

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Brookfield Energy Marketing LP,)	
Complainant,)	
)	
v.)	Docket No. EL19-34-000
)	
PJM Interconnection, L.L.C.,)	
Respondent.)	

ANSWER OF PJM INTERCONNECTION, L.L.C.

PJM Interconnection, L.L.C. (“PJM”), pursuant to Rule 213 of the Federal Energy Regulatory Commission’s (“Commission”) Rules of Practice and Procedure,¹ submits this Answer to the complaint filed by Brookfield Energy Marketing LP (“Brookfield”) on January 18, 2019.² As shown in this Answer, the Commission should deny the Complaint.

I. EXECUTIVE SUMMARY

Brookfield’s Complaint challenges Tariff³ terms (facially and as applied) that the Commission approved only fifteen months ago. Nothing in the Complaint, however,

¹ 18 C.F.R. § 385.213.

² Complaint and Request for Fast Track Processing of Brookfield Energy Marketing LP, Docket No. EL19-34-000 (Jan. 18, 2019) (“Complaint”).

³ PJM Interconnection L.L.C. Open Access Transmission Tariff (“Tariff”). All capitalized terms that are not otherwise defined herein shall have the same meaning as they are defined in the Tariff, the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C., or the Reliability Assurance Agreement among Load Serving Entities in the PJM Region (“RAA”).

offers convincing evidence for the Commission to comprehensively reverse that recent decision.

Specifically, Brookfield alleges that two key components of PJM’s Commission-approved qualification requirements for external resources wishing to pseudo-tie their resources into the PJM Region, i.e., the external firm transmission deliverability requirement (the “Deliverability Requirement”) and the market-to-market flowgate test (“M2M Flowgate Test”) are unjust and unreasonable, particularly as applied to non-market Balancing Authority Areas (“BAAs”).

As the Commission previously found in Docket No. ER17-1138 (“External Capacity Enhancements Proceeding”), PJM’s Deliverability Requirements and M2M Flowgate Test are just and reasonable and not unduly discriminatory or preferential as applied to Pseudo-Tied resources.⁴ Notwithstanding claims to the contrary in the Complaint, Brookfield’s challenges to the Deliverability Requirements and the M2M Flowgate Test reiterate arguments resolved in the External Capacity Enhancements Proceeding and therefore constitute a collateral attack on the External Capacity Enhancements Order.⁵

⁴ *PJM Interconnection, L.L.C.*, 161 FERC ¶ 61,197, at P 27 (2017) (“External Capacity Enhancements Order”), *reh’g pending*.

⁵ *See* Complaint at 4-6. As discussed in more detail below, the Commission explicitly found in the External Capacity Reforms Order that the M2M Flowgate Test is “an appropriate measure to provide PJM options to relieve or mitigate congestion at market-to-market flowgates . . . as well as other Balancing Authorities and non-market areas.” *Id.* at P 76. Similarly, the Commission held that PJM’s Deliverability Requirements “apply comparable transmission standards to all resources, whether they are internal to PJM or located external in another Balancing Authority Area.” *Id.* at P 115.

Beyond that pervasive infirmity, Brookfield does not meet its burden to show PJM's treatment of the Brookfield Pseudo-Tie is unjust, unreasonable, and unduly discriminatory. Therefore, the Commission should deny the Complaint.

II. BACKGROUND

Brookfield is the power marketer for Brookfield Smoky Mountain Hydropower LLC, which owns and operates the Calderwood and Cheoah hydroelectric generation resources located in eastern Tennessee and western North Carolina.⁶ Calderwood and Cheoah are interconnected to a discrete transmission system owned and operated by Smoky Mountain Transmission System, LLC, ("SMT") an affiliate of Brookfield.⁷ The SMT transmission system is part of the Tennessee Valley Authority ("TVA") BAA and also provides Calderwood and Cheoah with access to the transmission system owned and operated by Duke Energy Carolinas, LLC ("Duke") in the Duke BAA.⁸ Brookfield, SMT, TVA, and PJM are parties to two Pseudo-Tie Agreements, which provide for a portion of the capacity and energy of Calderwood and Cheoah, respectively, to be pseudo-tied into the PJM BAA.⁹

⁶ Complaint at 7.

⁷ *Id.*

⁸ *Id.*

⁹ Pseudo-Tie Agreement with Tennessee Valley Authority, Brookfield Energy Marketing LP, and Smoky Mountain Transmission LLC (Calderwood), Original Service Agreement No. 4791, Waiver of Notice Requirement, Request for Expedited Grant of Waiver and Shortened Comment Period of PJM Interconnection, L.L.C., Docket No. ER17-2500-000 (Sept. 18, 2017) ("Calderwood Pseudo-Tie Agreement"); Pseudo-Tie Agreement with Tennessee Valley Authority, Brookfield Energy Marketing LP, and Smoky Mountain Transmission LLC (Cheoah), Original Service Agreement No. 4790, Waiver of Notice Requirement, Request for Expedited Grant of Waiver and Shortened

On November 17, 2017, the Commission issued the External Capacity Enhancements Order accepting a Federal Power Act (“FPA”) Section 205¹⁰ proposal from PJM¹¹ to revise the Tariff and RAA to establish: (1) new Pseudo-Tie requirements for external Generation Capacity Resources seeking to participate in PJM’s Reliability Pricing Model (“RPM”) Auctions that put external Generation Capacity Resources on comparable footing with internal PJM Generation Capacity Resources; and (2) a five-year transition period, subject to certain operational deliverability requirements, to allow pre-existing pseudo-tied Generation Capacity Resources that previously cleared an RPM Auction to continue to participate in RPM Auctions while preparing to comply with the new Pseudo-Tie requirements at the expiration of the transition period.¹² Except for certain Generation Capacity Resources with long-term commitments to provide service to load-serving entities in PJM, all Prior Capacity Import Limit (“CIL”) Exception External Resources are expected to comply with PJM’s new external Generation Capacity

Comment Period of PJM Interconnection, L.L.C., Docket No. ER17-2499-000 (Sept. 18, 2017) (“Cheoah Pseudo-Tie Agreement”) (collectively, “Pseudo-Tie Agreements”).

¹⁰ 16 U.S.C. § 824d.

¹¹ External Capacity Enhancements Filing of PJM Interconnection, L.L.C, Docket No. ER17-1138-000 (Mar. 9, 2017) (“External Capacity Enhancements Filing”); Response to Deficiency Letter re: Proposed External Capacity Enhancements of PJM Interconnection, L.L.C., Docket No. ER17-1138-001 (Sept. 18, 2017) (“PJM Response to Deficiency Letter”); Compliance Filing Concerning External Capacity Enhancements of PJM Interconnection, L.L.C., Docket No. ER17-1138-002 (Dec. 18, 2017) (“PJM External Capacity Compliance Filing”).

¹² External Capacity Enhancements Order at PP 1-2, 119. The requirements for the transition period are set out in Tariff, Attachment DD, sections 5.5A(c).

Resource requirements after the transition period expires, i.e., as of the June 1, 2022 commencement of the 2022/2023 Delivery Year.¹³

Calderwood and Cheoah thus far have been allowed to participate in the RPM Auctions as Prior CIL Exception External Resources during the transition period. Following PJM's submission of the filing that led to the External Capacity Enhancements Order, Brookfield sought assurances from PJM that the Brookfield Pseudo-Tie would satisfy two of the requirements of the rules proposed in that filing, i.e., the M2M Flowgate Test and the Deliverability Requirement.

In response to Brookfield's requests for an early read on its satisfaction of the M2M Flowgate Test, PJM provided Brookfield in September 2017 with a preliminary analysis of the Brookfield Pseudo-Tie indicating that it appeared it would pass the M2M Flowgate Test. PJM expressly informed Brookfield via email at that time that these results, provided while the subject Tariff proposal was only pending, and not approved, were preliminary and subject to change.

