

November 30, 2020

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

Re: *PJM Interconnection, L.L.C. and PJM Settlement, Inc.*,  
Docket No. ER21-\_\_\_\_-000  
Financial Transmission Rights Default Disposition Tariff and Operating  
Agreement Revisions

Dear Ms. Bose:

PJM Interconnection, L.L.C. (“PJM”) together with PJM Settlement, Inc. (“PJM Settlement”) (collectively hereafter referred to as PJM), pursuant to section 205 of the Federal Power Act (“FPA”), 16 U.S.C. § 824d, hereby submit revisions to PJM Open Access Transmission Tariff (“Tariff”), Attachment Q; Tariff, Attachment K-Appendix, section 7.3, and the identical provisions of Amended and Restated Operating Agreement of PJM (“Operating Agreement”), Schedule 1, section 7.3; and Operating Agreement, section 15.1.<sup>1</sup> PJM asks the Federal Energy Regulatory Commission (“Commission or “FERC”) to issue an order accepting its proposal by no later than January 29, 2021, which is sixty (60) days from the date of this filing, with an effective date of February 1, 2021.

This filing represents an overwhelming consensus of the PJM stakeholders seeking to address, on a going forward basis, how they wish PJM to manage the disposition of Financial Transmission Right (“FTR”)<sup>2</sup> positions of Members that default on their payment obligations. Through this filing and accompanying affidavits, PJM details the benefits to its Members of revising the Tariff and Operating Agreement to allow PJM to liquidate, settle, or otherwise resolve<sup>3</sup> a defaulted Member’s FTR positions as appropriate, rather

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<sup>1</sup> All references herein to the Tariff, Attachment K-Appendix, section 7.3 or any subsection thereof also are intended to encompass the identical, parallel provisions in Operating Agreement, Schedule 1, section 7.3. PJM will refer generally to the Tariff throughout this letter to also include the Operating Agreement.

<sup>2</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.

<sup>3</sup> See *infra* page 8.

than unilaterally mandating all FTR positions of a defaulting Member be allowed to go to settlement,<sup>4</sup> as is the case in the current version of the Tariff and Operating Agreement.

Given that this filing is being submitted pursuant to FPA, section 205, its overwhelming Member support, and the fact that there may be multiple appropriate and reasonable ways to wind down a defaulted portfolio, PJM urges the Commission to grant deference to its Members' endorsement of this proposal. Deference to the Members' endorsement is especially appropriate here, where there would be significant financial impacts to the membership of choosing one method over another. The proposed revisions are just and reasonable, as explained herein, and have seven characteristics in particular that make them more desirable than the existing rules for addressing a Member default in the FTR market:

- First, the Tariff revisions provide PJM with flexibility, within certain parameters, to discern and implement an appropriate approach to resolve a defaulting Member's FTR portfolio based on the facts specific to that Member's default and the market conditions at that time. The parameters around PJM's determination are more fully explained in Section II.B, below, and are designed to ensure transparency and limit the membership's financial exposure.
- Second, the change will retain PJM's current ability to allow FTR positions in a defaulting Member's portfolio to go to settlement when, for example, liquidation at auction would significantly disrupt the FTR market because there are unlikely to be enough willing buyers to rationally absorb those FTR positions in a manner that does not produce aberrant market results or price distortions.<sup>5</sup> This preserves the fundamentals underlying the FTR market reform previously enacted by PJM in 2018 in response to the large financial default of then-Member GreenHat Energy, LLC ("GreenHat"), albeit in a less rigid format.
- Third, PJM's revisions will allow PJM to liquidate a defaulting Member's FTR positions at auction in the event there appear to be sufficient liquidity and willing buyers to rationally absorb those FTR positions without producing distorted FTR market results that do not reflect the value of the products being auctioned, which is consistent with the capabilities of other financial markets.<sup>6</sup> This represents an improvement on PJM's pre-2018

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<sup>4</sup> Refer *infra* Section I.A for a description of what "go to settlement" involves under the Tariff.

<sup>5</sup> Affidavit of Timothy Horger on Behalf of PJM Interconnection, L.L.C. ¶ 7 ("Horger Aff."). The Horger Aff. is Attachment E to this filing.

<sup>6</sup> Affidavit of Nigeria Bloczynski ¶ 7 ("Bloczynski Aff."). The Bloczynski Aff. is Attachment F to this filing.

Tariff requirements, which unilaterally required liquidation regardless of the liquidity level of the FTR market.

- Fourth, the Tariff revisions protect the interests of Members by requiring PJM to seek to minimize the losses to Members that may arise from settling, liquidating, or otherwise resolving a defaulting Member's FTR portfolio.
- Fifth, the proposal promotes transparency by including a list of factors PJM may use to evaluate and elect the appropriate course of action for resolving a defaulting Member's FTR positions.
- Sixth, the proposed revisions provide transparency by requiring PJM to provide reasonable advance notice of the approach or course of action chosen for resolving a defaulting Member's FTR positions prior to implementing that approach or course of action.<sup>7</sup>
- Seventh, the proposed revisions reflect an approach overwhelmingly endorsed by the Members themselves to address Member defaults in the FTR markets that may occur in the future.

PJM developed this proposal with significant contribution from its membership as part of its work with stakeholders through the Financial Risk Mitigation Senior Task Force ("FRMSTF"), formed in 2019, to address financial risk mitigation after the large financial default of GreenHat in 2018. Stakeholders primarily provided their input at FRMSTF meetings held on April 23, 2020, September 17, 2020, and September 29, 2020, and a Markets and Reliability Committee ("MRC") meeting held on September 17, 2020, before PJM presented its proposed solution to the MRC and Members Committee ("MC") meetings held on October 29, 2020, where the proposal received widespread support. Specifically, the MRC endorsed the Tariff and Operating Agreement revisions by a sector weighted vote of 4.59 in favor and 0.41 opposed, and the MC likewise endorsed the Tariff revisions and approved the Operating Agreement revisions by acclamation with one objection and one abstention. For all these reasons and consistent with the FPA, section 205 standard of review, PJM urges the Commission to accept this proposal.

## **I. BACKGROUND**

### ***A. FTRs and Current Resolution Process When a Member Is in Default***

FTRs are financial products that allow Market Participants to hedge the costs of day-ahead transmission congestion. FTRs allow Market Participants to offset potential charges related to the price risk of delivering energy to specific locations on the grid. FTRs are valued based upon the difference between the day-ahead prices at two pricing points—a source and a sink—on the transmission system. As such, an FTR serves as a benefit, or

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<sup>7</sup> This advance notice may allow interested parties to provide their input on PJM's planned course of action through, for example, stakeholder processes, dispute resolution procedures, or through making filings at the Commission.

credit, to the holder if it represents a flow of energy in the same direction as the congested flow. An FTR serves as a liability, or charge, to the holder if it represents a flow of energy in the opposite direction as the congested flow.

Under the current Tariff provisions, specifically Tariff, Attachment K-Appendix, section 7.3.9, adopted in 2018,<sup>8</sup> when a Member default is declared, the Tariff requires PJM to allow the FTR positions held by the defaulting Member at the time of its default to go to settlement, but terminates the defaulting Member's rights to manage those FTR positions. More specifically, the language in PJM's current Tariff provides that, after a default, PJM will terminate the defaulting Member's rights to its FTR positions, but those FTR positions themselves will continue to accumulate all charges and credits associated with the position that would have accrued had the defaulting Member not defaulted, including, but not limited to, applicable: (a) congestion charges and credits; (b) daily FTR auction charges to which the defaulting Member committed when acquiring the FTR positions on which the Member defaulted; (c) administrative charges under Tariff, Schedule 9; and (d) any other charges or credits applicable to the FTR positions on which the Member defaulted.<sup>9</sup> The net amount of these charges and credits, after consideration of any financial security held by PJM and any indemnification by any bilateral sellers to the extent the defaulting Member's FTRs that were acquired through bilateral transactions, are then billed to PJM's non-defaulting Members in accordance with the Default Allocation Assessment provisions of Operating Agreement, section 15.2.2.<sup>10</sup>

### ***B. The Need for Flexibility in Addressing Each Financial Default***

A hallmark of the prior iterations of PJM's FTR default resolution process has been a strict, unilateral commitment to a single approach for resolving FTR positions held by a Member in default. As described above, PJM's current Tariff requires settlement of all FTR positions in a defaulting Member's portfolio, without allowing any positions to be liquidated. Prior to the 2018 FTR Tariff revisions, the Tariff required a different approach, requiring PJM to liquidate all FTR positions of a Member in financial default as the sole

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<sup>8</sup> See Financial Transmission Rights Default Disposition Filing of PJM Interconnection, L.L.C., Docket No. ER19-19-000 (Oct. 1, 2018) ("2018 Default FTR Filing") (requesting acceptance of the current Tariff language in Tariff, Attachment K-Appendix, section 7.3 and Operating Agreement, section 15.1); *PJM Interconnection L.L.C.*, 165 FERC ¶ 61,188 (2018) ("2018 Default FTR Order") (accepting subject to consensus compliance modifications the revisions proposed in the 2018 Default FTR Filing).

<sup>9</sup> 2018 Default FTR Filing at 2.

<sup>10</sup> See Tariff, Attachment K-Appendix, section 7.3.9(e). Bilateral FTR transactions are governed by Operating Agreement, Schedule 1, section 5.2.2(d), which among other things requires any party that sells an FTR through a bilateral transaction to "indemnify the Office of the Interconnection, PJMSettlement, and the Members for the buyer'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 under such a bilateral transaction." Operating Agreement, Schedule 1, section 5.2.2(d)(iv).

method to resolve a defaulting Member's FTR positions.<sup>11</sup> Although both approaches had merit, neither has provided PJM with the ability to consider and respond to the specific circumstances and market conditions underlying a default event.

PJM and its stakeholders now seek to revise the Tariff to preserve many of the benefits of the 2018 revisions while enhancing PJM's flexibility to resolve future defaults in the FTR market in ways that best suit prevailing market conditions and the circumstances of each default. PJM has secured stakeholder endorsement to do this by retaining the ability to let a defaulting Member's FTR positions go to settlement while adopting more flexible language that would allow PJM to liquidate such positions if the FTR market appears to have sufficient liquidity such that it is capable of rationally absorbing them without creating excessive price volatility, or take other appropriate action to resolve the defaulting Member's FTR portfolio.

## **II. THE PROPOSED TARIFF AND OPERATING AGREEMENT REVISIONS ARE JUST AND REASONABLE**

The 2018 Default FTR Filing and associated Tariff revisions were an important step in preventing future disruptions to the FTR market that could result from a lack of market liquidity, especially when a defaulting Member has a particularly large FTR portfolio. However, PJM and its stakeholders since that time have concluded that, going forward, a more flexible, circumstance-specific approach to resolving a defaulting Member's FTR positions is appropriate. PJM and its stakeholders thus have developed the proposal herein, which, if accepted by the Commission, will provide PJM with the tools *not only* to pursue settlement of FTR positions of a defaulting Member in order to avoid significant FTR market disruptions due to a lack of liquidity, *but also* to resolve defaulting Members' FTR positions expeditiously through liquidation at auction or other means when market conditions are conducive to such approach. As such, and for the reasons below, this proposal is just and reasonable and not unduly discriminatory.

### ***A. The Proposal Will Allow PJM to Customize Its Approach to Resolving a Defaulting Member's Portfolio According to the Specific Facts and Market Conditions Associated with the Default.***

PJM proposes to revise Tariff, Attachment K-Appendix, section 7.3.9 to provide PJM with the flexibility, within certain parameters, to resolve a defaulting Member's FTR portfolio in a fashion appropriate for the facts associated with that particular default and the market conditions at that time. Proposed Tariff language reads as follows:

[T]he Office of the Interconnection shall determine and execute an appropriate course of action for addressing [FTR positions held by a defaulting Member], based on the specific circumstances of the default as

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<sup>11</sup> See 2018 Default FTR Filing at 4–5. PJM revised the Tariff in 2018 to require settlement rather than liquidation in order to avoid substantial market disruptions in the event a Member defaulted under circumstances where there were unlikely to be enough willing buyers to rationally absorb that Member's FTR positions in an economically efficient manner. *Id.* at 3.

determined by the Office of the Interconnection in exercise of its reasonable judgment, such as (1) liquidating the position by offering it for sale in an upcoming applicable Financial Transmission Rights auction, (2) liquidating the position by offering it for sale in an auction called and scheduled for the specific purpose of liquidating one or more positions held by the defaulting Member (“Special Auction”), (3) allowing the position to go to settlement, or (4) another course of action the Office of the Interconnection determines to be appropriate under the circumstances that is designed to minimize potential losses to PJM and its Members.<sup>12</sup>

The Tariff revisions would require PJM to initiate its resolution process for the defaulting Member’s FTR portfolio within two applicable FTR auctions after PJM declares the Member’s default,<sup>13</sup> although PJM considers this timing requirement to be a safeguard and would generally expect to initiate such process as soon as practicable under the circumstances.<sup>14</sup> The flexibility provided by this language is consistent with the practices other operators of financial markets are permitted to exercise upon events of default.<sup>15</sup> The rest of the Tariff revisions in this filing follow from the proposed revisions to Tariff, section 7.3.9.<sup>16</sup>

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<sup>12</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(b).

<sup>13</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9.

<sup>14</sup> Horger Aff. ¶ 13.

<sup>15</sup> Bloczynski Aff. ¶ 7; *see also, e.g., CCP Best Practices – A CCP12 Position Paper*, CCP12, 19 (May 27, 2019), [https://ccp12.org/wp-content/uploads/2019/05/CCP-Best-Practices\\_\\_CCP12\\_Position\\_Paper.pdf](https://ccp12.org/wp-content/uploads/2019/05/CCP-Best-Practices__CCP12_Position_Paper.pdf) (“a [central counterparty (“CCP”)] must have the necessary flexibility to manage a default considering its unique circumstances”); *A Discussion Paper on Central Counterparty Default Management Auctions*, Committee on Payments and Market Infrastructures & Board of the International Organization of Securities Commissions, § 4.1 (June 5, 2019), <https://www.bis.org/cpmi/publ/d185.pdf> (“Flexibility in the framework assists the CCP in tailoring the hedging strategy to the defaulted participant’s portfolio or current market conditions as required”); *Central Counterparty Default Management Auctions – Issues for Consideration*, Committee on Payments and Market Infrastructures & Board of the International Organization of Securities Commissions, § 4.1 (June 26, 2020), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD657.pdf> (“maintaining flexibility in the framework is important, as it assists the CCP in tailoring the hedging strategy to the defaulted participant’s portfolio or current market conditions as required”); *id.* § 4.3 (“A CCP should have processes and governance arrangements to assess if it should either rerun the auction or use other default management or recovery tools, in the event an auction is unsuccessful.”); *Rules*, ICE Clear U.S., Inc., Rule 802 (May 26, 2020), [https://www.theice.com/publicdocs/rulebooks/clear/ICE\\_Clear\\_US\\_Rules.pdf](https://www.theice.com/publicdocs/rulebooks/clear/ICE_Clear_US_Rules.pdf) (setting forth platform’s ability to exercise discretion not to liquidate positions of a defaulted market participant).

<sup>16</sup> This filing does not change the benefits or burdens to Members as far as the allocation of the default assessment under the Tariff—such process remains as stated in the provisions of the Operating Agreement addressing Default Allocation Assessments, including Operating Agreement, section 15.2. Any liquidation of FTRs under the new provisions “shall be for the account of the defaulting Member (and all amounts owed PJM in respect thereof shall be included in amounts owed by the defaulting Member as part of its default).” Proposed Tariff, Attachment K-Appendix, section 7.3.9(e).

PJM’s proposed approach has the benefit of allowing expeditious resolution of all or part of a defaulting Member’s FTR portfolio through liquidation if circumstances suggest there is sufficient market liquidity to support orderly liquidation. When practicable, this provides many benefits to the market, the most obvious of which include providing certainty within a short timeframe (i.e., by the time the liquidation auction is completed) regarding the valuation of the FTRs in the defaulted Member’s portfolio and facilitating more expeditious netting of a final settlement amount for the default than would occur if the positions were allowed to go to settlement.<sup>17</sup> This proposal should promote orderly and efficient resolution of a defaulting Member’s FTR portfolio through liquidation when circumstances are conducive to such liquidation as a method to minimize Member losses due to the Member default.<sup>18</sup>

The proposal also provides flexibility for PJM to include FTR positions for liquidation in an upcoming applicable auction if appropriate, but also allows PJM to call a Special Auction specifically for the liquidation of a defaulting Member’s FTRs. This flexibility is appropriate because PJM cannot now foresee the exact timing of a future default, and the opportunity to either hold Special Auctions or take advantage of already planned auctions will allow PJM to further tailor its approach to the circumstances at hand. Proposed Tariff, Attachment K-Appendix, section 7.3.9(d) provides that PJM will conduct Special Auctions using the existing procedures for FTR auctions to the extent it is appropriate, but allows PJM to adopt special rules for each Special Auction in order to accommodate the unique circumstances of the default and the characteristics of the FTR positions being liquidated. For example, if a default occurs shortly after a long-term auction has occurred, meaning it would be nearly a year until the next scheduled long-term FTR auction, it might make sense in that circumstance to hold a Special Auction to liquidate the defaulting Member’s FTR positions rather than waiting for the next long-term FTR auction.

Importantly, this approach also has the converse benefit of retaining PJM’s current ability to allow FTR positions in a defaulting Member’s portfolio to go to settlement if market conditions are not conducive to orderly and efficient liquidation. This would include, for example, where liquidation at auction would significantly disrupt the FTR market because there is a lack of liquidity that would produce aberrant market results or price distortions. This preserves the fundamentals underlying the FTR market reform previously enacted by PJM in 2018 in response to the large financial default of then-Member GreenHat,<sup>19</sup> and would have allowed PJM to pursue a “go to settlement” approach

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<sup>17</sup> Horger Aff. ¶ 8.

<sup>18</sup> *Id.*

<sup>19</sup> See 2018 Default FTR Order at P 4 (accepting subject to compliance condition the 2018 Default FTR Filing, effective December 1, 2018).

in response to that default if these new rules were in place at that time. These twin benefits are fundamental to the substantial merits of PJM's proposal.

PJM's proposal also leaves open the possibility to resolve a defaulting Member's FTR positions through "another course of action the Office of the Interconnection determines to be appropriate under the circumstances that is designed to minimize potential losses to PJM and its Members."<sup>20</sup> This could provide some limited flexibility for Members to pursue, for example, entering into bilateral transactions to resolve some FTR positions if doing so is more conducive to limiting Member losses and a bilateral counterparty has stepped forward to offer to acquire some or all of the defaulting Member's FTR positions.<sup>21</sup> The flexibility to resolve FTR positions in this manner could prove to be a useful tool for resolving defaults under certain factual circumstances, and thus is an appropriate addition to the Tariff.<sup>22</sup>

PJM notes that proposed Tariff, Attachment K-Appendix, section 7.3.9 retains an existing provision stating that PJM will unilaterally terminate all of a defaulting Member's rights with respect to FTR positions as of the date of the Member's default, but removes language stating that PJM will "close out" such positions. In the course of drafting the instant revisions, it became clear that the term "close out" was not a necessary component to PJM addressing a defaulting Member's FTR positions, and PJM thus has, with the endorsement of its Members, proposed to remove the phrase "close out" from Tariff, Attachment K-Appendix, section 7.3.9, as well as Tariff, Attachment Q, section IX, and Operating Agreement, section 15.1.6(c)(a).<sup>23</sup>

***B. The Proposal Requires PJM to Seek to Minimize Losses to PJM Members and Provides Transparency Regarding PJM's Approach to Resolving a Default.***

PJM's proposal contains two provisions that promote transparency and ensure PJM will base its approach to resolving a defaulting Member's FTR portfolio on appropriate considerations. First, the proposal requires PJM to attempt to minimize Member losses and promotes transparency by including a list of additional factors PJM may use to evaluate and elect the appropriate course of action for resolving a defaulting Member's FTR positions. Specifically, the proposed Tariff revisions state that PJM "will seek to minimize the losses to PJM Members associated with settling, liquidating or otherwise resolving the defaulting Member's Financial Transmission Rights portfolio," and provide the following

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<sup>20</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(b).

<sup>21</sup> Such bilateral transaction would be governed by and thus must comply with Operating Agreement, Schedule 1, section 5.2.2(d).

<sup>22</sup> Horger Aff. ¶ 14.

<sup>23</sup> Horger Aff. ¶ 15.



six additional factors PJM may consider in crafting its approach to resolving a defaulting Member's FTR positions:

- 1) the Office of the Interconnection's assessment of which approach will provide the greatest degree of protection to the financial integrity of the PJM Markets;
- 2) the size of the defaulting Member's Financial Transmission Rights portfolio, both in absolute terms and relative to overall market volume;
- 3) the term of the Financial Transmission Rights positions held by the defaulting Member as considered for a single position or on a portfolio basis;
- 4) whether liquidation is feasible or not, and on what timeline, due to the cessation or curtailment of trading at PJM for all Financial Transmission Rights or a subset of Financial Transmission Rights positions;
- 5) prevailing market conditions, such as but not limited to market liquidity and volatility; and
- 6) timing of the default and the actions taken to address the default.<sup>24</sup>

Enumerating these factors, combined with the requirement that PJM seek to minimize losses to Members, provides Members and other stakeholders with an understanding of PJM's decision making process and relevant considerations, while also ensuring PJM has the flexibility to administer the resolution of a defaulting Member's FTR portfolio in a fashion well suited to the unique circumstances of that default and the market conditions present at that time.<sup>25</sup> These factors reasonably capture the considerations likely to be most relevant to appropriately resolving a defaulting Member's FTR portfolio, including the interests of and impacts on Members, the characteristics of the defaulting Member's FTR portfolio and individual FTR positions, and market conditions and the practical feasibility of liquidation.<sup>26</sup> Moreover, these factors are consistent with the factors other operators of

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<sup>24</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(c).

<sup>25</sup> Horger Aff. ¶ 17.

<sup>26</sup> *Id.*

financial markets are expected to consider when managing a default in their financial markets.<sup>27</sup>

Second, the proposed revisions provide transparency by requiring PJM to provide reasonable advance notice of the approach or course of action chosen for resolving a defaulting Member's FTR positions prior to implementing that approach or course of action,<sup>28</sup> as well as advance notice of any special rules being adopted for any Special Auction being held for the liquidation of a defaulting Member's FTR positions.<sup>29</sup> This ensures that stakeholders have advance notice of PJM's decision making and will not be taken by surprise by PJM's approach to resolving a particular defaulting Member's FTR portfolio. PJM plans to provide additional details in one or more of its applicable business practice manuals regarding how PJM will implement its notice commitments under Tariff, Attachment K-Appendix, section 7.3.9.<sup>30</sup>

These provisions, which ensure PJM will seek to minimize Member losses that may result from a defaulting Member's FTR portfolio and provide transparency regarding PJM's approach to resolving defaulting Members' FTR portfolios, provide substantial protections to Members and other stakeholders and underscore the justness and reasonableness of PJM's proposal. The Commission previously recognized that there is value in Tariff provisions that "provide[] PJM flexibility to protect the integrity of the PJM-administered markets, as well as protect market participants from financial losses that result from unreasonable credit risks and defaults, while also providing additional clarity and transparency to market participants."<sup>31</sup> These Tariff revisions do exactly that, providing PJM with the flexibility, within reasonable parameters and with transparency protections, to address defaulting Members' FTR positions in ways that minimize losses to PJM and its members.

***C. PJM Will Administer Liquidation Auctions Consistent with Its Role as Administrator of All Other FTR Auctions.***

The proposed Tariff revisions also update Tariff, Attachment K-Appendix, section 7.3.1, which describes the role of PJM (the Office of the Interconnection in the Tariff language) in conducting FTR auctions, to provide that PJM will be in charge of conducting any auction held to liquidate FTR positions under Tariff, Attachment K-Appendix, section 7.3.9. This is consistent with the existing text of Tariff, Attachment K-Appendix, section 7.3.1, which provides that PJM conducts its other FTR auctions.

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<sup>27</sup> Bloczynski Aff. ¶ 8; *see supra* note 15.

<sup>28</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(b).

<sup>29</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(d).

<sup>30</sup> Horger Aff. ¶ 18.

<sup>31</sup> *PJM Interconnection, L.L.C.*, 171 FERC ¶ 61,173, at P 36 (2020).

***D. PJM’s Revisions to Operating Agreement, Section 15.1 Will Harmonize Two Major Provisions Addressing Defaults and Add Clarity Regarding the Cure Period Applicable upon an Event of Default.***

PJM proposes to revise Operating Agreement, section 15.1 to ensure harmony and consistency between Operating Agreement, section 15.1, which addresses defaults across all of the PJM Markets, and Tariff, Attachment K-Appendix, section 7.3.9, which sets forth procedures for addressing FTR positions held by Members in default. While making these revisions, PJM also proposes a revision to Operating Agreement, section 15.1.1, to make clear that a Market Participant is entitled to an opportunity to cure its default, but must do so within the time limitations of any applicable cure period. PJM’s three substantive revisions to Operating Agreement, section 15.1 are as follows:

First, PJM has revised Operating Agreement, section 15.1.1, which outlines PJM’s authority to suspend or terminate a Market Participant’s right to participate in any PJM Market upon failure to meet obligations under any PJM Agreements, to provide clarity that a Market Participant may secure reinstatement within a PJM Market by satisfying its requirements and obligations under the PJM Agreements, provided it satisfies such obligations within the parameters of the opportunity to cure (and applicable cure period) under Operating Agreement, section 15.1.5 or Tariff, Attachment Q, as applicable. The requirements underlying a Market Participant’s opportunity to cure under Operating Agreement, section 15.1.5 are not new, but this clarifying revision draws attention to these requirements in this related section.

Second, PJM has modified Operating Agreement, section 15.1.5 to explicitly list as one of PJM or PJM Settlement’s<sup>32</sup> remedies for default, that “[t]he Financial Transmission Rights positions of a Member in default shall be addressed as provided in Operating Agreement, Schedule 1, section 7.3.9 and the parallel provisions of Tariff, Attachment K-Appendix, section 7.3.9.” This modification does not create a new remedy for default. Rather, it adds a reference to the provisions for addressing defaults in the FTR market that are set forth in Operating Agreement, Schedule 1, section 7.3.9 and the parallel provisions of Tariff, Attachment K-Appendix, section 7.3.9.

Third, PJM has added new Operating Agreement, section 15.1.7 to provide that when PJM addresses a defaulting Member’s FTR positions pursuant to Tariff, Attachment K-Appendix, section 7.3.9, addressing those positions will result in a final settlement amount, which may be aggregated with and netted against any other amounts owed by the defaulting Member to PJM and/or PJM Settlement, and may be used to set off amounts owed for the purposes of determining the Default Allocation Assessment to PJM Members pursuant to Operating Agreement, section 15.2.2. This addition synthesizes and brings together the provisions in Tariff, Attachment K-Appendix, section 7.3.9 and Operating

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<sup>32</sup> PJM is making this revision as a clean-up revision to ensure Operating Agreement, section 15.1.5 is consistent with Tariff, Attachment K-Appendix, section 7.3.9. Although the role of PJM Settlement is not the focus of this filing, making this revision is appropriate because it ensures consistency between these two provisions.

Agreement, sections 15.1 and 15.2.2, to make clear how amounts collected under Tariff, Attachment K-Appendix, section 7.3.9 will play into amounts owed both by the defaulting Member and by remaining Members through their share of any Default Allocation Assessment.

These three additions to Operating Agreement, section 15.1 are reasonable additions that provide clarity about how PJM may address defaults in the FTR market. Rather than providing significant new rights or obligations, these provisions largely clarify rights and obligations set forth in other sections of the Tariff, and should help avoid confusion about the appropriate process in the event a default occurs.

In addition to making the above three revisions to Operating Agreement, section 15.1, PJM also proposes a few discrete clean-up revisions to Operating Agreement, section 15.1. Specifically, PJM proposes to revise Operating Agreement, sections 15.1.1 and 15.1.3 to include appropriate references to the cure period specified in Operating Agreement, section 15.1.5. PJM also proposes to revise Operating Agreement, sections 15.1.6(a) and (c) to ensure both PJM and PJM Settlement are mentioned in reference to applicable creditworthiness standards and responsibilities for addressing defaults in the FTR market, and to remove outdated language that suggested the Tariff requires unilateral liquidation of all current and forward positions, which will bring that language into harmony with proposed Tariff, Attachment K-Appendix, section 7.3.9.

***E. Revisions to Tariff, Attachment Q Will Ensure PJM's Credit Risk Management Policy Reflects Procedures for Addressing Defaulting Members' FTR Positions.***

PJM proposes to revise Tariff, Attachment Q, sections III, IX, and X to accurately reflect PJM's proposed process for addressing the FTR positions of a defaulting Member under Tariff, Attachment K-Appendix, section 7.3.9. These revisions update Tariff, Attachment Q to specifically reflect that PJM's actions to address FTR positions held by a defaulting Member may include liquidating those FTR positions, letting them go to settlement, or some other appropriate method for resolving such positions. These revisions, like those described above to Operating Agreement, section 15.1, do not create new rights or remedies for PJM but rather ensure that Tariff, Attachment Q reflects essentially the same options for resolving FTR positions of a defaulting member as are set forth in Tariff, Attachment K-Appendix.

PJM's revisions to Tariff, Attachment Q also include one ministerial revision to correct a typo in Tariff, Attachment Q, section IV.B. The need for that revision was not discovered until after PJM stakeholders voted on the proposed revisions. Nevertheless, PJM is including this revision in this filing as it is not substantive and is an obvious error that needs to be corrected. This non-substantive revision to Tariff, Attachment Q, section IV.B. is reflected below in redline:

#### **IV. ONGOING COVENANTS**

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##### **B. Risk Management Review**

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Each Participant's continued eligibility to participate in any PJM Markets is conditioned upon PJM notifying the Participant of successful completion of PJM's verification of the Participant's risk management policies, practices and procedures, as discussed herein. However, if PJM notifies the Participant in writing that it could not successfully complete the verification process, PJM shall allow such Participant fourteen (14) calendar days to provide sufficient evidence for verification prior to declaring the Participant as ineligible to continue to participate in any PJM Markets, which declaration shall be in writing with an explanation of why PJM could not complete the verification. If the Participant does not provide sufficient evidence for verification to PJM within the required cure period, such Participant will be considered in default under this Tariff. PJM may retain outside expertise to perform the review and verification function described in this paragraph. PJM and any third party it may retain will treat as confidential the documentation provided by a Participant under this paragraph, consistent with the applicable provisions of the Agreements. If PJM retains such outside expertise, a Participant may direct in writing that PJM perform the risk management review and verification for such Participant instead of utilizing a third party, provided however, that employees and contract employees of PJM ~~and PJM~~ shall not be considered to be such outside expertise or third parties.

##### ***F. Ministerial Revisions to Tariff, Attachment K-Appendix, Section 7.3.***

In the course of revising Tariff, Attachment K-Appendix, section 7.3 to modify PJM's procedures for addressing FTR positions held by a defaulting Member, PJM is also providing ministerial revisions to Tariff, Attachment K-Appendix, sections 7.3.3, 7.3.5, and 7.3.6 to ensure internal cross-references to other parts of Tariff, Attachment K-Appendix also include parallel citations to identical portions of Operating Agreement, Schedule 1. These revisions are non-substantive but will help provide more uniform section references across the Tariff.

#### **III. EFFECTIVE DATE**

PJM requests that the Commission issue its order accepting PJM's filing by no later than January 29, 2021, which is sixty (60) days from the date of this filing, with an effective date of February 1, 2021, for the Tariff and Operating Agreement revisions contained herein.

#### IV. 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:<sup>33</sup>

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#### V. DOCUMENTS ENCLOSED

This filing consists of the following:

1. This transmittal letter;
2. Revisions to the Tariff (in redlined and non-redlined format (as Attachments A and B, respectively) and in electronic tariff filing format as required by Order No. 714<sup>34</sup>);
3. Revisions to the Operating Agreement (in redlined and non-redlined format (as Attachments C and D, respectively) and in electronic tariff filing format as required by Order No. 714); and
4. Affidavit of Timothy Horger on Behalf of PJM Interconnection, L.L.C. (Attachment E).

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<sup>33</sup> To the extent necessary, PJM requests waiver of Rule 203(b)(3) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.203(b)(3), to permit all persons listed to be placed on the official service list for this proceeding.

<sup>34</sup> *Electronic Tariff Filings*, Order No. 714, 2008–2013 FERC Stats. & Regs., Regs. Preambles ¶ 31,276 (2008), *final rule*, Order No. 714-A, III FERC Stats. & Regs., Regs. Preambles ¶ 31,356 (2014).

5. Affidavit of Nigeria Bloczynski on Behalf of PJM Interconnection, L.L.C. (Attachment F).

## **VI. 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>35</sup> PJM will post a copy of this filing to the FERC filings section of its internet site, located at the following link: <http://www.pjm.com/documents/ferc-manuals/ferc-filings.aspx> with a specific link to the newly filed document, and will send an email on the same date as this filing to all PJM members and all state utility regulatory commissions in the PJM Region<sup>36</sup> alerting them that this filing has been made by PJM and is available by following such link. PJM also serves the parties listed on the Commission's official service list for this docket. 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 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.

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<sup>35</sup> See 18 C.F.R. §§ 35.2(e), 385.2010(f)(3).

<sup>36</sup> PJM already maintains, updates, and regularly uses email lists for all PJM members and affected state commissions.

## VII. CONCLUSION

Accordingly, PJM requests that the Commission accept the enclosed Tariff and Operating Agreement revisions effective February 1, 2021.

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November 30, 2020

Respectfully submitted,

/s/ Victoria M. Lauterbach

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



# Attachment A

## Revisions to the PJM Open Access Transmission Tariff

(Marked/Redline Format)

### **7.3 Auction Procedures.**

#### **7.3.1 Role of the Office of the Interconnection.**

Financial Transmission Rights auctions shall be conducted by the Office of the Interconnection in accordance with standards and procedures set forth in the PJM Manuals, such standards and procedures to be consistent with the requirements of this Schedule. PJMSettlement shall be the Counterparty to the purchases and sales of Financial Transmission Rights arising from such auctions, provided however, that PJMSettlement shall not be a contracting party to any subsequent bilateral transfers of Financial Transmission Rights between Market Participants. The conversion of an Auction Revenue Right to a Financial Transmission Right pursuant to this section 7 shall not constitute a purchase or sale transaction to which PJMSettlement is a contracting party. Any Financial Transmission Rights auctions conducted to liquidate a defaulting Member's Financial Transmission Rights portfolio shall be conducted by the Office of the Interconnection in accordance with the procedures set forth in section 7.3.9 below, and as may be further described in the PJM Manuals.

#### **7.3.2 Notice of Offer.**

A holder of a Financial Transmission Right wishing to offer the Financial Transmission Right for sale shall notify the Office of the Interconnection of any Financial Transmission Rights to be offered. Each Financial Transmission Right sold in an auction shall, at the end of the period for which the Financial Transmission Rights were auctioned, revert to the offering holder or the entity to which the offering holder has transferred such Financial Transmission Right, subject to the term of the Financial Transmission Right itself and to the right of such holder or transferee to offer the Financial Transmission Right in the next or any subsequent auction during the term of the Financial Transmission Right.

#### **7.3.3 Pending Applications for Firm Service.**

(a) [Reserved.]

(b) Financial Transmission Rights may be assigned to entities requesting Network Transmission Service or Firm Point-to-Point Transmission Service pursuant to Operating Agreement, Schedule 1, sSection 5.2.2 (e), and the parallel provisions of Tariff, Attachment K-Appendix, section 5.2.2(e). only if such Financial Transmission Rights are simultaneously feasible with all outstanding Financial Transmission Rights, including Financial Transmission Rights effective for the then-current auction period. If an assignment of Financial Transmission Rights pursuant to a pending application for Network Transmission Service or Firm Point-to-Point Transmission Service cannot be completed prior to an auction, Financial Transmission Rights attributable to such transmission service shall not be assigned for the then-current auction period. If a Financial Transmission Right cannot be assigned for this reason, the applicant may withdraw its application, or request that the Financial Transmission Right be assigned effective with the start of the next auction period.

#### **7.3.4 On-Peak, Off-Peak and 24-Hour Periods.**

On-peak, off-peak and 24-hour FTRs will be offered in the annual and monthly auction. On-Peak Financial Transmission Rights shall cover the periods from 7:00 a.m. up to the hour ending at 11:00 p.m. on Mondays through Fridays, except holidays as defined in the PJM Manuals. Off-Peak Financial Transmission Rights shall cover the periods from 11:00 p.m. up to the hour ending 7:00 a.m. on Mondays through Fridays and all hours on Saturdays, Sundays, and holidays as defined in the PJM Manuals. The 24-hour period shall cover the period from hour ending 1:00 a.m. to the hour ending 12:00 midnight on all days. Each bid shall specify whether it is for an on-peak, off-peak, or 24-hour period.

### **7.3.5 Offers and Bids.**

(a) Offers to sell and bids to purchase Financial Transmission Rights shall be submitted during the period set forth in [Operating Agreement, Schedule 1, sSection 7.1.2](#), and [the parallel provisions of Tariff, Attachment K-Appendix, section 7.1.2](#), and shall be in the form specified by the Office of the Interconnection in accordance with the requirements set forth below.

(b) Offers to sell shall identify the specific Financial Transmission Right, by term, megawatt quantity and receipt and delivery points, offered for sale. An offer to sell a specified megawatt quantity of Financial Transmission Rights shall constitute an offer to sell a quantity of Financial Transmission Rights equal to or less than the specified quantity. An offer to sell may not specify a minimum quantity being offered. Each offer may specify a reservation price, below which the offeror does not wish to sell the Financial Transmission Right. Offers submitted by entities holding rights to Financial Transmission Rights shall be subject to such reasonable standards for the verification of the rights of the offeror as may be established by the Office of the Interconnection. Offers shall be subject to such reasonable standards for the creditworthiness of the offeror or for the posting of security for performance as the Office of the Interconnection shall establish.

(c) Bids to purchase shall specify the term, megawatt quantity, price per megawatt, and receipt and delivery points of the Financial Transmission Right that the bidder wishes to purchase. A bid to purchase a specified megawatt quantity of Financial Transmission Rights shall constitute a bid to purchase a quantity of Financial Transmission Rights equal to or less than the specified quantity. A bid to purchase may not specify a minimum quantity that the bidder wishes to purchase. A bid may specify receipt and delivery points in accordance with [Operating Agreement, Schedule 1, sSection 7.2.2](#), and [the parallel provisions of Tariff, Attachment K-Appendix, section 7.2.2](#), and may include Financial Transmission Rights for which the associated Transmission Congestion Credits may have negative values. Bids shall be subject to such reasonable standards for the creditworthiness of the bidder or for the posting of security for performance as the Office of the Interconnection shall establish.

(d) Bids and offers shall be specified to the nearest tenth of a megawatt and shall be greater than zero. The Office of the Interconnection may require that a market participant shall not submit in excess of 5000 bids and offers for any single monthly auction, or for any single round of the annual auction, when the Office of the Interconnection determines that such limit is

required to avoid or mitigate significant system performance problems related to bid/offer volume. Notice of the need to impose such limit shall be provided prior to the start of the bidding period if possible. Where such notice is provided after the start of the bidding period, market participants shall be required within one day to reduce their bids and offers for such auction below 5000, and the bidding period in such cases shall be extended by one day.

### **7.3.6 Determination of Winning Bids and Clearing Price.**

(a) At the close of each bidding period, the Office of the Interconnection will create a base Financial Transmission Rights power flow model that includes all outstanding Financial Transmission Rights that have been approved and confirmed for any portion of the month for which the auction was conducted and that were not offered for sale in the auction. The base Financial Transmission Rights model also will include estimated uncompensated parallel flows into each interface point of the PJM Region and estimated scheduled transmission outages.

(b) In accordance with the requirements of [Operating Agreement, Schedule 1, Section 7.5, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.5, of this Schedule](#) and subject to all applicable transmission constraints and reliability requirements, the Office of the Interconnection shall determine the simultaneous feasibility of all outstanding Financial Transmission Rights not offered for sale in the auction and of all Financial Transmission Rights that could be awarded in the auction for which bids were submitted. The winning bids shall be determined from an appropriate linear programming model that, while respecting transmission constraints and the maximum MW quantities of the bids and offers, selects the set of simultaneously feasible Financial Transmission Rights with the highest net total auction value as determined by the bids of buyers and taking into account the reservation prices of the sellers. In the event that there are two or more identical bids for the selected Financial Transmission Rights and there are insufficient Financial Transmission Rights to accommodate all of the identical bids, then each such bidder will receive a pro rata share of the Financial Transmission Rights that can be awarded.

(c) Financial Transmission Rights shall be sold at the market-clearing price for Financial Transmission Rights between specified pairs of receipt and delivery points, as determined by the bid value of the marginal Financial Transmission Right that could not be awarded because it would not be simultaneously feasible. The linear programming model shall determine the clearing prices of all Financial Transmission Rights paths based on the bid value of the marginal Financial Transmission Rights, which are those Financial Transmission Rights with the highest bid values that could not be awarded fully because they were not simultaneously feasible, and based on the flow sensitivities of each Financial Transmission Rights path relative to the marginal Financial Transmission Rights paths flow sensitivities on the binding transmission constraints. Financial Transmission Rights with a zero clearing price will only be awarded if there is a minimum of one binding constraint in the auction period for which the Financial Transmission Rights path sensitivity is non-zero.

### **7.3.7 Announcement of Winners and Prices.**

Within two (2) Business Days after the close of the bid and offer period for an annual Financial Transmission Rights auction round, and within five (5) Business Days after the close of the bid and offer period for a monthly Financial Transmission Rights auction, the Office of the Interconnection shall post the winning bidders, the megawatt quantity, the term and the receipt and delivery points for each Financial Transmission Right awarded in the auction and the price at which each Financial Transmission Right was awarded unless circumstances beyond PJM's control prevent PJM from meeting the applicable deadline. Under such circumstances, PJM will post the auction results at the earliest possible opportunity. The Office of the Interconnection shall not disclose the price specified in any bid to purchase or the reservation price specified in any offer to sell. If the Office of the Interconnection discovers an error in the results posted for a Financial Transmission Rights auction (or a given round of the annual Financial Transmission Rights auction), the Office of the Interconnection shall notify Market Participants of the error as soon as possible after it is found, but in no event later than 5:00 p.m. of the Business Day following the initial publication of the results of the auction or round of the annual auction. After this initial notification, if the Office of the Interconnection determines that it is necessary to post modified results, it shall provide notification of its intent to do so, together with all available supporting documentation, by no later than 5:00 p.m. of the second Business Day following the initial publication of the results of that auction or round of the annual auction. Thereafter, the Office of the Interconnection must post any corrected results by no later than 5:00 p.m. of the fourth calendar day following the initial publication of the results of the auction or round of the annual auction. Should any of the above deadlines pass without the associated action on the part of the Office of the Interconnection, the originally posted results will be considered final. Notwithstanding the foregoing, the deadlines set forth above shall not apply if the referenced auction results are under publicly noticed review by the FERC.

### **7.3.8 Auction Settlements.**

All buyers and sellers of Financial Transmission Rights between the same points of receipt and delivery shall pay PJM Settlement or be paid by PJM Settlement the market-clearing price, as determined in the auction, for such Financial Transmission Rights.

### **7.3.9 Settling Addressing Defaulting Member's Financial Transmission Rights.**

In the event a Member fails to meet creditworthiness requirements or make timely payments when due pursuant to the ~~PJM~~ Operating Agreement or ~~PJM~~ Tariff, the Office of the Interconnection shall, as soon as practicable after declaring the Member to be in such default as provided in Operating Agreement, section 15.1.5 is declared, use reasonable efforts to initiate within two applicable auctions the following procedures to ~~close out and~~ settle, liquidate or otherwise resolve each the Financial Transmission Rights ~~of position held by~~ the defaulting Member:

a) The Office of the Interconnection shall ~~close out the defaulting Member's positions as of the date of its default, by~~ unilaterally terminating all of the defaulting Member's rights with respect to forward Financial Transmission Rights positions as of the date of the Member's default.

b) ~~Reserved.~~ As to each Financial Transmission Rights position held by the defaulting Member immediately prior to the termination of the defaulting Member's rights under subsection (a) above, the Office of the Interconnection shall determine and execute an appropriate course of action for addressing such Financial Transmission Rights position, based on the specific circumstances of the default as determined by the Office of the Interconnection in exercise of its reasonable judgment, such as (1) liquidating the position by offering it for sale in an upcoming applicable Financial Transmission Rights auction, (2) liquidating the position by offering it for sale in an auction called and scheduled for the specific purpose of liquidating one or more positions held by the defaulting Member ("Special Auction"), (3) allowing the position to go to settlement, or (4) another course of action the Office of the Interconnection determines to be appropriate under the circumstances that is designed to minimize potential losses to PJM and its Members. The Office of the Interconnection will provide reasonable advance notice to PJM Members of the approach or course of action it has determined to be appropriate prior to implementing that approach or course of action. The Office of the Interconnection is not required to apply a single approach to the defaulting Member's entire Financial Transmission Rights portfolio, and may determine that the appropriate course of action for addressing a defaulting Member's portfolio includes a combination of the above approaches as applied to different positions within the defaulting Member's overall Financial Transmission Rights portfolio.

c) ~~Reserved.~~ The Office of the Interconnection will seek to minimize the losses to PJM Members associated with settling, liquidating or otherwise resolving the defaulting Member's Financial Transmission Rights portfolio and may base its determination in subsection (b) above on several factors, including but not limited to, the following:

- 1) the Office of the Interconnection's assessment of which approach will provide the greatest degree of protection to the financial integrity of the PJM Markets;
- 2) the size of the defaulting Member's Financial Transmission Rights portfolio, both in absolute terms and relative to overall market volume;
- 3) the term of the Financial Transmission Rights positions held by the defaulting Member as considered for a single position or on a portfolio basis;
- 4) whether liquidation is feasible or not, and on what timeline, due to the cessation or curtailment of trading at PJM for all Financial Transmission Rights or a subset of Financial Transmission Rights positions;
- 5) prevailing market conditions, such as but not limited to market liquidity and volatility; and
- 6) timing of the default and the actions taken to address the default.

d) ~~Reserved.~~ Special Auctions. The Office of the Interconnection shall administer each Special Auction provided for in subsection (b)(2) above according to the procedures set forth in the Tariff and PJM Manuals for FTR auctions to the extent appropriate in the Office of the Interconnection's sole discretion, and may adopt special rules for each Special Auction to accommodate the unique circumstances underlying the particular default and particular Financial Transmission Rights positions being liquidated, with the terms and conditions of such auction being determined with the goal of facilitating a successful auction in light of the particular positions to be auctioned, the prevailing market conditions for such open positions (including the depth, scope, and nature of participation in such markets), and such other factors as the Office of the Interconnection determines appropriate, including those factors enumerated in subsection (c) above. The Office of the Interconnection shall provide reasonable advance notice to FTR Participants of a Special Auction and the terms and conditions under which it will be conducted.

e) All liquidations made pursuant to subsection (b) above shall be for the account of the defaulting Member (and all amounts owed PJM in respect thereof shall be included in amounts owed by the defaulting Member as part of its default).

fe) Notwithstanding subsections 7.3.9(a) and (b) above of this Schedule, the actual net charges or credits resulting from the defaulting Member's Financial Transmission Rights positions for which PJM Settlement acted as counterparty as calculated through the normal settlement processes shall be included in calculating the Default Allocation Assessment charges as described in Operating Agreement, section 15.2.2.

