



PJM Interconnection, L.L.C.  
2750 Monroe Blvd.  
Audubon, PA 19403-2497

Colleen Hicks  
Managing Counsel  
T: 610.666.3010 | F: 610.666.8211  
[Colleen.Hicks@pjm.com](mailto:Colleen.Hicks@pjm.com)

November 9, 2023

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426-0001

*Re: PJM Interconnection, L.L.C., Docket No. ER24-374-000*

*FTR Bilateral Agreement Reform*

Dear Secretary Bose:

Pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d, and Part 35 of the Federal Energy Regulatory Commission’s (the “Commission”) Regulations,<sup>1</sup> PJM Interconnection, L.L.C. (“PJM”) hereby submits proposed revisions to PJM’s Open Access Transmission Tariff (“Tariff”) Attachment K-Appendix, section 5.2.2(d) and the reciprocal provisions in PJM’s Amended and Restated Operating Agreement (“Operating Agreement”) Schedule 1, section 5.2.2(d).<sup>2</sup> Specifically, as further explained below, these proposed modifications relate to the bilateral transfer of Financial Transmission Rights (“FTRs”) between Market Participants under purchase and sale agreements, referred to as “FTR bilateral agreements.”<sup>3</sup> The purpose of these revisions is to better enable PJM to conduct market surveillance of its FTR market by standardizing and improving the quality of the data PJM receives

---

<sup>1</sup> 18 C.F.R. Part 35.

<sup>2</sup> Where PJM refers herein to provisions in Operating Agreement Schedule 1, Section 5.2.2(d). Those references also are intended to encompass the identical, parallel provisions in the Tariff, Attachment K-Appendix, and Section 5.2.2 (d). References herein to the Tariff shall apply to both Tariff and Operating Agreement.

<sup>3</sup> All capitalized terms that are not otherwise defined herein shall have the same meaning as they are defined in the Tariff, Operating Agreement, or the Reliability Assurance Agreement among Load Serving Entities in the PJM Region.

from FTR Participants about FTR bilateral agreements. As described herein, these proposed modifications are just and reasonable and serve the public by equipping PJM with additional information to better manage the risks that affect PJM's FTR markets.

The revisions will provide PJM with greater visibility into its FTR markets by: (1) requiring the seller under a FTR bilateral agreement to confirm to PJM that it retains no continuing or lingering interest in the underlying FTR being sold; (2) requiring that certain primary economic terms of the FTR bilateral agreement and the related underlying FTR be reported to PJM by the buyer; (3) establishing a 48-hour time period, following execution of the FTR bilateral agreement, for the buyer to report such terms to PJM; and (4) requiring the buyer under the FTR bilateral agreement to submit the document evidencing the FTR bilateral agreement to PJM.

To make clear that these gains in transparency will not be at the expense of confidentiality, additional language confirms that the FTR bilateral agreements submitted to PJM will receive confidential treatment pursuant to existing PJM confidentiality rules.<sup>4</sup> The revisions also include non-substantive modifications to terminology in the interest of consistency, including the deletion of the alternately used words "contract" and "transaction" in favor of the term "agreement" and the replacement of the term "purchaser" (under an FTR bilateral agreement) with the term "buyer."

PJM and its stakeholders recognized that additional reforms would assist PJM in monitoring the FTR bilateral market and initiated a review of the existing rules related to FTR bilateral agreements through the PJM stakeholder process.<sup>5</sup> These proposed revisions received necessary stakeholder support. In particular, the Market and Reliability Committee endorsed these

---

<sup>4</sup> Operating Agreement, Section 18.17.

<sup>5</sup> PJM, *Financial Transmission Rights Market Review* (Apr. 2020), <https://www.pjm.com/-/media/library/reports-notice/special-reports/2020/fr-market-review-whitepaper.ashx>.

proposed revisions by acclamation with no objections or abstentions.<sup>6</sup> Subsequently, the Members Committee endorsed the proposed revisions on December 21, 2022, by acclamation, with no objections and one abstention.<sup>7</sup>

PJM respectfully requests an effective date of June 30, 2024 for these Tariff revisions. Because this proposed effective date is beyond the timeframe provided for in the Commission's rules, which require an effective date within 120 days of its order, PJM respectfully requests a waiver to permit this longer effective date.<sup>8</sup> The June 30, 2024, requested effective date is necessary to allow PJM sufficient time to effectuate the coding changes required by the filing, as well as to build and test the necessary software modifications. PJM is including an effective date of January 9, 2024 for the non-substantive section of the cover page of Tariff, Attachment K-Appendix, section 5, while the effective date for the substantive sections in this filing are being coded as June 30, 2024.

## **I. BACKGROUND**

### ***A. The purpose of FTRs and FTR bilateral transactions.***

FTRs are financial transactions in the PJM markets that allow Market Participants to hedge the locational price differences of day-ahead transmission congestion. FTR Market Participants may enter into bilateral agreements for the transfer of FTRs for their entire tenure or for specified periods. FTRs allow Market Participants to offset potential charges related to the price risk of

---

<sup>6</sup> See November 16, 2022, Market & Reliability Committee meeting minutes, <https://pjm.com/-/media/committees-groups/committees/mrc/2022/20221221/consent-agenda-a---draft-mrc-minutes-11162022.ashx>.

<sup>7</sup> See December 21, 2022, Members Committee meeting minute, <https://pjm.com/-/media/committees-groups/committees/mc/2023/20230125/consent-agenda-a---draft-mc-minutes-12212022.ashx>.

<sup>8</sup> 18 C.F.R. § 35.3(a)(1).

delivering energy to specific locations on the grid. FTRs are valued based upon the difference between the day-ahead prices at two points – a source and a sink – on the PJM transmission system.

A FTR serves as a benefit or credit to the holder of the FTR if the FTR represents a flow of energy in the same direction as the congested flow. Similarly, an FTR serves as a liability or charge to the FTR holder if the FTR represents a flow of energy in the opposite direction as the congested flow.

Pursuant to Tariff, Attachment K-Appendix, Section 5.2.2(d), Market Participants are permitted to buy and sell FTRs bilaterally (after the FTR is first obtained from PJM's FTR auction). The FTR secondary market is used by PJM Market Participants for a number of reasons, including achieving a PJM Market Participant's desired configuration of its FTR portfolio. A FTR can be split into multiple FTRs on the same path with different MW amounts and different start and end dates.<sup>9</sup> Consequently, FTR bilateral agreements (to which neither PJM nor PJM Settlement, Inc. is a party) permit Market Participants an opportunity to accomplish reconfiguration of their FTR portfolios not otherwise permitted or available through PJM's FTR auction.

PJM, in this filing, seeks to improve the rules by which FTRs are sold bilaterally, and gather additional information about the secondary markets. These proposed Tariff revisions are intended to better enable PJM to protect its FTR markets and its Members from risks and potential market manipulation in the secondary bilateral markets for FTRs.<sup>10</sup>

---

<sup>9</sup> PJM, *Manual 6: Financial Transmission Rights*, § 7.2 (rev 32, July 26, 2023) (The PJM FTR Center's Secondary Trading Center at 48), <https://www.pjm.com/-/media/documents/manuals/m06.ashx>.

<sup>10</sup> PJM, *Financial Transmission Rights Market Review*, at 24 (Apr. 2020) (citing the need to enhance the FTR bilateral transaction rules), <https://www.pjm.com/-/media/library/reports-notice/special-reports/2020/ftm-review-whitepaper.ashx>.

## **II. PJM’S PROPOSED TARIFF REVISIONS PROMOTE TRANSPARENCY AND ARE PART OF PJM’S ONGOING PROCESS TO IMPROVE ITS RISK MANAGEMENT FUNCTION**

### ***A. The Seller of a FTR may not have a continuing interest in the FTR once the FTR is sold in the bilateral secondary market.***

The proposed Tariff revisions require that the seller of a FTR represent to PJM via FTR Center, PJM’s FTR reporting tool, that the seller does not have a continuing or lingering interest<sup>11</sup> in the underlying FTR once it is sold. This proposed Tariff provisions promote market transparency and supports PJM’s role as the market risk manager of its FTR market by enhancing PJM’s ability to monitor its markets and identify anomalies. The proposed Tariff revisions enable PJM to receive pertinent information about FTR sales in a standard format which enhance PJM’s market surveillance capabilities. The proposed Tariff revisions are similar to requirements in the broader financial industry, in particular financial market rules with respect to wash sales and the concept of a “true sale” in financing transactions and secured credit. Additionally, the Commission has weighed in on the importance of market regulatory and risk management transparency to well-functioning RTO markets. Each of these considerations are discussed below.

#### *1. Lingering interests of the Seller may have detrimental effect on Market transparency.*

A seller’s lingering ownership or controlling interest in a FTR can have a detrimental impact on a regional transmission operator’s ability to manage risks in its FTR markets. These harmful impacts include the distortion of the true value and pricing of congestion present at any

---

<sup>11</sup> For purposes of these Tariff revisions, a lingering or continuing interest in a FTR could be, but is not limited to, (1) an agreement or right of the seller to repurchase the FTR at a certain date, price, or event in the future, (2) an agreement (similar to a wash sale), where a FTR is purchased and sold, perhaps by the Seller or an affiliate at the same price within a short period of time, (3) an agreement by the seller to share in the profit or losses of the ultimate sale of the FTR, (4) the right of the seller to terminate the FTR transaction; or (5), the seller continuing to receive a revenue stream or fee in connection with the sale.

particular point on the transmission system, as well as opaqueness as to the current holder of particular FTRs and FTR positions in the ever-changing FTR markets.

More specifically, the presence of an unknown lingering interest of a seller under an FTR bilateral agreement could result in PJM observing FTR values that could be influenced by factors separate and distinct from the congestion on a particular FTR path, which is the main driver of an underlying FTR's value. These factors could include transaction decisions based upon factors unrelated to congestion such as certain price indices or price volatility. Additionally, the presence of such an interest, unknown to PJM, under or in connection with a FTR bilateral agreement could hinder PJM's ability to correctly and quickly identify and investigate potential FTR market anomalies and potential manipulative behavior in the FTR market. The presence of additional terms and conditions unknown to PJM could result in an opaqueness that would negatively impact or delay PJM's understanding of the FTR market activity and associated credit risks -- hindering and unnecessarily delaying PJM's market risk management abilities. Consequently, the proposed Tariff provisions aid PJM in its market surveillance efforts, promote market transparency, and improves PJM's risk management efforts, which could lead to fewer potential losses for PJM Members.<sup>12</sup>

2. *Financial markets, and finance and accounting industry principles, support the concept of no lingering interests.*

The proposed Tariff revisions have support in the financial markets, and in the finance and accounting industry, where regulators, risk managers and accounting standards boards have put in place rules and accounting principles to promote market transparency and to deter manipulative

---

<sup>12</sup> Losses among FTR bilaterals are borne by the parties, however, this could have a disruptive impact on PJM's FTR market.

behavior subsequent to the purchase and sale of a financial product or asset. These situations are demonstrated in the financial markets' prohibition of "wash sales"<sup>13</sup> and the finance account industry concept of a "true sale."

In the case of wash sale, the financial market exchanges, such as the Chicago Mercantile Exchange, impose penalties against a market participant when the same or a substantially similar product is sold and repurchased by that market participant or an affiliate within 30 days. The concern regarding such a wash sale is the perceived absence of an economic rationale for the trade, which raises regulatory and market risk concern regarding fraud and/or market manipulation.

Similar to financial markets prohibitions on wash sales is the concept in finance transactions and accounting industry rules of a "true sale."<sup>14</sup> There is an expectation (sometimes requiring extensive documentation, factual analysis or a legal opinion) that requires that a seller has "truly" sold a product or an asset to the buyer. For instance, an agreement where a seller of an asset concurrently agrees to repurchase the same product or asset at a later time could result in a transaction that is recharacterized as a loan from the purported buyer to the purported seller -- as opposed to the "true sale" of the product or asset for legal or accounting purposes. The proper characterization of a sale could have ramifications for the balance sheet of an entity from an accounting perspective, or the legal solvency of the entity, if a seller is determined to have kept a lingering or controlling interest in a product or asset. The difficulties confronted by financial

---

<sup>13</sup> The Wash Sale rule bars a taxpayer from deducting a loss on the sale of a security they replace within 30 days. The point of the rule is to prevent investors from creating an investment loss for the benefit of a tax deduction while essentially maintaining the position in the security.

<sup>14</sup> A true sale is an accounting standard that determines the legal and financial treatment of the sale or disposition of a financial asset. Under Generally Accepted Accounting Principles promulgated by Financial Accounting Standards Board ("FASB"), the criteria for a true sale includes: (1) legal isolation of the transferred assets; (2) the transferee's right to freely pledge or exchange the transferred assets; and (3) the transferor's relinquishment of effective control of the transferred asset.

industry regulators and market participants with analyzing wash sales and “true sales” are similar to those faced by PJM if a seller has a lingering interest in the underlying FTR after the FTR bilateral agreement is executed.

3. *FERC and PJM share similar goals for increased Energy Market transparency.*

FERC has recognized the need for transparency in the markets that it regulates. In Order 704, FERC’s transparency rule noted that additional information on natural gas prices and price formation, and the size of the natural gas market, would enable the Commission to assess the effectiveness of the index pricing regime.<sup>15</sup> Order 704 required all market participants (with some exceptions) to report via FERC Form 552 aggregate volumes of gas purchases and sales to permit the Commission to gain a better understanding of how price indexes are formed.<sup>16</sup> The Order noted that the additional information would allow the Commission to, “not only to understand the transactions used to formulate price indices; it is to understand how influential price indices are in the overall transacting of natural gas in U.S. wholesale markets.”<sup>17</sup>

PJM seeks information on FTRs sold bilaterally in secondary markets for similar reasons. The information obtained by the proposed Tariff revisions will enable PJM, like FERC, to better understand how FTRs are bilaterally purchased and sold and assist PJM in monitoring and maintaining a well-functioning market.<sup>18</sup>

---

<sup>15</sup> *Transparency Provisions of Section 23 of the Natural Gas Act*, Order No. 704, FERC Stats. & Regs. ¶ 31,260, 73 Fed. Reg. 1,014 (2007) (Final Rule) (Order No. 704), *affirmed*, *Transparency Provisions of Section 23 of the Natural Gas Act*, Order No. 704-A, 73 Fed. Reg. 55,726, FERC Stats. & Regs. ¶ 31,275 (2008) (Order No. 704-A).

<sup>16</sup> *See generally* Order No. 704.

<sup>17</sup> *Id.* at 73.

<sup>18</sup> *GreenHat Energy, LLC, et al.*, 177 FERC ¶ 61,073, at PP 30 & 43 (2021).