Following issuance of the External Capacity Enhancements Order, PJM applied the M2M Flowgate Test to the Brookfield Pseudo-Tie, and notified Brookfield on March 26, 2018, that Calderwood and Cheoah will not be eligible to participate in RPM Auctions for Delivery Years after the end of the transition period because the Brookfield Pseudo-Tie failed the M2M Flowgate Test. PJM explained that numerous flowgates that would become eligible for coordination because of flows from the Brookfield Pseudo-Tie did not each have at least one PJM-internal generation resource (with a historic economic

¹³ See External Capacity Enhancements Order at P 119; Tariff, Attachment DD, sections 5.5A(b) and (c).

minimum offer lower than its historic economic maximum offer) that has a minimum flow distribution impact of 1.5 percent on that flowgate.

PJM issued a revised M2M Flowgate Test analysis on June 18, 2018 confirming that the Brookfield Pseudo-Tie had failed the M2M Flowgate Test, but identifying a reduced, although still numerous, list of flowgates that failed the test.¹⁴

In addition to evaluating the Brookfield Pseudo-Tie under the M2M Flowgate Test, Brookfield requested that PJM affirm that the Brookfield Pseudo-Tie satisfied the Deliverability Requirements of Tariff, Attachment DD, section 5.5A(b)(ii). PJM evaluated a report prepared by Quanta Technology on behalf of Brookfield and informed Brookfield on March 15, 2018 that the report was insufficient to satisfy the Deliverability Requirements, and further testing would be required. As acknowledged in the Complaint, Brookfield has not pursued further testing to satisfy the Deliverability Requirements.¹⁵

On January 18, 2019, Brookfield filed the Complaint. Brookfield's Complaint alleges that, despite being fully evaluated and approved by the Commission in the External Capacity Enhancements Order, PJM's Deliverability Requirement is unjust and unreasonable.¹⁶ The Complaint also alleges that the M2M Flowgate Test is unjust and unreasonable, and PJM's decision to terminate the Brookfield Pseudo-Tie into the PJM Region based on Brookfield's failure of the M2M Flowgate Test violates the Tariff and is

¹⁴ Affidavit of Timothy Horger (Attachment A) ¶ 16 ("Horger Aff.").

¹⁵ Complaint at 17.

¹⁶ *Id.* at 17-24.

unduly discriminatory and unjust and unreasonable because it constitutes an artificial barrier to capacity imports into PJM.¹⁷

As a remedy, Brookfield requests the Commission: (1) find the M2M Flowgate Test and Deliverability Requirement, as applied by PJM, unjust and unreasonable; (2) grandfather the Brookfield Pseudo-Tie so that it is not subject to the External Capacity Enhancements Order; or, in the alternative, (3) extend the five-year transition period for existing pseudo-tied resources wishing to remain pseudo-tied in PJM for an additional three years to facilitate a redesign of the capacity import rules.¹⁸ As PJM demonstrates below, the M2M Flowgate Test and Deliverability Requirement are just and reasonable, both facially and as applied to Brookfield. The Complaint should therefore be denied.

III. ANSWER

A. **Brookfield Bears the Burden of Showing that PJM's Tariff Terms (As Approved or As Applied) Are Unjust and Unreasonable or Unduly Discriminatory.**

Under FPA, section 206,¹⁹ Brookfield as the complainant bears the burden of proving that the external capacity resource rules adopted by the Commission in the External Capacity Enhancements Order are unjust, unreasonable or unduly discriminatory. Brookfield also bears the burden of proving that PJM's application of its

¹⁷ *Id.* at 27-30.

¹⁸ Complaint at 41.

¹⁹ 16 U.S.C. § 824e.

Tariff to Brookfield is unjust, unreasonable, or unduly discriminatory.²⁰ If Brookfield fails to meet its burden of proof, Brookfield is not entitled to a remedy.²¹

Because Brookfield has failed to demonstrate that the PJM external capacity resource rules (either as stated in the Tariff or as applied) are unjust, unreasonable, or unduly discriminatory, the Commission should deny Brookfield's Complaint.

B. Brookfield Has Not Shown that External Resources that Fail the M2M Flowgate Test Should Be Excused from Satisfying that Test Simply Because the Resource Is Located in a Non-Market Area.

Brookfield argues that the M2M Flowgate Test is unjust and unreasonable to the extent it applies to resources located in areas that do not have market-based congestion management.²² In essence, Brookfield contends that: (1) even if a resource seeking to Pseudo-Tie into PJM and become a PJM Capacity Resource would cause PJM to become responsible for coordinating an external flowgate; and (2) even if PJM has no effective options among PJM internal resources to manage flows on that flowgate, then PJM

²⁰ *Ameren Servs. Co. v. Midwest Indep. Transmission Sys. Operator, Inc.*, 125 FERC ¶ 61,161, at P 9 (2008) (“Complainants carry the burden of proof . . . and therefore must demonstrate, on the basis of substantial evidence, . . . that the rate in effect is unjust and unreasonable.”), *order on reh’g*, 127 FERC ¶ 61,121 (2009), petition for reviews denied sub nom. *Ameren Servs. Co. v. FERC*, 739 Fed. Appx. 646 (D.C. Cir. 2018); *see also Cal. Mun. Utils. Ass’n v. Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,315, at PP 69-72 (2009) (same), *reh’g denied*, 143 FERC ¶ 61,174 (2013); *Nantahala Power & Light Co.*, Opinion No. 139, 19 FERC ¶ 61,152, at 61,276 (same), *reh’g denied*, Opinion No. 139-A, 20 FERC ¶ 61,430, *order on clarification & reh’g denied*, Opinion No. 139-B, 21 FERC ¶ 61,222 (1982).

²¹ *See Cal. Indep. Sys. Operator Corp.*, 111 FERC ¶ 61,337, at P 27 (2005) (stating that current rates “must first be found to be unjust, unreasonable, or unduly discriminatory before alternative proposals are ripe for consideration” (quoting *Cal. Indep. Sys. Operator Corp.*, 106 FERC ¶ 63,026, at P 346 (2004))).

²² Complaint at 28-29.

nonetheless should have to agree to the Pseudo-Tie and commit to the coordination, solely because the external BAA will not impose a market-based congestion charge on PJM for PJM flows on that flowgate.²³ Brookfield's position is patently unreasonable. There is no basis for ignoring or discounting PJM's obligations under coordination agreements simply because the counterparty does not have market-based congestion management. The reasonable focus of the M2M Flowgate Test is whether a Pseudo-Tie will cause PJM to undertake additional coordination obligations that PJM has limited ability to manage with its other resources. Variations in the *remedies* available to another BAA as a result of any resulting ineffective management of the flows on the flowgate provide no basis for compelling PJM to undertake an obligation that it lacks good options to administer.

Brookfield's Calderwood and Cheoah plants are located in, respectively, the TVA BAA and the Duke BAA. PJM and Duke are parties to the Amended and Restated Joint Operating Agreement Among and Between PJM Interconnection, L.L.C., and Duke Energy Progress, Inc. ("PJM-Duke JOA").²⁴ PJM and TVA are parties to a PJM-TVA Joint Reliability Coordination Agreement Among and Between PJM Interconnection, L.L.C., And Tennessee Valley Authority ("PJM-TVA JRCA").²⁵ The PJM-TVA JRCA

²³ Complaint at 28-30.

²⁴ Amended and Restated Joint Operating Agreement Among and Between PJM Interconnection, L.L.C., and Duke Energy Progress, LLC, PJM Interconnection, L.L.C. (Apr. 1, 2018), <https://www.pjm.com/directory/merged-tariffs/progress-joa.pdf>.

