

April 11, 2017

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

Re: Schedule 12 Revisions Regarding Assignment of Costs for Targeted Market Efficiency Projects, Docket No. ER17-1406-000

Dear Secretary Bose:

Pursuant to Section 205 of the Federal Power Act, Part 35 of the regulations of the Federal Energy Regulatory Commission (“FERC” or “Commission”) and Article 7 of the PJM Consolidated Transmission Owners Agreement (“CTOA”), the PJM Transmission Owners¹ acting through the voting protocols of the CTOA, hereby submit for filing revisions to Schedule 12 of the PJM Open Access Transmission Tariff (“PJM Tariff”).² As described in greater detail below, the proposed revisions establish the means by which the costs of Targeted Market Efficiency Projects (“TMEPs”) will be assigned in the PJM Region. The PJM Transmission Owners respectfully request that the proposed tariff sheets be made effective concurrently with the proposed TMEP amendments to the PJM and Midcontinent Independent System Operator

¹ Pursuant to Order No. 714, and in accordance with the requirements of the Commission’s September 19, 2012 “Notice of Filing Procedures for Order No. 1000 Electronic Compliance Filings,” issued in Docket No. RM10-23-000, this filing is being submitted by PJM on behalf of the PJM Transmission Owners as part of an XML filing package that conforms with the Commission’s regulations. Pursuant to Section 9.1(b) of the PJM Tariff, PJM has agreed to make all filings on behalf of the PJM Transmission Owners in order to retain administrative control over the PJM Tariff. Thus, the PJM Transmission Owners have requested that PJM submit this filing in the eTariff system as part of PJM’s electronic Intra PJM Tariff.

² *PJM Interconnection, L.L.C.*, Consolidated Transmission Owners Agreement, Rate Schedule F.E.R.C. No. 42 (June 19, 2008). Pursuant to Section 9.1 of the PJM Tariff and Article 7 of the CTOA, the PJM Transmission Owners have the exclusive authority and responsibility to submit filings under Section 205 “in or relating to . . . the transmission rate design under the PJM Tariff.” The cost allocation proposed herein has been authorized pursuant to the individual and weighted voting requirements in Section 8.5 of the CTOA. See *PJM Interconnection, L.L.C.*, FERC Electric Tariff, Rate Schedule No. 38.

Inc. (“MISO”) Joint Operating Agreement (“JOA”) which were submitted by PJM and MISO on December 30, 2016 and are currently pending before the Commission.³

I. Background

On December 30, 2016, PJM and MISO filed with the Commission proposed revisions to the JOA in order to add TMEPs as a class of projects eligible for interregional coordination and cost assignment (collectively “PJM and MISO Filings”).⁴ Concurrently, the PJM Transmission Owners proposed revisions to the JOA in order to establish the means by which cost responsibility for TMEPs will be allocated between PJM and MISO.⁵ As described in greater detail in the PJM and MISO Filings, TMEPs are low-cost, short lead time projects that are intended to address historical congestion issues occurring at Reciprocal Coordinated Flowgates along the PJM-MISO border. Unlike traditional Market Efficiency Projects, which are studied and developed based on projected long-term future congestion, TMEPs are intended to deliver “quick hit” solutions to existing congestion in PJM and MISO, and are therefore planned in response to historical congestion that likely will continue to persist into the foreseeable future.

As explained in the PJM and MISO Filings, in order to be eligible for interregional and regional cost assignment, TMEPs must be (1) be evaluated as part of a joint study process between PJM and MISO;⁶ (2) have an estimated installed cost of less than \$20 million in study year dollars; (3) have an estimated in service date by the third summer peak season from the year the project is approved; (4) be shown to have expected annual congestion relief over the four year period after the study year on a specific flowgate that is equal to or greater than the estimated cost of the proposed project; and (5) be recommended by the Joint RTO Planning Committee and approved by each RTO’s Board of Directors.⁷

³ *PJM Interconnection, L.L.C.*, Proposed Targeted Market Efficiency Project Amendments to PJM-MISO Joint Operating Agreement, Docket No. ER17-718-000 (filed Dec. 30, 2016) (“PJM Filing”); *Midcontinent Independent System Operator, Inc.*, Proposed Targeted Market Efficiency Project Amendments to MISO-PJM Joint Operating Agreement, Docket No. ER17-721-000 (filed Dec. 30, 2016) (collectively “PJM and MISO Filings”).

⁴ See PJM and MISO Filings.

⁵ *PJM Interconnection, L.L.C.*, Proposed Revisions to the PJM Interconnection L.L.C. Joint Operating Agreement, Docket No. ER17-729-000 (filed Dec. 30, 2016).

⁶ JOA § 9.3.2. The PJM and MISO Filings also include proposed revisions to JOA § 9.3.6 to include the process by which TMEPs may be identified through the Coordinated System Plan Study process. See *Id.* § 9.3.6.2(c).

⁷ *Id.* § 9.4.4.1.5(v).

In order to determine the expected “annual congestion” relief of a proposed TMEP, PJM and MISO conduct a targeted market efficiency project study (“TMEP Study”).⁸ For the purposes of the TMEP Study, annual congestion is calculated using the estimated average historical congestion based on the two historical calendar years prior to the TMEP study period for both load and generator nodes in PJM and MISO, as determined under each RTO’s applicable market rules.⁹ The average annual congestion calculated under the TMEP Study is then reduced by the amounts determined to be due to outages and adjusted to reflect the effectiveness of the proposed TMEP to relieve all or only a portion of the congestion as modeled in the TMEP Study.¹⁰

If the results of the TMEP Study demonstrate that the expected annual congestion relief over the four year period after the TMEP study year is equal to or greater than the estimated cost of the proposed TMEP, and if the TMEP satisfies the other criteria referenced above, the TMEP is eligible for interregional cost assignment. The costs of the TMEP would then be assigned to PJM and MISO in direct proportion to the congestion relief benefits received by each region. Any costs assigned to PJM in this manner would then be included in the PJM Regional Transmission Expansion Plan (“RTEP”) and are eligible for regional cost assignment using the proposed methodology discussed below.

To date, PJM and MISO have identified five TMEPs that, based on the criteria outlined above, would be eligible for approval by each RTO and for inclusion in the JOA for the purposes of interregional cost assignment.¹¹

II. Proposed Modifications to Schedule 12 to Allocate the Costs of Targeted Market Efficiency Projects in PJM.

The PJM Transmission Owners propose to assign the costs of TMEPs within the PJM Region to those Zones and Merchant Transmission Facilities (“MTFs”) in PJM that are shown to have experienced net positive congestion over the two historical years prior to the TMEP study period.¹² As described in the attached affidavit of Mr. Paul F. McGlynn, PJM will use the same

⁸ JOA § 9.4.4.1.5(iv)(a).

⁹ In PJM, congestion is calculated pursuant to Section 5.1 of Attachment K-Appendix to the PJM Tariff and Schedule 1 to the PJM Operating Agreement.

¹⁰ See JOA § 9.4.4.1.5 (iv) (b), (c).

¹¹ See PJM Filing at p 3. Collectively, the five TMEPs identified by PJM and MISO have expected benefits of approximately \$100 million (at a total estimated installed cost of \$17.25 million for the five projects) in avoided market-to-market congestion along the MISO-PJM border in the first four years after the projects are in service. *Id.*

¹² Attachments A and B, Proposed PJM Tariff, Schedule 12 § (b)(xvii).

TMEP Study used to determine a TMEP's eligibility for interregional cost allocation under the JOA in order to determine the Zones and MTFs which have experienced congestion in PJM.¹³ A copy of Mr. McGlynn's Affidavit is annexed hereto as Attachment C.