FERC has had occasion to review Market Participant activity in PJM’s FTR bilateral market. In the Commission’s Order assessing significant penalties in connection with PJM’s FTR markets, the Commission found that a market participant’s bilateral sales of FTRs, with a pre-agreement to repurchase the FTRs five days before PJM’s next FTR auction violated FPA 222, was part of a fraudulent scheme which constituted market manipulation.<sup>19</sup> In its Order, the Commission found that GreenHat violated FPA Section 222 by “engaging in a manipulative scheme in PJM’s FTR market consisting of acquiring an FTR portfolio made up primarily of long-term FTRs with virtually no supporting, upfront capital, planning not to pay for the losses at settlement, and obtaining cash for the individual Respondent *by selling profitable FTRs to third parties at a discount.*”<sup>20</sup> These proposed Tariff revisions address and seek to expressly prohibit activity that the Commission found warranted significant fines under the Commission authority under the FPA.<sup>21</sup>

4. *The proposed revisions support PJM’s administration of its FTR Market Risk Management function.*

a. Creditworthiness

The information received as a result of the proposed Tariff revision will better enable PJM to evaluate the creditworthiness of the buyer of FTRs purchased under FTR bilateral agreements. Pursuant to Tariff, Attachment K-Appendix, 5.2.2(d)(iii),<sup>22</sup> PJM’s consent is required for a seller

---

<sup>19</sup> *Id.* at 43.

<sup>20</sup> *Id.* at 30 (emphasis added).

<sup>21</sup> *Id.*

<sup>22</sup> Tariff, Attachment K-Appendix, Section 5.2.2(d)(iii). (“Consent of the Office of the Interconnection shall be required for a seller to transfer to a buyer any Financial Transmission Right Obligation. Such consent shall be based upon the Office of the Interconnection’s assessment of the buyer’s ability to perform the obligations, including meeting applicable creditworthiness requirements, transferred in the bilateral contract. If consent for a transfer is not provided by the Office of the Interconnection, the title to the Financial Transmission Rights shall not transfer to the third party and the FTR Holder shall continue to receive all Transmission Congestion Credits attributable to the Financial

to transfer a FTR to a buyer. The additional data collected as a result of the proposed Tariff revisions will better equip PJM to accomplish this creditworthiness review by allowing PJM a more up-to-date and holistic review of the FTR portfolio of its FTR Market Participants.

***B. The proposed revisions enable better enforcement of PJM's FTR Forfeiture Rule.***

The proposed Tariff revisions aid PJM's administration of its FERC approved FTR Forfeiture Rule.<sup>23</sup> PJM's FTR Forfeiture Rule requires a FTR holder to forfeit the profit from its FTR when it submits a virtual transaction at or near the source or sink location of the FTR it holds (such a FTR/virtual transaction pairing results in a higher location marginal price spread in the Day-ahead energy market rather than in the Real-time energy market). The proposed Tariff revisions will provide PJM with data to assist PJM's ongoing administration of the FTR forfeiture rule and to determine, if any, the amount of any forfeiture as well as alerting PJM to any potential indications of market manipulation.<sup>24</sup>

***C. Primary economic terms must be reported to PJM.***

The proposed Tariff provisions require the buyer of FTRs under a FTR bilateral agreement to report ten primary economic terms relating to the FTR bilateral agreement and the underlying FTR. These terms are (1) the name of the seller, (2) the name of the buyer, (3) the FTR start date and (4) end date, (5) the quantity of the FTR transferred, (6) the source and sink of the underlying FTR, (7) the FTR market auction in which the FTRs were originally purchased, (8) the FTR class,

---

Transmission Rights and remain subject to all credit requirements and obligations associated with the Financial Transmission Rights.”).

<sup>23</sup> The FTR Forfeiture Rule was approved by FERC on January 31, 2022 under ER17-1433-004. *PJM Interconnection, L.L.C.*, 179 FERC ¶ 61,010 (2022).

<sup>24</sup> *Id.* at 5. The FTR Forfeiture Rule may help deter manipulative behavior.

(9) the price and (10) execution date of the FTR bilateral agreement. The submission of these data elements will assist PJM in evaluating risk associated with a FTR bilateral agreement, as well as better assess the creditworthiness of the buyer of the FTR. The collection of this data fills an important gap within the implementation of PJM’s market risk management for its FTR market.

Importantly, the proposed revisions also provide clarity with regard to the FTR “price” field in PJM’s FTR center. The FTR price field in FTR Center has been inconsistently applied by Market Participants and PJM had not previously provided clear guidance regarding the obligation to accurately report data in the price field.<sup>25</sup> The proposed Tariff revisions clarify that the price field should be completed with the actual price or prices paid under the FTR bilateral agreement.

The requirement for the buyer to report the primary economic data includes an obligation to submit continuation data with respect to the FTR bilateral agreement and the underlying FTRs. These provisions help ensure PJM has additional and ongoing relevant data to monitor its FTR markets consistent with Commission policy on the use of sufficient information. As referenced by the Commission, “information is the key to a viable electricity market and to preventing market manipulation.”<sup>26</sup> As markets continue to evolve with increased levels of sophistication, PJM must continue to collect and evaluate the type of data necessary to ensure just and reasonable rates.<sup>27</sup> The data on FTR bilateral agreements submitted by Market Participants will provide PJM with

---

<sup>25</sup> PJM, Report of the Independent Consultants on the GreenHat Default, at 27 (Mar. 26, 2019), <https://www.pjm.com/-/media/library/reports-notices/special-reports/2019/report-of-the-independent-consultants-on-the-greenhat-default.pdf>.

<sup>26</sup> *Enhancements of Electricity Market Surveillance and Analysis through Ongoing Electronic Delivery of Data from Regional Transmission Organizations and Independent System Operators*, 76 Fed. Reg. 62,211, 66,213 (Oct. 26, 2011).

<sup>27</sup> *Id.* at 66,213 (paragraph 13).

increased and ongoing visibility to assess the risks posed to the FTR markets by purchase and sale of a FTR under a FTR bilateral agreement.

The requirement to provide the primary economic terms is not overly broad in its scope, but has been calibrated by PJM to collect a limited number of data elements viewed as necessary for its market risk management purposes.<sup>28</sup> Consequently, this proposed requirement neither grants an undue preference or advantage nor subjects any Market Participants to an undue prejudice or disadvantage<sup>29</sup> as a result of these proposed reporting requirements.

***D. A 48-hour time period is established for reporting of data and submission of FTR bilateral agreement.***

The Tariff revisions require that the buyer under the FTR bilateral agreement submit the terms of the agreement using PJM's FTR Center within 48 hours of the date the FTR bilateral agreement is executed. The 48 hours provides a specific time frame and thus regulatory certainty related to the FTR Participant's roles and responsibilities. The 48-hour time frame serves several purposes. The window provides FTR Participants sufficient time to conduct necessary confirmation procedures. Often times, these types of purchase and sale transactions are conducted under the International Swaps and Dealers Association (ISDA) agreements and, once executed, the FTR bilateral agreement requires only a confirm as documentation that the purchase and sale has been executed. The 48-hour time period provides sufficient time for the confirmation process, and submission of the FTR bilateral agreement.

---

<sup>28</sup> Commodity Futures Trading Commission Regulation ("CFTC")-regulated financial markets require participants to report as many as 128 data elements associated with each individual purchase and sale transaction. 17 C.F.R. § 45.3(b)(2) (CFTC Regulation - Swap Data Reporting: Creation Data).

<sup>29</sup> FPA 205.

The financial markets have similar time frames for the reporting of certain off-facility energy commodity swaps.<sup>30</sup> CFTC Reg. 43.3(a)(3) requires the reporting of certain swaps “as soon as technologically practicable” and, for a swap executed bilaterally or “off-facility,” requires reporting of certain data elements by the end of the second business day after execution.<sup>31</sup> PJM’s 48 hour reporting requirement is consistent with industry norms, and balances the certainty provided by a set time requirement for a limited number of data elements with the various types and levels of sophistication of FTR Market Participants.

***E. FTR bilateral agreements must be submitted to PJM.***

The proposed Tariff revisions require that the buyer under a FTR bilateral agreement submit the documentation to PJM’s FTR Center. Unlike FTR transactions conducted as part of PJM’s FTR auction, PJM does not have access to data regarding FTRs bought and sold by Market Participants under FTR bilateral agreements. Submission of the FTR bilateral agreement to PJM gives PJM the ability to confirm certain of the terms as provided to PJM by the buyer under the FTR bilateral agreement.<sup>32</sup>

Additionally, the submission of the FTR bilateral agreement will permit PJM to better conduct surveillance of its markets and to be better prepared to address factors cited by the Commission, including detecting attempts at market manipulation and assisting PJM in determining how market participants are positioning themselves in PJM FTR markets. Further, the submission of data regarding FTR bilateral agreements will assist PJM in detecting anomalous

---

<sup>30</sup> 17 C.F.R. § 43.3 (CFTC Regulation - Methods and Timing for Real-Time Public Reporting).

<sup>31</sup> CFTC Regulation 43.2(a) defines “as soon as technologically practicable” as taking in consideration the prevalence, implementation and use of technology by comparable market participants. 17 C.F.R. § 43.2.

<sup>32</sup> PJM may share certain information, as applicable, with the Market Monitor pursuant to Tariff, Attachment M, section V(A).

or uneconomic bilateral FTR transactions between market participants that may not be consistent with pricing signals. Under these proposed Tariff revision, the buyer of the FTR bilateral would be under a continuing obligation to report continuation data regarding amendments to the FTR bilateral agreement terms to PJM.

***F. FTR bilateral agreement Documentation will receive confidential treatment.***

The proposed Tariff provisions confirm that the submission of the primary economic terms as well as the FTR bilateral agreement documentation to PJM will receive confidential treatment under PJM's existing confidentiality rules.<sup>33</sup> During the PJM stakeholder process on these Tariff changes, PJM FTR Participants expressed concerns regarding the proprietary nature of some of the information that may be included in the FTR bilateral agreement. In response to these concerns, the proposed Tariff revisions confirm the confidentiality of the FTR bilateral agreements.

**III. THE PROPOSED REVISIONS ARE JUST AND REASONABLE AND IN THE PUBLIC INTEREST**

These proposed revisions to the Tariff are just and reasonable under FPA section 205 because they further the Commission's policies on transparency, enhance PJM's ability to manage risk and equip PJM with additional information to administer and surveil its markets, which together serve to better protect PJM members from potential losses.

The proposed Tariff revision to prohibit lingering interest in a FTR promotes transparency and enables PJM to better monitor and manage risk in its markets. This transparency aids PJM market surveillance activities and better enables PJM to perform its role as risk manager. This

---

<sup>33</sup> Operating Agreement, Section 18.17.1.

enhanced risk management will help minimize potential disruptions to PJM's FTR market and is narrowly tailored to meet the needs of PJM in complying with Attachment Q, Credit Risk Policy and administering its FTR forfeiture rule.

Likewise, the proposed Tariff revisions establishing reporting requirements and ensuring confidentiality are also just and reasonable as they provide PJM with valuable information to administer its Tariff and better enable well-functioning markets. The proposed reporting requirements, which involve reporting just 10 data elements to PJM within 48 hours, do not create an undue prejudice or disadvantage for FTR Participants. PJM's risk management tools will be enhanced with additional and standardized data from FTR Market Participants about their secondary market FTR bilateral agreements, which is data to which PJM does not otherwise have access.

The proposed reporting Tariff revisions will also enable enforcement of FPA 222<sup>34</sup> with respect to the prohibition of market manipulation as these provisions provide additional information to PJM to identify and analyze potential anomalies in its FTR markets. PJM will gain a better understanding of the FTR bilateral agreements in the secondary market, which leads to well-functioning PJM markets.

#### **IV. STAKEHOLDER PROCESS**

PJM and its stakeholders developed these Tariff and Operating Agreement revisions in 2022, and the proposed revisions have the support of the PJM membership. The Markets and

---

<sup>34</sup> 16 U.S.C. § 824v (2022) (“It shall be unlawful for any entity (including any entity described in 201(f), directly or indirectly, to use or employ, in connection with the purchase and sale of electric energy or the purchase or sale of transmission services subject to the jurisdiction of the Commission, any manipulative or deceptive device or contrivance ... in contravention of such rules and regulations as the Commission may prescribe as necessary or appropriate in the public interest or for the protection of electric ratepayers.”).

Reliability Committee endorsed this package on November 16, 2022.<sup>35</sup> The Members Committee subsequently considered and endorsed the proposal on December 21, 2022, by acclamation with no objections and one abstention.

## V. EFFECTIVE DATE AND REQUEST FOR WAIVER

PJM respectfully requests waiver of the Commission's prior notice requirements<sup>36</sup> to permit an effective date of June 30, 2024, for the proposed revisions to the Tariff and Operating Agreement.

Good cause exists to grant waiver, as this effective date will align with the earliest date that PJM can take into effect the coding changes and provide sufficient time for PJM to build and test the software modifications necessary to implement the proposed changes in conjunction with PJM's other ongoing initiatives. The Commission has previously found it appropriate to grant waiver of the 120-day prior notice period to afford Regional Transmission Organizations sufficient time to construct and test necessary software changes.<sup>37</sup> Given these considerations, there are multiple measures that PJM will coordinate with FTR Participants to guard against risk discussed herein.

---

<sup>35</sup> See PJM, Risk Management Committee Meeting Minutes (Dec. 20, 2022), <https://www.pjm.com/-/media/committees-groups/committees/rmc/2022/20221220/minutes---rmc---12202022-doc.ashx>.

<sup>36</sup> 18 C.F.R. § 35.3(a)(1). PJM is including an effective date of January 9, 2024 for the non-substantive section of the cover page of Tariff, Attachment K-Appendix, section 5, while the effective date for the substantive sections in this filing are being coded as June 30, 2024.

<sup>37</sup> See, e.g., *Sw. Power Pool, Inc.*, 141 FERC ¶ 61,048, at P 16 (2012) (“We find good cause to grant SPP’s request for waiver of the 120-day notice requirement in section 35.3 of the Commission’s regulations. It is reasonable for SPP to file the proposal early to permit the Commission sufficient time to address the filing so that SPP may complete the remaining work required for commencement of the new market.” (citation omitted)); *Cal. Indep. Sys. Operator Corp.*, 136 FERC ¶ 61,236, at P 13 (2011) (“In sum, we shall accept the subject tariff records as just and reasonable, and find good cause to grant the CAISO’s request for waiver of section 35.3 of the Commission’s regulations to allow testing of the GMC revisions in advance of the tariff effective date of January 1, 2012.”); *PJM Interconnection, L.L.C.*, 134 FERC ¶ 61,246, at P 28 (2011) (“We find reasonable PJM’s explanation for the effective date it requests. Because the proposed revisions will require additional time to implement changes to PJM’s modeling software, good cause exists to grant the requested waiver.”).



## VI. DESCRIPTION OF SUBMITTAL

This filing consists of the following:

1. This transmittal letter;
2. Attachment A – Revisions to the Tariff and Operating Agreement in marked format;
3. Attachment B – Revisions to the Tariff and Operating Agreement in clean format; and
4. Attachment C – Affidavit of Carl Coscia, *Chief Risk Officer*, PJM Interconnection, L.L.C.

## VII. 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:

Colleen Hicks  
Managing Counsel  
PJM Interconnection, L.L.C.  
2750 Monroe Boulevard  
Audubon, Pennsylvania 19403  
(610) 666-3010  
colleen.hicks@pjm.com

Craig Glazer  
Vice President - Federal Government Policy  
PJM Interconnection, L.L.C.  
1200 G Street, N.W, Suite 600  
Washington, D.C. 20005  
(202) 423-4743  
craig.glazer@pjm.com

## VIII. 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,<sup>38</sup> 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.aspx> with a specific link to the newly-filed document, and will send an e-mail on the same date as this filing

---

<sup>38</sup> See 18 C.F.R. §§ 35.2(e) and 385.2010(f)(3).

to all PJM Members and all state utility regulatory commissions in the PJM Region<sup>39</sup> 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.