## **ATTACHMENT Q**

### **CREDIT RISK MANAGEMENT POLICY**

#### **I. INTRODUCTION**

It is the policy of PJM that prior to an entity participating in any PJM Markets or in order to take Transmission Service, the entity must demonstrate its ability to meet the requirements in this Attachment Q. This Attachment Q also sets forth PJM's authority to deny, reject, or terminate a Participant's right to participate in any PJM Markets in order to protect the PJM Markets and PJM Members from unreasonable credit risk from any Participant's activities. Given the interconnectedness and overlapping of their responsibilities, PJM Interconnection, L.L.C. and PJM Settlement, Inc. are referred to both individually and collectively herein as "PJM."

#### **PURPOSE**

PJMSettlement is the counterparty to transactions in the PJM Markets. As a consequence, if a Participant defaults on its obligations under this Attachment Q, or PJM determines a Participant represents unreasonable credit risk to the PJM Markets, and the Participant does not post Collateral, additional Collateral or Restricted Collateral in response to a Collateral Call, the result is that the Participant represents unsecured credit risk to the PJM Markets. For this reason, PJM must have the authority to monitor and manage credit risk on an ongoing basis, and to act promptly to mitigate or reduce any unsecured credit risk, in order to protect the PJM Markets and PJM Members from losses.

This Attachment Q describes requirements for: (1) eligibility to be a Market Participant, (2) establishment and maintenance of credit by Market Participants, and (3) collateral requirements and forms of credit support that will be deemed as acceptable to mitigate risk to any PJM Markets.

This Attachment Q also sets forth (1) PJM's authority to monitor and manage credit risk that a Participant may represent to the PJM Markets and/or PJM membership in general, (2) the basis for establishing limits that will be imposed on a Market Participant in order to minimize risk, and (3) various obligations and requirements the violation of which will result in an Event of Default pursuant to this Attachment Q and the Agreements.

Attachment Q describes the types of data and information PJM will review in order to determine whether an Applicant or Market Participant presents an unreasonable risk to any PJM Markets and/or PJM membership in general, and the steps PJM may take in order to address that risk.

#### **APPLICABILITY**

This Attachment Q applies to all Applicants and Market Participants who take Transmission Service under this Tariff, or participate in any PJM Markets or market activities under the Agreements. Notwithstanding anything to the contrary in this Attachment Q, simply taking



transmission service or procuring Ancillary Services via market-based rates does not imply market participation for purposes of applicability of this Attachment Q.

## **II. RISK EVALUATION PROCESS**

PJM will conduct a risk evaluation to determine eligibility to become and/or remain a Market Participant or Guarantor that: (1) assesses the entity's financial strength, risk profile, creditworthiness, and other relevant factors; (2) determines an Unsecured Credit Allowance, if appropriate; (3) determines appropriate levels of Collateral; and (4) evaluates any Credit Support, including Guaranties or Letters of Credit.

### **A. Initial Risk Evaluation**

PJM will perform an initial risk evaluation of each Applicant and/or its Guarantor. As part of the initial risk evaluation, PJM will consider certain Minimum Participation Requirements, assign an Internal Risk Score, establish an Unsecured Credit Allowance if appropriate, and make a determination regarding required levels of Collateral, creditworthiness, credit support, Restricted Collateral and other assurances for participation in certain PJM Markets.

Each Applicant and/or its Guarantor must provide the information set forth below at the time of its initial application pursuant to this Attachment Q and on an ongoing basis in order to remain eligible to participate in any PJM Markets. The same quantitative and qualitative factors will be used to evaluate Participants whether or not they have rated debt.

#### **1. Rating Agency Reports**

PJM will review Rating Agency reports from Standard & Poor's, Moody's Investors Service, Fitch Ratings, or other Nationally Recognized Statistical Rating Organization for each Applicant and/or Guarantor. The review will focus on the Applicant's or its Guarantor's senior unsecured debt ratings. If senior unsecured debt ratings are not available, PJM may consider other ratings, including issuer ratings, corporate ratings and/or an implied rating based on an internally derived Internal Credit Score pursuant to section II.A.3 below.

#### **2. Financial Statements and Related Information**

Each Applicant and/or its Guarantor must submit, or cause to be submitted, audited financial statements, except as otherwise indicated below, prepared in accordance with United States Generally Accepted Accounting Principles ("US GAAP") or any other format acceptable to PJM for the three (3) fiscal years most recently ended, or the period of existence of the Applicant and/or its Guarantor, if shorter. Applicants and/or their Guarantors must submit, or cause to be submitted, financial statements, which may be unaudited, for each completed fiscal quarter of the current fiscal year. All audited financial statements provided by the Applicant and/or its Guarantor must be audited by an Independent Auditor.

The information should include, but not be limited to, the following:

- (a) If the Applicant and/or its Guarantor has publicly traded securities:
- (i) Annual reports on Form 10-K, together with any amendments thereto;
  - (ii) Quarterly reports on Form 10-Q, together with any amendments thereto;
  - (iii) Form 8-K reports, if any, that have been filed since the most recent Form 10-K;
  - (iv) A summary provided by the Principal responsible, or to be responsible, for PJM Market activity of: (1) the Participant's primary purpose(s) of activity or anticipated activity in the PJM Markets (investment, trading or "hedging or mitigating commercial risks," as such phrase has meaning in the CFTC's regulations regarding the end-user exception to clearing); (2) the experience of the Participant (and its Principals) in managing risks in similar markets, including other organized RTO/ISO markets or on regulated commodity exchanges; and (3) a high level overview of the Participant's intended participation in the PJM Markets.
  - (v) All audited financial statements provided by an Applicant with publicly traded securities and/or its Guarantor with publicly traded securities must be audited by an Independent Auditor that satisfies the requirements set forth in the Sarbanes-Oxley Act of 2002.
- (b) If the Applicant and/or its Guarantor does not have publicly-traded securities:
- (i) Annual Audited Financial Statements or equivalent independently audited financials, and quarterly financial statements, generally found on:
    - Balance Sheets
    - Income Statements
    - Statements of Cash Flows
    - Statements of Stockholder's or Member's Equity or Net Worth;
  - (ii) Notes to Annual Audited Financial Statements, and notes to quarterly financial statements if any, including disclosures of any material changes from the last report;
  - (iii) Disclosure equivalent to a Management's Discussion & Analysis, including an executive overview of operating results and outlook, and compliance with debt covenants and indentures, and off balance sheet arrangements, if any;
  - (iv) Auditor's Report with an unqualified opinion or written letter from auditor containing the opinion whether the annual audited financial statements comply with the US GAAP or any other format acceptable to PJM; and

- (v) A summary provided by the Principal responsible or to be responsible for PJM Market activity of: (1) the Participant’s primary purpose(s) of activity or anticipated activity in the PJM Markets (investment, trading or “hedging or mitigating commercial risks,” as such phrase has meaning in the CFTC’s regulations regarding the end-user exception to clearing); (2) the experience of the Participant (and its Principals) in managing risks in similar markets, including other organized RTO/ISO markets or on regulated commodity exchanges; and (3) a high level overview of the Participant’s intended participation in the PJM Markets.
- (c) If Applicant and/or Guarantor is newly formed, does not yet have three (3) years of audited financials, or does not routinely prepare audited financial statements, PJM may specify other information to allow it to assess the entity’s creditworthiness, including but not limited to:
  - (i) Equivalent financial information traditionally found in:
    - Balance Sheets
    - Income Statements
    - Statements of Cash Flows
  - (ii) Disclosure equivalent to a Management’s Discussion & Analysis, including an executive overview of operating results and outlook, and compliance with debt covenants and indentures, and off balance sheet arrangements, if any; and
  - (iii) A summary provided by the Principal responsible or to be responsible for PJM Market activity of: (1) the Participant’s primary purpose(s) of activity or anticipated activity in the PJM Markets (investment, trading or “hedging or mitigating commercial risks,” as such phrase has meaning in the CFTC’s regulations regarding the end-user exception to clearing); (2) the experience of the Participant (and its Principals) in managing risks in similar markets, including other organized RTO/ISO markets or on regulated commodity exchanges; and (3) a high level overview of the Participant’s intended participation in the PJM Markets.
- (d) During a two year transition period from June 1, 2020 to May 31, 2022, the Applicant or Guarantor may provide a combination of audited financial statements and/or equivalent financial information.

If any of the above information in this section II.A.2 is available on the internet, the Applicant and/or its Guarantor may provide a letter stating where such statements can be located and retrieved by PJM. If an Applicant and/or its Guarantor files Form 10-K, Form 10-Q, or Form 8-K with the SEC, then the Applicant and/or its Guarantor will be deemed to have satisfied the requirement by indicating to PJM where the information in this section II.A.2 can be located on the internet.

If the Applicant and/or its Guarantor fails, for any reason, to provide the information required above in this section II.A.2, PJM has the right to (1) request Collateral and/or Restricted Collateral to cover the amount of risk reasonably associated with the Applicant and/or its Guarantor's expected activity in any PJM Markets, and/or (2) restrict the Applicant from participating in certain PJM Markets, including but not limited to restricting the positions the Applicant (once it becomes a Market Participant) takes in the market.

For certain Applicants and/or their Guarantors, some of the above submittals may not be applicable and alternate requirements for compliant submittals may be specified by PJM. In the credit evaluation of Municipalities and Cooperatives, PJM may also request additional information as part of the initial and ongoing review process and will consider other qualitative factors in determining financial strength and creditworthiness.

### **3. Credit Rating and Internal Credit Score**

PJM will use credit risk scoring methodologies as a tool in determining an Unsecured Credit Allowance for each Applicant and/or its Guarantor. As its source for calculating the Unsecured Credit Allowance, PJM will rely on the ratings from a Rating Agency, if any, on the Applicant's or Guarantor's senior unsecured debt or their issuer ratings or corporate ratings if senior unsecured debt ratings are not available. If there is a split rating between the Rating Agencies, the lower of the ratings shall apply. If no external credit rating is available PJM will utilize its Internal Credit Score in order to calculate the Unsecured Credit Allowance.

The model used to develop the Internal Credit Score will be quantitative, based on financial data found in the income statement, balance sheet, and cash flow statement, and it will be qualitative based on relevant factors that may be internal or external to a particular Applicant and/or its Guarantor.

PJM will employ a framework, as outlined in Tables 1-5 below, based on metrics internal to the Applicant and/or its Guarantor, including capital and leverage, cash flow coverage of fixed obligations, liquidity, profitability, and other qualitative factors. The particular metrics and scoring rules differ according to the Applicant's or Guarantor's line of business and the PJM Markets in which it anticipates participating, in order to account for varying sources and degrees of risk to the PJM Markets and PJM members.

The formulation of each metric will be consistently applied to all Applicants and Guarantors across industries with slight variations based on identifiable differences in entity type, anticipated market activity, and risks to the PJM Markets and PJM members. In instances where the external credit rating is used to calculate the unsecured credit allowance, PJM may also use the Internal Credit Score as an input into determining the overall risk profile of an Applicant and/or its Guarantor.

| <b>Table 1.<br/>Quantitative Metrics by Line of Business: Leverage and Capital Structure</b> | <b>Investor-Owned Utilities</b> | <b>Municipal Utilities</b> | <b>Co-Operative Utilities</b> | <b>Power Transmission</b> | <b>Merchant Power</b> | <b>Project Developers</b> | <b>Exploration &amp; Production</b> | <b>Financial Institutions</b> | <b>Commodity Trading</b> | <b>Private Equity</b> |
|--|---------------------------------|----------------------------|-------------------------------|---------------------------|-----------------------|---------------------------|-------------------------------------|-------------------------------|--------------------------|-----------------------|
| Debt / Total Capitalization (%)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| FFO / Debt (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Debt / EBITDA (x)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Debt / Property, Plant & Equipment (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Retained Earnings / Total Assets (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Debt / Avg Daily Production or Kwh (\$)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Tangible Net Worth (\$)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Core Capital / Total Assets (%)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Risk-Based Capital / RWA (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Tier 1 Capital / RWA (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Equity / Investments (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Debt / Investments (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |

primary metric secondary metric

FFO = Funds From Operations RWA = Risk-Weighted Assets

| <b>Table 2.<br/>Quantitative Metrics by Line of Business: Fixed Charge Coverage and Funding</b> | <b>Investor-Owned Utilities</b> | <b>Municipal Utilities</b> | <b>Co-Operative Utilities</b> | <b>Power Transmission</b> | <b>Merchant Power</b> | <b>Project Developers</b> | <b>Exploration &amp;</b> | <b>Financial Institutions</b> | <b>Commodity Trading</b> | <b>Private Equity</b> |
|---|---------------------------------|----------------------------|-------------------------------|---------------------------|-----------------------|---------------------------|--------------------------|-------------------------------|--------------------------|-----------------------|
| EBIT / Interest Expense (x)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| EBITDA / Interest Expense (x)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| EBITDA / [Interest Exp + CPLTD] (x)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| [FFO + Interest Exp] / Interest Exp (x)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| Loans / Total Deposits (%)  |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| NPL / Gross Loans (%)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| NPL / [Net Worth + LLR] (%)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| Market Funding/Tangible Bank Assets (%)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |

primary metric secondary metric

CPLTD = Current Portion of Long-Term Debt EBIT = Earnings Before Interest and Taxes EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization LLR = Loan Loss Reserves NPL = Non-Performing Loans



|   |  |          |          |          |           |           |           |           |            |            |            |
|---|--|----------|----------|----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| <b>Need for PJM Markets to Achieve Business Goals</b> | Rating Agency criteria or other industry analysis  | High     | High     | High     | High      | Med       | Low       | Med       | Low        | Low        | N/A        |
| <b>Ability to Grow/Enter Markets other than PJM</b>   | Rating Agency criteria or other industry analysis  | Very Low | Very Low | Very Low | Very Low  | High      | High      | Med       | Med        | High       | N/A        |
| <b>Other Participants' Ability to Serve Customers</b> | Rating Agency criteria or other industry analysis  | Low      | Low      | Low      | Low       | Low       | Med       | Low       | Low        | High       | N/A        |
| <b>Regulation of Participant's Business</b>           | RRA regulatory climate scores, S&P BICRA   | PUCS     | Govt     | N/A      | FERC PUCs | N/A       | N/A       | N/A       | N/A        | N/A        | N/A        |
| <b>Primary Purpose of PJM Activity</b>                | Investment ("Inv.)/ Trading ("Trade")/ Hedging or Mitigating Commercial Risk of Operations ("CRH") | CRH      | CRH      | CRH      | CRH/Trade | CRH/Trade | CRH/Trade | CRH/Trade | Inv./Trade | Inv./Trade | Inv./Trade |

RRA = Regulatory Research Associates, a division of S&P Global, Inc.      BICRA = Bank Industry Country Risk Assessment

The scores developed will range from 1-6, with the following mappings:

- 1 = Very Low Risk (S&P/Fitch: AAA to AA-; Moody's: Aaa to Aa3)
- 2 = Low Risk (S&P/Fitch: A+ to BBB+; Moody's: A1 to Baa1)
- 3 = Low to Medium Risk (S&P/Fitch: BBB; Moody's: Baa2)
- 4 = Medium Risk (S&P/Fitch: BBB-; Moody's: Baa3)
- 5 = Medium to High Risk (S&P/Fitch: BB+ to BB; Moody's Ba1 to Ba2)
- 6 = High Risk (S&P/Fitch: BB- and below; Moody's: Ba3 and below)

#### **4. Trade References**

If deemed necessary by PJM, whether because the Applicant is newly or recently formed or for any other reason, each Applicant and/or its Guarantor shall provide at least one (1) bank reference and three (3) Trade References to provide PJM with evidence of Applicant's understanding of the markets in which the Applicant is seeking to participate and the Applicant's experience and ability to manage risk. PJM may contact the bank references and Trade References provided by the Applicant to verify their business experience with the Applicant.

#### **5. Litigation and Contingencies**

Unless prohibited by law, each Applicant and Guarantor is also required to disclose and provide information as to the occurrence of, within the five (5) years prior to the submission of the information to PJM (i) any litigation, arbitration, investigation (formal inquiry initiated by a governmental or regulatory entity), or proceeding, pending or, to the knowledge of the involving, Applicant or its Guarantor or any of their Principals that would likely have a material adverse impact on its financial condition and/or would likely materially affect the risk of non-payment by the Applicant or Guarantor, or (ii) any finding of material defalcation, market manipulation or fraud by or involving the Applicant, Guarantor, or any of their Principals, predecessors, subsidiaries, or Credit Affiliates that participate in any United States power markets based upon a final adjudication of regulatory and/or legal proceedings, (iii) any bankruptcy declarations or petitions by or against an Applicant and/or Guarantor, or (iv) any violation by any of the foregoing of any federal or state regulations or laws regarding energy commodities, U.S. Commodity Futures Trading Commission ("CFTC") or FERC requirements, the rules of any exchange monitored by the National Futures Association, any self-regulatory organization or any other governing, regulatory, or standards body responsible for regulating activity in North American markets for electricity, natural gas or electricity-related commodity products. Each Applicant and Guarantor shall take reasonable measures to obtain permission to disclose information related to a non-public investigation. These disclosures shall be made by Applicant and Guarantor upon application, and within ten (10) Business Days of any material change with respect to any of the above matters.

#### **6. History of Defaults in Energy Projects**

Each Applicant and Guarantor shall disclose their current default status and default history for any energy related generation or transmission project (e.g. generation, solar, development), and within any wholesale or retail energy market, including but not limited to within PJM, any



Independent System Operator or Regional Transmission Organization, and exchange that has not been cured within the past five (5) years. Defaults of a non-recourse project financed entity may not be included in the default history.

## **7. Other Disclosures and Additional Information**

Each Applicant and Guarantor is required to disclose any Credit Affiliates that are currently Members of PJM, applying for membership with PJM, Transmission Customers, Participants, applying to become Market Participants, or that participate directly or indirectly in any PJM Markets or any other North American markets for electricity, natural gas or electricity-related commodity products. Each Applicant and Guarantor shall also provide a copy of its limited liability company agreement or equivalent agreement, certification of formation, articles of incorporation or other similar organization document, offering memo or equivalent, the names of its five (5) most senior Principals, and information pertaining to any non-compliance with debt covenants and indentures.

Applicants shall provide PJM the credit application referenced in section III.A and any other information or documentation reasonably required for PJM to perform the initial risk evaluation of Applicant's or Guarantor's creditworthiness and ability to comply with the requirements contained in the Agreements related to settlements, billing, credit requirements, and other financial matters.

### **B. Supplemental Risk Evaluation Process**

As described in section VI below, PJM will conduct a supplemental risk evaluation process for Applicants, Participants, and Guarantors applying to conduct virtual and export transactions or participate in any PJM Markets.

### **C. Unsecured Credit Allowance**

A Market Participant may request that PJM consider it for an Unsecured Credit Allowance pursuant to the provisions herein. Notwithstanding the foregoing, an FTR Participant shall not be considered for an Unsecured Credit Allowance for participation in the FTR markets.

#### **1. Unsecured Credit Allowance Evaluation**

PJM will perform a credit evaluation on each Participant that has requested an Unsecured Credit Allowance, both initially and at least annually thereafter. PJM shall determine the amount of Unsecured Credit Allowance, if any, that can be provided to the Market Participant in accordance with the creditworthiness and other requirements set forth in this Attachment Q. In completing the credit evaluation, PJM will consider:

##### **(a) Rating Agency Reports**

PJM will review Rating Agency reports as for each Market Participant on the same basis as described in section II.A.1 above and section II.E.1 below.

**(b) Financial Statements and Related Information**

All financial statements and related information considered for an Unsecured Credit Allowance must satisfy all of the same requirements described in section II.A.2 above and section II.E.2 below.

**2. Material Adverse Changes**

Each Market Participant is responsible for informing PJM, in writing, of any Material Adverse Change in its financial condition (or the financial condition of its Guarantor) since the date of the Market Participant or Guarantor's most recent annual financial statements provided to PJM, pursuant to the requirements reflected in section II.A.2 above and section II.E.3 below.

In the event that PJM determines that a Material Adverse Change in the financial condition of a Market Participant warrants a requirement to provide Collateral, additional Collateral or Restricted Collateral, PJM shall comply with the process and requirements described in section II.A above and section II.E below.

**3. Other Disclosures**

Each Market Participant desiring an Unsecured Credit Allowance is required to make the disclosures and upon the same requirements reflected in section II.A.7 above and section II.E.7 below.

**D. Determination of Unreasonable Credit Risk**

Unreasonable credit risk shall be determined by the likelihood that an Applicant will default on a financial obligation arising from its participation in any PJM Markets. Indicators of potentially unreasonable credit risk include, but are not limited to, a history of market manipulation based upon a final adjudication of regulatory and/or legal proceedings, a history of financial defaults, a history of bankruptcy or insolvency within the past five (5) years, or a combination of current market and financial risk factors such as low capitalization, a reasonably likely future material financial liability, a low Internal Credit Score (derived pursuant to section II.A.3 above) and/or a low externally derived credit score. PJM's determination will be based on, but not limited to, information and material provided to PJM during its initial risk evaluation process, information and material provided to PJM in the Officer's Certification, and/or information gleaned by PJM from public and non-public sources.

If PJM determines that an Applicant poses an unreasonable credit risk to the PJM Markets, PJM may require Collateral, additional Collateral, or Restricted Collateral commensurate with the Applicant's risk of financial default, reject an application, and/or limit or deny Applicant's participation in the PJM Markets, to the extent and for the time period it determines is necessary to mitigate the unreasonable credit risk to the PJM Markets. PJM will reject an application if it determines that Collateral, additional Collateral, or Restricted Collateral cannot address the risk.

PJM will communicate its concerns regarding whether the Applicant presents an unreasonable credit risk, if any, in writing to the Applicant and attempt to better understand the circumstances surrounding that Applicant's financial and credit position before making its determination. In the event PJM determines that an Applicant presents an unreasonable credit risk that warrants a requirement to provide Collateral of any type, or some action to mitigate risk, PJM shall provide the Applicant with a written explanation of why such determination was made.

## **E. Ongoing Risk Evaluation**

In addition to the initial risk evaluation set forth in sections II.A through II.D above and the annual certification requirements set forth in section III.A below, each Market Participant and/or its Guarantor has an ongoing obligation to provide PJM with the information required in section IV.A described in more detail below. PJM may also review public information regarding a Market Participant and/or its Guarantor as part of its ongoing risk evaluation. If appropriate, PJM will revise the Market Participant's Unsecured Credit Allowance and/or change its determination of creditworthiness, credit support, Restricted Collateral, required Collateral or other assurances pursuant to PJM's ongoing risk evaluation process.

Each Market Participant and/or its Guarantor must provide the information set forth below on an ongoing basis in order to remain eligible to participate in any PJM Markets. The same quantitative and qualitative factors will be used to evaluate Market Participants whether or not they have rated debt.

### **1. Rating Agency Reports**

PJM will review Rating Agency reports for each Market Participant and/or Guarantor on the same basis as described in section II.A.1 above.

### **2. Financial Statements and Related Information**

On an ongoing basis, Market Participants and/or their Guarantors shall provide the information they are required to provide as described in section II.A.2 above, pursuant to the schedule reflected below, with one exception. With regard to the summary that is required to be provided by the Principal responsible for PJM Market activity, with respect to experience of the Participant or its Principals in managing risks in similar markets, the Principal only needs to provide that information for a new Principal that was not serving in the position when the prior summary was provided. PJM will review financial statements and related information for each Market Participant and/or Guarantor on the same basis as described in section II.A.2 above.

Each Market Participant and/or its Guarantor must submit, or cause to be submitted, annual audited financial statements, except as otherwise indicated below, prepared in accordance with US GAAP or any other format acceptable to PJM for the fiscal year most recently ended within ten (10) calendar days of the financial statements becoming available and no later than one hundred twenty (120) calendar days after its fiscal year end. Market Participants and/or their Guarantors must submit, or cause to be submitted, financial statements, which may be unaudited, for each completed fiscal quarter of the current fiscal year, promptly upon their issuance, but no

later than sixty (60) calendar days after the end of each fiscal quarter. All audited financial statements provided by the Market Participant and/or its Guarantor must be audited by an Independent Auditor.

Notwithstanding the foregoing, PJM may upon request, grant a Market Participant or Guarantor an extension of time, if the financials are not available within the time frame stated above.

### **3. Material Adverse Changes**

Each Market Participant and each Guarantor is responsible for informing PJM, in writing, of any Material Adverse Change in its or its Guarantor's financial condition within five (5) Business Days of any Principal becoming aware of the occurrence of a Material Adverse Change since the date of the Market Participant or Guarantor's most recent annual financial statements provided to PJM. However, PJM may also independently establish from available information that a Participant and/or its Guarantor has experienced a Material Adverse Change in its financial condition without regard to whether such Market Participant or Guarantor has informed PJM of the same.

For the purposes of this Attachment Q, a Material Adverse Change in financial condition may include, but is not be limited to, any of the following:

- (a) a bankruptcy filing;
- (b) insolvency;
- (c) a significant decrease in market capitalization;
- (d) restatement of prior financial statements unless required due to regulatory changes;
- (e) the resignation or removal of a Principal unless there is a new Principal appointed or expected to be appointed, a transition plan in place pending the appointment of a new Principal, or a planned restructuring of such roles;
- (f) the filing of a lawsuit or initiation of an arbitration, investigation, or other proceeding that would likely have a material adverse effect on any current or future financial results or financial condition or increase the likelihood of non-payment;
- (g) a material financial default in any other organized energy, ancillary service, financial transmission rights and/or capacity markets including but not limited to those of another Regional Transmission Organization or Independent System Operator, or on any commodity exchange, futures exchange or clearing house, that has not been cured or remedied after any required notice has been given and any cure period has elapsed;
- (h) a revocation of a license or other authority by any Federal or State regulatory agency; where such license or authority is necessary or important to the Participant's continued business, for example, FERC market-based rate authority, or State license to serve retail load;
- (i) a significant change in credit default swap spreads, market capitalization, or other market-based risk measurement criteria, such as a recent increase in Moody's KMV Expected Default Frequency (EDF<sup>tm</sup>) that is materially greater than the

- increase in its peers' EDF<sup>tm</sup> rates, or a collateral default swap (CDS) premium normally associated with an entity rated lower than investment grade;
- (j) a confirmed, undisputed material financial default in a bilateral arrangement with another Participant or counterparty that has not been cured or remedied after any required notice has been given and any cure period has elapsed;
  - (k) the sale by a Participant of all or substantially all of its bilateral position(s) in the PJM Markets;
  - (l) any adverse changes in financial condition which, individually, or in the aggregate, are material; and,
  - (m) any adverse changes, events or occurrences which, individually or in the aggregate, could affect the ability of the entity to pay its debts as they become due or could reasonably be expected to have a material adverse effect on any current or future financial results or financial condition.

Upon identification of a Material Adverse Change, PJM shall evaluate the financial strength and risk profile of the Market Participant and/or its Guarantor at that time and may do so on a more frequent basis going forward. If the result of such evaluation identifies unreasonable credit risk to any PJM Market as further described in section II.E.8 below, PJM will take steps to mitigate the financial exposure to the PJM Markets. These steps include, but are not limited to requiring the Market Participant and/or each Guarantor to provide Collateral, additional Collateral or additional Restricted Collateral that is commensurate with the amount of risk in which the Market Participant wants to engage, and/or limiting the Market Participant's ability to participate in any PJM Market to the extent, and for the time-period necessary to mitigate the unreasonable credit risk. In the event PJM determines that a Material Adverse Change in the financial condition or risk profile of a Market Participant and/or Guarantor, warrants a requirement to provide Collateral of any type, or some action to mitigate risk, PJM shall provide the Market Participant and/or Guarantor, a written explanation of why such determination was made. Conversely, in the event PJM determines there has been an improvement in the financial condition or risk profile of a Market Participant and/or Guarantor such that the amount of Collateral needed for that Market Participant and/or Guarantor can be reduced, PJM shall provide a written explanation why such determination was made, including the amount of the Collateral reduction and indicating when and how the reduction will be made.

#### **4. Litigation and Contingencies**

Each Market Participant and/or Guarantor is required to disclose and provide information regarding litigation and contingencies as outlined in section II.A.5 above.

#### **5. History of Defaults in Energy Projects**

Each Market Participant and/or Guarantor is required to disclose current default status and default history as outlined in section II.A.6 above.

#### **6. Internal Credit Score**

As part of its ongoing risk evaluation, PJM will use credit risk scoring methodologies as a tool in determining an Internal Credit Score for each Market Participant and/or Guarantor, utilizing the same model and framework outlined in section II.A.3 above.

## **7. Other Disclosures and Additional Information**

Each Market Participant and/or Guarantor is required to make other disclosures and provide additional information outlined in section II.A.7 above.

PJM will monitor each Market Participant's use of services and associated financial obligations on a regular basis to determine their total potential financial exposure and for credit monitoring purposes, and may require the Market Participant and/or Guarantor to provide additional information, pursuant to the terms and provisions described herein.

Market Participants shall provide PJM, upon request, any information or documentation reasonably required for PJM to monitor and evaluate a Market Participant's creditworthiness and compliance with the Agreements related to settlements, billing, credit requirements, and other financial matters.

## **8. Unreasonable Credit Risk**

If PJM has reasonable grounds to believe that a Market Participant and/or its Guarantor poses an unreasonable credit risk to any PJM Markets, PJM may immediately notify the Market Participant of such unreasonable credit risk and (1) issue a Collateral Call to demand Collateral, additional Collateral, or Restricted Collateral or other assurances commensurate with the Market Participant's and/or its Guarantor's risk of financial default or other risk posed by the Market Participant's or Guarantor's financial condition or risk profile to the PJM Markets and PJM members, or (2) limit or suspend the Market Participant's participation in any PJM Markets, to the extent and for such time period PJM determines is necessary to mitigate the unreasonable credit risk to any PJM Markets. PJM will only limit or suspend a Market Participant's market participation if Collateral, additional Collateral or Restricted Collateral cannot address the unreasonable credit risk.

PJM's determination will be based on, but not limited to, information and material provided to PJM during its ongoing risk evaluation process or in the Officer's Certification, and/or information gleaned by PJM from public and non-public sources. PJM will communicate its concerns, if any, in writing to the Market Participant and attempt to better understand the circumstances surrounding the Market Participant's financial and credit position before making its determination. At PJM's request or upon its own initiative, the Market Participant or its Guarantor may provide supplemental information to PJM that would allow PJM to consider reducing the additional Collateral requested or reducing the severity of limitations or other restrictions designed to mitigate the Market Participant's credit risk. Such information shall include, but not be limited to: (i) the Market Participant's estimated exposure, (ii) explanations for any recent change in the Market Participant's market activity, (iii) any relevant new load or unit outage information; or (iv) any default or supply contract expiration, termination or suspension.

The Market Participant shall have five (5) Business Days to respond to PJM's request for supplemental information. If the requested information is provided in full to PJM's satisfaction during said period, the additional Collateral requirement shall reflect the Market Participant's anticipated exposure based on the information provided. Notwithstanding the foregoing, any additional Collateral requested by PJM in a Collateral Call must be provided by the Market Participant within the applicable cure period.

In the event PJM determines that an Market Participant and/or its Guarantor presents an unreasonable credit risk, as described above, that warrants a requirement to provide Collateral of any type, or some action to mitigate risk, PJM shall provide the Market Participant with a written explanation of why such final determination was made.

PJM has the right at any time to modify any Unsecured Credit Allowance and/or require additional Collateral as may be deemed reasonably necessary to support current or anticipated market activity as set forth in Tariff, Attachment Q, sections II.A.2 and II.C.1.b. Failure to remit the required amount of additional Collateral within the applicable cure period shall constitute an Event of Default.

#### **F. Collateral and Credit Restrictions**

PJM may establish certain restrictions on available credit by requiring that some amounts of credit, i.e. Restricted Collateral, may not be available to satisfy credit requirements. Such designations shall be construed to be applicable to the calculation of credit requirements only, and shall not restrict PJM's ability to apply such designated credit to any obligation(s) in case of a default. Any such Restricted Collateral will be held by PJM, as applicable. Such Restricted Collateral will not be returned to the Participant until PJM has determined that the risk for which such Restricted Collateral is being held has subsided or been resolved.

PJM may post on PJM's web site, and may reference on OASIS, a supplementary document which contains additional business practices (such as algorithms for credit scoring) that are not included in this Attachment Q. Changes to the supplementary document will be subject to stakeholder review and comment prior to implementation. PJM may specify a required compliance date, not less than fifteen (15) calendar days from notification, by which time all Participants and their Guarantors must comply with provisions that have been revised in the supplementary document.

PJM will regularly post each Participant's and/or its Guarantor's credit requirements and credit provisions on the PJM web site in a secure, password-protected location. Each Participant and/or its Guarantor is responsible for monitoring such information, and maintaining sufficient credit to satisfy the credit requirements described herein. Failure to maintain credit sufficient to satisfy the credit requirements of the Attachment Q shall constitute a Credit Breach, and the Participant will be subject to the remedies established herein and in any of the Agreements.

#### **G. Unsecured Credit Allowance Calculation**

The external rating from a Rating Agency will be used as the source for calculating the Unsecured Credit Allowance, unless no external credit rating is available in which case PJM will utilize its Internal Credit Score for such purposes. If there is a split rating between the Rating Agencies, the lower of the ratings shall apply.

Where two or more entities, including Participants, are considered Credit Affiliates, Unsecured Credit Allowances will be established for each individual Participant, subject to an aggregate maximum amount for all Credit Affiliates as provided for in Attachment Q, section II.G.3.

In its credit evaluation of Municipalities and Cooperatives, PJM may request additional information as part of the ongoing risk evaluation process and will also consider qualitative factors in determining financial strength and creditworthiness.

## **1. Credit Rating and Internal Credit Score**

As previously described in section II.A.3 above, PJM will determine the Internal Credit Score for an Applicant, Market Participant and/or its Guarantor using the credit risk scoring methodologies contained therein. Internal Credit Scores, ranging from 1-6, for each Applicant, Market Participant and/or its Guarantor, will be determined with the following mappings:

- 1 = Very Low Risk (S&P/Fitch: AAA to AA-; Moody's: Aaa to Aa3)
- 2 = Low Risk (S&P/Fitch: A+ to BBB+; Moody's: A1 to Baa1)
- 3 = Low to Medium Risk (S&P/Fitch: BBB; Moody's: Baa2)
- 4 = Medium Risk (S&P/Fitch: BBB-; Moody's: Baa3)
- 5 = Medium to High Risk (S&P/Fitch: BB+ to BB; Moody's Ba1 to Ba2)
- 6 = High Risk (S&P/Fitch: BB- and below; Moody's: Ba3 and below)

In instances where the external credit rating is used to calculate the unsecured credit allowance, PJM may also use the Internal Credit Score as an input into its determination of the overall risk profile of an Applicant and/or its Guarantor

## **2. Unsecured Credit Allowance**

PJM will determine a Participant's Unsecured Credit Allowance based on its external rating or its Internal Credit Score, as applicable, and the parameters in the table below. The maximum Unsecured Credit Allowance is the lower of:

- (a) A percentage of the Participant's Tangible Net Worth, as stated in the table below, with the percentage based on the Participant's external rating or Internal Credit Score, as applicable; and
- (b) A dollar cap based on the external rating or Internal Credit Score, as applicable, as stated in the table below:



| <b>Internal Credit Score</b> | <b>Risk Ranking</b>            | <b>Tangible Net Worth Factor</b> | <b>Maximum Unsecured Credit Allowance</b><br><b>(\$ Million)</b> |
|------------------------------|--------------------------------|----------------------------------|--|
| 1.00 – 1.99                  | 1 – Very Low (AAA to AA-)      | Up to 10.00%                     | \$50   |
| 2.00 – 2.99                  | 2 – Low (A+ to BBB+)           | Up to 8.00%                      | \$42   |
| 3.00 – 3.49                  | 3 – Low to Medium (BBB)        | Up to 6.00%                      | \$33   |
| 3.50 – 4.49                  | 4 – Medium (BBB-)              | Up to 5.00%                      | \$7  |
| 4.50 – 5.49                  | 5 – Medium to High (BB+ to BB) | 0%                               | \$0  |
| > 5.49                       | 6 – High (BB- and below)       | 0%                               | \$0  |

If a Corporate Guaranty is utilized to establish an Unsecured Credit Allowance for a Participant, the value of a Corporate Guaranty will be the lesser of:

- (a) The limit imposed in the Corporate Guaranty;
- (b) The Unsecured Credit Allowance calculated for the Guarantor; and
- (c) A portion of the Unsecured Credit Allowance calculated for the Guarantor in the case of Credit Affiliates.

PJM has the right at any time to modify any Unsecured Credit Allowance and/or require additional Collateral as may be deemed reasonably necessary to support current market activity. Failure to remit the required amount of additional Collateral within the applicable cure period shall be deemed an Event of Default.

PJM will maintain a posting of each Participant’s Unsecured Credit Allowance, along with certain other credit related parameters, on the PJM website in a secure, password-protected location. Each Participant will be responsible for monitoring such information and recognizing changes that may occur.

### **3. Unsecured Credit Limits For Credit Affiliates**

If two or more Participants are Credit Affiliates and have requested an Unsecured Credit Allowance, PJM will consider the overall creditworthiness of the Credit Affiliates when determining the Unsecured Credit Allowances in order not to establish more Unsecured Credit for the Credit Affiliates collectively than the overall corporate family could support.

**Example:** Participants A and B each have a \$10.0 million Corporate Guaranty from their common parent, a holding company with an Unsecured Credit Allowance calculation of \$12.0 million. PJM may limit the Unsecured Credit Allowance for each Participant to \$6.0 million, so the total Unsecured Credit Allowance does not exceed the corporate family total of \$12.0 million.

PJM will work with the Credit Affiliates to allocate the total Unsecured Credit Allowance among the Credit Affiliates while assuring that no individual Participant, nor common guarantor, exceeds the Unsecured Credit Allowance appropriate for its credit strength. The aggregate Unsecured Credit for a Participant, including Unsecured Credit Allowance granted based on its own creditworthiness and risk profile, and any Unsecured Credit Allowance conveyed through a Guaranty shall not exceed \$50 million. The aggregate Unsecured Credit for a Credit Affiliates corporate family shall not exceed \$50 million. A Credit Affiliate corporate family subject to this cap shall request PJM to allocate the maximum Unsecured Credit amongst the corporate family, assuring that no individual Participant or common guarantor, shall exceed the Unsecured Credit level appropriate for its credit strength and activity.

#### **H. Contesting an Unsecured Credit Evaluation**

PJM will provide to a Participant, upon request, a written explanation for any determination of or change in Unsecured Credit or credit requirement within ten (10) Business Days of receiving such request.

If a Participant believes that either its level of Unsecured Credit or its credit requirement has been incorrectly determined, according to this Attachment Q, then the Participant may send a request for reconsideration in writing to PJM. Such a request should include:

- (1) A citation to the applicable section(s) of this Attachment Q along with an explanation of how the respective provisions of this Attachment Q were not carried out in the determination as made; and
- (2) A calculation of what the Participant believes should be the appropriate Unsecured Credit or Collateral requirement, according to terms of this Attachment Q.

PJM will provide a written response as promptly as practical, but no more than ten (10) Business Days after receipt of the request. If the Participant still feels that the determination is incorrect, then the Participant may contest that determination. Such contest should be in written form, addressed to PJM, and should contain:

- (1) A complete copy of the Participant's earlier request for reconsideration, including citations and calculations;
- (2) A copy of PJM's written response to its request for reconsideration; and
- (3) An explanation of why it believes that the determination still does not comply with this Attachment Q.

PJM will investigate and will respond to the Participant with a final determination on the matter as promptly as practical, but no more than twenty (20) Business Days after receipt of the request.

Neither requesting reconsideration nor contesting the determination following such request shall relieve or delay Participant's responsibility to comply with all provisions of this Attachment Q, including without limitation posting Collateral, additional Collateral or Restricted Collateral in response to a Collateral Call.

If a Corporate Guaranty is being utilized to establish credit for a Participant, the Guarantor will be evaluated and the Unsecured Credit Allowance granted, if any, based on the financial strength and creditworthiness, and risk profile of the Guarantor. Any utilization of a Corporate Guaranty will only be applicable to non-FTR credit requirements, and will not be applicable to cover FTR credit requirements.

PJM will identify any necessary Collateral requirements and establish a Working Credit Limit for each Participant. Any Unsecured Credit Allowance will only be applicable to non-FTR credit requirements, for positions in PJM Markets other than the FTR market, because all FTR credit requirements must be satisfied by posting Collateral.

### **III. MINIMUM PARTICIPATION REQUIREMENTS**

A Participant seeking to participate in any PJM Markets shall submit to PJM any information or documentation reasonably required for PJM to evaluate its experience and resources. If PJM determines, based on its review of the relevant information and after consultation with the Participant, that the Participant's participation in any PJM Markets presents an unreasonable credit risk, PJM may reject the Participant's application to become a Market Participant, notwithstanding applicant's ability to meet other minimum participation criteria, registration requirements and creditworthiness requirements.

#### **A. Annual Certification**

Before they are eligible to transact in any PJM Market, all Applicants shall provide to PJM (i) an executed copy of a credit application and (ii) a copy of the annual certification set forth in Attachment Q, Appendix 1. As a condition to continued eligibility to transact in any PJM Market, Market Participants shall provide to PJM the annual certification set forth in Attachment Q, Appendix 1.

After the initial submission, the annual certification must be submitted each calendar year by all Market Participants between January 1 and April 30. PJM will accept such certifications as a matter of course and the Market Participants will not need further notice from PJM before commencing or maintaining their eligibility to participate in any PJM Markets.

A Market Participant that fails to provide its annual certification by April 30 shall be ineligible to transact in any PJM Markets and PJM will disable the Market Participant's access to any PJM Markets until such time as PJM receives the certification. In addition, failure to provide an

executed annual certification in a form acceptable to PJM and by the specified deadlines may result in a default under the Tariff.

Market Participants acknowledge and understand that the annual certification constitutes a representation upon which PJM will rely. Such representation is additionally made under the Tariff, filed with and accepted by FERC, and any false, misleading or incomplete statement knowingly made by the Market Participant and that is material to the Market Participant's ability to perform may be considered a violation of the Tariff and subject the Market Participant to action by FERC. Failure to comply with any of the criteria or requirements listed herein or in the certification may result in suspension or limitation of a Market Participant's transaction rights in any PJM Markets.

Applicants and Market Participants shall submit to PJM, upon request, any information or documentation reasonably and/or legally required to confirm Applicant's or Market Participant's compliance with the Agreements and the annual certification.

## **B. PJM Market Participation Eligibility Requirements**

PJM may conduct periodic verification to confirm that Applicants and Market Participants can demonstrate that they meet the definition of "appropriate person" to further ensure minimum criteria are in place. Such demonstration will consist of the submission of evidence and an executed Annual Officer Certification form as set forth in Attachment Q, Appendix 1 in a form acceptable to PJM. If an Applicant or Market Participant does not provide sufficient evidence for verification to PJM within five (5) Business Days of written request, then such Applicant or Market Participant may result in a default under this Tariff. Demonstration of "appropriate person" status and support of other certifications on the annual certification is one part of the Minimum Participation Requirements for any PJM Markets and does not obviate the need to meet the other Minimum Participation Requirements such as those for minimum capitalization and risk profile as set forth in this Attachment Q.

To be eligible to transact in any PJM Markets, an Applicant or Participant must demonstrate in accordance with the Risk Management and Verification processes set forth below that it qualifies in one of the following ways:

1. an "appropriate person," as that term is defined under Commodity Exchange Act, section 4(c)(3), or successor provision, or;
2. an "eligible contract participant," as that term is defined in Commodity Exchange Act, section 1a(18), or successor provision, or;
3. a business entity or person who is in the business of: (1) generating, transmitting, or distributing electric energy, or (2) providing electric energy services that are necessary to support the reliable operation of the transmission system, or;
4. an Applicant or Market Participant seeking eligibility as an "appropriate person" providing an unlimited Corporate Guaranty in a form acceptable to PJM as described

in section V below from a Guarantor that has demonstrated it is an “appropriate person,” and has at least \$1 million of total net worth or \$5 million of total assets per Applicant and Market Participant for which the Guarantor has issued an unlimited Corporate Guaranty, or;

5. an Applicant or Market Participant providing a Letter of Credit of at least \$5 million to PJM in a form acceptable to PJM as described in section V below, that the Applicant or Market Participant acknowledges is separate from, and cannot be applied to meet, its credit requirements to PJM.

If, at any time, a Market Participant cannot meet the eligibility requirements set forth above, it shall immediately notify PJM and immediately cease conducting transactions in any PJM Markets. PJM may terminate a Market Participant’s transaction rights in any PJM Markets if, at any time, it becomes aware that the Market Participant does not meet the minimum eligibility requirements set forth above.

In the event that a Market Participant is no longer able to demonstrate it meets the minimum eligibility requirements set forth above, and possesses, obtains or has rights to possess or obtain, any open or forward positions in any PJM Markets, PJM may take any such action it deems necessary with respect to such open or forward positions, including, but not limited to, liquidation, transfer, assignment, ~~or sale~~ or allowing position(s) to go to settlement; provided, however, that the Market Participant will, notwithstanding its ineligibility to participate in any PJM Markets, be entitled to any positive market value of those positions, net of any obligations due and owing to PJM.

### **C. Risk Management and Verification**

All Market Participants must maintain current written risk management policies, procedures, or controls to address how market and credit risk is managed, and are required to submit to PJM (at the time they make their annual certification) a copy of their current governing risk control policies, procedures and controls applicable to their market activities. PJM will review such documentation to verify that it appears generally to conform to prudent risk management practices for entities participating in any PJM Markets.

All Market Participants subject to this provision shall make a one-time payment of \$1,500.00 to PJM to cover administrative costs. Thereafter, if such Participant’s risk policies, procedures and controls applicable to its market activities change substantively, it shall submit such modified documentation, with applicable administrative charge determined by PJM, to PJM for review and verification at the time it makes its annual certification. All Market Participant’s continued eligibility to participate in any PJM Markets is conditioned on PJM notifying a Participant that its annual certification, including the submission of its risk policies, procedures and controls, has been accepted by PJM. PJM may retain outside expertise to perform the review and verification function described in this section, however, in all circumstances, PJM and any third-party it may retain will treat as confidential the documentation provided by a Participant under this section, consistent with the applicable provisions of the Operating Agreement.

Participants must demonstrate that they have implemented prudent risk management policies and procedures in order to be eligible to participate in any PJM Markets. Participants must demonstrate on at least an annual basis that they have implemented and maintained prudent risk management policies and procedures in order to continue to participate in any PJM Markets. Upon written request, the Participant will have fourteen (14) calendar days to provide to PJM current governing risk management policies, procedures, or controls applicable to Participant's activities in any PJM Markets.