As Mr. McGlynn explains, PJM will use the results of the TMEP Study to determine the total historical annual congestion experienced by each Zone and MTF at the targeted Reciprocal Coordinated Flowgate(s). To do so, PJM will first identify all PJM load node congestion identified in the TMEP Study and then aggregate it by PJM Zone and MTF. PJM will also disregard any generator node congestion identified by the TMEP Study, because the cost of transmission in PJM is recovered exclusively from load, defined as "Market Buyers" under PJM's Market Rules.¹⁴ These aggregated Zonal and MTF congestion values will be the basis for regional cost allocation.¹⁵

Mr. McGlynn further explains that, in order to ensure that costs are only assigned to those Zones and MTFs that actually benefit from the reduction in congestion caused by a TMEP, PJM will net the nodal congestion effects from any increases in Day-ahead and Real-time prices paid by Market Buyers in a Zone or MTF against the nodal congestion effects from any decreases in Day-ahead and Real-time prices paid by Market Buyers in such Zone or MTF that are attributable to the targeted Reciprocal Coordinated Flowgate.¹⁶ Along the same lines, where a TMEP is selected to relieve congestion at multiple Reciprocal Coordinated Flowgates, the congestion impacts on all affected Zones or MTFs shall be netted to ensure that only those Zones and MTFs with net Transmission Congestion Charges across the multiple Reciprocal Coordinated Flowgates are assigned cost responsibility for the TMEP.¹⁷ As a result, only those Zones or MTFs with average net Transmission Congestion Charges (positive Market Buyer congestion) over the two historical years prior to the TMEP Study period will be assigned a share of the TMEP costs.

Finally, Mr. McGlynn describes the process by which individual Zonal and MTF shares of the total costs of the TMEP will be determined for the purposes of cost assignment. Specifically, under the proposed methodology PJM will calculate the total Market Buyer Transmission Congestion Charges of all the Zones and MTFs in PJM that experienced net

¹³ McGlynn Affidavit at P 13. As Mr. McGlynn explains, use of the TMEP Study to allocate costs within PJM is appropriate because the TMEP Study calculates congestion in PJM pursuant to the PJM's Market Rules in Attachment K-Appendix to the PJM Tariff.

¹⁴ PJM Tariff, Attachment K-Appendix § 5.1.

¹⁵ McGlynn Affidavit at P 16.

¹⁶ *Id.* at P 17.

¹⁷ *Id.* at P 18.

Transmission Congestion Charges, and then assign the costs to the applicable Zones and MTFs on a *pro rata* basis based on each Zone or MTF's individual net Transmission Congestion Charges compared to the sum total.¹⁸ Because cost assignment analysis for each TMEP relies on historical congestion data, cost responsibility assignments for a TMEP will only be performed once, and will apply for the entire useful life of the TMEP. However, and as noted by Mr. McGlynn, given that TMEPs must have a total installed cost of \$20 million or less, and given that the costs will be amortized over the entire life of the TMEP facilities, the resulting cost impact on those Zones or MTFs that are assigned a portion of the costs will be small.¹⁹

III. The Proposed Cost Allocation for Targeted Market Efficiency Projects is Consistent with the Commission's Regional Cost Allocation Principles

As discussed in greater detail in the PJM and MISO Filings, TMEPs are not required Order No. 1000 projects and are instead designed to supplement existing Order No. 1000 projects currently eligible for interregional and regional cost allocation in PJM. Nevertheless, the proposed methodology for assigning the costs of TMEPs within the PJM region is consistent with the six regional cost allocation principles established by the Commission in Order No. 1000.²⁰ Accordingly, the Commission should find that the proposed cost allocation methodology is just and reasonable and consistent with the principles of cost causation.

1. Regional Cost Allocation Principle One: Allocation of Costs Commensurate with the Benefits

Regional Cost Allocation Principle One requires that “[t]he cost of transmission facilities be allocated to those within the transmission planning region in a manner that is at least roughly commensurate with the estimated benefits of such facilities.”²¹ In determining the beneficiaries of a transmission facility, Regional Cost Allocation Principle One allows the transmission provider to consider a variety of benefits, including the extent to which the transmission facility provides congestion relief.²² As explained by Mr. McGlynn, the proposed methodology assigns the costs of a TMEP only to those Zones and MTF in PJM in which load experienced net

¹⁸ *Id.* at P 19.

¹⁹ *Id.* at P 20.

²⁰ *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, FERC Stats. & Regs. ¶ 31,323 (2011) (“Order No. 1000”), *order on reh’g*, Order No. 1000-A, 139 FERC ¶ 61,132, *order on reh’g and clarification*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012), *aff’d sub nom. S.C. Pub. Serv. Auth. v. FERC*, 762 F.3d 41 (D.C. Cir. 2014).

²¹ *Order No. 1000* at P 622.

²² *Id.*

positive Transmission Congestion Charges due to the Reciprocal Coordinated Flowgate(s) addressed by a TMEP during the two years prior to the study period.²³ Additionally, each Zone and MTF is assigned only its *pro rata* share of the costs based on each Zone or MTF's individual net Transmission Congestion Charges relative to the PJM sum total.²⁴ As a result, cost responsibility for a TMEP is assigned in direct proportion to the benefits received by each Zone and MTF in the form of expected future congestion relief provided by the project. Accordingly, the proposed methodology ensures that the beneficiaries are properly assigned their respective shares of the costs of a TMEP, and is therefore consistent with the principles of cost causation and with Regional Cost Allocation Principal One.²⁵

2. Regional Cost Allocation Principle Two: No Involuntary Allocation of Costs to Non-Beneficiaries

Regional Cost Allocation Principle Two requires that the costs of transmission facilities must not be involuntarily allocated to “those that receive no benefit from [the] facilities, either at present or in a likely future scenario...”²⁶ The proposed methodology complies with Regional Cost Allocation Principle Two because, as described above, only those Zones and MTFs that receive net benefits from a TMEP in the form of actual congestion relief will be assigned a portion of the costs.²⁷ Additionally, the cost assignment analysis for each TMEP will only be performed once and can not be changed during the life of the project, ensuring that costs will only be assigned to those Zones and MTFs that contributed to the initial need for the TMEP and were found to receive immediate congestion relief in the form of reduced Transmission Congestion Charges.

3. Regional Cost Allocation Principle Three: Benefit-Cost Analysis

Regional Cost Allocation Principle Three requires that “[i]f a benefit to cost threshold is used to determine which transmission facilities have sufficient net benefits to be selected in a regional transmission plan for the purpose of cost allocation...such a threshold may not include a

²³ McGlynn Affidavit at PP 17-18.

²⁴ *Id.* at P 19.

²⁵ *Order No. 1000* at P 623 (“it is appropriate to adopt a cost allocation principle that includes as beneficiaries those that cause costs to be incurred or that benefit from a new transmission facility”). *See also Illinois Commerce Comm’n v. FERC*, 576 F.3d 470, 477 (7th Cir. 2009) (holding that the principle of cost causation does not require benefits to be calculated to the last penny, and that the costs of transmission projects need only be allocated in manner that is roughly commensurate with the benefits received).

²⁶ *Id.* at P 637.

²⁷ McGlynn Affidavit at PP 17-19.

ratio of benefits to costs that exceeds 1.25 unless the transmission planning region or public utility transmission provider justifies and the Commission approves a higher ratio.”²⁸ As discussed above, in order to be eligible for regional cost assignment in PJM, a TMEP must first be approved for interregional cost assignment under the JOA. While Section 9.4.4.1.5 of the JOA requires a benefit-to-cost analysis as a qualification criteria for interregional cost assignment, a TMEP will qualify as long as it provides congestion relief benefits to PJM and MISO that are at least equal to or greater than the cost of the project, *i.e.* a benefit-to-cost threshold of 1.0. Thus, the proposed methodology complies with Regional Cost Allocation Principle Three, since a TMEP will only be eligible for regional cost assignment under the proposed methodology if it first meets the 1.0 benefit-to-cost threshold required by the JOA.

4. Cost Allocation Principle Four: Allocation Solely Within the Transmission Planning Region

Regional Cost Allocation Principle Four states that “[t]he allocation method for the cost of a transmission facility selected in a regional transmission plan must allocate costs solely within that transmission planning region unless another entity outside the region or another transmission planning region voluntarily agrees to assume a portion of those costs.”²⁹ The proposed methodology complies with Regional Cost Allocation Principle Four because it only applies to the portion of the costs of a TMEP assigned to PJM under the JOA, and because it assigns such costs exclusively to responsible Zones and MTFs within the PJM Region.³⁰

5. Cost Allocation Principle Five: Transparent Method for Determining Benefits and Identifying Beneficiaries

Regional Cost Allocation Principle Five requires that “[t]he cost allocation method and data requirements for determining benefits and identifying beneficiaries for a transmission facility must be transparent with adequate documentation to allow a stakeholder to determine how they were applied to a proposed transmission facility.”³¹ As described above, the benefits are readily quantifiable and calculated based on the TMEP Study, which is based on pre-existing PJM Tariff-based measurements of historical congestion and is developed by the Joint Regional Planning Committee through an open planning process with full input from the Interregional Planning Stakeholder Advisory Committee (“IPSAC”).³² The IPSAC is open to all PJM and

²⁸ *Order No. 1000* at P 646.