²⁵ Joint Responsibility Coordination Agreement Among and Between PJM Interconnection L.L.C., and Tennessee Valley Authority, PJM Interconnection, L.L.C. (Oct. 15, 2014), <https://www.pjm.com/>

incorporates (as Attachment 1) a “Congestion Management Process” document (“CMP”) that is also included (in varying forms) in joint coordination agreements among PJM and other BAAs, and in agreements among non-PJM BAAs. Section 6 of the CMP explains that “Reciprocal Coordination Agreements can be executed on a market-to-market basis, a market-to-non-market basis, and a non-market-to-non-market basis.”²⁶ It makes clear that “the agreement to allocate Flowgate capability is not dependent on an entity operating a centralized energy market [and only] requires that a set of Flowgates be defined upon which coordination shall occur and an agreement to perform such coordination.”²⁷

Indeed, the CMP was developed to address coordination challenges between non-market areas and emerging market areas. The “overview” sections of the CMP describe these challenges, explaining that “regional market expansion has begun to draw attention to this operational disjoint [between non-market and market-based congestion management practices], as the expansion itself exacerbates the negative effects of the incompatibility.”²⁸ The overview lists a number of specific reliability and operational challenges at the market/non-market interface:

</media/documents/agreements/joint-reliability-agreement-jrca-pjm-tva.ashx?la=en>.

²⁶ CMP § 6.

²⁷ *Id.*

²⁸ *Id.* § 1.1.1.

- “[W]hen the market footprint expands significantly, and is co-mingled with non-market Control Areas, . . . the historic approximation of electrically representative flows fails to effectively predict energy flow;”²⁹
- “Impacts on external facilities can vary significantly depending on the dispatch of the resources within the market footprint;”³⁰
- Representative flow “information is effectively lost [to the North American Electricity Reliability Corporation (“NERC”) Interchange Distribution Calculator (“IDC”)] within the expanded footprint, and results in an increase in the level of granularity coarseness, or a ‘loss of granularity;”³¹
- “The processes for accounting for loop flows caused by uses of the transmission system between Control Areas are different under a market environment,” because “the market will not have explicit transmission reservations” and so “a mechanism for accounting for anticipated Market Flows on non-market systems is necessary;”³² and
- “While relief can still be requested using the current [Transmission Loading Relief (“TLR”)] process, both the ability to predict the effectiveness of a curtailment to provide that relief and the general pool of transactions available for curtailment are reduced.”³³

The CMP overview concludes that “[t]he net effect of these changes is that reliability must be managed through different processes than those used before the market region’s expansion.”³⁴ To help meet this need, the CMP establishes “a process that provides more information (finer granularity) to the NERC IDC for the market area;” and

²⁹ *Id.* § 1.1.3.

³⁰ *Id.*

³¹ *Id.*

³² *Id.* § 1.1.4.

³³ *Id.* § 1.1.5.

³⁴ *Id.* § 1.1.5.

helps “ensure that reliability is not adversely affected as markets expand by providing information and relief opportunities previously unavailable to the IDC.”³⁵

Accordingly, as Mr. Horger notes in his affidavit, even though neither TVA nor Duke operates a market in its region, the JRCA still establishes rules and procedures for:

- identifying coordinated flowgates;³⁶
- defining PJM’s, TVA’s, and other parties’ allocations on those flowgates;³⁷
- identifying PJM’s, TVA’s, and other parties’ impacts on those flowgates;³⁸ and
- requiring or recognizing actions by the parties to alleviate flows on those flowgates.³⁹

As Mr. Horger explains, the basic provisions on identifying flowgates, defining rights, and measuring impacts are comparable whether the relevant party is a market or non-market entity; only the actions taken to alleviate flows will differ between market and non-market entities. Notably, the JRCA uses the same five percent threshold used by market areas to identify coordinated flowgates.⁴⁰

³⁵ *Id.* § 1.1.5.

³⁶ Horger Aff. ¶ 2; CMP § 3.2 (“An Operating Entity will conduct sensitivity studies to determine which Flowgates are significantly impacted by the flows of the Operating Entity’s Control Zones A Flowgate passing any one of these studies will be considered a Coordinated Flowgate.”); *see also id.* at Appendix C (Flowgate Determination Process); PJM-Duke JOA § 5.1.

³⁷ Horger Aff. ¶ 2; CMP § 4.1; PJM-Duke JOA § 5.1.

³⁸ Horger Aff. ¶ 2; CMP § 5.1; PJM-Duke JOA § 5.1.

³⁹ Horger Aff. ¶ 2; CMP §§ 5.3-5.5; PJM-Duke JOA §§ 14.1-14.3.

⁴⁰ *See* CMP § 3.2.

Consequently, when PJM agrees to a Pseudo-Tie, and thus includes a generation resource (electrically) in the PJM Region, PJM becomes responsible to TVA or Duke for flow impacts on flowgates in those BAAs resulting from that generator. If, in such a case, PJM has no internal generation with non-trivial (i.e., more than 1.5 percent) impacts on that flowgate, then PJM will (by agreeing to the Pseudo-Tie) take on a new coordination obligation that PJM has no good options to manage, beyond dispatching the pseudo-tied generator itself. Defining such situations is exactly the purpose of the M2M Flowgate Test. Whether the other BAA is a market region or a non-market region, PJM should not have to take on new obligations, that PJM has limited options to manage, to accommodate an external generator's desire to be treated as capacity for PJM loads. PJM does not take on such uncovered obligations for internal resources; the M2M Flowgate Test reasonably ensures that PJM need not take on such obligations for external resources.

The *specific form* of the potential *consequences* if PJM takes on a new flowgate coordination obligation that it cannot effectively manage do not change this analysis. As explained by Mr. Horger, under PJM's agreements with TVA and Duke, "[t]he Native BAA (i.e., TVA) does not have primary responsibility for congestion caused by the pseudo-tied unit; that responsibility falls to the Attaining BAA (i.e., PJM), as the capacity holder, under specific flowgate identification and control requirements in the CMP."⁴¹ Consequently, "PJM must redispatch its market flows on non-market-to-market flowgates during NERC [TLR] procedures."⁴² Moreover, "potential congestion impacts on the

⁴¹ Horger Aff. ¶ 9.

⁴² *Id.*

Duke transmission system [also] must be recognized,” given that “Pseudo-Ties are not required to be tagged under the NERC interchange tagging process, which creates a congestion management gap for non-market entities.”⁴³ Importantly, “[c]ongestion is managed under the NERC TLR process as enhanced by the CMP which requires PJM, as the capacity holder to reduce market flows impacting non-market flowgates created by the Pseudo-Tie.”⁴⁴ Consequently, “[i]f PJM has only the pseudo-tied resource to meaningfully control flows on the flowgate, PJM may not be able to satisfy its NERC IDC relief obligations, which could create compliance risks.”⁴⁵

In addition to the compliance risks, PJM’s agreement to a Pseudo-Tie that establishes obligations PJM has insufficient alternatives to manage “could also raise reliability risks if flow relief is needed on a flowgate but [is] not being provided to the degree needed.”⁴⁶ Undertaking such obligations “could also raise equity issues for any entity or neighboring BAA stepping in to provide additional relief, which could then require PJM to take on additional obligations and commitments to address such

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.* As Mr. Horger explains (Horger Aff. ¶ 8-9), these facts also rebut the claim of Brookfield’s affiants Mr. Johannes Pfeifenberger and Mr. Akarsh Sheilendranath that “PJM does not bear responsibility for the management of congestion on external flowgates in Non-Market BAAs.” Affidavit of Johannes P. Pfeifenberger and Akarsh Sheilendranath (“Pfeifenberger/Sheilandranath Aff.”) at 18: 24-28. The Pfeifenberger/Sheilandranath Aff. is attached to the Complaint as Exhibit A. Contrary to their view, “PJM would face consequences if, by agreeing to a Pseudo-Tie, PJM takes on a flowgate coordination obligation that PJM has no other good options to manage.” Horger Aff. ¶ 8.

⁴⁶ Horger Aff. ¶ 9.

concerns.”⁴⁷ As Mr. Horger sums up, “[t]he M2M Flowgate Test, as neutrally applied to Pseudo-Ties in both market and non-market areas, ensures that PJM is not unduly burdened with coordination obligations it cannot effectively manage.”⁴⁸

Brookfield’s proposal for an M2M Flowgate Test exemption for external generators located in non-market areas also ignores the flow impacts such generators may have on market areas. Given the free-flowing ties between and among PJM and the systems surrounding PJM, flows from an external resource will not be confined to the non-market area in which it is physically located. If a PJM pseudo-tied generator has flow impacts on a flowgate in a market area, such as the Midcontinent Independent System Operator, Inc. (“MISO”), then PJM would be responsible for those flows under the PJM-Duke JOA and CMP with that market area—and any resulting congestion management charges under that JOA.

