue Position AC1-089) is directly incurring interconnection costs of $4,000,000. Based
on my experience, the election of self-funding in either of these projects would have materially increased those costs.

11. RWERA acknowledges that there may be some small incremental operations and maintenance ("O&M") costs for discrete facilities which are completely new to the system but owned by the Transmission Owner. However, network upgrades necessary to interconnect a generator are often merely improvements to the existing networked system and not discrete new facilities. Upgrading existing facilities does not increase the costs to the Transmission Owner when the engineering, procurement and construction costs are funded by the project developers; in fact, Transmission Owners typically save expense by deferring O&M costs and realize significant network operational benefits from new equipment funded by generators.

12. RWERA is developing numerous early to mid-stage projects active in the PJM interconnection queue which have not yet executed Interconnection Service Agreements, and therefore have upgrades which are not yet finalized by the technical study process. For each of those projects, self-funding would likely significantly increase the assessed interconnection costs, and therefore strike a fatal blow to one or more of the projects.

Verification of Jennifer Ayers-Brasher

Pursuant to 18 C.F.R. § 385.2005(b)(3) (2018), I verify under penalty of perjury that the foregoing affidavit is true and correct to the best of my knowledge, information and belief.

[Signature]

Jennifer Ayers-Brasher
Sr. Director, Transmission and Interconnection
RWE Renewables Americas, LLC

Dated: July 28, 2021
ATTACHMENT D
Declaration of Kate O’Hair
I, Kate O’Hair, do hereby declare as follows:

1. I have personal knowledge of the information set forth herein and, if called upon as a witness, am competent to testify hereto.

2. I am the Vice President, Development, US North Central, Grid Scale Power of EDF Renewables North America, which is a wholly owned subsidiary of EDF Renewables, Inc. (“EDFR”) and have served in that lead development role since 2002. EDFR develops, owns and operates renewable generation throughout the United States.

3. In my role as Vice President of Development, I am responsible for the development activities in the PJM Interconnection, L.L.C. (“PJM”) and Midcontinent Independent System Operator, Inc. (“MISO”) regions on behalf of EDFR. In this role, I am familiar with the policies to pay for network upgrade costs required to obtain interconnection service in the PJM and MISO regions.

4. EDFR has experience with unilateral Transmission Owner Funding in MISO and that funding mechanism has proven to be costly and harmful to EDFR. From EDFR’s experience, total payments over a 20 year period are easily exceeding twice the “sticker price” of the network upgrades, and with an impact of over 30% on a net present value (“NPV”) basis. With the majority of larger transmission owners in MISO now electing Transmission Owner Funding, the effective cost of all anticipated network upgrades allocated to generation developers in MISO has increased exponentially.

5. EDFR undertakes extensive research before a project enters the MISO queue and assesses likely network upgrade costs. That assessment is used to make decisions about whether to enter the queue, whether to sink non-refundable deposits for studies, and whether to put Milestone payments at-risk (now beginning with the start of studies). To the extent network upgrade costs from studies are in line with expectations, projects proceed. However, when a MISO transmission owner unilaterally chooses to elect Transmission Owner Funding, the costs for the EDFR project increase significantly. As noted, when that occurs, the expected economics of a project change dramatically. This has put EDFR in a difficult position because, to the extent EDFR has made arrangements either to sell the project to a third party or to operate the project and sell power under a power purchase agreement (“PPA”), EDFR must consider how to address this additional cost. With the NPV impact of Transmission
Owner Funding, it can be enough of a material risk to contribute to a decision to cancel a project.