²⁹ *Id.* at P 657.

³⁰ *See* McGlynn Affidavit at PP 11-12.

³¹ *Order No. 1000* at P 668.

³² JOA § 9.4.4.1(iv)(b), (c); McGlynn Affidavit at P 10.

MISO stakeholders and is intended to facilitate stakeholder review and input into coordinated system planning.³³ Additionally, PJM stakeholders will, through the RTEP process, have access to all documentation used by PJM to determine the cost assignment for TMEPs within PJM. Accordingly, the proposed methodology satisfies Regional Cost Allocation Principle Five.

6. Cost Allocation Principle Six: Flexibility to Use Single or Multiple Methodologies for Different Projects

Regional Cost Allocation Principle Six provides that “[a] transmission planning region may choose to use a different cost allocation method for different types of transmission facilities in the regional transmission plan...”³⁴ The Commission further noted that “[i]t may be appropriate to have different cost allocation methods for transmission facilities that are planned for different purposes...provided these methods are applied consistently.”³⁵ The proposed methodology satisfies Regional Cost Allocation Principle Six because the proposed methodology will allocate the costs of TMEPs, which are planned to mitigate historical congestion that is expected to persist, in a manner that directly relates to the congestion to be mitigated. The proposed methodology clearly states how the costs of TMEPs will be assigned among Zones and MTFs, and the proposed methodology is the only method in the PJM Tariff used for assigning cost responsibility for TMEPs in PJM. Notably, the proposed methodology only applies to TMEPs, and will not apply to existing Market Efficiency Projects that are eligible for cost assignment under the JOA and the PJM RTEP. Distinguishing between TMEPs and traditional Market Efficiency Projects for the purposes of cost assignment is appropriate, since traditional Market Efficiency Projects are studied and planned to address anticipated congestion, while TMEPs are planned to address historical congestion that is likely to persist in the near future. Thus, while the costs of TMEPs are assigned to those Zones and MTFs which experienced historical congestion, the costs of traditional Market Efficiency Projects are assigned to those Zones and MTFs that will benefit from anticipated long-term future congestion relief. Accordingly, the proposed methodology complies with Interregional Cost Allocation Principle Six.

³³ See JOA § 9.1.2.

³⁴ Order No. 1000 at P 685.

³⁵ *Id.* at P 687.

IV. CORRESPONDENCE AND COMMUNICATIONS

Correspondence and communications concerning this filing should be directed to the following persons on behalf of the PJM Transmission Owners:

Mike Batta	Donald A. Kaplan
Director – Electric Transmission Policy	Benjamin L. Tejblum
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V. CONTENTS OF THIS FILING

Along with this transmittal letter, the following documents are submitted with this filing:

- Attachment A – Revised Schedule 12 § (b)(xvii) (in redlined form)
- Attachment B – Revised Schedule 12 § (b)(xvii) (in clean form)
- Attachment C – Affidavit of Paul F. McGlynn

VI. Effective Date

In the PJM and MISO Filings, the parties requested that the effective date for the proposed amendments to the JOA be no later than June 28, 2017.³⁶ Accordingly, the PJM Transmission Owners respectfully request that the revisions to Schedule 12 proposed herein be made effective concurrently with the proposed amendments to the JOA currently pending before the Commission, but in no circumstances later than June 28, 2017. Allowing the proposed revisions to Schedule 12 to go into effect concurrently with the proposed JOA amendments will ensure that the costs of TMEPs may be assigned on both the regional and interregional level without any delay, and will enable PJM and MISO to approve the five identified TMEPs discussed above.³⁷ To the extent that such an effective date requires waiver of any Commission regulations, the PJM Transmission Owners respectfully request such waiver from the Commission.

³⁶ See PJM and MISO Filings.

³⁷ See n 11, *supra*.

VII. SERVICE

PJM has served a copy of this filing on all PJM Members and on all state utility regulatory commissions in the PJM Region by posting this filing electronically. In accordance with the Commission's regulations,³⁸ 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 e-mail on the same date as this filing to all PJM Members and all state utility regulatory commissions in the PJM Region³⁹ alerting them that this filing has been made by PJM and is available by following such link. If the document is not immediately available by using the referenced link, the document will be available through the referenced link within 24 hours of the filing. Also, a copy of this filing will be available on the Commission'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.

VIII. CONCLUSION

WHEREFORE, the PJM Transmission Owners respectfully request that the Commission accept these revisions to the Schedule 12 of the PJM Tariff.

Respectfully submitted,

/s/ Donald A. Kaplan

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Counsel to the PJM Transmission Owners

Dated: April 11, 2017

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

³⁹ PJM already maintains, updates and regularly uses e-mail lists for all PJM members and affected state commissions.

ATTACHMENT A

Schedule 12
(Marked Format)

SCHEDULE 12
Transmission Enhancement Charges

(a) Establishment of Transmission Enhancement Charges.

(i) Establishment of Transmission Enhancement Charges by Transmission Owners and Entities That Will Become Transmission Owners. One or more of the Transmission Owners may be designated to construct and own and/or finance Required Transmission Enhancements by (1) the Regional Transmission Expansion Plan periodically developed pursuant to Schedule 6 of the Operating Agreement or (2) any joint planning or coordination agreement between PJM and another region or transmission planning authority set forth in Schedule 12-Appendix B (“Appendix B Agreement”) (collectively, for purposes of this Schedule 12 only, “Regional Transmission Expansion Plan”). Section 1.7 of Schedule 6 of the Operating Agreement recognizes that Transmission Owners, subject to obtaining any necessary regulatory approvals, may seek to recover the costs of Required Transmission Enhancements and obligates PJM Settlement to collect on behalf of Transmission Owner(s) any charges established by Transmission Owners to recover the costs of Required Transmission Enhancements. If a Transmission Owner is designated by the Regional Transmission Expansion Plan to construct and own and/or finance a Required Transmission Enhancement, such Transmission Owner may choose any of the following cost recovery mechanisms, subject to the crediting procedures set forth in section (e) below:

- (1) Decline to seek to recover the costs of Required Transmission Enhancements from customers until such time as it makes a filing pursuant to Section 205 of the Federal Power Act to revise its Network Integration Transmission Service rates;
- (2) Make a filing pursuant Section 205 of the Federal Power Act and the FERC’s rules and regulations to establish the revenue requirement with respect to a Required Transmission Enhancement, without filing to revise its rates for Network Integration Transmission Service generally; or
- (3) Establish the revenue requirement with respect to a Required Transmission Enhancement through the operation of a formula rate in effect applicable to its rates for Network Integration Transmission Service.

A charge established to recover the revenue requirement with respect to a Required Transmission Enhancement is hereafter referred to as a “Transmission Enhancement Charge.” Transmission Enhancement Charges of one or more Transmission Owners for Required Transmission Enhancements shall be established in accordance with this Schedule 12.

(ii) Establishment of Transmission Enhancement Charges With Respect to Required Transmission Enhancements Constructed by Entities in Another Region. The revenue requirement with respect to a Required Transmission Enhancement constructed pursuant to an Appendix B Agreement in another region by an entity designated by such other region shall be governed by the tariffs or agreements in effect in such region. Transmission Enhancement Charges to recover the costs of such Required Transmission Enhancement for which PJM is

responsible shall be determined in accordance with this Schedule 12. Other than with respect to a Required Transmission Enhancement constructed pursuant to an Appendix B Agreement, no PJM Network or Transmission Customer will bear cost responsibility for any required transmission upgrades in another region as a consequence of a Required Transmission Enhancement included in the Regional Transmission Expansion Plan.