## **D. Capitalization**

In advance of certification, Applicants shall meet the minimum capitalization requirements below. In addition to the annual certification requirements in Attachment Q, Appendix 1, a Market Participant shall satisfy the minimum capitalization requirements on an annual basis thereafter. A Participant must demonstrate that it meets the minimum financial requirements appropriate for the PJM Markets in which it transacts by satisfying either the minimum capitalization or the provision of Collateral requirements listed below:

### **1. Minimum Capitalization**

Minimum capitalization may be met by demonstrating minimum levels of Tangible Net Worth or tangible assets. FTR Participants must demonstrate a Tangible Net Worth in excess of \$1 million or tangible assets in excess of \$10 million. Other Market Participants must demonstrate a Tangible Net Worth in excess of \$500,000 or tangible assets in excess of \$5 million.

(a) Consideration of tangible assets and Tangible Net Worth shall exclude assets which PJM reasonably believes to be restricted, highly risky, or potentially unavailable to settle a claim in the event of default. Examples include, but are not limited to, restricted assets, derivative assets, goodwill, and other intangible assets.

(b) Demonstration of "tangible" assets and Tangible Net Worth may be satisfied through presentation of an acceptable Corporate Guaranty, provided that both:

- (i) the Guarantor is a Credit Affiliate company that satisfies the Tangible Net Worth or tangible assets requirements herein, and;
- (ii) the Corporate Guaranty is either unlimited or at least \$500,000.

If the Corporate Guaranty presented by the Participant to satisfy these capitalization requirements is limited in value, then the Participant's resulting Unsecured Credit Allowance shall be the lesser of:

- (1) the applicable Unsecured Credit Allowance available to the Participant by the Corporate Guaranty pursuant to the creditworthiness provisions of this Attachment Q, or:

- (2) the face value of the Corporate Guaranty, reduced by \$500,000 and further reduced by 10%. (For example, a \$10.5 million Corporate Guaranty would be reduced first by \$500,000 to \$10 million and then further reduced 10% more to \$9 million. The resulting \$9 million would be the Participant's Unsecured Credit Allowance available through the Corporate Guaranty).

In the event that a Participant provides Collateral in addition to a limited Corporate Guaranty to increase its available credit, the value of such Collateral shall be reduced by 10%. This reduced value shall be considered the amount available to satisfy requirements of this Attachment Q.

- (c) Demonstrations of minimum capitalization (minimum Tangible Net Worth or tangible assets) must be presented in the form of audited financial statements for the Participant's most recent fiscal year during the initial risk evaluation process and ongoing risk evaluation process.

## **2. Provision of Collateral**

If a Participant does not demonstrate compliance with its applicable minimum capitalization requirements above, it may still qualify to participate in any PJM Markets by posting Collateral, additional Collateral, and/or Restricted Collateral, subject to the terms and conditions set forth herein.

Any Collateral provided by a Participant unable to satisfy the minimum capitalization requirements above will also be restricted in the following manner:

- (a) Collateral provided by Market Participants that engage in FTR transactions shall be reduced by an amount of the current risk plus any future risk to any PJM Markets and PJM membership in general, and may coincide with limitations on market participation. The amount of this Restricted Collateral shall not be available to cover any credit requirements from market activity. The remaining value shall be considered the amount available to satisfy requirements of this Attachment Q.
- (b) Collateral provided by other Participants that engage in Virtual Transactions or Export Transactions shall be reduced by \$200,000 and then further reduced by 10%. The amount of this Restricted Collateral shall not be available to cover any credit requirements from market activity. The remaining value shall be considered the amount available to satisfy requirements of this Attachment Q.
- (c) Collateral provided by other Participants that do not engage in Virtual Transactions or Export Transactions shall be reduced by 10%. The amount of this Restricted Collateral shall not be available to cover any credit requirements from market activity. The remaining value shall be considered the amount available to satisfy requirements of this Attachment Q.

In the event a Participant that satisfies the minimum capital requirement through provision of Collateral also provides a Corporate Guaranty to increase its available credit, then the Participant's resulting Unsecured Credit Allowance conveyed through such Corporate Guaranty shall be the lesser of:

- (a) the applicable Unsecured Credit Allowance available to the Participant by the Corporate Guaranty pursuant to the creditworthiness provisions of this Attachment Q; or
- (b) the face value of the Corporate Guaranty, reduced commensurate with the amount of the current risk plus any anticipated future risk to any PJM Markets and PJM membership in general, and may coincide with limitations on market participation.

#### **IV. ONGOING COVENANTS**

##### **A. Ongoing Obligation to Provide Information to PJM**

So long as a Participant is eligible to participate, or participates or holds positions, in any PJM Markets, it shall deliver to PJM, in form and detail satisfactory to PJM:

- (1) All financial statements and other financial disclosures as required by section II.E.2 by the deadline set forth therein;
- (2) Notice, within five (5) Business Days, of any Principal becoming aware that the Participant does not meet the Minimum Participation Requirements set forth in section III;
- (3) Notice when any Principal becomes aware of any matter that has resulted or would reasonably be expected to result in a Material Adverse Change in the financial condition of the Participant or its Guarantor, if any, a description of such Material Adverse Change in detail reasonable to allow PJM to determine its potential effect on, or any change in, the Participant's risk profile as a participant in any PJM Markets, by the deadline set forth in section II.E.3 above;
- (4) Notice, within the deadline set forth therein, of any Principal becoming aware of a litigation or contingency event described in section II.E.4, or of a Material Adverse Change in any such litigation or contingency event previously disclosed to PJM, information in detail reasonable to allow PJM to determine its potential effect on, or any change in, the Market Participant's risk profile as a participant in any PJM Markets by the deadline set forth therein;
- (5) Notice, within two (2) Business Days after any Principal becomes aware of a Credit Breach, Financial Default, or Credit Support Default, that includes a description of such default or event and the Participant's proposals for addressing the default or event;
- (6) As soon as available but not later than April 30<sup>th</sup> of any calendar year, the annual Certification described in section III.A in a form set forth in Attachment Q, Appendix 1;
- (7) Concurrently with submission of the annual certification, demonstration that the Participant meets the minimum capitalization requirements set forth in section III.D;



- (8) Concurrently with submission of the annual certification and within the applicable deadline of any substantive change, or within the applicable deadline of a request from PJM, a copy of the Participant's written risk management policies, procedures or controls addressing how the Participant manages market and credit risk in the PJM Markets in which it participates, as well as a high level summary by the chief risk officer or other Principal regarding any material violations, breaches, or compliance or disciplinary actions related to the risk management policies, by the Participant under the policies, procedures or controls within the prior 12 months, as set forth in section IV.B below;
- (9) Within five (5) Business Days of request by PJM, evidence demonstrating the Participant meets the definition of "appropriate person" or "eligible contract participant," as those terms are defined in the Commodity Exchange Act and the CFTC regulations promulgated thereunder, or of any other certification in the annual Certification; or
- (10) Within a reasonable time after PJM requests, any other information or documentation reasonably and/or legally required by PJM to confirm Participant's compliance with the Tariff and its eligibility to participate in any PJM Markets.

Participants acknowledge and understand that the deliveries constitute representations upon which PJM will rely in allowing the Participant to continue to participate in its markets, with the Internal Credit Score and Unsecured Credit Allowance, if any, previously determined by PJM.

#### **B. Risk Management Review**

PJM shall also conduct a periodic compliance verification process to review and verify, as applicable, Participants' risk management policies, practices, and procedures pertaining to the Participant's activities in any PJM Markets. PJM shall review such documentation to verify that it appears generally to conform to prudent risk management practices for entities trading in any PJM Markets. Participant shall also provide a high level summary by the chief risk officer or other Principal regarding any material violations, breaches, or compliance or disciplinary actions in connection with such risk management policies, practices and procedures within the prior twelve (12) months.

If a third-party industry association publishes or modifies principles or best practices relating to risk management in North American markets for electricity, natural gas or electricity-related commodity products, PJM may, following stakeholder discussion and with no less than six (6) months prior notice to stakeholders, consider such principles or best practices in evaluating the Participant's risk controls.

PJM will prioritize the verification of risk management policies based on a number of criteria, including but not limited to how long the entity has been in business, the Participant's and its Principals' history of participation in any PJM Markets, and any other information obtained in determining the risk profile of the Participant.

Each Participant's continued eligibility to participate in any PJM Markets is conditioned upon PJM notifying the Participant of successful completion of PJM's verification of the Participant's risk management policies, practices and procedures, as discussed herein. However, if PJM notifies the Participant in writing that it could not successfully complete the verification process, PJM shall allow such Participant fourteen (14) calendar days to provide sufficient evidence for verification prior to declaring the Participant as ineligible to continue to participate in any PJM

Markets, which declaration shall be in writing with an explanation of why PJM could not complete the verification. If the Participant does not provide sufficient evidence for verification to PJM within the required cure period, such Participant will be considered in default under this Tariff. PJM may retain outside expertise to perform the review and verification function described in this paragraph. PJM and any third party it may retain will treat as confidential the documentation provided by a Participant under this paragraph, consistent with the applicable provisions of the Agreements. If PJM retains such outside expertise, a Participant may direct in writing that PJM perform the risk management review and verification for such Participant instead of utilizing a third party, provided however, that employees and contract employees of PJM ~~and PJM~~ shall not be considered to be such outside expertise or third parties.

Participants are solely responsible for the positions they take and the obligations they assume in any PJM Markets. PJM hereby disclaims any and all responsibility to any Participant or PJM Member associated with Participant's submitting or failure to submit its annual certification or PJM's review and verification of a Participant's risk policies, procedures and controls. Such review and verification is limited to demonstrating basic compliance by a Participant showing the existence of written policies, procedures and controls to limit its risk in any PJM Markets and does not constitute an endorsement of the efficacy of such policies, procedures or controls.

## **V. FORMS OF CREDIT SUPPORT**

In order to satisfy their PJM credit requirements Participants may provide credit support in a PJM-approved form and amount pursuant to the guidelines herein, provided that, notwithstanding anything to the contrary in this section, a Market Participant in PJM's FTR markets shall meet its credit support requirements related to those FTR markets with either cash or Letters of Credit.

Unless otherwise restricted by PJM, credit support provided may be used by PJM to secure the payment of Participant's financial obligations under the Agreements.

Collateral which may no longer be required to be maintained under provisions of the Agreements, shall be returned at the request of a Participant, no later than two (2) Business Days following determination by PJM within a commercially reasonable period of time that such Collateral is not required.

Except when an Event of Default has occurred, a Participant may substitute an approved PJM form of Collateral for another PJM approved form of Collateral of equal value.

### **A. Cash Deposit**

Cash provided by a Participant as Collateral will be held in a depository account by PJM. Interest shall accrue to the benefit of the Participant, provided that PJM may require Participants to provide appropriate tax and other information in order to accrue such interest credits.

PJM may establish an array of investment options among which a Participant may choose to invest its cash deposited as Collateral. The depository account shall be held in PJM's name in a

banking or financial institution acceptable to PJM. Where practicable, PJM may establish a means for the Participant to communicate directly with the bank or financial institution to permit the Participant to direct certain activity in the PJM account in which its Collateral is held. PJM will establish and publish procedural rules, identifying the investment options and respective discounts in Collateral value that will be taken to reflect any liquidation, market and/or credit risk presented by such investments.

Cash Collateral may not be pledged or in any way encumbered or restricted from full and timely use by PJM in accordance with terms of the Agreements.

PJM has the right to liquidate all or a portion of the Collateral account balance at its discretion to satisfy a Participant's Total Net Obligation to PJM in the Event of Default under this Attachment Q or one or more of the Agreements.

## **B. Letter of Credit**

An unconditional, irrevocable standby Letter of Credit can be utilized to meet the Collateral requirement. As stated below, the form, substance, and provider of the Letter of Credit must all be acceptable to PJM.

- (1) The Letter of Credit will only be accepted from U.S.-based financial institutions or U.S. branches of foreign financial institutions ("financial institutions") that have a minimum corporate debt rating of "A" by Standard & Poor's or Fitch Ratings, or "A2" from Moody's Investors Service, or an equivalent short term rating from one of these agencies. PJM will consider the lowest applicable rating to be the rating of the financial institution. If the rating of a financial institution providing a Letter of Credit is lowered below A/A2 by any Rating Agency, then PJM may require the Participant to provide a Letter of Credit from another financial institution that is rated A/A2 or better, or to provide a cash deposit. If a Letter of Credit is provided from a U.S. branch of a foreign institution, the U.S. branch must itself comply with the terms of this Attachment Q, including having its own acceptable credit rating.
- (2) The Letter of Credit shall state that it shall renew automatically for successive one-year periods, until terminated upon at least ninety (90) calendar days prior written notice from the issuing financial institution. If PJM or PJM receives notice from the issuing financial institution that the current Letter of Credit is being cancelled or expiring, the Participant will be required to provide evidence, acceptable to PJM, that such Letter of Credit will be replaced with appropriate Collateral, effective as of the cancellation date of the Letter of Credit, no later than thirty (30) calendar days before the cancellation date of the Letter of Credit, and no later than ninety (90) calendar days after the notice of cancellation. Failure to do so will constitute a default under this Attachment Q and one or more of the Agreements.
- (3) PJM will post on its web site an acceptable standard form of a Letter of Credit that should be utilized by a Participant choosing to submit a Letter of Credit to establish credit at PJM. If the Letter of Credit varies in any way from the standard format, it must first be

reviewed and approved by PJM. All costs associated with obtaining and maintaining a Letter of Credit and meeting the Attachment Q provisions are the responsibility of the Participant.

- (4) PJM may accept a Letter of Credit from a financial institution that does not meet the credit standards of this Attachment Q provided that the Letter of Credit has third-party support, in a form acceptable to PJM, from a financial institution that does meet the credit standards of this Attachment Q.

### **C. Corporate Guaranty**

An irrevocable and unconditional Corporate Guaranty may be utilized to establish an Unsecured Credit Allowance for a Participant. Such credit will be considered a transfer of Unsecured Credit from the Guarantor to the Participant, and will not be considered a form of Collateral.

PJM will post on its web site an acceptable form that should be utilized by a Participant choosing to establish its credit with a Corporate Guaranty. If the Corporate Guaranty varies in any way from the PJM format, it must first be reviewed and approved by PJM before it may be applied to satisfy the Participant's credit requirements.

The Corporate Guaranty must be signed by an officer of the Guarantor, and must demonstrate that it is duly authorized in a manner acceptable to PJM. Such demonstration may include either a corporate seal on the Corporate Guaranty itself, or an accompanying executed and sealed secretary's certificate from the Guarantor's corporate secretary noting that the Guarantor was duly authorized to provide such Corporate Guaranty and that the person signing the Corporate Guaranty is duly authorized, or other manner acceptable to PJM.

PJM will evaluate the creditworthiness of a Guarantor and will establish any Unsecured Credit granted through a Corporate Guaranty using the methodology and requirements established for Participants requesting an Unsecured Credit Allowance as described herein. Foreign Guaranties and Canadian Guaranties shall be subject to additional requirements as established herein. If PJM determines at any time that a Material Adverse Change in the financial condition of the Guarantor has occurred, or if the Corporate Guaranty comes within thirty (30) calendar days of expiring without renewal, PJM may reduce or eliminate any Unsecured Credit afforded to the Participant through the guaranty. Such reduction or elimination may require the Participant to provide Collateral within the applicable cure period. If the Participant fails to provide the required Collateral, the Participant shall be in default under this Attachment Q.

All costs associated with obtaining and maintaining a Corporate Guaranty and meeting the Attachment Q provisions are the responsibility of the Participant.

#### **1. Foreign Guaranties**

A Foreign Guaranty is a Corporate Guaranty that is provided by a Credit Affiliate entity that is domiciled in a country other than the United States or Canada. The entity providing a Foreign Guaranty on behalf of a Participant is a Foreign Guarantor. A Participant may provide a Foreign

Guaranty in satisfaction of part of its credit obligations or voluntary credit provision at PJM provided that all of the following conditions are met:

PJM reserves the right to deny, reject, or terminate acceptance of any Foreign Guaranty at any time, including for material adverse circumstances or occurrences.

(a) A Foreign Guaranty:

- (i) Must contain provisions equivalent to those contained in PJM's standard form of Foreign Guaranty with any modifications subject to review and approval by PJM counsel.
- (ii) Must be denominated in US currency.
- (iii) Must be written and executed solely in English, including any duplicate originals.
- (iv) Will not be accepted towards a Participant's Unsecured Credit Allowance for more than the following limits, depending on the Foreign Guarantor's credit rating:

| Rating of Foreign Guarantor | Maximum Accepted Guaranty if Country Rating is AAA | Maximum Accepted Guaranty if Country Rating is AA+ |
|-----------------------------|--|--|
| A- and above                | USD50,000,000                                      | USD30,000,000                                      |
| BBB+                        | USD30,000,000                                      | USD20,000,000                                      |
| BBB                         | USD10,000,000                                      | USD10,000,000                                      |
| BBB- or below               | USD 0  | USD 0  |

- (v) May not exceed 50% of the Participant's total credit, if the Foreign Grantor is rated less than BBB+.

(b) A Foreign Guarantor:

- (i) Must satisfy all provisions of this Attachment Q applicable to domestic Guarantors.
- (ii) Must be a Credit Affiliate of the Participant.
- (iii) Must maintain an agent for acceptance of service of process in the United States; such agent shall be situated in the Commonwealth of Pennsylvania, absent legal constraint.
- (iv) Must be rated by at least one Rating Agency acceptable to PJM; the credit strength of a Foreign Guarantor may not be determined based on an evaluation of its audited financial statements without an actual credit rating as well.
- (v) Must have a senior unsecured (or equivalent, in PJM's sole discretion) rating of BBB (one notch above BBB-) or greater by any and all agencies that provide rating coverage of the entity.
- (vi) Must provide audited financial statements, in US GAAP format or any other format acceptable to PJM, with clear representation of net worth, intangible assets, and any other information PJM may require in order to determine the entity's Unsecured Credit Allowance.
- (vii) Must provide a Secretary's Certificate from the Participant's corporate secretary certifying the adoption of Corporate Resolutions:

1. Authorizing and approving the Guaranty; and
  2. Authorizing the Officers to execute and deliver the Guaranty on behalf of the Guarantor.
- (viii) Must be domiciled in a country with a minimum long-term sovereign (or equivalent) rating of AA+/Aa1, with the following conditions:
1. Sovereign ratings must be available from at least two rating agencies acceptable to PJM (e.g. S&P, Moody's, Fitch, DBRS).
  2. Each agency's sovereign rating for the domicile will be considered to be the lowest of: country ceiling, senior unsecured government debt, long-term foreign currency sovereign rating, long-term local currency sovereign rating, or other equivalent measures, at PJM's sole discretion.
  3. Whether ratings are available from two or three agencies, the lowest of the two or three will be used.
- (ix) Must be domiciled in a country that recognizes and enforces judgments of US courts.
- (x) Must demonstrate financial commitment to activity in the United States as evidenced by one of the following:
1. American Depository Receipts (ADR) are traded on the New York Stock Exchange, American Stock Exchange, or NASDAQ.
  2. Equity ownership worth over USD 100,000,000 in the wholly-owned or majority owned subsidiaries in the United States.
- (xi) Must satisfy all other applicable provisions of the PJM Tariff and/or Operating Agreement, including this Attachment Q.
- (xii) Must pay for all expenses incurred by PJM related to reviewing and accepting a foreign guaranty beyond nominal in-house credit and legal review.
- (xiii) Must, at its own cost, provide PJM with independent legal opinion from an attorney/solicitor of PJM's choosing and licensed to practice law in the United States and/or Guarantor's domicile, in form and substance acceptable to PJM in its sole discretion, confirming the enforceability of the Foreign Guaranty, the Guarantor's legal authorization to grant the Guaranty, the conformance of the Guaranty, Guarantor, and Guarantor's domicile to all of these requirements, and such other matters as PJM may require in its sole discretion.

## **2. Canadian Guaranties**

The entity providing a Canadian Guaranty on behalf of a Participant is a Canadian Guarantor. A Participant may provide a Canadian Guaranty in satisfaction of part of its credit obligations or voluntary credit provision at PJM provided that all of the following conditions are met.

PJM reserves the right to deny, reject, or terminate acceptance of any Canadian Guaranty at any time for reasonable cause, including material adverse circumstances or occurrences.

- (a) A Canadian Guaranty:

- (i) Must contain provisions equivalent to those contained in PJM's standard form of Foreign Guaranty with any modifications subject to review and approval by PJM counsel.
  - (ii) Must be denominated in US currency.
  - (iii) Must be written and executed solely in English, including any duplicate originals.
- (b) A Canadian Guarantor:
- (i) Must be a Credit Affiliate of the Participant.
  - (ii) Must satisfy all provisions of this Attachment Q applicable to domestic Guarantors.
  - (iii) Must maintain an agent for acceptance of service of process in the United States; such agent shall be situated in the Commonwealth of Pennsylvania, absent legal constraint.
  - (iv) Must be rated by at least one Rating Agency acceptable to PJM; the credit strength of a Canadian Guarantor may not be determined based on an evaluation of its audited financial statements without an actual credit rating as well.
  - (v) Must provide audited financial statements, in US GAAP format or any other format acceptable to PJM with clear representation of net worth, intangible assets, and any other information PJM may require in order to determine the entity's Unsecured Credit Allowance.
  - (vi) Must satisfy all other applicable provisions of the PJM Tariff and/or Operating Agreement, including this Attachment Q.

#### **D. PJM Administrative Charges**

Collateral or credit support held by PJM shall also secure obligations to PJM for PJM administrative charges, and may be liquidated to satisfy all such obligations in an Event of Default.

#### **E. Collateral and Credit Support Held by PJM**

Collateral or credit support submitted by Participants and held by PJM shall be held by PJM for the benefit of PJM.

### **VI. SUPPLEMENTAL CREDIT REQUIREMENTS FOR SCREENED TRANSACTIONS**

#### **A. Virtual and Export Transaction Screening**

##### **1. Credit for Virtual and Export Transactions**

Export Transactions and Virtual Transactions both utilize Credit Available for Virtual Transactions to support their credit requirements.

PJM does not require a Market Participant to establish separate or additional credit for submitting Virtual or Export Transactions; however, once transactions are submitted and

accepted by PJM, PJM may require credit supporting those transactions to be held until the transactions are completed and their financial impact incorporated into the Market Participant's Obligations. If a Market Participant chooses to establish additional Collateral and/or Unsecured Credit Allowance in order to increase its Credit Available for Virtual Transactions, the Market Participant's Working Credit Limit for Virtual Transactions shall be increased in accordance with the definition thereof. The Collateral and/or Unsecured Credit Allowance available to increase a Market Participant's Credit Available for Virtual Transactions shall be the amount of Collateral and/or Unsecured Credit Allowance available after subtracting any credit required for Minimum Participation Requirements, FTR, RPM or other credit requirement determinants defined in this Attachment Q, as applicable.

If a Market Participant chooses to provide additional Collateral in order to increase its Credit Available for Virtual Transactions PJM may establish a reasonable timeframe, not to exceed three months, for which such Collateral must be maintained. PJM will not impose such restriction on a deposit unless a Market Participant is notified prior to making the deposit. Such restriction, if applied, shall be applied to all future deposits by all Market Participants engaging in Virtual Transactions.

A Market Participant may increase its Credit Available for Virtual Transactions by providing additional Collateral to PJM. PJM will make a good faith effort to make new Collateral available as Credit Available for Virtual Transactions as soon as practicable after confirmation of receipt. In any event, however, Collateral received and confirmed by noon on a Business Day will be applied (as provided under this Attachment Q) to Credit Available for Virtual Transactions no later than 10:00 am on the following Business Day. Receipt and acceptance of wired funds for cash deposit shall mean actual receipt by PJM's bank, deposit into PJM's customer deposit account, confirmation by PJM that such wire has been received and deposited, and entry into PJM's credit system. Receipt and acceptance of letters of credit shall mean receipt of the original Letter of Credit or amendment thereto, confirmation from PJM's credit and legal staffs that such Letter of Credit or amendment thereto conforms to PJM's requirements, which confirmation shall be made in a reasonable and practicable timeframe, and entry into PJM's credit system. To facilitate this process, bidders submitting additional Collateral for the purpose of increasing their Credit Available for Virtual Transactions are advised to submit such Collateral well in advance of the desired time, and to specifically notify PJM of such submission.

A Market Participant wishing to submit Virtual or Export Transactions must allocate within PJM's credit system the appropriate amount of Credit Available for Virtual Transactions to the virtual and export allocation sections within each customer account in which it wishes to submit such transactions.

## **2. Virtual Transaction Screening**

All Virtual Transactions submitted to PJM shall be subject to a credit screen prior to acceptance in the Day-ahead Energy Market. The credit screen is applied separately for each of a Market Participant's customer accounts. The credit screen process will automatically reject Virtual Transactions submitted by the Market Participant in a customer account if the Market Participant's Credit Available for Virtual Transactions, allocated on a customer account basis, is



exceeded by the Virtual Credit Exposure that is calculated based on the Market Participant's Virtual Transactions submitted, as described below.

A Market Participant's Virtual Credit Exposure will be calculated separately for each customer account on a daily basis for all Virtual Transactions submitted by the Market Participant for the next Operating Day using the following equation:

Virtual Credit Exposure = INC and DEC Exposure + Up-to Congestion Exposure

Where:

(a) INC and DEC Exposure for each customer account is calculated as:

(i) ((the total MWh bid or offered, whichever is greater, hourly at each node) x the Nodal Reference Price x 1 day) summed over all nodes and all hours; plus (ii) ((the difference between the total bid MWh cleared and total offered MWh cleared hourly at each node) x Nodal Reference Price) summed over all nodes and all hours for the previous cleared Day-ahead Energy Market.

(b) Up-to Congestion Exposure for each customer account is calculated as:

(i) Total MWh bid hourly for each Up-to Congestion Transaction x (price bid – Up-to Congestion Reference Price) summed over all Up-to Congestion Transactions and all hours; plus (ii) Total MWh cleared hourly for each Up-to Congestion Transaction x (cleared price – Up-to Congestion Reference Price) summed over all Up-to Congestion Transactions and all hours for the previous cleared Day-ahead Energy Market, provided that hours for which the calculation for an Up-to Congestion Transaction is negative, it shall be deemed to have a zero contribution to the sum.

### **3. Export Transaction Screening**

Export Transactions in the Real-time Energy Market shall be subject to Export Transaction Screening. Export Transaction Screening may be performed either for the duration of the entire Export Transaction, or separately for each time interval comprising an Export Transaction. PJM will deny or curtail all or a portion (based on the relevant time interval) of an Export Transaction if that Export Transaction, or portion thereof, would otherwise cause the Market Participant's Export Credit Exposure to exceed its Credit Available for Export Transactions. Export Transaction Screening shall be applied separately for each Operating Day and shall also be applied to each Export Transaction one or more times prior to the market clearing process for each relevant time interval. Export Transaction Screening shall not apply to transactions established directly by and between PJM and a neighboring Balancing Authority for the purpose of maintaining reliability.

A Market Participant's credit exposure for an individual Export Transaction shall be the MWh volume of the Export Transaction for each relevant time interval multiplied by each relevant Export Transaction Price Factor and summed over all relevant time intervals of the Export Transaction.

## **B. RPM Auction and Price Responsive Demand Credit Requirements**

Settlement during any Delivery Year of cleared positions resulting or expected to result from any RPM Auction shall be included as appropriate in Peak Market Activity, and the provisions of this Attachment Q shall apply to any such activity and obligations arising therefrom. In addition, the provisions of this section shall apply to any entity seeking to participate in any RPM Auction, to address credit risks unique to such auctions. The provisions of this section also shall apply under certain circumstances to PRD Providers that seek to commit Price Responsive Demand pursuant to the provisions of the Reliability Assurance Agreement.

Credit requirements described herein for RPM Auctions and RPM bilateral transactions are applied separately for each customer account of a Market Participant. Market Participants wishing to participate in an RPM Auction or enter into RPM bilateral transactions must designate the appropriate amount of credit to each account in which their offers are submitted.

### **1. Applicability**

A Market Participant seeking to submit a Sell Offer in any RPM Auction based on any Capacity Resource for which there is a materially increased risk of nonperformance must satisfy the credit requirement specified herein before submitting such Sell Offer. A PRD Provider seeking to commit Price Responsive Demand for which there is a materially increased risk of non-performance must satisfy the credit requirement specified herein before it may commit the Price Responsive Demand. Credit must be maintained until such risk of non-performance is substantially eliminated, but may be reduced commensurate with the reduction in such risk, as set forth in section IV.B.3 below.

For purposes of this provision, a resource for which there is a materially increased risk of nonperformance shall mean: (i) a Planned Generation Capacity Resource; (ii) a Planned Demand Resource or an Energy Efficiency Resource; (iii) a Qualifying Transmission Upgrade; (iv) an existing or Planned Generation Capacity Resource located outside the PJM Region that at the time it is submitted in a Sell Offer has not secured firm transmission service to the border of the PJM Region sufficient to satisfy the deliverability requirements of the Reliability Assurance Agreement; or (v) Price Responsive Demand to the extent the responsible PRD Provider has not registered PRD-eligible load at a PRD Substation level to satisfy its Nominal PRD Value commitment, in accordance with Reliability Assurance Agreement, Schedule 6.1.

### **2. Reliability Pricing Model Auction and Price Responsive Demand Credit Requirement**

Except as provided for Credit-Limited Offers below, for any resource specified in section IV.B.1 above, other than Price Responsive Demand, the credit requirement shall be the RPM Auction Credit Rate, as provided in section IV.B.4 below, times the megawatts to be offered for sale from such resource in an RPM Auction. For Qualified Transmission Upgrades, the credit requirements shall be based on the Locational Deliverability Area in which such upgrade was to increase the Capacity Emergency Transfer Limit. However, the credit requirement for Planned Financed Generation Capacity Resources and Planned External Financed Generation Capacity

Resources shall be one half of the product of the RPM Auction Credit Rate, as provided in section IV.B.4 below, times the megawatts to be offered for sale from such resource in a Reliability Pricing Model Auction. The RPM Auction Credit Requirement for each Market Participant shall be determined on a customer account basis, separately for each customer account of a Market Participant, and shall be the sum of the credit requirements for all such resources to be offered by such Market Participant in the auction or, as applicable, cleared by such Market Participant in the relevant auctions. For Price Responsive Demand, the credit requirement shall be based on the Nominal PRD Value (stated in Unforced Capacity terms) times the Price Responsive Demand Credit Rate as set forth in section IV.B.5 below. Except for Credit-Limited Offers, the RPM Auction Credit requirement for a Market Participant will be reduced for any Delivery Year to the extent less than all of such Market Participant's offers clear in the Base Residual Auction or any Incremental Auction for such Delivery Year. Such reduction shall be proportional to the quantity, in megawatts, that failed to clear in such Delivery Year.

A Sell Offer based on a Planned Generation Capacity Resource, Planned Demand Resource, or Energy Efficiency Resource may be submitted as a Credit-Limited Offer. A Market Participant electing this option shall specify a maximum amount of Unforced Capacity, in megawatts, and a maximum credit requirement, in dollars, applicable to the Sell Offer. A Credit-Limited Offer shall clear the RPM Auction in which it is submitted (to the extent it otherwise would clear based on the other offer parameters and the system's need for the offered capacity) only to the extent of the lesser of: (i) the quantity of Unforced Capacity that is the quotient of the division of the specified maximum credit requirement by the Auction Credit Rate resulting from section IV.B.4.b. below; and (ii) the maximum amount of Unforced Capacity specified in the Sell Offer. For a Market Participant electing this alternative, the RPM Auction Credit requirement applicable prior to the posting of results of the auction shall be the maximum credit requirement specified in its Credit-Limited Offer, and the RPM Auction Credit requirement subsequent to posting of the results will be the Auction Credit Rate, as provided in section IV.B.4.b, c. or d. of this Attachment Q, as applicable, times the amount of Unforced Capacity from such Sell Offer that cleared in the auction. The availability and operational details of Credit-Limited Offers shall be as described in the PJM Manuals.

As set forth in section IV.B.4 below, a Market Participant's Auction Credit requirement shall be determined separately for each Delivery Year.

### **3. Reduction in Credit Requirement**

As specified below, the RPM Auction Credit Rate may be reduced under certain circumstances after the auction has closed.

The Price Responsive Demand credit requirement shall be reduced as and to the extent the PRD Provider registers PRD-eligible load at a PRD Substation level to satisfy its Nominal PRD Value commitment, in accordance with Reliability Assurance Agreement, Schedule 6.1.

In addition, the RPM Auction Credit requirement for a Market Participant for any given Delivery Year shall be reduced periodically, after the Market Participant has provided PJM a written request for each reduction, accompanied by documentation sufficient for PJM to verify

attainment of required milestones or satisfaction of other requirements, and PJM has verified that the Market Participant has successfully met progress milestones for its Capacity Resource that reduce the risk of non-performance, as follows:

- (a) For Planned Demand Resources and Energy Efficiency Resources, the RPM Auction Credit requirement will be reduced in direct proportion to the megawatts of such Demand Resource that the Resource Provider qualifies as a Capacity Resource, in accordance with the procedures established under the Reliability Assurance Agreement.
- (b) For Existing Generation Capacity Resources located outside the PJM Region that have not secured sufficient firm transmission to the border of the PJM Region prior to the auction in which such resource is first offered, the RPM Auction Credit requirement shall be reduced in direct proportion to the megawatts of firm transmission service secured by the Market Participant that qualify such resource under the deliverability requirements of the Reliability Assurance Agreement.
- (c) For Planned Generation Capacity Resources located in the PJM Region, the RPM Auction Credit requirement shall be reduced as the Capacity Resource attains the milestones stated in the following table and as further described in the PJM Manuals.

| Milestones   | Increment of reduction from initial RPM Auction Credit requirement |
|--|--|
| Effective Date of Interconnection Service Agreement                            | 50%  |
| Financial Close  | 15%  |
| Full Notice to Proceed and Commencement of Construction (e.g., footers poured) | 5%   |
| Main Power Generating Equipment Delivered                                      | 5%   |
| Commencement of Interconnection Service  | 25%  |

For externally financed projects, the Market Participant must submit with its request for reduction a sworn, notarized certification of a duly authorized independent engineer for the Financial Close, Full Notice to Proceed and Commencement of Construction, and Main Power Generating Equipment Delivered milestones.

For internally financed projects, the Market Participant must submit with its request for reduction a sworn, notarized certification of a duly authorized officer of the Market Participant for the Financial Close milestone and either a duly authorized independent engineer or Professional Engineer for the Full Notice to Proceed and Commencement of Construction and the Main Power Generating Equipment Delivered milestones.

The required certifications must be in a form acceptable to PJM, certifying that the engineer or officer, as applicable, has personal knowledge, or has engaged in a diligent inquiry to determine, that the milestone has been achieved and that, based on its review of the relevant project

information, the engineer or officer, as applicable, is not aware of any information that could reasonably cause it to believe that the Capacity Resource will not be in-service by the beginning of the applicable Delivery Year. The Market Participant shall, if requested by PJM, supply to PJM on a confidential basis all records and documents relating to the engineer's and/or officer's certifications.

(d) For Planned External Generation Capacity Resources, the RPM Auction Credit requirement shall be reduced as the Capacity Resource attains the milestones stated in the following table and as further described in the PJM Manuals; provided, however, that the total percentage reduction in the RPM Auction Credit requirement shall be no greater than the quotient of (i) the MWs of firm transmission service that the Market Participant has secured for the complete transmission path divided by (ii) the MWs of firm transmission service required to qualify such resource under the deliverability requirements of the Reliability Assurance Agreement.

| <b>Credit Reduction Milestones for Planned External Generation Capacity Resources</b> |   |
|---|---|
| <b>Milestones</b>   | <b>Increment of reduction from initial RPM Auction Credit requirement</b> |
| Effective Date of the equivalent of an Interconnection Service Agreement              | 50%   |
| Financial Close   | 15%   |
| Full Notice to Proceed and Commencement of Construction (e.g., footers poured)        | 5%  |
| Main Power Generating Equipment Delivered   | 5%  |
| Commencement of Interconnection Service   | 25%   |

To obtain a reduction in its RPM Auction Credit requirement, the Market Participant must demonstrate satisfaction of the applicable milestone in the same manner as set forth for Planned Generation Capacity Resources in subsection (c) above.

(e) For Planned Financed Generation Capacity Resources located in the PJM Region, the RPM Auction Credit requirement shall be reduced as the Capacity Resource attains the milestones stated in the following table and as further described in the PJM Manuals.

| <b>Credit Reduction Milestones for Planned Financed Generation Capacity Resources</b> |   |
|---|---|
| <b>Milestones</b>   | <b>Increment of reduction from initial RPM Auction Credit requirement</b> |
| Full Notice to Proceed  | 50%   |
| Commencement of Construction (e.g., footers poured)                                   | 15%   |
| Main Power Generating Equipment Delivered   | 10%   |
| Commencement of Interconnection Service   | 25%   |

To obtain a reduction in its RPM Auction Credit requirement, the Market Participant must demonstrate satisfaction of the applicable milestone in the same manner as set forth for Planned Generation Capacity Resources in subsection (c) above.

(f) For Planned External Financed Generation Capacity Resources, the RPM Auction Credit Requirement shall be reduced as the Capacity Resource attains the milestones stated in the following table and as further described in the PJM Manuals; provided, however, that the total percentage reduction in the RPM Auction Credit requirement, including the initial 50% reduction for being a Planned External Financed Generation Capacity Resources, shall be no greater than the quotient of (i) the MWs of firm transmission service that the Market Participant has secured for the complete transmission path divided by (ii) the MWs of firm transmission service required to qualify such resource under the deliverability requirements of the Reliability Assurance Agreement.

| <b>Credit Reduction Milestones for Planned External Financed Generation Capacity</b> |   |
|--|---|
| <b>Milestones</b>  | <b>Increment of reduction from initial RPM Auction Credit requirement</b> |
| Full Notice to Proceed   | 50%   |
| Commencement of Construction (e.g., footers poured)                                  | 15%   |
| Main Power Generating Equipment Delivered  | 10%   |
| Commencement of Interconnection Service  | 25%   |

To obtain a reduction in its RPM Auction Credit requirement, the Market Participant must demonstrate satisfaction of the applicable milestone in the same manner as set forth for Planned Generation Capacity Resources in subsection (c) above.

(g) For Qualifying Transmission Upgrades, the RPM Auction Credit requirement shall be reduced to 50% of the amount calculated under section IV.B.2 above beginning as of the effective date of the latest associated Interconnection Service Agreement (or, when a project will have no such agreement, an Upgrade Construction Service Agreement), and shall be reduced to zero on the date the Qualifying Transmission Upgrade is placed in service.

#### **4. RPM Auction Credit Rate**

As set forth in the PJM Manuals, a separate Auction Credit Rate shall be calculated for each Delivery Year prior to each RPM Auction for such Delivery Year, as follows:

(a) Prior to the posting of the results of a Base Residual Auction for a Delivery Year, the Auction Credit Rate shall be:

- (i) For all Capacity Resources other than Capacity Performance Resources, (the greater of (A) 0.3 times the Net Cost of New Entry for the PJM Region for such Delivery Year, in MW-day or (B) \$20 per MW-day) times the number of calendar days in such Delivery Year; and

- (ii) For Capacity Performance Resources, the greater of ((A) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in MW-day or (B) \$20 per MW-day) times the number of calendar days in such Delivery Year.
  - (iii) For Seasonal Capacity Performance Resources, the same as the Auction Credit Rate for Capacity Performance Resources, but reduced to be proportional to the number of calendar days in the relevant season.
- (b) Subsequent to the posting of the results from a Base Residual Auction, the Auction Credit Rate used for ongoing credit requirements for supply committed in such auction shall be:
- (i) For all Capacity Resources other than Capacity Performance Resources, (the greater of (A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located) times the number of calendar days in such Delivery Year; and
  - (ii) For Capacity Performance Resources, the (greater of [(A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located) or (C) the lesser of (1) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (2) 1.5 times the Net Cost of New Entry (stated on an installed capacity basis) for the PJM Region for such Delivery year or for the Relevant LDA, in \$/MW-day minus (the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located)] times the number of calendar days in such Delivery Year).
  - (iii) For Seasonal Capacity Performance Resources, the same as the Auction Credit Rate for Capacity Performance Resources, but reduced to be proportional to the number of calendar days in the relevant season.
- (c) For any resource not previously committed for a Delivery Year that seeks to participate in an Incremental Auction, the Auction Credit Rate shall be:
- (i) For all Capacity Resources other than Capacity Performance Resources, (the greater of (A) 0.3 times the Net Cost of New Entry for the PJM Region for such Delivery Year, in MW-day or (B) 0.24 times the Capacity Resource Clearing Price in the Base Residual Auction for such Delivery Year for the Locational Deliverability Area within which the resource is located or (C) \$20 per MW-day) times the number of calendar days in such Delivery Year; and
  - (ii) For Capacity Performance Resources, the (greater of (A) 0.5 times Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA or (B) \$20/MW-day) times the number of calendar days in such Delivery Year.

(d) Subsequent to the posting of the results of an Incremental Auction, the Auction Credit Rate used for ongoing credit requirements for supply committed in such auction shall be:

- (i) For Base Capacity Resources: (the greater of (A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located) times the number of calendar days in such Delivery Year, but no greater than the Auction Credit Rate previously established for such resource's participation in such Incremental Auction pursuant to subsection (c) above) times the number of calendar days in such Delivery Year;
- (ii) For Capacity Performance Resources, the greater of [(A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located or (C) the lesser of (1) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (2) 1.5 times the Net Cost of New Entry (stated on an installed capacity basis) for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day minus (the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located)] times the number of calendar days in such Delivery Year); and
- (iii) For Seasonal Capacity Performance Resources, the same as the Auction Credit Rate for Capacity Performance Resources, but reduced to be proportional to the number of calendar days in the relevant season.

(e) For the purposes of this section IV.B.4 and section IV.B.5 below, "Relevant LDA" means the Locational Deliverability Area in which the Capacity Performance Resource is located if a separate Variable Resource Requirement Curve has been established for that Locational Deliverability Area for the Base Residual Auction for such Delivery Year.

## **5. Price Responsive Demand Credit Rate**

(a) For the 2018/2019 through 2022/2023 Delivery Years:

- (i) Prior to the posting of the results of a Base Residual Auction for a Delivery Year, the Price Responsive Demand Credit Rate shall be (the greater of (A) 0.3 times the Net Cost of New Entry for the PJM Region for such Delivery Year, in MW-day or (B) \$20 per MW-day) times the number of calendar days in such Delivery Year;
- (ii) Subsequent to the posting of the results from a Base Residual Auction, the Price Responsive Demand Credit Rate used for ongoing credit requirements for Price Responsive Demand committed in such auction shall be (the greater of (A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the Price Responsive



Demand load is located, in \$/MW-day) times the number of calendar days in such Delivery Year times a final price uncertainty factor of 1.05;

- (iii) For any additional Price Responsive Demand that seeks to commit in a Third Incremental Auction in response to a qualifying change in the final LDA load forecast, the Price Responsive Demand Credit Rate shall be the same as the rate for Price Responsive Demand that had cleared in the Base Residual Auction; and
  - (iv) Subsequent to the posting of the results of the Third Incremental Auction, the Price Responsive Demand Credit Rate used for ongoing credit requirements for all Price Responsive Demand, shall be (the greater of (i) \$20/MW-day or (ii) 0.2 times the Final Zonal Capacity Price for the Locational Deliverability Area within which the Price Responsive Demand is located) times the number of calendar days in such Delivery Year, but no greater than the Price Responsive Demand Credit Rate previously established under subsections (a)(i), (a)(ii), or (a)(iii) of this section for such Delivery Year.
- (b) For the 2022/2023 Delivery Year and Subsequent Delivery Years:
- (i) Prior to the posting of the results of a Base Residual Auction for a Delivery Year, the Price Responsive Demand Credit Rate shall be (the greater of (A) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (B) \$20 per MW-day) times the number of calendar days in such Delivery Year;
  - (ii) Subsequent to the posting of the results from a Base Residual Auction, the Price Responsive Demand Credit Rate used for ongoing credit requirements for Price Responsive Demand committed in such auction shall be (the greater of [(A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the Price Responsive Demand is located, in \$/MW-day or (C) the lesser of (1) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (2) 1.5 times the Net Cost of New Entry (stated on an installed capacity basis) for the PJM Region for such Delivery year or for the Relevant LDA, in \$/MW-day minus (the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the Price Responsive Demand is located)] times the number of calendar days in such Delivery Year;
  - (iii) For any additional Price Responsive Demand that seeks to commit in a Third Incremental Auction in response to a qualifying change in the final LDA load forecast, the Price Responsive Demand Credit Rate shall be (the greater of (A) 0.5 times Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (B) \$20/MW-day) times the number of calendar days in such Delivery Year; and

- (iv) Subsequent to the posting of the results of the Third Incremental Auction, the Price Responsive Demand Credit Rate used for ongoing credit requirements for all Price Responsive Demand committed in such auction shall be the greater of [(A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the Price Responsive Demand is located or (C) the lesser of (1) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (2) 1.5 times the Net Cost of New Entry (stated on an installed capacity basis) for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day minus (the Capacity Performance Resource Clearing Price in such Incremental Auction for the Locational Deliverability Areas within which the Price Responsive Demand is located)] times the number of calendar days in such Delivery Year.

## **6. RPM Seller Credit - Additional Form of Unsecured Credit for RPM**

In addition to the forms of credit specified elsewhere in this Attachment Q, RPM Seller Credit shall be available to Market Participants, but solely for purposes of satisfying RPM Auction Credit requirements. If a supplier has a history of being a net seller into PJM Markets, on average, over the past 12 months, then PJM will count as available Unsecured Credit twice the average of that Market Participant's total net monthly PJM bills over the past 12 months. This RPM Seller Credit shall be subject to the cap on available Unsecured Credit as established in section II.G.3 above.

RPM Seller Credit is calculated as a single value for each Market Participant, not separately by account, and must be designated to specific customer accounts in order to be available to satisfy RPM Auction Credit requirements that are calculated in each such customer account.

## **7. Credit Responsibility for Traded Planned RPM Capacity Resources**

PJM may require that credit and financial responsibility for planned Capacity Resources that are traded remain with the original party (which for these purposes, means the party bearing credit responsibility for the planned Capacity Resource immediately prior to trade) unless the receiving party independently establishes consistent with this Attachment Q, that it has sufficient credit with PJM and agrees by providing written notice to PJM that it will fully assume the credit responsibility associated with the traded planned Capacity Resource.

## **C. Financial Transmission Right Auctions**

Credit requirements described herein for FTR activity are applied separately for each customer account of a Market Participant, unless specified otherwise in this section C. FTR Participants must designate the appropriate amount of credit to each separate customer account in which any activity occurs or will occur.

### **1. FTR Credit Limit.**

Participants must maintain their FTR Credit Limit at a level equal to or greater than their FTR Credit Requirement for each applicable account. FTR Credit Limits will be established only by a Participant providing Collateral and designating the available credit to specific accounts.

## **2. FTR Credit Requirement.**

For each Market Participant with FTR activity, PJM shall calculate an FTR Credit Requirement. The FTR Credit Requirement shall be based on FTR cost, FTR Historical Value and MWh volume, anticipated FTR activity for new Market Participants, and anticipated change in exposure for existing Market Participants newly participating in the FTR market, and may be increased to reflect any change in exposure based on the most recent applicable FTR auction prices, as further described below.