#### IX. CONCLUSION

Based on the foregoing, PJM respectfully requests that the Commission accept the proposed revisions to PJM's Tariff and Operating Agreement by no later than January 8, 2024, effective June 30, 2024.

Respectfully submitted,

*/s/ Colleen Hicks*

Craig Glazer  
Vice President–Federal Government Policy  
PJM Interconnection, L.L.C.  
1200 G Street, N.W., Suite 600  
Washington, D.C. 20005  
(202) 423-4743 (phone)  
(202) 393-7741 (fax)  
[Craig.Glazer@pjm.com](mailto:Craig.Glazer@pjm.com)

Colleen Hicks  
Managing Counsel  
PJM Interconnection, L.L.C.  
2750 Monroe Blvd.  
Audubon, PA 19403  
(610) 666-3010 (phone)  
(610) 666-8211 (fax)  
[Colleen.Hicks@pjm.com](mailto:Colleen.Hicks@pjm.com)

---

<sup>39</sup> PJM already maintains, updates and regularly uses e-mail lists for all PJM Members and affected state commissions.

# Attachment A

## Revisions to the PJM Open Access Transmission Tariff

(Marked / Redline Format)

## **5.2 Transmission Congestion Credit Calculation.**

### **5.2.1 Eligibility.**

(a) Except as provided in section 5.2.1(b), each FTR Holder shall receive as a Transmission Congestion Credit a proportional share of the Day-ahead Energy Market Transmission Congestion Charges collected for each constrained hour.

(b) If an Effective FTR Holder between specified delivery and receipt buses acquired the Financial Transmission Right in a Financial Transmission Rights auction (the procedures for which are set forth in section 7 of this Attachment K – Appendix) and had a Virtual Transaction portfolio which includes Increment Offer(s), Decrement Bid(s), and/or Up-to Congestion Transaction(s) that was accepted by the Office of the Interconnection for an applicable hour in the Day-ahead Energy Market, whereby the Effective FTR Holder's Virtual Transaction portfolio resulted in (i) a difference in Location Marginal Prices in the Day-ahead Energy Market between such delivery and receipt buses which is greater than the difference in Locational Marginal Prices between such delivery and receipt buses in the Real-time Energy Market, and (ii) an increasing the value between such delivery and receipt buses, then the Market Participant shall not receive any Transmission Congestion Credit associated with such Financial Transmission Right in such hour, that is attributable to the absolute value (i.e., the product of the constraint's shadow price times the distribution factor (dfax) of the difference between the Financial Transmission Right delivery and receipt buses) of the relevant Day-ahead Energy Market binding constraint (as further discussed in section 5.2.1(c) below), but no more than the excess of one divided by the number of hours in the applicable period multiplied by the amount that the Market Participant paid for the Financial Transmission Right in the Financial Transmission Rights auction (i.e., FTR profit). For the purposes of this calculation, every individual Financial Transmission Right of an Effective FTR Holder shall be considered.

(c) For purposes of section 5.2.1(b), an Effective FTR Holder's Virtual Transaction portfolio shall be considered if the absolute value of the attributable net flow across a Day-ahead Energy Market binding constraint relative to the Day-ahead Energy Market load weighted reference bus between the Financial Transmission Right delivery and receipt buses exceeds the physical limit of such binding constraint by the greater of 0.1 MW or ten percent.

(d) The Market Monitoring Unit shall calculate Transmission Congestion Credits pursuant to this section and Tariff, Attachment M-Appendix, section VI. Nothing in this section shall preclude the Market Monitoring Unit from action to recover inappropriate benefits from the subject activity if the amount forfeited is less than the benefit derived by the Effective FTR Holder. If the Office of the Interconnection agrees with such calculation, then it shall impose the forfeiture of the Transmission Congestion Credit accordingly. If the Office of the Interconnection does not agree with the calculation, then it shall impose a forfeiture of Transmission Congestion Credit consistent with its determination. If the Market Monitoring Unit disagrees with the Office of the Interconnection's determination, it may exercise its powers to inform the Commission staff of its concerns and may request an adjustment. This provision is duplicated in Tariff, Attachment M-Appendix, section VI. An Effective FTR Holder objecting to

the application of this rule shall have recourse to the Commission for review of the application of the FTR forfeiture rule to its trading activity.

### 5.2.2 Financial Transmission Rights.

(a) Transmission Congestion Credits will be calculated based upon the Financial Transmission Rights held at the time of the constrained hour. Except as provided in subsection (e) below, Financial Transmission Rights shall be auctioned as set forth in Operating Agreement, Schedule 1, section 7.

(b) The hourly economic value of a Financial Transmission Right Obligation is based on the Financial Transmission Right MW reservation and the difference between the Day-ahead Congestion Price at the point of delivery and the point of receipt of the Financial Transmission Right. The hourly economic value of a Financial Transmission Right Obligation is positive (a benefit to the FTR Holder) when the Day-ahead Congestion Price at the point of delivery is higher than the Day-ahead Congestion Price at the point of receipt. The hourly economic value of a Financial Transmission Right Obligation is negative (a liability to the FTR Holder) when the Day-ahead Congestion Price at the point of receipt is higher than the Day-ahead Congestion Price at the point of delivery.

(c) The hourly economic value of a Financial Transmission Right Option is based on the Financial Transmission Right MW reservation and the difference between the Day-ahead Congestion Price at the point of delivery and the point of receipt of the Financial Transmission Right when that difference is positive. The hourly economic value of a Financial Transmission Right Option is positive (a benefit to the FTR Holder) when the Day-ahead Congestion Price at the point of delivery is higher than the Day-ahead Congestion Price at the point of receipt. The hourly economic value of a Financial Transmission Right Option is zero (neither a benefit nor a liability to the FTR Holder) when the Day-ahead Congestion Price at the point of receipt is higher than the Day-ahead Congestion Price at the point of delivery.

(d) In addition to transactions with PJMSettlement in the Financial Transmission Rights auctions administered by the Office of the Interconnection, a Financial Transmission Right, for its entire tenure or for a specified period, may be sold or otherwise transferred by a FTR Holder to a third party by bilateral agreement, subject to compliance with such procedures as may be established by the Office of the Interconnection ~~for verification of the rights of the purchaser or transferee.~~

(i) Market Participants may enter into bilateral agreements ~~to for the~~ transfer ~~to a third party of~~ Financial Transmission Rights, for ~~its their~~ entire tenure or for a specified periods. Such bilateral ~~transactions agreements~~ shall be reported to the Office of the Interconnection in accordance with this Schedule Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d), and ~~pursuant to~~ the LLC's rules related to its FTR reporting tools.

(ii) For purposes of clarity, with respect to all bilateral ~~transactions agreements~~ for the transfer of Financial Transmission Rights, the rights and obligations pertaining to

the Financial Transmission Rights ~~that are the subject of such a bilateral transaction~~ transferred thereunder shall pass to the ~~buyer-purchaser~~ under ~~the such~~ bilateral ~~contract agreement~~ subject to the provisions of this ~~Schedule Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d)~~. The seller of Financial Transmission Rights in a bilateral agreement shall confirm to the Office of Interconnection, through the FTR reporting tools provided by the Office of Interconnection, that the seller has no continuing interest in the Financial Transmission Rights following their transfer. Such bilateral ~~transactions agreements~~ shall not modify the location or reconfigure the Financial Transmission Rights ~~transferred thereunder~~. In no event shall the purchase and sale of a Financial Transmission Right pursuant to a bilateral ~~transaction agreement~~ constitute a transaction with PJM Settlement or a transaction in any auction under this ~~Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d)~~.

- (iii) Consent of the Office of the Interconnection shall be required for a seller to transfer ~~to a buyer~~ any Financial Transmission Right Obligation ~~to a purchaser~~. Such consent shall be based upon the Office of the Interconnection's assessment of the ~~buyer's-purchaser's~~ ability to perform the obligations, including meeting applicable creditworthiness requirements, transferred in the bilateral ~~contract agreement~~. If consent for a transfer is not provided by the Office of the Interconnection, the title to the Financial Transmission Rights shall not transfer to the third party and the FTR Holder shall continue to receive all Transmission Congestion Credits attributable to the Financial Transmission Rights and remain subject to all credit requirements and obligations associated with the Financial Transmission Rights.
- (iv) A seller under such a bilateral ~~contract agreement~~ shall guarantee and indemnify the Office of the Interconnection, PJM Settlement, and the Members for the ~~buyer's-purchaser's~~ obligation to pay any charges associated with the transferred Financial Transmission Right and for which payment is not made to PJM Settlement by the ~~buyer-purchaser~~ under such a bilateral ~~transaction agreement~~.
- (v) All payments and related charges associated with such a bilateral ~~contract agreement~~ shall be arranged between the parties to such bilateral ~~contract agreement~~ and shall not be billed or settled by PJM Settlement or the Office of the Interconnection. The LLC, PJM Settlement, and the Members will not assume financial responsibility for the failure of a party to perform obligations owed to the other party under such a bilateral ~~contract agreement~~ reported to the Office of the Interconnection under this ~~Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d)~~ ~~Schedule~~.
- (vi) All claims regarding a default of a ~~buyer-purchaser~~ to a seller under such a bilateral ~~contract agreement~~ shall be resolved solely between the ~~buyer-purchaser~~ and the seller.

(vii) Reports of bilateral Financial Transmission Rights agreements shall include all primary economic terms (PET) data requested by the Office of Interconnection through its FTR reporting tools. A report of a bilateral Financial Transmission Rights agreement shall be made no later than 48 hours following the execution of such agreement between the parties, and changes to any previously reported PET data shall be reported to the Office of Interconnection within 48 hours. The purchaser in a bilateral Financial Transmission Rights agreement shall upload the underlying contract document to the Office of Interconnection within 48 hours of execution to allow for verification of reported PET data; provided, however, that if the underlying contract document is in the form of a standard master agreement (such as the ISDA Master Agreement), the purchaser shall be required to upload the bilateral Financial Transmission Rights transaction confirmation including any and all special terms and provisions contained in the parties' agreement. All underlying contract documents which are provided to the Office of Interconnection pursuant to the requirements set forth herein shall be treated as confidential.

(e) Network Service Users and Firm Transmission Customers that take service that sinks, sources in, or is transmitted through new PJM zones, at their election, may receive a direct allocation of Financial Transmission Rights instead of an allocation of Auction Revenue Rights. Network Service Users and Firm Transmission Customers may make this election for the succeeding two annual FTR auctions after the integration of the new zone into the PJM Interchange Energy Market. Such election shall be made prior to the commencement of each annual FTR auction. For purposes of this election, the Allegheny Power Zone shall be considered a new zone with respect to the annual Financial Transmission Right auction in 2003 and 2004. Network Service Users and Firm Transmission Customers in new PJM zones that elect not to receive direct allocations of Financial Transmission Rights shall receive allocations of Auction Revenue Rights. During the annual allocation process, the Financial Transmission Right allocation for new PJM zones shall be performed simultaneously with the Auction Revenue Rights allocations in existing and new PJM zones. Prior to the effective date of the initial allocation of FTRs in a new PJM Zone, PJM shall file with FERC, under section 205 of the Federal Power Act, the FTRs and ARRs allocated in accordance with sections 5 and 7 of this Schedule 1.

(f) For Network Service Users and Firm Transmission Customers that take service that sinks in, sources in, or is transmitted through new PJM zones, that elect to receive direct allocations of Financial Transmission Rights, Financial Transmission Rights shall be allocated using the same allocation methodology as is specified for the allocation of Auction Revenue Rights in Operating Agreement, Schedule 1, section 7.4.2 and in accordance with the following:

(i) Subject to subsection (ii) of this section, all Financial Transmission Rights must be simultaneously feasible. If all Financial Transmission Right requests made when Financial Transmission Rights are allocated for the new zone are not feasible then Financial Transmission Rights are prorated and allocated in

proportion to the MW level requested and in inverse proportion to the effect on the binding constraints.

- (ii) If any Financial Transmission Right requests that are equal to or less than sixty percent (60%) of a Network Service User's proportion of peak load in the Zone or fifty percent of its transmission responsibility for Non-Zone Network Load, or fifty percent of megawatts of firm service between the receipt and delivery points of Firm Transmission Customers, are not feasible in the annual allocation and auction processes due to system conditions, then PJM shall increase the capability limits of the binding constraints that would have rendered the Financial Transmission Rights infeasible to the extent necessary in order to allocate such Financial Transmission Rights without their being infeasible for all rounds of the annual allocation and auction processes, provided that this subsection (ii) shall not apply if the infeasibility is caused by extraordinary circumstances. Additionally, such increased limits shall be included in subsequent modeling during the Planning Year to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions; unless and to the extent those system conditions that contributed to infeasibility in the annual process are not extant for the time period subject to the subsequent modeling, such as would be the case, for example, if transmission facilities are returned to service during the Planning Year. In these cases, any increase in the capability limits taken under this subsection (ii) during the annual process will be removed from subsequent modeling to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions. In addition, PJM may remove or lower the increased capability limits, if feasible, during subsequent FTR Auctions if the removal or lowering of the increased capability limits does not impact Auction Revenue Rights funding and net auction revenues are positive.

For the purposes of this subsection (ii), extraordinary circumstances shall mean an event of force majeure that reduces the capability of existing or planned transmission facilities and such reduction in capability is the cause of the infeasibility of such Financial Transmission Rights. Extraordinary circumstances do not include those system conditions and assumptions modeled in simultaneous feasibility analyses conducted pursuant to Operating Agreement, Schedule 1, section 7.5 of Schedule 1 of this Agreement. If PJM allocates Financial Transmission Rights as a result of this subsection (ii) that would not otherwise have been feasible, then PJM shall notify Members and post on its web site (a) the aggregate megawatt quantities, by sources and sinks, of such Financial Transmission Rights and (b) any increases in capability limits used to allocate such Financial Transmission Rights.

- (iii) In the event that Network Load changes from one Network Service User to another after an initial or annual allocation of Financial Transmission Rights in a new zone, Financial Transmission Rights will be reassigned on a proportional



basis from the Network Service User losing the load to the Network Service User that is gaining the Network Load.

(g) At least one month prior to the integration of a new zone into the PJM Interchange Energy Market, Network Service Users and Firm Transmission Customers that take service that sinks in, sources in, or is transmitted through the new zone, shall receive an initial allocation of Financial Transmission Rights that will be in effect from the date of the integration of the new zone until the next annual allocation of Financial Transmission Rights and Auction Revenue Rights. Such allocation of Financial Transmission Rights shall be made in accordance with Operating Agreement, Schedule 1, section 5.2.2(f) of this Schedule.

(h) Reserved.