(iii) Transmission Facilities Not Eligible for Cost Responsibility Assignment. Any alternating current (“A.C.”) facilities or direct current (“D.C.”) facilities that are Attachment Facilities, Local Upgrades, Merchant Network Upgrades, Merchant Transmission Facilities, Network Upgrades, Supplemental Projects, or any other Transmission Facilities that operate or are planned to be operated in a manner that requires customers to subscribe to transmission service over such facilities or to a portion of the electric capability of such facilities shall not be eligible for cost responsibility assignment pursuant to this Schedule 12.

(iv) Entities Not Yet Eligible to Become Transmission Owners. For purposes of this Schedule 12 only, the term, “Transmission Owner,” shall include any entity that undertakes to construct and own and/or finance a Required Transmission Enhancement pursuant to a designation in the Regional Transmission Expansion Plan to construct and own and/or finance such Required Transmission Enhancement, even if such entity is not yet eligible to become a party to the Consolidated Transmission Owners Agreement. Nothing in the PJM Tariff nor the Consolidated Transmission Owners Agreement shall prevent an entity that undertakes to construct and own and/or finance a Required Transmission Enhancement pursuant to a designation in the Regional Transmission Expansion Plan to construct and own and/or finance such Required Transmission Enhancement from recovering the costs of such Required Transmission Enhancement through this Schedule 12.

(v) Effective Date. The assignment of cost responsibility or classification of Required Transmission Enhancements either (1) made by the Transmission Provider prior to February 1, 2013, or (2) applicable to Required Transmission Enhancements approved by the PJM Board pursuant to Section 1.6 of the PJM Operating Agreement prior to February 1, 2013 are set forth in Schedule 12-Appendix. Except as specifically set forth herein, nothing in this Schedule 12 shall change the assignment of cost responsibility or classification of Required Transmission Enhancements included in Schedule 12-Appendix. The assignment of cost responsibility or classification of all other Required Transmission Enhancements shall be set forth in Schedule 12-Appendix A.

(b) Designation of Customers Subject to Transmission Enhancement Charges.

(i) Regional Facilities and Necessary Lower Voltage Facilities. Transmission Provider shall assign cost responsibility on a region-wide basis for Required Transmission Enhancements included in the Regional Transmission Expansion Plan that (1) (a) are A.C. facilities that operate at or above 500 kV; (b) constitute a single Required Transmission Enhancement comprising two A.C. circuits operating at or above 345 kV and below 500 kV, where both circuits originate from a single substation or switching station at one end and terminate at a single substation or switching station at the other end, regardless of whether or not the two circuits are routed in the same right-of-way (“Double-circuit 345 kV Required

Transmission Enhancement”); (c) are A.C. or D.C. shunt reactive resources (such as capacitors, static var compensators, static synchronous condenser (STATCON), synchronous condensers, inductors, other shunt devices, or their equivalent) connected to a Transmission Facility described in clause (a) or (b) of this subsection, or (d) are D.C. facilities meeting the criteria set forth in subsection (b)(i)(D) (collectively, “Regional Facilities”), or (2) new A.C. Transmission Facilities or expansions or enhancements to existing Transmission Facilities that operate below 500 kV (or 345 kV in the case of a Regional Facility described in clause (1)(b) of this subsection) or new D.C. Transmission Facilities that do not meet the criteria of subsection (b)(i)(D) that must be constructed or strengthened to support new Regional Facilities, based on the planning criteria used by the Transmission Provider in developing the applicable Regional Transmission Expansion Plan (“Necessary Lower Voltage Facilities”) as follows:

(A) Cost responsibility for Regional Facilities and Necessary Lower Voltage Facilities shall be allocated among Responsible Customers as defined in this Schedule 12 as follows:

(1) Fifty percent (50%) shall be assigned annually on a load-ratio share basis as follows:

(a) With respect to each Zone, using, consistent with section 34.1 of the Tariff, the applicable zonal loads at the time of such Zone’s annual peak load from the 12-month period ending October 31 preceding the calendar year for which the annual cost responsibility allocation is determined; and

(b) With respect to Merchant Transmission Facilities, (1) for the calendar year following the year in which it initiates operation, the actually awarded Firm Transmission Withdrawal Rights associated with its existing Merchant Transmission Facility; and (2) for all subsequent calendar years, the annual peak load of the Merchant Transmission Facility (not to exceed its actual Firm Transmission Withdrawal Rights) from the 12-month period ending October 31 of the calendar year preceding the calendar year for which the annual cost responsibility allocation is determined.

(2) Fifty percent (50%) shall be assigned as follows:

(a) In the case of a Required Transmission Enhancement included in the Regional Transmission Expansion Plan to address one or more reliability violations or to address operational adequacy and performance issues (collectively, “Reliability Project”), in accordance with the distribution factor (“DFAX”) analysis described in subsection (b)(iii) of this Schedule 12; and

(b) In the case of a Required Transmission Enhancement included in the Regional Transmission Expansion Plan to relieve one or more economic constraints as described in section 1.5.7(b)(iii) of Schedule 6 of the Operating Agreement (“Economic Project”), in accordance with the methodology described in subsection (b)(v) of this Schedule 12.

(B) (1) Except for transformers that are an integral component of a Regional Facility, transformers connected to Lower Voltage Facilities, as defined in section (b)(ii) of this Schedule 12, shall not be considered Regional Facilities or Necessary Lower Voltage Facilities; and (2) Transmission Facilities that are not Regional Facilities and deliver energy from a Regional Facility to load shall not be considered Necessary Lower Voltage Facilities.

(C) With respect Required Transmission Enhancements that qualify as Regional Facilities under subsection (b)(i)(1)(b) or subsection (b)(i)(D)(2) of this Schedule 12,

(1) where the Required Transmission Enhancement includes both new Transmission Facilities and pre-existing Transmission Facilities, cost responsibility under this section (b)(i) shall apply only to the cost of the new Transmission Facilities plus the original cost less accumulated depreciation of pre-existing Transmission Facilities that are included in Schedule 12-Appendix or Schedule 12-Appendix A;

(2) cost responsibility shall be assigned under this section (b)(i) only after the Required Transmission Enhancement goes into service as a Double-circuit 345 kV Required Transmission Enhancement or a Double-circuit D.C. Required Transmission Enhancement; and

(3) cost responsibility shall be assigned under this section (b)(i) for any CWIP permitted to be recovered before the Required Transmission Enhancement goes into service only after such Transmission Facilities are approved in a Regional Transmission Expansion Plan as a Double-circuit 345 kV Required Transmission Enhancement or a Double-circuit D.C. Required Transmission Enhancement.

(D) A Required Transmission Enhancement included in the Regional Transmission Expansion Plan that is a D.C. facility, consisting of D.C. lines (i.e., wires or cables) and A.C./D.C. converters, shall be a Regional Facility only if:

(1) such D.C. facility comprises two poles and operates at a voltage of ± 433 kV D.C. or above; or

(2) such D.C. Facility constitutes a single Required Transmission Enhancement comprising two D.C. circuits where (i) both circuits originate from a single substation or switching station at one end and terminate at a single substation or switching station at the other end, regardless of whether or not both circuits are routed in the same right-of-way, and (ii) each such circuit consists of two poles and operates at a voltage of ± 298 kV D.C. or above (“Double-circuit D.C. Required Transmission Enhancement”).

(ii) Lower Voltage Facilities. Transmission Provider shall assign cost responsibility for Required Transmission Enhancements that (a) are not Regional Facilities; and (b) are not “Necessary Lower Voltage Facilities” as defined in section (b)(i) of this Schedule 12 (collectively “Lower Voltage Facilities”), as follows:

(A) If the Lower Voltage Facility is a Reliability Project, Transmission Provider shall use the DFAX analysis described in subsection (b)(iii) of this Schedule 12; and

(B) If the Lower Voltage Facility is an Economic Project, Transmission Provider shall use the methodology described in subsection (b)(v) of this Schedule 12.

(iii) DFAX Analysis for Reliability Projects.