FTR Historical Values shall be calculated separately for on-peak, off-peak, and 24-hour FTRs for each month of the year. FTR Historical Values shall be adjusted by plus or minus ten percent for cleared counter flow or prevailing flow FTRs, respectively, in order to mitigate exposure due to uncertainty and fluctuations in actual FTR value. Historical values used in the calculation of FTR Historical Values shall be adjusted when the network simulation model utilized in PJM's economic planning process indicates that transmission congestion will decrease due to certain transmission upgrades that are in effect or planned to go into effect for the following Planning Period. The transmission upgrades to be modeled for this purpose shall only include those upgrades that, individually, or together, have 10% or more impact on the transmission congestion on an individual constraint or constraints with congestion of \$5 million or more affecting a common congestion path. The adjustments to historical values shall be the dollar amount of the adjustment shown in the network simulation model.

If FTR cost less the FTR Historical Value, plus any applicable increase related to portfolio diversification as described in section C.6 below, results in a value that is less than ten cents (10¢) per MWh, the FTR Credit Requirement shall be increased to ten cents (10¢) per MWh. When calculating the portfolio MWh for this comparison, for cleared "Sell" FTRs, the MWh shall be subtracted from the portfolio total; prior to clearing, the MWh for "Sell" FTRs shall not be included in the portfolio total. FTR Credit Requirements shall be further adjusted by ARR credits available and by an amount based on portfolio diversification, if applicable. The requirement will be based on individual monthly exposures which are then used to derive a total requirement.

The FTR Credit Requirement shall be calculated by first adding for each month the FTR Monthly Credit Requirement Contribution for each submitted, accepted, and cleared FTR and then subtracting the prorated value of any ARRs held by the Market Participant for that month. The resulting twelve monthly subtotals represent the expected value of net payments between PJM and the Market Participant for FTR activity each month during the Planning Period. Subject to later adjustment by an amount based on portfolio diversification, if applicable, and subject to later adjustment for auction prices, the FTR Credit Requirement shall be the sum of the individual positive monthly subtotals, representing months in which net payments to PJM are expected.

### **3. Rejection of FTR Bids.**

Bids submitted into an auction will be rejected if the Market Participant's FTR Credit Requirement including such submitted bids would exceed the Market Participant's FTR Credit Limit, or if the Market Participant fails to provide additional credit support or additional Collateral as required pursuant to provisions related to portfolio diversification and mark-to-auction.

### **4. FTR Credit Collateral Returns.**

A Market Participant may request from PJM the return of any Collateral no longer required for the FTR markets. PJM is permitted to limit the frequency of such requested Collateral returns, provided that Collateral returns shall be made by PJM at least once per calendar quarter, if requested by a Market Participant.

### **5. Credit Responsibility for Bilateral Transfers of FTRs.**

PJM may require that credit responsibility associated with an FTR bilaterally transferred to a new Market Participant remain with the original party (which for these purposes, means the party bearing credit responsibility for the FTR immediately prior to bilateral transfer) unless and until the receiving party independently establishes, consistent with this Attachment Q, sufficient credit with PJM and agrees through confirmation of the bilateral transfer in PJM's FTR reporting tool that it will meet in full the credit requirements associated with the transferred FTR.

### **6. Portfolio Diversification.**

Portfolio diversification shall be calculated, and the appropriate provisions herein applied, separately for each customer account of a Market Participant, and separately for each month.

Subsequent to calculating a tentative cleared solution for an FTR auction (or auction round), PJM shall determine the FTR Portfolio Auction Value for each customer account of a Market Participant, including the tentative cleared solution. Any customer accounts with such FTR Portfolio Auction Values that are negative in one or more months shall be deemed "FTR Flow Undiversified."

For customer accounts that are FTR Flow Undiversified in a month, PJM shall increment the FTR Credit Requirement by an amount equal to three times the absolute value of the FTR Portfolio Auction Value in that month, including the tentative cleared solution. For portfolios that are FTR Flow Undiversified in months subsequent to the current planning year, these incremental amounts, calculated on a monthly basis, shall be reduced (but not below zero) by an amount up to 25% of the monthly value of ARR credits that are held by a Market Participant. Subsequent to the ARR allocation process preceding an annual FTR auction, such ARR credits shall be reduced to zero for months associated with that ARR allocation process. PJM may recalculate such ARR credits at any time, but at a minimum shall do so subsequent to each annual FTR auction. If a reduction in such ARR credits at any time increases an FTR Participant's FTR Credit Requirements beyond its credit available for FTR activity, the FTR

Participant must increase its credit to eliminate the shortfall in the applicable customer account(s).

If the FTR Credit Requirement for any Market Participant's customer account exceeds its credit available for FTRs as a result of these diversification requirements for the tentatively cleared portfolio of FTRs, PJM shall immediately issue a demand for additional credit, and such demand must be fulfilled before 4:00 p.m. on the Business Day following the demand. If any Market Participant does not timely satisfy such demand, PJM shall cause the removal of that Market Participant's entire set of bids in that account for that FTR auction (or auction round) and a new cleared solution shall be calculated for the entire auction (or auction round).

If necessary, PJM shall repeat the auction clearing calculation. PJM shall repeat these portfolio diversification calculations subsequent to any secondary clearing calculation, and PJM shall require affected Market Participants to establish additional credit.

#### **7. FTR Administrative Charge Credit Requirement**

In addition to any other credit requirements, PJM may apply a credit requirement to cover the maximum administrative fees that may be charged to a Market Participant for its bids and offers.

#### **8. Long-Term FTR Credit Recalculation**

Long-term FTR Credit Requirement calculations shall be updated annually for known history, consistent with updating of historical values used for FTR Credit Requirement calculations in the annual auctions. If the historical value update results in an FTR Credit Requirement for any Market Participant's customer account that exceeds its credit available for FTR activity, then PJM shall issue a Collateral Call equal to the lesser of the increase in the FTR Credit Requirement from the historical value adjustment and the credit shortfall after the historical value adjustment.

#### **9. Mark-to-Auction**

A Mark-to-Auction Value shall be calculated separately for each customer account of a Market Participant. For each such customer account, the Mark-to-Auction Value shall be a single number equal to the sum, over all months remaining in the applicable FTR period and for all cleared FTRs in the customer account, of the most recently available cleared auction price applicable to the FTR minus the original transaction price of the FTR, multiplied by the transacted quantity.

The FTR Credit Requirement, as otherwise described above, shall be increased when the Mark-to-Auction Value is negative. The increase shall equal the absolute value of the negative Mark-to-Auction Value less the value of ARR credits that are held in the customer account and have not been used to reduce the FTR Credit Requirement prior to application of the Mark-to-Auction Value. PJM shall recalculate ARR credits held by each Market Participant after each annual FTR auction and may also recalculate such ARR credits at any other additional time intervals it

deems appropriate. Application of the Mark-to-Auction Value, including the effect from ARR application, shall not decrease the FTR Credit Requirement.

For Market Participant customer accounts for which FTR bids have been submitted into the current FTR auction, if the Market Participant's FTR Credit Requirement exceeds its credit available for FTRs as a result of the mark-to-auction requirements for the Market Participant's portfolio of FTRs in the tentative cleared solution for an FTR auction (or auction round), PJM shall issue a Collateral Call to the Market Participant, and the Market Participant must fulfill such demand before 4:00 p.m. on the following Business Day. If a Market Participant does not timely satisfy such Collateral Call, PJM shall, in coordination with PJM, cause the removal of all of that Market Participant's bids in that FTR auction (or auction round), submitted from such Market Participant's customer account, and a new cleared solution shall be calculated for the FTR auction (or auction round).

If necessary, PJM shall repeat the auction clearing calculation. PJM shall repeat these mark-to-auction calculations subsequent to any secondary clearing calculation, and PJM shall require affected Market Participants to establish additional credit.

Subsequent to final clearing of an FTR auction or an annual FTR auction round, PJM shall recalculate the FTR Credit Requirement for all FTR portfolios, and, as applicable, issue to each Market Participant an MTA Collateral Call for the total amount by which the FTR Credit Requirement exceeds the credit allocated in any of the Market Participant's accounts.

If the MTA Collateral Call is not satisfied within the applicable cure period referenced in Operating Agreement, section 15, then such Market Participant shall be restricted in all of its credit-screened transactions. Specifically, such Market Participant may not engage in any Virtual Transactions or Export Transactions, or participate in RPM Auctions or other RPM activity. Such Market Participant may engage only in the selling of open FTR positions, either in FTR auctions or bilaterally, provided such sales would reduce the Market Participant's FTR Credit Requirements. PJM shall not return any Collateral to such Market Participant, and no payment shall be due or payable to such Market Participant, until its credit shortfall is remedied. Market Participant shall allocate any excess or unallocated Collateral to any of its account in which there is a credit shortfall. Market Participants may remedy their credit shortfall at any time through provision of sufficient Collateral.

If a Market Participant fails to satisfy MTA Collateral Calls for two consecutive auctions of overlapping periods, e.g. two balance of Planning Period auctions, an annual FTR auction and a balance of Planning Period auction, or two long term FTR auctions, (for this purpose the four rounds of an annual FTR auction shall be considered a single auction), the Market Participant shall be declared in default of this Attachment Q.

## **VII. PEAK MARKET ACTIVITY AND WORKING CREDIT LIMIT**

### **A. Peak Market Activity Credit Requirement**

PJM shall calculate a Peak Market Activity credit requirement for each Participant. Each Participant must maintain sufficient Unsecured Credit Allowance and/or Collateral, as applicable, and subject to the provisions herein, to satisfy its Peak Market Activity credit requirement.

Peak Market Activity for Participants will be determined semi-annually, utilizing an initial Peak Market Activity, as explained below, calculated after the first complete billing week in the months of April and October. Peak Market Activity shall be the greater of the initial Peak Market Activity, or the greatest amount invoiced for the Participant's transaction activity for all PJM Markets and services in any rolling one, two, or three week period, ending within a respective semi-annual period. However, Peak Market Activity shall not exceed the greatest amount invoiced for the Participant's transaction activity for all PJM Markets and services in any rolling one, two or three week period in the prior 52 weeks. Peak Market Activity shall exclude FTR Net Activity, Virtual Transactions Net Activity, and Export Transactions Net Activity.

When calculating Peak Market Activity, PJM may attribute credits for Regulation service to the days on which they were accrued, rather than including them in the month-end invoice.

The initial Peak Market Activity for Applicants will be determined by PJM based on a review of an estimate of their transactional activity for all PJM Markets and services over the next 52 weeks, which the Applicant shall provide to PJM.

The initial Peak Market Activity for Market Participants and Transmission Customers, calculated at the beginning of each semi-annual period, shall be the three-week average of all non-zero invoice totals over the previous 52 weeks. This calculation shall be performed and applied within three (3) Business Days following the day the invoice is issued for the first full billing week in the current semi-annual period.

Prepayments shall not affect Peak Market Activity unless otherwise agreed to in writing pursuant to this Attachment Q.

Peak Market Activity calculations shall take into account reductions of invoice values effectuated by early payments which are applied to reduce a Participant's Peak Market Activity as contemplated by other terms of this Attachment Q; provided that the initial Peak Market Activity shall not be less than the average value calculated using the weeks for which no early payment was made.

A Participant may reduce its Collateral requirement by agreeing in writing (in a form acceptable to PJM) to make additional payments, including prepayments, as and when necessary to ensure that such Participant's Total Net Obligation at no time exceeds such reduced Collateral requirement.

PJM may, at its discretion, adjust a Participant's Peak Market Activity requirement if PJM determines that the Peak Market Activity is not representative of such Participant's expected activity, as a consequence of known, measurable, and sustained changes. Such changes may

include, but shall not be limited to when a Participant makes PJM aware of federal, state or local law that could affect the allocation of charges or credits from a Participant to another party, the loss (without replacement) of short-term load contracts, when such contracts had terms of three months or more and were acquired through state-sponsored retail load programs, but shall not include short-term buying and selling activities.

PJM may waive the credit requirements for a Participant that has no outstanding transactions and agrees in writing that it shall not, after the date of such agreement, incur obligations under any of the Agreements. Such entity's access to all electronic transaction systems administered by PJM shall be terminated.

A Participant receiving unsecured credit may make early payments up to ten times in a rolling 52-week period in order to reduce its Peak Market Activity for credit requirement purposes. Imputed Peak Market Activity reductions for credit purposes will be applied to the billing period for which the payment was received. Payments used as the basis for such reductions must be received prior to issuance or posting of the invoice for the relevant billing period. The imputed Peak Market Activity reduction attributed to any payment may not exceed the amount of Unsecured Credit for which the Participant is eligible.

#### **B. Working Credit Limit**

PJM will establish a Working Credit Limit for each Participant against which its Total Net Obligation will be monitored. The Working Credit Limit is defined as 75% of the Collateral provided to PJM and/or 75% of the Unsecured Credit Allowance determined by PJM, as reduced by any applicable credit requirement allocations for the FTR and RPM markets. A Participant's Total Net Obligation should not exceed its Working Credit Limit.

If a Participant's Total Net Obligation approaches its Working Credit Limit, PJM may require the Participant to make an advance payment or increase its Collateral in order to maintain its Total Net Obligation below its Working Credit Limit. Except as explicitly provided herein, advance payments shall not serve to reduce the Participant's Peak Market Activity for the purpose of calculating credit requirements.

Example: After ten (10) calendar days, and with five (5) calendar days remaining before the bill is due to be paid, a Participant approaches its \$4.0 million Working Credit Limit. PJM may require a prepayment of \$2.0 million in order that the Total Net Obligation will not exceed the Working Credit Limit.

If a Participant exceeds its Working Credit Limit or is required to make advance payments more than ten times during a 52-week period, PJM may require Collateral in an amount as may be deemed reasonably necessary to support its Total Net Obligation.

When calculating Total Net Obligation, PJM may attribute credits for Regulation service to the days on which they were accrued, rather than including them in the month-end invoice.

### **VIII. SUSPENSION OR LIMITATION ON MARKET PARTICIPATION**



If PJM determines that a Participant presents an unreasonable credit risk as determined pursuant to initial or ongoing risk evaluations, as described in section II above, or in the case of any other event which, after notice, lapse of time, or both, would result in an Event of Default, PJM will take steps to mitigate the exposure of any PJM Markets, which may include, but is not limited to, requiring Collateral, additional Collateral or Restricted Collateral or suspending or limiting the Market Participant's ability to participate in the PJM Markets commensurate to the risk to any PJM Markets.

If a Participant fails to reduce or eliminate any unreasonable credit risks to PJM's satisfaction within the applicable cure period including without limitation by posting Collateral, additional Collateral or Restricted Collateral, PJM may treat such failure as an Event of Default.

Notwithstanding the foregoing, a Participant that transacts in FTRs will be eligible to request that PJM exempt or exclude FTR transactions of such Participant from the effect of any such limitations on market activity established by PJM, and PJM may but shall not be required to so exempt or exclude, any FTR transactions that the Participant reasonably demonstrates to PJM it has entered into to "hedge or mitigate commercial risk" arising from its transactions in the PJM Interchange Energy Market that are intended to result in the actual flow of physical energy or ancillary services in the PJM Region, as the phrase "hedge or mitigate commercial risks" is defined under the CFTC's regulations defining the end-user exception to clearing set forth in 17 C.F.R. §50.50(c).

#### **IX. REMEDIES FOR CREDIT BREACH, FINANCIAL DEFAULT OR CREDIT SUPPORT DEFAULT; REMEDIES FOR EVENTS OF DEFAULT**

If PJM determines that a Market Participant is in Credit Breach, or that a Financial Default or Credit Support Default exists, PJM may issue to the Market Participant a breach notice and/or a Collateral Call or demand for additional documentation or assurances. At such time, PJM may also suspend payments of any amounts due to the Participant and limit, restrict or rescind the Market Participant's privileges to participate in any or all PJM Markets under the Agreements during any such cure period. Failure to remedy the Credit Breach, Financial Default or to satisfy a Collateral Call or demand for additional documentation or assurances within the applicable cure period described in Operating Agreement, section 15.1.5, shall constitute an Event of Default. If a Participant fails to meet the requirements of this Attachment Q, but then remedies the Credit Breach, Financial Default or Credit Support Default, or satisfies a Collateral Call or demand for additional documentation or assurances within the applicable cure period, then the Participant shall be deemed to again be in compliance with this Attachment Q, so long as no other Credit Breach, Financial Default, Credit Support Default or Collateral Call or demand for additional documentation or assurances has occurred and is continuing.

Only one cure period shall apply to a single event giving rise to a Credit Breach, Financial Default or Credit Support Default. Application of Collateral towards a Financial Default, Credit Breach or Credit Support Breach shall not be considered a cure of such Credit Breach, Financial Default or Credit Support Default unless the Participant is determined by PJM to be in full compliance with all requirements of this Attachment Q after such application.

When an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing, PJM may take such actions as may be required or permitted under the Agreements to protect the PJM Markets and the PJM Members, including but not limited to (a) suspension and/or termination of the Participant's ongoing Transmission Service, (b) limitation, suspension and/or termination of participation in any PJM Markets, (c) ~~close-out and liquidation of~~ taking all necessary steps to address the Market Participant's market portfolio in accordance with the provisions of the Operating Agreement and PJM Tariff, including, but not limited to, allowing such portfolio's positions to go to settlement, liquidating or otherwise resolving such portfolio positions, exercising judgment in the manner in which this is achieved in any PJM Markets. When an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing, PJM also has the immediate right to liquidate all or a portion of a Participant's Collateral at its discretion to satisfy Total Net Obligations to PJM under this Attachment Q or one or more of the Agreements. No remedy for an Event of Default is or shall be deemed to be exclusive of any other available remedy or remedies by contract or under applicable laws and regulations. Each such remedy shall be distinct, separate and cumulative, shall not be deemed inconsistent with or in exclusion of any other available remedy, and shall be in addition to and separate and distinct from every other remedy.

When an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing, PJM may continue to retain all payments due to a Participant as a cash security for all such Participant's obligations under the Agreements (regardless of any restrictions placed on such Participant's use of Collateral for any account, market activity or capitalization purpose); provided, however, that an Event of Default will not be deemed cured or no longer continuing because PJM is retaining amounts due the Participant, or because PJM has not yet applied Collateral or credit support to any amounts due PJM, unless PJM determines that the Participant has again satisfied all the Collateral requirements and application requirements as a new Applicant for participation in the PJM Markets, and consistent with the requirements and limitations of Operating Agreement, section 15.

In Event of Default by a Participant, PJM may exercise any remedy or action allowed or prescribed by this Attachment Q immediately or following investigation and determination of an orderly exercise of such remedy or action. Delay in exercising any allowed remedy or action shall not preclude PJM from exercising such remedy or action at a later time.

PJM may hold a defaulting Participant's Collateral for as long as such party's positions exist and consistent with this Attachment Q, in order to protect the PJM Markets and PJM's membership, and minimize or mitigate the impacts or potential impacts or risks associated with such Event of Default when an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing.

PJM may apply towards an ongoing Event of Default any amounts that are held or later become available or due to the defaulting Participant through PJM's markets and systems.

In order to cover the Participant's Obligations, PJM may hold a Participant's Collateral indefinitely and specifically through the end of the billing period which includes the 90th day following the last day a Participant had activity, open positions, or accruing obligations (other

than reconciliations and true-ups), until such Participant has satisfactorily paid any obligations invoiced through such period and until PJM determines that the Participant's positions represent no risk exposure to the PJM Markets or the PJM Members. Obligations incurred or accrued through such period shall survive any withdrawal from PJM. When an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing, PJM may apply any Collateral to such Participant's Obligations, even if Participant had previously announced and effected its withdrawal from PJM.

## **X. FTRS UNDER THE COMMODITY EXCHANGE ACT AND THE BANKRUPTCY CODE**

Under the terms of the Tariff, PJM Settlement is the counterparty to all transactions in PJM Markets, including but not limited to all FTR transactions, other than (i) any bilateral transactions between Participants, or (ii) with respect to self-supplied or self-scheduled transactions reported to the Office of the Interconnection. Pursuant to the "Final Order in Response to a Petition From Certain Independent System Operators and Regional Transmission Organizations To Exempt Specified Transactions Authorized by a Tariff or Protocol Approved by the Federal Energy Regulatory Commission or the Public Utility Commission of Texas From Certain Provisions of the Commodity Exchange Act Pursuant to the Authority Provided in the Act" 78 Fed. Reg. 19880 (April 2, 2013) (the "CFTC RTO/ISO Order"), the Commodity Futures Trading Commission (the "CFTC") exempts transactions offered or entered into in a market administered by PJM pursuant to the Tariff, including but not limited to FTR transactions, from the provisions of the Commodity Exchange Act and the CFTC's rules applicable to "swaps," with the exception of the CFTC's general anti-fraud and anti-manipulation authority and scienter-based prohibitions.

Notwithstanding the CFTC RTO/ISO Order, for purposes of the United States Bankruptcy Code ("Bankruptcy Code"), all FTR transactions constitute "swap agreements" and/or "forward contracts," and PJM and each FTR Participant is a "forward contract merchant" and/or a "swap participant" within the meaning of the Bankruptcy Code for purposes of FTR transactions.

Pursuant to this Attachment Q and other provisions of the Agreements, PJM already has, and shall continue to have, the following rights (among other rights) with respect to a Market Participant's Event of Default: (a) the right to terminate, ~~and/or~~ liquidate or otherwise resolve any FTR transaction or position held by that Market Participant, including by allowing such position to go to settlement; (b) the right to immediately proceed against any Collateral provided by the Market Participant; (c) the right to set-off any obligations due or owing to that Market Participant pursuant to any forward contract, swap agreement, or similar agreement against any amounts due and owing by that Market Participant pursuant to any forward contract, swap agreement, or similar agreement, such arrangement to constitute a "master netting agreement" within the meaning of the Bankruptcy Code; and (d) the right to suspend or limit that Market Participant from entering into further FTR transactions.

For the avoidance of doubt, upon the commencement of a voluntary or involuntary proceeding for a Participant under the Bankruptcy Code, and without limiting any other rights of PJM or obligations of any Participant under the Agreements, PJM may exercise any of its rights against

such Participant, including, without limitation (1) the right to terminate, ~~and/or~~ liquidate or otherwise resolve any FTR transaction or position held by that Participant, including by allowing such position to go to settlement, (2) the right to immediately proceed against any Collateral provided by that Participant, (3) the right to set off any obligations due and owing to that Participant pursuant to any forward contract, swap agreement and/or master netting agreement against any amounts due and owing by that Participant with respect to an FTR transaction including as a result of the actions taken by PJM pursuant to (a) above, and 4) the right to suspend or limit that Participant from entering into future FTR transactions.

For purposes of the Bankruptcy Code, all transactions, including but not limited to FTR transactions, between PJM, on the one hand, and a Market Participant, on the other hand, are intended to be part of a single integrated agreement, and together with the Agreements constitute a “master netting agreement.”

**Attachment Q**  
**Appendix 1**

**PJM MINIMUM PARTICIPATION CRITERIA**  
ANNUAL OFFICER CERTIFICATION FORM

|   |
|---|
| <b>Participant Name:</b> _____ ( <b>"Participant"</b> ) |
|---|

I, \_\_\_\_\_, a duly authorized officer of Participant, understanding that PJM Interconnection, L.L.C. and PJMSettlement, Inc. ("PJMSettlement") are relying on this certification as evidence that Participant meets the minimum requirements set forth in the PJM Open Access Transmission Tariff ("PJM Tariff"), Attachment Q hereby certify that I have full authority to represent on behalf of Participant and further represent as follows, as evidenced by my initialing each representation in the space provided below:

1. All employees or agents transacting in markets or services provided pursuant to the PJM Tariff or PJM Amended and Restated Operating Agreement ("PJM Operating Agreement") on behalf of the Participant have received appropriate training and are authorized to transact on behalf of Participant. As used in this representation, the term "appropriate" as used with respect to training means training that is (i) comparable to generally accepted practices in the energy trading industry, and (ii) commensurate and proportional in sophistication, scope and frequency to the volume of transactions and the nature and extent of the risk taken by the participant. \_\_\_\_\_
  
2. Participant has written risk management policies, procedures, and controls, approved by Participant's independent risk management function and applicable to transactions in any PJM Markets in which it participates and for which employees or agents transacting in markets or services provided pursuant to the PJM Tariff or PJM Operating Agreement have been trained, that provide an appropriate, comprehensive risk management framework that, at a minimum, clearly identifies and documents the range of risks to which Participant is exposed, including, but not limited to credit risks, liquidity risks and market risks. As used in this representation, a Participant's "independent risk management function" can include appropriate corporate persons or bodies that are independent of the Participant's trading functions, such as a risk management committee, a risk officer, a Participant's board or board committee, or a board or committee of the Participant's parent company.
  - a. Participant is providing to PJM or PJMSettlement, in accordance with Tariff, Attachment Q, section III, with this Annual Officer Certification Form, a copy of its current governing risk management policies, procedures and controls applicable to its activities in any PJM Markets pursuant to Attachment Q or because there have been substantive changes made to such policies, procedures and controls applicable to its market activities since they were last provided to PJM. \_\_\_\_\_
  
  - b. If the risk management policies, procedures and controls applicable to Participant's market activities submitted to PJM or PJMSettlement were submitted prior to the current certification, Participant certifies that no substantive changes have

been made to such policies, procedures and controls applicable to its market activities since such submission. \_\_\_\_\_

3. An FTR Participant must make either the following 3.a. or 3.b. additional representations, evidenced by the undersigned officer initialing either the one 3.a. representation or the four 3.b. representations in the spaces provided below:

- a. Participant transacts in PJM's FTR markets with the sole intent to hedge congestion risk in connection with either obligations Participant has to serve load or rights Participant has to generate electricity in the PJM Region ("physical transactions") and monitors all of the Participant's FTR market activity to endeavor to ensure that its FTR positions, considering both the size and pathways of the positions, are either generally proportionate to or generally do not exceed the Participant's physical transactions, and remain generally consistent with the Participant's intention to hedge its physical transactions. \_\_\_\_\_

- b. On no less than a weekly basis, Participant values its FTR positions and engages in a probabilistic assessment of the hypothetical risk of such positions using analytically based methodologies, predicated on the use of industry accepted valuation methodologies. \_\_\_\_\_

Such valuation and risk assessment functions are performed either by persons within Participant's organization independent from those trading in PJM's FTR markets or by an outside firm qualified and with expertise in this area of risk management. \_\_\_\_\_

Having valued its FTR positions and quantified their hypothetical risks, Participant applies its written policies, procedures and controls to limit its risks using industry recognized practices, such as value-at-risk limitations, concentration limits, or other controls designed to prevent Participant from purposefully or unintentionally taking on risk that is not commensurate or proportional to Participant's financial capability to manage such risk. \_\_\_\_\_

Exceptions to Participant's written risk policies, procedures and controls applicable to Participant's FTR positions are documented and explain a reasoned basis for the granting of any exception. \_\_\_\_\_

4. Participant has appropriate personnel resources, operating procedures and technical abilities to promptly and effectively respond to all PJM and PJMSettlement communications and directions. \_\_\_\_\_
5. Participant has demonstrated compliance with the Minimum Capitalization criteria set forth in Tariff, Attachment Q that are applicable to any PJM Markets in which Participant transacts, and is not aware of any change having occurred or being imminent that would invalidate such compliance. \_\_\_\_\_

6. All Participants must certify and initial in at least one of the four sections below:

- a. I certify that Participant qualifies as an “appropriate person” as that term is defined under section 4(c)(3), or successor provision, of the Commodity Exchange Act or an “eligible contract participant” as that term is defined under section 1a(18), or successor provision, of the Commodity Exchange Act. I certify that Participant will cease transacting in any PJM Markets and notify PJM and PJMSettlement immediately if Participant no longer qualifies as an “appropriate person” or “eligible contract participant.” \_\_\_\_\_

If providing audited financial statements, which shall be in US GAAP format or any other format acceptable to PJM, to support Participant’s certification of qualification as an “appropriate person:”

I certify, to the best of my knowledge and belief, that the audited financial statements provided to PJM and/or PJMSettlement present fairly, pursuant to such disclosures in such audited financial statements, the financial position of Participant as of the date of those audited financial statements. Further, I certify that Participant continues to maintain the minimum \$1 million total net worth and/or \$5 million total asset levels reflected in these audited financial statements as of the date of this certification. I acknowledge that both PJM and PJMSettlement are relying upon my certification to maintain compliance with federal regulatory requirements. \_\_\_\_\_

If not providing audited financial statements to support Participant’s certification of qualification as an “appropriate person,” Participant certifies that they qualify as an “appropriate person” under one of the entities defined in section 4(c)(3)(A)-(J) of the Commodities Exchange Act. \_\_\_\_\_

If providing audited financial statements, which shall be in US GAAP format or any other format acceptable to PJM, to support Participant’s certification of qualification as an “eligible contract participant:”

I certify, to the best of my knowledge and belief, that the audited financial statements provided to PJM and/or PJMSettlement present fairly, pursuant to such disclosures in such audited financial statements, the financial position of Participant as of the date of those audited financial statements. Further, I certify that Participant continues to maintain the minimum \$1 million total net worth and/or \$10 million total asset levels reflected in these audited financial statements as of the date of this certification. I acknowledge that both PJM and PJMSettlement are relying upon my certification to maintain compliance with federal regulatory requirements. \_\_\_\_\_

If not providing audited financial statements to support Participant’s certification of qualification as an “eligible contract participant,” Participant certifies that they



qualify as an “eligible contract participant” under one of the entities defined in section 1a(18)(A) of the Commodities Exchange Act. \_\_\_\_\_

- b. I certify that Participant has provided an unlimited Corporate Guaranty in a form acceptable to PJM as described in Tariff, Attachment Q, section III.D from an issuer that has at least \$1 million of total net worth or \$5 million of total assets per Participant for which the issuer has issued an unlimited Corporate Guaranty. I also certify, to the best of my knowledge and belief, that the audited financial statements provided to PJM and/or PJMSettlement present fairly, pursuant to such disclosures in such audited financial statements, the financial position of the issuer as of the date of those audited financial statements. Further, I certify that Participant will cease transacting PJM’s Markets and notify PJM and PJMSettlement immediately if issuer of the unlimited Corporate Guaranty for Participant no longer has at least \$1 million of total net worth or \$5 million of total assets per Participant for which the issuer has issued an unlimited Corporate Guaranty. \_\_\_\_\_

I certify that the issuer of the unlimited Corporate Guaranty to Participant continues to have at least \$1 million of total net worth or \$5 million of total assets per Participant for which the issuer has issued an unlimited Corporate Guaranty. I acknowledge that PJM and PJMSettlement are relying upon my certifications to maintain compliance with federal regulatory requirements. \_\_\_\_\_

- c. I certify that Participant fulfills the eligibility requirements of the Commodity Futures Trading Commission exemption order (78 F.R. 19880 – April 2, 2013) by being in the business of at least one of the following in the PJM Region as indicated below (initial those applicable):

1. Generating electric energy, including Participants that resell physical energy acquired from an entity generating electric energy: \_\_\_\_\_
2. Transmitting electric energy: \_\_\_\_\_
3. Distributing electric energy delivered under Point-to-Point or Network Integration Transmission Service, including scheduled import, export and wheel through transactions: \_\_\_\_\_
4. Other electric energy services that are necessary to support the reliable operation of the transmission system: \_\_\_\_\_

Description only if c(4) is initialed:

\_\_\_\_\_

Further, I certify that Participant will cease transacting in any PJM Markets and notify PJM and PJMSettlement immediately if Participant no longer performs at least one of the functions noted above in the PJM Region. I acknowledge that PJM and

PJMSettlement are relying on my certification to maintain compliance with federal energy regulatory requirements. \_\_\_\_\_

d. I certify that Participant has provided a Letter of Credit of \$5 million or more to PJM or PJMSettlement in a form acceptable to PJM and/or PJMSettlement as described in Tariff, Attachment Q, section V.B that the Participant acknowledges cannot be utilized to meet its credit requirements to PJM and PJMSettlement. I acknowledge that PJM and PJMSettlement are relying on the provision of this letter of credit and my certification to maintain compliance with federal regulatory requirements. \_\_\_\_\_

7. I acknowledge that I have read and understood the provisions of Tariff, Attachment Q applicable to Participant's business in any PJM Markets, including those provisions describing PJM's Minimum Participation Requirements and the enforcement actions available to PJM and PJMSettlement of a Participant not satisfying those requirements. I acknowledge that the information provided herein is true and accurate to the best of my belief and knowledge after due investigation. In addition, by signing this certification, I acknowledge the potential consequences of making incomplete or false statements in this Certification. \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Participant (Signature)

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

# Attachment B

## Revisions to the PJM Open Access Transmission Tariff

(Clean Format)

### **7.3 Auction Procedures.**

#### **7.3.1 Role of the Office of the Interconnection.**

Financial Transmission Rights auctions shall be conducted by the Office of the Interconnection in accordance with standards and procedures set forth in the PJM Manuals, such standards and procedures to be consistent with the requirements of this Schedule. PJMSettlement shall be the Counterparty to the purchases and sales of Financial Transmission Rights arising from such auctions, provided however, that PJMSettlement shall not be a contracting party to any subsequent bilateral transfers of Financial Transmission Rights between Market Participants. The conversion of an Auction Revenue Right to a Financial Transmission Right pursuant to this section 7 shall not constitute a purchase or sale transaction to which PJMSettlement is a contracting party. Any Financial Transmission Rights auctions conducted to liquidate a defaulting Member's Financial Transmission Rights portfolio shall be conducted by the Office of the Interconnection in accordance with the procedures set forth in section 7.3.9 below, and as may be further described in the PJM Manuals.

#### **7.3.2 Notice of Offer.**

A holder of a Financial Transmission Right wishing to offer the Financial Transmission Right for sale shall notify the Office of the Interconnection of any Financial Transmission Rights to be offered. Each Financial Transmission Right sold in an auction shall, at the end of the period for which the Financial Transmission Rights were auctioned, revert to the offering holder or the entity to which the offering holder has transferred such Financial Transmission Right, subject to the term of the Financial Transmission Right itself and to the right of such holder or transferee to offer the Financial Transmission Right in the next or any subsequent auction during the term of the Financial Transmission Right.

#### **7.3.3 Pending Applications for Firm Service.**

(a) [Reserved.]

(b) Financial Transmission Rights may be assigned to entities requesting Network Transmission Service or Firm Point-to-Point Transmission Service pursuant to Operating Agreement, Schedule 1, section 5.2.2 (e), and the parallel provisions of Tariff, Attachment K-Appendix, section 5.2.2(e), only if such Financial Transmission Rights are simultaneously feasible with all outstanding Financial Transmission Rights, including Financial Transmission Rights effective for the then-current auction period. If an assignment of Financial Transmission Rights pursuant to a pending application for Network Transmission Service or Firm Point-to-Point Transmission Service cannot be completed prior to an auction, Financial Transmission Rights attributable to such transmission service shall not be assigned for the then-current auction period. If a Financial Transmission Right cannot be assigned for this reason, the applicant may withdraw its application, or request that the Financial Transmission Right be assigned effective with the start of the next auction period.

#### **7.3.4 On-Peak, Off-Peak and 24-Hour Periods.**

On-peak, off-peak and 24-hour FTRs will be offered in the annual and monthly auction. On-Peak Financial Transmission Rights shall cover the periods from 7:00 a.m. up to the hour ending at 11:00 p.m. on Mondays through Fridays, except holidays as defined in the PJM Manuals. Off-Peak Financial Transmission Rights shall cover the periods from 11:00 p.m. up to the hour ending 7:00 a.m. on Mondays through Fridays and all hours on Saturdays, Sundays, and holidays as defined in the PJM Manuals. The 24-hour period shall cover the period from hour ending 1:00 a.m. to the hour ending 12:00 midnight on all days. Each bid shall specify whether it is for an on-peak, off-peak, or 24-hour period.

### **7.3.5 Offers and Bids.**

(a) Offers to sell and bids to purchase Financial Transmission Rights shall be submitted during the period set forth in Operating Agreement, Schedule 1, section 7.1.2, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.1.2, and shall be in the form specified by the Office of the Interconnection in accordance with the requirements set forth below.

(b) Offers to sell shall identify the specific Financial Transmission Right, by term, megawatt quantity and receipt and delivery points, offered for sale. An offer to sell a specified megawatt quantity of Financial Transmission Rights shall constitute an offer to sell a quantity of Financial Transmission Rights equal to or less than the specified quantity. An offer to sell may not specify a minimum quantity being offered. Each offer may specify a reservation price, below which the offeror does not wish to sell the Financial Transmission Right. Offers submitted by entities holding rights to Financial Transmission Rights shall be subject to such reasonable standards for the verification of the rights of the offeror as may be established by the Office of the Interconnection. Offers shall be subject to such reasonable standards for the creditworthiness of the offeror or for the posting of security for performance as the Office of the Interconnection shall establish.

(c) Bids to purchase shall specify the term, megawatt quantity, price per megawatt, and receipt and delivery points of the Financial Transmission Right that the bidder wishes to purchase. A bid to purchase a specified megawatt quantity of Financial Transmission Rights shall constitute a bid to purchase a quantity of Financial Transmission Rights equal to or less than the specified quantity. A bid to purchase may not specify a minimum quantity that the bidder wishes to purchase. A bid may specify receipt and delivery points in accordance with Operating Agreement, Schedule 1, section 7.2.2, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.2.2, and may include Financial Transmission Rights for which the associated Transmission Congestion Credits may have negative values. Bids shall be subject to such reasonable standards for the creditworthiness of the bidder or for the posting of security for performance as the Office of the Interconnection shall establish.

(d) Bids and offers shall be specified to the nearest tenth of a megawatt and shall be greater than zero. The Office of the Interconnection may require that a market participant shall not submit in excess of 5000 bids and offers for any single monthly auction, or for any single round of the annual auction, when the Office of the Interconnection determines that such limit is

required to avoid or mitigate significant system performance problems related to bid/offer volume. Notice of the need to impose such limit shall be provided prior to the start of the bidding period if possible. Where such notice is provided after the start of the bidding period, market participants shall be required within one day to reduce their bids and offers for such auction below 5000, and the bidding period in such cases shall be extended by one day.

### **7.3.6 Determination of Winning Bids and Clearing Price.**

(a) At the close of each bidding period, the Office of the Interconnection will create a base Financial Transmission Rights power flow model that includes all outstanding Financial Transmission Rights that have been approved and confirmed for any portion of the month for which the auction was conducted and that were not offered for sale in the auction. The base Financial Transmission Rights model also will include estimated uncompensated parallel flows into each interface point of the PJM Region and estimated scheduled transmission outages.

(b) In accordance with the requirements of Operating Agreement, Schedule 1, section 7.5, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.5, and subject to all applicable transmission constraints and reliability requirements, the Office of the Interconnection shall determine the simultaneous feasibility of all outstanding Financial Transmission Rights not offered for sale in the auction and of all Financial Transmission Rights that could be awarded in the auction for which bids were submitted. The winning bids shall be determined from an appropriate linear programming model that, while respecting transmission constraints and the maximum MW quantities of the bids and offers, selects the set of simultaneously feasible Financial Transmission Rights with the highest net total auction value as determined by the bids of buyers and taking into account the reservation prices of the sellers. In the event that there are two or more identical bids for the selected Financial Transmission Rights and there are insufficient Financial Transmission Rights to accommodate all of the identical bids, then each such bidder will receive a pro rata share of the Financial Transmission Rights that can be awarded.

(c) Financial Transmission Rights shall be sold at the market-clearing price for Financial Transmission Rights between specified pairs of receipt and delivery points, as determined by the bid value of the marginal Financial Transmission Right that could not be awarded because it would not be simultaneously feasible. The linear programming model shall determine the clearing prices of all Financial Transmission Rights paths based on the bid value of the marginal Financial Transmission Rights, which are those Financial Transmission Rights with the highest bid values that could not be awarded fully because they were not simultaneously feasible, and based on the flow sensitivities of each Financial Transmission Rights path relative to the marginal Financial Transmission Rights paths flow sensitivities on the binding transmission constraints. Financial Transmission Rights with a zero clearing price will only be awarded if there is a minimum of one binding constraint in the auction period for which the Financial Transmission Rights path sensitivity is non-zero.

### **7.3.7 Announcement of Winners and Prices.**

Within two (2) Business Days after the close of the bid and offer period for an annual Financial Transmission Rights auction round, and within five (5) Business Days after the close of the bid and offer period for a monthly Financial Transmission Rights auction, the Office of the Interconnection shall post the winning bidders, the megawatt quantity, the term and the receipt and delivery points for each Financial Transmission Right awarded in the auction and the price at which each Financial Transmission Right was awarded unless circumstances beyond PJM's control prevent PJM from meeting the applicable deadline. Under such circumstances, PJM will post the auction results at the earliest possible opportunity. The Office of the Interconnection shall not disclose the price specified in any bid to purchase or the reservation price specified in any offer to sell. If the Office of the Interconnection discovers an error in the results posted for a Financial Transmission Rights auction (or a given round of the annual Financial Transmission Rights auction), the Office of the Interconnection shall notify Market Participants of the error as soon as possible after it is found, but in no event later than 5:00 p.m. of the Business Day following the initial publication of the results of the auction or round of the annual auction. After this initial notification, if the Office of the Interconnection determines that it is necessary to post modified results, it shall provide notification of its intent to do so, together with all available supporting documentation, by no later than 5:00 p.m. of the second Business Day following the initial publication of the results of that auction or round of the annual auction. Thereafter, the Office of the Interconnection must post any corrected results by no later than 5:00 p.m. of the fourth calendar day following the initial publication of the results of the auction or round of the annual auction. Should any of the above deadlines pass without the associated action on the part of the Office of the Interconnection, the originally posted results will be considered final. Notwithstanding the foregoing, the deadlines set forth above shall not apply if the referenced auction results are under publicly noticed review by the FERC.

### **7.3.8 Auction Settlements.**

All buyers and sellers of Financial Transmission Rights between the same points of receipt and delivery shall pay PJM Settlement or be paid by PJM Settlement the market-clearing price, as determined in the auction, for such Financial Transmission Rights.

### **7.3.9 Addressing Defaulting Member's Financial Transmission Rights.**

In the event a Member fails to meet creditworthiness requirements or make timely payments when due pursuant to the Operating Agreement or Tariff, the Office of the Interconnection shall, as soon as practicable after declaring the Member to be in default as provided in Operating Agreement, section 15.1.5, use reasonable efforts to initiate within two applicable auctions the following procedures to settle, liquidate or otherwise resolve each Financial Transmission Rights position held by the defaulting Member:

- a) The Office of the Interconnection shall unilaterally terminate all of the defaulting Member's rights with respect to forward Financial Transmission Rights positions as of the date of the Member's default.
- b) As to each Financial Transmission Rights position held by the defaulting Member immediately prior to the termination of the defaulting Member's rights under subsection (a)

above, the Office of the Interconnection shall determine and execute an appropriate course of action for addressing such Financial Transmission Rights position, based on the specific circumstances of the default as determined by the Office of the Interconnection in exercise of its reasonable judgment, such as (1) liquidating the position by offering it for sale in an upcoming applicable Financial Transmission Rights auction, (2) liquidating the position by offering it for sale in an auction called and scheduled for the specific purpose of liquidating one or more positions held by the defaulting Member (“Special Auction”), (3) allowing the position to go to settlement, or (4) another course of action the Office of the Interconnection determines to be appropriate under the circumstances that is designed to minimize potential losses to PJM and its Members. The Office of the Interconnection will provide reasonable advance notice to PJM Members of the approach or course of action it has determined to be appropriate prior to implementing that approach or course of action. The Office of the Interconnection is not required to apply a single approach to the defaulting Member’s entire Financial Transmission Rights portfolio, and may determine that the appropriate course of action for addressing a defaulting Member’s portfolio includes a combination of the above approaches as applied to different positions within the defaulting Member’s overall Financial Transmission Rights portfolio.

c) The Office of the Interconnection will seek to minimize the losses to PJM Members associated with settling, liquidating or otherwise resolving the defaulting Member’s Financial Transmission Rights portfolio and may base its determination in subsection (b) above on several factors, including but not limited to, the following:

- 1) the Office of the Interconnection’s assessment of which approach will provide the greatest degree of protection to the financial integrity of the PJM Markets;
- 2) the size of the defaulting Member’s Financial Transmission Rights portfolio, both in absolute terms and relative to overall market volume;
- 3) the term of the Financial Transmission Rights positions held by the defaulting Member as considered for a single position or on a portfolio basis;
- 4) whether liquidation is feasible or not, and on what timeline, due to the cessation or curtailment of trading at PJM for all Financial Transmission Rights or a subset of Financial Transmission Rights positions;
- 5) prevailing market conditions, such as but not limited to market liquidity and volatility; and
- 6) timing of the default and the actions taken to address the default.

d) Special Auctions. The Office of the Interconnection shall administer each Special Auction provided for in subsection (b)(2) above according to the procedures set forth in the Tariff and PJM Manuals for FTR auctions to the extent appropriate in the Office of the



Interconnection's sole discretion, and may adopt special rules for each Special Auction to accommodate the unique circumstances underlying the particular default and particular Financial Transmission Rights positions being liquidated, with the terms and conditions of such auction being determined with the goal of facilitating a successful auction in light of the particular positions to be auctioned, the prevailing market conditions for such open positions (including the depth, scope, and nature of participation in such markets), and such other factors as the Office of the Interconnection determines appropriate, including those factors enumerated in subsection (c) above. The Office of the Interconnection shall provide reasonable advance notice to FTR Participants of a Special Auction and the terms and conditions under which it will be conducted.

e) All liquidations made pursuant to subsection (b) above shall be for the account of the defaulting Member (and all amounts owed PJM in respect thereof shall be included in amounts owed by the defaulting Member as part of its default).

f) Notwithstanding subsections 7.3.9(a) and (b) above, the actual net charges or credits resulting from the defaulting Member's Financial Transmission Rights positions for which PJM Settlement acted as counterparty as calculated through the normal settlement processes shall be included in calculating the Default Allocation Assessment charges as described in Operating Agreement, section 15.2.2.

## **ATTACHMENT Q**

### **CREDIT RISK MANAGEMENT POLICY**

#### **I. INTRODUCTION**

It is the policy of PJM that prior to an entity participating in any PJM Markets or in order to take Transmission Service, the entity must demonstrate its ability to meet the requirements in this Attachment Q. This Attachment Q also sets forth PJM's authority to deny, reject, or terminate a Participant's right to participate in any PJM Markets in order to protect the PJM Markets and PJM Members from unreasonable credit risk from any Participant's activities. Given the interconnectedness and overlapping of their responsibilities, PJM Interconnection, L.L.C. and PJM Settlement, Inc. are referred to both individually and collectively herein as "PJM."

#### **PURPOSE**

PJM Settlement is the counterparty to transactions in the PJM Markets. As a consequence, if a Participant defaults on its obligations under this Attachment Q, or PJM determines a Participant represents unreasonable credit risk to the PJM Markets, and the Participant does not post Collateral, additional Collateral or Restricted Collateral in response to a Collateral Call, the result is that the Participant represents unsecured credit risk to the PJM Markets. For this reason, PJM must have the authority to monitor and manage credit risk on an ongoing basis, and to act promptly to mitigate or reduce any unsecured credit risk, in order to protect the PJM Markets and PJM Members from losses.

