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January 17, 2025

The Honorable Debbie-Anne A. Reese
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426-0001

Re: PJM Interconnection, L.L.C., Docket No. ER25-962-000
Removal of Certain Interface Pricing Methodologies

Dear Secretary Reese,

Pursuant to Section 205 of the Federal Power Act ("FPA"),[1] and Part 35 of the Federal Energy Regulatory Commission's ("Commission") Regulations,[2] PJM Interconnection, L.L.C. ("PJM") hereby submits for filing proposed revisions to the PJM Open Access Transmission Tariff ("Tariff") and the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. ("Operating Agreement").[3] The purpose of these revisions is to remove two obsolete methodologies used in "interface pricing"—the process by which PJM calculates Locational Marginal Prices ("LMPs") for energy exports to, or energy imports from, external balancing authority areas.

The amendments to the Tariff and Operating Agreement proposed herein were endorsed at the October 30, 2024 PJM Markets and Reliability Committee ("MRC") by acclamation, with no

[1] 16 U.S.C. § 824d.

[2] 18 C.F.R. Part 35.

[3] The Tariff and Operating Agreement are currently located under PJM's "Intra-PJM Tariffs" eTariff title, available here: https://etariff.ferc.gov/TariffBrowser.aspx?tid=1731. Terms not otherwise defined herein shall have the same meaning as set forth in the Tariff, Operating Agreement, and the Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region ("RAA").

objections and one abstention,[4] and at the November 21, 2024 Members Committee ("MC") by acclamation, with no objections and one abstention.[5]

PJM respectfully requests that the Commission accept the Tariff and Operating Agreement revisions described herein with an effective date of March 19, 2025— the sixty-first day after the date of this filing.

I. BACKGROUND

A. Interface Pricing

Operating Agreement, section 2.1 requires PJM to "calculate the price of energy at the load buses and generation buses in the PJM Region *and at the Interface Pricing Points between adjacent Control Areas and the PJM Region* on the basis of Locational Marginal Prices."[6]

In PJM, the term "interface pricing" refers to the process by which PJM, in accordance with this requirement in Operating Agreement, section 2.1, calculates LMPs for energy exports to, or energy imports from, external balancing authority areas. Interface Pricing Points are groupings of individual busses combined into a proxy-pricing node (pnode) utilized for purposes of calculating LMPs for such energy exports to, or energy imports from, external balancing authority areas. Such Interface Pricing Points may represent external balancing authority areas, aggregates of external balancing authority areas, or portions of any external balancing authority area.

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[4] *See* Minutes of the October 30, 2024 MRC, available here: https://www.pjm.com/-/media/DotCom/committees-groups/committees/mrc/2024/20241121/20241121-consent-agenda-a---draft-mrc-minutes---10302024.pdf.

[5] *See* Minutes of the November 21, 2024 MC, available here: https://www.pjm.com/-/media/DotCom/committees-groups/committees/mc/2024/20241218/20241218-consent-agenda-a---draft-mc-minutes---11212024.pdf.

[6] Operating Agreement, section 2.1 (emphasis added).

The current rules governing interface pricing in PJM are located in Tariff, Attachment K-Appendix, section 2.6A, and the identical corresponding provisions in Operating Agreement, Schedule 1, section 2.6A.

B. The "Nodal," "High/Low," and "Marginal Cost Proxy" Interface Pricing Methodologies

There are currently three interface pricing methodologies under Tariff, Attachment K-Appendix, section 2.6A and Operating Agreement, Schedule 1, section 2.6A: (i) the "Nodal" methodology; (ii) the "High/Low" methodology; and (iii) the "Marginal Cost Proxy" methodology. This filing proposes to remove the latter two—High/Low and Marginal Cost Proxy—and retain the Nodal methodology.

Under the "Nodal" methodology, PJM uses standard power flow analysis to determine a set of nodes internal and external to the PJM system to represent one or more external balancing authority areas. Each node in the interface definition is assigned to a tie line in a set of such lines that PJM determines for each Interface Pricing Point. The sensitivity of each tie line to injections at each external pricing point determines the weight assigned to the node associated with the tie line in the price calculation for the indicated Interface Pricing Point.

Under the "High/Low" methodology, the price for energy exported to the external balancing authority area will equal the *highest* LMP that PJM calculates at any online generator bus in the external area, and the price for energy imported from the external balancing authority area will equal the *lowest* LMP that PJM calculates at any online generator bus in the external area. The High/Low methodology requires the external balancing authority area to provide unit-specific generator output information to PJM.