(A) For purposes of the assignment of cost responsibility for Reliability Projects under subsection (b)(i)(A)(2)(a) and subsection (b)(ii)(A) of Schedule 12, the Transmission Provider, based on a computer model of the electric network and using power flow modeling software, shall calculate distribution factors, represented as decimal values or percentages, which express the portions of a transfer of energy from a defined source to a defined sink that will flow across a particular transmission facility or group of transmission facilities. These distribution factors represent a measure of the use by the load of each Zone or Merchant Transmission Facility (collectively, “Responsible Zone”) of the Required Transmission Enhancement, as determined by a power flow analysis. In general, a distribution factor can be represented as:

Distribution Factor = (After-shift power flow – pre-shift power flow) / Total amount of power shifted

Total amount of power shifted = Modeled incremental megawatt transfer to a given Load Deliverability Area or Merchant Transmission Facility

Pre-shift power flow = Megawatt flow over the Required Transmission Enhancement before the incremental megawatt transfer

After-shift power flow = Megawatt flow over the Required Transmission Enhancement after the incremental megawatt transfer

When calculating such distribution factors:

(1) All distribution factors are calculated with respect to the Required Transmission Enhancement subject to cost allocation under subsection (b)(i)(A)(2)(a) and subsection (b)(ii)(A) of this Schedule 12.

(2) The calculation of distribution factors shall be determined using linear matrix algebra, such that distribution factors represent the ratio of (i) a change in megawatt flow on a Required Transmission Enhancement to (ii) a change in megawatts transferred to aggregate load within a Zone or, in the case of a Merchant Transmission Facility, the point of withdrawal associated with Firm Transmission Withdrawal Rights over such Merchant Transmission Facility.

(3) With respect to a Merchant Transmission Facility, zonal peak load shall mean (i) the existing Firm Transmission Withdrawal Rights of the Merchant Transmission Facility being evaluated, if the Merchant Transmission Facility is in service, or (ii) for a Merchant Transmission Facility that is not yet in service, the planned Firm Transmission Withdrawal Rights of the Merchant Transmission Facility being evaluated as identified in the Interconnection Service Agreement in effect for such Merchant Transmission Facility.

(4) In the DFAX analysis, when Transmission Provider models a transfer from generation to all load within an individual Zone, Transmission Provider shall model the transfer to the Zone as a whole (not on a bus-by-bus basis).

(5) In the DFAX analysis, Transmission Provider shall model generation both external and internal to individual Responsible Zones to reflect (a) the boundaries of Locational Deliverability Areas (“LDAs”), and (b) limitations with respect to the reliability objective for moving generation capacity across the transmission system. Transmission Provider shall adopt the Capacity Emergency Transfer Objective (“CETO”), associated with that LDA and calculated for the applicable planning year to be the transfer limitation into the LDA. In modeling the system generation and load, Transmission Provider shall assume that the percentage of the zonal load in the LDA served by external (or internal) generation to the LDA shall equal the ratio of (i) the CETO associated within that LDA (or generation internal with the LDA) to (ii) the sum of (a) the internal generation within the LDA and (b) the CETO associated with that LDA. For the generation dispatch used in calculating the distribution factor, Transmission Provider shall distribute these amounts of external/internal generation among all generation in the PJM Region external to/internal within the LDA, respectively, in proportion to their capacity. For Responsible Zones that are located within LDAs that are also entirely contained in other larger LDAs, the modeling approach and distribution factor calculations shall be repeated for such Responsible Zones for each LDA. The lowest distribution factor derived from these calculations shall be applied to the Responsible Zone in the calculation of the use of the Required Transmission Enhancement.

(6) No cost responsibility shall be assigned to a Responsible Zone unless the magnitude of the distribution factor is greater than or equal to 0.01. Any distribution factor of a smaller magnitude shall be set equal to zero.

(B) a The DFAX analysis will be performed in accordance with the following steps:

(1) Transmission Provider shall calculate a distribution factor and a direction of use for each Responsible Zone by modeling a transfer from all generation in the PJM Region to each Responsible Zone. To establish the use by a Responsible Zone, in megawatts, of a Required Transmission Enhancement, the distribution factor of a Required Transmission Enhancement associated with the resulting transfer modeled by the Transmission Provider to each Responsible Zone shall be multiplied by the Responsible Zone’s peak load.

(2) The Transmission Provider shall separately determine the relative use of the Required Transmission Enhancement by each Responsible Zone in each direction by dividing the megawatts of use by each Responsible Zone determined in Section (iii)(B)(1) by the total use of all Responsible Zones using the Required Transmission Enhancement in the same direction of use.

(3) Transmission Provider shall determine the direction of use percentage of the Required Transmission Enhancement in each direction using a production cost analysis to determine the total use, in megawatt-hours, of the Required Transmission Enhancement by all Zones and Merchant Transmission Facilities in each direction over the course of a year. The Transmission Provider shall calculate the percentage use in each direction by dividing the megawatt-hours of use in each direction by total use in megawatt-hours in both directions of use.

(4) The Transmission Provider shall multiply the relative use by each Responsible Zone of the Required Transmission Enhancement in each direction of use determined in Section (iii)(B)(2), above, by the applicable direction of use percentage determined in Section (iii)(B)(3), above.

(5) The products of the calculation performed in Section (iii)(B)(4), above, shall determine the relative allocation to each Responsible Zone of cost responsibility for the Required Transmission Enhancement.

(C) In the DFAX analysis, the Zones of Public Service Electric and Gas Company and Rockland Electric Company will be treated as one Zone unless and until Rockland Electric Company elects to be treated as a separate Zone in accordance with the terms of the Settlement Agreement And Offer Of Partial Settlement approved by FERC in Docket Nos. ER06-456-000, et al.

(D) Transmission Provider shall round cost responsibility assignments determined using the DFAX analysis described in subsection (b)(iii) of this Schedule 12 to the nearest one-hundredth of one percent.

(E) Transmission Provider shall not account for the ability to adjust use of phase angle regulators (“PARs”) in the DFAX analysis described in subsection (b)(iii) of this Schedule 12. In the DFAX analysis, all PAR angles shall be fixed at their base case settings.

(F) In the DFAX analysis, if the Required Transmission Enhancement is a D.C. facility, the Transmission Provider shall determine cost responsibility assignment as follows:

(1) The Required Transmission Enhancement shall be replaced in the model with a comparable proxy A.C. facility, the impedance of which shall be calculated based on the length of the D.C. facility that was removed from the model multiplied by an approximate per unit/mile impedance value for the proxy A.C. facility.

(2) Where a D.C. facility is an integral part of a Required Transmission Enhancement that also includes A.C. facilities, the methodology described in Subsection (b)(iii)(F)(1) above shall be used only for the D.C. facility segment of such Required Transmission Enhancement.

(3) A D.C. facility used to control flow over portions of the Transmission System shall be modeled with a zero impedance and no control shall be applied.

(G) If Transmission Provider determines in its reasonable engineering judgment that, as a result of applying the provisions of this Section (b)(iii), the DFAX analysis cannot be performed or that the results of such DFAX analysis are objectively unreasonable, the Transmission Provider may use an appropriate substitute proxy for the Required Transmission Enhancement in conducting the DFAX analysis. If a proxy is used that is not specified in this Schedule 12, Transmission Provider shall state in a written report (a) the reasons why it determined the DFAX analysis could not be performed or that the results of the DFAX analysis were objectively unreasonable; (b) why the substitute proxy produced objectively reasonable results; and (3) a recommendation as to what changes, if any, should be considered in conducting the DFAX analysis.

(H) The Transmission Provider shall make a preliminary cost responsibility determination for each Required Transmission Enhancement subject to this section (b)(iii) of Schedule 12 at the time such Required Transmission Enhancement is included in the Regional Transmission Expansion Plan.

(1) When CWIP in connection with a Required Transmission Enhancement subject to this section (b)(iii) of Schedule 12 is entitled to be recovered, the preliminary determination of cost responsibility made at the time that the Required Transmission Enhancement was included in the Regional Transmission Expansion Plan shall be used to assign cost responsibility for such CWIP and such cost responsibility shall remain unchanged until the date the Required Transmission Enhancement goes into service. Once a Required Transmission Enhancement has gone into service, the updated cost responsibility determination provided for in subsection (b)(iii)(H)(2) shall apply.

(2) Beginning with the calendar year in which a Required Transmission Enhancement is scheduled to enter service, and thereafter annually at the beginning of each calendar year, the Transmission Provider shall update the preliminary cost responsibility determination for each Required Transmission Enhancement using the values and inputs used in the base case of the most recent Regional Transmission Expansion Plan approved by the PJM Board prior to the date of the update. All values and inputs used in the calculation of the distribution factor in a determination of cost responsibility shall be the same values and inputs as used in the base case of the most recent Regional Transmission Expansion Plan approved by the PJM Board prior to the determination of cost responsibility.