This Attachment Q describes requirements for: (1) eligibility to be a Market Participant, (2) establishment and maintenance of credit by Market Participants, and (3) collateral requirements and forms of credit support that will be deemed as acceptable to mitigate risk to any PJM Markets.

This Attachment Q also sets forth (1) PJM's authority to monitor and manage credit risk that a Participant may represent to the PJM Markets and/or PJM membership in general, (2) the basis for establishing limits that will be imposed on a Market Participant in order to minimize risk, and (3) various obligations and requirements the violation of which will result in an Event of Default pursuant to this Attachment Q and the Agreements.

Attachment Q describes the types of data and information PJM will review in order to determine whether an Applicant or Market Participant presents an unreasonable risk to any PJM Markets and/or PJM membership in general, and the steps PJM may take in order to address that risk.

#### **APPLICABILITY**

This Attachment Q applies to all Applicants and Market Participants who take Transmission Service under this Tariff, or participate in any PJM Markets or market activities under the Agreements. Notwithstanding anything to the contrary in this Attachment Q, simply taking

transmission service or procuring Ancillary Services via market-based rates does not imply market participation for purposes of applicability of this Attachment Q.

## **II. RISK EVALUATION PROCESS**

PJM will conduct a risk evaluation to determine eligibility to become and/or remain a Market Participant or Guarantor that: (1) assesses the entity's financial strength, risk profile, creditworthiness, and other relevant factors; (2) determines an Unsecured Credit Allowance, if appropriate; (3) determines appropriate levels of Collateral; and (4) evaluates any Credit Support, including Guaranties or Letters of Credit.

### **A. Initial Risk Evaluation**

PJM will perform an initial risk evaluation of each Applicant and/or its Guarantor. As part of the initial risk evaluation, PJM will consider certain Minimum Participation Requirements, assign an Internal Risk Score, establish an Unsecured Credit Allowance if appropriate, and make a determination regarding required levels of Collateral, creditworthiness, credit support, Restricted Collateral and other assurances for participation in certain PJM Markets.

Each Applicant and/or its Guarantor must provide the information set forth below at the time of its initial application pursuant to this Attachment Q and on an ongoing basis in order to remain eligible to participate in any PJM Markets. The same quantitative and qualitative factors will be used to evaluate Participants whether or not they have rated debt.

#### **1. Rating Agency Reports**

PJM will review Rating Agency reports from Standard & Poor's, Moody's Investors Service, Fitch Ratings, or other Nationally Recognized Statistical Rating Organization for each Applicant and/or Guarantor. The review will focus on the Applicant's or its Guarantor's senior unsecured debt ratings. If senior unsecured debt ratings are not available, PJM may consider other ratings, including issuer ratings, corporate ratings and/or an implied rating based on an internally derived Internal Credit Score pursuant to section II.A.3 below.

#### **2. Financial Statements and Related Information**

Each Applicant and/or its Guarantor must submit, or cause to be submitted, audited financial statements, except as otherwise indicated below, prepared in accordance with United States Generally Accepted Accounting Principles ("US GAAP") or any other format acceptable to PJM for the three (3) fiscal years most recently ended, or the period of existence of the Applicant and/or its Guarantor, if shorter. Applicants and/or their Guarantors must submit, or cause to be submitted, financial statements, which may be unaudited, for each completed fiscal quarter of the current fiscal year. All audited financial statements provided by the Applicant and/or its Guarantor must be audited by an Independent Auditor.

The information should include, but not be limited to, the following:

- (a) If the Applicant and/or its Guarantor has publicly traded securities:
- (i) Annual reports on Form 10-K, together with any amendments thereto;
  - (ii) Quarterly reports on Form 10-Q, together with any amendments thereto;
  - (iii) Form 8-K reports, if any, that have been filed since the most recent Form 10-K;
  - (iv) A summary provided by the Principal responsible, or to be responsible, for PJM Market activity of: (1) the Participant's primary purpose(s) of activity or anticipated activity in the PJM Markets (investment, trading or "hedging or mitigating commercial risks," as such phrase has meaning in the CFTC's regulations regarding the end-user exception to clearing); (2) the experience of the Participant (and its Principals) in managing risks in similar markets, including other organized RTO/ISO markets or on regulated commodity exchanges; and (3) a high level overview of the Participant's intended participation in the PJM Markets.
  - (v) All audited financial statements provided by an Applicant with publicly traded securities and/or its Guarantor with publicly traded securities must be audited by an Independent Auditor that satisfies the requirements set forth in the Sarbanes-Oxley Act of 2002.
- (b) If the Applicant and/or its Guarantor does not have publicly-traded securities:
- (i) Annual Audited Financial Statements or equivalent independently audited financials, and quarterly financial statements, generally found on:
    - Balance Sheets
    - Income Statements
    - Statements of Cash Flows
    - Statements of Stockholder's or Member's Equity or Net Worth;
  - (ii) Notes to Annual Audited Financial Statements, and notes to quarterly financial statements if any, including disclosures of any material changes from the last report;
  - (iii) Disclosure equivalent to a Management's Discussion & Analysis, including an executive overview of operating results and outlook, and compliance with debt covenants and indentures, and off balance sheet arrangements, if any;
  - (iv) Auditor's Report with an unqualified opinion or written letter from auditor containing the opinion whether the annual audited financial statements comply with the US GAAP or any other format acceptable to PJM; and

- (v) A summary provided by the Principal responsible or to be responsible for PJM Market activity of: (1) the Participant's primary purpose(s) of activity or anticipated activity in the PJM Markets (investment, trading or "hedging or mitigating commercial risks," as such phrase has meaning in the CFTC's regulations regarding the end-user exception to clearing); (2) the experience of the Participant (and its Principals) in managing risks in similar markets, including other organized RTO/ISO markets or on regulated commodity exchanges; and (3) a high level overview of the Participant's intended participation in the PJM Markets.
- (c) If Applicant and/or Guarantor is newly formed, does not yet have three (3) years of audited financials, or does not routinely prepare audited financial statements, PJM may specify other information to allow it to assess the entity's creditworthiness, including but not limited to:
  - (i) Equivalent financial information traditionally found in:
    - Balance Sheets
    - Income Statements
    - Statements of Cash Flows
  - (ii) Disclosure equivalent to a Management's Discussion & Analysis, including an executive overview of operating results and outlook, and compliance with debt covenants and indentures, and off balance sheet arrangements, if any; and
  - (iii) A summary provided by the Principal responsible or to be responsible for PJM Market activity of: (1) the Participant's primary purpose(s) of activity or anticipated activity in the PJM Markets (investment, trading or "hedging or mitigating commercial risks," as such phrase has meaning in the CFTC's regulations regarding the end-user exception to clearing); (2) the experience of the Participant (and its Principals) in managing risks in similar markets, including other organized RTO/ISO markets or on regulated commodity exchanges; and (3) a high level overview of the Participant's intended participation in the PJM Markets.
- (d) During a two year transition period from June 1, 2020 to May 31, 2022, the Applicant or Guarantor may provide a combination of audited financial statements and/or equivalent financial information.

If any of the above information in this section II.A.2 is available on the internet, the Applicant and/or its Guarantor may provide a letter stating where such statements can be located and retrieved by PJM. If an Applicant and/or its Guarantor files Form 10-K, Form 10-Q, or Form 8-K with the SEC, then the Applicant and/or its Guarantor will be deemed to have satisfied the requirement by indicating to PJM where the information in this section II.A.2 can be located on the internet.

If the Applicant and/or its Guarantor fails, for any reason, to provide the information required above in this section II.A.2, PJM has the right to (1) request Collateral and/or Restricted Collateral to cover the amount of risk reasonably associated with the Applicant and/or its Guarantor's expected activity in any PJM Markets, and/or (2) restrict the Applicant from participating in certain PJM Markets, including but not limited to restricting the positions the Applicant (once it becomes a Market Participant) takes in the market.

For certain Applicants and/or their Guarantors, some of the above submittals may not be applicable and alternate requirements for compliant submittals may be specified by PJM. In the credit evaluation of Municipalities and Cooperatives, PJM may also request additional information as part of the initial and ongoing review process and will consider other qualitative factors in determining financial strength and creditworthiness.

### **3. Credit Rating and Internal Credit Score**

PJM will use credit risk scoring methodologies as a tool in determining an Unsecured Credit Allowance for each Applicant and/or its Guarantor. As its source for calculating the Unsecured Credit Allowance, PJM will rely on the ratings from a Rating Agency, if any, on the Applicant's or Guarantor's senior unsecured debt or their issuer ratings or corporate ratings if senior unsecured debt ratings are not available. If there is a split rating between the Rating Agencies, the lower of the ratings shall apply. If no external credit rating is available PJM will utilize its Internal Credit Score in order to calculate the Unsecured Credit Allowance.

The model used to develop the Internal Credit Score will be quantitative, based on financial data found in the income statement, balance sheet, and cash flow statement, and it will be qualitative based on relevant factors that may be internal or external to a particular Applicant and/or its Guarantor.

PJM will employ a framework, as outlined in Tables 1-5 below, based on metrics internal to the Applicant and/or its Guarantor, including capital and leverage, cash flow coverage of fixed obligations, liquidity, profitability, and other qualitative factors. The particular metrics and scoring rules differ according to the Applicant's or Guarantor's line of business and the PJM Markets in which it anticipates participating, in order to account for varying sources and degrees of risk to the PJM Markets and PJM members.

The formulation of each metric will be consistently applied to all Applicants and Guarantors across industries with slight variations based on identifiable differences in entity type, anticipated market activity, and risks to the PJM Markets and PJM members. In instances where the external credit rating is used to calculate the unsecured credit allowance, PJM may also use the Internal Credit Score as an input into determining the overall risk profile of an Applicant and/or its Guarantor.

| <b>Table 1.<br/>Quantitative Metrics by Line of Business: Leverage and Capital Structure</b> | <b>Investor-Owned Utilities</b> | <b>Municipal Utilities</b> | <b>Co-Operative Utilities</b> | <b>Power Transmission</b> | <b>Merchant Power</b> | <b>Project Developers</b> | <b>Exploration &amp; Production</b> | <b>Financial Institutions</b> | <b>Commodity Trading</b> | <b>Private Equity</b> |
|--|---------------------------------|----------------------------|-------------------------------|---------------------------|-----------------------|---------------------------|-------------------------------------|-------------------------------|--------------------------|-----------------------|
| Debt / Total Capitalization (%)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| FFO / Debt (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Debt / EBITDA (x)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Debt / Property, Plant & Equipment (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Retained Earnings / Total Assets (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Debt / Avg Daily Production or Kwh (\$)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Tangible Net Worth (\$)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Core Capital / Total Assets (%)  |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Risk-Based Capital / RWA (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Tier 1 Capital / RWA (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Equity / Investments (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |
| Debt / Investments (%)   |                                 |                            |                               |                           |                       |                           |                                     |                               |                          |                       |

primary metric secondary metric

FFO = Funds From Operations RWA = Risk-Weighted Assets

| <b>Table 2.<br/>Quantitative Metrics by Line of Business: Fixed Charge Coverage and Funding</b> | <b>Investor-Owned Utilities</b> | <b>Municipal Utilities</b> | <b>Co-Operative Utilities</b> | <b>Power Transmission</b> | <b>Merchant Power</b> | <b>Project Developers</b> | <b>Exploration &amp;</b> | <b>Financial Institutions</b> | <b>Commodity Trading</b> | <b>Private Equity</b> |
|---|---------------------------------|----------------------------|-------------------------------|---------------------------|-----------------------|---------------------------|--------------------------|-------------------------------|--------------------------|-----------------------|
| EBIT / Interest Expense (x)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| EBITDA / Interest Expense (x)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| EBITDA / [Interest Exp + CPLTD] (x)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| [FFO + Interest Exp] / Interest Exp (x)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| Loans / Total Deposits (%)  |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| NPL / Gross Loans (%)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| NPL / [Net Worth + LLR] (%)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |
| Market Funding/Tangible Bank Assets (%)   |                                 |                            |                               |                           |                       |                           |                          |                               |                          |                       |

primary metric secondary metric

CPLTD = Current Portion of Long-Term Debt EBIT = Earnings Before Interest and Taxes EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization LLR = Loan Loss Reserves NPL = Non-Performing Loans





|   |  |          |          |          |           |           |           |           |            |            |            |
|---|--|----------|----------|----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| <b>Need for PJM Markets to Achieve Business Goals</b> | Rating Agency criteria or other industry analysis  | High     | High     | High     | High      | Med       | Low       | Med       | Low        | Low        | N/A        |
| <b>Ability to Grow/Enter Markets other than PJM</b>   | Rating Agency criteria or other industry analysis  | Very Low | Very Low | Very Low | Very Low  | High      | High      | Med       | Med        | High       | N/A        |
| <b>Other Participants' Ability to Serve Customers</b> | Rating Agency criteria or other industry analysis  | Low      | Low      | Low      | Low       | Low       | Med       | Low       | Low        | High       | N/A        |
| <b>Regulation of Participant's Business</b>           | RRA regulatory climate scores, S&P BICRA   | PUC S    | Govt     | N/A      | FERC PUCs | N/A       | N/A       | N/A       | N/A        | N/A        | N/A        |
| <b>Primary Purpose of PJM Activity</b>                | Investment ("Inv.)/ Trading ("Trade")/ Hedging or Mitigating Commercial Risk of Operations ("CRH") | CRH      | CRH      | CRH      | CRH/Trade | CRH/Trade | CRH/Trade | CRH/Trade | Inv./Trade | Inv./Trade | Inv./Trade |

RRA = Regulatory Research Associates, a division of S&P Global, Inc.      BICRA = Bank Industry Country Risk Assessment

The scores developed will range from 1-6, with the following mappings:

- 1 = Very Low Risk (S&P/Fitch: AAA to AA-; Moody's: Aaa to Aa3)
- 2 = Low Risk (S&P/Fitch: A+ to BBB+; Moody's: A1 to Baa1)
- 3 = Low to Medium Risk (S&P/Fitch: BBB; Moody's: Baa2)
- 4 = Medium Risk (S&P/Fitch: BBB-; Moody's: Baa3)
- 5 = Medium to High Risk (S&P/Fitch: BB+ to BB; Moody's Ba1 to Ba2)
- 6 = High Risk (S&P/Fitch: BB- and below; Moody's: Ba3 and below)

#### **4. Trade References**

If deemed necessary by PJM, whether because the Applicant is newly or recently formed or for any other reason, each Applicant and/or its Guarantor shall provide at least one (1) bank reference and three (3) Trade References to provide PJM with evidence of Applicant's understanding of the markets in which the Applicant is seeking to participate and the Applicant's experience and ability to manage risk. PJM may contact the bank references and Trade References provided by the Applicant to verify their business experience with the Applicant.

#### **5. Litigation and Contingencies**

Unless prohibited by law, each Applicant and Guarantor is also required to disclose and provide information as to the occurrence of, within the five (5) years prior to the submission of the information to PJM (i) any litigation, arbitration, investigation (formal inquiry initiated by a governmental or regulatory entity), or proceeding, pending or, to the knowledge of the involving, Applicant or its Guarantor or any of their Principals that would likely have a material adverse impact on its financial condition and/or would likely materially affect the risk of non-payment by the Applicant or Guarantor, or (ii) any finding of material defalcation, market manipulation or fraud by or involving the Applicant, Guarantor, or any of their Principals, predecessors, subsidiaries, or Credit Affiliates that participate in any United States power markets based upon a final adjudication of regulatory and/or legal proceedings, (iii) any bankruptcy declarations or petitions by or against an Applicant and/or Guarantor, or (iv) any violation by any of the foregoing of any federal or state regulations or laws regarding energy commodities, U.S. Commodity Futures Trading Commission ("CFTC") or FERC requirements, the rules of any exchange monitored by the National Futures Association, any self-regulatory organization or any other governing, regulatory, or standards body responsible for regulating activity in North American markets for electricity, natural gas or electricity-related commodity products. Each Applicant and Guarantor shall take reasonable measures to obtain permission to disclose information related to a non-public investigation. These disclosures shall be made by Applicant and Guarantor upon application, and within ten (10) Business Days of any material change with respect to any of the above matters.

#### **6. History of Defaults in Energy Projects**

Each Applicant and Guarantor shall disclose their current default status and default history for any energy related generation or transmission project (e.g. generation, solar, development), and within any wholesale or retail energy market, including but not limited to within PJM, any

Independent System Operator or Regional Transmission Organization, and exchange that has not been cured within the past five (5) years. Defaults of a non-recourse project financed entity may not be included in the default history.

## **7. Other Disclosures and Additional Information**

Each Applicant and Guarantor is required to disclose any Credit Affiliates that are currently Members of PJM, applying for membership with PJM, Transmission Customers, Participants, applying to become Market Participants, or that participate directly or indirectly in any PJM Markets or any other North American markets for electricity, natural gas or electricity-related commodity products. Each Applicant and Guarantor shall also provide a copy of its limited liability company agreement or equivalent agreement, certification of formation, articles of incorporation or other similar organization document, offering memo or equivalent, the names of its five (5) most senior Principals, and information pertaining to any non-compliance with debt covenants and indentures.

Applicants shall provide PJM the credit application referenced in section III.A and any other information or documentation reasonably required for PJM to perform the initial risk evaluation of Applicant's or Guarantor's creditworthiness and ability to comply with the requirements contained in the Agreements related to settlements, billing, credit requirements, and other financial matters.

### **B. Supplemental Risk Evaluation Process**

As described in section VI below, PJM will conduct a supplemental risk evaluation process for Applicants, Participants, and Guarantors applying to conduct virtual and export transactions or participate in any PJM Markets.

### **C. Unsecured Credit Allowance**

A Market Participant may request that PJM consider it for an Unsecured Credit Allowance pursuant to the provisions herein. Notwithstanding the foregoing, an FTR Participant shall not be considered for an Unsecured Credit Allowance for participation in the FTR markets.

#### **1. Unsecured Credit Allowance Evaluation**

PJM will perform a credit evaluation on each Participant that has requested an Unsecured Credit Allowance, both initially and at least annually thereafter. PJM shall determine the amount of Unsecured Credit Allowance, if any, that can be provided to the Market Participant in accordance with the creditworthiness and other requirements set forth in this Attachment Q. In completing the credit evaluation, PJM will consider:

##### **(a) Rating Agency Reports**

PJM will review Rating Agency reports as for each Market Participant on the same basis as described in section II.A.1 above and section II.E.1 below.

**(b) Financial Statements and Related Information**

All financial statements and related information considered for an Unsecured Credit Allowance must satisfy all of the same requirements described in section II.A.2 above and section II.E.2 below.

**2. Material Adverse Changes**

Each Market Participant is responsible for informing PJM, in writing, of any Material Adverse Change in its financial condition (or the financial condition of its Guarantor) since the date of the Market Participant or Guarantor's most recent annual financial statements provided to PJM, pursuant to the requirements reflected in section II.A.2 above and section II.E.3 below.

In the event that PJM determines that a Material Adverse Change in the financial condition of a Market Participant warrants a requirement to provide Collateral, additional Collateral or Restricted Collateral, PJM shall comply with the process and requirements described in section II.A above and section II.E below.

**3. Other Disclosures**

Each Market Participant desiring an Unsecured Credit Allowance is required to make the disclosures and upon the same requirements reflected in section II.A.7 above and section II.E.7 below.

**D. Determination of Unreasonable Credit Risk**

Unreasonable credit risk shall be determined by the likelihood that an Applicant will default on a financial obligation arising from its participation in any PJM Markets. Indicators of potentially unreasonable credit risk include, but are not limited to, a history of market manipulation based upon a final adjudication of regulatory and/or legal proceedings, a history of financial defaults, a history of bankruptcy or insolvency within the past five (5) years, or a combination of current market and financial risk factors such as low capitalization, a reasonably likely future material financial liability, a low Internal Credit Score (derived pursuant to section II.A.3 above) and/or a low externally derived credit score. PJM's determination will be based on, but not limited to, information and material provided to PJM during its initial risk evaluation process, information and material provided to PJM in the Officer's Certification, and/or information gleaned by PJM from public and non-public sources.

If PJM determines that an Applicant poses an unreasonable credit risk to the PJM Markets, PJM may require Collateral, additional Collateral, or Restricted Collateral commensurate with the Applicant's risk of financial default, reject an application, and/or limit or deny Applicant's participation in the PJM Markets, to the extent and for the time period it determines is necessary to mitigate the unreasonable credit risk to the PJM Markets. PJM will reject an application if it determines that Collateral, additional Collateral, or Restricted Collateral cannot address the risk.

PJM will communicate its concerns regarding whether the Applicant presents an unreasonable credit risk, if any, in writing to the Applicant and attempt to better understand the circumstances surrounding that Applicant's financial and credit position before making its determination. In the event PJM determines that an Applicant presents an unreasonable credit risk that warrants a requirement to provide Collateral of any type, or some action to mitigate risk, PJM shall provide the Applicant with a written explanation of why such determination was made.

## **E. Ongoing Risk Evaluation**

In addition to the initial risk evaluation set forth in sections II.A through II.D above and the annual certification requirements set forth in section III.A below, each Market Participant and/or its Guarantor has an ongoing obligation to provide PJM with the information required in section IV.A described in more detail below. PJM may also review public information regarding a Market Participant and/or its Guarantor as part of its ongoing risk evaluation. If appropriate, PJM will revise the Market Participant's Unsecured Credit Allowance and/or change its determination of creditworthiness, credit support, Restricted Collateral, required Collateral or other assurances pursuant to PJM's ongoing risk evaluation process.

Each Market Participant and/or its Guarantor must provide the information set forth below on an ongoing basis in order to remain eligible to participate in any PJM Markets. The same quantitative and qualitative factors will be used to evaluate Market Participants whether or not they have rated debt.

### **1. Rating Agency Reports**

PJM will review Rating Agency reports for each Market Participant and/or Guarantor on the same basis as described in section II.A.1 above.

### **2. Financial Statements and Related Information**

On an ongoing basis, Market Participants and/or their Guarantors shall provide the information they are required to provide as described in section II.A.2 above, pursuant to the schedule reflected below, with one exception. With regard to the summary that is required to be provided by the Principal responsible for PJM Market activity, with respect to experience of the Participant or its Principals in managing risks in similar markets, the Principal only needs to provide that information for a new Principal that was not serving in the position when the prior summary was provided. PJM will review financial statements and related information for each Market Participant and/or Guarantor on the same basis as described in section II.A.2 above.

Each Market Participant and/or its Guarantor must submit, or cause to be submitted, annual audited financial statements, except as otherwise indicated below, prepared in accordance with US GAAP or any other format acceptable to PJM for the fiscal year most recently ended within ten (10) calendar days of the financial statements becoming available and no later than one hundred twenty (120) calendar days after its fiscal year end. Market Participants and/or their Guarantors must submit, or cause to be submitted, financial statements, which may be unaudited, for each completed fiscal quarter of the current fiscal year, promptly upon their issuance, but no

later than sixty (60) calendar days after the end of each fiscal quarter. All audited financial statements provided by the Market Participant and/or its Guarantor must be audited by an Independent Auditor.

Notwithstanding the foregoing, PJM may upon request, grant a Market Participant or Guarantor an extension of time, if the financials are not available within the time frame stated above.

### **3. Material Adverse Changes**

Each Market Participant and each Guarantor is responsible for informing PJM, in writing, of any Material Adverse Change in its or its Guarantor's financial condition within five (5) Business Days of any Principal becoming aware of the occurrence of a Material Adverse Change since the date of the Market Participant or Guarantor's most recent annual financial statements provided to PJM. However, PJM may also independently establish from available information that a Participant and/or its Guarantor has experienced a Material Adverse Change in its financial condition without regard to whether such Market Participant or Guarantor has informed PJM of the same.

For the purposes of this Attachment Q, a Material Adverse Change in financial condition may include, but is not be limited to, any of the following:

- (a) a bankruptcy filing;
- (b) insolvency;
- (c) a significant decrease in market capitalization;
- (d) restatement of prior financial statements unless required due to regulatory changes;
- (e) the resignation or removal of a Principal unless there is a new Principal appointed or expected to be appointed, a transition plan in place pending the appointment of a new Principal, or a planned restructuring of such roles;
- (f) the filing of a lawsuit or initiation of an arbitration, investigation, or other proceeding that would likely have a material adverse effect on any current or future financial results or financial condition or increase the likelihood of non-payment;
- (g) a material financial default in any other organized energy, ancillary service, financial transmission rights and/or capacity markets including but not limited to those of another Regional Transmission Organization or Independent System Operator, or on any commodity exchange, futures exchange or clearing house, that has not been cured or remedied after any required notice has been given and any cure period has elapsed;
- (h) a revocation of a license or other authority by any Federal or State regulatory agency; where such license or authority is necessary or important to the Participant's continued business, for example, FERC market-based rate authority, or State license to serve retail load;
- (i) a significant change in credit default swap spreads, market capitalization, or other market-based risk measurement criteria, such as a recent increase in Moody's KMV Expected Default Frequency (EDF<sup>tm</sup>) that is materially greater than the

- increase in its peers' EDF<sup>tm</sup> rates, or a collateral default swap (CDS) premium normally associated with an entity rated lower than investment grade;
- (j) a confirmed, undisputed material financial default in a bilateral arrangement with another Participant or counterparty that has not been cured or remedied after any required notice has been given and any cure period has elapsed;
  - (k) the sale by a Participant of all or substantially all of its bilateral position(s) in the PJM Markets;
  - (l) any adverse changes in financial condition which, individually, or in the aggregate, are material; and,
  - (m) any adverse changes, events or occurrences which, individually or in the aggregate, could affect the ability of the entity to pay its debts as they become due or could reasonably be expected to have a material adverse effect on any current or future financial results or financial condition.

Upon identification of a Material Adverse Change, PJM shall evaluate the financial strength and risk profile of the Market Participant and/or its Guarantor at that time and may do so on a more frequent basis going forward. If the result of such evaluation identifies unreasonable credit risk to any PJM Market as further described in section II.E.8 below, PJM will take steps to mitigate the financial exposure to the PJM Markets. These steps include, but are not limited to requiring the Market Participant and/or each Guarantor to provide Collateral, additional Collateral or additional Restricted Collateral that is commensurate with the amount of risk in which the Market Participant wants to engage, and/or limiting the Market Participant's ability to participate in any PJM Market to the extent, and for the time-period necessary to mitigate the unreasonable credit risk. In the event PJM determines that a Material Adverse Change in the financial condition or risk profile of a Market Participant and/or Guarantor, warrants a requirement to provide Collateral of any type, or some action to mitigate risk, PJM shall provide the Market Participant and/or Guarantor, a written explanation of why such determination was made. Conversely, in the event PJM determines there has been an improvement in the financial condition or risk profile of a Market Participant and/or Guarantor such that the amount of Collateral needed for that Market Participant and/or Guarantor can be reduced, PJM shall provide a written explanation why such determination was made, including the amount of the Collateral reduction and indicating when and how the reduction will be made.

#### **4. Litigation and Contingencies**

Each Market Participant and/or Guarantor is required to disclose and provide information regarding litigation and contingencies as outlined in section II.A.5 above.

#### **5. History of Defaults in Energy Projects**

Each Market Participant and/or Guarantor is required to disclose current default status and default history as outlined in section II.A.6 above.

#### **6. Internal Credit Score**

As part of its ongoing risk evaluation, PJM will use credit risk scoring methodologies as a tool in determining an Internal Credit Score for each Market Participant and/or Guarantor, utilizing the same model and framework outlined in section II.A.3 above.

## **7. Other Disclosures and Additional Information**

Each Market Participant and/or Guarantor is required to make other disclosures and provide additional information outlined in section II.A.7 above.

PJM will monitor each Market Participant's use of services and associated financial obligations on a regular basis to determine their total potential financial exposure and for credit monitoring purposes, and may require the Market Participant and/or Guarantor to provide additional information, pursuant to the terms and provisions described herein.

Market Participants shall provide PJM, upon request, any information or documentation reasonably required for PJM to monitor and evaluate a Market Participant's creditworthiness and compliance with the Agreements related to settlements, billing, credit requirements, and other financial matters.

## **8. Unreasonable Credit Risk**

If PJM has reasonable grounds to believe that a Market Participant and/or its Guarantor poses an unreasonable credit risk to any PJM Markets, PJM may immediately notify the Market Participant of such unreasonable credit risk and (1) issue a Collateral Call to demand Collateral, additional Collateral, or Restricted Collateral or other assurances commensurate with the Market Participant's and/or its Guarantor's risk of financial default or other risk posed by the Market Participant's or Guarantor's financial condition or risk profile to the PJM Markets and PJM members, or (2) limit or suspend the Market Participant's participation in any PJM Markets, to the extent and for such time period PJM determines is necessary to mitigate the unreasonable credit risk to any PJM Markets. PJM will only limit or suspend a Market Participant's market participation if Collateral, additional Collateral or Restricted Collateral cannot address the unreasonable credit risk.

PJM's determination will be based on, but not limited to, information and material provided to PJM during its ongoing risk evaluation process or in the Officer's Certification, and/or information gleaned by PJM from public and non-public sources. PJM will communicate its concerns, if any, in writing to the Market Participant and attempt to better understand the circumstances surrounding the Market Participant's financial and credit position before making its determination. At PJM's request or upon its own initiative, the Market Participant or its Guarantor may provide supplemental information to PJM that would allow PJM to consider reducing the additional Collateral requested or reducing the severity of limitations or other restrictions designed to mitigate the Market Participant's credit risk. Such information shall include, but not be limited to: (i) the Market Participant's estimated exposure, (ii) explanations for any recent change in the Market Participant's market activity, (iii) any relevant new load or unit outage information; or (iv) any default or supply contract expiration, termination or suspension.



The Market Participant shall have five (5) Business Days to respond to PJM's request for supplemental information. If the requested information is provided in full to PJM's satisfaction during said period, the additional Collateral requirement shall reflect the Market Participant's anticipated exposure based on the information provided. Notwithstanding the foregoing, any additional Collateral requested by PJM in a Collateral Call must be provided by the Market Participant within the applicable cure period.

In the event PJM determines that an Market Participant and/or its Guarantor presents an unreasonable credit risk, as described above, that warrants a requirement to provide Collateral of any type, or some action to mitigate risk, PJM shall provide the Market Participant with a written explanation of why such final determination was made.

PJM has the right at any time to modify any Unsecured Credit Allowance and/or require additional Collateral as may be deemed reasonably necessary to support current or anticipated market activity as set forth in Tariff, Attachment Q, sections II.A.2 and II.C.1.b. Failure to remit the required amount of additional Collateral within the applicable cure period shall constitute an Event of Default.

#### **F. Collateral and Credit Restrictions**

PJM may establish certain restrictions on available credit by requiring that some amounts of credit, i.e. Restricted Collateral, may not be available to satisfy credit requirements. Such designations shall be construed to be applicable to the calculation of credit requirements only, and shall not restrict PJM's ability to apply such designated credit to any obligation(s) in case of a default. Any such Restricted Collateral will be held by PJM, as applicable. Such Restricted Collateral will not be returned to the Participant until PJM has determined that the risk for which such Restricted Collateral is being held has subsided or been resolved.

PJM may post on PJM's web site, and may reference on OASIS, a supplementary document which contains additional business practices (such as algorithms for credit scoring) that are not included in this Attachment Q. Changes to the supplementary document will be subject to stakeholder review and comment prior to implementation. PJM may specify a required compliance date, not less than fifteen (15) calendar days from notification, by which time all Participants and their Guarantors must comply with provisions that have been revised in the supplementary document.

PJM will regularly post each Participant's and/or its Guarantor's credit requirements and credit provisions on the PJM web site in a secure, password-protected location. Each Participant and/or its Guarantor is responsible for monitoring such information, and maintaining sufficient credit to satisfy the credit requirements described herein. Failure to maintain credit sufficient to satisfy the credit requirements of the Attachment Q shall constitute a Credit Breach, and the Participant will be subject to the remedies established herein and in any of the Agreements.

#### **G. Unsecured Credit Allowance Calculation**

The external rating from a Rating Agency will be used as the source for calculating the Unsecured Credit Allowance, unless no external credit rating is available in which case PJM will utilize its Internal Credit Score for such purposes. If there is a split rating between the Rating Agencies, the lower of the ratings shall apply.

Where two or more entities, including Participants, are considered Credit Affiliates, Unsecured Credit Allowances will be established for each individual Participant, subject to an aggregate maximum amount for all Credit Affiliates as provided for in Attachment Q, section II.G.3.

In its credit evaluation of Municipalities and Cooperatives, PJM may request additional information as part of the ongoing risk evaluation process and will also consider qualitative factors in determining financial strength and creditworthiness.

## **1. Credit Rating and Internal Credit Score**

As previously described in section II.A.3 above, PJM will determine the Internal Credit Score for an Applicant, Market Participant and/or its Guarantor using the credit risk scoring methodologies contained therein. Internal Credit Scores, ranging from 1-6, for each Applicant, Market Participant and/or its Guarantor, will be determined with the following mappings:

- 1 = Very Low Risk (S&P/Fitch: AAA to AA-; Moody's: Aaa to Aa3)
- 2 = Low Risk (S&P/Fitch: A+ to BBB+; Moody's: A1 to Baa1)
- 3 = Low to Medium Risk (S&P/Fitch: BBB; Moody's: Baa2)
- 4 = Medium Risk (S&P/Fitch: BBB-; Moody's: Baa3)
- 5 = Medium to High Risk (S&P/Fitch: BB+ to BB; Moody's Ba1 to Ba2)
- 6 = High Risk (S&P/Fitch: BB- and below; Moody's: Ba3 and below)

In instances where the external credit rating is used to calculate the unsecured credit allowance, PJM may also use the Internal Credit Score as an input into its determination of the overall risk profile of an Applicant and/or its Guarantor

## **2. Unsecured Credit Allowance**

PJM will determine a Participant's Unsecured Credit Allowance based on its external rating or its Internal Credit Score, as applicable, and the parameters in the table below. The maximum Unsecured Credit Allowance is the lower of:

- (a) A percentage of the Participant's Tangible Net Worth, as stated in the table below, with the percentage based on the Participant's external rating or Internal Credit Score, as applicable; and
- (b) A dollar cap based on the external rating or Internal Credit Score, as applicable, as stated in the table below:

| <b>Internal Credit Score</b> | <b>Risk Ranking</b>            | <b>Tangible Net Worth Factor</b> | <b>Maximum Unsecured Credit Allowance<br/>(\$ Million)</b> |
|------------------------------|--------------------------------|----------------------------------|--|
| 1.00 – 1.99                  | 1 – Very Low (AAA to AA-)      | Up to 10.00%                     | \$50   |
| 2.00 – 2.99                  | 2 – Low (A+ to BBB+)           | Up to 8.00%                      | \$42   |
| 3.00 – 3.49                  | 3 – Low to Medium (BBB)        | Up to 6.00%                      | \$33   |
| 3.50 – 4.49                  | 4 – Medium (BBB-)              | Up to 5.00%                      | \$7  |
| 4.50 – 5.49                  | 5 – Medium to High (BB+ to BB) | 0%                               | \$0  |
| > 5.49                       | 6 – High (BB- and below)       | 0%                               | \$0  |

If a Corporate Guaranty is utilized to establish an Unsecured Credit Allowance for a Participant, the value of a Corporate Guaranty will be the lesser of:

- (a) The limit imposed in the Corporate Guaranty;
- (b) The Unsecured Credit Allowance calculated for the Guarantor; and
- (c) A portion of the Unsecured Credit Allowance calculated for the Guarantor in the case of Credit Affiliates.

PJM has the right at any time to modify any Unsecured Credit Allowance and/or require additional Collateral as may be deemed reasonably necessary to support current market activity. Failure to remit the required amount of additional Collateral within the applicable cure period shall be deemed an Event of Default.

PJM will maintain a posting of each Participant’s Unsecured Credit Allowance, along with certain other credit related parameters, on the PJM website in a secure, password-protected location. Each Participant will be responsible for monitoring such information and recognizing changes that may occur.

### **3. Unsecured Credit Limits For Credit Affiliates**

If two or more Participants are Credit Affiliates and have requested an Unsecured Credit Allowance, PJM will consider the overall creditworthiness of the Credit Affiliates when determining the Unsecured Credit Allowances in order not to establish more Unsecured Credit for the Credit Affiliates collectively than the overall corporate family could support.

**Example:** Participants A and B each have a \$10.0 million Corporate Guaranty from their common parent, a holding company with an Unsecured Credit Allowance calculation of \$12.0 million. PJM may limit the Unsecured Credit Allowance for each Participant to \$6.0 million, so the total Unsecured Credit Allowance does not exceed the corporate family total of \$12.0 million.

PJM will work with the Credit Affiliates to allocate the total Unsecured Credit Allowance among the Credit Affiliates while assuring that no individual Participant, nor common guarantor, exceeds the Unsecured Credit Allowance appropriate for its credit strength. The aggregate Unsecured Credit for a Participant, including Unsecured Credit Allowance granted based on its own creditworthiness and risk profile, and any Unsecured Credit Allowance conveyed through a Guaranty shall not exceed \$50 million. The aggregate Unsecured Credit for a Credit Affiliates corporate family shall not exceed \$50 million. A Credit Affiliate corporate family subject to this cap shall request PJM to allocate the maximum Unsecured Credit amongst the corporate family, assuring that no individual Participant or common guarantor, shall exceed the Unsecured Credit level appropriate for its credit strength and activity.

#### **H. Contesting an Unsecured Credit Evaluation**

PJM will provide to a Participant, upon request, a written explanation for any determination of or change in Unsecured Credit or credit requirement within ten (10) Business Days of receiving such request.

If a Participant believes that either its level of Unsecured Credit or its credit requirement has been incorrectly determined, according to this Attachment Q, then the Participant may send a request for reconsideration in writing to PJM. Such a request should include:

- (1) A citation to the applicable section(s) of this Attachment Q along with an explanation of how the respective provisions of this Attachment Q were not carried out in the determination as made; and
- (2) A calculation of what the Participant believes should be the appropriate Unsecured Credit or Collateral requirement, according to terms of this Attachment Q.

PJM will provide a written response as promptly as practical, but no more than ten (10) Business Days after receipt of the request. If the Participant still feels that the determination is incorrect, then the Participant may contest that determination. Such contest should be in written form, addressed to PJM, and should contain:

- (1) A complete copy of the Participant's earlier request for reconsideration, including citations and calculations;
- (2) A copy of PJM's written response to its request for reconsideration; and
- (3) An explanation of why it believes that the determination still does not comply with this Attachment Q.

PJM will investigate and will respond to the Participant with a final determination on the matter as promptly as practical, but no more than twenty (20) Business Days after receipt of the request.

Neither requesting reconsideration nor contesting the determination following such request shall relieve or delay Participant's responsibility to comply with all provisions of this Attachment Q, including without limitation posting Collateral, additional Collateral or Restricted Collateral in response to a Collateral Call.

If a Corporate Guaranty is being utilized to establish credit for a Participant, the Guarantor will be evaluated and the Unsecured Credit Allowance granted, if any, based on the financial strength and creditworthiness, and risk profile of the Guarantor. Any utilization of a Corporate Guaranty will only be applicable to non-FTR credit requirements, and will not be applicable to cover FTR credit requirements.

PJM will identify any necessary Collateral requirements and establish a Working Credit Limit for each Participant. Any Unsecured Credit Allowance will only be applicable to non-FTR credit requirements, for positions in PJM Markets other than the FTR market, because all FTR credit requirements must be satisfied by posting Collateral.

### **III. MINIMUM PARTICIPATION REQUIREMENTS**

A Participant seeking to participate in any PJM Markets shall submit to PJM any information or documentation reasonably required for PJM to evaluate its experience and resources. If PJM determines, based on its review of the relevant information and after consultation with the Participant, that the Participant's participation in any PJM Markets presents an unreasonable credit risk, PJM may reject the Participant's application to become a Market Participant, notwithstanding applicant's ability to meet other minimum participation criteria, registration requirements and creditworthiness requirements.

#### **A. Annual Certification**

Before they are eligible to transact in any PJM Market, all Applicants shall provide to PJM (i) an executed copy of a credit application and (ii) a copy of the annual certification set forth in Attachment Q, Appendix 1. As a condition to continued eligibility to transact in any PJM Market, Market Participants shall provide to PJM the annual certification set forth in Attachment Q, Appendix 1.

After the initial submission, the annual certification must be submitted each calendar year by all Market Participants between January 1 and April 30. PJM will accept such certifications as a matter of course and the Market Participants will not need further notice from PJM before commencing or maintaining their eligibility to participate in any PJM Markets.

A Market Participant that fails to provide its annual certification by April 30 shall be ineligible to transact in any PJM Markets and PJM will disable the Market Participant's access to any PJM Markets until such time as PJM receives the certification. In addition, failure to provide an

executed annual certification in a form acceptable to PJM and by the specified deadlines may result in a default under the Tariff.

Market Participants acknowledge and understand that the annual certification constitutes a representation upon which PJM will rely. Such representation is additionally made under the Tariff, filed with and accepted by FERC, and any false, misleading or incomplete statement knowingly made by the Market Participant and that is material to the Market Participant's ability to perform may be considered a violation of the Tariff and subject the Market Participant to action by FERC. Failure to comply with any of the criteria or requirements listed herein or in the certification may result in suspension or limitation of a Market Participant's transaction rights in any PJM Markets.

Applicants and Market Participants shall submit to PJM, upon request, any information or documentation reasonably and/or legally required to confirm Applicant's or Market Participant's compliance with the Agreements and the annual certification.

## **B. PJM Market Participation Eligibility Requirements**

PJM may conduct periodic verification to confirm that Applicants and Market Participants can demonstrate that they meet the definition of "appropriate person" to further ensure minimum criteria are in place. Such demonstration will consist of the submission of evidence and an executed Annual Officer Certification form as set forth in Attachment Q, Appendix 1 in a form acceptable to PJM. If an Applicant or Market Participant does not provide sufficient evidence for verification to PJM within five (5) Business Days of written request, then such Applicant or Market Participant may result in a default under this Tariff. Demonstration of "appropriate person" status and support of other certifications on the annual certification is one part of the Minimum Participation Requirements for any PJM Markets and does not obviate the need to meet the other Minimum Participation Requirements such as those for minimum capitalization and risk profile as set forth in this Attachment Q.

To be eligible to transact in any PJM Markets, an Applicant or Participant must demonstrate in accordance with the Risk Management and Verification processes set forth below that it qualifies in one of the following ways:

1. an "appropriate person," as that term is defined under Commodity Exchange Act, section 4(c)(3), or successor provision, or;
2. an "eligible contract participant," as that term is defined in Commodity Exchange Act, section 1a(18), or successor provision, or;
3. a business entity or person who is in the business of: (1) generating, transmitting, or distributing electric energy, or (2) providing electric energy services that are necessary to support the reliable operation of the transmission system, or;
4. an Applicant or Market Participant seeking eligibility as an "appropriate person" providing an unlimited Corporate Guaranty in a form acceptable to PJM as described

in section V below from a Guarantor that has demonstrated it is an “appropriate person,” and has at least \$1 million of total net worth or \$5 million of total assets per Applicant and Market Participant for which the Guarantor has issued an unlimited Corporate Guaranty, or;

5. an Applicant or Market Participant providing a Letter of Credit of at least \$5 million to PJM in a form acceptable to PJM as described in section V below, that the Applicant or Market Participant acknowledges is separate from, and cannot be applied to meet, its credit requirements to PJM.

If, at any time, a Market Participant cannot meet the eligibility requirements set forth above, it shall immediately notify PJM and immediately cease conducting transactions in any PJM Markets. PJM may terminate a Market Participant’s transaction rights in any PJM Markets if, at any time, it becomes aware that the Market Participant does not meet the minimum eligibility requirements set forth above.

In the event that a Market Participant is no longer able to demonstrate it meets the minimum eligibility requirements set forth above, and possesses, obtains or has rights to possess or obtain, any open or forward positions in any PJM Markets, PJM may take any such action it deems necessary with respect to such open or forward positions, including, but not limited to, liquidation, transfer, assignment, sale or allowing position(s) to go to settlement; provided, however, that the Market Participant will, notwithstanding its ineligibility to participate in any PJM Markets, be entitled to any positive market value of those positions, net of any obligations due and owing to PJM.

### **C. Risk Management and Verification**

All Market Participants must maintain current written risk management policies, procedures, or controls to address how market and credit risk is managed, and are required to submit to PJM (at the time they make their annual certification) a copy of their current governing risk control policies, procedures and controls applicable to their market activities. PJM will review such documentation to verify that it appears generally to conform to prudent risk management practices for entities participating in any PJM Markets.

All Market Participants subject to this provision shall make a one-time payment of \$1,500.00 to PJM to cover administrative costs. Thereafter, if such Participant’s risk policies, procedures and controls applicable to its market activities change substantively, it shall submit such modified documentation, with applicable administrative charge determined by PJM, to PJM for review and verification at the time it makes its annual certification. All Market Participant’s continued eligibility to participate in any PJM Markets is conditioned on PJM notifying a Participant that its annual certification, including the submission of its risk policies, procedures and controls, has been accepted by PJM. PJM may retain outside expertise to perform the review and verification function described in this section, however, in all circumstances, PJM and any third-party it may retain will treat as confidential the documentation provided by a Participant under this section, consistent with the applicable provisions of the Operating Agreement.

Participants must demonstrate that they have implemented prudent risk management policies and procedures in order to be eligible to participate in any PJM Markets. Participants must demonstrate on at least an annual basis that they have implemented and maintained prudent risk management policies and procedures in order to continue to participate in any PJM Markets. Upon written request, the Participant will have fourteen (14) calendar days to provide to PJM current governing risk management policies, procedures, or controls applicable to Participant's activities in any PJM Markets.

## **D. Capitalization**

In advance of certification, Applicants shall meet the minimum capitalization requirements below. In addition to the annual certification requirements in Attachment Q, Appendix 1, a Market Participant shall satisfy the minimum capitalization requirements on an annual basis thereafter. A Participant must demonstrate that it meets the minimum financial requirements appropriate for the PJM Markets in which it transacts by satisfying either the minimum capitalization or the provision of Collateral requirements listed below:

### **1. Minimum Capitalization**

Minimum capitalization may be met by demonstrating minimum levels of Tangible Net Worth or tangible assets. FTR Participants must demonstrate a Tangible Net Worth in excess of \$1 million or tangible assets in excess of \$10 million. Other Market Participants must demonstrate a Tangible Net Worth in excess of \$500,000 or tangible assets in excess of \$5 million.

(a) Consideration of tangible assets and Tangible Net Worth shall exclude assets which PJM reasonably believes to be restricted, highly risky, or potentially unavailable to settle a claim in the event of default. Examples include, but are not limited to, restricted assets, derivative assets, goodwill, and other intangible assets.

(b) Demonstration of "tangible" assets and Tangible Net Worth may be satisfied through presentation of an acceptable Corporate Guaranty, provided that both:

- (i) the Guarantor is a Credit Affiliate company that satisfies the Tangible Net Worth or tangible assets requirements herein, and;
- (ii) the Corporate Guaranty is either unlimited or at least \$500,000.