### **5.2.3 Target Allocation of Transmission Congestion Credits.**

A Target Allocation of Transmission Congestion Credits for each FTR Holder shall be determined for each Financial Transmission Right. Each Financial Transmission Right shall be multiplied by the Day-ahead Congestion Price differences for the receipt and delivery points associated with the Financial Transmission Right, calculated as the Day-ahead Congestion Price at the delivery point(s) minus the Day-ahead Congestion Price at the receipt point(s). For the purposes of calculating Transmission Congestion Credits, the Day-ahead Congestion Price of a Zone is calculated as the sum of the Day-ahead Congestion Price of each bus that comprises the Zone multiplied by the percent of annual peak load assigned to each node in the Zone. Commencing with the 2015/2016 Planning Period, for the purposes of calculating Transmission Congestion Credits, the Day-ahead Congestion Price of a Residual Metered Load aggregate is calculated as the sum of the Day-ahead Congestion Price of each bus that comprises the Residual Metered Load aggregate multiplied by the percent of the annual peak residual load assigned to each bus that comprises the Residual Metered Load aggregate. When the FTR Target Allocation is positive, the FTR Target Allocation is a credit to the FTR Holder. When the FTR Target Allocation is negative, the FTR Target Allocation is a debit to the FTR Holder if the FTR is a Financial Transmission Right Obligation. When the FTR Target Allocation is negative, the FTR Target Allocation is set to zero if the FTR is a Financial Transmission Right Option. The total Target Allocation for Network Service Users and Transmission Customers for each hour shall be the sum of the Target Allocations associated with all of the Network Service Users' or Transmission Customers' Financial Transmission Rights.

During a Market Suspension where there are no Day-ahead Prices available for the affected Operating Day, the aforementioned Day-ahead Congestion Price will be substituted with the hourly integrated Real-time Congestion Price as determined in Operating Agreement, Schedule 1, section 2.5.

For a Market Suspension where the suspension is greater than twenty-four (24) consecutive hours, which may span up to two Operating Days, and there are no Day-ahead Prices available for the affected Operating Day, the Day-ahead Financial Transmission Right Target Allocation values would be equal to zero for the hours corresponding to this suspension interval.

#### 5.2.4 [Reserved.]

#### 5.2.5 Calculation of Transmission Congestion Credits.

(a) The total of all the positive Target Allocations determined as specified above shall be compared to the Day-ahead Energy Market Transmission Congestion Charges in each hour. If the total of the Target Allocations is less than or equal to the total of the Day-ahead Energy Market Transmission Congestion Charges, the Transmission Congestion Credit for each entity holding an FTR shall be equal to its Target Allocation. All remaining Day-ahead Energy Market Transmission Congestion Charges shall be distributed as described below in Operating Agreement, Schedule 1, section 5.2.6 “Distribution of Excess Congestion Charges.”

(b) If the total of the Target Allocations is greater than the Day-ahead Energy Market Transmission Congestion Charges for the hour, each FTR Holder shall be assigned a share of the Day-ahead Energy Market Transmission Congestion Charges in proportion to its Target Allocations for Financial Transmission Rights which have a positive Target Allocation value. Financial Transmission Rights which have a negative Target Allocation value are assigned the full Target Allocation value as a negative Transmission Congestion Credit.

(c) At the end of a Planning Period if all FTR Holders did not receive Transmission Congestion Credits equal to their Target Allocations, the Office of the Interconnection shall assess a charge equal to the difference between the Transmission Congestion Credit Target Allocations for all revenue deficient FTRs and the actual Transmission Congestion Credits allocated to those FTR Holders. A charge assessed pursuant to this section shall also include any aggregate charge assessed pursuant to Operating Agreement, Schedule 1, section 7.4.4(c) and shall be allocated to all FTR Holders on a pro-rata basis according to the total Target Allocations for all FTRs held at any time during the relevant Planning Period. The charge shall be calculated and allocated in accordance with the following methodology:

1. The Office of the Interconnection shall calculate the total amount of uplift required as  $\{[\text{sum of the total monthly deficiencies in FTR Target Allocations for the Planning Period} + \text{the sum of the ARR Target Allocation deficiencies determined pursuant to Operating Agreement, Schedule 1, section 7.4.4(c)}] - [\text{sum of the total monthly excess ARR revenues and excess Day-ahead Energy Market Transmission Congestion Charges for the Planning Period}]\}$ .

2. For each Market Participant that held an FTR during the Planning Period, the Office of the Interconnection shall calculate the total Target Allocation associated with all FTRs held by the Market Participant during the Planning Period, provided that, the foregoing notwithstanding, if the total Target Allocation for an individual Market Participant calculated pursuant to this section is negative the Office of Interconnection shall set the value to zero.

3. The Office of the Interconnection shall then allocate an uplift charge to each Market Participant that held an FTR at any time during the Planning Period in accordance with the following formula:  $\{[\text{total uplift}] * [\text{total Target Allocation for all FTRs held by the Market Participant at any time during the Planning Period}] / [\text{total Target Allocations for all FTRs held by all PJM Market Participants at any time during the Planning Period}]\}$ .

### **5.2.6 Distribution of Excess Congestion Charges.**

(a) Excess Day-ahead Energy Market Transmission Congestion Charges accumulated in a month shall be distributed to each FTR Holder in proportion to, but not more than, any deficiency in the share of Day-ahead Energy Market Transmission Congestion Charges received by the FTR Holder during that month as compared to its total Target Allocations for the month.

(b) After the excess Day-ahead Energy Market Transmission Congestion Charge distribution described in Operating Agreement, Schedule 1, section 5.2.6(a) is performed, any excess Day-ahead Energy Market Transmission Congestion Charges remaining at the end of a month shall be distributed to each FTR Holder in proportion to, but not more than, any deficiency in the share of Day-ahead Energy Market Transmission Congestion Charges received by the FTR Holder during the current Planning Period, including previously distributed excess Day-ahead Energy Market Transmission Congestion Charges, as compared to its total Target Allocation for the Planning Period.

(c) Any excess Day-ahead Energy Market Transmission Congestion Charges remaining at the end of a Planning Period shall be distributed to each holder of Auction Revenue Rights in proportion to, but not more than, any Auction Revenue Right deficiencies for that Planning Period.

(d) Any excess Day-ahead Energy Market Transmission Congestion Charges remaining after a distribution pursuant to subsection (c) of this section shall be distributed to all ARR holders on a pro-rata basis according to the total Target Allocations for all ARRs held at any time during the relevant Planning Period. Any allocation pursuant to this subsection (d) shall be conducted in accordance with the following methodology:

1. For each Market Participant that held an ARR during the Planning Period, the Office of the Interconnection shall calculate the total Target Allocation associated with all ARRs held by the Market Participant during the Planning Period, provided that, the foregoing notwithstanding, if the total Target Allocation for an individual Market Participant calculated pursuant to this section is negative the Office of the Interconnection shall set the value to zero.

2. The Office of the Interconnection shall then allocate an excess Day-ahead Energy Market Transmission Congestion Charge credit to each Market Participant that held an ARR at any time during the Planning Period in accordance with the following formula: {[total excess Day-ahead Energy Market Transmission Congestion Charges remaining after distributions pursuant to subsection (a)-(c) of this section] \* [total Target Allocation for all ARRs held by the Market Participant at any time during the Planning Period] / [total Target Allocations for all ARRs held by all PJM Market Participants at any time during the Planning Period]}.

### **5.2.7 Allocation of Balancing Congestion Charges**

At the end of each hour during an Operating Day, the Office of the Interconnection shall allocate the Balancing Congestion Charges to real-time load and exports on a pro-rata basis. Such allocation shall not include purchases of Direct Charging Energy.

During a Market Suspension where the suspension has no Day-ahead Prices or if the suspension is less than or equal to twenty-four (24) hours, which may span up to two Operating Days, and there are no Day-ahead Prices available for the affected Operating Day, for each hour corresponding to this suspension interval, the Office of the Interconnection shall allocate the Balancing Congestion Charges to Financial Transmission Right Target Allocation values before being allocated to real-time load and exports on a pro-rata basis.

# Attachment A

## Revisions to the PJM Operating Agreement

(Marked / Redline Format)

## **5.2 Transmission Congestion Credit Calculation.**

### **5.2.1 Eligibility.**

(a) Except as provided in section 5.2.1(b), each FTR Holder shall receive as a Transmission Congestion Credit a proportional share of the Day-ahead Energy Market Transmission Congestion Charges collected for each constrained hour.

(b) If an Effective FTR Holder between specified delivery and receipt buses acquired the Financial Transmission Right in a Financial Transmission Rights auction (the procedures for which are set forth in section 7 of this Schedule 1) and had a Virtual Transaction portfolio which includes Increment Offer(s), Decrement Bid(s), and/or Up-to Congestion Transaction(s) that was accepted by the Office of the Interconnection for an applicable hour in the Day-ahead Energy Market, whereby the Effective FTR Holder's Virtual Transaction portfolio resulted in (i) a difference in Location Marginal Prices in the Day-ahead Energy Market between such delivery and receipt buses which is greater than the difference in Locational Marginal Prices between such delivery and receipt buses in the Real-time Energy Market, and (ii) an increasing the value between such delivery and receipt buses, then the Market Participant shall not receive any Transmission Congestion Credit associated with such Financial Transmission Right in such hour, that is attributable to the absolute value (i.e., the product of the constraint's shadow price times the distribution factor (dfax) of the difference between the Financial Transmission Right delivery and receipt buses) of the relevant Day-ahead Energy Market binding constraint (as further discussed in section 5.2.1(c) below), but no more than the excess of one divided by the number of hours in the applicable period multiplied by the amount that the Market Participant paid for the Financial Transmission Right in the Financial Transmission Rights auction (i.e., FTR profit). For the purposes of this calculation, every individual Financial Transmission Right of an Effective FTR Holder shall be considered.

(c) For purposes of section 5.2.1(b), an Effective FTR Holder's Virtual Transaction portfolio shall be considered if the absolute value of the attributable net flow across a Day-ahead Energy Market binding constraint relative to the Day-ahead Energy Market load weighted reference bus between the Financial Transmission Right delivery and receipt buses exceeds the physical limit of such binding constraint by the greater of 0.1 MW or ten percent.

(d) The Market Monitoring Unit shall calculate Transmission Congestion Credits pursuant to this section and Tariff, Attachment M-Appendix, section VI. Nothing in this section shall preclude the Market Monitoring Unit from action to recover inappropriate benefits from the subject activity if the amount forfeited is less than the benefit derived by the Effective FTR Holder. If the Office of the Interconnection agrees with such calculation, then it shall impose the forfeiture of the Transmission Congestion Credit accordingly. If the Office of the Interconnection does not agree with the calculation, then it shall impose a forfeiture of Transmission Congestion Credit consistent with its determination. If the Market Monitoring Unit disagrees with the Office of the Interconnection's determination, it may exercise its powers to inform the Commission staff of its concerns and may request an adjustment. This provision is duplicated in Tariff, Attachment M-Appendix, section VI. An Effective FTR Holder objecting to

the application of this rule shall have recourse to the Commission for review of the application of the FTR forfeiture rule to its trading activity.

### 5.2.2 Financial Transmission Rights.

(a) Transmission Congestion Credits will be calculated based upon the Financial Transmission Rights held at the time of the constrained hour. Except as provided in subsection (e) below, Financial Transmission Rights shall be auctioned as set forth in Operating Agreement, Schedule 1, section 7.

(b) The hourly economic value of a Financial Transmission Right Obligation is based on the Financial Transmission Right MW reservation and the difference between the Day-ahead Congestion Price at the point of delivery and the point of receipt of the Financial Transmission Right. The hourly economic value of a Financial Transmission Right Obligation is positive (a benefit to the FTR Holder) when the Day-ahead Congestion Price at the point of delivery is higher than the Day-ahead Congestion Price at the point of receipt. The hourly economic value of a Financial Transmission Right Obligation is negative (a liability to the FTR Holder) when the Day-ahead Congestion Price at the point of receipt is higher than the Day-ahead Congestion Price at the point of delivery.

(c) The hourly economic value of a Financial Transmission Right Option is based on the Financial Transmission Right MW reservation and the difference between the Day-ahead Congestion Price at the point of delivery and the point of receipt of the Financial Transmission Right when that difference is positive. The hourly economic value of a Financial Transmission Right Option is positive (a benefit to the FTR Holder) when the Day-ahead Congestion Price at the point of delivery is higher than the Day-ahead Congestion Price at the point of receipt. The hourly economic value of a Financial Transmission Right Option is zero (neither a benefit nor a liability to the FTR Holder) when the Day-ahead Congestion Price at the point of receipt is higher than the Day-ahead Congestion Price at the point of delivery.

(d) In addition to transactions with PJMSettlement in the Financial Transmission Rights auctions administered by the Office of the Interconnection, a Financial Transmission Right, for its entire tenure or for a specified period, may be sold or otherwise transferred by a FTR Holder to a third party by bilateral agreement, subject to compliance with such procedures as may be established by the Office of the Interconnection ~~for verification of the rights of the purchaser or transferee.~~

(i) Market Participants may enter into bilateral agreements ~~to~~ for the transfer ~~to a third party~~ of Financial Transmission Rights, for ~~its~~ their entire tenure or for a specified periods. Such bilateral ~~transactions~~ agreements shall be reported to the Office of the Interconnection in accordance with this Schedule Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d), and ~~pursuant to~~ the LLC's rules related to its FTR reporting tools.

(ii) For purposes of clarity, with respect to all bilateral ~~transactions~~ agreements for the transfer of Financial Transmission Rights, the rights and obligations pertaining to

the Financial Transmission Rights ~~that are the subject of such a bilateral transaction~~ transferred thereunder shall pass to the ~~buyer-purchaser~~ under ~~the such~~ bilateral ~~contract agreement~~ subject to the provisions of this ~~Schedule Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d)~~. The seller of Financial Transmission Rights in a bilateral agreement shall confirm to the Office of Interconnection, through the FTR reporting tools provided by the Office of Interconnection, that the seller has no continuing interest in the Financial Transmission Rights following their transfer. Such bilateral ~~transactions agreements~~ shall not modify the location or reconfigure the Financial Transmission Rights ~~transferred thereunder~~. In no event shall the purchase and sale of a Financial Transmission Right pursuant to a bilateral ~~transaction agreement~~ constitute a transaction with PJMSettlement or a transaction in any auction under this ~~Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d)~~.

- (iii) Consent of the Office of the Interconnection shall be required for a seller to transfer ~~to a buyer~~ any Financial Transmission Right Obligation ~~to a purchaser~~. Such consent shall be based upon the Office of the Interconnection's assessment of the ~~buyer's-purchaser's~~ ability to perform the obligations, including meeting applicable creditworthiness requirements, transferred in the bilateral ~~contract agreement~~. If consent for a transfer is not provided by the Office of the Interconnection, the title to the Financial Transmission Rights shall not transfer to the third party and the FTR Holder shall continue to receive all Transmission Congestion Credits attributable to the Financial Transmission Rights and remain subject to all credit requirements and obligations associated with the Financial Transmission Rights.
- (iv) A seller under such a bilateral ~~contract agreement~~ shall guarantee and indemnify the Office of the Interconnection, PJMSettlement, and the Members for the ~~buyer's-purchaser's~~ obligation to pay any charges associated with the transferred Financial Transmission Right and for which payment is not made to PJMSettlement by the ~~buyer-purchaser~~ under such a bilateral ~~transaction agreement~~.
- (v) All payments and related charges associated with such a bilateral ~~contract agreement~~ shall be arranged between the parties to such bilateral ~~contract agreement~~ and shall not be billed or settled by PJMSettlement or the Office of the Interconnection. The LLC, PJMSettlement, and the Members will not assume financial responsibility for the failure of a party to perform obligations owed to the other party under such a bilateral ~~contract agreement~~ reported to the Office of the Interconnection under this ~~Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d)~~ ~~Schedule~~.
- (vi) All claims regarding a default of a ~~buyer-purchaser~~ to a seller under such a bilateral ~~contract agreement~~ shall be resolved solely between the ~~buyer-purchaser~~ and the seller.