Stripped to its essence, Brookfield’s argument on this point is that PJM should have to accept a Pseudo-Tie even if it causes PJM to take on a new flowgate coordination obligation, and even if PJM does not have good alternatives for managing flows on those flowgates, so long as the consequences of PJM’s failure to manage those flows are not too bad. But the governing consideration cannot be ranking the adverse consequences if PJM takes on an obligation it cannot effectively meet. As explained above and in the Horger Affidavit, consequences could arise such as compliance, reliability, or equity concerns, even if limited to flowgates located in non-market areas, and will vary from flowgate to flowgate.

⁴⁷ *Id.*

⁴⁸ *Id.*

This discussion simply reaffirms that the better approach is to adopt bright-line tests that protect PJM from having, in the first place, to take on coordination obligations that PJM has limited options to manage successfully. That is exactly what the current effective M2M Flowgate Test does. As the Commission expressly found in the External Capacity Enhancements Order, “the 1.5 percent impact threshold is . . . an appropriate measure to provide PJM options to relieve or mitigate congestion at market-to-market flowgates between PJM and MISO, *as well as . . . non-market areas*, beyond the sole recourse of redispatching a pseudo-tied resource.”⁴⁹

Accordingly, Brookfield has not shown that the M2M Flowgate Test is unjust and unreasonable, either on its face or as applied.

C. Brookfield Does Not Show that the Current Objective, Transparent, Generally Applicable Tests Are Unjust and Unreasonable and Should Be Replaced with Case-by-Case Evaluations of Each External Generator and Its Performance History.

Brookfield argues that its Calderwood and Cheoah plants have a relatively good performance history, including a relatively low outage rate.⁵⁰ Brookfield argues that, based on this unit-specific performance history, PJM should have no reasonable concerns about relying on these plants as Capacity Resources, and therefore should exempt them from the Tariff’s conditions on Pseudo-Tie qualification.⁵¹

The Commission can easily dispose of this argument, which is directly contrary to the approach taken in the External Capacity Enhancements Order. There, the

⁴⁹ External Capacity Enhancements Order at P 76 (emphasis added).

⁵⁰ Complaint at 29-30; Affidavit of Aleksander Mitreski (“Mitreski Aff.”) at 11:1 – 12:6. The Mitreski Aff. is attached to the Complaint as Exhibit B. Pfeifenberger/Sheilandrath Aff. at 10:25 – 12:22.

⁵¹ Complaint at 5, 29.

Commission accepted PJM’s reforms based in part on its explicit finding that “the additional proposed pseudo-tie requirements *would apply equally to all external resources* that wish to pseudo-tie into PJM and . . . *are transparent and codified* within PJM’s Tariff and RAA.”⁵² Indeed, the Commission’s only two changes to PJM’s proposal both required PJM to add the objective qualification standards to the Tariff.⁵³

The outage history of the Calderwood and Cheoah plants therefore does not excuse those plants from compliance with the Pseudo-Tie qualification requirements of the Tariff. Nor does the specific history of those individual units show that the Tariff provisions are unjust and unreasonable. To the contrary, the current Tariff is just and reasonable in applying objective rules, codified in the Tariff, in a non-discriminatory fashion to all external resources. Brookfield’s implicit alternative approach of unit-specific review of all facts and circumstance pertinent to individual external resources, would—by contrast—be unjust and unreasonable, as it lacks clear standards and would be at high risk of leading to inconsistent results among Market Participants requesting Pseudo-Ties.

D. PJM Reasonably Determined that Brookfield’s Calderwood and Cheoah Plants Fail the M2M Flowgate Test.

Brookfield and its affiant, Mr. Mitreski, recount the history of PJM’s evaluation of Brookfield’s Pseudo-Ties to suggest that PJM’s application of the M2M Flowgate Test

⁵² External Capacity Enhancements Order at P 29 (emphasis added). *See also id.* at P 27 n.33 (“PJM’s proposal is intended *to better define the requirements* for becoming a pseudo-tied resource *to promote a level playing field between external and internal resources.*” (emphasis added)).

⁵³ *See id.* PP 62, 79 (requiring PJM to add to the Tariff the 0.065 p.u. Electrical Distance maximum value, and the 1.5 percent internal PJM generation minimum impact threshold).

to Brookfield is unjust and unreasonable.⁵⁴ The facts show otherwise, as Mr. Horger explains in his affidavit. Under the Tariff, a single flowgate failing the M2M Flowgate Test means the Pseudo-Tie fails the M2M Flowgate Test. Here, the Calderwood and Cheoah Pseudo-Ties result in numerous coordinated flowgates that fail the M2M Flowgate Test, leaving no doubt that these two external generators do not qualify as Pseudo-Ties under the Tariff rules.

In simplified terms, the M2M Flowgate Test entails (1) identifying external flowgates that would, as a result of flows from the external generator seeking to pseudo-tie⁵⁵ become eligible for coordination under a coordination agreement between PJM and another BAA; and (2) assessing whether dispatchable resources located in the PJM Region can affect flows by 1.5 percent or more on those identified flowgates. If there are any flowgates that would become eligible for coordination for which there are *no* PJM-internal resources capable of affecting flows on that flowgate by 1.5 percent or more, then the external generator fails the test.⁵⁶ Conversely, if there are no flowgates that would become eligible for coordination as a result of the Pseudo-Tie, or if every flowgate that would become eligible for coordination has at least one PJM-internal generator that can move flows on that flowgate by 1.5 percent or more, then the Pseudo-Tie passes the test.

⁵⁴ Complaint at 13-17; Mitreski Aff. at 3:13 – 4:21. *See also* Pfeifenberger/Sheilendranath Aff. at 15:12 - 16.

⁵⁵ This includes existing pseudo-tied resources like the Calderwood and Cheoah plants, seeking to continue qualifying as Pseudo-Ties after the end of the transition period approved by the External Capacity Enhancements Order.

⁵⁶ Horger Aff. ¶ 10.

As Mr. Horger explains, even before issuance of the External Capacity Enhancements Order, Brookfield requested, and PJM prepared and provided “a *preliminary* analysis of the Brookfield Pseudo-Tie’s potential satisfaction of the proposed M2M Flowgate Test [which] indicated the Brookfield Pseudo-Tie would theoretically pass the M2M Flowgate Test.”⁵⁷

However, after the Commission accepted the M2M Flowgate Test, PJM then “coordinat[ed] with all neighboring [BAAs] to ensure PJM had a complete list of flowgates [which] exceeded that gathered for PJM’s preliminary assessment.”⁵⁸ When PJM applied the M2M Flowgate Test using that more complete list, PJM “found that thirty-eight flowgates made eligible for coordination as a result of flows from the Brookfield Pseudo-Tie each failed the M2M Flowgate Test because there were no internal PJM generation resources with at least a 1.5 percent flow distribution impact on the flowgate.”⁵⁹ PJM provided these results to Brookfield on March 26, 2018.⁶⁰

Mr. Horger explains that after providing those results to Brookfield, PJM made “two changes in the application details of that test which resulted, for the Brookfield Pseudo-Tie, in a lower number of flowgates failing the test, but that did not change the overall result that the Brookfield Pseudo-Tie failed the test.”⁶¹ PJM provided Brookfield

⁵⁷ *Id.* ¶ 13 (emphasis added).