Under the "Marginal Cost Proxy" methodology, PJM compares the individual bus LMP for each generator in the PJM model in the directly-connected balancing authority area or sub-area having a telemetered output greater than zero MW to the marginal cost for that generator. PJM in real time, during each five-minute calculation of LMPs for the PJM Region, calculates the energy price for imports to PJM from a balancing authority area or sub-area as the lowest LMP of any generator bus in such area or sub-area with an output greater than 0 MW that has an LMP less than its marginal cost for such five-minute interval. PJM similarly calculates the energy price for exports from PJM to such area or sub-area as the highest LMP of any generator bus in such area or sub-area with an output greater than 0 MW that has an LMP greater than its marginal cost for such 5-minute interval. The Marginal Cost Proxy methodology requires an approved congestion management agreement between PJM and the external balancing authority area.

The Nodal, High/Low, and Marginal Cost Proxy methodologies for interface pricing were established in 2008 and 2009, as part of a PJM FPA section 205 filing in Docket No. ER09-369.

II. PROPOSAL TO REMOVE THE HIGH/LOW AND MARGINAL COST PROXY METHODOLOGIES FOR INTERFACE PRICING

In this submission, PJM proposes to remove the High/Low and Marginal Cost Proxy methodologies for interface pricing, and retain the Nodal methodology. Removal of the High/Low and Marginal Cost Proxy methodologies is just and reasonable under FPA section 205 for the following two reasons.

First, neither the High/Low nor the Marginal Cost Proxy methodologies have been used since 2019 by any external balancing authorities, and there is no external balancing authority that has expressed any interest in using either of these methodologies in the future. The last external balancing authority to utilize either of these methodologies was Duke Energy Progress, which had

previously leveraged the Marginal Cost Proxy methodology via a dynamic interface. In 2019, Duke Energy Progress notified PJM of its intent to unwind the dynamic interface, and in July of 2019 the Commission accepted via delegated letter order revisions to the PJM/Duke Energy Progress Joint Operating Agreement that removed the corresponding congestion management process.[7] No external entities have expressed interest in using either methodologies since July 2019. For all intents and purposes, the High/Low and Marginal Cost Proxy methodologies are obsolete in PJM in 2025. The Commission has previously found the removal of obsolete tariff provisions to be just and reasonable.[8]

Second, should any external balancing authority seek to utilize interface pricing in the future, the existing Nodal methodology—which PJM proposes to retain—will provide clearer, more concise, and more broadly applicable pricing signals to drive energy transfers into and out of PJM. The Nodal methodology is significantly less complex for PJM to implement than the

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[7] *See PJM Interconnection, L.L.C.*, Revisions to the Duke Energy Progress/PJM Joint Operating Agreement, Docket No. ER19-1905-000 (May 20, 2019). Note that while the amendments to the PJM/Duke Energy Progress JOA in Docket No. ER19-1905-000 were intended to effectuate a change from Marginal Cost Proxy interface pricing to High/Low interface pricing, neither methodology has actually been used by Duke Energy Progress, or any other external balancing authority, since.

[8] *See, e.g., S. Star Cent. Gas Pipeline, Inc.*, 128 FERC ¶ 61,099 at PP 3, 6 (2009) ("Southern Star also proposes to remove from its tariff obsolete tariff provisions. These include the Form of Service Agreement under Rate Schedule PAS (Production Area Sales), the Form of Service Agreement for Electronic Bulletin Board, and the Form of Electronic Data Interchange Trading Partner Agreement. Southern Star proposes to remove from its GT&C language pertaining to marketing affiliates since it states it has no current marketing affiliates and performs no marketing function . . . Southern Star's proposed tariff revisions are generally just and reasonable, since they provide tariff clarifications and consistencies, and eliminate obsolete tariff provisions and form of service agreements."); *PJM Interconnection, L.L.C.*, 158 FERC ¶ 61,093 at PP 26-28 (2017) ("[W]e find that it is possible and necessary to update generation-to-load paths to better reflect the system usage by replacing the megawatts associated with an obsolete source point with an appropriate replacement source . . . we find that the elimination of the use of obsolete historic source points and the elimination of balancing congestion from the FTR funding equation is a just and reasonable method of rectifying PJM's unjust and unreasonable ARR/FTR market design."); *Midcontinent Indep. Sys. Operator, Inc.*, 183 FERC ¶ 61,195 at P 4, 12 (2023) ("MISO asserts that these revisions are needed because this type of "backfilling" is no longer possible with its current three-phase Definitive Planning Phase (DPP) process, and thus removal of this language is just and reasonable because it is obsolete . . . We find that the proposed Tariff revisions are just and reasonable and not unduly discriminatory or preferential because they provide greater clarity to several Tariff provisions, remove obsolete references and conflicting language, correct various errors, and build greater consistency throughout the Tariff.").