(vii) Reports of bilateral Financial Transmission Rights agreements shall include all primary economic terms (PET) data requested by the Office of Interconnection through its FTR reporting tools. A report of a bilateral Financial Transmission Rights agreement shall be made no later than 48 hours following the execution of such agreement between the parties, and changes to any previously reported PET data shall be reported to the Office of Interconnection within 48 hours. The purchaser in a bilateral Financial Transmission Rights agreement shall upload the underlying contract document to the Office of Interconnection within 48 hours of execution to allow for verification of reported PET data; provided, however, that if the underlying contract document is in the form of a standard master agreement (such as the ISDA Master Agreement), the purchaser shall be required to upload the bilateral Financial Transmission Rights transaction confirmation including any and all special terms and provisions contained in the parties' agreement. All underlying contract documents which are provided to the Office of Interconnection pursuant to the requirements set forth herein shall be treated as confidential.

(e) Network Service Users and Firm Transmission Customers that take service that sinks, sources in, or is transmitted through new PJM zones, at their election, may receive a direct allocation of Financial Transmission Rights instead of an allocation of Auction Revenue Rights. Network Service Users and Firm Transmission Customers may make this election for the succeeding two annual FTR auctions after the integration of the new zone into the PJM Interchange Energy Market. Such election shall be made prior to the commencement of each annual FTR auction. For purposes of this election, the Allegheny Power Zone shall be considered a new zone with respect to the annual Financial Transmission Right auction in 2003 and 2004. Network Service Users and Firm Transmission Customers in new PJM zones that elect not to receive direct allocations of Financial Transmission Rights shall receive allocations of Auction Revenue Rights. During the annual allocation process, the Financial Transmission Right allocation for new PJM zones shall be performed simultaneously with the Auction Revenue Rights allocations in existing and new PJM zones. Prior to the effective date of the initial allocation of FTRs in a new PJM Zone, PJM shall file with FERC, under section 205 of the Federal Power Act, the FTRs and ARRs allocated in accordance with sections 5 and 7 of this Schedule 1.

(f) For Network Service Users and Firm Transmission Customers that take service that sinks in, sources in, or is transmitted through new PJM zones, that elect to receive direct allocations of Financial Transmission Rights, Financial Transmission Rights shall be allocated using the same allocation methodology as is specified for the allocation of Auction Revenue Rights in Operating Agreement, Schedule 1, section 7.4.2 and in accordance with the following:

- (i) Subject to subsection (ii) of this section, all Financial Transmission Rights must be simultaneously feasible. If all Financial Transmission Right requests made when Financial Transmission Rights are allocated for the new zone are not feasible then Financial Transmission Rights are prorated and allocated in proportion to the MW level requested and in inverse proportion to the effect on the binding constraints.

- (ii) If any Financial Transmission Right requests that are equal to or less than sixty percent (60%) of a Network Service User's proportion of peak load in the Zone or fifty percent of its transmission responsibility for Non-Zone Network Load, or fifty percent of megawatts of firm service between the receipt and delivery points of Firm Transmission Customers, are not feasible in the annual allocation and auction processes due to system conditions, then PJM shall increase the capability limits of the binding constraints that would have rendered the Financial Transmission Rights infeasible to the extent necessary in order to allocate such Financial Transmission Rights without their being infeasible for all rounds of the annual allocation and auction processes, provided that this subsection (ii) shall not apply if the infeasibility is caused by extraordinary circumstances. Additionally, such increased limits shall be included in subsequent modeling during the Planning Year to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions; unless and to the extent those system conditions that contributed to infeasibility in the annual process are not extant for the time period subject to the subsequent modeling, such as would be the case, for example, if transmission facilities are returned to service during the Planning Year. In these cases, any increase in the capability limits taken under this subsection (ii) during the annual process will be removed from subsequent modeling to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions. In addition, PJM may remove or lower the increased capability limits, if feasible, during subsequent FTR Auctions if the removal or lowering of the increased capability limits does not impact Auction Revenue Rights funding and net auction revenues are positive.

For the purposes of this subsection (ii), extraordinary circumstances shall mean an event of force majeure that reduces the capability of existing or planned transmission facilities and such reduction in capability is the cause of the infeasibility of such Financial Transmission Rights. Extraordinary circumstances do not include those system conditions and assumptions modeled in simultaneous feasibility analyses conducted pursuant to Operating Agreement, Schedule 1, section 7.5 of Schedule 1 of this Agreement. If PJM allocates Financial Transmission Rights as a result of this subsection (ii) that would not otherwise have been feasible, then PJM shall notify Members and post on its web site (a) the aggregate megawatt quantities, by sources and sinks, of such Financial Transmission Rights and (b) any increases in capability limits used to allocate such Financial Transmission Rights.

- (iii) In the event that Network Load changes from one Network Service User to another after an initial or annual allocation of Financial Transmission Rights in a new zone, Financial Transmission Rights will be reassigned on a proportional basis from the Network Service User losing the load to the Network Service User that is gaining the Network Load.

(g) At least one month prior to the integration of a new zone into the PJM Interchange Energy Market, Network Service Users and Firm Transmission Customers that take service that sinks in, sources in, or is transmitted through the new zone, shall receive an initial allocation of Financial Transmission Rights that will be in effect from the date of the integration of the new zone until the next annual allocation of Financial Transmission Rights and Auction Revenue Rights. Such allocation of Financial Transmission Rights shall be made in accordance with Operating Agreement, Schedule 1, section 5.2.2(f) of this Schedule.

(h) Reserved.

### **5.2.3 Target Allocation of Transmission Congestion Credits.**

A Target Allocation of Transmission Congestion Credits for each FTR Holder shall be determined for each Financial Transmission Right. Each Financial Transmission Right shall be multiplied by the Day-ahead Congestion Price differences for the receipt and delivery points associated with the Financial Transmission Right, calculated as the Day-ahead Congestion Price at the delivery point(s) minus the Day-ahead Congestion Price at the receipt point(s). For the purposes of calculating Transmission Congestion Credits, the Day-ahead Congestion Price of a Zone is calculated as the sum of the Day-ahead Congestion Price of each bus that comprises the Zone multiplied by the percent of annual peak load assigned to each node in the Zone. Commencing with the 2015/2016 Planning Period, for the purposes of calculating Transmission Congestion Credits, the Day-ahead Congestion Price of a Residual Metered Load aggregate is calculated as the sum of the Day-ahead Congestion Price of each bus that comprises the Residual Metered Load aggregate multiplied by the percent of the annual peak residual load assigned to each bus that comprises the Residual Metered Load aggregate. When the FTR Target Allocation is positive, the FTR Target Allocation is a credit to the FTR Holder. When the FTR Target Allocation is negative, the FTR Target Allocation is a debit to the FTR Holder if the FTR is a Financial Transmission Right Obligation. When the FTR Target Allocation is negative, the FTR Target Allocation is set to zero if the FTR is a Financial Transmission Right Option. The total Target Allocation for Network Service Users and Transmission Customers for each hour shall be the sum of the Target Allocations associated with all of the Network Service Users' or Transmission Customers' Financial Transmission Rights.

During a Market Suspension where there are no Day-ahead Prices available for the affected Operating Day, the aforementioned Day-ahead Congestion Price will be substituted with the hourly integrated Real-time Congestion Price as determined in Operating Agreement, Schedule 1, section 2.5.

For a Market Suspension where the suspension is greater than twenty-four (24) consecutive hours, which may span up to two Operating Days, and there are no Day-ahead Prices available for the affected Operating Day, the Day-ahead Financial Transmission Right Target Allocation values would be equal to zero for the hours corresponding to this suspension interval.

### **5.2.4 [Reserved.]**

### **5.2.5 Calculation of Transmission Congestion Credits.**

(a) The total of all the positive Target Allocations determined as specified above shall be compared to the Day-ahead Energy Market Transmission Congestion Charges in each hour. If the total of the Target Allocations is less than or equal to the total of the Day-ahead Energy Market Transmission Congestion Charges, the Transmission Congestion Credit for each entity holding an FTR shall be equal to its Target Allocation. All remaining Day-ahead Energy Market Transmission Congestion Charges shall be distributed as described below in Operating Agreement, Schedule 1, section 5.2.6 “Distribution of Excess Congestion Charges.”

(b) If the total of the Target Allocations is greater than the Day-ahead Energy Market Transmission Congestion Charges for the hour, each FTR Holder shall be assigned a share of the Day-ahead Energy Market Transmission Congestion Charges in proportion to its Target Allocations for Financial Transmission Rights which have a positive Target Allocation value. Financial Transmission Rights which have a negative Target Allocation value are assigned the full Target Allocation value as a negative Transmission Congestion Credit.

(c) At the end of a Planning Period if all FTR Holders did not receive Transmission Congestion Credits equal to their Target Allocations, the Office of the Interconnection shall assess a charge equal to the difference between the Transmission Congestion Credit Target Allocations for all revenue deficient FTRs and the actual Transmission Congestion Credits allocated to those FTR Holders. A charge assessed pursuant to this section shall also include any aggregate charge assessed pursuant to Operating Agreement, Schedule 1, section 7.4.4(c) and shall be allocated to all FTR Holders on a pro-rata basis according to the total Target Allocations for all FTRs held at any time during the relevant Planning Period. The charge shall be calculated and allocated in accordance with the following methodology:

1. The Office of the Interconnection shall calculate the total amount of uplift required as  $\{[\text{sum of the total monthly deficiencies in FTR Target Allocations for the Planning Period} + \text{the sum of the ARR Target Allocation deficiencies determined pursuant to Operating Agreement, Schedule 1, section 7.4.4(c)}] - [\text{sum of the total monthly excess ARR revenues and excess Day-ahead Energy Market Transmission Congestion Charges for the Planning Period}]\}$ .
2. For each Market Participant that held an FTR during the Planning Period, the Office of the Interconnection shall calculate the total Target Allocation associated with all FTRs held by the Market Participant during the Planning Period, provided that, the foregoing notwithstanding, if the total Target Allocation for an individual Market Participant calculated pursuant to this section is negative the Office of Interconnection shall set the value to zero.
3. The Office of the Interconnection shall then allocate an uplift charge to each Market Participant that held an FTR at any time during the Planning Period in accordance with the following formula:  $\{[\text{total uplift}] * [\text{total Target Allocation for all FTRs held by the Market Participant at any time during the Planning Period}] / [\text{total Target Allocations for all FTRs held by all PJM Market Participants at any time during the Planning Period}]\}$ .

### **5.2.6 Distribution of Excess Congestion Charges.**

(a) Excess Day-ahead Energy Market Transmission Congestion Charges accumulated in a month shall be distributed to each FTR Holder in proportion to, but not more than, any deficiency in the share of Day-ahead Energy Market Transmission Congestion Charges received by the FTR Holder during that month as compared to its total Target Allocations for the month.

(b) After the excess Day-ahead Energy Market Transmission Congestion Charge distribution described in Operating Agreement, Schedule 1, section 5.2.6(a) is performed, any excess Day-ahead Energy Market Transmission Congestion Charges remaining at the end of a month shall be distributed to each FTR Holder in proportion to, but not more than, any deficiency in the share of Day-ahead Energy Market Transmission Congestion Charges received by the FTR Holder during the current Planning Period, including previously distributed excess Day-ahead Energy Market Transmission Congestion Charges, as compared to its total Target Allocation for the Planning Period.

(c) Any excess Day-ahead Energy Market Transmission Congestion Charges remaining at the end of a Planning Period shall be distributed to each holder of Auction Revenue Rights in proportion to, but not more than, any Auction Revenue Right deficiencies for that Planning Period.

(d) Any excess Day-ahead Energy Market Transmission Congestion Charges remaining after a distribution pursuant to subsection (c) of this section shall be distributed to all ARR holders on a pro-rata basis according to the total Target Allocations for all ARRs held at any time during the relevant Planning Period. Any allocation pursuant to this subsection (d) shall be conducted in accordance with the following methodology:

1. For each Market Participant that held an ARR during the Planning Period, the Office of the Interconnection shall calculate the total Target Allocation associated with all ARRs held by the Market Participant during the Planning Period, provided that, the foregoing notwithstanding, if the total Target Allocation for an individual Market Participant calculated pursuant to this section is negative the Office of the Interconnection shall set the value to zero.
2. The Office of the Interconnection shall then allocate an excess Day-ahead Energy Market Transmission Congestion Charge credit to each Market Participant that held an ARR at any time during the Planning Period in accordance with the following formula:  $\{[\text{total excess Day-ahead Energy Market Transmission Congestion Charges remaining after distributions pursuant to subsection (a)-(c) of this section}] * [\text{total Target Allocation for all ARRs held by the Market Participant at any time during the Planning Period}] / [\text{total Target Allocations for all ARRs held by all PJM Market Participants at any time during the Planning Period}]\}$ .

### **5.2.7 Allocation of Balancing Congestion Charges**

At the end of each hour during an Operating Day, the Office of the Interconnection shall allocate the Balancing Congestion Charges to real-time load and exports on a pro-rata basis. Such allocation shall not include purchases of Direct Charging Energy.

During a Market Suspension where the suspension has no Day-ahead Prices or if the suspension is less than or equal to twenty-four (24) hours, which may span up to two Operating Days, and there are no Day-ahead Prices available for the affected Operating Day, for each hour corresponding to this suspension interval, the Office of the Interconnection shall allocate the Balancing Congestion Charges to Financial Transmission Right Target Allocation values before being allocated to real-time load and exports on a pro-rata basis.

Attachment B

Revisions to the  
PJM Open Access Transmission Tariff

(Clean Format)

## **5.2 Transmission Congestion Credit Calculation.**

### **5.2.1 Eligibility.**

(a) Except as provided in section 5.2.1(b), each FTR Holder shall receive as a Transmission Congestion Credit a proportional share of the Day-ahead Energy Market Transmission Congestion Charges collected for each constrained hour.

(b) If an Effective FTR Holder between specified delivery and receipt buses acquired the Financial Transmission Right in a Financial Transmission Rights auction (the procedures for which are set forth in section 7 of this Attachment K – Appendix) and had a Virtual Transaction portfolio which includes Increment Offer(s), Decrement Bid(s), and/or Up-to Congestion Transaction(s) that was accepted by the Office of the Interconnection for an applicable hour in the Day-ahead Energy Market, whereby the Effective FTR Holder's Virtual Transaction portfolio resulted in (i) a difference in Location Marginal Prices in the Day-ahead Energy Market between such delivery and receipt buses which is greater than the difference in Locational Marginal Prices between such delivery and receipt buses in the Real-time Energy Market, and (ii) an increasing the value between such delivery and receipt buses, then the Market Participant shall not receive any Transmission Congestion Credit associated with such Financial Transmission Right in such hour, that is attributable to the absolute value (i.e., the product of the constraint's shadow price times the distribution factor (dfax) of the difference between the Financial Transmission Right delivery and receipt buses) of the relevant Day-ahead Energy Market binding constraint (as further discussed in section 5.2.1(c) below), but no more than the excess of one divided by the number of hours in the applicable period multiplied by the amount that the Market Participant paid for the Financial Transmission Right in the Financial Transmission Rights auction (i.e., FTR profit). For the purposes of this calculation, every individual Financial Transmission Right of an Effective FTR Holder shall be considered.