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.* ¶ 14. *See also id.* ¶ 16.

with those updated results in June 2018.⁶² As Mr. Horger explains, these two changes were made consistently for all Pseudo-Ties, and not just for Brookfield.⁶³

As explained by Mr. Horger, PJM had found that one of the four studies prescribed by the CMP (i.e. “Study 4 – Control Area to Control Area”) for identification of coordinated flowgates⁶⁴ was inapplicable for the purpose of the M2M Flowgate Test.⁶⁵ Consequently, PJM “dropped Study 4 from its application of the M2M Flowgate Test for all Pseudo-Ties, and re-conducted any prior M2M Flowgate Tests (including the Brookfield Pseudo-Tie results provided in March 2018) that had used CMP Study 4 to identify affected flowgates.”⁶⁶ Mr. Horger explains that PJM’s second change corrected a detail in PJM’s identification of relevant PJM-internal resources, because the list of Flexible Resources initially used for that purpose did not fully correspond with the approved Tariff standard of internal resources with “a historic economic minimum offer lower than its historic economic maximum offer.”⁶⁷ PJM therefore “changed its list of

⁶² *Id.* at ¶ 16.

⁶³ *Id.* ¶¶ 14, 16.

⁶⁴ As Mr. Horger points out, CMP, section 3.2.1 identifies four sensitivity studies for use in identifying Coordinated Flowgates. Study 1 – the IDC Base Case, is a one-time study inapplicable to the M2M Flowgate Test. Study 2 and Study 3 are offline studies evaluating flow impacts of generator deliveries to Reginal Transmission Organization (“RTO”) load. Study 3 includes transmission outage scenarios developed in consultation with affected operating authorities. Study 4 considers flow impacts from Control Area to Control Area transactions (as opposed to generator to load deliveries). Horger Aff. ¶ 14.

⁶⁵ Horger Aff. ¶ 14.

⁶⁶ *Id.*

⁶⁷ Horger Aff. ¶ 15 (quoting Tariff, Attachment DD, section 5.5A(b)(i)(B)).

internal resources assessed in the test, and redetermined any prior applications (including for the Brookfield Pseudo-Tie), that had relied on the list of Flexible Resources.”⁶⁸

In short, less than three months after PJM’s analysis found the Brookfield Pseudo-Tie failed the M2M Flowgate test, PJM’s updated analysis found the Pseudo-Tie still failed the test.

Contrary to Brookfield,⁶⁹ nothing in this history shows that PJM’s application of the M2M Flowgate Test to the Brookfield Pseudo-Tie was unjust and unreasonable. To the contrary, as Mr. Horger correctly observes, “this experience instead shows PJM’s commitment of applying the M2M Flowgate Test to ensure the test was correctly and reasonably applied to all external generators—not just Brookfield—seeking to sell capacity to the PJM Region.”⁷⁰ As he explains, “PJM will not be oscillating between CMP study methods.”⁷¹ Rather, “PJM’s experience during the first few months of applying the test [simply] found that CMP Study 4 was not applicable;” a conclusion “which PJM has no intent to revisit.”⁷² Moreover, that change “reduced the number of flowgates likely to become coordinated as a result of agreeing to Pseudo-Ties.”⁷³

⁶⁸ Horger Aff. ¶ 15.

⁶⁹ Complaint at 27-30; Pfeifenberger/Sheilendranath Aff. at 15:12-15.

⁷⁰ Horger Aff. ¶ 16.

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.* (emphasis added).

Brookfield’s affiants also argue that the M2M Flowgate Test identifies flowgates impacted by the Pseudo-Tie that may never become coordinated flowgates.⁷⁴ However, as Mr. Horger explains, “PJM is not inventing some new method of identifying coordinated flowgates; it is simply identifying flowgates that have sufficient flows from the Pseudo-Tie to become coordinated flowgates under the express provisions of PJM’s executed JOAs/JRCAs and the CMP.”⁷⁵ PJM cannot avoid or ignore the fact that, “[o]nce PJM agrees to a Pseudo-Tie with those flow impacts, the other [CMP] party . . . has the right to add that flowgate to the list of coordinated flowgates;” at which point, PJM “has no control over whether the other BAA chooses to add that flowgate or not (so long as it meets the agreement’s criteria).”⁷⁶

E. Brookfield Does Not Show that Applying PJM’s Generator-to-Load Deliverability Requirement to External Resources Seeking to Serve as Capacity for PJM Loads Is Unjust and Reasonable or Unduly Discriminatory.

1. The Tariff Reasonably Requires External Resources that Wish to Provide Capacity to PJM Loads to Meet the Same Deliverability Requirement as Internal Capacity Resources.

To qualify as a Pseudo-Tie under the rules approved in 2017, an external resource must show that the firm point-to-point transmission service it secures for delivery of its resource’s output to the PJM border is “evaluated for deliverability from the unit-specific physical location of the resource to PJM load pursuant to a study that is

⁷⁴ Pfiefenberger/Sheilandranath Aff. at 16:23-26.

⁷⁵ Horger Aff. ¶ 17.

⁷⁶ *Id.*

reviewed and approved by PJM in accordance with PJM deliverability criteria to ensure uniformity for internal and external resource deliverability requirements.”⁷⁷

Protestors in the External Capacity Enhancements Proceeding argued that this provision “would impose significant new requirements on external generators wishing to compete in PJM’s capacity market and will likely require significant and costly transmission upgrades in neighboring regions that would be incurred by external generators.”⁷⁸ Brookfield and others argued that it would “create[] barriers to entry for external sellers seeking to participate in PJM’s capacity auctions.”⁷⁹ Answering these objections, PJM argued that the proposal helps “meet the unit-specific standard of a capacity commitment in PJM;” and “help[s] put external resources on more comparable footing with internal resources.”⁸⁰ As PJM pointed out, “no generator has an entitlement to qualify as a Generation Capacity Resource;” and PJM’s proposal “provides reasonable solutions to challenges that can arise when loads in one [BAA] rely on generation physically located in other [BAA] that have different planning, operating, and market rules and practices.”⁸¹

The Commission sided with PJM and approved the proposed Deliverability Requirement, “find[ing] that external resources should serve as comparable substitutes for internal resources and to achieve this, PJM’s pseudo-tie requirements account for the

⁷⁷ Tariff, Attachment DD, section 5.5A(b)(ii).

⁷⁸ External Capacity Enhancements Order at P 26.

⁷⁹ *Id.* at P 22.

⁸⁰ *Id.* at P 25.

⁸¹ *Id.*

deliverability of an external resource to PJM load.”⁸² This consistent requirement of deliverability from generator to load for both internal and external resources remains reasonable, and nothing in Brookfield’s Complaint shows otherwise.

2. Brookfield’s Contention that the Deliverability Requirement Is Contrary to the Commission’s Open Access Policies Is Unpersuasive.

Brookfield argues that the Deliverability Requirement is unjust and unreasonable because the Open Access Transmission Tariffs for the relevant external BAAs characterize firm point-to-point (“PtP”) transmission service as the ability to market sales of “capacity and energy.”⁸³ Similarly, Brookfield contends that the Deliverability Requirement “unilaterally disregard[s] a neighboring BAA’s established planning criteria” in violation of the Commission’s open access rules and policies.⁸⁴ Last, Brookfield claims that “[i]t is unjust and unreasonable as a matter of law for PJM to unilaterally impose its own deliverability study criteria on Firm PtP Service in external, neighboring BAAs who use NERC-approved criteria.”⁸⁵

None of these contentions is persuasive. No neighboring BAA purports to determine PJM’s capacity rules; just as PJM does not purport to determine other RTO’s rules for capacity needed to serve their loads. Nor do neighboring BAAs’ open access transmission tariffs seek to address or dictate PJM’s capacity rules. A single reference to the word “capacity” in the pro forma PtP service schedule (as cited by Brookfield)

⁸² *Id.* at P 28.

⁸³ Complaint at 18, 25.

⁸⁴ Complaint at 18-19.

⁸⁵ *Id.* at 19.

certainly cannot be read as negating all rules developed by an RTO to ensure that all resources paid to provide capacity for the RTO's loads are in fact deliverable to those loads.