If the Corporate Guaranty presented by the Participant to satisfy these capitalization requirements is limited in value, then the Participant's resulting Unsecured Credit Allowance shall be the lesser of:

- (1) the applicable Unsecured Credit Allowance available to the Participant by the Corporate Guaranty pursuant to the creditworthiness provisions of this Attachment Q, or:



- (2) the face value of the Corporate Guaranty, reduced by \$500,000 and further reduced by 10%. (For example, a \$10.5 million Corporate Guaranty would be reduced first by \$500,000 to \$10 million and then further reduced 10% more to \$9 million. The resulting \$9 million would be the Participant's Unsecured Credit Allowance available through the Corporate Guaranty).

In the event that a Participant provides Collateral in addition to a limited Corporate Guaranty to increase its available credit, the value of such Collateral shall be reduced by 10%. This reduced value shall be considered the amount available to satisfy requirements of this Attachment Q.

- (c) Demonstrations of minimum capitalization (minimum Tangible Net Worth or tangible assets) must be presented in the form of audited financial statements for the Participant's most recent fiscal year during the initial risk evaluation process and ongoing risk evaluation process.

## **2. Provision of Collateral**

If a Participant does not demonstrate compliance with its applicable minimum capitalization requirements above, it may still qualify to participate in any PJM Markets by posting Collateral, additional Collateral, and/or Restricted Collateral, subject to the terms and conditions set forth herein.

Any Collateral provided by a Participant unable to satisfy the minimum capitalization requirements above will also be restricted in the following manner:

- (a) Collateral provided by Market Participants that engage in FTR transactions shall be reduced by an amount of the current risk plus any future risk to any PJM Markets and PJM membership in general, and may coincide with limitations on market participation. The amount of this Restricted Collateral shall not be available to cover any credit requirements from market activity. The remaining value shall be considered the amount available to satisfy requirements of this Attachment Q.
- (b) Collateral provided by other Participants that engage in Virtual Transactions or Export Transactions shall be reduced by \$200,000 and then further reduced by 10%. The amount of this Restricted Collateral shall not be available to cover any credit requirements from market activity. The remaining value shall be considered the amount available to satisfy requirements of this Attachment Q.
- (c) Collateral provided by other Participants that do not engage in Virtual Transactions or Export Transactions shall be reduced by 10%. The amount of this Restricted Collateral shall not be available to cover any credit requirements from market activity. The remaining value shall be considered the amount available to satisfy requirements of this Attachment Q.

In the event a Participant that satisfies the minimum capital requirement through provision of Collateral also provides a Corporate Guaranty to increase its available credit, then the Participant's resulting Unsecured Credit Allowance conveyed through such Corporate Guaranty shall be the lesser of:

- (a) the applicable Unsecured Credit Allowance available to the Participant by the Corporate Guaranty pursuant to the creditworthiness provisions of this Attachment Q; or
- (b) the face value of the Corporate Guaranty, reduced commensurate with the amount of the current risk plus any anticipated future risk to any PJM Markets and PJM membership in general, and may coincide with limitations on market participation.

#### **IV. ONGOING COVENANTS**

##### **A. Ongoing Obligation to Provide Information to PJM**

So long as a Participant is eligible to participate, or participates or holds positions, in any PJM Markets, it shall deliver to PJM, in form and detail satisfactory to PJM:

- (1) All financial statements and other financial disclosures as required by section II.E.2 by the deadline set forth therein;
- (2) Notice, within five (5) Business Days, of any Principal becoming aware that the Participant does not meet the Minimum Participation Requirements set forth in section III;
- (3) Notice when any Principal becomes aware of any matter that has resulted or would reasonably be expected to result in a Material Adverse Change in the financial condition of the Participant or its Guarantor, if any, a description of such Material Adverse Change in detail reasonable to allow PJM to determine its potential effect on, or any change in, the Participant's risk profile as a participant in any PJM Markets, by the deadline set forth in section II.E.3 above;
- (4) Notice, within the deadline set forth therein, of any Principal becoming aware of a litigation or contingency event described in section II.E.4, or of a Material Adverse Change in any such litigation or contingency event previously disclosed to PJM, information in detail reasonable to allow PJM to determine its potential effect on, or any change in, the Market Participant's risk profile as a participant in any PJM Markets by the deadline set forth therein;
- (5) Notice, within two (2) Business Days after any Principal becomes aware of a Credit Breach, Financial Default, or Credit Support Default, that includes a description of such default or event and the Participant's proposals for addressing the default or event;
- (6) As soon as available but not later than April 30<sup>th</sup> of any calendar year, the annual Certification described in section III.A in a form set forth in Attachment Q, Appendix 1;
- (7) Concurrently with submission of the annual certification, demonstration that the Participant meets the minimum capitalization requirements set forth in section III.D;

- (8) Concurrently with submission of the annual certification and within the applicable deadline of any substantive change, or within the applicable deadline of a request from PJM, a copy of the Participant's written risk management policies, procedures or controls addressing how the Participant manages market and credit risk in the PJM Markets in which it participates, as well as a high level summary by the chief risk officer or other Principal regarding any material violations, breaches, or compliance or disciplinary actions related to the risk management policies, by the Participant under the policies, procedures or controls within the prior 12 months, as set forth in section IV.B below;
- (9) Within five (5) Business Days of request by PJM, evidence demonstrating the Participant meets the definition of "appropriate person" or "eligible contract participant," as those terms are defined in the Commodity Exchange Act and the CFTC regulations promulgated thereunder, or of any other certification in the annual Certification; or
- (10) Within a reasonable time after PJM requests, any other information or documentation reasonably and/or legally required by PJM to confirm Participant's compliance with the Tariff and its eligibility to participate in any PJM Markets.

Participants acknowledge and understand that the deliveries constitute representations upon which PJM will rely in allowing the Participant to continue to participate in its markets, with the Internal Credit Score and Unsecured Credit Allowance, if any, previously determined by PJM.

## **B. Risk Management Review**

PJM shall also conduct a periodic compliance verification process to review and verify, as applicable, Participants' risk management policies, practices, and procedures pertaining to the Participant's activities in any PJM Markets. PJM shall review such documentation to verify that it appears generally to conform to prudent risk management practices for entities trading in any PJM Markets. Participant shall also provide a high level summary by the chief risk officer or other Principal regarding any material violations, breaches, or compliance or disciplinary actions in connection with such risk management policies, practices and procedures within the prior twelve (12) months.

If a third-party industry association publishes or modifies principles or best practices relating to risk management in North American markets for electricity, natural gas or electricity-related commodity products, PJM may, following stakeholder discussion and with no less than six (6) months prior notice to stakeholders, consider such principles or best practices in evaluating the Participant's risk controls.

PJM will prioritize the verification of risk management policies based on a number of criteria, including but not limited to how long the entity has been in business, the Participant's and its Principals' history of participation in any PJM Markets, and any other information obtained in determining the risk profile of the Participant.

Each Participant's continued eligibility to participate in any PJM Markets is conditioned upon PJM notifying the Participant of successful completion of PJM's verification of the Participant's risk management policies, practices and procedures, as discussed herein. However, if PJM notifies the Participant in writing that it could not successfully complete the verification process, PJM shall allow such Participant fourteen (14) calendar days to provide sufficient evidence for verification prior to declaring the Participant as ineligible to continue to participate in any PJM

Markets, which declaration shall be in writing with an explanation of why PJM could not complete the verification. If the Participant does not provide sufficient evidence for verification to PJM within the required cure period, such Participant will be considered in default under this Tariff. PJM may retain outside expertise to perform the review and verification function described in this paragraph. PJM and any third party it may retain will treat as confidential the documentation provided by a Participant under this paragraph, consistent with the applicable provisions of the Agreements. If PJM retains such outside expertise, a Participant may direct in writing that PJM perform the risk management review and verification for such Participant instead of utilizing a third party, provided however, that employees and contract employees of PJM shall not be considered to be such outside expertise or third parties.

Participants are solely responsible for the positions they take and the obligations they assume in any PJM Markets. PJM hereby disclaims any and all responsibility to any Participant or PJM Member associated with Participant's submitting or failure to submit its annual certification or PJM's review and verification of a Participant's risk policies, procedures and controls. Such review and verification is limited to demonstrating basic compliance by a Participant showing the existence of written policies, procedures and controls to limit its risk in any PJM Markets and does not constitute an endorsement of the efficacy of such policies, procedures or controls.

## **V. FORMS OF CREDIT SUPPORT**

In order to satisfy their PJM credit requirements Participants may provide credit support in a PJM-approved form and amount pursuant to the guidelines herein, provided that, notwithstanding anything to the contrary in this section, a Market Participant in PJM's FTR markets shall meet its credit support requirements related to those FTR markets with either cash or Letters of Credit.

Unless otherwise restricted by PJM, credit support provided may be used by PJM to secure the payment of Participant's financial obligations under the Agreements.

Collateral which may no longer be required to be maintained under provisions of the Agreements, shall be returned at the request of a Participant, no later than two (2) Business Days following determination by PJM within a commercially reasonable period of time that such Collateral is not required.

Except when an Event of Default has occurred, a Participant may substitute an approved PJM form of Collateral for another PJM approved form of Collateral of equal value.

### **A. Cash Deposit**

Cash provided by a Participant as Collateral will be held in a depository account by PJM. Interest shall accrue to the benefit of the Participant, provided that PJM may require Participants to provide appropriate tax and other information in order to accrue such interest credits.

PJM may establish an array of investment options among which a Participant may choose to invest its cash deposited as Collateral. The depository account shall be held in PJM's name in a

banking or financial institution acceptable to PJM. Where practicable, PJM may establish a means for the Participant to communicate directly with the bank or financial institution to permit the Participant to direct certain activity in the PJM account in which its Collateral is held. PJM will establish and publish procedural rules, identifying the investment options and respective discounts in Collateral value that will be taken to reflect any liquidation, market and/or credit risk presented by such investments.

Cash Collateral may not be pledged or in any way encumbered or restricted from full and timely use by PJM in accordance with terms of the Agreements.

PJM has the right to liquidate all or a portion of the Collateral account balance at its discretion to satisfy a Participant's Total Net Obligation to PJM in the Event of Default under this Attachment Q or one or more of the Agreements.

## **B. Letter of Credit**

An unconditional, irrevocable standby Letter of Credit can be utilized to meet the Collateral requirement. As stated below, the form, substance, and provider of the Letter of Credit must all be acceptable to PJM.

- (1) The Letter of Credit will only be accepted from U.S.-based financial institutions or U.S. branches of foreign financial institutions ("financial institutions") that have a minimum corporate debt rating of "A" by Standard & Poor's or Fitch Ratings, or "A2" from Moody's Investors Service, or an equivalent short term rating from one of these agencies. PJM will consider the lowest applicable rating to be the rating of the financial institution. If the rating of a financial institution providing a Letter of Credit is lowered below A/A2 by any Rating Agency, then PJM may require the Participant to provide a Letter of Credit from another financial institution that is rated A/A2 or better, or to provide a cash deposit. If a Letter of Credit is provided from a U.S. branch of a foreign institution, the U.S. branch must itself comply with the terms of this Attachment Q, including having its own acceptable credit rating.
- (2) The Letter of Credit shall state that it shall renew automatically for successive one-year periods, until terminated upon at least ninety (90) calendar days prior written notice from the issuing financial institution. If PJM or PJM receives notice from the issuing financial institution that the current Letter of Credit is being cancelled or expiring, the Participant will be required to provide evidence, acceptable to PJM, that such Letter of Credit will be replaced with appropriate Collateral, effective as of the cancellation date of the Letter of Credit, no later than thirty (30) calendar days before the cancellation date of the Letter of Credit, and no later than ninety (90) calendar days after the notice of cancellation. Failure to do so will constitute a default under this Attachment Q and one or more of the Agreements.
- (3) PJM will post on its web site an acceptable standard form of a Letter of Credit that should be utilized by a Participant choosing to submit a Letter of Credit to establish credit at PJM. If the Letter of Credit varies in any way from the standard format, it must first be

reviewed and approved by PJM. All costs associated with obtaining and maintaining a Letter of Credit and meeting the Attachment Q provisions are the responsibility of the Participant.

- (4) PJM may accept a Letter of Credit from a financial institution that does not meet the credit standards of this Attachment Q provided that the Letter of Credit has third-party support, in a form acceptable to PJM, from a financial institution that does meet the credit standards of this Attachment Q.

### **C. Corporate Guaranty**

An irrevocable and unconditional Corporate Guaranty may be utilized to establish an Unsecured Credit Allowance for a Participant. Such credit will be considered a transfer of Unsecured Credit from the Guarantor to the Participant, and will not be considered a form of Collateral.

PJM will post on its web site an acceptable form that should be utilized by a Participant choosing to establish its credit with a Corporate Guaranty. If the Corporate Guaranty varies in any way from the PJM format, it must first be reviewed and approved by PJM before it may be applied to satisfy the Participant's credit requirements.

The Corporate Guaranty must be signed by an officer of the Guarantor, and must demonstrate that it is duly authorized in a manner acceptable to PJM. Such demonstration may include either a corporate seal on the Corporate Guaranty itself, or an accompanying executed and sealed secretary's certificate from the Guarantor's corporate secretary noting that the Guarantor was duly authorized to provide such Corporate Guaranty and that the person signing the Corporate Guaranty is duly authorized, or other manner acceptable to PJM.

PJM will evaluate the creditworthiness of a Guarantor and will establish any Unsecured Credit granted through a Corporate Guaranty using the methodology and requirements established for Participants requesting an Unsecured Credit Allowance as described herein. Foreign Guaranties and Canadian Guaranties shall be subject to additional requirements as established herein. If PJM determines at any time that a Material Adverse Change in the financial condition of the Guarantor has occurred, or if the Corporate Guaranty comes within thirty (30) calendar days of expiring without renewal, PJM may reduce or eliminate any Unsecured Credit afforded to the Participant through the guaranty. Such reduction or elimination may require the Participant to provide Collateral within the applicable cure period. If the Participant fails to provide the required Collateral, the Participant shall be in default under this Attachment Q.

All costs associated with obtaining and maintaining a Corporate Guaranty and meeting the Attachment Q provisions are the responsibility of the Participant.

#### **1. Foreign Guaranties**

A Foreign Guaranty is a Corporate Guaranty that is provided by a Credit Affiliate entity that is domiciled in a country other than the United States or Canada. The entity providing a Foreign Guaranty on behalf of a Participant is a Foreign Guarantor. A Participant may provide a Foreign

Guaranty in satisfaction of part of its credit obligations or voluntary credit provision at PJM provided that all of the following conditions are met:

PJM reserves the right to deny, reject, or terminate acceptance of any Foreign Guaranty at any time, including for material adverse circumstances or occurrences.

(a) A Foreign Guaranty:

- (i) Must contain provisions equivalent to those contained in PJM’s standard form of Foreign Guaranty with any modifications subject to review and approval by PJM counsel.
- (ii) Must be denominated in US currency.
- (iii) Must be written and executed solely in English, including any duplicate originals.
- (iv) Will not be accepted towards a Participant’s Unsecured Credit Allowance for more than the following limits, depending on the Foreign Guarantor's credit rating:

| Rating of Foreign Guarantor | Maximum Accepted Guaranty if Country Rating is AAA | Maximum Accepted Guaranty if Country Rating is AA+ |
|-----------------------------|--|--|
| A- and above                | USD50,000,000                                      | USD30,000,000                                      |
| BBB+                        | USD30,000,000                                      | USD20,000,000                                      |
| BBB                         | USD10,000,000                                      | USD10,000,000                                      |
| BBB- or below               | USD 0  | USD 0  |

- (v) May not exceed 50% of the Participant’s total credit, if the Foreign Grantor is rated less than BBB+.

(b) A Foreign Guarantor:

- (i) Must satisfy all provisions of this Attachment Q applicable to domestic Guarantors.
- (ii) Must be a Credit Affiliate of the Participant.
- (iii) Must maintain an agent for acceptance of service of process in the United States; such agent shall be situated in the Commonwealth of Pennsylvania, absent legal constraint.
- (iv) Must be rated by at least one Rating Agency acceptable to PJM; the credit strength of a Foreign Guarantor may not be determined based on an evaluation of its audited financial statements without an actual credit rating as well.
- (v) Must have a senior unsecured (or equivalent, in PJM’s sole discretion) rating of BBB (one notch above BBB-) or greater by any and all agencies that provide rating coverage of the entity.
- (vi) Must provide audited financial statements, in US GAAP format or any other format acceptable to PJM, with clear representation of net worth, intangible assets, and any other information PJM may require in order to determine the entity’s Unsecured Credit Allowance.
- (vii) Must provide a Secretary’s Certificate from the Participant’s corporate secretary certifying the adoption of Corporate Resolutions:

1. Authorizing and approving the Guaranty; and
  2. Authorizing the Officers to execute and deliver the Guaranty on behalf of the Guarantor.
- (viii) Must be domiciled in a country with a minimum long-term sovereign (or equivalent) rating of AA+/Aa1, with the following conditions:
1. Sovereign ratings must be available from at least two rating agencies acceptable to PJM (e.g. S&P, Moody's, Fitch, DBRS).
  2. Each agency's sovereign rating for the domicile will be considered to be the lowest of: country ceiling, senior unsecured government debt, long-term foreign currency sovereign rating, long-term local currency sovereign rating, or other equivalent measures, at PJM's sole discretion.
  3. Whether ratings are available from two or three agencies, the lowest of the two or three will be used.
- (ix) Must be domiciled in a country that recognizes and enforces judgments of US courts.
- (x) Must demonstrate financial commitment to activity in the United States as evidenced by one of the following:
1. American Depository Receipts (ADR) are traded on the New York Stock Exchange, American Stock Exchange, or NASDAQ.
  2. Equity ownership worth over USD 100,000,000 in the wholly-owned or majority owned subsidiaries in the United States.
- (xi) Must satisfy all other applicable provisions of the PJM Tariff and/or Operating Agreement, including this Attachment Q.
- (xii) Must pay for all expenses incurred by PJM related to reviewing and accepting a foreign guaranty beyond nominal in-house credit and legal review.
- (xiii) Must, at its own cost, provide PJM with independent legal opinion from an attorney/solicitor of PJM's choosing and licensed to practice law in the United States and/or Guarantor's domicile, in form and substance acceptable to PJM in its sole discretion, confirming the enforceability of the Foreign Guaranty, the Guarantor's legal authorization to grant the Guaranty, the conformance of the Guaranty, Guarantor, and Guarantor's domicile to all of these requirements, and such other matters as PJM may require in its sole discretion.

## **2. Canadian Guaranties**

The entity providing a Canadian Guaranty on behalf of a Participant is a Canadian Guarantor. A Participant may provide a Canadian Guaranty in satisfaction of part of its credit obligations or voluntary credit provision at PJM provided that all of the following conditions are met.

PJM reserves the right to deny, reject, or terminate acceptance of any Canadian Guaranty at any time for reasonable cause, including material adverse circumstances or occurrences.

- (a) A Canadian Guaranty:



- (i) Must contain provisions equivalent to those contained in PJM's standard form of Foreign Guaranty with any modifications subject to review and approval by PJM counsel.
  - (ii) Must be denominated in US currency.
  - (iii) Must be written and executed solely in English, including any duplicate originals.
- (b) A Canadian Guarantor:
- (i) Must be a Credit Affiliate of the Participant.
  - (ii) Must satisfy all provisions of this Attachment Q applicable to domestic Guarantors.
  - (iii) Must maintain an agent for acceptance of service of process in the United States; such agent shall be situated in the Commonwealth of Pennsylvania, absent legal constraint.
  - (iv) Must be rated by at least one Rating Agency acceptable to PJM; the credit strength of a Canadian Guarantor may not be determined based on an evaluation of its audited financial statements without an actual credit rating as well.
  - (v) Must provide audited financial statements, in US GAAP format or any other format acceptable to PJM with clear representation of net worth, intangible assets, and any other information PJM may require in order to determine the entity's Unsecured Credit Allowance.
  - (vi) Must satisfy all other applicable provisions of the PJM Tariff and/or Operating Agreement, including this Attachment Q.

#### **D. PJM Administrative Charges**

Collateral or credit support held by PJM shall also secure obligations to PJM for PJM administrative charges, and may be liquidated to satisfy all such obligations in an Event of Default.

#### **E. Collateral and Credit Support Held by PJM**

Collateral or credit support submitted by Participants and held by PJM shall be held by PJM for the benefit of PJM.

### **VI. SUPPLEMENTAL CREDIT REQUIREMENTS FOR SCREENED TRANSACTIONS**

#### **A. Virtual and Export Transaction Screening**

##### **1. Credit for Virtual and Export Transactions**

Export Transactions and Virtual Transactions both utilize Credit Available for Virtual Transactions to support their credit requirements.

PJM does not require a Market Participant to establish separate or additional credit for submitting Virtual or Export Transactions; however, once transactions are submitted and

accepted by PJM, PJM may require credit supporting those transactions to be held until the transactions are completed and their financial impact incorporated into the Market Participant's Obligations. If a Market Participant chooses to establish additional Collateral and/or Unsecured Credit Allowance in order to increase its Credit Available for Virtual Transactions, the Market Participant's Working Credit Limit for Virtual Transactions shall be increased in accordance with the definition thereof. The Collateral and/or Unsecured Credit Allowance available to increase a Market Participant's Credit Available for Virtual Transactions shall be the amount of Collateral and/or Unsecured Credit Allowance available after subtracting any credit required for Minimum Participation Requirements, FTR, RPM or other credit requirement determinants defined in this Attachment Q, as applicable.

If a Market Participant chooses to provide additional Collateral in order to increase its Credit Available for Virtual Transactions PJM may establish a reasonable timeframe, not to exceed three months, for which such Collateral must be maintained. PJM will not impose such restriction on a deposit unless a Market Participant is notified prior to making the deposit. Such restriction, if applied, shall be applied to all future deposits by all Market Participants engaging in Virtual Transactions.

A Market Participant may increase its Credit Available for Virtual Transactions by providing additional Collateral to PJM. PJM will make a good faith effort to make new Collateral available as Credit Available for Virtual Transactions as soon as practicable after confirmation of receipt. In any event, however, Collateral received and confirmed by noon on a Business Day will be applied (as provided under this Attachment Q) to Credit Available for Virtual Transactions no later than 10:00 am on the following Business Day. Receipt and acceptance of wired funds for cash deposit shall mean actual receipt by PJM's bank, deposit into PJM's customer deposit account, confirmation by PJM that such wire has been received and deposited, and entry into PJM's credit system. Receipt and acceptance of letters of credit shall mean receipt of the original Letter of Credit or amendment thereto, confirmation from PJM's credit and legal staffs that such Letter of Credit or amendment thereto conforms to PJM's requirements, which confirmation shall be made in a reasonable and practicable timeframe, and entry into PJM's credit system. To facilitate this process, bidders submitting additional Collateral for the purpose of increasing their Credit Available for Virtual Transactions are advised to submit such Collateral well in advance of the desired time, and to specifically notify PJM of such submission.

A Market Participant wishing to submit Virtual or Export Transactions must allocate within PJM's credit system the appropriate amount of Credit Available for Virtual Transactions to the virtual and export allocation sections within each customer account in which it wishes to submit such transactions.

## **2. Virtual Transaction Screening**

All Virtual Transactions submitted to PJM shall be subject to a credit screen prior to acceptance in the Day-ahead Energy Market. The credit screen is applied separately for each of a Market Participant's customer accounts. The credit screen process will automatically reject Virtual Transactions submitted by the Market Participant in a customer account if the Market Participant's Credit Available for Virtual Transactions, allocated on a customer account basis, is

exceeded by the Virtual Credit Exposure that is calculated based on the Market Participant's Virtual Transactions submitted, as described below.

A Market Participant's Virtual Credit Exposure will be calculated separately for each customer account on a daily basis for all Virtual Transactions submitted by the Market Participant for the next Operating Day using the following equation:

Virtual Credit Exposure = INC and DEC Exposure + Up-to Congestion Exposure

Where:

(a) INC and DEC Exposure for each customer account is calculated as:

(i) ((the total MWh bid or offered, whichever is greater, hourly at each node) x the Nodal Reference Price x 1 day) summed over all nodes and all hours; plus (ii) ((the difference between the total bid MWh cleared and total offered MWh cleared hourly at each node) x Nodal Reference Price) summed over all nodes and all hours for the previous cleared Day-ahead Energy Market.

(b) Up-to Congestion Exposure for each customer account is calculated as:

(i) Total MWh bid hourly for each Up-to Congestion Transaction x (price bid – Up-to Congestion Reference Price) summed over all Up-to Congestion Transactions and all hours; plus (ii) Total MWh cleared hourly for each Up-to Congestion Transaction x (cleared price – Up-to Congestion Reference Price) summed over all Up-to Congestion Transactions and all hours for the previous cleared Day-ahead Energy Market, provided that hours for which the calculation for an Up-to Congestion Transaction is negative, it shall be deemed to have a zero contribution to the sum.

### **3. Export Transaction Screening**

Export Transactions in the Real-time Energy Market shall be subject to Export Transaction Screening. Export Transaction Screening may be performed either for the duration of the entire Export Transaction, or separately for each time interval comprising an Export Transaction. PJM will deny or curtail all or a portion (based on the relevant time interval) of an Export Transaction if that Export Transaction, or portion thereof, would otherwise cause the Market Participant's Export Credit Exposure to exceed its Credit Available for Export Transactions. Export Transaction Screening shall be applied separately for each Operating Day and shall also be applied to each Export Transaction one or more times prior to the market clearing process for each relevant time interval. Export Transaction Screening shall not apply to transactions established directly by and between PJM and a neighboring Balancing Authority for the purpose of maintaining reliability.

A Market Participant's credit exposure for an individual Export Transaction shall be the MWh volume of the Export Transaction for each relevant time interval multiplied by each relevant Export Transaction Price Factor and summed over all relevant time intervals of the Export Transaction.

## **B. RPM Auction and Price Responsive Demand Credit Requirements**

Settlement during any Delivery Year of cleared positions resulting or expected to result from any RPM Auction shall be included as appropriate in Peak Market Activity, and the provisions of this Attachment Q shall apply to any such activity and obligations arising therefrom. In addition, the provisions of this section shall apply to any entity seeking to participate in any RPM Auction, to address credit risks unique to such auctions. The provisions of this section also shall apply under certain circumstances to PRD Providers that seek to commit Price Responsive Demand pursuant to the provisions of the Reliability Assurance Agreement.

Credit requirements described herein for RPM Auctions and RPM bilateral transactions are applied separately for each customer account of a Market Participant. Market Participants wishing to participate in an RPM Auction or enter into RPM bilateral transactions must designate the appropriate amount of credit to each account in which their offers are submitted.

### **1. Applicability**

A Market Participant seeking to submit a Sell Offer in any RPM Auction based on any Capacity Resource for which there is a materially increased risk of nonperformance must satisfy the credit requirement specified herein before submitting such Sell Offer. A PRD Provider seeking to commit Price Responsive Demand for which there is a materially increased risk of non-performance must satisfy the credit requirement specified herein before it may commit the Price Responsive Demand. Credit must be maintained until such risk of non-performance is substantially eliminated, but may be reduced commensurate with the reduction in such risk, as set forth in section IV.B.3 below.

For purposes of this provision, a resource for which there is a materially increased risk of nonperformance shall mean: (i) a Planned Generation Capacity Resource; (ii) a Planned Demand Resource or an Energy Efficiency Resource; (iii) a Qualifying Transmission Upgrade; (iv) an existing or Planned Generation Capacity Resource located outside the PJM Region that at the time it is submitted in a Sell Offer has not secured firm transmission service to the border of the PJM Region sufficient to satisfy the deliverability requirements of the Reliability Assurance Agreement; or (v) Price Responsive Demand to the extent the responsible PRD Provider has not registered PRD-eligible load at a PRD Substation level to satisfy its Nominal PRD Value commitment, in accordance with Reliability Assurance Agreement, Schedule 6.1.

### **2. Reliability Pricing Model Auction and Price Responsive Demand Credit Requirement**

Except as provided for Credit-Limited Offers below, for any resource specified in section IV.B.1 above, other than Price Responsive Demand, the credit requirement shall be the RPM Auction Credit Rate, as provided in section IV.B.4 below, times the megawatts to be offered for sale from such resource in an RPM Auction. For Qualified Transmission Upgrades, the credit requirements shall be based on the Locational Deliverability Area in which such upgrade was to increase the Capacity Emergency Transfer Limit. However, the credit requirement for Planned Financed Generation Capacity Resources and Planned External Financed Generation Capacity

Resources shall be one half of the product of the RPM Auction Credit Rate, as provided in section IV.B.4 below, times the megawatts to be offered for sale from such resource in a Reliability Pricing Model Auction. The RPM Auction Credit Requirement for each Market Participant shall be determined on a customer account basis, separately for each customer account of a Market Participant, and shall be the sum of the credit requirements for all such resources to be offered by such Market Participant in the auction or, as applicable, cleared by such Market Participant in the relevant auctions. For Price Responsive Demand, the credit requirement shall be based on the Nominal PRD Value (stated in Unforced Capacity terms) times the Price Responsive Demand Credit Rate as set forth in section IV.B.5 below. Except for Credit-Limited Offers, the RPM Auction Credit requirement for a Market Participant will be reduced for any Delivery Year to the extent less than all of such Market Participant's offers clear in the Base Residual Auction or any Incremental Auction for such Delivery Year. Such reduction shall be proportional to the quantity, in megawatts, that failed to clear in such Delivery Year.

A Sell Offer based on a Planned Generation Capacity Resource, Planned Demand Resource, or Energy Efficiency Resource may be submitted as a Credit-Limited Offer. A Market Participant electing this option shall specify a maximum amount of Unforced Capacity, in megawatts, and a maximum credit requirement, in dollars, applicable to the Sell Offer. A Credit-Limited Offer shall clear the RPM Auction in which it is submitted (to the extent it otherwise would clear based on the other offer parameters and the system's need for the offered capacity) only to the extent of the lesser of: (i) the quantity of Unforced Capacity that is the quotient of the division of the specified maximum credit requirement by the Auction Credit Rate resulting from section IV.B.4.b. below; and (ii) the maximum amount of Unforced Capacity specified in the Sell Offer. For a Market Participant electing this alternative, the RPM Auction Credit requirement applicable prior to the posting of results of the auction shall be the maximum credit requirement specified in its Credit-Limited Offer, and the RPM Auction Credit requirement subsequent to posting of the results will be the Auction Credit Rate, as provided in section IV.B.4.b, c. or d. of this Attachment Q, as applicable, times the amount of Unforced Capacity from such Sell Offer that cleared in the auction. The availability and operational details of Credit-Limited Offers shall be as described in the PJM Manuals.

As set forth in section IV.B.4 below, a Market Participant's Auction Credit requirement shall be determined separately for each Delivery Year.

### **3. Reduction in Credit Requirement**

As specified below, the RPM Auction Credit Rate may be reduced under certain circumstances after the auction has closed.

The Price Responsive Demand credit requirement shall be reduced as and to the extent the PRD Provider registers PRD-eligible load at a PRD Substation level to satisfy its Nominal PRD Value commitment, in accordance with Reliability Assurance Agreement, Schedule 6.1.

In addition, the RPM Auction Credit requirement for a Market Participant for any given Delivery Year shall be reduced periodically, after the Market Participant has provided PJM a written request for each reduction, accompanied by documentation sufficient for PJM to verify

attainment of required milestones or satisfaction of other requirements, and PJM has verified that the Market Participant has successfully met progress milestones for its Capacity Resource that reduce the risk of non-performance, as follows:

- (a) For Planned Demand Resources and Energy Efficiency Resources, the RPM Auction Credit requirement will be reduced in direct proportion to the megawatts of such Demand Resource that the Resource Provider qualifies as a Capacity Resource, in accordance with the procedures established under the Reliability Assurance Agreement.
- (b) For Existing Generation Capacity Resources located outside the PJM Region that have not secured sufficient firm transmission to the border of the PJM Region prior to the auction in which such resource is first offered, the RPM Auction Credit requirement shall be reduced in direct proportion to the megawatts of firm transmission service secured by the Market Participant that qualify such resource under the deliverability requirements of the Reliability Assurance Agreement.
- (c) For Planned Generation Capacity Resources located in the PJM Region, the RPM Auction Credit requirement shall be reduced as the Capacity Resource attains the milestones stated in the following table and as further described in the PJM Manuals.

| Milestones   | Increment of reduction from initial RPM Auction Credit requirement |
|--|--|
| Effective Date of Interconnection Service Agreement                            | 50%  |
| Financial Close  | 15%  |
| Full Notice to Proceed and Commencement of Construction (e.g., footers poured) | 5%   |
| Main Power Generating Equipment Delivered                                      | 5%   |
| Commencement of Interconnection Service  | 25%  |

For externally financed projects, the Market Participant must submit with its request for reduction a sworn, notarized certification of a duly authorized independent engineer for the Financial Close, Full Notice to Proceed and Commencement of Construction, and Main Power Generating Equipment Delivered milestones.

For internally financed projects, the Market Participant must submit with its request for reduction a sworn, notarized certification of a duly authorized officer of the Market Participant for the Financial Close milestone and either a duly authorized independent engineer or Professional Engineer for the Full Notice to Proceed and Commencement of Construction and the Main Power Generating Equipment Delivered milestones.

The required certifications must be in a form acceptable to PJM, certifying that the engineer or officer, as applicable, has personal knowledge, or has engaged in a diligent inquiry to determine, that the milestone has been achieved and that, based on its review of the relevant project

information, the engineer or officer, as applicable, is not aware of any information that could reasonably cause it to believe that the Capacity Resource will not be in-service by the beginning of the applicable Delivery Year. The Market Participant shall, if requested by PJM, supply to PJM on a confidential basis all records and documents relating to the engineer's and/or officer's certifications.

(d) For Planned External Generation Capacity Resources, the RPM Auction Credit requirement shall be reduced as the Capacity Resource attains the milestones stated in the following table and as further described in the PJM Manuals; provided, however, that the total percentage reduction in the RPM Auction Credit requirement shall be no greater than the quotient of (i) the MWs of firm transmission service that the Market Participant has secured for the complete transmission path divided by (ii) the MWs of firm transmission service required to qualify such resource under the deliverability requirements of the Reliability Assurance Agreement.

| <b>Credit Reduction Milestones for Planned External Generation Capacity Resources</b> |   |
|---|---|
| <b>Milestones</b>   | <b>Increment of reduction from initial RPM Auction Credit requirement</b> |
| Effective Date of the equivalent of an Interconnection Service Agreement              | 50%   |
| Financial Close   | 15%   |
| Full Notice to Proceed and Commencement of Construction (e.g., footers poured)        | 5%  |
| Main Power Generating Equipment Delivered   | 5%  |
| Commencement of Interconnection Service   | 25%   |

To obtain a reduction in its RPM Auction Credit requirement, the Market Participant must demonstrate satisfaction of the applicable milestone in the same manner as set forth for Planned Generation Capacity Resources in subsection (c) above.

(e) For Planned Financed Generation Capacity Resources located in the PJM Region, the RPM Auction Credit requirement shall be reduced as the Capacity Resource attains the milestones stated in the following table and as further described in the PJM Manuals.

| <b>Credit Reduction Milestones for Planned Financed Generation Capacity Resources</b> |   |
|---|---|
| <b>Milestones</b>   | <b>Increment of reduction from initial RPM Auction Credit requirement</b> |
| Full Notice to Proceed  | 50%   |
| Commencement of Construction (e.g., footers poured)                                   | 15%   |
| Main Power Generating Equipment Delivered   | 10%   |
| Commencement of Interconnection Service   | 25%   |

To obtain a reduction in its RPM Auction Credit requirement, the Market Participant must demonstrate satisfaction of the applicable milestone in the same manner as set forth for Planned Generation Capacity Resources in subsection (c) above.

(f) For Planned External Financed Generation Capacity Resources, the RPM Auction Credit Requirement shall be reduced as the Capacity Resource attains the milestones stated in the following table and as further described in the PJM Manuals; provided, however, that the total percentage reduction in the RPM Auction Credit requirement, including the initial 50% reduction for being a Planned External Financed Generation Capacity Resources, shall be no greater than the quotient of (i) the MWs of firm transmission service that the Market Participant has secured for the complete transmission path divided by (ii) the MWs of firm transmission service required to qualify such resource under the deliverability requirements of the Reliability Assurance Agreement.

| <b>Credit Reduction Milestones for Planned External Financed Generation Capacity</b> |   |
|--|---|
| <b>Milestones</b>  | <b>Increment of reduction from initial RPM Auction Credit requirement</b> |
| Full Notice to Proceed   | 50%   |
| Commencement of Construction (e.g., footers poured)                                  | 15%   |
| Main Power Generating Equipment Delivered  | 10%   |
| Commencement of Interconnection Service  | 25%   |

To obtain a reduction in its RPM Auction Credit requirement, the Market Participant must demonstrate satisfaction of the applicable milestone in the same manner as set forth for Planned Generation Capacity Resources in subsection (c) above.

(g) For Qualifying Transmission Upgrades, the RPM Auction Credit requirement shall be reduced to 50% of the amount calculated under section IV.B.2 above beginning as of the effective date of the latest associated Interconnection Service Agreement (or, when a project will have no such agreement, an Upgrade Construction Service Agreement), and shall be reduced to zero on the date the Qualifying Transmission Upgrade is placed in service.

#### **4. RPM Auction Credit Rate**

As set forth in the PJM Manuals, a separate Auction Credit Rate shall be calculated for each Delivery Year prior to each RPM Auction for such Delivery Year, as follows:

(a) Prior to the posting of the results of a Base Residual Auction for a Delivery Year, the Auction Credit Rate shall be:

- (i) For all Capacity Resources other than Capacity Performance Resources, (the greater of (A) 0.3 times the Net Cost of New Entry for the PJM Region for such Delivery Year, in MW-day or (B) \$20 per MW-day) times the number of calendar days in such Delivery Year; and



- (ii) For Capacity Performance Resources, the greater of ((A) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in MW-day or (B) \$20 per MW-day) times the number of calendar days in such Delivery Year.
  - (iii) For Seasonal Capacity Performance Resources, the same as the Auction Credit Rate for Capacity Performance Resources, but reduced to be proportional to the number of calendar days in the relevant season.
- (b) Subsequent to the posting of the results from a Base Residual Auction, the Auction Credit Rate used for ongoing credit requirements for supply committed in such auction shall be:
- (i) For all Capacity Resources other than Capacity Performance Resources, (the greater of (A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located) times the number of calendar days in such Delivery Year; and
  - (ii) For Capacity Performance Resources, the (greater of [(A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located) or (C) the lesser of (1) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (2) 1.5 times the Net Cost of New Entry (stated on an installed capacity basis) for the PJM Region for such Delivery year or for the Relevant LDA, in \$/MW-day minus (the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located)] times the number of calendar days in such Delivery Year).
  - (iii) For Seasonal Capacity Performance Resources, the same as the Auction Credit Rate for Capacity Performance Resources, but reduced to be proportional to the number of calendar days in the relevant season.
- (c) For any resource not previously committed for a Delivery Year that seeks to participate in an Incremental Auction, the Auction Credit Rate shall be:
- (i) For all Capacity Resources other than Capacity Performance Resources, (the greater of (A) 0.3 times the Net Cost of New Entry for the PJM Region for such Delivery Year, in MW-day or (B) 0.24 times the Capacity Resource Clearing Price in the Base Residual Auction for such Delivery Year for the Locational Deliverability Area within which the resource is located or (C) \$20 per MW-day) times the number of calendar days in such Delivery Year; and
  - (ii) For Capacity Performance Resources, the (greater of (A) 0.5 times Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA or (B) \$20/MW-day) times the number of calendar days in such Delivery Year.

(d) Subsequent to the posting of the results of an Incremental Auction, the Auction Credit Rate used for ongoing credit requirements for supply committed in such auction shall be:

- (i) For Base Capacity Resources: (the greater of (A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located) times the number of calendar days in such Delivery Year, but no greater than the Auction Credit Rate previously established for such resource's participation in such Incremental Auction pursuant to subsection (c) above) times the number of calendar days in such Delivery Year;
- (ii) For Capacity Performance Resources, the greater of [(A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located or (C) the lesser of (1) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (2) 1.5 times the Net Cost of New Entry (stated on an installed capacity basis) for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day minus (the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the resource is located)] times the number of calendar days in such Delivery Year); and
- (iii) For Seasonal Capacity Performance Resources, the same as the Auction Credit Rate for Capacity Performance Resources, but reduced to be proportional to the number of calendar days in the relevant season.

(e) For the purposes of this section IV.B.4 and section IV.B.5 below, "Relevant LDA" means the Locational Deliverability Area in which the Capacity Performance Resource is located if a separate Variable Resource Requirement Curve has been established for that Locational Deliverability Area for the Base Residual Auction for such Delivery Year.

## **5. Price Responsive Demand Credit Rate**

(a) For the 2018/2019 through 2022/2023 Delivery Years:

- (i) Prior to the posting of the results of a Base Residual Auction for a Delivery Year, the Price Responsive Demand Credit Rate shall be (the greater of (A) 0.3 times the Net Cost of New Entry for the PJM Region for such Delivery Year, in MW-day or (B) \$20 per MW-day) times the number of calendar days in such Delivery Year;
- (ii) Subsequent to the posting of the results from a Base Residual Auction, the Price Responsive Demand Credit Rate used for ongoing credit requirements for Price Responsive Demand committed in such auction shall be (the greater of (A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the Price Responsive

Demand load is located, in \$/MW-day) times the number of calendar days in such Delivery Year times a final price uncertainty factor of 1.05;

- (iii) For any additional Price Responsive Demand that seeks to commit in a Third Incremental Auction in response to a qualifying change in the final LDA load forecast, the Price Responsive Demand Credit Rate shall be the same as the rate for Price Responsive Demand that had cleared in the Base Residual Auction; and
  - (iv) Subsequent to the posting of the results of the Third Incremental Auction, the Price Responsive Demand Credit Rate used for ongoing credit requirements for all Price Responsive Demand, shall be (the greater of (i) \$20/MW-day or (ii) 0.2 times the Final Zonal Capacity Price for the Locational Deliverability Area within which the Price Responsive Demand is located) times the number of calendar days in such Delivery Year, but no greater than the Price Responsive Demand Credit Rate previously established under subsections (a)(i), (a)(ii), or (a)(iii) of this section for such Delivery Year.
- (b) For the 2022/2023 Delivery Year and Subsequent Delivery Years:
- (i) Prior to the posting of the results of a Base Residual Auction for a Delivery Year, the Price Responsive Demand Credit Rate shall be (the greater of (A) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (B) \$20 per MW-day) times the number of calendar days in such Delivery Year;
  - (ii) Subsequent to the posting of the results from a Base Residual Auction, the Price Responsive Demand Credit Rate used for ongoing credit requirements for Price Responsive Demand committed in such auction shall be (the greater of [(A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the Price Responsive Demand is located, in \$/MW-day or (C) the lesser of (1) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (2) 1.5 times the Net Cost of New Entry (stated on an installed capacity basis) for the PJM Region for such Delivery year or for the Relevant LDA, in \$/MW-day minus (the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the Price Responsive Demand is located)] times the number of calendar days in such Delivery Year;
  - (iii) For any additional Price Responsive Demand that seeks to commit in a Third Incremental Auction in response to a qualifying change in the final LDA load forecast, the Price Responsive Demand Credit Rate shall be (the greater of (A) 0.5 times Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (B) \$20/MW-day) times the number of calendar days in such Delivery Year; and

- (iv) Subsequent to the posting of the results of the Third Incremental Auction, the Price Responsive Demand Credit Rate used for ongoing credit requirements for all Price Responsive Demand committed in such auction shall be the greater of [(A) \$20/MW-day or (B) 0.2 times the Capacity Resource Clearing Price in such auction for the Locational Deliverability Area within which the Price Responsive Demand is located or (C) the lesser of (1) 0.5 times the Net Cost of New Entry for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day or (2) 1.5 times the Net Cost of New Entry (stated on an installed capacity basis) for the PJM Region for such Delivery Year or for the Relevant LDA, in \$/MW-day minus (the Capacity Performance Resource Clearing Price in such Incremental Auction for the Locational Deliverability Areas within which the Price Responsive Demand is located)] times the number of calendar days in such Delivery Year.

## **6. RPM Seller Credit - Additional Form of Unsecured Credit for RPM**

In addition to the forms of credit specified elsewhere in this Attachment Q, RPM Seller Credit shall be available to Market Participants, but solely for purposes of satisfying RPM Auction Credit requirements. If a supplier has a history of being a net seller into PJM Markets, on average, over the past 12 months, then PJM will count as available Unsecured Credit twice the average of that Market Participant's total net monthly PJM bills over the past 12 months. This RPM Seller Credit shall be subject to the cap on available Unsecured Credit as established in section II.G.3 above.

RPM Seller Credit is calculated as a single value for each Market Participant, not separately by account, and must be designated to specific customer accounts in order to be available to satisfy RPM Auction Credit requirements that are calculated in each such customer account.

## **7. Credit Responsibility for Traded Planned RPM Capacity Resources**

PJM may require that credit and financial responsibility for planned Capacity Resources that are traded remain with the original party (which for these purposes, means the party bearing credit responsibility for the planned Capacity Resource immediately prior to trade) unless the receiving party independently establishes consistent with this Attachment Q, that it has sufficient credit with PJM and agrees by providing written notice to PJM that it will fully assume the credit responsibility associated with the traded planned Capacity Resource.

## **C. Financial Transmission Right Auctions**

Credit requirements described herein for FTR activity are applied separately for each customer account of a Market Participant, unless specified otherwise in this section C. FTR Participants must designate the appropriate amount of credit to each separate customer account in which any activity occurs or will occur.

### **1. FTR Credit Limit.**

Participants must maintain their FTR Credit Limit at a level equal to or greater than their FTR Credit Requirement for each applicable account. FTR Credit Limits will be established only by a Participant providing Collateral and designating the available credit to specific accounts.

## **2. FTR Credit Requirement.**

For each Market Participant with FTR activity, PJM shall calculate an FTR Credit Requirement. The FTR Credit Requirement shall be based on FTR cost, FTR Historical Value and MWh volume, anticipated FTR activity for new Market Participants, and anticipated change in exposure for existing Market Participants newly participating in the FTR market, and may be increased to reflect any change in exposure based on the most recent applicable FTR auction prices, as further described below.

FTR Historical Values shall be calculated separately for on-peak, off-peak, and 24-hour FTRs for each month of the year. FTR Historical Values shall be adjusted by plus or minus ten percent for cleared counter flow or prevailing flow FTRs, respectively, in order to mitigate exposure due to uncertainty and fluctuations in actual FTR value. Historical values used in the calculation of FTR Historical Values shall be adjusted when the network simulation model utilized in PJM's economic planning process indicates that transmission congestion will decrease due to certain transmission upgrades that are in effect or planned to go into effect for the following Planning Period. The transmission upgrades to be modeled for this purpose shall only include those upgrades that, individually, or together, have 10% or more impact on the transmission congestion on an individual constraint or constraints with congestion of \$5 million or more affecting a common congestion path. The adjustments to historical values shall be the dollar amount of the adjustment shown in the network simulation model.