(c) For purposes of section 5.2.1(b), an Effective FTR Holder's Virtual Transaction portfolio shall be considered if the absolute value of the attributable net flow across a Day-ahead Energy Market binding constraint relative to the Day-ahead Energy Market load weighted reference bus between the Financial Transmission Right delivery and receipt buses exceeds the physical limit of such binding constraint by the greater of 0.1 MW or ten percent.

(d) The Market Monitoring Unit shall calculate Transmission Congestion Credits pursuant to this section and Tariff, Attachment M-Appendix, section VI. Nothing in this section shall preclude the Market Monitoring Unit from action to recover inappropriate benefits from the subject activity if the amount forfeited is less than the benefit derived by the Effective FTR Holder. If the Office of the Interconnection agrees with such calculation, then it shall impose the forfeiture of the Transmission Congestion Credit accordingly. If the Office of the Interconnection does not agree with the calculation, then it shall impose a forfeiture of Transmission Congestion Credit consistent with its determination. If the Market Monitoring Unit disagrees with the Office of the Interconnection's determination, it may exercise its powers to inform the Commission staff of its concerns and may request an adjustment. This provision is duplicated in Tariff, Attachment M-Appendix, section VI. An Effective FTR Holder objecting to



the application of this rule shall have recourse to the Commission for review of the application of the FTR forfeiture rule to its trading activity.

### **5.2.2 Financial Transmission Rights.**

(a) Transmission Congestion Credits will be calculated based upon the Financial Transmission Rights held at the time of the constrained hour. Except as provided in subsection (e) below, Financial Transmission Rights shall be auctioned as set forth in Operating Agreement, Schedule 1, section 7.

(b) The hourly economic value of a Financial Transmission Right Obligation is based on the Financial Transmission Right MW reservation and the difference between the Day-ahead Congestion Price at the point of delivery and the point of receipt of the Financial Transmission Right. The hourly economic value of a Financial Transmission Right Obligation is positive (a benefit to the FTR Holder) when the Day-ahead Congestion Price at the point of delivery is higher than the Day-ahead Congestion Price at the point of receipt. The hourly economic value of a Financial Transmission Right Obligation is negative (a liability to the FTR Holder) when the Day-ahead Congestion Price at the point of receipt is higher than the Day-ahead Congestion Price at the point of delivery.

(c) The hourly economic value of a Financial Transmission Right Option is based on the Financial Transmission Right MW reservation and the difference between the Day-ahead Congestion Price at the point of delivery and the point of receipt of the Financial Transmission Right when that difference is positive. The hourly economic value of a Financial Transmission Right Option is positive (a benefit to the FTR Holder) when the Day-ahead Congestion Price at the point of delivery is higher than the Day-ahead Congestion Price at the point of receipt. The hourly economic value of a Financial Transmission Right Option is zero (neither a benefit nor a liability to the FTR Holder) when the Day-ahead Congestion Price at the point of receipt is higher than the Day-ahead Congestion Price at the point of delivery.

(d) In addition to transactions with PJMSettlement in the Financial Transmission Rights auctions administered by the Office of the Interconnection, a Financial Transmission Right, for its entire tenure or for a specified period, may be sold or otherwise transferred by a FTR Holder to a third party by bilateral agreement, subject to compliance with such procedures as may be established by the Office of the Interconnection.

- (i) Market Participants may enter into bilateral agreements for the transfer of Financial Transmission Rights, for their entire tenure or for specified periods. Such bilateral agreements shall be reported to the Office of the Interconnection in accordance with this Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d), and the LLC's rules related to its FTR reporting tools.
- (ii) For purposes of clarity, with respect to all bilateral agreements for the transfer of Financial Transmission Rights, the rights and obligations pertaining to the Financial Transmission Rights transferred thereunder shall pass to the purchaser

under such bilateral agreement subject to the provisions of this Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d). The seller of Financial Transmission Rights in a bilateral agreement shall confirm to the Office of Interconnection, through the FTR reporting tools provided by the Office of Interconnection, that the seller has no continuing interest in the Financial Transmission Rights following their transfer. Such bilateral agreements shall not modify the location or reconfigure the Financial Transmission Rights transferred thereunder. In no event shall the purchase and sale of a Financial Transmission Right pursuant to a bilateral agreement constitute a transaction with PJMSettlement or a transaction in any auction under this Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d).

- (iii) Consent of the Office of the Interconnection shall be required for a seller to transfer any Financial Transmission Right Obligation to a purchaser. Such consent shall be based upon the Office of the Interconnection’s assessment of the purchaser’s ability to perform the obligations, including meeting applicable creditworthiness requirements, transferred in the bilateral agreement. If consent for a transfer is not provided by the Office of the Interconnection, the title to the Financial Transmission Rights shall not transfer to the third party and the FTR Holder shall continue to receive all Transmission Congestion Credits attributable to the Financial Transmission Rights and remain subject to all credit requirements and obligations associated with the Financial Transmission Rights.
- (iv) A seller under such a bilateral agreement shall guarantee and indemnify the Office of the Interconnection, PJMSettlement, and the Members for the purchaser’s obligation to pay any charges associated with the transferred Financial Transmission Right and for which payment is not made to PJMSettlement by the purchaser under such a bilateral agreement.
- (v) All payments and related charges associated with such a bilateral agreement shall be arranged between the parties to such bilateral agreement and shall not be billed or settled by PJMSettlement or the Office of the Interconnection. The LLC, PJMSettlement, and the Members will not assume financial responsibility for the failure of a party to perform obligations owed to the other party under such a bilateral agreement reported to the Office of the Interconnection under this Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d).
- (vi) All claims regarding a default of a purchaser to a seller under such a bilateral agreement shall be resolved solely between the purchaser and the seller.
- (vii) Reports of bilateral Financial Transmission Rights agreements shall include all primary economic terms (PET) data requested by the Office of Interconnection through its FTR reporting tools. A report of a bilateral Financial Transmission Rights agreement shall be made no later than 48 hours following the execution of such agreement between the parties, and changes to any previously reported PET

data shall be reported to the Office of Interconnection within 48 hours. The purchaser in a bilateral Financial Transmission Rights agreement shall upload the underlying contract document to the Office of Interconnection within 48 hours of execution to allow for verification of reported PET data; provided, however, that if the underlying contract document is in the form of a standard master agreement (such as the ISDA Master Agreement), the purchaser shall be required to upload the bilateral Financial Transmission Rights transaction confirmation including any and all special terms and provisions contained in the parties' agreement. All underlying contract documents which are provided to the Office of Interconnection pursuant to the requirements set forth herein shall be treated as confidential.

(e) Network Service Users and Firm Transmission Customers that take service that sinks, sources in, or is transmitted through new PJM zones, at their election, may receive a direct allocation of Financial Transmission Rights instead of an allocation of Auction Revenue Rights. Network Service Users and Firm Transmission Customers may make this election for the succeeding two annual FTR auctions after the integration of the new zone into the PJM Interchange Energy Market. Such election shall be made prior to the commencement of each annual FTR auction. For purposes of this election, the Allegheny Power Zone shall be considered a new zone with respect to the annual Financial Transmission Right auction in 2003 and 2004. Network Service Users and Firm Transmission Customers in new PJM zones that elect not to receive direct allocations of Financial Transmission Rights shall receive allocations of Auction Revenue Rights. During the annual allocation process, the Financial Transmission Right allocation for new PJM zones shall be performed simultaneously with the Auction Revenue Rights allocations in existing and new PJM zones. Prior to the effective date of the initial allocation of FTRs in a new PJM Zone, PJM shall file with FERC, under section 205 of the Federal Power Act, the FTRs and ARR allocations in accordance with sections 5 and 7 of this Schedule 1.

(f) For Network Service Users and Firm Transmission Customers that take service that sinks in, sources in, or is transmitted through new PJM zones, that elect to receive direct allocations of Financial Transmission Rights, Financial Transmission Rights shall be allocated using the same allocation methodology as is specified for the allocation of Auction Revenue Rights in Operating Agreement, Schedule 1, section 7.4.2 and in accordance with the following:

- (i) Subject to subsection (ii) of this section, all Financial Transmission Rights must be simultaneously feasible. If all Financial Transmission Right requests made when Financial Transmission Rights are allocated for the new zone are not feasible then Financial Transmission Rights are prorated and allocated in proportion to the MW level requested and in inverse proportion to the effect on the binding constraints.
- (ii) If any Financial Transmission Right requests that are equal to or less than sixty percent (60%) of a Network Service User's proportion of peak load in the Zone or fifty percent of its transmission responsibility for Non-Zone Network Load, or fifty percent of megawatts of firm service between the receipt and delivery points

of Firm Transmission Customers, are not feasible in the annual allocation and auction processes due to system conditions, then PJM shall increase the capability limits of the binding constraints that would have rendered the Financial Transmission Rights infeasible to the extent necessary in order to allocate such Financial Transmission Rights without their being infeasible for all rounds of the annual allocation and auction processes, provided that this subsection (ii) shall not apply if the infeasibility is caused by extraordinary circumstances. Additionally, such increased limits shall be included in subsequent modeling during the Planning Year to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions; unless and to the extent those system conditions that contributed to infeasibility in the annual process are not extant for the time period subject to the subsequent modeling, such as would be the case, for example, if transmission facilities are returned to service during the Planning Year. In these cases, any increase in the capability limits taken under this subsection (ii) during the annual process will be removed from subsequent modeling to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions. In addition, PJM may remove or lower the increased capability limits, if feasible, during subsequent FTR Auctions if the removal or lowering of the increased capability limits does not impact Auction Revenue Rights funding and net auction revenues are positive.

For the purposes of this subsection (ii), extraordinary circumstances shall mean an event of force majeure that reduces the capability of existing or planned transmission facilities and such reduction in capability is the cause of the infeasibility of such Financial Transmission Rights. Extraordinary circumstances do not include those system conditions and assumptions modeled in simultaneous feasibility analyses conducted pursuant to Operating Agreement, Schedule 1, section 7.5 of Schedule 1 of this Agreement. If PJM allocates Financial Transmission Rights as a result of this subsection (ii) that would not otherwise have been feasible, then PJM shall notify Members and post on its web site (a) the aggregate megawatt quantities, by sources and sinks, of such Financial Transmission Rights and (b) any increases in capability limits used to allocate such Financial Transmission Rights.

- (iii) In the event that Network Load changes from one Network Service User to another after an initial or annual allocation of Financial Transmission Rights in a new zone, Financial Transmission Rights will be reassigned on a proportional basis from the Network Service User losing the load to the Network Service User that is gaining the Network Load.

(g) At least one month prior to the integration of a new zone into the PJM Interchange Energy Market, Network Service Users and Firm Transmission Customers that take service that sinks in, sources in, or is transmitted through the new zone, shall receive an initial allocation of Financial Transmission Rights that will be in effect from the date of the integration of the new zone until the next annual allocation of Financial Transmission Rights and Auction

Revenue Rights. Such allocation of Financial Transmission Rights shall be made in accordance with Operating Agreement, Schedule 1, section 5.2.2(f) of this Schedule.

(h) Reserved.

### **5.2.3 Target Allocation of Transmission Congestion Credits.**

A Target Allocation of Transmission Congestion Credits for each FTR Holder shall be determined for each Financial Transmission Right. Each Financial Transmission Right shall be multiplied by the Day-ahead Congestion Price differences for the receipt and delivery points associated with the Financial Transmission Right, calculated as the Day-ahead Congestion Price at the delivery point(s) minus the Day-ahead Congestion Price at the receipt point(s). For the purposes of calculating Transmission Congestion Credits, the Day-ahead Congestion Price of a Zone is calculated as the sum of the Day-ahead Congestion Price of each bus that comprises the Zone multiplied by the percent of annual peak load assigned to each node in the Zone. Commencing with the 2015/2016 Planning Period, for the purposes of calculating Transmission Congestion Credits, the Day-ahead Congestion Price of a Residual Metered Load aggregate is calculated as the sum of the Day-ahead Congestion Price of each bus that comprises the Residual Metered Load aggregate multiplied by the percent of the annual peak residual load assigned to each bus that comprises the Residual Metered Load aggregate. When the FTR Target Allocation is positive, the FTR Target Allocation is a credit to the FTR Holder. When the FTR Target Allocation is negative, the FTR Target Allocation is a debit to the FTR Holder if the FTR is a Financial Transmission Right Obligation. When the FTR Target Allocation is negative, the FTR Target Allocation is set to zero if the FTR is a Financial Transmission Right Option. The total Target Allocation for Network Service Users and Transmission Customers for each hour shall be the sum of the Target Allocations associated with all of the Network Service Users' or Transmission Customers' Financial Transmission Rights.

During a Market Suspension where there are no Day-ahead Prices available for the affected Operating Day, the aforementioned Day-ahead Congestion Price will be substituted with the hourly integrated Real-time Congestion Price as determined in Operating Agreement, Schedule 1, section 2.5.

For a Market Suspension where the suspension is greater than twenty-four (24) consecutive hours, which may span up to two Operating Days, and there are no Day-ahead Prices available for the affected Operating Day, the Day-ahead Financial Transmission Right Target Allocation values would be equal to zero for the hours corresponding to this suspension interval.

### **5.2.4 [Reserved.]**

### **5.2.5 Calculation of Transmission Congestion Credits.**

(a) The total of all the positive Target Allocations determined as specified above shall be compared to the Day-ahead Energy Market Transmission Congestion Charges in each hour. If the total of the Target Allocations is less than or equal to the total of the Day-ahead Energy Market Transmission Congestion Charges, the Transmission Congestion Credit for each entity

holding an FTR shall be equal to its Target Allocation. All remaining Day-ahead Energy Market Transmission Congestion Charges shall be distributed as described below in Operating Agreement, Schedule 1, section 5.2.6 “Distribution of Excess Congestion Charges.”

(b) If the total of the Target Allocations is greater than the Day-ahead Energy Market Transmission Congestion Charges for the hour, each FTR Holder shall be assigned a share of the Day-ahead Energy Market Transmission Congestion Charges in proportion to its Target Allocations for Financial Transmission Rights which have a positive Target Allocation value. Financial Transmission Rights which have a negative Target Allocation value are assigned the full Target Allocation value as a negative Transmission Congestion Credit.

(c) At the end of a Planning Period if all FTR Holders did not receive Transmission Congestion Credits equal to their Target Allocations, the Office of the Interconnection shall assess a charge equal to the difference between the Transmission Congestion Credit Target Allocations for all revenue deficient FTRs and the actual Transmission Congestion Credits allocated to those FTR Holders. A charge assessed pursuant to this section shall also include any aggregate charge assessed pursuant to Operating Agreement, Schedule 1, section 7.4.4(c) and shall be allocated to all FTR Holders on a pro-rata basis according to the total Target Allocations for all FTRs held at any time during the relevant Planning Period. The charge shall be calculated and allocated in accordance with the following methodology:

1. The Office of the Interconnection shall calculate the total amount of uplift required as  $\{[\text{sum of the total monthly deficiencies in FTR Target Allocations for the Planning Period} + \text{the sum of the ARR Target Allocation deficiencies determined pursuant to Operating Agreement, Schedule 1, section 7.4.4(c)}] - [\text{sum of the total monthly excess ARR revenues and excess Day-ahead Energy Market Transmission Congestion Charges for the Planning Period}]\}$ .