Moreover, PJM's deliverability requirement serves the same "comparability" objective as the Commission's open access transmission policies. Those policies were designed, for example, to ensure that independent generators would have "fair access to the transmission wires necessary to reach [their] customers" when competing against the vertically integrated owners of those wires.⁸⁶ To the same end, customers who buy long-term firm PTP transmission service from a transmission provider are entitled to be included in the regional planning process to ensure that they can continue to utilize such service—just as a vertically integrated owner of those lines would include its services and usage in that planning process.⁸⁷ PJM's Deliverability Requirement likewise ensures that generators competing to serve as capacity for PJM loads meet the same generation-to-load deliverability requirement, regardless whether they are located inside or outside the

⁸⁶ *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888-A, 78 FERC ¶ 61,220, 1996–2000 FERC Stats. & Regs., Regs. Preambles ¶ 31,048 at 30,176, *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *reh'g denied*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in part & remanded in part sub nom. Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

⁸⁷ *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 118 FERC ¶ 61,119, *order on reh'g*, Order No. 890-A, 121 FERC ¶ 61,297 (2007), *order on reh'g & clarification*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g & clarification*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

PJM Region. As the Commission recognized in the External Capacity Enhancements Order, PJM’s upstream transmission standards “seek [] to apply comparable transmission standards to all resources, whether they are internal to PJM or located external in another [BAA],” for purposes of participating in the capacity market.⁸⁸

Nor, contrary to Brookfield, is PJM interfering with, countermanding, or frustrating any other BAA’s planning processes or criteria. PJM is only setting the rules for qualifying an external resource to serve as capacity for PJM loads. The only effect is that for the specific transmission service from the pseudo-tied generator to the PJM border, the generation owner is subject to a showing that the service meets PJM’s Deliverability Requirement, in addition to meeting any firm service study criteria of the host BAA. If the host BAA’s criteria already meet or exceed the PJM criteria, then nothing additional is required. In practice, PJM will work with neighboring BAAs to provide cooperation, guidance, and support for any assessment of whether a transmission service meets PJM’s Deliverability Requirement, and of what may be needed to meet that requirement.

At bottom, nothing in the Commission’s open access requirements under Order No. 888 and Order No. 890 affords an external resource a guaranteed right to qualify as capacity serving PJM loads. If an external resource cannot meet requirements comparable to those for an internal resource, then it simply will not qualify as PJM capacity. Such resources can still participate in PJM’s energy and ancillary services markets.

⁸⁸ External Capacity Enhancements Order at P 115.

3. *Brookfield Has Not Shown that the Ongoing Deliverability Requirement Is Unduly Discriminatory.*

Brookfield alleges that PJM's Deliverability Requirement is unduly discriminatory toward external resources because the Deliverability Requirement is ongoing.⁸⁹ However, there is no undue discrimination. First, Brookfield's plants failed at the outset to demonstrate satisfaction of PJM's Deliverability Requirement. As admitted in Mr. Mitreski's affidavit, Brookfield abandoned its efforts to satisfy PJM's Deliverability Requirement after Calderwood and Cheoah failed the M2M Flowgate Test.⁹⁰ Thus, Brookfield presents no live issue of continuing to satisfy the Deliverability Requirement in the future, after initially meeting that test. Second, PJM's Deliverability Requirement for external resources necessarily includes ongoing testing obligations to ensure fair treatment with internal resources. Ongoing testing is necessary to ensure continued deliverability, as topology changes may occur or external BAA planning requirements may impact an external resource's ability to satisfy its capacity obligation. Third, there is no undue discrimination in such continuing assessments, given that PJM's planning processes for the PJM Region similarly must ensure continued deliverability as system conditions change.⁹¹ Brookfield's concern seems more directed at the possibility

⁸⁹ Complaint at 22.

⁹⁰ Mitreski Aff. at 16:19–21.

⁹¹ PJM's rules for evaluation of Pseudo-Ties expressly note this comparability, stating that "[o]ngoing study requirements for the study of generation in the PJM footprint [which includes Pseudo-Ties] must be maintained under these same standards as is conducted in the annual [Regional Transmission Expansion Plan] studies. PJM Manual 12: Balancing Operations (Rev. 38), PJM Interconnection, L.L.C., Attachment F (Apr. 20, 2018), <https://www.pjm.com/-/media/documents/manuals/m12.ashx>.

that *it might be required by the host transmission provider* to bear the cost of future upgrades needed to ensure continued deliverability to PJM loads. But PJM has no control over, and would not be assessing, any such external transmission provider charges. Therefore, Brookfield’s allegations do not show that PJM is maintaining any undue discrimination or undue preference in its rates, terms, or conditions of service.

F. PJM’s Implementation and Application of the M2M Flowgate Test Comports with the Tariff

Brookfield incorporates by reference its arguments in another complaint proceeding pending before the Commission in Docket No. EL18-145 (“Tilton Proceeding”),⁹² in which it has asserted that PJM’s implementation of the M2M Flowgate Test is inconsistent with the requirements of the Tariff. PJM similarly incorporates by reference its responses to the arguments raised in the Tilton Proceeding, in which PJM has demonstrated that its implementation of the M2M Flowgate Test is consistent with the terms of Tariff, Attachment DD, section 5.5A(i)(b)(ii).⁹³

G. Brookfield’s Complaint Constitutes a Collateral Attack on the External Capacity Enhancements Order

Notwithstanding Brookfield’s insistence to the contrary, the vast majority of the arguments raised in the complaint constitute a collateral attack on the External Capacity Enhancements Order. A collateral attack is “[a]n attack on a judgment in a proceeding

⁹² See Complaint of Tilton Energy LLC, Docket No. EL18-145-000 (May 11, 2018).

⁹³ See Answer of PJM Interconnection L.L.C, Docket No. EL18-145-000 (May 11, 2018); Motion for Leave and Answer and Answer of PJM Interconnection, L.L.C., Docket No. EL18-145-000 (July 13, 2019); Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C. to Replies of Tilton Energy LLC and Brookfield Energy LP, Docket No. EL18-145-000 (Jan. 9, 2019).

other than a direct appeal” and is generally prohibited.⁹⁴ The Commission determined in the External Capacity Enhancements Order that both the Deliverability Requirement and the M2M Flowgate Test were just and reasonable and not unduly discriminatory.⁹⁵ Brookfield now presents in its Complaint a facial challenge to those determinations.

Brookfield argues that its Complaint is solely about the “implementation and application” of the Deliverability Requirement and M2M Flowgate Test.⁹⁶ Such an argument is easily rebutted by pointing to Brookfield’s own words. For example, the heading of its first argument reads “The Extraterritorial Deliverability Requirements Are Unjust, Unreasonable And Unduly Discriminatory and Preferential.”⁹⁷ While Brookfield goes on to caveat the argument as one of “general implementation,” the intent and plain language of the heading is clear. Moreover, the Affidavit of Messrs. Pfeifenberger and Sheilendranth attacks the entirety of the External Capacity Enhancements Order, arguing that not only do PJM’s M2M Flowgate Test and Deliverability Requirement create barriers to entry, the remainder of PJM’s Pseudo-Tie requirements are also unjust and unreasonable.⁹⁸ Brookfield’s arguments with respect to PJM’s Deliverability Requirement and M2M Flowgate Test target the requirements themselves, rather than as applied to resources in non-market BAAs or to Brookfield specifically.

⁹⁴ *Wall v. Kholi*, 562 U.S. 545, 522 (2011) (quoting *Black's Law Dictionary* 298 (9th ed. 2009)).

⁹⁵ *See* External Capacity Enhancements Order at PP 76, 115.

⁹⁶ Complaint at 37.

⁹⁷ *Id.* at 17.

⁹⁸ Pfeifenberger/Sheilendranth Aff. at 9:4-26 (asserting that application of the “Electrical Distance” test and the requirement that all capacity imports be pseudo-tied are anti-competitive and create barriers to entry).

Therefore, inasmuch as the Complaint challenges to PJM's Pseudo-Tie qualification rules were resolved by the Commission in the External Capacity Enhancements Order, the Complaint constitutes a collateral attack on that order and should be dismissed.