If FTR cost less the FTR Historical Value, plus any applicable increase related to portfolio diversification as described in section C.6 below, results in a value that is less than ten cents (10¢) per MWh, the FTR Credit Requirement shall be increased to ten cents (10¢) per MWh. When calculating the portfolio MWh for this comparison, for cleared "Sell" FTRs, the MWh shall be subtracted from the portfolio total; prior to clearing, the MWh for "Sell" FTRs shall not be included in the portfolio total. FTR Credit Requirements shall be further adjusted by ARR credits available and by an amount based on portfolio diversification, if applicable. The requirement will be based on individual monthly exposures which are then used to derive a total requirement.

The FTR Credit Requirement shall be calculated by first adding for each month the FTR Monthly Credit Requirement Contribution for each submitted, accepted, and cleared FTR and then subtracting the prorated value of any ARRs held by the Market Participant for that month. The resulting twelve monthly subtotals represent the expected value of net payments between PJM and the Market Participant for FTR activity each month during the Planning Period. Subject to later adjustment by an amount based on portfolio diversification, if applicable, and subject to later adjustment for auction prices, the FTR Credit Requirement shall be the sum of the individual positive monthly subtotals, representing months in which net payments to PJM are expected.

### **3. Rejection of FTR Bids.**

Bids submitted into an auction will be rejected if the Market Participant's FTR Credit Requirement including such submitted bids would exceed the Market Participant's FTR Credit Limit, or if the Market Participant fails to provide additional credit support or additional Collateral as required pursuant to provisions related to portfolio diversification and mark-to-auction.

### **4. FTR Credit Collateral Returns.**

A Market Participant may request from PJM the return of any Collateral no longer required for the FTR markets. PJM is permitted to limit the frequency of such requested Collateral returns, provided that Collateral returns shall be made by PJM at least once per calendar quarter, if requested by a Market Participant.

### **5. Credit Responsibility for Bilateral Transfers of FTRs.**

PJM may require that credit responsibility associated with an FTR bilaterally transferred to a new Market Participant remain with the original party (which for these purposes, means the party bearing credit responsibility for the FTR immediately prior to bilateral transfer) unless and until the receiving party independently establishes, consistent with this Attachment Q, sufficient credit with PJM and agrees through confirmation of the bilateral transfer in PJM's FTR reporting tool that it will meet in full the credit requirements associated with the transferred FTR.

### **6. Portfolio Diversification.**

Portfolio diversification shall be calculated, and the appropriate provisions herein applied, separately for each customer account of a Market Participant, and separately for each month.

Subsequent to calculating a tentative cleared solution for an FTR auction (or auction round), PJM shall determine the FTR Portfolio Auction Value for each customer account of a Market Participant, including the tentative cleared solution. Any customer accounts with such FTR Portfolio Auction Values that are negative in one or more months shall be deemed "FTR Flow Undiversified."

For customer accounts that are FTR Flow Undiversified in a month, PJM shall increment the FTR Credit Requirement by an amount equal to three times the absolute value of the FTR Portfolio Auction Value in that month, including the tentative cleared solution. For portfolios that are FTR Flow Undiversified in months subsequent to the current planning year, these incremental amounts, calculated on a monthly basis, shall be reduced (but not below zero) by an amount up to 25% of the monthly value of ARR credits that are held by a Market Participant. Subsequent to the ARR allocation process preceding an annual FTR auction, such ARR credits shall be reduced to zero for months associated with that ARR allocation process. PJM may recalculate such ARR credits at any time, but at a minimum shall do so subsequent to each annual FTR auction. If a reduction in such ARR credits at any time increases an FTR Participant's FTR Credit Requirements beyond its credit available for FTR activity, the FTR

Participant must increase its credit to eliminate the shortfall in the applicable customer account(s).

If the FTR Credit Requirement for any Market Participant's customer account exceeds its credit available for FTRs as a result of these diversification requirements for the tentatively cleared portfolio of FTRs, PJM shall immediately issue a demand for additional credit, and such demand must be fulfilled before 4:00 p.m. on the Business Day following the demand. If any Market Participant does not timely satisfy such demand, PJM shall cause the removal of that Market Participant's entire set of bids in that account for that FTR auction (or auction round) and a new cleared solution shall be calculated for the entire auction (or auction round).

If necessary, PJM shall repeat the auction clearing calculation. PJM shall repeat these portfolio diversification calculations subsequent to any secondary clearing calculation, and PJM shall require affected Market Participants to establish additional credit.

#### **7. FTR Administrative Charge Credit Requirement**

In addition to any other credit requirements, PJM may apply a credit requirement to cover the maximum administrative fees that may be charged to a Market Participant for its bids and offers.

#### **8. Long-Term FTR Credit Recalculation**

Long-term FTR Credit Requirement calculations shall be updated annually for known history, consistent with updating of historical values used for FTR Credit Requirement calculations in the annual auctions. If the historical value update results in an FTR Credit Requirement for any Market Participant's customer account that exceeds its credit available for FTR activity, then PJM shall issue a Collateral Call equal to the lesser of the increase in the FTR Credit Requirement from the historical value adjustment and the credit shortfall after the historical value adjustment.

#### **9. Mark-to-Auction**

A Mark-to-Auction Value shall be calculated separately for each customer account of a Market Participant. For each such customer account, the Mark-to-Auction Value shall be a single number equal to the sum, over all months remaining in the applicable FTR period and for all cleared FTRs in the customer account, of the most recently available cleared auction price applicable to the FTR minus the original transaction price of the FTR, multiplied by the transacted quantity.

The FTR Credit Requirement, as otherwise described above, shall be increased when the Mark-to-Auction Value is negative. The increase shall equal the absolute value of the negative Mark-to-Auction Value less the value of ARR credits that are held in the customer account and have not been used to reduce the FTR Credit Requirement prior to application of the Mark-to-Auction Value. PJM shall recalculate ARR credits held by each Market Participant after each annual FTR auction and may also recalculate such ARR credits at any other additional time intervals it

deems appropriate. Application of the Mark-to-Auction Value, including the effect from ARR application, shall not decrease the FTR Credit Requirement.

For Market Participant customer accounts for which FTR bids have been submitted into the current FTR auction, if the Market Participant's FTR Credit Requirement exceeds its credit available for FTRs as a result of the mark-to-auction requirements for the Market Participant's portfolio of FTRs in the tentative cleared solution for an FTR auction (or auction round), PJM shall issue a Collateral Call to the Market Participant, and the Market Participant must fulfill such demand before 4:00 p.m. on the following Business Day. If a Market Participant does not timely satisfy such Collateral Call, PJM shall, in coordination with PJM, cause the removal of all of that Market Participant's bids in that FTR auction (or auction round), submitted from such Market Participant's customer account, and a new cleared solution shall be calculated for the FTR auction (or auction round).

If necessary, PJM shall repeat the auction clearing calculation. PJM shall repeat these mark-to-auction calculations subsequent to any secondary clearing calculation, and PJM shall require affected Market Participants to establish additional credit.

Subsequent to final clearing of an FTR auction or an annual FTR auction round, PJM shall recalculate the FTR Credit Requirement for all FTR portfolios, and, as applicable, issue to each Market Participant an MTA Collateral Call for the total amount by which the FTR Credit Requirement exceeds the credit allocated in any of the Market Participant's accounts.

If the MTA Collateral Call is not satisfied within the applicable cure period referenced in Operating Agreement, section 15, then such Market Participant shall be restricted in all of its credit-screened transactions. Specifically, such Market Participant may not engage in any Virtual Transactions or Export Transactions, or participate in RPM Auctions or other RPM activity. Such Market Participant may engage only in the selling of open FTR positions, either in FTR auctions or bilaterally, provided such sales would reduce the Market Participant's FTR Credit Requirements. PJM shall not return any Collateral to such Market Participant, and no payment shall be due or payable to such Market Participant, until its credit shortfall is remedied. Market Participant shall allocate any excess or unallocated Collateral to any of its account in which there is a credit shortfall. Market Participants may remedy their credit shortfall at any time through provision of sufficient Collateral.

If a Market Participant fails to satisfy MTA Collateral Calls for two consecutive auctions of overlapping periods, e.g. two balance of Planning Period auctions, an annual FTR auction and a balance of Planning Period auction, or two long term FTR auctions, (for this purpose the four rounds of an annual FTR auction shall be considered a single auction), the Market Participant shall be declared in default of this Attachment Q.

## **VII. PEAK MARKET ACTIVITY AND WORKING CREDIT LIMIT**

### **A. Peak Market Activity Credit Requirement**



PJM shall calculate a Peak Market Activity credit requirement for each Participant. Each Participant must maintain sufficient Unsecured Credit Allowance and/or Collateral, as applicable, and subject to the provisions herein, to satisfy its Peak Market Activity credit requirement.

Peak Market Activity for Participants will be determined semi-annually, utilizing an initial Peak Market Activity, as explained below, calculated after the first complete billing week in the months of April and October. Peak Market Activity shall be the greater of the initial Peak Market Activity, or the greatest amount invoiced for the Participant's transaction activity for all PJM Markets and services in any rolling one, two, or three week period, ending within a respective semi-annual period. However, Peak Market Activity shall not exceed the greatest amount invoiced for the Participant's transaction activity for all PJM Markets and services in any rolling one, two or three week period in the prior 52 weeks. Peak Market Activity shall exclude FTR Net Activity, Virtual Transactions Net Activity, and Export Transactions Net Activity.

When calculating Peak Market Activity, PJM may attribute credits for Regulation service to the days on which they were accrued, rather than including them in the month-end invoice.

The initial Peak Market Activity for Applicants will be determined by PJM based on a review of an estimate of their transactional activity for all PJM Markets and services over the next 52 weeks, which the Applicant shall provide to PJM.

The initial Peak Market Activity for Market Participants and Transmission Customers, calculated at the beginning of each semi-annual period, shall be the three-week average of all non-zero invoice totals over the previous 52 weeks. This calculation shall be performed and applied within three (3) Business Days following the day the invoice is issued for the first full billing week in the current semi-annual period.

Prepayments shall not affect Peak Market Activity unless otherwise agreed to in writing pursuant to this Attachment Q.

Peak Market Activity calculations shall take into account reductions of invoice values effectuated by early payments which are applied to reduce a Participant's Peak Market Activity as contemplated by other terms of this Attachment Q; provided that the initial Peak Market Activity shall not be less than the average value calculated using the weeks for which no early payment was made.

A Participant may reduce its Collateral requirement by agreeing in writing (in a form acceptable to PJM) to make additional payments, including prepayments, as and when necessary to ensure that such Participant's Total Net Obligation at no time exceeds such reduced Collateral requirement.

PJM may, at its discretion, adjust a Participant's Peak Market Activity requirement if PJM determines that the Peak Market Activity is not representative of such Participant's expected activity, as a consequence of known, measurable, and sustained changes. Such changes may

include, but shall not be limited to when a Participant makes PJM aware of federal, state or local law that could affect the allocation of charges or credits from a Participant to another party, the loss (without replacement) of short-term load contracts, when such contracts had terms of three months or more and were acquired through state-sponsored retail load programs, but shall not include short-term buying and selling activities.

PJM may waive the credit requirements for a Participant that has no outstanding transactions and agrees in writing that it shall not, after the date of such agreement, incur obligations under any of the Agreements. Such entity's access to all electronic transaction systems administered by PJM shall be terminated.

A Participant receiving unsecured credit may make early payments up to ten times in a rolling 52-week period in order to reduce its Peak Market Activity for credit requirement purposes. Imputed Peak Market Activity reductions for credit purposes will be applied to the billing period for which the payment was received. Payments used as the basis for such reductions must be received prior to issuance or posting of the invoice for the relevant billing period. The imputed Peak Market Activity reduction attributed to any payment may not exceed the amount of Unsecured Credit for which the Participant is eligible.

#### **B. Working Credit Limit**

PJM will establish a Working Credit Limit for each Participant against which its Total Net Obligation will be monitored. The Working Credit Limit is defined as 75% of the Collateral provided to PJM and/or 75% of the Unsecured Credit Allowance determined by PJM, as reduced by any applicable credit requirement allocations for the FTR and RPM markets. A Participant's Total Net Obligation should not exceed its Working Credit Limit.

If a Participant's Total Net Obligation approaches its Working Credit Limit, PJM may require the Participant to make an advance payment or increase its Collateral in order to maintain its Total Net Obligation below its Working Credit Limit. Except as explicitly provided herein, advance payments shall not serve to reduce the Participant's Peak Market Activity for the purpose of calculating credit requirements.

Example: After ten (10) calendar days, and with five (5) calendar days remaining before the bill is due to be paid, a Participant approaches its \$4.0 million Working Credit Limit. PJM may require a prepayment of \$2.0 million in order that the Total Net Obligation will not exceed the Working Credit Limit.

If a Participant exceeds its Working Credit Limit or is required to make advance payments more than ten times during a 52-week period, PJM may require Collateral in an amount as may be deemed reasonably necessary to support its Total Net Obligation.

When calculating Total Net Obligation, PJM may attribute credits for Regulation service to the days on which they were accrued, rather than including them in the month-end invoice.

### **VIII. SUSPENSION OR LIMITATION ON MARKET PARTICIPATION**

If PJM determines that a Participant presents an unreasonable credit risk as determined pursuant to initial or ongoing risk evaluations, as described in section II above, or in the case of any other event which, after notice, lapse of time, or both, would result in an Event of Default, PJM will take steps to mitigate the exposure of any PJM Markets, which may include, but is not limited to, requiring Collateral, additional Collateral or Restricted Collateral or suspending or limiting the Market Participant's ability to participate in the PJM Markets commensurate to the risk to any PJM Markets.

If a Participant fails to reduce or eliminate any unreasonable credit risks to PJM's satisfaction within the applicable cure period including without limitation by posting Collateral, additional Collateral or Restricted Collateral, PJM may treat such failure as an Event of Default.

Notwithstanding the foregoing, a Participant that transacts in FTRs will be eligible to request that PJM exempt or exclude FTR transactions of such Participant from the effect of any such limitations on market activity established by PJM, and PJM may but shall not be required to so exempt or exclude, any FTR transactions that the Participant reasonably demonstrates to PJM it has entered into to "hedge or mitigate commercial risk" arising from its transactions in the PJM Interchange Energy Market that are intended to result in the actual flow of physical energy or ancillary services in the PJM Region, as the phrase "hedge or mitigate commercial risks" is defined under the CFTC's regulations defining the end-user exception to clearing set forth in 17 C.F.R. §50.50(c).

#### **IX. REMEDIES FOR CREDIT BREACH, FINANCIAL DEFAULT OR CREDIT SUPPORT DEFAULT; REMEDIES FOR EVENTS OF DEFAULT**

If PJM determines that a Market Participant is in Credit Breach, or that a Financial Default or Credit Support Default exists, PJM may issue to the Market Participant a breach notice and/or a Collateral Call or demand for additional documentation or assurances. At such time, PJM may also suspend payments of any amounts due to the Participant and limit, restrict or rescind the Market Participant's privileges to participate in any or all PJM Markets under the Agreements during any such cure period. Failure to remedy the Credit Breach, Financial Default or to satisfy a Collateral Call or demand for additional documentation or assurances within the applicable cure period described in Operating Agreement, section 15.1.5, shall constitute an Event of Default. If a Participant fails to meet the requirements of this Attachment Q, but then remedies the Credit Breach, Financial Default or Credit Support Default, or satisfies a Collateral Call or demand for additional documentation or assurances within the applicable cure period, then the Participant shall be deemed to again be in compliance with this Attachment Q, so long as no other Credit Breach, Financial Default, Credit Support Default or Collateral Call or demand for additional documentation or assurances has occurred and is continuing.

Only one cure period shall apply to a single event giving rise to a Credit Breach, Financial Default or Credit Support Default. Application of Collateral towards a Financial Default, Credit Breach or Credit Support Breach shall not be considered a cure of such Credit Breach, Financial Default or Credit Support Default unless the Participant is determined by PJM to be in full compliance with all requirements of this Attachment Q after such application.

When an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing, PJM may take such actions as may be required or permitted under the Agreements to protect the PJM Markets and the PJM Members, including but not limited to (a) suspension and/or termination of the Participant's ongoing Transmission Service, (b) limitation, suspension and/or termination of participation in any PJM Markets, (c) taking all necessary steps to address the Market Participant's market portfolio in accordance with the provisions of the Operating Agreement and PJM Tariff, including, but not limited to, allowing such portfolio's positions to go to settlement, liquidating or otherwise resolving such portfolio positions, exercising judgment in the manner in which this is achieved in any PJM Markets. When an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing, PJM also has the immediate right to liquidate all or a portion of a Participant's Collateral at its discretion to satisfy Total Net Obligations to PJM under this Attachment Q or one or more of the Agreements. No remedy for an Event of Default is or shall be deemed to be exclusive of any other available remedy or remedies by contract or under applicable laws and regulations. Each such remedy shall be distinct, separate and cumulative, shall not be deemed inconsistent with or in exclusion of any other available remedy, and shall be in addition to and separate and distinct from every other remedy.

When an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing, PJM may continue to retain all payments due to a Participant as a cash security for all such Participant's obligations under the Agreements (regardless of any restrictions placed on such Participant's use of Collateral for any account, market activity or capitalization purpose); provided, however, that an Event of Default will not be deemed cured or no longer continuing because PJM is retaining amounts due the Participant, or because PJM has not yet applied Collateral or credit support to any amounts due PJM, unless PJM determines that the Participant has again satisfied all the Collateral requirements and application requirements as a new Applicant for participation in the PJM Markets, and consistent with the requirements and limitations of Operating Agreement, section 15.

In Event of Default by a Participant, PJM may exercise any remedy or action allowed or prescribed by this Attachment Q immediately or following investigation and determination of an orderly exercise of such remedy or action. Delay in exercising any allowed remedy or action shall not preclude PJM from exercising such remedy or action at a later time.

PJM may hold a defaulting Participant's Collateral for as long as such party's positions exist and consistent with this Attachment Q, in order to protect the PJM Markets and PJM's membership, and minimize or mitigate the impacts or potential impacts or risks associated with such Event of Default when an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing.

PJM may apply towards an ongoing Event of Default any amounts that are held or later become available or due to the defaulting Participant through PJM's markets and systems.

In order to cover the Participant's Obligations, PJM may hold a Participant's Collateral indefinitely and specifically through the end of the billing period which includes the 90th day following the last day a Participant had activity, open positions, or accruing obligations (other

than reconciliations and true-ups), until such Participant has satisfactorily paid any obligations invoiced through such period and until PJM determines that the Participant's positions represent no risk exposure to the PJM Markets or the PJM Members. Obligations incurred or accrued through such period shall survive any withdrawal from PJM. When an Event of Default under this Attachment Q or one or more of the Agreements has occurred and is continuing, PJM may apply any Collateral to such Participant's Obligations, even if Participant had previously announced and effected its withdrawal from PJM.

## **X. FTRS UNDER THE COMMODITY EXCHANGE ACT AND THE BANKRUPTCY CODE**

Under the terms of the Tariff, PJM Settlement is the counterparty to all transactions in PJM Markets, including but not limited to all FTR transactions, other than (i) any bilateral transactions between Participants, or (ii) with respect to self-supplied or self-scheduled transactions reported to the Office of the Interconnection. Pursuant to the "Final Order in Response to a Petition From Certain Independent System Operators and Regional Transmission Organizations To Exempt Specified Transactions Authorized by a Tariff or Protocol Approved by the Federal Energy Regulatory Commission or the Public Utility Commission of Texas From Certain Provisions of the Commodity Exchange Act Pursuant to the Authority Provided in the Act" 78 Fed. Reg. 19880 (April 2, 2013) (the "CFTC RTO/ISO Order"), the Commodity Futures Trading Commission (the "CFTC") exempts transactions offered or entered into in a market administered by PJM pursuant to the Tariff, including but not limited to FTR transactions, from the provisions of the Commodity Exchange Act and the CFTC's rules applicable to "swaps," with the exception of the CFTC's general anti-fraud and anti-manipulation authority and scienter-based prohibitions.

Notwithstanding the CFTC RTO/ISO Order, for purposes of the United States Bankruptcy Code ("Bankruptcy Code"), all FTR transactions constitute "swap agreements" and/or "forward contracts," and PJM and each FTR Participant is a "forward contract merchant" and/or a "swap participant" within the meaning of the Bankruptcy Code for purposes of FTR transactions.

Pursuant to this Attachment Q and other provisions of the Agreements, PJM already has, and shall continue to have, the following rights (among other rights) with respect to a Market Participant's Event of Default: (a) the right to terminate, liquidate or otherwise resolve any FTR transaction or position held by that Market Participant, including by allowing such position to go to settlement; (b) the right to immediately proceed against any Collateral provided by the Market Participant; (c) the right to set-off any obligations due or owing to that Market Participant pursuant to any forward contract, swap agreement, or similar agreement against any amounts due and owing by that Market Participant pursuant to any forward contract, swap agreement, or similar agreement, such arrangement to constitute a "master netting agreement" within the meaning of the Bankruptcy Code; and (d) the right to suspend or limit that Market Participant from entering into further FTR transactions.

For the avoidance of doubt, upon the commencement of a voluntary or involuntary proceeding for a Participant under the Bankruptcy Code, and without limiting any other rights of PJM or obligations of any Participant under the Agreements, PJM may exercise any of its rights against

such Participant, including, without limitation (1) the right to terminate, liquidate or otherwise resolve any FTR transaction or position held by that Participant, including by allowing such position to go to settlement, (2) the right to immediately proceed against any Collateral provided by that Participant, (3) the right to set off any obligations due and owing to that Participant pursuant to any forward contract, swap agreement and/or master netting agreement against any amounts due and owing by that Participant with respect to an FTR transaction including as a result of the actions taken by PJM pursuant to (a) above, and 4) the right to suspend or limit that Participant from entering into future FTR transactions.

For purposes of the Bankruptcy Code, all transactions, including but not limited to FTR transactions, between PJM, on the one hand, and a Market Participant, on the other hand, are intended to be part of a single integrated agreement, and together with the Agreements constitute a “master netting agreement.”

**Attachment Q**  
**Appendix 1**

**PJM MINIMUM PARTICIPATION CRITERIA**  
ANNUAL OFFICER CERTIFICATION FORM

**Participant Name:** \_\_\_\_\_ (**"Participant"**)

I, \_\_\_\_\_, a duly authorized officer of Participant, understanding that PJM Interconnection, L.L.C. and PJMSettlement, Inc. ("PJMSettlement") are relying on this certification as evidence that Participant meets the minimum requirements set forth in the PJM Open Access Transmission Tariff ("PJM Tariff"), Attachment Q hereby certify that I have full authority to represent on behalf of Participant and further represent as follows, as evidenced by my initialing each representation in the space provided below:

1. All employees or agents transacting in markets or services provided pursuant to the PJM Tariff or PJM Amended and Restated Operating Agreement ("PJM Operating Agreement") on behalf of the Participant have received appropriate training and are authorized to transact on behalf of Participant. As used in this representation, the term "appropriate" as used with respect to training means training that is (i) comparable to generally accepted practices in the energy trading industry, and (ii) commensurate and proportional in sophistication, scope and frequency to the volume of transactions and the nature and extent of the risk taken by the participant. \_\_\_\_\_
  
2. Participant has written risk management policies, procedures, and controls, approved by Participant's independent risk management function and applicable to transactions in any PJM Markets in which it participates and for which employees or agents transacting in markets or services provided pursuant to the PJM Tariff or PJM Operating Agreement have been trained, that provide an appropriate, comprehensive risk management framework that, at a minimum, clearly identifies and documents the range of risks to which Participant is exposed, including, but not limited to credit risks, liquidity risks and market risks. As used in this representation, a Participant's "independent risk management function" can include appropriate corporate persons or bodies that are independent of the Participant's trading functions, such as a risk management committee, a risk officer, a Participant's board or board committee, or a board or committee of the Participant's parent company.
  - a. Participant is providing to PJM or PJMSettlement, in accordance with Tariff, Attachment Q, section III, with this Annual Officer Certification Form, a copy of its current governing risk management policies, procedures and controls applicable to its activities in any PJM Markets pursuant to Attachment Q or because there have been substantive changes made to such policies, procedures and controls applicable to its market activities since they were last provided to PJM. \_\_\_\_\_
  
  - b. If the risk management policies, procedures and controls applicable to Participant's market activities submitted to PJM or PJMSettlement were submitted prior to the current certification, Participant certifies that no substantive changes have



been made to such policies, procedures and controls applicable to its market activities since such submission. \_\_\_\_\_

3. An FTR Participant must make either the following 3.a. or 3.b. additional representations, evidenced by the undersigned officer initialing either the one 3.a. representation or the four 3.b. representations in the spaces provided below:

- a. Participant transacts in PJM's FTR markets with the sole intent to hedge congestion risk in connection with either obligations Participant has to serve load or rights Participant has to generate electricity in the PJM Region ("physical transactions") and monitors all of the Participant's FTR market activity to endeavor to ensure that its FTR positions, considering both the size and pathways of the positions, are either generally proportionate to or generally do not exceed the Participant's physical transactions, and remain generally consistent with the Participant's intention to hedge its physical transactions. \_\_\_\_\_

- b. On no less than a weekly basis, Participant values its FTR positions and engages in a probabilistic assessment of the hypothetical risk of such positions using analytically based methodologies, predicated on the use of industry accepted valuation methodologies. \_\_\_\_\_

Such valuation and risk assessment functions are performed either by persons within Participant's organization independent from those trading in PJM's FTR markets or by an outside firm qualified and with expertise in this area of risk management. \_\_\_\_\_

Having valued its FTR positions and quantified their hypothetical risks, Participant applies its written policies, procedures and controls to limit its risks using industry recognized practices, such as value-at-risk limitations, concentration limits, or other controls designed to prevent Participant from purposefully or unintentionally taking on risk that is not commensurate or proportional to Participant's financial capability to manage such risk. \_\_\_\_\_

Exceptions to Participant's written risk policies, procedures and controls applicable to Participant's FTR positions are documented and explain a reasoned basis for the granting of any exception. \_\_\_\_\_

4. Participant has appropriate personnel resources, operating procedures and technical abilities to promptly and effectively respond to all PJM and PJMSettlement communications and directions. \_\_\_\_\_
5. Participant has demonstrated compliance with the Minimum Capitalization criteria set forth in Tariff, Attachment Q that are applicable to any PJM Markets in which Participant transacts, and is not aware of any change having occurred or being imminent that would invalidate such compliance. \_\_\_\_\_

6. All Participants must certify and initial in at least one of the four sections below:

- a. I certify that Participant qualifies as an “appropriate person” as that term is defined under section 4(c)(3), or successor provision, of the Commodity Exchange Act or an “eligible contract participant” as that term is defined under section 1a(18), or successor provision, of the Commodity Exchange Act. I certify that Participant will cease transacting in any PJM Markets and notify PJM and PJMSettlement immediately if Participant no longer qualifies as an “appropriate person” or “eligible contract participant.” \_\_\_\_\_

If providing audited financial statements, which shall be in US GAAP format or any other format acceptable to PJM, to support Participant’s certification of qualification as an “appropriate person:”

I certify, to the best of my knowledge and belief, that the audited financial statements provided to PJM and/or PJMSettlement present fairly, pursuant to such disclosures in such audited financial statements, the financial position of Participant as of the date of those audited financial statements. Further, I certify that Participant continues to maintain the minimum \$1 million total net worth and/or \$5 million total asset levels reflected in these audited financial statements as of the date of this certification. I acknowledge that both PJM and PJMSettlement are relying upon my certification to maintain compliance with federal regulatory requirements. \_\_\_\_\_

If not providing audited financial statements to support Participant’s certification of qualification as an “appropriate person,” Participant certifies that they qualify as an “appropriate person” under one of the entities defined in section 4(c)(3)(A)-(J) of the Commodities Exchange Act. \_\_\_\_\_

If providing audited financial statements, which shall be in US GAAP format or any other format acceptable to PJM, to support Participant’s certification of qualification as an “eligible contract participant:”

I certify, to the best of my knowledge and belief, that the audited financial statements provided to PJM and/or PJMSettlement present fairly, pursuant to such disclosures in such audited financial statements, the financial position of Participant as of the date of those audited financial statements. Further, I certify that Participant continues to maintain the minimum \$1 million total net worth and/or \$10 million total asset levels reflected in these audited financial statements as of the date of this certification. I acknowledge that both PJM and PJMSettlement are relying upon my certification to maintain compliance with federal regulatory requirements. \_\_\_\_\_

If not providing audited financial statements to support Participant’s certification of qualification as an “eligible contract participant,” Participant certifies that they

qualify as an “eligible contract participant” under one of the entities defined in section 1a(18)(A) of the Commodities Exchange Act. \_\_\_\_\_

- b. I certify that Participant has provided an unlimited Corporate Guaranty in a form acceptable to PJM as described in Tariff, Attachment Q, section III.D from an issuer that has at least \$1 million of total net worth or \$5 million of total assets per Participant for which the issuer has issued an unlimited Corporate Guaranty. I also certify, to the best of my knowledge and belief, that the audited financial statements provided to PJM and/or PJMSettlement present fairly, pursuant to such disclosures in such audited financial statements, the financial position of the issuer as of the date of those audited financial statements. Further, I certify that Participant will cease transacting PJM’s Markets and notify PJM and PJMSettlement immediately if issuer of the unlimited Corporate Guaranty for Participant no longer has at least \$1 million of total net worth or \$5 million of total assets per Participant for which the issuer has issued an unlimited Corporate Guaranty. \_\_\_\_\_

I certify that the issuer of the unlimited Corporate Guaranty to Participant continues to have at least \$1 million of total net worth or \$5 million of total assets per Participant for which the issuer has issued an unlimited Corporate Guaranty. I acknowledge that PJM and PJMSettlement are relying upon my certifications to maintain compliance with federal regulatory requirements. \_\_\_\_\_

- c. I certify that Participant fulfills the eligibility requirements of the Commodity Futures Trading Commission exemption order (78 F.R. 19880 – April 2, 2013) by being in the business of at least one of the following in the PJM Region as indicated below (initial those applicable):

1. Generating electric energy, including Participants that resell physical energy acquired from an entity generating electric energy: \_\_\_\_\_
2. Transmitting electric energy: \_\_\_\_\_
3. Distributing electric energy delivered under Point-to-Point or Network Integration Transmission Service, including scheduled import, export and wheel through transactions: \_\_\_\_\_
4. Other electric energy services that are necessary to support the reliable operation of the transmission system: \_\_\_\_\_

Description only if c(4) is initialed:

\_\_\_\_\_

Further, I certify that Participant will cease transacting in any PJM Markets and notify PJM and PJMSettlement immediately if Participant no longer performs at least one of the functions noted above in the PJM Region. I acknowledge that PJM and

PJMSettlement are relying on my certification to maintain compliance with federal energy regulatory requirements. \_\_\_\_\_

d. I certify that Participant has provided a Letter of Credit of \$5 million or more to PJM or PJMSettlement in a form acceptable to PJM and/or PJMSettlement as described in Tariff, Attachment Q, section V.B that the Participant acknowledges cannot be utilized to meet its credit requirements to PJM and PJMSettlement. I acknowledge that PJM and PJMSettlement are relying on the provision of this letter of credit and my certification to maintain compliance with federal regulatory requirements. \_\_\_\_\_

7. I acknowledge that I have read and understood the provisions of Tariff, Attachment Q applicable to Participant's business in any PJM Markets, including those provisions describing PJM's Minimum Participation Requirements and the enforcement actions available to PJM and PJMSettlement of a Participant not satisfying those requirements. I acknowledge that the information provided herein is true and accurate to the best of my belief and knowledge after due investigation. In addition, by signing this certification, I acknowledge the potential consequences of making incomplete or false statements in this Certification. \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Participant (Signature)

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

# Attachment C

## Revisions to the Operating Agreement

(Marked/Redline Format)

## **15.1 Failure to Meet Obligations.**

### **15.1.1 Suspension and Termination of Market Participant Rights.**

PJM may limit, suspend or terminate a Market Participant's right to participate in any PJM Market if it determines that the Market Participant does not continue to meet the obligations set forth in any of the Agreements, including but not limited to the obligation to be in compliance with the terms, or operating characteristics of any of its prior scheduled transactions in any market operated by PJM, -the creditworthiness requirements set forth in Tariff, Attachment Q and/or the obligation to make timely payment, provided that PJM and/or PJMSettlement has notified the Market Participant of any such deficiency and afforded the Market Participant a reasonable opportunity to cure pursuant to section 15.1.3-5 below, or Tariff, Attachment Q, as applicable. PJM shall reinstate a Market Participant's right to participate in any PJM Market upon a determination by PJM and/or PJMSettlement that the Market Participant has, within the parameters of its opportunity to cure provided pursuant to section 15.1.5 below, or Tariff, Attachment Q, as applicable, satisfied the applicable requirements and is in compliance with the obligations set forth in the Agreements.

### **15.1.2 [Reserved for Future Use]**

### **15.1.3 Payment of Bills.**

Members and Participants shall make full and timely payment, in accordance with the terms specified by PJM, of all bills rendered in connection with or arising under or from any of the Agreements, any service or rate schedule, any tariff, or any services performed by PJM or transactions with PJMSettlement, notwithstanding any disputed amount, but any such payment shall not be deemed a waiver of any right with respect to such dispute. Any Member or Participant that fails to make full and timely payment to PJMSettlement (of amounts owed either directly to PJMSettlement or PJMSettlement as agent for PJM) or otherwise fails to meet its financial or other obligations to a Member, -PJMSettlement, or PJM under any of the Agreements, shall, in addition to any requirement set forth in Operating Agreement, section 15.1 and upon expiration of the cure period specified in section 15.1.5 below, be in default.

### **15.1.4 Breach Notification and Remedy**

If PJM or PJMSettlement concludes, upon its own initiative or the recommendation of or complaint by the Members Committee or any Member, that a Member or Participant is in breach of any of its obligation under any of the Agreements, including, but not limited to, the obligation to make timely payment and the obligation to meet PJM's creditworthiness standards and to otherwise comply with PJM's credit policies, PJM and/or PJMSettlement shall so notify such Member or Participant. The notified Member or Participant may remedy such asserted breach by: (i) paying all amounts assertedly due, along with interest on such amounts calculated in accordance with the methodology specified for interest on refunds in FERC's regulations at 18 C.F.R. § 35.19a(a)(2)(iii); and (ii) demonstration to the satisfaction of PJM and/or PJMSettlement that the Member or Participant has taken appropriate measures to meet any other obligation of which it was deemed to be in breach; provided, however, that any such payment or

demonstration may be subject to a reservation of rights, if any, to subject such matter to the PJM Dispute Resolution Procedures; and provided, further, that any such determination by PJM and/or PJMSettlement may be subject to review by the PJM Board upon request of the Member or Participant involved or PJM and/or PJMSettlement.

#### **15.1.5 Default Notification and Remedy**

If a Member or Participant has not remedied a breach, as described in section 15.1.4 above, by 4:00 p.m. Eastern Prevailing Time on the first Business Day following PJM's or PJMSettlement's issuance of a written notice of breach or Collateral Call, the notice of which is issued before 1:00 p.m. Eastern Prevailing Time, or by 4:00 p.m. Eastern Prevailing Time on the second Business Day following PJM's or PJMSettlement's issuance to the Member or Participant of a written notice of breach or Collateral Call, the notice of which is issued at or after 1:00 p.m. Eastern Prevailing Time, or receipt of the PJM Board's decision on review, if applicable, then the Member or Participant shall be in default and, in addition to such other remedies as may be available to PJM or PJMSettlement:

- i) A defaulting Market Participant shall be precluded from buying or selling in any market operated by PJM until the default is remedied as set forth above;
- ii) A defaulting Member shall not be entitled to participate in the activities of any committee or other body established by the Members Committee or PJM; and
- iii) A defaulting Member shall not be entitled to vote on the Members Committee or any other committee or other body established pursuant to this Agreement.
- iv) PJM shall notify all other Members of the default.

v) The Financial Transmission Rights positions of a Member in default shall be addressed as provided in Operating Agreement, Schedule 1, section 7.3.9 and the parallel provisions of Tariff, Attachment K-Appendix, section 7.3.9.

#### **15.1.6 Reinstatement of Member Following Default and Remedy**

a. A Member that has been declared in default, solely of PJM's and PJMSettlement's creditworthiness standards, or fails to otherwise comply with PJM's credit policies as more fully described in Tariff, Attachment Q, once within any 12 month period may be reinstated in full after remedying such default and satisfying any requirements imposed upon the Member as a result of the default.

b. A Member that has been declared in default of any of the Agreements for failing to: (i) make timely payments when due once during any prior 12 month period, or (ii) adhere to PJM's creditworthiness standards and credit policies, twice during any prior 12 month period, may be subject to the following restrictions:

- a) Loss of stakeholder privileges, including voting privileges, for 12 months

following such default; and

b) Loss of the allowance of unsecured credit for 12 months following such default

c. A Member that has been declared in default of this Agreement for failing to: (i) make timely payments when due twice during any prior 12 month period, or (ii) adhere to PJM's creditworthiness standards and credit policies, three times during any prior 12 month period, shall, except as provided for in section 15.1.6(d) below, not be eligible to be reinstated as a Member to this Agreement and its membership rights pursuant to this Agreement shall be terminated in accordance with Operating Agreement, section 4.1(c), notwithstanding whether such default has been remedied. Furthermore:

a) **PJM and PJM Settlement** shall ~~address~~**close-out and liquidate** all of the Member's current and forward positions in accordance with the provisions of this Agreement and the PJM Tariff; and

b) A Member terminated in accordance with these provisions shall be precluded from seeking future membership in PJM under this Agreement whether in the name of the Member when it was terminated from PJM membership or as a new Applicant under a different name, affiliation, or organization if the Member or new Applicant experienced a previous default that resulted in a loss to the PJM Markets and was terminated from membership. Whether an Applicant should be considered the same as a Member that previously defaulted will be determined based on the factors identified in Operating Agreement, Schedule 1, section 1.4.8, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.4.8.

d. A Member may appeal a determination made pursuant to the foregoing procedures utilizing PJM's Dispute Resolution Procedures as set forth in Operating Agreement, Schedule 5, (provided, however, that a Member's decision to utilize these procedures shall not operate to stay the ability of PJM to exercise any and all of its rights under this Agreement and the PJM Tariff) and may be reinstated provided that the Member can demonstrate the following:

a) that it has otherwise consistently complied with its obligations under this Agreement and the PJM Tariff; and

b) the failure to comply was not material; and

c) the failure to comply was due in large part to conditions that were not in the common course of business.

**15.1.7 Allocation of Costs and Proceeds Resulting from Addressing Defaulting Member Financial Transmission Rights Positions.**

Addressing a defaulting Member's Financial Transmission Rights positions pursuant to Operating Agreement, Schedule 1, section 7.3.9, and Tariff, Attachment K-Appendix, section 7.3.9, shall result in a final settlement amount. The final settlement amount may be aggregated



with any other amounts owed by the defaulting Member to PJM and/or PJMSettlement and may be set off by PJM and/or PJMSettlement against any amounts owed by PJM and/or PJMSettlement to the defaulting Member for purposes of determining the Default Allocation Assessment pursuant to the provisions of section 15.2.2 below. Any payments made to a Member purchasing some or all of a liquidated Financial Transmission Rights portfolio shall be net of that Member's charge resulting from a Default Allocation Assessment.

### **7.3 Auction Procedures.**

#### **7.3.1 Role of the Office of the Interconnection.**

Financial Transmission Rights auctions shall be conducted by the Office of the Interconnection in accordance with standards and procedures set forth in the PJM Manuals, such standards and procedures to be consistent with the requirements of this Schedule. PJMSettlement shall be the Counterparty to the purchases and sales of Financial Transmission Rights arising from such auctions, provided however, that PJMSettlement shall not be a contracting party to any subsequent bilateral transfers of Financial Transmission Rights between Market Participants. The conversion of an Auction Revenue Right to a Financial Transmission Right pursuant to this section 7 shall not constitute a purchase or sale transaction to which PJMSettlement is a contracting party. Any Financial Transmission Rights auctions conducted to liquidate a defaulting Member's Financial Transmission Rights portfolio shall be conducted by the Office of the Interconnection in accordance with the procedures set forth in section 7.3.9 below, and as may be further described in the PJM Manuals.

#### **7.3.2 Notice of Offer.**

A holder of a Financial Transmission Right wishing to offer the Financial Transmission Right for sale shall notify the Office of the Interconnection of any Financial Transmission Rights to be offered. Each Financial Transmission Right sold in an auction shall, at the end of the period for which the Financial Transmission Rights were auctioned, revert to the offering holder or the entity to which the offering holder has transferred such Financial Transmission Right, subject to the term of the Financial Transmission Right itself and to the right of such holder or transferee to offer the Financial Transmission Right in the next or any subsequent auction during the term of the Financial Transmission Right.

#### **7.3.3 Pending Applications for Firm Service.**

(a) [Reserved.]

(b) Financial Transmission Rights may be assigned to entities requesting Network Transmission Service or Firm Point-to-Point Transmission Service pursuant to Operating Agreement, Schedule 1, sSection 5.2.2 (e), and the parallel provisions of Tariff, Attachment K-Appendix, section 5.2.2(e). only if such Financial Transmission Rights are simultaneously feasible with all outstanding Financial Transmission Rights, including Financial Transmission Rights effective for the then-current auction period. If an assignment of Financial Transmission Rights pursuant to a pending application for Network Transmission Service or Firm Point-to-Point Transmission Service cannot be completed prior to an auction, Financial Transmission Rights attributable to such transmission service shall not be assigned for the then-current auction period. If a Financial Transmission Right cannot be assigned for this reason, the applicant may withdraw its application, or request that the Financial Transmission Right be assigned effective with the start of the next auction period.

#### **7.3.4 On-Peak, Off-Peak and 24-Hour Periods.**

On-peak, off-peak and 24-hour FTRs will be offered in the annual and monthly auction. On-Peak Financial Transmission Rights shall cover the periods from 7:00 a.m. up to the hour ending at 11:00 p.m. on Mondays through Fridays, except holidays as defined in the PJM Manuals. Off-Peak Financial Transmission Rights shall cover the periods from 11:00 p.m. up to the hour ending 7:00 a.m. on Mondays through Fridays and all hours on Saturdays, Sundays, and holidays as defined in the PJM Manuals. The 24-hour period shall cover the period from hour ending 1:00 a.m. to the hour ending 12:00 midnight on all days. Each bid shall specify whether it is for an on-peak, off-peak, or 24-hour period.

### **7.3.5 Offers and Bids.**

(a) Offers to sell and bids to purchase Financial Transmission Rights shall be submitted during the period set forth in [Operating Agreement, Schedule 1, sSection 7.1.2, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.1.2,](#) and shall be in the form specified by the Office of the Interconnection in accordance with the requirements set forth below.

(b) Offers to sell shall identify the specific Financial Transmission Right, by term, megawatt quantity and receipt and delivery points, offered for sale. An offer to sell a specified megawatt quantity of Financial Transmission Rights shall constitute an offer to sell a quantity of Financial Transmission Rights equal to or less than the specified quantity. An offer to sell may -not specify a minimum quantity being offered. Each offer may specify a reservation price, below which the offeror does not wish to sell the Financial Transmission Right. Offers submitted by entities holding rights to Financial Transmission Rights shall be subject to such reasonable standards for the verification of the rights of the offeror as may be established by the Office of the Interconnection. Offers shall be subject to such reasonable standards for the creditworthiness of the offeror or for the posting of security for performance as the Office of the Interconnection shall establish.

(c) Bids to purchase shall specify the term, megawatt quantity, price per megawatt, and receipt and delivery points of the Financial Transmission Right that the bidder wishes to purchase. A bid to purchase a specified megawatt quantity of Financial Transmission Rights shall constitute a bid to purchase a quantity of Financial Transmission Rights equal to or less than the specified quantity. A bid to purchase may not specify a minimum quantity that the bidder wishes to purchase. A bid may specify receipt and delivery points in accordance with [Operating Agreement, Schedule 1, sSection 7.2.2, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.2.2,](#) and may include Financial Transmission Rights for which the associated Transmission Congestion Credits may have negative values. Bids shall be subject to such reasonable standards for the creditworthiness of the bidder or for the posting of security for performance as the Office of the Interconnection shall establish.

(d) Bids and offers shall be specified to the nearest tenth of a megawatt and shall be greater than zero. The Office of the Interconnection may require that a market participant shall not submit in excess of 5000 bids and offers for any single monthly auction, or for any single round of the annual auction, when the Office of the Interconnection determines that such limit is required to avoid or mitigate significant system performance problems related to bid/offer

volume. Notice of the need to impose such limit shall be provided prior to the start of the bidding period if possible. Where such notice is provided after the start of the bidding period, market participants shall be required within one day to reduce their bids and offers for such auction below 5000, and the bidding period in such cases shall be extended by one day.

### **7.3.6 Determination of Winning Bids and Clearing Price.**

(a) At the close of each bidding period, the Office of the Interconnection will create a base Financial Transmission Rights power flow model that includes all outstanding Financial Transmission Rights that have been approved and confirmed for any portion of the month for which the auction was conducted and that were not offered for sale in the auction. The base Financial Transmission Rights model also will include estimated uncompensated parallel flows into each interface point of the PJM Region and estimated scheduled transmission outages.

(b) In accordance with the requirements of Operating Agreement, Schedule 1, sSection 7.5, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.5, of this Schedule and subject to all applicable transmission constraints and reliability requirements, the Office of the Interconnection shall determine the simultaneous feasibility of all outstanding Financial Transmission Rights not offered for sale in the auction and of all Financial Transmission Rights that could be awarded in the auction for which bids were submitted. The winning bids shall be determined from an appropriate linear programming model that, while respecting transmission constraints and the maximum MW quantities of the bids and offers, selects the set of simultaneously feasible Financial Transmission Rights with the highest net total auction value as determined by the bids of buyers and taking into account the reservation prices of the sellers. In the event that there are two or more identical bids for the selected Financial Transmission Rights and there are insufficient Financial Transmission Rights to accommodate all of the identical bids, then each such bidder will receive a pro rata share of the Financial Transmission Rights that can be awarded.

(c) Financial Transmission Rights shall be sold at the market-clearing price for Financial Transmission Rights between specified pairs of receipt and delivery points, as determined by the bid value of the marginal Financial Transmission Right that could not be awarded because it would not be simultaneously feasible. The linear programming model shall determine the clearing prices of all Financial Transmission Rights paths based on the bid value of the marginal Financial Transmission Rights, which are those Financial Transmission Rights with the highest bid values that could not be awarded fully because they were not simultaneously feasible, and based on the flow sensitivities of each Financial Transmission Rights path relative to the marginal Financial Transmission Rights paths flow sensitivities on the binding transmission constraints. Financial Transmission Rights with a zero clearing price will only be awarded if there is a minimum of one binding constraint in the auction period for which the Financial Transmission Rights path sensitivity is non-zero.