High/Low and Marginal Cost Proxy methodologies, as it does not rely on the external balancing authority area to provide unit-specific generator output information to PJM, nor the establishment of an approved congestion management agreement between PJM and the external balancing authority area. Instead, the Nodal methodology involves the use of standard power flow analysis to determine a set of nodes external to the PJM system, and each node in the interface definition is assigned to a tie line in a set of such lines that PJM determines for each Interface Pricing Point. These characteristics also make the Nodal methodology fundamentally easier for market participants to understand.

Additionally, the Nodal methodology can be applied more broadly, to a wider configuration of external balancing authorities. Unlike the High/Low and Marginal Cost Proxy methodologies, the Nodal methodology is not narrowly focused on a specific dynamic interface for specific external entities—it can be used by *any* external party for *any* external interface, should such entity desire to do so in the future.

PJM submits that the proposed removal of the High/Low and Marginal Cost Proxy methodologies, and the retention of the Nodal methodology, will promote uniformity and increase transparency and efficiency in the implementation of tariff provisions. The Commission has previously found tariff revisions effectuating these outcomes to be just and reasonable in the context of dynamic transfers, dynamic schedules, and pseudo-ties—constructs that similarly govern the interaction between PJM and external entities.[9]

[9] *See, e.g.*, *PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,086 at P 22 (2018) ("We agree with PJM that the Pseudo-tie Agreements and corresponding Tariff and Operating Agreement revisions promote uniformity among the pseudo-tie and dynamic schedule requirements and increase the transparency and efficiency of the implementation process.").

III. DESCRIPTION OF TARIFF REVISIONS

To effectuate this proposal, PJM proposes revisions to Tariff, Attachment K-Appendix, section 2.6A, and the identical corresponding provisions in Operating Agreement, Schedule 1, section 2.6A.

The revisions consist of removal of the text defining the High/Low and Marginal Cost Proxy methodologies, and the retention of the text defining the Nodal Methodology.

PJM also proposes revisions to the opening paragraph of 2.6A, in order to replace terms such as "PJM" with "The Office of the Interconnection," and to change "Tie Lines" to "nodes," which is consistent with the current approach for the existing Nodal interfaces.

Finally, PJM proposes to retain a savings clause that permits PJM to enter into agreements with External Resource owners for Dynamic Transfers.

IV. PROPOSED EFFECTIVE DATE

PJM respectfully requests that the Commission accept the proposed Tariff and Operating Agreement revisions described herein with an effective date of March 19, 2025—the sixty-first day after the date of this filing.

V. DESCRIPTION OF SUBMITTAL

This filing consists of the following:

1. This transmittal letter;
2. Attachment A - Revised sections of the Tariff (redlined version); and
3. Attachment B - Revised sections of the Tariff (clean version).

VI. CORRESPONDENCE

The following individuals are designated for inclusion on the official service list in this proceeding and for receipt of any communications regarding this filing:

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VII. SERVICE

PJM has served a copy of this filing on all PJM Members and on all state utility regulatory commissions in the PJM Region by posting this filing electronically. In accordance with the Commission's regulations,[10] PJM will post a copy of this filing to the FERC filings section of its internet site, located at the following link: https://www.pjm.com/library/filing-order with a specific link to the newly-filed document, and will send an e-mail on the same date as this filing to all PJM Members and all state utility regulatory commissions in the PJM Region[11] alerting them that this filing has been made by PJM and is available by following such link. If the document is not immediately available by using the referenced link, the document will be available through the referenced link within 24 hours of the filing. Also, a copy of this filing will be available on the FERC's eLibrary website located at the following link: http://www.ferc.gov/docs-filing/elibrary.asp in accordance with the Commission's regulations and Order No. 714.

[10] *See* 18 C.F.R §§ 35.2(e) and 385.2010(f)(3).