III. ADMISSIONS AND DENIALS PURSUANT TO 18 C.F.R. § 385.213(c)(2)(i)

Pursuant to Rule 213(c)(2)(i) of the Commission's rules of Practice and Procedure,⁹⁹ PJM affirms that any allegation in the Complaint is not specifically and expressly admitted above is denied.

IV. AFFIRMATIVE DEFENSES PURSUANT TO 18 C.F.R. § 385.213(c)(2)(ii)

PJM's affirmative defenses are set forth above in this Answer, and include the following, subject to amendment and supplementation.

1. Brookfield, as the Complainant, has failed to satisfy its burden of proof under FPA section 206 (16 U.S.C. § 824e), and has not demonstrated that PJM violated any Commission order, the Tariff, the PJM Operating Agreement, RAA, or any other Commission-jurisdictional governing document.
2. PJM's application of the Deliverability Requirements to the Brookfield Pseudo-Tie was just and reasonable, not unduly discriminatory, and consistent with the Tariff.
3. PJM's application of the M2M Flowgate Test to the Brookfield Pseudo-Tie and resulting determination that the Brookfield Pseudo-Tie is not feasible were just and reasonable, not unduly discriminatory, and consistent with the Tariff.

⁹⁹ 18 C.F.R. § 385.213(c)(2)(i).

V. COMMUNICATIONS AND SERVICE

PJM requests that the Commission place the following individuals on the official service list for this proceeding:¹⁰⁰

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¹⁰⁰ To the extent necessary, PJM requests a waiver of Commission Rule 203(b)(3), 18 C.F.R. § 385.203(b)(3), to permit more than two persons to be listed on the official service list for this proceeding.

VI. CONCLUSION

For the reasons set forth in this Answer, the Commission should deny the Complaint.

Respectfully submitted

/s/ Paul M. Flynn

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C., this 8th day of February 2019.

/s/ Elizabeth P. Trinkle

Elizabeth P. Trinkle

*Attorney for PJM Interconnection,
L.L.C.*

Attachment A

**AFFIDAVIT OF TIMOTHY HORGER
ON BEHALF OF PJM INTERCONNECTION,
L.L.C.**

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Brookfield Energy Marketing LP,)	
Complainant,)	
)	
v.)	Docket No. EL19-34-000
)	
PJM Interconnection, L.L.C.,)	
Respondent.)	

**AFFIDAVIT OF TIMOTHY HORGER
ON BEHALF OF PJM INTERCONNECTION, L.L.C.**

1. My name is Timothy Horger. My business address is 2750 Monroe Blvd., Audubon, Pennsylvania, 19403. I currently serve as the Director, Energy Market Operations, for PJM Interconnection, L.L.C. (“PJM”). I am submitting this affidavit on behalf of PJM in support of its answer to the complaint of Brookfield Energy Marketing LP (“Brookfield”) filed on January 18, 2019 in Docket No. EL19-34-000 (“Complaint”).

2. I joined PJM in 2002. Prior to my current position, I worked at PJM as Manager, Interregional Markets Operations. Prior to my employment at PJM, I worked as a Power Systems and Control Engineer at Laser Technology, Inc.

3. As part of my work at PJM, I am responsible for reviewing and overseeing the eligibility criteria for external Generation Capacity Resources to participate in PJM’s Reliability Pricing Model (“RPM”) capacity market and the application of these criteria to external Generation Capacity Resources. As part of my review, I oversee the administration of PJM’s market-to-market flowgate test (“M2M Flowgate Test”), which PJM administers to evaluate the feasibility of Pseudo-Ties under PJM Open Access Transmission Tariff (“Tariff”), Attachment DD, section 5.5A(b)(i)(B) to external generation resources seeking to participate in the RPM market.

4. In my affidavit, I:
- a. show, in response to the Complaint and the affidavit of Johannes Pfeifenberger and Akarsh Sheilendranath, (“Pfeifenberger/Sheilendranath Affidavit”) that the M2M Flowgate Test is reasonably applied in all areas where PJM has entered agreements with Balancing Authorities to coordinate flowgates, including areas without regional energy markets; and
 - b. show, in response to the Complaint, the Pfeifenberger/Sheilendranath Affidavit, and the affidavit of Aleksander Mitreski (“Mitreski Affidavit”) that PJM reasonably applied the M2M Test to the Pseudo-Ties for Brookfield’s Calderwood and Cheoah plants.

All capitalized terms I use here have the meanings ascribed to them in the Tariff unless I indicate otherwise in this Affidavit.

The M2M Flowgate Test is Reasonably Applied to Non-Market Areas.

5. The M2M Flowgate Test is a bright-line test. It is designed to ensure that all external resources wishing to pseudo-tie into PJM, regardless of whether those resources are located in market or non-market regions, are evaluated in a transparent and non-discriminatory manner.

6. When PJM agrees to a Pseudo-Tie, PJM becomes responsible to its neighboring BAA for flow impacts on the neighboring BAA resulting from that generator. The focus of the M2M Flowgate Test is whether a Pseudo-Tie will cause PJM to undertake additional coordination obligations that PJM has limited ability to manage with its internal resources. If PJM has no internal generation with non-trivial (i.e., more than 1.5%) impacts on that flowgate, then PJM, by accepting the Pseudo-Tie, would be obligating itself to take on a new coordination obligation that it has no good options to manage beyond dispatching the pseudo-tied generator itself. PJM does not take on such uncovered obligations for internal resources, and it should not do so for external resources, regardless of whether the resource is located in a market region or non-market region.

7. PJM is a signatory to reliability agreements with its neighboring market and non-market BAAs, including the Joint Reliability Coordination Agreement Among And Between PJM Interconnection, L.L.C., and Tennessee Valley Authority (“TVA”), dated October 15, 2014 (“PJM-TVA JRCA”) and the Amended and Restated Joint Operating Agreement Among And Between Duke Energy Progress Inc. (“Duke”) and PJM Interconnection, L.L.C. (“PJM-Duke JOA”). PJM is bound by the terms and conditions presented in those agreements, including the Congestion Management Process (“CMP”) as appended to the PJM-TVA JRCA. Brookfield’s Calderwood and Cheoah plants are located in the TVA BAA with firm Point-to-Point transmission service on the Duke BAA system. Even though neither TVA nor Duke operate markets in their respective regions, the PJM-TVA JRCA, the PJM-Duke JOA, and the CMP establish rules and procedures for identifying coordinated flowgates; defining each party’s allocations on those flowgates; identifying the impacts on those flowgates; and requiring or recognizing actions by the parties to alleviate flows on those flowgates. These basic provisions are comparable whether the relevant party is a market or non-market entity. Only the actions taken to alleviate flows will differ between market and non-market entities.

8. Mr. Pfeifenberger and Mr. Sheilendranath argue in their affidavit that “while PJM may identify flowgates located in a Non-Market BAA that are impacted by the pseudo-tied resource, which could at some point become coordinated flowgates, doing so is unnecessary [because] PJM does not bear responsibility for the management of congestion on external flowgates in Non-Market BAAs.”¹ They add that “congestion management on external flowgates in Non-Market BAAs that export PJM pseudo-tied resources, such as Calderwood and Cheoah, will be performed by the external Non-Market

¹ Pfeifenberger/Sheilendranath Affidavit at 18:24–28.

BAA, which is required to maintain its obligation to provide Firm PtP Service for capacity exports to PJM.”² These arguments do not change the fact that PJM would face consequences if, by agreeing to a Pseudo-Tie, PJM takes on a flowgate coordination obligation that PJM has no other good options to manage.