### **7.3.7 Announcement of Winners and Prices.**

Within two (2) Business Days after the close of the bid and offer period for an annual Financial Transmission Rights auction round, and within five (5) Business Days after the close of the bid

and offer period for a monthly Financial Transmission Rights auction, the Office of the Interconnection shall post the winning bidders, the megawatt quantity, the term and the receipt and delivery points for each Financial Transmission Right awarded in the auction and the price at which each Financial Transmission Right was awarded unless circumstances beyond PJM's control prevent PJM from meeting the applicable deadline. Under such circumstances, PJM will post the auction results at the earliest possible opportunity. The Office of the Interconnection shall not disclose the price specified in any bid to purchase or the reservation price specified in any offer to sell. If the Office of the Interconnection discovers an error in the results posted for a Financial Transmission Rights auction (or a given round of the annual Financial Transmission Rights auction), the Office of the Interconnection shall notify Market Participants of the error as soon as possible after it is found, but in no event later than 5:00 p.m. of the Business Day following the initial publication of the results of the auction or round of the annual auction. After this initial notification, if the Office of the Interconnection determines that it is necessary to post modified results, it shall provide notification of its intent to do so, together with all available supporting documentation, by no later than 5:00 p.m. of the second Business Day following the initial publication of the results of that auction or round of the annual auction. Thereafter, the Office of the Interconnection must post any corrected results by no later than 5:00 p.m. of the fourth calendar day following the initial publication of the results of the auction or round of the annual auction. Should any of the above deadlines pass without the associated action on the part of the Office of the Interconnection, the originally posted results will be considered final. Notwithstanding the foregoing, the deadlines set forth above shall not apply if the referenced auction results are under publicly noticed review by the FERC.

### **7.3.8 Auction Settlements.**

All buyers and sellers of Financial Transmission Rights between the same points of receipt and delivery shall pay PJM Settlement or be paid by PJM Settlement the market-clearing price, as determined in the auction, for such Financial Transmission Rights.

### **7.3.9 Settling Addressing Defaulting Member's Financial Transmission Rights.**

In the event a Member fails to meet creditworthiness requirements or make timely payments when due pursuant to the ~~PJM~~ Operating Agreement or ~~PJM~~ Tariff, the Office of the Interconnection shall, as soon as practicable after declaring the Member to be in such default as provided in Operating Agreement, section 15.1.5 is declared, use reasonable efforts to initiate within two applicable auctions the following procedures to ~~close-out and settle, liquidate or otherwise resolve each the~~ Financial Transmission Rights ~~of position held by~~ the defaulting Member:

- a) The Office of the Interconnection shall ~~close-out the defaulting Member's positions as of the date of its default, by~~ unilaterally terminating all of the defaulting Member's rights with respect to forward Financial Transmission Rights positions as of the date of the Member's default.
- b) ~~Reserved.~~ As to each Financial Transmission Rights position held by the defaulting Member immediately prior to the termination of the defaulting Member's rights under subsection

(a) above, the Office of the Interconnection shall determine and execute an appropriate course of action for addressing such Financial Transmission Rights position, based on the specific circumstances of the default as determined by the Office of the Interconnection in exercise of its reasonable judgment, such as (1) liquidating the position by offering it for sale in an upcoming applicable Financial Transmission Rights auction, (2) liquidating the position by offering it for sale in an auction called and scheduled for the specific purpose of liquidating one or more positions held by the defaulting Member (“Special Auction”), (3) allowing the position to go to settlement, or (4) another course of action the Office of the Interconnection determines to be appropriate under the circumstances that is designed to minimize potential losses to PJM and its Members. The Office of the Interconnection will provide reasonable advance notice to PJM Members of the approach or course of action it has determined to be appropriate prior to implementing that approach or course of action. The Office of the Interconnection is not required to apply a single approach to the defaulting Member’s entire Financial Transmission Rights portfolio, and may determine that the appropriate course of action for addressing a defaulting Member’s portfolio includes a combination of the above approaches as applied to different positions within the defaulting Member’s overall Financial Transmission Rights portfolio.

c) Reserved.—The Office of the Interconnection will seek to minimize the losses to PJM Members associated with settling, liquidating or otherwise resolving the defaulting Member’s Financial Transmission Rights portfolio and may base its determination in subsection (b) above on several factors, including but not limited to, the following:

- 1) the Office of the Interconnection’s assessment of which approach will provide the greatest degree of protection to the financial integrity of the PJM Markets;
- 2) the size of the defaulting Member’s Financial Transmission Rights portfolio, both in absolute terms and relative to overall market volume;
- 3) the term of the Financial Transmission Rights positions held by the defaulting Member as considered for a single position or on a portfolio basis;
- 4) whether liquidation is feasible or not, and on what timeline, due to the cessation or curtailment of trading at PJM for all Financial Transmission Rights or a subset of Financial Transmission Rights positions;
- 5) prevailing market conditions, such as but not limited to market liquidity and volatility; and
- 6) timing of the default and the actions taken to address the default.

d) Reserved.Special Auctions. The Office of the Interconnection shall administer each Special Auction provided for in subsection (b)(2) above according to the procedures set forth in the Tariff and PJM Manuals for FTR auctions to the extent appropriate in the Office of the

Interconnection's sole discretion, and may adopt special rules for each Special Auction to accommodate the unique circumstances underlying the particular default and particular Financial Transmission Rights positions being liquidated, with the terms and conditions of such auction being determined with the goal of facilitating a successful auction in light of the particular positions to be auctioned, the prevailing market conditions for such open positions (including the depth, scope, and nature of participation in such markets), and such other factors as the Office of the Interconnection determines appropriate, including those factors enumerated in subsection (c) above. The Office of the Interconnection shall provide reasonable advance notice to FTR Participants of a Special Auction and the terms and conditions under which it will be conducted.

e) All liquidations made pursuant to subsection (b) above shall be for the account of the defaulting Member (and all amounts owed PJM in respect thereof shall be included in amounts owed by the defaulting Member as part of its default).

fe) Notwithstanding subsections 7.3.9(a) and (b) above of this Schedule, the actual net charges or credits resulting from the defaulting Member's Financial Transmission Rights positions for which PJM Settlement acted as counterparty as calculated through the normal settlement processes shall be included in calculating the Default Allocation Assessment charges as described in Operating Agreement, section 15.2.2.

# Attachment D

## Revisions to the Operating Agreement

(Clean Format)



## **15.1 Failure to Meet Obligations.**

### **15.1.1 Suspension and Termination of Market Participant Rights.**

PJM may limit, suspend or terminate a Market Participant's right to participate in any PJM Market if it determines that the Market Participant does not continue to meet the obligations set forth in any of the Agreements, including but not limited to the obligation to be in compliance with the terms, or operating characteristics of any of its prior scheduled transactions in any market operated by PJM, the creditworthiness requirements set forth in Tariff, Attachment Q and/or the obligation to make timely payment, provided that PJM and/or PJMSettlement has notified the Market Participant of any such deficiency and afforded the Market Participant a reasonable opportunity to cure pursuant to section 15.1.5 below, or Tariff, Attachment Q, as applicable. PJM shall reinstate a Market Participant's right to participate in any PJM Market upon a determination by PJM and/or PJMSettlement that the Market Participant has, within the parameters of its opportunity to cure provided pursuant to section 15.1.5 below, or Tariff, Attachment Q, as applicable, satisfied the applicable requirements and is in compliance with the obligations set forth in the Agreements.

### **15.1.2 [Reserved for Future Use]**

### **15.1.3 Payment of Bills.**

Members and Participants shall make full and timely payment, in accordance with the terms specified by PJM, of all bills rendered in connection with or arising under or from any of the Agreements, any service or rate schedule, any tariff, or any services performed by PJM or transactions with PJMSettlement, notwithstanding any disputed amount, but any such payment shall not be deemed a waiver of any right with respect to such dispute. Any Member or Participant that fails to make full and timely payment to PJMSettlement (of amounts owed either directly to PJMSettlement or PJMSettlement as agent for PJM) or otherwise fails to meet its financial or other obligations to a Member, PJMSettlement, or PJM under any of the Agreements, shall, in addition to any requirement set forth in Operating Agreement, section 15.1 and upon expiration of the cure period specified in section 15.1.5 below, be in default.

### **15.1.4 Breach Notification and Remedy**

If PJM or PJMSettlement concludes, upon its own initiative or the recommendation of or complaint by the Members Committee or any Member, that a Member or Participant is in breach of any of its obligation under any of the Agreements, including, but not limited to, the obligation to make timely payment and the obligation to meet PJM's creditworthiness standards and to otherwise comply with PJM's credit policies, PJM and/or PJMSettlement shall so notify such Member or Participant. The notified Member or Participant may remedy such asserted breach by: (i) paying all amounts assertedly due, along with interest on such amounts calculated in accordance with the methodology specified for interest on refunds in FERC's regulations at 18 C.F.R. § 35.19a(a)(2)(iii); and (ii) demonstration to the satisfaction of PJM and/or PJMSettlement that the Member or Participant has taken appropriate measures to meet any other obligation of which it was deemed to be in breach; provided, however, that any such payment or demonstration

may be subject to a reservation of rights, if any, to subject such matter to the PJM Dispute Resolution Procedures; and provided, further, that any such determination by PJM and/or PJMSettlement may be subject to review by the PJM Board upon request of the Member or Participant involved or PJM and/or PJMSettlement.

#### **15.1.5 Default Notification and Remedy**

If a Member or Participant has not remedied a breach, as described in section 15.1.4 above, by 4:00 p.m. Eastern Prevailing Time on the first Business Day following PJM's or PJMSettlement's issuance of a written notice of breach or Collateral Call, the notice of which is issued before 1:00 p.m. Eastern Prevailing Time, or by 4:00 p.m. Eastern Prevailing Time on the second Business Day following PJM's or PJMSettlement's issuance to the Member or Participant of a written notice of breach or Collateral Call, the notice of which is issued at or after 1:00 p.m. Eastern Prevailing Time, or receipt of the PJM Board's decision on review, if applicable, then the Member or Participant shall be in default and, in addition to such other remedies as may be available to PJM or PJMSettlement:

- i) A defaulting Market Participant shall be precluded from buying or selling in any market operated by PJM until the default is remedied as set forth above;
- ii) A defaulting Member shall not be entitled to participate in the activities of any committee or other body established by the Members Committee or PJM; and
- iii) A defaulting Member shall not be entitled to vote on the Members Committee or any other committee or other body established pursuant to this Agreement.
- iv) PJM shall notify all other Members of the default.
- v) The Financial Transmission Rights positions of a Member in default shall be addressed as provided in Operating Agreement, Schedule 1, section 7.3.9 and the parallel provisions of Tariff, Attachment K-Appendix, section 7.3.9.

#### **15.1.6 Reinstatement of Member Following Default and Remedy**

a. A Member that has been declared in default, solely of PJM's and PJMSettlement's creditworthiness standards, or fails to otherwise comply with PJM's credit policies as more fully described in Tariff, Attachment Q, once within any 12 month period may be reinstated in full after remedying such default and satisfying any requirements imposed upon the Member as a result of the default.

b. A Member that has been declared in default of any of the Agreements for failing to: (i) make timely payments when due once during any prior 12 month period, or (ii) adhere to PJM's creditworthiness standards and credit policies, twice during any prior 12 month period, may be subject to the following restrictions:

- a) Loss of stakeholder privileges, including voting privileges, for 12 months

following such default; and

b) Loss of the allowance of unsecured credit for 12 months following such default

c. A Member that has been declared in default of this Agreement for failing to: (i) make timely payments when due twice during any prior 12 month period, or (ii) adhere to PJM's creditworthiness standards and credit policies, three times during any prior 12 month period, shall, except as provided for in section 15.1.6(d) below, not be eligible to be reinstated as a Member to this Agreement and its membership rights pursuant to this Agreement shall be terminated in accordance with Operating Agreement, section 4.1(c), notwithstanding whether such default has been remedied. Furthermore:

a) PJM and PJMSettlement shall address all of the Member's current and forward positions in accordance with the provisions of this Agreement and the PJM Tariff; and

b) A Member terminated in accordance with these provisions shall be precluded from seeking future membership in PJM under this Agreement whether in the name of the Member when it was terminated from PJM membership or as a new Applicant under a different name, affiliation, or organization if the Member or new Applicant experienced a previous default that resulted in a loss to the PJM Markets and was terminated from membership. Whether an Applicant should be considered the same as a Member that previously defaulted will be determined based on the factors identified in Operating Agreement, Schedule 1, section 1.4.8, and the parallel provisions of Tariff, Attachment K-Appendix, section 1.4.8.

d. A Member may appeal a determination made pursuant to the foregoing procedures utilizing PJM's Dispute Resolution Procedures as set forth in Operating Agreement, Schedule 5, (provided, however, that a Member's decision to utilize these procedures shall not operate to stay the ability of PJM to exercise any and all of its rights under this Agreement and the PJM Tariff) and may be reinstated provided that the Member can demonstrate the following:

a) that it has otherwise consistently complied with its obligations under this Agreement and the PJM Tariff; and

b) the failure to comply was not material; and

c) the failure to comply was due in large part to conditions that were not in the common course of business.

#### **15.1.7 Allocation of Costs and Proceeds Resulting from Addressing Defaulting Member Financial Transmission Rights Positions.**

Addressing a defaulting Member's Financial Transmission Rights positions pursuant to Operating Agreement, Schedule 1, section 7.3.9, and Tariff, Attachment K-Appendix, section 7.3.9, shall result in a final settlement amount. The final settlement amount may be aggregated with any

other amounts owed by the defaulting Member to PJM and/or PJMSettlement and may be set off by PJM and/or PJMSettlement against any amounts owed by PJM and/or PJMSettlement to the defaulting Member for purposes of determining the Default Allocation Assessment pursuant to the provisions of section 15.2.2 below. Any payments made to a Member purchasing some or all of a liquidated Financial Transmission Rights portfolio shall be net of that Member's charge resulting from a Default Allocation Assessment.

### **7.3 Auction Procedures.**

#### **7.3.1 Role of the Office of the Interconnection.**

Financial Transmission Rights auctions shall be conducted by the Office of the Interconnection in accordance with standards and procedures set forth in the PJM Manuals, such standards and procedures to be consistent with the requirements of this Schedule. PJMSettlement shall be the Counterparty to the purchases and sales of Financial Transmission Rights arising from such auctions, provided however, that PJMSettlement shall not be a contracting party to any subsequent bilateral transfers of Financial Transmission Rights between Market Participants. The conversion of an Auction Revenue Right to a Financial Transmission Right pursuant to this section 7 shall not constitute a purchase or sale transaction to which PJMSettlement is a contracting party. Any Financial Transmission Rights auctions conducted to liquidate a defaulting Member's Financial Transmission Rights portfolio shall be conducted by the Office of the Interconnection in accordance with the procedures set forth in section 7.3.9 below, and as may be further described in the PJM Manuals.

#### **7.3.2 Notice of Offer.**

A holder of a Financial Transmission Right wishing to offer the Financial Transmission Right for sale shall notify the Office of the Interconnection of any Financial Transmission Rights to be offered. Each Financial Transmission Right sold in an auction shall, at the end of the period for which the Financial Transmission Rights were auctioned, revert to the offering holder or the entity to which the offering holder has transferred such Financial Transmission Right, subject to the term of the Financial Transmission Right itself and to the right of such holder or transferee to offer the Financial Transmission Right in the next or any subsequent auction during the term of the Financial Transmission Right.

#### **7.3.3 Pending Applications for Firm Service.**

(a) [Reserved.]

(b) Financial Transmission Rights may be assigned to entities requesting Network Transmission Service or Firm Point-to-Point Transmission Service pursuant to Operating Agreement, Schedule 1, section 5.2.2 (e), and the parallel provisions of Tariff, Attachment K-Appendix, section 5.2.2(e), only if such Financial Transmission Rights are simultaneously feasible with all outstanding Financial Transmission Rights, including Financial Transmission Rights effective for the then-current auction period. If an assignment of Financial Transmission Rights pursuant to a pending application for Network Transmission Service or Firm Point-to-Point Transmission Service cannot be completed prior to an auction, Financial Transmission Rights attributable to such transmission service shall not be assigned for the then-current auction period. If a Financial Transmission Right cannot be assigned for this reason, the applicant may withdraw its application, or request that the Financial Transmission Right be assigned effective with the start of the next auction period.

#### **7.3.4 On-Peak, Off-Peak and 24-Hour Periods.**

On-peak, off-peak and 24-hour FTRs will be offered in the annual and monthly auction. On-Peak Financial Transmission Rights shall cover the periods from 7:00 a.m. up to the hour ending at 11:00 p.m. on Mondays through Fridays, except holidays as defined in the PJM Manuals.

Off-Peak Financial Transmission Rights shall cover the periods from 11:00 p.m. up to the hour ending 7:00 a.m. on Mondays through Fridays and all hours on Saturdays, Sundays, and holidays as defined in the PJM Manuals. The 24-hour period shall cover the period from hour ending 1:00 a.m. to the hour ending 12:00 midnight on all days. Each bid shall specify whether it is for an on-peak, off-peak, or 24-hour period.

### **7.3.5 Offers and Bids.**

(a) Offers to sell and bids to purchase Financial Transmission Rights shall be submitted during the period set forth in Operating Agreement, Schedule 1, section 7.1.2, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.1.2, and shall be in the form specified by the Office of the Interconnection in accordance with the requirements set forth below.

(b) Offers to sell shall identify the specific Financial Transmission Right, by term, megawatt quantity and receipt and delivery points, offered for sale. An offer to sell a specified megawatt quantity of Financial Transmission Rights shall constitute an offer to sell a quantity of Financial Transmission Rights equal to or less than the specified quantity. An offer to sell may not specify a minimum quantity being offered. Each offer may specify a reservation price, below which the offeror does not wish to sell the Financial Transmission Right. Offers submitted by entities holding rights to Financial Transmission Rights shall be subject to such reasonable standards for the verification of the rights of the offeror as may be established by the Office of the Interconnection. Offers shall be subject to such reasonable standards for the creditworthiness of the offeror or for the posting of security for performance as the Office of the Interconnection shall establish.

(c) Bids to purchase shall specify the term, megawatt quantity, price per megawatt, and receipt and delivery points of the Financial Transmission Right that the bidder wishes to purchase. A bid to purchase a specified megawatt quantity of Financial Transmission Rights shall constitute a bid to purchase a quantity of Financial Transmission Rights equal to or less than the specified quantity. A bid to purchase may not specify a minimum quantity that the bidder wishes to purchase. A bid may specify receipt and delivery points in accordance with Operating Agreement, Schedule 1, section 7.2.2, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.2.2, and may include Financial Transmission Rights for which the associated Transmission Congestion Credits may have negative values. Bids shall be subject to such reasonable standards for the creditworthiness of the bidder or for the posting of security for performance as the Office of the Interconnection shall establish.

(d) Bids and offers shall be specified to the nearest tenth of a megawatt and shall be greater than zero. The Office of the Interconnection may require that a market participant shall not submit in excess of 5000 bids and offers for any single monthly auction, or for any single round of the annual auction, when the Office of the Interconnection determines that such limit is required to avoid or mitigate significant system performance problems related to bid/offer volume. Notice of

the need to impose such limit shall be provided prior to the start of the bidding period if possible. Where such notice is provided after the start of the bidding period, market participants shall be required within one day to reduce their bids and offers for such auction below 5000, and the bidding period in such cases shall be extended by one day.

### **7.3.6 Determination of Winning Bids and Clearing Price.**

(a) At the close of each bidding period, the Office of the Interconnection will create a base Financial Transmission Rights power flow model that includes all outstanding Financial Transmission Rights that have been approved and confirmed for any portion of the month for which the auction was conducted and that were not offered for sale in the auction. The base Financial Transmission Rights model also will include estimated uncompensated parallel flows into each interface point of the PJM Region and estimated scheduled transmission outages.

(b) In accordance with the requirements of Operating Agreement, Schedule 1, section 7.5, and the parallel provisions of Tariff, Attachment K-Appendix, section 7.5, and subject to all applicable transmission constraints and reliability requirements, the Office of the Interconnection shall determine the simultaneous feasibility of all outstanding Financial Transmission Rights not offered for sale in the auction and of all Financial Transmission Rights that could be awarded in the auction for which bids were submitted. The winning bids shall be determined from an appropriate linear programming model that, while respecting transmission constraints and the maximum MW quantities of the bids and offers, selects the set of simultaneously feasible Financial Transmission Rights with the highest net total auction value as determined by the bids of buyers and taking into account the reservation prices of the sellers. In the event that there are two or more identical bids for the selected Financial Transmission Rights and there are insufficient Financial Transmission Rights to accommodate all of the identical bids, then each such bidder will receive a pro rata share of the Financial Transmission Rights that can be awarded.

(c) Financial Transmission Rights shall be sold at the market-clearing price for Financial Transmission Rights between specified pairs of receipt and delivery points, as determined by the bid value of the marginal Financial Transmission Right that could not be awarded because it would not be simultaneously feasible. The linear programming model shall determine the clearing prices of all Financial Transmission Rights paths based on the bid value of the marginal Financial Transmission Rights, which are those Financial Transmission Rights with the highest bid values that could not be awarded fully because they were not simultaneously feasible, and based on the flow sensitivities of each Financial Transmission Rights path relative to the marginal Financial Transmission Rights paths flow sensitivities on the binding transmission constraints. Financial Transmission Rights with a zero clearing price will only be awarded if there is a minimum of one binding constraint in the auction period for which the Financial Transmission Rights path sensitivity is non-zero.

### **7.3.7 Announcement of Winners and Prices.**

Within two (2) Business Days after the close of the bid and offer period for an annual Financial Transmission Rights auction round, and within five (5) Business Days after the close of the bid and offer period for a monthly Financial Transmission Rights auction, the Office of the

Interconnection shall post the winning bidders, the megawatt quantity, the term and the receipt and delivery points for each Financial Transmission Right awarded in the auction and the price at which each Financial Transmission Right was awarded unless circumstances beyond PJM's control prevent PJM from meeting the applicable deadline. Under such circumstances, PJM will post the auction results at the earliest possible opportunity. The Office of the Interconnection shall not disclose the price specified in any bid to purchase or the reservation price specified in any offer to sell. If the Office of the Interconnection discovers an error in the results posted for a Financial Transmission Rights auction (or a given round of the annual Financial Transmission Rights auction), the Office of the Interconnection shall notify Market Participants of the error as soon as possible after it is found, but in no event later than 5:00 p.m. of the Business Day following the initial publication of the results of the auction or round of the annual auction. After this initial notification, if the Office of the Interconnection determines that it is necessary to post modified results, it shall provide notification of its intent to do so, together with all available supporting documentation, by no later than 5:00 p.m. of the second Business Day following the initial publication of the results of that auction or round of the annual auction. Thereafter, the Office of the Interconnection must post any corrected results by no later than 5:00 p.m. of the fourth calendar day following the initial publication of the results of the auction or round of the annual auction. Should any of the above deadlines pass without the associated action on the part of the Office of the Interconnection, the originally posted results will be considered final. Notwithstanding the foregoing, the deadlines set forth above shall not apply if the referenced auction results are under publicly noticed review by the FERC.

#### **7.3.8 Auction Settlements.**

All buyers and sellers of Financial Transmission Rights between the same points of receipt and delivery shall pay PJM Settlement or be paid by PJM Settlement the market-clearing price, as determined in the auction, for such Financial Transmission Rights.

#### **7.3.9 Addressing Defaulting Member's Financial Transmission Rights.**

In the event a Member fails to meet creditworthiness requirements or make timely payments when due pursuant to the Operating Agreement or Tariff, the Office of the Interconnection shall, as soon as practicable after declaring the Member to be in default as provided in Operating Agreement, section 15.1.5, use reasonable efforts to initiate within two applicable auctions the following procedures to settle, liquidate or otherwise resolve each Financial Transmission Rights position held by the defaulting Member:

- a) The Office of the Interconnection shall unilaterally terminate all of the defaulting Member's rights with respect to forward Financial Transmission Rights positions as of the date of the Member's default.
- b) As to each Financial Transmission Rights position held by the defaulting Member immediately prior to the termination of the defaulting Member's rights under subsection (a) above, the Office of the Interconnection shall determine and execute an appropriate course of action for addressing such Financial Transmission Rights position, based on the specific circumstances of the default as determined by the Office of the Interconnection in exercise of its reasonable



judgment, such as (1) liquidating the position by offering it for sale in an upcoming applicable Financial Transmission Rights auction, (2) liquidating the position by offering it for sale in an auction called and scheduled for the specific purpose of liquidating one or more positions held by the defaulting Member (“Special Auction”), (3) allowing the position to go to settlement, or (4) another course of action the Office of the Interconnection determines to be appropriate under the circumstances that is designed to minimize potential losses to PJM and its Members. The Office of the Interconnection will provide reasonable advance notice to PJM Members of the approach or course of action it has determined to be appropriate prior to implementing that approach or course of action. The Office of the Interconnection is not required to apply a single approach to the defaulting Member’s entire Financial Transmission Rights portfolio, and may determine that the appropriate course of action for addressing a defaulting Member’s portfolio includes a combination of the above approaches as applied to different positions within the defaulting Member’s overall Financial Transmission Rights portfolio.

c) The Office of the Interconnection will seek to minimize the losses to PJM Members associated with settling, liquidating or otherwise resolving the defaulting Member’s Financial Transmission Rights portfolio and may base its determination in subsection (b) above on several factors, including but not limited to, the following:

- 1) the Office of the Interconnection’s assessment of which approach will provide the greatest degree of protection to the financial integrity of the PJM Markets;
- 2) the size of the defaulting Member’s Financial Transmission Rights portfolio, both in absolute terms and relative to overall market volume;
- 3) the term of the Financial Transmission Rights positions held by the defaulting Member as considered for a single position or on a portfolio basis;
- 4) whether liquidation is feasible or not, and on what timeline, due to the cessation or curtailment of trading at PJM for all Financial Transmission Rights or a subset of Financial Transmission Rights positions;
- 5) prevailing market conditions, such as but not limited to market liquidity and volatility; and
- 6) timing of the default and the actions taken to address the default.

d) Special Auctions. The Office of the Interconnection shall administer each Special Auction provided for in subsection (b)(2) above according to the procedures set forth in the Tariff and PJM Manuals for FTR auctions to the extent appropriate in the Office of the Interconnection’s sole discretion, and may adopt special rules for each Special Auction to accommodate the unique circumstances underlying the particular default and particular Financial Transmission Rights positions being liquidated, with the terms and conditions of such auction being determined with the goal of facilitating a successful auction in light of the particular positions to be auctioned, the

prevailing market conditions for such open positions (including the depth, scope, and nature of participation in such markets), and such other factors as the Office of the Interconnection determines appropriate, including those factors enumerated in subsection (c) above. The Office of the Interconnection shall provide reasonable advance notice to FTR Participants of a Special Auction and the terms and conditions under which it will be conducted.

e) All liquidations made pursuant to subsection (b) above shall be for the account of the defaulting Member (and all amounts owed PJM in respect thereof shall be included in amounts owed by the defaulting Member as part of its default).

f) Notwithstanding subsections 7.3.9(a) and (b) above, the actual net charges or credits resulting from the defaulting Member's Financial Transmission Rights positions for which PJMSettlement acted as counterparty as calculated through the normal settlement processes shall be included in calculating the Default Allocation Assessment charges as described in Operating Agreement, section 15.2.2.

# Attachment E

Affidavit of Timothy Horger  
on Behalf of PJM Interconnection, L.L.C.

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

) )  
PJM Interconnection, L.L.C. ) Docket No. ER21-\_\_\_\_-000  
and PJM Settlement, Inc. )

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

1. My name is Timothy Horger. My business address is 2750 Monroe Blvd., Audubon, Pennsylvania, 19403. I currently serve as the Director of Market Operations for PJM Interconnection, L.L.C. (“PJM”). I am submitting this affidavit on behalf of PJM in support of the proposed Tariff revisions being filed today by PJM and PJM Settlement, Inc. (collectively referred to as PJM) in the captioned proceeding.

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

3. As part of my work at PJM, I am responsible for overseeing the operation of PJM’s Financial Transmission Rights (“FTR”)<sup>1</sup> market.

4. Under the current Tariff provisions, specifically Tariff, Attachment K-Appendix, section 7.3.9<sup>2</sup> adopted in 2018,<sup>3</sup> when a Member default is declared, the Tariff requires PJM to allow the FTR positions held by the defaulting Member at the time of its default to go to settlement but terminates the defaulting Member’s rights to manage those FTR positions. In practice this means that, after a default, PJM will terminate the defaulting Member’s rights to its FTR positions but those FTR positions themselves will continue to accumulate all charges and credits associated with the position that would have accrued had the defaulting Member not defaulted.<sup>4</sup> The net amount of these charges

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<sup>1</sup> All capitalized terms that are not otherwise defined herein shall have the same meaning as they are defined in the PJM Open Access Transmission Tariff (“Tariff”), Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. (“Operating Agreement”), or the Reliability Assurance Agreement Among Load Serving Entities in the PJM Region.

<sup>2</sup> All references herein to the Tariff, Attachment K-Appendix, section 7.3 or any subsection thereof also are intended to encompass the identical, parallel provisions in Operating Agreement, Schedule 1, section 7.3. This affidavit will refer generally to the Tariff throughout this letter to also include the Operating Agreement.

<sup>3</sup> See Financial Transmission Rights Default Disposition Filing of PJM Interconnection, L.L.C., Docket No. ER19-19-000 (October 1, 2018) (“2018 Default FTR Filing”) (requesting acceptance of the current Tariff language in Tariff, Attachment K-Appendix, section 7.3 and Operating Agreement, section 15.1); *PJM Interconnection L.L.C.*, 165 FERC ¶ 61,188 (2018) (accepting subject to consensus compliance modifications the revisions proposed in the 2018 Default FTR Filing).

<sup>4</sup> See 2018 Default FTR Filing at 2.

and credits, after consideration of any financial security held by PJM for the FTR positions and any indemnification by any bilateral sellers of those FTR positions to the extent any of the defaulting Member's FTRs were acquired through any bilateral transactions, are then billed to PJM's non-defaulting Members in accordance with the Default Allocation Assessment provisions of Operating Agreement, section 15.2.<sup>5</sup>

5. PJM is now proposing as part of its work with stakeholders through the Financial Risk Mitigation Senior Task Force formed in 2019 to address financial risk mitigation after the large financial default of GreenHat Energy, LLC in 2018, to revise its procedures for addressing the FTR positions of a Member in payment default to provide limited flexibility that will allow PJM to address FTR positions of a defaulting Member in a way appropriately tailored to the facts and circumstances underlying that particular default, including the FTR market conditions at that time. More specifically, PJM's Tariff revisions have the desirable characteristics described below.

6. First, the new procedures will provide PJM with flexibility, within certain parameters, to choose and implement an appropriate approach to resolve a defaulting Member's FTR portfolio based on the facts specific to that Member's default and the market conditions at that time.

7. Second, the new procedures will preserve a desirable aspect of the current Tariff regime by retaining PJM's current ability to allow FTR positions in a defaulting Member's portfolio to go to settlement if doing so is appropriate, for example in the event liquidation at auction would significantly disrupt the FTR market because there is a lack of liquidity due to a lack of willing buyers to absorb those FTR positions such that it would produce aberrant market results or price distortions.

8. Third, the new procedures will permit PJM to liquidate a defaulting Member's FTR positions at auction if doing so is appropriate, for example if there appear to be sufficient liquidity and willing buyers to rationally absorb those FTR positions without producing distorted FTR market results that do not reflect the value of the products being auctioned. This will provide an improvement on PJM's pre-2018 Tariff requirements, which required liquidation regardless of the liquidity level of the FTR market. When practicable, addressing a defaulting Member's FTR positions through liquidation provides many benefits to the FTR market, the most obvious of which are (a) providing certainty within a short timeframe (i.e., by the time the liquidation auction is completed) regarding the valuation of the FTRs in the defaulted Member's portfolio and (b) facilitating more expeditious netting of a final settlement amount for the default than would occur if the positions were allowed to go to settlement. PJM's proposed new procedures are also expected to promote orderly and efficient resolution of a defaulting Member's FTR portfolio through liquidation when circumstances are conducive to such liquidation as a method to minimize Member losses due to the Member default.

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<sup>5</sup> See Tariff, Attachment K-Appendix, section 7.3.9(e).

9. Fourth, the new procedures will provide protections to Members by requiring PJM to seek to minimize the losses to Members that may arise from settling, liquidating or otherwise resolving a defaulting Member's FTR portfolio.

10. Fifth, the new procedures promote transparency by including a list of factors PJM may use to evaluate and elect the appropriate course of action for resolving a defaulting Member's FTR positions.

11. Sixth, the new procedures will provide transparency by requiring PJM to provide reasonable advance notice of the approach or course of action chosen for resolving a defaulting Member's FTR positions prior to implementing that approach or course of action.

12. Seventh, the proposed revisions are strongly supported by PJM's membership, reflecting an approach overwhelmingly endorsed by the Members themselves to address Member defaults in the FTR markets that may occur in the future.

13. The proposed procedures, at Tariff, Attachment K-Appendix, section 7.3.9, would require PJM to initiate its resolution process for a defaulting Member's FTR portfolio within two applicable FTR auctions after PJM declares the default. This timing provides a constraint that will assure timely initiation of resolution of the defaulting Member's FTR portfolio. In practice, PJM expects to initiate such resolution process as soon as is practicable under the circumstances.

14. PJM's proposal, at Tariff, Attachment K-Appendix, section 7.3.9(b), also provides an option for PJM to resolve a defaulting Member's FTR positions through "another course of action the Office of the Interconnection determines to be appropriate under the circumstances that is designed to minimize potential losses to PJM and its Members." This language could provide some limited flexibility for Members to pursue, for example, entering into bilateral transactions to resolve some FTR positions if entering into bilateral transactions is more conducive (than liquidation would be) to limiting Member losses and a bilateral counterparty has stepped forward to offer to acquire some or all of the defaulting Member's FTR positions. The flexibility to resolve FTR positions in this manner might be a useful tool for resolving defaults under certain factual circumstances, and thus is an appropriate addition to the Tariff.

15. Proposed Tariff, Attachment K-Appendix, section 7.3.9 retains an existing provision stating that PJM will terminate all of a defaulting Member's rights with respect to FTR positions as of the date of the Member's default, but removes language stating that PJM will "close out" those positions. In the course of drafting the instant revisions, it became clear that the term "close out" was not a necessary component to PJM addressing a defaulting Member's FTR positions. Therefore, with the endorsement of the PJM Members Commission, PJM now proposes to remove the phrase "close out" from Tariff, Attachment K-Appendix, section 7.3.9, as well as Tariff, Attachment Q, section IX, and Operating Agreement, section 15.1.6.c(a). Because this term was not a necessary component of PJM addressing a defaulting Member's FTR positions either before or after PJM's current tariff revision proposal, this change is not expected to materially affect how PJM will address defaults in the FTR market.

16. PJM's new process lists the following six factors PJM may consider in crafting its approach to resolving a defaulting Member's FTR positions under proposed Attachment K-Appendix, section 7.3.9:

- 1) the Office of the Interconnection's assessment of which approach will provide the greatest degree of protection to the financial integrity of the PJM Markets;
- 2) the size of the defaulting Member's Financial Transmission Rights portfolio, both in absolute terms and relative to overall market volume;
- 3) the term of the Financial Transmission Rights positions held by the defaulting Member as considered for a single position or on a portfolio basis;
- 4) whether liquidation is feasible or not, and on what timeline, due to the cessation or curtailment of trading at PJM for all Financial Transmission Rights or a subset of Financial Transmission Rights positions;
- 5) prevailing market conditions, such as but not limited to market liquidity and volatility; and
- 6) timing of the default and the actions taken to address the default.<sup>6</sup>

17. Listing these factors, alongside the requirement (also set forth in proposed Tariff, Attachment K-Appendix, section 7.3.9(c)) that PJM must seek to minimize losses to members, provides Members and other stakeholders with an understanding of PJM's decision making process and relevant considerations, while also ensuring PJM has the flexibility to administer the resolution of a defaulting Member's FTR portfolio in a way that is appropriate for the unique circumstances of that default and the market conditions present at that time. The six factors listed above reasonably capture the considerations likely to be most relevant to appropriately resolving a defaulting Member's FTR portfolio, including the interests of and impacts on Members, the characteristics of the defaulting Member's FTR portfolio and individual FTR positions, and market conditions and the practical feasibility of liquidation.

18. PJM's proposed FTR resolution process is transparent because it requires PJM to provide reasonable advance notice of the approach or course of action chosen for resolving a defaulting Member's FTR positions prior to implementing that approach or

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<sup>6</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(c).

course of action,<sup>7</sup> as well as advance notice of any special rules being adopted for any Special Auction being held for the liquidation of a defaulting Member's FTR positions.<sup>8</sup> These transparency requirements will help ensure that stakeholders have advance notice of PJM's decision making. I note here that PJM plans to provide additional details in one or more of its applicable business practice manuals regarding how PJM will implement its notice commitments under Tariff, Attachment K-Appendix, section 7.3.9, such as but not limited to listing where PJM will publish such notices.

19. This concludes my Affidavit.

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<sup>7</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(b).

<sup>8</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(d).



UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

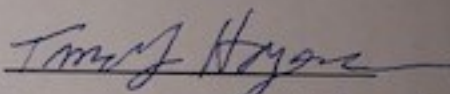
PJM Interconnection, L.L.C.

)  
) Docket No. ER21-\_\_\_-000  
)

VERIFICATION

I, Timothy Horger, state that I am the Timothy Horger referred to in the foregoing document entitled "Affidavit of Timothy Horger," 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.

In light of recent steps that PJM Interconnection, L.L.C has taken to address the ongoing emergency relating to COVID-19, including making arrangements for employees to work remotely, I respectfully request waiver of the Commission's regulations with respect to any expectation or requirement that this verification be notarized.<sup>9</sup>

By:   
Name: Timothy Horger 11/30/20  
Title: Director of Market Operations  
for PJM Interconnection,  
L.L.C.

<sup>9</sup> See *Extension of Non-Statutory Deadlines*, Supplemental Notice Granting Extension of Time for Non-Statutory Deadlines, Waiving Regulations, and Shortening Answer Period, Docket No. AD20-11-000, at 2 & n.2 (Apr. 2, 2020); *Extension of Non-Statutory Deadlines*, Notice Granting Extension of Time, Docket No. AD20-11-000, at 2 & n.4 (Mar. 19, 2020)

## Attachment F

Affidavit of Nigeria Bloczynski  
on Behalf of PJM Interconnection, L.L.C.

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

PJM Interconnection, L.L.C.                     )  
and PJM Settlement, Inc.                    )             Docket No. ER21-\_\_\_\_-000

**AFFIDAVIT OF NIGERIA BLOCZYNSKI  
ON BEHALF OF PJM INTERCONNECTION, L.L.C.**

1. My name is Nigeria Bloczynski. My business address is 2750 Monroe Blvd., Audubon, Pennsylvania, 19403. I currently serve as the Chief Risk Officer for PJM Interconnection, L.L.C. (“PJM”). I am submitting this affidavit on behalf of PJM and PJM Settlement, Inc. (collectively referred to herein as PJM) in support of the proposed Tariff revisions being filed today by PJM in the captioned proceeding.

2. I joined PJM in July 2019 as its first Chief Risk Officer. Prior to my employment at PJM, I worked as the Head of Commodity & Corporate Risk Management at WGL, a diversified energy business that provides natural gas, electricity, green power, carbon reduction and energy services, from August 2008 to July 2019. I also served as a Member of the Board of Directors of the Committee of Chief Risk Officers from November 2016 to October 2020. Prior to joining WGL, I served in compliance and risk management roles at various regulated, energy markets and financial services institutions between 1998 and 2008.

3. As part of my work at PJM, I am responsible for overseeing the enterprise risk management practices across all markets within PJM, including assessing the market and credit risk applicable in PJM’s Financial Transmission Rights (“FTR”)<sup>1</sup> market.

4. Under the current Tariff provisions, specifically Tariff, Attachment K-Appendix, section 7.3.9<sup>2</sup> adopted in 2018,<sup>3</sup> when a Member default is declared, the Tariff requires PJM to allow the FTR positions held by the defaulting Member at the time of its

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<sup>1</sup> All capitalized terms that are not otherwise defined herein shall have the same meaning as they are defined in the PJM Open Access Transmission Tariff (“Tariff”), Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. (“Operating Agreement”), or the Reliability Assurance Agreement Among Load Serving Entities in the PJM Region.

<sup>2</sup> All references herein to the Tariff, Attachment K-Appendix, section 7.3 or any subsection thereof also are intended to encompass the identical, parallel provisions in Operating Agreement, Schedule 1, section 7.3. This affidavit will refer generally to the Tariff throughout this letter to also include the Operating Agreement.

<sup>3</sup> See Financial Transmission Rights Default Disposition Filing of PJM Interconnection, L.L.C., Docket No. ER19-19-000 (October 1, 2018) (“2018 Default FTR Filing”) (requesting acceptance of the current Tariff language in Tariff, Attachment K-Appendix, section 7.3 and Operating Agreement, section 15.1); *PJM Interconnection L.L.C.*, 165 FERC ¶ 61,188 (2018) (accepting subject to consensus compliance modifications the revisions proposed in the 2018 Default FTR Filing).

default to go to settlement but terminates the defaulting Member's rights to manage those FTR positions. In practice this means that, after a default, PJM will terminate the defaulting Member's rights to its FTR positions but those FTR positions themselves will continue to accumulate all charges and credits associated with the position that would have accrued had the defaulting Member not defaulted.<sup>4</sup> The net amount of these charges and credits, after consideration of any financial security held by PJM and any indemnification by any bilateral sellers to the extent any of the defaulting Member's FTRs were acquired through any bilateral transactions, are then allocated to PJM's non-defaulting Members in accordance with the Default Allocation Assessment provisions of Operating Agreement, section 15.2.<sup>5</sup>

5. PJM is now proposing, as part of its work with stakeholders through the Financial Risk Mitigation Senior Task Force, formed in 2019 to address financial risk mitigation after the large financial default of GreenHat Energy, LLC in 2018, to revise its procedures for addressing the FTR positions of a Member in payment default to provide limited flexibility that will allow PJM to address FTR positions of a defaulting Member in a way appropriately tailored to the facts and circumstances underlying that particular default, including the FTR market conditions at that time. Tim Horger is submitting a separate affidavit in this proceeding generally addressing the many desirable characteristics of this proposal.<sup>6</sup>

6. I focus my remarks here on two aspects of the proposed Tariff revisions: (i) the flexibility afforded to PJM under Tariff, Attachment K-Appendix, section 7.3.9(b) in formulating and implementing a plan to appropriately address a defaulting Member's FTR positions; and (ii) the factors listed in proposed Tariff, Attachment K-Appendix, section 7.3.9(c) that will guide PJM's decision making process as it works to address a defaulting Member's FTR positions. Specifically, I will explain that this flexibility and these factors are consistent with processes and procedures used in other financial markets to guide their response to market participant defaults.

7. PJM's proposal would revise Tariff, Attachment K-Appendix, section 7.3.9 to provide PJM with flexibility, within certain parameters, to address a defaulting Member's FTR portfolio in a way that is appropriate for the facts associated with that particular default and the market conditions in place at that time. For reference, the proposed Tariff language reads as follows:

[T]he Office of the Interconnection shall determine and execute an appropriate course of action for addressing [FTR positions held by a defaulting Member], based on the specific circumstances of the

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<sup>4</sup> See 2018 Default FTR Filing at 2.

<sup>5</sup> See Tariff, Attachment K-Appendix, section 7.3.9(e).

<sup>6</sup> See Affidavit of Timothy Horger on Behalf of PJM Interconnection, L.L.C. This affidavit is Attachment E to this filing.

default as determined by the Office of the Interconnection in exercise of its reasonable judgment, such as (1) liquidating the position by offering it for sale in an upcoming applicable Financial Transmission Rights auction, (2) liquidating the position by offering it for sale in an auction called and scheduled for the specific purpose of liquidating one or more positions held by the defaulting Member (“Special Auction”), (3) allowing the position to go to settlement, or (4) another course of action the Office of the Interconnection determines to be appropriate under the circumstances that is designed to minimize potential losses to PJM and its Members.<sup>7</sup>

Based on my experience as a risk management professional in both the energy and financial sectors, the flexibility provided by this language is consistent with the practices other operators of financial markets are permitted to exercise upon events of default in their markets. In support of this conclusion, I note that several recent publications by robust financial markets describe similar levels of flexibility for the market operators to address market participant defaults in their markets.<sup>8</sup>

8. In addition to requiring PJM to seek to minimize losses to Members as it discerns and implements a plan to address a defaulting Member’s FTR positions, PJM’s new process lists the following six factors PJM may consider in crafting its approach to resolving a defaulting Member’s FTR positions under proposed Tariff, Attachment K-Appendix, section 7.3.9:

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<sup>7</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(b).

<sup>8</sup> See, e.g., *CCP Best Practices – A CCP12 Position Paper*, CCP12, 19 (May 27, 2019), [https://ccp12.org/wp-content/uploads/2019/05/CCP-Best-Practices\\_\\_CCP12\\_Position\\_Paper.pdf](https://ccp12.org/wp-content/uploads/2019/05/CCP-Best-Practices__CCP12_Position_Paper.pdf) (“a [central counterparty (“CCP”)] must have the necessary flexibility to manage a default considering its unique circumstances”); *A Discussion Paper on Central Counterparty Default Management Auctions*, Committee on Payments and Market Infrastructures & Board of the International Organization of Securities Commissions, § 4.1 (June 26, 2019), <https://www.bis.org/cpmi/publ/d185.pdf> (“Flexibility in the framework assists the CCP in tailoring the hedging strategy to the defaulted participant’s portfolio or current market conditions as required”); *Central Counterparty Default Management Auctions – Issues for Consideration*, Committee on Payments and Market Infrastructures & Board of the International Organization of Securities Commissions, § 4.1 (June 26, 2020), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD657.pdf> (“maintaining flexibility in the framework is important, as it assists the CCP in tailoring the hedging strategy to the defaulted participant’s portfolio or current market conditions as required”); *id.* § 4.3 (“A CCP should have processes and governance arrangements to assess if it should either rerun the auction or use other default management or recovery tools, in the event an auction is unsuccessful.”); *Rules*, ICE Clear U.S., Inc., Rule 802 (May 26, 2020), [https://www.theice.com/publicdocs/rulebooks/clear/ICE\\_Clear\\_US\\_Rules.pdf](https://www.theice.com/publicdocs/rulebooks/clear/ICE_Clear_US_Rules.pdf) (setting forth platform’s ability to exercise discretion not to liquidate positions of a defaulted market participant).

- 1) the Office of the Interconnection's assessment of which approach will provide the greatest degree of protection to the financial integrity of the PJM Markets;
- 2) the size of the defaulting Member's Financial Transmission Rights portfolio, both in absolute terms and relative to overall market volume;
- 3) the term of the Financial Transmission Rights positions held by the defaulting Member as considered for a single position or on a portfolio basis;
- 4) whether liquidation is feasible or not, and on what timeline, due to the cessation or curtailment of trading at PJM for all Financial Transmission Rights or a subset of Financial Transmission Rights positions;
- 5) prevailing market conditions, such as but not limited to market liquidity and volatility; and
- 6) timing of the default and the actions taken to address the default.<sup>9</sup>

In my experience, these factors are consistent with the factors other operators of financial markets are expected to consider when managing a default in their financial markets.

9. This concludes my Affidavit.

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<sup>9</sup> Proposed Tariff, Attachment K-Appendix, section 7.3.9(c).