6. MISO uses a Facilities Service Agreement (“FSA”) that allows the cost to change per year based on the transmission owner’s current carrying costs. This too has directly impacted the development of generation in MISO. EDFR cannot know the true cost impact because of the annual rate variability. A fixed rate would help, but that was disallowed by the Commission, instead leaving it to the discretion of the MISO transmission owner whether a fixed rate will apply. As noted, EDFR sells power under PPAs. To account for this unknown FSA cost variability, EDFR has had to weigh whether to increase the price under a PPA and by how much. This can be a difficult decision. On one hand, if the variability is not included in the PPA rate and the annual FSA rate increases, EDFR must bear the cost increase and reduce expected project profitability. On the other hand, EDFR competes in market-based regime. If EDFR raises its PPA rate to account for the cost variability, it might lose a potential PPA-based project. EDFR has had difficulty navigating this variability, all caused by the uncertainty of pricing under Transmission Owner Funding in MISO.

7. The FSA has also added another layer of costs to EDFR projects. The MISO pro forma FSA requires EDFR to post security covering the full amount of payments due under the FSA. Thus, in the first year of the FSA, EDFR must post security covering 20 years of payments. These are not just the cost of the network upgrades. These are the costs of the network upgrades plus amounts the transmission owner has identified for its carrying costs, that is, a rate of return on the cost of the network upgrades. The amount of security will decrease each year, such as in the second year when only 19 more years remain under the FSA. However, the requirement to post security is another cost that EDFR must navigate when deciding whether to proceed with the development of a project and if so, how to address the PPA price. There is a two-fold cost to EDFR to post security. One, EDFR must maintain the security, such as a letter of credit with a financial institution. Financing institutions charge a fee for a letter of credit. This is a fee that EDFR must pay every year. By way of example, if EDFR must post security of $20 million, on average, the fee will be 1 to 2 million dollars over the term of the FSA. That is an additional $1-2 million in cost to EDFR and the project. Two, a letter of credit tied up for 20 years directly impacts EDFR’s ability to develop other clean energy resources. As EDFR must post a letter of credit for project after project in MISO, the extent of EDFR exposure begins to mount with fee upon fee for each required letter of credit, along with each outstanding letter of credit, and it begins to impact the calculus for EDFR to obtain debt to finance other projects. All of this stems from Transmission Owner Funding and the FSA in MISO.

8. In sum, Transmission Owner Funding in MISO has had a tremendous and deleterious impact on EDFR.

9. In the docket here, PJM transmission owners seek to replicate what has been introduced in MISO.
10. EDFR has successfully developed a significant amount of clean energy projects in the PJM region and is committed to developing more projects and resources to help our customers reach their clean energy goals. EDFR has one of the largest solar generation development pipelines in PJM with several GWs in the PJM queue under development or co-development by PJM. EDFR is concerned about the impact to its business model in PJM from Transmission Owner Funding. EDFR will face increased costs for network upgrades. EDFR will be required to enter into a FSA, provide security to backstop 20 years of payments that include a rate of return and carry fees to maintain that security. Further, EDFR will have to carry the security, security fees and 20 years of payments on its books. These are significant cost increases that EDFR will have to navigate.

11. Notably, in return for these costs increases, EDFR will not receive any increased benefit in terms of any change in interconnection service. The costs will simply increase. EDFR is going to have to assess how to recoup these costs. The likely vehicle is in an increased rate under a PPA contract that will be passed to consumers in PJM. EDFR suspects that this same increased costs in PPA rates will be passed on from all generation developers in PJM to consumers.

12. PJM transmission owners’ proposal to apply Transmission Owner Funding will cause substantial harm to EDFR projects in the future if the proposal is approved. Transmission Owner Funding will bring dramatic and unexpected increased costs to EDFR that could render future projects uneconomic. Based on the MISO experience, EDFR expects that the proposal to apply Transmission Owner Funding will be causing significant uncertainty and threatens to render the millions in dollars that have been spent to date to be for naught.

I declare under penalty of perjury that, to the best of my knowledge, information, or belief, the foregoing is true and correct.

Executed on July 27, 2021

Kate O’Hair
Vice President, Development,
US North Central, Grid Scale Power
EDF Renewables North America
CERTIFICATE OF SERVICE

I hereby certify that the foregoing has been served in accordance with 18 C.F.R. § 385.2010 upon each party designated on the official service lists in these proceedings listed above, by email.


/s/ Daniel Franz
Daniel Franz
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