(iv) Spare Parts, Replacement Equipment And Circuit Breakers. Transmission Provider shall assign cost responsibility for spare parts, replacement equipment, and circuit breakers and associated equipment, included in the Regional Transmission Expansion Plan as follows:

(A) Spare parts that are part of the design specifications of a Required Transmission Enhancement at the time such Required Transmission Enhancement is first included in the Regional Transmission Expansion Plan shall be considered part of the Required

Transmission Enhancement for the purpose of applying the cost threshold described in subsection (b)(vi) of this Schedule 12 and cost responsibility for such spare parts shall be assigned in the same manner as the Required Transmission Enhancement. Cost responsibility for spare parts independently included in the Regional Transmission Expansion Plan and not a part of the design specifications of a Required Transmission Enhancement as described above in this subsection shall be assigned to the Zone of the owner of the spare part, if the owner of the spare part is a Transmission Owner listed in Attachment J of the Tariff. If the owner of the spare part is not a Transmission Owner listed in Attachment J of the Tariff, cost responsibility shall be assigned on a pro rata basis to the zones that bear cost responsibility for the owner's Required Transmission Enhancements.

(B) Replacement equipment that is part of the design specifications of a Required Transmission Enhancement at the time the Required Transmission Enhancement is first included in the Regional Transmission Expansion Plan shall be considered part of the Required Transmission Enhancement for the purpose of applying the cost threshold described in section (b)(vi) of this Schedule 12 and cost responsibility for such replacement equipment shall be assigned in the same manner as the Required Transmission Enhancement. Cost responsibility for Required Transmission Enhancement replacement equipment independently included in the Regional Transmission Expansion Plan and not a part of the design specifications of a Required Transmission Enhancement as described above in this subsection, shall be assigned to the same Zones and/or Merchant Transmission Facilities and in the same proportions as the then-existing assignments of cost responsibility for the facilities that the replacement equipment is replacing.

(C) Circuit breakers and associated equipment that are part of the design specifications of a Required Transmission Enhancement at the time the Required Transmission Enhancement is first included in the Regional Transmission Expansion Plan shall be considered part of the Required Transmission Enhancement for the purpose of applying the cost threshold described in subsection (b)(vi) of this Schedule 12 and cost responsibility for such circuit breakers and associated equipment shall be assigned in the same manner as the Required Transmission Enhancement. Cost responsibility for circuit breakers and associated equipment independently included in the Regional Transmission Expansion Plan and not a part of the design specifications of a transmission element of a Required Transmission Enhancement as described above in this subsection, shall be assigned to the Zone of the owner of the circuit breaker and associated equipment if the owner of the circuit breaker is a Transmission Owner listed in Attachment J of the Tariff. If the owner of the circuit breaker is not a Transmission Owner listed in Attachment J of the Tariff, cost responsibility shall be assigned on a pro rata basis to the zones that bear cost responsibility for the owner's Required Transmission Enhancements.

(v) **Economic Projects.** Transmission Provider shall assign (i) fifty percent (50%) of cost responsibility for Economic Projects that are Regional Facilities; and (ii) full cost responsibility for Economic Projects that are Lower Voltage Facilities; as follows:

(A) Transmission Provider shall assign cost responsibility for Economic Projects that are accelerations of Reliability Projects as described in section 1.5.7(b)(i) of Schedule 6 of the Operating Agreement ("Acceleration Projects") by performing and comparing (1) a DFAX analysis consistent with the methodology described in subsection (b)(iii) of this

Schedule 12, and (2) a methodology that is intended to act as a proxy for expected economic benefits from reduced Locational Marginal Prices (“LMP Benefit”) over the period that the reliability-based enhancement or expansion is to be accelerated (“LMP Benefits Methodology”). The LMP Benefits Methodology shall determine cost responsibility assignment percentages to Zones and Merchant Transmission Facilities in the following manner. The LMP Benefit to a Zone shall be deemed to be equal to the reduction in Locational Marginal Price payments made by Load Serving Entities as a result of the Acceleration Project assuming the customers purchase all energy needs from the PJM Interchange Energy Market, and LMP Benefits so calculated shall be converted into percentage cost responsibility assignments for the affected Zones. The LMP Benefits Methodology shall not incorporate the financial effects of allocations of Auction Revenue Rights or Financial Transmission Rights. The LMP Benefit to a Merchant Transmission Facility shall be deemed to be equal to the proportionate share of assigned cost responsibility using the DFAX analysis and the assignments of cost responsibility to other Zones in the LMP Benefits Methodology shall be proportionately adjusted, as necessary, to reflect this treatment of Merchant Transmission Facilities to ensure that the total allocation for any economic-based Required Transmission Enhancement equals one hundred percent. If, after performing both analyses and comparing the percentage cost responsibility assignments for the affected Zones calculated pursuant to the DFAX analysis and the LMP Benefits Methodology, the results do not indicate at least a ten percentage point cost responsibility assignment differential between the two methods for any Zone, cost responsibility for the Acceleration Project shall be assigned using the DFAX analysis. If, after performing both analyses and comparing the percentage cost responsibility assignments for the affected Zones calculated pursuant to the DFAX analysis and LMP Benefits Methodology, the results indicate at least a ten percentage point cost responsibility assignment differential between the DFAX analysis and the LMP Benefits Methodology for any Zone, cost responsibility for the Acceleration Project for the period of time the Reliability Project is accelerated (i.e. the period between the date the Reliability Project actually goes into service and the date the Reliability Project originally was scheduled to go in service in the PJM Board approved Regional Transmission Expansion Plan) shall be assigned using the LMP Benefits Methodology. For all periods other than the period of time the Reliability Project is accelerated, cost responsibility for such an Acceleration Project shall be assigned in accordance with the provisions of this Schedule 12 governing the assignment of cost responsibility of Regional Facility Reliability Projects or Lower Voltage Facility Reliability Projects, as applicable.

(B) Transmission Provider shall assign cost responsibility for Economic Projects that are modifications to Reliability Projects as described in section 1.5.7(b)(ii) of Schedule 6 of the Operating Agreement in accordance with the provisions of this Schedule 12 governing the assignment of cost responsibility of Regional Facility Reliability Projects or Lower Voltage Facility Reliability Projects, as applicable.

(C) Transmission Provider shall assign cost responsibility for Economic Projects that are new enhancements or expansions that could relieve one or more economic constraints as described in section 1.5.7(b)(iii) of Schedule 6 of the Operating Agreement to the Zones that show a decrease in the net present value of the Changes in Load Energy Payment determined for the first 15 years of the life of the Economic Project. The Change in Load Energy Payment for each year shall be determined using the methodology set forth in Section

1.5.7(d) of Schedule 6 of the Operating Agreement. Cost responsibility shall be assigned based on each Zone's pro rata share of the sum of the net present values of the Changes in Load Energy Payment only of the Zones in which the net present value of the Changes in Load Energy Payment shows a decrease.

(vi) Required Transmission Enhancements Costing Less Than \$5 Million.

Notwithstanding Section (b)(i), (b)(ii), (b)(iv) and (b)(v), cost responsibility for a Required Transmission Enhancement for which the good faith estimate of the cost of the Required Transmission Enhancement (a) prepared in connection with the development of the Regional Transmission Expansion Plan and (b) provided to the PJM Board at the time the Required Transmission Enhancement is included for the first time in the Regional Transmission Expansion Plan, does not equal or exceed \$5 million shall be assigned to the Zone where the Required Transmission Enhancement is to be located. The determination of whether the estimated cost of a Required Transmission Enhancement does not equal or exceed \$5 million shall be based solely on such good faith estimate of the cost of the Required Transmission Enhancement regardless of the actual costs incurred. The estimated cost of a Required Transmission Enhancement shall include the aggregate estimated costs of all of the transmission elements approved by the PJM Board at the time such elements are included in the Regional Transmission Expansion Plan that collectively are intended (i) in the case of a Reliability Project, to resolve a specific reliability criteria violation, or (ii) in the case of an Economic Project, provide a specific LMP Benefit. Where a Required Transmission Enhancement subject to this section (b)(vi) consists of a single transmission element or multiple transmission elements that will be located in more than one Zone, each Zone shall be assigned cost responsibility for the transmission elements or portions of the transmission elements located in such Zone. Merchant Transmission Facilities shall not be assigned cost responsibility for a Required Transmission Enhancement subject to this Section (b)(vi).