[11] PJM already maintains, updates and regularly uses e-mail lists for all PJM Members and affected state commissions.

VIII. CONCLUSION

In accordance with the foregoing, PJM respectfully requests that the Commission accept the proposed amendments to the Tariff and Operating Agreement, effective March 19, 2025, as discussed herein.

Respectfully submitted,

/s/ Thomas DeVita

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Attachment A

PJM Open Access Transmission Tariff
and
Operating Agreement

Marked/Redlined Version

(Identified by Additional Cover Pages)

Tariff, Attachment K-Appendix, section 2.6A

Marked/Redlined Version

2.6A Interface Prices.

~~PJM~~ The Office of the Interconnection shall from time to time, as appropriate, define and revise Interface Pricing Points for purposes of calculating LMPs for energy exports to or energy imports from external balancing authority areas. Such Interface Pricing Points may represent external balancing authority areas, aggregates of external balancing authority areas, or portions of any external balancing authority area. ~~Subject to the terms of this section 2.6A, PJM may define Interface Pricing Points and interface pricing methods for a sub-area of a balancing authority area different from the pricing points and interface pricing methods applicable to the adjacent balancing authority area where the sub-area is located, and no action of the balancing authority area or any entity whose transactions do not source and/or sink within the sub-area shall affect the pricing points or interface pricing methods established for such sub-area. Definitions of Interface Pricing Points and price calculation methodologies may vary, depending on such factors as whether an external balancing authority area operates an organized electric market with locational pricing, whether the external balancing authority has entered an interregional congestion management agreement with PJM, and the availability of data from the external balancing authority area on such relevant items as unit costs, run status, and output. PJM shall negotiate in good faith with any external balancing authority that seeks to enter into an interregional congestion management agreement with PJM, and will file such agreement, upon execution, with the Commission. In the event PJM and an external balancing authority do not reach a mutually acceptable agreement, the external balancing authority may request, and PJM shall file with the Commission within 90 days after such request, an unexecuted congestion management agreement for such balancing authority. Nothing herein precludes PJM from entering into agreements with External Resource owners for the Dynamic Transfer of such resources, as contemplated by Operating Agreement, Schedule 1, section 1.12 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.12, at prices determined in accordance with such agreements. Acceptable pricing point definitions and pricing methodologies include, but are not limited to, the following:~~

~~(a) External Balancing Authority Areas that are Part of Larger Centrally Dispatched Organizations. PJM~~ The Office of the Interconnection shall determine a set of nodes ~~external to the PJM system~~ representing an external balancing authority area or set of balancing authority areas via flow analysis, utilizing standard power flow analysis tools, of the impact of transactions from the balancing authority area or areas on the transmission facilities connecting PJM with such external area(s). ~~PJM~~ The Office of the Interconnection shall then weight the contribution of each identified node to the calculation of the interface price. For each Interface Pricing Point, a set of ~~Tie Lines~~nodes will be defined ~~and each node in the interface definition will be assigned to a Tie Line~~. ~~PJM~~ The Office of the Interconnection shall utilize the sensitivity of the ~~Tie Lines~~nodes to an injection at each ~~external~~ nodal pricing point to weight the node ~~associated with that Tie Line~~ in the Interface Pricing Point calculation, as ~~more fully~~ described in the PJM Manuals.

Nothing herein precludes the Office of the Interconnection from entering into agreements with External Resource owners for the Dynamic Transfer of such resources, as contemplated by Operating Agreement, Schedule 1, section 1.12 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.12, at prices determined in accordance with such agreements. ~~(b)~~

External Areas that are Not Part of Larger Centrally Dispatched Organizations. PJM may define pricing points aggregating multiple directly or non-directly connected external balancing authority areas that are not part of larger centrally dispatched organizations. Prices at such points representing aggregated balancing authority areas shall be determined as described in subsection (a) above; provided, however, that PJM shall define Interface Pricing Points corresponding to individual, directly connected balancing authority areas, and establish alternative pricing methodologies for use as to such areas, to the extent that necessary supporting data is provided from the external area, as follows:

(1) PJM will define an Interface Pricing Point corresponding to a directly connected individual external balancing authority area or sub-area within a directly connected balancing authority area and determine prices in accordance with High-Low Pricing, as defined in section (A) below, if the balancing authority area or sub-area within the balancing authority area provides the data described in section (B) below.