2. For each Market Participant that held an FTR during the Planning Period, the Office of the Interconnection shall calculate the total Target Allocation associated with all FTRs held by the Market Participant during the Planning Period, provided that, the foregoing notwithstanding, if the total Target Allocation for an individual Market Participant calculated pursuant to this section is negative the Office of Interconnection shall set the value to zero.

3. The Office of the Interconnection shall then allocate an uplift charge to each Market Participant that held an FTR at any time during the Planning Period in accordance with the following formula:  $\{[\text{total uplift}] * [\text{total Target Allocation for all FTRs held by the Market Participant at any time during the Planning Period}] / [\text{total Target Allocations for all FTRs held by all PJM Market Participants at any time during the Planning Period}]\}$ .

### **5.2.6 Distribution of Excess Congestion Charges.**

(a) Excess Day-ahead Energy Market Transmission Congestion Charges accumulated in a month shall be distributed to each FTR Holder in proportion to, but not more than, any deficiency in the share of Day-ahead Energy Market Transmission Congestion Charges received by the FTR Holder during that month as compared to its total Target Allocations for the month.

(b) After the excess Day-ahead Energy Market Transmission Congestion Charge distribution described in Operating Agreement, Schedule 1, section 5.2.6(a) is performed, any excess Day-ahead Energy Market Transmission Congestion Charges remaining at the end of a month shall be distributed to each FTR Holder in proportion to, but not more than, any deficiency in the share of Day-ahead Energy Market Transmission Congestion Charges received by the FTR Holder during the current Planning Period, including previously distributed excess Day-ahead Energy Market Transmission Congestion Charges, as compared to its total Target Allocation for the Planning Period.

(c) Any excess Day-ahead Energy Market Transmission Congestion Charges remaining at the end of a Planning Period shall be distributed to each holder of Auction Revenue Rights in proportion to, but not more than, any Auction Revenue Right deficiencies for that Planning Period.

(d) Any excess Day-ahead Energy Market Transmission Congestion Charges remaining after a distribution pursuant to subsection (c) of this section shall be distributed to all ARR holders on a pro-rata basis according to the total Target Allocations for all ARRs held at any time during the relevant Planning Period. Any allocation pursuant to this subsection (d) shall be conducted in accordance with the following methodology:

1. For each Market Participant that held an ARR during the Planning Period, the Office of the Interconnection shall calculate the total Target Allocation associated with all ARRs held by the Market Participant during the Planning Period, provided that, the foregoing notwithstanding, if the total Target Allocation for an individual Market Participant calculated pursuant to this section is negative the Office of the Interconnection shall set the value to zero.

2. The Office of the Interconnection shall then allocate an excess Day-ahead Energy Market Transmission Congestion Charge credit to each Market Participant that held an ARR at any time during the Planning Period in accordance with the following formula: {[total excess Day-ahead Energy Market Transmission Congestion Charges remaining after distributions pursuant to subsection (a)-(c) of this section] \* [total Target Allocation for all ARRs held by the Market Participant at any time during the Planning Period] / [total Target Allocations for all ARRs held by all PJM Market Participants at any time during the Planning Period]}.

### **5.2.7 Allocation of Balancing Congestion Charges**

At the end of each hour during an Operating Day, the Office of the Interconnection shall allocate the Balancing Congestion Charges to real-time load and exports on a pro-rata basis. Such allocation shall not include purchases of Direct Charging Energy.

During a Market Suspension where the suspension has no Day-ahead Prices or if the suspension is less than or equal to twenty-four (24) hours, which may span up to two Operating Days, and there are no Day-ahead Prices available for the affected Operating Day, for each hour corresponding to this suspension interval, the Office of the Interconnection shall allocate the Balancing Congestion Charges to Financial Transmission Right Target Allocation values before being allocated to real-time load and exports on a pro-rata basis.

Attachment B

Revisions to the  
PJM Operating Agreement

(Clean Format)



## **5.2 Transmission Congestion Credit Calculation.**

### **5.2.1 Eligibility.**

(a) Except as provided in section 5.2.1(b), each FTR Holder shall receive as a Transmission Congestion Credit a proportional share of the Day-ahead Energy Market Transmission Congestion Charges collected for each constrained hour.

(b) If an Effective FTR Holder between specified delivery and receipt buses acquired the Financial Transmission Right in a Financial Transmission Rights auction (the procedures for which are set forth in section 7 of this Schedule 1) and had a Virtual Transaction portfolio which includes Increment Offer(s), Decrement Bid(s), and/or Up-to Congestion Transaction(s) that was accepted by the Office of the Interconnection for an applicable hour in the Day-ahead Energy Market, whereby the Effective FTR Holder's Virtual Transaction portfolio resulted in (i) a difference in Location Marginal Prices in the Day-ahead Energy Market between such delivery and receipt buses which is greater than the difference in Locational Marginal Prices between such delivery and receipt buses in the Real-time Energy Market, and (ii) an increasing the value between such delivery and receipt buses, then the Market Participant shall not receive any Transmission Congestion Credit associated with such Financial Transmission Right in such hour, that is attributable to the absolute value (i.e., the product of the constraint's shadow price times the distribution factor (dfax) of the difference between the Financial Transmission Right delivery and receipt buses) of the relevant Day-ahead Energy Market binding constraint (as further discussed in section 5.2.1(c) below), but no more than the excess of one divided by the number of hours in the applicable period multiplied by the amount that the Market Participant paid for the Financial Transmission Right in the Financial Transmission Rights auction (i.e., FTR profit). For the purposes of this calculation, every individual Financial Transmission Right of an Effective FTR Holder shall be considered.

(c) For purposes of section 5.2.1(b), an Effective FTR Holder's Virtual Transaction portfolio shall be considered if the absolute value of the attributable net flow across a Day-ahead Energy Market binding constraint relative to the Day-ahead Energy Market load weighted reference bus between the Financial Transmission Right delivery and receipt buses exceeds the physical limit of such binding constraint by the greater of 0.1 MW or ten percent.

(d) The Market Monitoring Unit shall calculate Transmission Congestion Credits pursuant to this section and Tariff, Attachment M-Appendix, section VI. Nothing in this section shall preclude the Market Monitoring Unit from action to recover inappropriate benefits from the subject activity if the amount forfeited is less than the benefit derived by the Effective FTR Holder. If the Office of the Interconnection agrees with such calculation, then it shall impose the forfeiture of the Transmission Congestion Credit accordingly. If the Office of the Interconnection does not agree with the calculation, then it shall impose a forfeiture of Transmission Congestion Credit consistent with its determination. If the Market Monitoring Unit disagrees with the Office of the Interconnection's determination, it may exercise its powers to inform the Commission staff of its concerns and may request an adjustment. This provision is duplicated in Tariff, Attachment M-Appendix, section VI. An Effective FTR Holder objecting to

the application of this rule shall have recourse to the Commission for review of the application of the FTR forfeiture rule to its trading activity.

### **5.2.2 Financial Transmission Rights.**

(a) Transmission Congestion Credits will be calculated based upon the Financial Transmission Rights held at the time of the constrained hour. Except as provided in subsection (e) below, Financial Transmission Rights shall be auctioned as set forth in Operating Agreement, Schedule 1, section 7.

(b) The hourly economic value of a Financial Transmission Right Obligation is based on the Financial Transmission Right MW reservation and the difference between the Day-ahead Congestion Price at the point of delivery and the point of receipt of the Financial Transmission Right. The hourly economic value of a Financial Transmission Right Obligation is positive (a benefit to the FTR Holder) when the Day-ahead Congestion Price at the point of delivery is higher than the Day-ahead Congestion Price at the point of receipt. The hourly economic value of a Financial Transmission Right Obligation is negative (a liability to the FTR Holder) when the Day-ahead Congestion Price at the point of receipt is higher than the Day-ahead Congestion Price at the point of delivery.

(c) The hourly economic value of a Financial Transmission Right Option is based on the Financial Transmission Right MW reservation and the difference between the Day-ahead Congestion Price at the point of delivery and the point of receipt of the Financial Transmission Right when that difference is positive. The hourly economic value of a Financial Transmission Right Option is positive (a benefit to the FTR Holder) when the Day-ahead Congestion Price at the point of delivery is higher than the Day-ahead Congestion Price at the point of receipt. The hourly economic value of a Financial Transmission Right Option is zero (neither a benefit nor a liability to the FTR Holder) when the Day-ahead Congestion Price at the point of receipt is higher than the Day-ahead Congestion Price at the point of delivery.

(d) In addition to transactions with PJMSettlement in the Financial Transmission Rights auctions administered by the Office of the Interconnection, a Financial Transmission Right, for its entire tenure or for a specified period, may be sold or otherwise transferred by a FTR Holder to a third party by bilateral agreement, subject to compliance with such procedures as may be established by the Office of the Interconnection.

- (i) Market Participants may enter into bilateral agreements for the transfer of Financial Transmission Rights, for their entire tenure or for specified periods. Such bilateral agreements shall be reported to the Office of the Interconnection in accordance with this Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d), and the LLC's rules related to its FTR reporting tools.
- (ii) For purposes of clarity, with respect to all bilateral agreements for the transfer of Financial Transmission Rights, the rights and obligations pertaining to the Financial Transmission Rights transferred thereunder shall pass to the purchaser

under such bilateral agreement subject to the provisions of this Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d). The seller of Financial Transmission Rights in a bilateral agreement shall confirm to the Office of Interconnection, through the FTR reporting tools provided by the Office of Interconnection, that the seller has no continuing interest in the Financial Transmission Rights following their transfer. Such bilateral agreements shall not modify the location or reconfigure the Financial Transmission Rights transferred thereunder. In no event shall the purchase and sale of a Financial Transmission Right pursuant to a bilateral agreement constitute a transaction with PJMSettlement or a transaction in any auction under this Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d).

- (iii) Consent of the Office of the Interconnection shall be required for a seller to transfer any Financial Transmission Right Obligation to a purchaser. Such consent shall be based upon the Office of the Interconnection’s assessment of the purchaser’s ability to perform the obligations, including meeting applicable creditworthiness requirements, transferred in the bilateral agreement. If consent for a transfer is not provided by the Office of the Interconnection, the title to the Financial Transmission Rights shall not transfer to the third party and the FTR Holder shall continue to receive all Transmission Congestion Credits attributable to the Financial Transmission Rights and remain subject to all credit requirements and obligations associated with the Financial Transmission Rights.
- (iv) A seller under such a bilateral agreement shall guarantee and indemnify the Office of the Interconnection, PJMSettlement, and the Members for the purchaser’s obligation to pay any charges associated with the transferred Financial Transmission Right and for which payment is not made to PJMSettlement by the purchaser under such a bilateral agreement.
- (v) All payments and related charges associated with such a bilateral agreement shall be arranged between the parties to such bilateral agreement and shall not be billed or settled by PJMSettlement or the Office of the Interconnection. The LLC, PJMSettlement, and the Members will not assume financial responsibility for the failure of a party to perform obligations owed to the other party under such a bilateral agreement reported to the Office of the Interconnection under this Attachment K – Appendix and Operating Agreement, Schedule 1, Section 5.2.2(d).
- (vi) All claims regarding a default of a purchaser to a seller under such a bilateral agreement shall be resolved solely between the purchaser and the seller.
- (vii) Reports of bilateral Financial Transmission Rights agreements shall include all primary economic terms (PET) data requested by the Office of Interconnection through its FTR reporting tools. A report of a bilateral Financial Transmission Rights agreement shall be made no later than 48 hours following the execution of such agreement between the parties, and changes to any previously reported PET data shall be reported to the Office of Interconnection within 48 hours. The

purchaser in a bilateral Financial Transmission Rights agreement shall upload the underlying contract document to the Office of Interconnection within 48 hours of execution to allow for verification of reported PET data; provided, however, that if the underlying contract document is in the form of a standard master agreement (such as the ISDA Master Agreement), the purchaser shall be required to upload the bilateral Financial Transmission Rights transaction confirmation including any and all special terms and provisions contained in the parties' agreement. All underlying contract documents which are provided to the Office of Interconnection pursuant to the requirements set forth herein shall be treated as confidential.

(e) Network Service Users and Firm Transmission Customers that take service that sinks, sources in, or is transmitted through new PJM zones, at their election, may receive a direct allocation of Financial Transmission Rights instead of an allocation of Auction Revenue Rights. Network Service Users and Firm Transmission Customers may make this election for the succeeding two annual FTR auctions after the integration of the new zone into the PJM Interchange Energy Market. Such election shall be made prior to the commencement of each annual FTR auction. For purposes of this election, the Allegheny Power Zone shall be considered a new zone with respect to the annual Financial Transmission Right auction in 2003 and 2004. Network Service Users and Firm Transmission Customers in new PJM zones that elect not to receive direct allocations of Financial Transmission Rights shall receive allocations of Auction Revenue Rights. During the annual allocation process, the Financial Transmission Right allocation for new PJM zones shall be performed simultaneously with the Auction Revenue Rights allocations in existing and new PJM zones. Prior to the effective date of the initial allocation of FTRs in a new PJM Zone, PJM shall file with FERC, under section 205 of the Federal Power Act, the FTRs and ARRs allocated in accordance with sections 5 and 7 of this Schedule 1.

(f) For Network Service Users and Firm Transmission Customers that take service that sinks in, sources in, or is transmitted through new PJM zones, that elect to receive direct allocations of Financial Transmission Rights, Financial Transmission Rights shall be allocated using the same allocation methodology as is specified for the allocation of Auction Revenue Rights in Operating Agreement, Schedule 1, section 7.4.2 and in accordance with the following:

- (i) Subject to subsection (ii) of this section, all Financial Transmission Rights must be simultaneously feasible. If all Financial Transmission Right requests made when Financial Transmission Rights are allocated for the new zone are not feasible then Financial Transmission Rights are prorated and allocated in proportion to the MW level requested and in inverse proportion to the effect on the binding constraints.
- (ii) If any Financial Transmission Right requests that are equal to or less than sixty percent (60%) of a Network Service User's proportion of peak load in the Zone or fifty percent of its transmission responsibility for Non-Zone Network Load, or fifty percent of megawatts of firm service between the receipt and delivery points of Firm Transmission Customers, are not feasible in the annual allocation and

auction processes due to system conditions, then PJM shall increase the capability limits of the binding constraints that would have rendered the Financial Transmission Rights infeasible to the extent necessary in order to allocate such Financial Transmission Rights without their being infeasible for all rounds of the annual allocation and auction processes, provided that this subsection (ii) shall not apply if the infeasibility is caused by extraordinary circumstances. Additionally, such increased limits shall be included in subsequent modeling during the Planning Year to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions; unless and to the extent those system conditions that contributed to infeasibility in the annual process are not extant for the time period subject to the subsequent modeling, such as would be the case, for example, if transmission facilities are returned to service during the Planning Year. In these cases, any increase in the capability limits taken under this subsection (ii) during the annual process will be removed from subsequent modeling to support any incremental allocations of Auction Revenue Rights and monthly and balance of the Planning Period Financial Transmission Rights auctions. In addition, PJM may remove or lower the increased capability limits, if feasible, during subsequent FTR Auctions if the removal or lowering of the increased capability limits does not impact Auction Revenue Rights funding and net auction revenues are positive.