(vii) Modifications of Required Transmission Enhancements. Once a Required Transmission Enhancement is included in the Regional Transmission Expansion Plan, any modification to such Required Transmission Enhancement that subsequently is included in the Regional Transmission Expansion Plan as a separate Reliability or Economic Project shall be considered a separate and distinct Required Transmission Enhancement for purposes of cost responsibility assignment under this Schedule 12. Except as provided in Sections (b)(iv) and (b)(xiv) of this Schedule 12, any cost responsibility assignment that has been made for a previously approved Required Transmission Enhancement shall have no impact on the cost responsibility assignment of such modification.

(viii) FERC Filing. Within 30 days of the approval of each Regional Transmission Expansion Plan or an addition to such plan by the PJM Board pursuant to Section 1.6 of Schedule 6 of the PJM Operating Agreement, the Transmission Provider shall designate in the Schedule 12-Appendix A and in a report filed with the FERC the customers using Point-to-Point Transmission Service and/or Network Integration Transmission Service and Merchant Transmission Facility owners that will be subject to each such Transmission Enhancement Charge ("Responsible Customers") based on the cost responsibility assignments determined pursuant to subsections (b)(i) through (v) of this Schedule 12. Those customers designated by the Transmission Provider as Responsible Customers shall have 30 days from the date the filing

is made with the FERC to seek review of such designation. Such cost responsibility designations shall be the same as those made for the relevant Regional Facility, Necessary Lower Voltage Facility, or Lower Voltage Facility in the Regional Transmission Expansion Plan.

(ix) Regions With Which PJM Has Entered Into an Agreement Listed in Schedule 12-Appendix B . For purposes of this Schedule 12, where costs of a Required Transmission Enhancement are allocated to a region other than PJM pursuant to an agreement set forth in Schedule 12-Appendix B, Responsible Customers for such costs shall be customers in such region. Cost responsibility with respect to the costs of a Required Transmission Enhancements allocated to a region other than PJM shall be allocated within such region in accordance with the applicable tariff or agreement governing the allocation of such costs in such region.

(x) Merchant Transmission Facilities.

(A) For purposes of this Schedule 12, where the Transmission Provider has allocated all or a portion of a Required Transmission Enhancement to a Merchant Transmission Facility, the owner of the Merchant Transmission Facility shall be the Responsible Customer with respect to such Required Transmission Enhancement, and shall pay the Transmission Enhancement Charges associated with the Required Transmission Enhancement.

(B) (1) Transmission Provider shall defer collection of Transmission Enhancement Charges from a Merchant Transmission Facility until the Merchant Transmission Facility goes into commercial operation; provided, however, in the event the commercial operation of a Merchant Transmission Facility is delayed beyond the commercial operation milestone date(s) specified in the Interconnection Service Agreement associated with the Merchant Transmission Facility and the Transmission Provider or Transmission Owner constructing the Required Transmission Enhancement demonstrates that the Merchant Transmission Facility is responsible for such delay, Transmission Provider may begin collecting Transmission Enhancement Charges from the Merchant Transmission Facility prior to the Merchant Transmission Facility going into commercial operation. Transmission Enhancement Charges allocated to a Merchant Transmission Facility for which collection is deferred in accordance with this section (b)(x)(B)(1) shall be recorded in appropriate Transmission Provider accounts for deferred charges and collected in accordance with section (b)(x)(B)(3), below.

(2) Transmission Provider shall base the collection of Transmission Enhancement Charges associated with Required Transmission Enhancements from a Merchant Transmission Facility on the actual Firm Transmission Withdrawal Rights that have been awarded to the Merchant Transmission Facility; provided, however, to the extent that a Merchant Transmission Facility has been awarded less than the amount of Firm Transmission Withdrawal Rights specified in the Interconnection Service Agreement associated with the Merchant Transmission Facility, then Transmission Provider shall record the difference between the amount of Transmission Enhancement Charges collected based on the lesser amount of Firm Transmission Withdrawal Rights and the amount of Transmission Enhancement Charges based on the full amount of Firm Transmission Withdrawal Rights specified in the applicable Interconnection Service Agreement in appropriate accounts for deferred charges and, after the

Merchant Transmission Facility has been awarded the full amount of Firm Transmission Withdrawal Rights specified in the Interconnection Service Agreement, collect such deferred amounts in accordance with section (b)(x)(B)(3), below. Notwithstanding the foregoing, Transmission Provider may collect Transmission Enhancement Charges based on more than a Merchant Transmission Facility's actually awarded Firm Transmission Withdrawal Rights (not to exceed the Firm Transmission Withdrawal Rights specified in the applicable Interconnection Service Agreement) if the Transmission Provider or Transmission Owner demonstrates that the Merchant Transmission Facility is responsible for receiving fewer Firm Transmission Withdrawal Rights than are specified in the applicable Interconnection Service Agreement.

(3) Transmission Provider shall record: (i) in an appropriate deferred asset account, the Transmission Enhancement Charges associated with Required Transmission Enhancements for which collection is deferred in accordance with sections (b)(x)(B)(1) and (b)(x)(B)(2); and (ii) in an appropriate deferred liability account, the revenues associated with the Transmission Enhancement Charges that, absent the deferred charges, would have been due to Transmission Owners or to Transmission Owners' customers as directed by the applicable Transmission Owner. At such time as collection of such deferred Transmission Enhancement Charges are permitted in accordance with sections (b)(x)(B)(1) and (b)(x)(B)(2), the deferred charges (along with appropriate interest) shall be collected from the Merchant Transmission Facility in equal installments over the twelve months following the commencement of the collection of the deferred charges. Such amounts shall be distributed to Transmission Owners or to Transmission Owners' customers as directed by the applicable Transmission Owner, and the Transmission Provider shall make appropriate adjustments to the deferred asset and liability accounts. Transmission Provider shall not be responsible for distributing revenues associated with deferred Transmission Enhancement Charges unless and until such charges are collected in accordance with this section (b)(x)(B), and uncollected deferred Transmission Enhancement Charges shall not be subject to Default Allocation Assessments to the Members pursuant to section 15.2 of the Operating Agreement.

(xi) Consolidated Edison Company of New York. (A) Cost responsibility assignments to Consolidated Edison Company of New York for Required Transmission Enhancements pursuant to this Schedule 12 with respect to the Firm Point-To-Point Service Agreements designated as Original Service Agreement No. 1873 and Original Service Agreement No. 1874 accepted by the Commission in Docket No. ER08-858 ("ConEd Service Agreements") shall be in accordance with the terms and conditions of the settlement approved by the FERC in Docket No. ER08-858-000. (B) All cost responsibility assignments for Required Transmission Enhancements pursuant to this Schedule 12 shall be adjusted at the commencement and termination of service under the ConEd Service Agreements to take account of the assignments under subsection (xi)(A).

(xii) Public Policy Projects.

(A) Transmission Facilities as defined in section 1.27 of the Consolidated Transmission Owners Agreement constructed by a Transmission Owner pursuant to a Public Policy

Requirement but not included in a Regional Transmission Expansion Plan as a Required Transmission Enhancement, shall be as considered a Supplemental Project.

(B) If a transmission enhancement or expansion is proposed pursuant to Section 1.5.9(a) of Schedule 6 of the Operating Agreement which is not a Supplemental Project (“State Agreement Public Policy Project”), the Transmission Provider shall submit the assignment of costs to Responsible Customers proposed in connection with such State Agreement Public Policy Project to the Transmission Owners Agreement Administrative Committee for consideration and filing pursuant to Section 7.3 of the Consolidated Transmission Owners Agreement and Section 9.1(a) of the PJM Tariff. Nothing in this Section (b)(xii) shall prevent the Transmission Provider or the state governmental entities proposing such State Agreement Public Policy Project from filing a proposed assignment of costs to Responsible Customers for such project pursuant to Section 206 of the Federal Power Act.