(A) Under High-Low Pricing, the price for imports of energy to PJM from the external balancing authority area shall equal the LMP calculated by PJM at the generator bus in such area with an output greater than 0 MW that has the lowest price in such area; and the price for exports of energy from PJM to the external balancing authority area shall equal the price at the generator bus in such area with an output greater than 0 MW that has the highest price in such area, updated every 5 minutes in the real time market and calculated for each hour in the Day-Ahead market, to the extent and for the periods that the information described below is provided.

(B) Such pricing point and pricing methodology shall be provided only to the extent the external balancing authority area or sub-area provides or causes to be provided to PJM real-time telemetered load, generation and similar data for such area or sub-area demonstrating that the transaction receiving such pricing sources, or sinks as appropriate, in such area or sub-area. Such data shall be of the type and in the form specified in the PJM Manuals. If such data is provided, any transaction, regardless of participant, sourcing or sinking in such area will be priced in accordance with section (A) above. During any hour in which any entity makes any purchases from other external areas outside of such area or sub-area (other than delivery of external designated Network Resources or such other exceptions specifically documented for such area or sub-area in the PJM Manuals) at the same time that energy sales into PJM are being made, or purchases energy from PJM for delivery into such area or sub-area while sales from such area to other external areas are simultaneously implemented (subject to any exceptions specifically documented for such area or sub-area in the PJM Manuals), pricing will revert to the applicable import or export pricing point that would otherwise be assigned to such external area or sub-area.

(2) PJM will define an Interface Pricing Point corresponding to an individual external balancing authority area or sub-area within a directly connected balancing authority area and determine prices in accordance with Marginal Cost Proxy Pricing, as defined in section (A) below, if the balancing authority area or sub-area within a directly connected balancing authority area provides, in addition to the data specified in section (1)(B) above, the data described in section (B) below provided, however, that such pricing methodology shall terminate, and pricing

shall be governed by the methodology described in subsection (a) or (b)(1) above, as applicable, on January 31, 2010 for any external balancing authority area that has not executed an interregional congestion management agreement with the Office of the Interconnection prior to January 31, 2010.

Under Marginal Cost Proxy Pricing, PJM shall compare the individual bus LMP for each generator in the PJM model in the directly connected balancing authority area or sub-area having a telemetered output greater than zero MW to the marginal cost for that generator.

In real time, during each 5-minute calculation of LMPs for the PJM Region, PJM shall calculate the energy price for imports to PJM from such area or sub-area as the lowest LMP of any generator bus in such area or sub-area with an output greater than 0 MW that has an LMP less than its marginal cost for such 5-minute interval. If no generator with an output greater than 0 MW has an LMP less than its marginal cost, then the import price shall be the average of the bus LMPs for the set of generators in such area with an output greater than 0 MW that PJM determines to be the marginal units in that area for that 5-minute interval. PJM shall determine the set of marginal units in the external area by summing the output of the units serving load in that area in ascending order of the units' marginal costs until such sum equals the real time load in such external area. Units in the external area with marginal costs at or above that of the last unit included in the sum shall be the marginal units for that area for that interval.

PJM similarly shall calculate the energy price for exports from PJM to such area or sub-area as the highest LMP of any generator bus in such area or sub-area with an output greater than 0 MW that has an LMP greater than its marginal cost for such 5-minute interval. If no generator with an output greater than 0 MW has an LMP greater than its marginal cost, then the export price shall be the average of the bus LMPs for the set of generators with an output greater than 0 MW that PJM determines to be the marginal units in such area for that 5-minute interval, as described above.

Locational interface prices in the Day-ahead Energy Market shall be calculated in the same manner as set forth above for the Real-time Energy Market, except that such prices will be determined on an hourly basis, utilizing information regarding whether each unit in such area is scheduled to run for each hour of the following day, provided as specified in subsection (B) below.