For the purposes of this subsection (ii), extraordinary circumstances shall mean an event of force majeure that reduces the capability of existing or planned transmission facilities and such reduction in capability is the cause of the infeasibility of such Financial Transmission Rights. Extraordinary circumstances do not include those system conditions and assumptions modeled in simultaneous feasibility analyses conducted pursuant to Operating Agreement, Schedule 1, section 7.5 of Schedule 1 of this Agreement. If PJM allocates Financial Transmission Rights as a result of this subsection (ii) that would not otherwise have been feasible, then PJM shall notify Members and post on its web site (a) the aggregate megawatt quantities, by sources and sinks, of such Financial Transmission Rights and (b) any increases in capability limits used to allocate such Financial Transmission Rights.

- (iii) In the event that Network Load changes from one Network Service User to another after an initial or annual allocation of Financial Transmission Rights in a new zone, Financial Transmission Rights will be reassigned on a proportional basis from the Network Service User losing the load to the Network Service User that is gaining the Network Load.

(g) At least one month prior to the integration of a new zone into the PJM Interchange Energy Market, Network Service Users and Firm Transmission Customers that take service that sinks in, sources in, or is transmitted through the new zone, shall receive an initial allocation of Financial Transmission Rights that will be in effect from the date of the integration of the new zone until the next annual allocation of Financial Transmission Rights and Auction Revenue

Rights. Such allocation of Financial Transmission Rights shall be made in accordance with Operating Agreement, Schedule 1, section 5.2.2(f) of this Schedule.

(h) Reserved.

### **5.2.3 Target Allocation of Transmission Congestion Credits.**

A Target Allocation of Transmission Congestion Credits for each FTR Holder shall be determined for each Financial Transmission Right. Each Financial Transmission Right shall be multiplied by the Day-ahead Congestion Price differences for the receipt and delivery points associated with the Financial Transmission Right, calculated as the Day-ahead Congestion Price at the delivery point(s) minus the Day-ahead Congestion Price at the receipt point(s). For the purposes of calculating Transmission Congestion Credits, the Day-ahead Congestion Price of a Zone is calculated as the sum of the Day-ahead Congestion Price of each bus that comprises the Zone multiplied by the percent of annual peak load assigned to each node in the Zone. Commencing with the 2015/2016 Planning Period, for the purposes of calculating Transmission Congestion Credits, the Day-ahead Congestion Price of a Residual Metered Load aggregate is calculated as the sum of the Day-ahead Congestion Price of each bus that comprises the Residual Metered Load aggregate multiplied by the percent of the annual peak residual load assigned to each bus that comprises the Residual Metered Load aggregate. When the FTR Target Allocation is positive, the FTR Target Allocation is a credit to the FTR Holder. When the FTR Target Allocation is negative, the FTR Target Allocation is a debit to the FTR Holder if the FTR is a Financial Transmission Right Obligation. When the FTR Target Allocation is negative, the FTR Target Allocation is set to zero if the FTR is a Financial Transmission Right Option. The total Target Allocation for Network Service Users and Transmission Customers for each hour shall be the sum of the Target Allocations associated with all of the Network Service Users' or Transmission Customers' Financial Transmission Rights.

During a Market Suspension where there are no Day-ahead Prices available for the affected Operating Day, the aforementioned Day-ahead Congestion Price will be substituted with the hourly integrated Real-time Congestion Price as determined in Operating Agreement, Schedule 1, section 2.5.

For a Market Suspension where the suspension is greater than twenty-four (24) consecutive hours, which may span up to two Operating Days, and there are no Day-ahead Prices available for the affected Operating Day, the Day-ahead Financial Transmission Right Target Allocation values would be equal to zero for the hours corresponding to this suspension interval.

### **5.2.4 [Reserved.]**

### **5.2.5 Calculation of Transmission Congestion Credits.**

(a) The total of all the positive Target Allocations determined as specified above shall be compared to the Day-ahead Energy Market Transmission Congestion Charges in each hour. If the total of the Target Allocations is less than or equal to the total of the Day-ahead Energy Market Transmission Congestion Charges, the Transmission Congestion Credit for each entity

holding an FTR shall be equal to its Target Allocation. All remaining Day-ahead Energy Market Transmission Congestion Charges shall be distributed as described below in Operating Agreement, Schedule 1, section 5.2.6 “Distribution of Excess Congestion Charges.”

(b) If the total of the Target Allocations is greater than the Day-ahead Energy Market Transmission Congestion Charges for the hour, each FTR Holder shall be assigned a share of the Day-ahead Energy Market Transmission Congestion Charges in proportion to its Target Allocations for Financial Transmission Rights which have a positive Target Allocation value. Financial Transmission Rights which have a negative Target Allocation value are assigned the full Target Allocation value as a negative Transmission Congestion Credit.

(c) At the end of a Planning Period if all FTR Holders did not receive Transmission Congestion Credits equal to their Target Allocations, the Office of the Interconnection shall assess a charge equal to the difference between the Transmission Congestion Credit Target Allocations for all revenue deficient FTRs and the actual Transmission Congestion Credits allocated to those FTR Holders. A charge assessed pursuant to this section shall also include any aggregate charge assessed pursuant to Operating Agreement, Schedule 1, section 7.4.4(c) and shall be allocated to all FTR Holders on a pro-rata basis according to the total Target Allocations for all FTRs held at any time during the relevant Planning Period. The charge shall be calculated and allocated in accordance with the following methodology:

1. The Office of the Interconnection shall calculate the total amount of uplift required as  $\{[\text{sum of the total monthly deficiencies in FTR Target Allocations for the Planning Period} + \text{the sum of the ARR Target Allocation deficiencies determined pursuant to Operating Agreement, Schedule 1, section 7.4.4(c)}] - [\text{sum of the total monthly excess ARR revenues and excess Day-ahead Energy Market Transmission Congestion Charges for the Planning Period}]\}$ .
2. For each Market Participant that held an FTR during the Planning Period, the Office of the Interconnection shall calculate the total Target Allocation associated with all FTRs held by the Market Participant during the Planning Period, provided that, the foregoing notwithstanding, if the total Target Allocation for an individual Market Participant calculated pursuant to this section is negative the Office of Interconnection shall set the value to zero.
3. The Office of the Interconnection shall then allocate an uplift charge to each Market Participant that held an FTR at any time during the Planning Period in accordance with the following formula:  $\{[\text{total uplift}] * [\text{total Target Allocation for all FTRs held by the Market Participant at any time during the Planning Period}] / [\text{total Target Allocations for all FTRs held by all PJM Market Participants at any time during the Planning Period}]\}$ .

### **5.2.6 Distribution of Excess Congestion Charges.**

(a) Excess Day-ahead Energy Market Transmission Congestion Charges accumulated in a month shall be distributed to each FTR Holder in proportion to, but not more than, any

deficiency in the share of Day-ahead Energy Market Transmission Congestion Charges received by the FTR Holder during that month as compared to its total Target Allocations for the month.

(b) After the excess Day-ahead Energy Market Transmission Congestion Charge distribution described in Operating Agreement, Schedule 1, section 5.2.6(a) is performed, any excess Day-ahead Energy Market Transmission Congestion Charges remaining at the end of a month shall be distributed to each FTR Holder in proportion to, but not more than, any deficiency in the share of Day-ahead Energy Market Transmission Congestion Charges received by the FTR Holder during the current Planning Period, including previously distributed excess Day-ahead Energy Market Transmission Congestion Charges, as compared to its total Target Allocation for the Planning Period.

(c) Any excess Day-ahead Energy Market Transmission Congestion Charges remaining at the end of a Planning Period shall be distributed to each holder of Auction Revenue Rights in proportion to, but not more than, any Auction Revenue Right deficiencies for that Planning Period.

(d) Any excess Day-ahead Energy Market Transmission Congestion Charges remaining after a distribution pursuant to subsection (c) of this section shall be distributed to all ARR holders on a pro-rata basis according to the total Target Allocations for all ARRs held at any time during the relevant Planning Period. Any allocation pursuant to this subsection (d) shall be conducted in accordance with the following methodology:

1. For each Market Participant that held an ARR during the Planning Period, the Office of the Interconnection shall calculate the total Target Allocation associated with all ARRs held by the Market Participant during the Planning Period, provided that, the foregoing notwithstanding, if the total Target Allocation for an individual Market Participant calculated pursuant to this section is negative the Office of the Interconnection shall set the value to zero.
2. The Office of the Interconnection shall then allocate an excess Day-ahead Energy Market Transmission Congestion Charge credit to each Market Participant that held an ARR at any time during the Planning Period in accordance with the following formula:  $\{[\text{total excess Day-ahead Energy Market Transmission Congestion Charges remaining after distributions pursuant to subsection (a)-(c) of this section}] * [\text{total Target Allocation for all ARRs held by the Market Participant at any time during the Planning Period}] / [\text{total Target Allocations for all ARRs held by all PJM Market Participants at any time during the Planning Period}]\}$ .

### **5.2.7 Allocation of Balancing Congestion Charges**

At the end of each hour during an Operating Day, the Office of the Interconnection shall allocate the Balancing Congestion Charges to real-time load and exports on a pro-rata basis. Such allocation shall not include purchases of Direct Charging Energy.



During a Market Suspension where the suspension has no Day-ahead Prices or if the suspension is less than or equal to twenty-four (24) hours, which may span up to two Operating Days, and there are no Day-ahead Prices available for the affected Operating Day, for each hour corresponding to this suspension interval, the Office of the Interconnection shall allocate the Balancing Congestion Charges to Financial Transmission Right Target Allocation values before being allocated to real-time load and exports on a pro-rata basis.

**ATTACHMENT C**

**AFFIDAVIT OF CARL F. COSCIA  
CHIEF RISK OFFICER OF PJM INTERCONNECTION, L.L.C.**

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

**PJM Interconnection, L.L.C.**                                 )  
  )  
  )     **Docket No. ER24-374-000**

**AFFIDAVIT OF CARL F. COSCIA  
CHIEF RISK OFFICER OF PJM INTERCONNECTION, L.L.C.**

1. My name is Carl F. Coscia, Ph. D. Since September 2022, I am the Vice President and Chief Risk Officer of PJM Interconnection, L.L.C. (PJM). My business address is 2750 Monroe Boulevard, Audubon, PA 19403. My role at PJM involves ensuring that adequate risk management tools and policies are in place to protect PJM members.
2. I hold a Ph.D. in economics from the University of Minnesota, as well as a Bachelor of Science in economics and a Bachelor of Arts in mathematics from the University of Kansas.
3. My background includes more than 20 years of experience in commodity and financial markets, most recently as Global Head of Risk Management for German-based energy company, EnBW, where my responsibilities included market risk, enterprise risk, credit risk, compliance and approval for all master trading agreements. I previously served as Chief Business Officer and Chief Risk Officer for Hartree Partners, LP. Additionally, I also worked as Vice President of Federal Energy Policy for Constellation Energy, Director of Wholesale Power Fundamentals for TXU Wholesale Power Trading and Branch Chief for the Federal Energy Regulatory Commission’s Office of Enforcement.
4. The purpose of this Affidavit is to provide more evidence based on my risk management experience to support this filing to enhance PJM’s rules for its Financial Transmission

Right (FTR) bilateral market. My Affidavit discusses how the proposed changes to PJM's Open Access Transmission Tariff (the "Tariff") and Operating Agreement included in the filing promote transparency and also enhance PJM's credit risk management and market surveillance practices.

5. PJM has recognized that the FTR bilateral market could be enhanced.<sup>1</sup> This filing represents PJM's efforts to continually improve the efficiency of its markets. Each of the components of the filing (as further discussed herein) improve the transparency within PJM's FTR and FTR bilateral market. The proposed revisions will increase the tools available to PJM for enhanced market surveillance and credit risk management.
6. The prohibition on the retention of a lingering interest in a FTR bilateral once sold, included in this filing, is critical to enhancing PJM's ability to assess the credit risk of the Buyer of a FTR Bilateral and for performing market surveillance. The presence of a lingering value could distort the true value of an FTR, as value (as a component of price) could be allocated to components of a transaction unknown to PJM. The absence of the lingering interest in an FTR further provides the ability to standardize the FTR market data that PJM will receive as a consequence of approval of the proposed Tariff revisions. This shift toward a more standardized FTR bilateral agreement assists PJM in identifying and recognizing potential distortions in the value of an FTR. Further, these proposed prohibition on lingering interests will eliminate any opaqueness in PJM's FTR Market that could cause delay as PJM determines the cause of a potential anomaly in FTR values.

---

<sup>1</sup> PJM, *Financial Transmission Rights Market Review*, at 24 (Apr. 2020) (citing the need to enhance the FTR bilateral transaction rules), <https://www.pjm.com/-/media/library/reports-notice/special-reports/2020/ftm-review-whitepaper.ashx>.

7. PJM is required under existing Tariff provisions to assess the creditworthiness of the Buyer of an FTR bilateral.<sup>2</sup> The prohibition on lingering interests better enables PJM to perform this assessment armed with the knowledge that no other interests are part of the transaction.
8. The absence of a lingering interest in the FTR bilateral also permits PJM to identify a FTR price that may be an outlier among other FTR values along the same path and better enables PJM to be alerted to the presence of risk or other concerns with regard to a potential FTR path.
9. The inclusion of the primary economic terms of a FTR bilateral transaction, which include the name of the seller, name of the buyer, FTR start and end date, quantity of the FTR to be transferred, the source and sink of the underlying FTR, the FTR class, the price and execution date of the FTR bilateral promote transparency in the PJM Markets as well as provide additional tools for PJM to perform market surveillance. This additional information will provide additional tools to aid PJM in credit risk management and the surveillance of its markets as they will better enable PJM to identify anomalies in the PJM's FTR market.
10. These proposed Tariff provisions will provide Participants with certainty with regard to the "price" field within PJM. Historically, there has been uncertainty regarding whether the actual price, or any price, was required to be included in the price field within PJM's FTR center. These provisions eliminate uncertainty and provide more orderly and clear rules for FTR Participants.

---

<sup>2</sup> Tariff, Attachment K-Appendix, Section 5.2(d)(iii).

11. The reporting obligations included in the Tariff revisions will provide uniformity to the reporting process. FTR Participants, whether as a Buyer or Seller will have consistent and uniform reporting obligations.
12. The Tariff revision that requires FTR bilateral agreements to be submitted to PJM by the Buyer of the FTR will provide a means to verify certain data points as circumstances warrant.
13. This concludes my Affidavit.

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

**PJM Interconnection, L.L.C.**                     )  
   )   **Docket No. ER24-374-000**  
   )

**VERIFICATION**

I, **Carl F. Coscia**, state, under penalty of perjury, that I am the Carl F. Coscia referred to in the foregoing document entitled Affidavit of Carl F. Coscia on Behalf of PJM Interconnection, L.L.C., that I have read the same and am familiar with the contents thereof, and that the facts set forth therein are true and correct to the best of my knowledge, information, and belief.

*/s/ Carl F. Coscia*  
\_\_\_\_\_   
Carl F. Coscia