9. For example, under the PJM-TVA JCRA and the PJM-Duke JOA, PJM must redispatch its market flows on non market-to-market flowgates during NERC Transmission Loading Relief (“TLR”) procedures. The Native BAA (i.e., TVA) does not have primary responsibility for congestion caused by the pseudo-tied unit; that responsibility falls to the Attaining BAA (i.e., PJM), as the capacity holder, under specific flowgate identification and control requirements in the CMP. Also, potential congestion impacts on the Duke transmission system must be recognized. While Brookfield holds firm Point-to-Point transmission service on the Duke system, Pseudo-Ties are not required to be tagged under the NERC interchange tagging process, which creates a congestion management gap for non-market entities. Congestion is managed under the NERC TLR process as enhanced by the CMP which requires PJM, as the capacity holder to reduce market flows impacting non-market flowgates created by the Pseudo-Tie. If PJM has only the pseudo-tied resource to meaningfully control flows on the flowgate, PJM may not be able to satisfy its NERC IDC relief obligations, which could create compliance risks. It could also raise reliability risks if flow relief is needed on a flowgate but not being provided to the degree needed. PJM’s inability to effectively manage flows from a pseudo-tied generator could also raise equity issues for any entity or neighboring BAA stepping in to provide additional relief, which could then require PJM to take on additional obligations and commitments to address such concerns. The M2M Flowgate Test, as neutrally applied to Pseudo-Ties in both market and non-market areas, ensures that PJM is not unduly burdened with coordination obligations it cannot effectively manage.

PJM Reasonably Applied the M2M Flowgate Test to the Brookfield Pseudo-Tie.

10. The M2M Flowgate Test applies uniformly to all Pseudo-Ties a Capacity Market Seller seeks to use to provide Capacity from an external Generation Capacity Resource to PJM. In applying the test, PJM first identifies any flowgates that both (1) would result from the Pseudo-Tie and (2) would be eligible for coordination under an applicable joint operating agreement with a neighboring balancing authority. After PJM identifies the flowgates that would result from the Pseudo-Tie and would be eligible for coordination, PJM analyzes each such eligible flowgate to determine whether the flowgate has on it at least one generation resource internal to PJM that has a historic economic minimum offer lower than its historic economic maximum offer and that has a minimum flow distribution impact of 1.5 percent. If the eligible flowgate does not meet this 1.5 percent threshold, the Pseudo-Tie is not feasible and the associated external Generation Capacity Resource is not eligible to provide Capacity to PJM.

11. Even though Brookfield has participated in PJM’s RPM Auctions before, the Brookfield Pseudo-Tie had to be evaluated under the new M2M Flowgate Test for

² *Id.* at 19: 1-4.

Delivery Year 2022/2023 because Brookfield's transition period expires at the end of Delivery Year 2021/2022.

12. The Calderwood and Cheoah plants had approved Pseudo-Ties that predated the External Capacity Enhancements Order.³ Before issuance of that order, in anticipation of possible approval of the then-pending Tariff changes, and at Brookfield's request, PJM conducted a preliminary analysis of the Brookfield Pseudo-Tie's potential satisfaction of the proposed M2M Flowgate Test. That very preliminary analysis indicated the Brookfield Pseudo-Tie would theoretically pass the M2M Flowgate Test, and PJM informed Brookfield via email in September 2017 of those non-binding results.

13. After the Commission issued the External Capacity Enhancements Order, PJM proceeded to implement the approved Tariff provisions, including coordinating with all neighboring Balancing Authority Areas ("BAAs") to ensure PJM had a complete list of flowgates for use when conducting M2M Tests. The universe of flowgates compiled after this coordination exceeded that gathered for PJM's preliminary assessment before the M2M Flowgate Test was approved. PJM then applied the M2M Flowgate Test to the Brookfield Pseudo-Tie and found that thirty-eight flowgates made eligible for coordination as a result of flows from the Brookfield Pseudo-Tie each failed the M2M Flowgate Test because there were no internal PJM generation resources with at least a 1.5 percent flow distribution impact on the flowgate. PJM provided these results to Brookfield on March 26, 2018.

14. PJM thereafter, in the first few months of implementing the M2M Flowgate Test, made two changes in the application details of that test which resulted, for the Brookfield Pseudo-Tie, in a lower number of flowgates failing the test, but that did not change the overall result that the Brookfield Pseudo-Tie failed the test. CMP Section 3.2.1 identifies four sensitivity studies for use in identifying Coordinated Flowgates. Study 1 – the IDC Base Case is an online study inapplicable to the M2M Flowgate Test. Study 2 and Study 3 are offline studies evaluating flow impacts of generator deliveries to RTO load. Study 3 includes transmission outage scenarios developed in consultation with affected operating authorities. Study 4 considers flow impacts from Control Area ("CA") to CA transactions (as opposed to generator to load deliveries) and was therefore inapplicable for the application of the M2M Flowgate Test. PJM therefore dropped Study 4 from its application of the M2M Flowgate Test for all Pseudo-Ties, and re-conducted any prior M2M Flowgate Tests (including the Brookfield Pseudo-Tie results provided in March 2018) that had used CMP Study 4 to identify affected flowgates.

15. PJM's second change, also effected during the first months of PJM's conduct of M2M Flowgate Tests, corrected a detail in PJM's identification of relevant PJM-internal resources. The approved Tariff language directs PJM to consider internal resources with "a historic economic minimum offer lower than its historic economic

³ *PJM Interconnection, L.L.C.*, 161 FERC ¶ 61,197 (2017) ("External Capacity Enhancements Order"), *reh'g pending*.

maximum offer.”⁴ PJM initially applied the M2M Flowgate Test using PJM’s list of Flexible Resources. However, “Flexible Resources” are defined as resources with a combined Start-up Time and Notification Time of less than or equal to two hours; and a Minimum Run Time of less than or equal to two hours.⁵ Because that definition differs from the dispatchable range concept in the M2M Flowgate Test Tariff language, PJM changed its list of internal resources assessed in the test, and re-determined any prior applications (including for the Brookfield Pseudo-Tie), that had relied on the list of Flexible Resources.

16. Re-running the M2M Flowgate Test for the Brookfield Pseudo-Tie to account for these two process changes resulted in nineteen flowgates that would become eligible for coordination as a result of the Pseudo-Tie, and for each of which there were no PJM-internal resources that could affect flows on that flowgate by 1.5 percent or more. Accordingly, on June 18, 2018, PJM notified Brookfield that the Brookfield Pseudo-Tie had again failed the M2M Flowgate Test. Mr. Pfeifenberger and Mr. Sheilendranath contend in their affidavit that this history shows that the M2M Flowgate Test “appears to be quite unstable and unpredictable,” yielding very different results depending on the timing of studies and the specific application of the study methodologies.”⁶ However, this experience instead shows PJM’s commitment of applying the M2M Flowgate Test to ensure the test was correctly and reasonably applied to all external generators—not just Brookfield—seeking to sell capacity to the PJM Region. PJM will not be oscillating between CMP study methods as it conducts the M2M Flowgate Test. Based on PJM’s experience during the first few months of applying the test, PJM found that CMP Study 4 was not applicable. Notably, that determination, which PJM has no intent to revisit, *reduced* the number of flowgates likely to become coordinated as a result of agreeing to Pseudo-Ties.

17. Mr. Pfeifenberger and Mr. Sheilendranath also more broadly attack the first step of the M2M Flowgate Test, arguing that it tends to identify a large number of potential future coordinated flowgates that they assert are unlikely to ever actually become coordinated flowgates. The Commission should not adopt their position. PJM is not inventing some new method of identifying coordinated flowgates; it is simply identifying flowgates that have sufficient flows from the Pseudo-Tie to become coordinated flowgates under the express provisions of PJM’s executed JOAs/JRCAs and the CMP. Once PJM agrees to a Pseudo-Tie with those flow impacts, the other party to the JOA/JRCA and the CMP then has the right to add that flowgate to the list of coordinated flowgates under the agreement. PJM at that point has no control over whether the other BAA chooses to add that flowgate or not (so long as it meets the agreement’s criteria).

⁴ Tariff, Attachment DD, section 5.5A(b)(i)(B).

⁵ Amended and Restated Operating Agreement of PJM Interconnection, L.L.C., section 1, Definitions E – F.

⁶ Pfeifenberger/Sheilendranath Affidavit at 15:12–15.

18. This concludes my Affidavit.