(B) Such pricing point and pricing methodology shall be provided only to the extent the external balancing authority area or sub-area provides or causes to be provided to PJM (i) unit-specific, real-time telemetered output data for each unit in the PJM network model in such area or sub-area; (ii) unit-specific marginal cost data for each unit in the PJM network model in such area or sub-area, prepared in accordance with the PJM Manuals and subject to the same review of the Market Monitoring Unit as any such cost data for internal PJM units; and (iii) a day-ahead indication for each unit in such area or sub-area as to whether that unit is scheduled to run for each hour of the following day. During any hour in which any entity makes any purchases from other external areas outside of such area or sub-area (other than delivery of external designated Network Resources or such other exceptions specifically documented for such area or sub-area in the PJM Manuals) at the same time that energy sales into PJM are being

~~made, or purchases energy from PJM for delivery into such area or sub-area while sales from such area to other external areas are simultaneously implemented (subject to any exceptions specifically documented for such area or sub-area in the PJM Manuals), pricing will revert to the applicable import or export pricing point that would otherwise be assigned to such external area or sub-area.~~

~~(C) PJM shall post the individual generator bus LMPs in the directly connected external control areas for informational purposes; provided, however, that no settlement shall take place at such external bus LMPs, and such nodes shall not be available for the submission of Virtual Transactions in the PJM Day-ahead Energy Market.~~

~~(3) All data provided to PJM by balancing and/or reliability authorities hereunder will be used only for the purpose of implementing the interface pricing set forth herein, will be treated confidentially by PJM, and will be afforded the same treatment provided to Member confidential data under the PJM Operating Agreement.~~

~~(4) PJM reserves the right to audit the data supplied to PJM hereunder by giving written notice to the relevant balancing/reliability authority/market operator no more than three months following provision of such data, and at least ten (10) business days in advance of the date that PJM wishes to initiate such audit, with completion of the audit occurring within sixty (60) days of such notice. Each party shall be responsible for its own expenses related to any such audit.~~

Operating Agreement, Schedule 1, section 2.6A

Marked/Redlined Version

2.6A Interface Prices.

~~PJM~~ The Office of the Interconnection shall from time to time, as appropriate, define and revise Interface Pricing Points for purposes of calculating LMPs for energy exports to or energy imports from external balancing authority areas. Such Interface Pricing Points may represent external balancing authority areas, aggregates of external balancing authority areas, or portions of any external balancing authority area. ~~Subject to the terms of this section 2.6A, PJM may define Interface Pricing Points and interface pricing methods for a sub-area of a balancing authority area different from the pricing points and interface pricing methods applicable to the adjacent balancing authority area where the sub-area is located, and no action of the balancing authority area or any entity whose transactions do not source and/or sink within the sub-area shall affect the pricing points or interface pricing methods established for such sub-area. Definitions of Interface Pricing Points and price calculation methodologies may vary, depending on such factors as whether an external balancing authority area operates an organized electric market with locational pricing, whether the external balancing authority has entered an interregional congestion management agreement with PJM, and the availability of data from the external balancing authority area on such relevant items as unit costs, run status, and output. PJM shall negotiate in good faith with any external balancing authority that seeks to enter into an interregional congestion management agreement with PJM, and will file such agreement, upon execution, with the Commission. In the event PJM and an external balancing authority do not reach a mutually acceptable agreement, the external balancing authority may request, and PJM shall file with the Commission within 90 days after such request, an unexecuted congestion management agreement for such balancing authority. Nothing herein precludes PJM from entering into agreements with External Resource owners for the Dynamic Transfer of such resources, as contemplated by Operating Agreement, Schedule 1, section 1.12 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.12, at prices determined in accordance with such agreements. Acceptable pricing point definitions and pricing methodologies include, but are not limited to, the following:~~

~~(a) External Balancing Authority Areas that are Part of Larger Centrally Dispatched Organizations. PJM~~ The Office of the Interconnection shall determine a set of nodes ~~external to the PJM system~~ representing an external balancing authority area or set of balancing authority areas via flow analysis, utilizing standard power flow analysis tools, of the impact of transactions from the balancing authority area or areas on the transmission facilities connecting PJM with such external area(s). ~~PJM~~ The Office of the Interconnection shall then weight the contribution of each identified node to the calculation of the interface price. For each Interface Pricing Point, a set of ~~Tie Lines~~nodes will be defined ~~and each node in the interface definition will be assigned to a Tie Line~~. ~~PJM~~ The Office of the Interconnection shall utilize the sensitivity of the ~~Tie Lines~~nodes to an injection at each ~~external~~ nodal pricing point to weight the node ~~associated with that Tie Line~~ in the Interface Pricing Point calculation, as ~~more fully~~ described in the PJM Manuals.

Nothing herein precludes the Office of the Interconnection from entering into agreements with External Resource owners for the Dynamic Transfer of such resources, as contemplated by Operating Agreement, Schedule 1, section 1.12 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.12, at prices determined in accordance with such agreements. ~~(b)~~

External Areas that are Not Part of Larger Centrally Dispatched Organizations. PJM may define pricing points aggregating multiple directly or non-directly connected external balancing authority areas that are not part of larger centrally dispatched organizations. Prices at such points representing aggregated balancing authority areas shall be determined as described in subsection (a) above; provided, however, that PJM shall define Interface Pricing Points corresponding to individual, directly connected balancing authority areas, and establish alternative pricing methodologies for use as to such areas, to the extent that necessary supporting data is provided from the external area, as follows:

(1) PJM will define an Interface Pricing Point corresponding to a directly connected individual external balancing authority area or sub-area within a directly connected balancing authority area and determine prices in accordance with High-Low Pricing, as defined in section (A) below, if the balancing authority area or sub-area within the balancing authority area provides the data described in section (B) below.

(A) Under High-Low Pricing, the price for imports of energy to PJM from the external balancing authority area shall equal the LMP calculated by PJM at the generator bus in such area with an output greater than 0 MW that has the lowest price in such area; and the price for exports of energy from PJM to the external balancing authority area shall equal the price at the generator bus in such area with an output greater than 0 MW that has the highest price in such area, updated every 5 minutes in the real time market and calculated for each hour in the Day-Ahead market, to the extent and for the periods that the information described below is provided.

(B) Such pricing point and pricing methodology shall be provided only to the extent the external balancing authority area or sub-area provides or causes to be provided to PJM real-time telemetered load, generation and similar data for such area or sub-area demonstrating that the transaction receiving such pricing sources, or sinks as appropriate, in such area or sub-area. Such data shall be of the type and in the form specified in the PJM Manuals. If such data is provided, any transaction, regardless of participant, sourcing or sinking in such area will be priced in accordance with section (A) above. During any hour in which any entity makes any purchases from other external areas outside of such area or sub-area (other than delivery of external designated Network Resources or such other exceptions specifically documented for such area or sub-area in the PJM Manuals) at the same time that energy sales into PJM are being made, or purchases energy from PJM for delivery into such area or sub-area while sales from such area to other external areas are simultaneously implemented (subject to any exceptions specifically documented for such area or sub-area in the PJM Manuals), pricing will revert to the applicable import or export pricing point that would otherwise be assigned to such external area or sub-area.

(2) PJM will define an Interface Pricing Point corresponding to an individual external balancing authority area or sub-area within a directly connected balancing authority area and determine prices in accordance with Marginal Cost Proxy Pricing, as defined in section (A) below, if the balancing authority area or sub-area within a directly connected balancing authority area provides, in addition to the data specified in section (1)(B) above, the data described in section (B) below provided, however, that such pricing methodology shall terminate, and pricing

shall be governed by the methodology described in subsection (a) or (b)(1) above, as applicable, on January 31, 2010 for any external balancing authority area that has not executed an interregional congestion management agreement with the Office of the Interconnection prior to January 31, 2010.

Under Marginal Cost Proxy Pricing, PJM shall compare the individual bus LMP for each generator in the PJM model in the directly connected balancing authority area or sub-area having a telemetered output greater than zero MW to the marginal cost for that generator.

In real time, during each 5-minute calculation of LMPs for the PJM Region, PJM shall calculate the energy price for imports to PJM from such area or sub-area as the lowest LMP of any generator bus in such area or sub-area with an output greater than 0 MW that has an LMP less than its marginal cost for such 5-minute interval. If no generator with an output greater than 0 MW has an LMP less than its marginal cost, then the import price shall be the average of the bus LMPs for the set of generators in such area with an output greater than 0 MW that PJM determines to be the marginal units in that area for that 5-minute interval. PJM shall determine the set of marginal units in the external area by summing the output of the units serving load in that area in ascending order of the units' marginal costs until such sum equals the real time load in such external area. Units in the external area with marginal costs at or above that of the last unit included in the sum shall be the marginal units for that area for that interval.

PJM similarly shall calculate the energy price for exports from PJM to such area or sub-area as the highest LMP of any generator bus in such area or sub-area with an output greater than 0 MW that has an LMP greater than its marginal cost for such 5-minute interval. If no generator with an output greater than 0 MW has an LMP greater than its marginal cost, then the export price shall be the average of the bus LMPs for the set of generators with an output greater than 0 MW that PJM determines to be the marginal units in such area for that 5-minute interval, as described above.

Locational interface prices in the Day-ahead Energy Market shall be calculated in the same manner as set forth above for the Real-time Energy Market, except that such prices will be determined on an hourly basis, utilizing information regarding whether each unit in such area is scheduled to run for each hour of the following day, provided as specified in subsection (B) below.

(B) Such pricing point and pricing methodology shall be provided only to the extent the external balancing authority area or sub-area provides or causes to be provided to PJM (i) unit-specific, real-time telemetered output data for each unit in the PJM network model in such area or sub-area; (ii) unit-specific marginal cost data for each unit in the PJM network model in such area or sub-area, prepared in accordance with the PJM Manuals and subject to the same review of the Market Monitoring Unit as any such cost data for internal PJM units; and (iii) a day-ahead indication for each unit in such area or sub-area as to whether that unit is scheduled to run for each hour of the following day. During any hour in which any entity makes any purchases from other external areas outside of such area or sub-area (other than delivery of external designated Network Resources or such other exceptions specifically documented for such area or sub-area in the PJM Manuals) at the same time that energy sales into PJM are being

~~made, or purchases energy from PJM for delivery into such area or sub-area while sales from such area to other external areas are simultaneously implemented (subject to any exceptions specifically documented for such area or sub-area in the PJM Manuals), pricing will revert to the applicable import or export pricing point that would otherwise be assigned to such external area or sub-area.~~

~~(C) PJM shall post the individual generator bus LMPs in the directly connected external control areas for informational purposes; provided, however, that no settlement shall take place at such external bus LMPs, and such nodes shall not be available for the submission of Virtual Transactions in the PJM Day-ahead Energy Market.~~

~~(3) All data provided to PJM by balancing and/or reliability authorities hereunder will be used only for the purpose of implementing the interface pricing set forth herein, will be treated confidentially by PJM, and will be afforded the same treatment provided to Member confidential data under the PJM Operating Agreement.~~

~~(4) PJM reserves the right to audit the data supplied to PJM hereunder by giving written notice to the relevant balancing/reliability authority/market operator no more than three months following provision of such data, and at least ten (10) business days in advance of the date that PJM wishes to initiate such audit, with completion of the audit occurring within sixty (60) days of such notice. Each party shall be responsible for its own expenses related to any such audit.~~

Attachment B

PJM Open Access Transmission Tariff
and
Operating Agreement

Clean Version

(Identified by Additional Cover Pages)

Tariff, Attachment K-Appendix, section 2.6A

Clean Version

2.6A Interface Prices.

The Office of the Interconnection shall from time to time, as appropriate, define and revise Interface Pricing Points for purposes of calculating LMPs for energy exports to or energy imports from external balancing authority areas. Such Interface Pricing Points may represent external balancing authority areas, aggregates of external balancing authority areas, or portions of any external balancing authority area.

The Office of the Interconnection shall determine a set of nodes representing an external balancing authority area or set of balancing authority areas via flow analysis, utilizing standard power flow analysis tools, of the impact of transactions from the balancing authority area or areas on the transmission facilities connecting PJM with such external area(s). The Office of the Interconnection shall then weight the contribution of each identified node to the calculation of the interface price. For each Interface Pricing Point, a set of nodes will be defined. The Office of the Interconnection shall utilize the sensitivity of the nodes to an injection at each nodal pricing point to weight the node in the Interface Pricing Point calculation, as described in the PJM Manuals.

Nothing herein precludes the Office of the Interconnection from entering into agreements with External Resource owners for the Dynamic Transfer of such resources, as contemplated by Operating Agreement, Schedule 1, section 1.12 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.12, at prices determined in accordance with such agreements.

Operating Agreement, Schedule 1, section 2.6A

Clean Version

2.6A Interface Prices.

The Office of the Interconnection shall from time to time, as appropriate, define and revise Interface Pricing Points for purposes of calculating LMPs for energy exports to or energy imports from external balancing authority areas. Such Interface Pricing Points may represent external balancing authority areas, aggregates of external balancing authority areas, or portions of any external balancing authority area.

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Nothing herein precludes the Office of the Interconnection from entering into agreements with External Resource owners for the Dynamic Transfer of such resources, as contemplated by Operating Agreement, Schedule 1, section 1.12 and the parallel provisions of Tariff, Attachment K-Appendix, section 1.12, at prices determined in accordance with such agreements.