(xiii) Replacement of Transmission Facilities. Unless determined by PJM to be a Required Transmission Enhancement included in a Regional Transmission Expansion Plan, cost responsibility for the replacement of Transmission Facilities, as defined in section 1.27 of the Consolidated Transmission Owners Agreement, shall be assigned to the Zonal loads and Merchant Transmission Facilities responsible for the costs of the Transmission Facilities being replaced.

(xiv) Multi-Driver Projects.

(A) Assignment of Proportional Multi-Driver Project Costs. The Transmission Provider shall assign cost responsibility for Proportional Multi-Driver Projects in proportion to the relative percentage benefit that each driver of a Proportional Multi-Driver Project addresses, respectively, reliability violations or operational performance (“reliability”), economic constraints (“economic”) and/or Public Policy Requirements (“public policy”) as follows:

(1) As part of the open planning process provided for in Section 1.5.10(h) of Schedule 6 of the Operating Agreement, the Transmission Provider employs the Proportional Method to develop a Proportional Multi-Driver Project, by determining which of the following drivers a Proportional Multi-Driver Project addresses: reliability, economic, or public policy, and the extent to which each such driver contributes to the size, scope, and estimated costs of such Proportional Multi-Driver Project (irrespective of the reliability cost allocation treatment that is otherwise accorded an incremental market efficiency modification thereto pursuant to Section (b)(v)(B) of this Schedule 12). The Transmission Provider shall identify the contribution of each driver in terms of a percentage totaling 100 percent for all such drivers at the time that each Proportional Multi-Driver Project is submitted to the PJM Board for approval and included in the Regional Transmission Expansion Plan. The percentage contribution of each driver shall be based on the ratio of the estimated cost of each project that the Multi-Driver Project replaces to the total of the estimated costs of all projects combined into the Multi-Driver Project.

(2) Once a Proportional Multi-Driver Project is approved by the PJM Board,

the percentage contributions of each driver shall not be changed unless the PJM Board subsequently approves an upgrade or modification to the Proportional Multi-Driver Project. In that event, the cost responsibility for the Proportional Multi-Driver Project, including any costs incurred prior to the upgrade or modification, will be determined as if it were a new Proportional Multi-Driver Project, such that the percentage contribution for each driver shall be established anew.

(B) Assignment of Incremental Multi-Driver Project Costs. The Transmission Provider shall assign cost responsibility for Incremental Multi-Driver Projects as defined in Section 1.15B of Schedule 6 of the Operating Agreement using the same methodology described in Section (b)(xiv)(A)(1) treating the estimated cost of modifying the original project as if it were the estimated cost of a separate project included in a Proportional Multi-Driver Project. Any costs that had been expended on the original project prior its designation by Transmission Provider as an Incremental Multi-Driver Project shall be included in the calculation of the Incremental Multi-Driver Project pursuant to this Section (b)(xiv)(B).

(C) The Transmission Provider shall separately assign cost responsibility for the costs assigned to each driver pursuant to this Section (b)(xiv) in accordance with the provisions of Schedule 12 governing the assignment of cost responsibility for a single driver project of each driver's respective type (reliability, economic or public policy). Except as provided in Section (b)(xiv)(D), cost responsibility will be assigned based on the final voltage and configuration of the Multi-Driver Project determined in accordance with Sections (b)(i), (b)(ii), or (b)(vi) of Schedule 12.

(D) Notwithstanding the cost assignments that would otherwise be provided for in Section (b)(xiv)(C) of this Schedule 12, if a Multi-Driver Project includes a public policy driver that is the result of the State Agreement Approach provided for in Schedule 6, Section 1.5.9 of the Operating Agreement and is a Regional Facility as defined in Section (b)(i) of this Schedule 12 and such Multi-Driver Project would not be a Regional Facility but for the inclusion of the public policy driver, then the percentage of costs of such Multi-Driver Project assigned to the non-public policy drivers in accordance with the procedures set forth in in Section (b)(i)(A)(1) shall be twenty percent (20%) and the percentage of costs assigned to the non-public policy drivers of such Multi-Driver Project in accordance Section (b)(i)(A)(2) shall be eighty percent (80%), and not the fifty percent (50%) cost responsibility percentages provided for in Section (b)(i)(A)(i) and Section (b)(i)(A)(2), respectively, of this Schedule 12.

(xv) Required Transmission Enhancements to Address Transmission Owner Planning Criteria. Notwithstanding Sections (b)(i), (b)(ii), (b)(iv) and (b)(v), cost responsibility for any Required Transmission Enhancements that are included in the Regional Transmission Expansion Plan, but which would not have otherwise been so included but for the fact that they address individual Transmission Owner FERC filed planning criteria as filed in FERC Form No. 715 and posted on the PJM website, shall be assigned to the Responsible Customers in the Zone of the Transmission Owner that filed such planning criteria. Merchant Transmission Facilities shall not be assigned cost responsibility for a Required Transmission Enhancement subject to this Section (b)(xv).

(xvi) Required Transmission Enhancements Designed to Address Reliability Violations on Transmission Facilities Operating Below 200 kV. Notwithstanding Section (b)(ii), cost responsibility for any Required Transmission Enhancements that are included in the Regional Transmission Expansion Plan to address reliability violations on Transmission Facilities that are designed to operate at below 200 kV and, pursuant to Section 1.5.8(n) of Schedule 6 of the Operating Agreement, were not included in a Schedule 6, Section 1.5.8(c) proposal window, shall be assigned to the Responsible Customers in the Zone where the Required Transmission Enhancement is to be located.

(xvii) Required Transmission Enhancements Constructed As Targeted Market Efficiency Projects Under The Midcontinent Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. Coordinated System Plan. Notwithstanding Sections (b)(i), (b)(ii), (b)(iv), (b)(v) and (b)(vi), cost responsibility for the costs of a Required Transmission Enhancement that is included in the Regional Transmission Expansion Plan because it is a Targeted Market Efficiency Project (“TMEP”) identified in the Coordinated System Plan periodically developed pursuant to the Joint Operating Agreement Between the Midcontinent Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. (“PJM-MISO JOA”) and assigned to PJM pursuant to Section 9.4.4.2.5 of the PJM-MISO JOA, shall be assigned among Zones and Merchant Transmission Facilities in accordance with this Section (b)(xvii). Using the Targeted Market Efficiency Project study conducted pursuant to Section 9.3.7.2(c) of the PJM-MISO JOA in which the TMEP was identified, the Transmission Provider shall determine, in accordance with Attachment K-Appendix, Section 5.1 of the Tariff, the average annual Transmission Congestion Charges experienced by Market Buyers in Zones and at Merchant Transmission Facilities attributable to the targeted Reciprocal Coordinated Flowgate during the two historical calendar years prior to the study year of the Targeted Market Efficiency Project study. In making this determination, the Transmission Provider shall net any increases in Day-ahead and Real-time Prices paid by Market Buyers in a Zone or at a Merchant Transmission Facility against any decreases in Day-ahead and Real-time Prices paid by Market Buyers in such Zone or at such Merchant Transmission Facility attributable to the targeted Reciprocal Coordinated Flowgate. Where a single TMEP is constructed to reduce Transmission Congestion Charges attributable to more than one targeted Reciprocal Coordinated Flowgate, the Transmission Provider shall net any increases in Day-ahead and Real-time Prices paid by Market Buyers in a Zone or at a Merchant Transmission Facility against any decreases in Day-ahead and Real-time Prices paid by Market Buyers in such Zone or at such Merchant Transmission Facility attributable to all targeted Reciprocal Coordinated Flowgates. Cost responsibility shall be assigned based on each Zone’s and Merchant Transmission Facility’s pro rata share of the sum of the net Transmission Congestion Charges paid by Market Buyers only of the Zones and Merchant Transmission Facilities in which Market Buyers experienced net Transmission Congestion Charges.

(c) Determination of Transmission Enhancement Charges. In the event that any Transmission Owner recovers the cost of a Required Transmission Enhancement through a Transmission Enhancement Charge, such charge shall be determined as follows:

- (1) Transmission Provider shall identify in writing and post on the PJM Internet site the Required Transmission Enhancement(s) to which each Transmission Enhancement

Charge corresponds. The Transmission Enhancement Charge with respect to a Required Transmission Enhancement shall recover the applicable Transmission Owner's annual transmission revenue requirement associated with the Required Transmission Enhancement.

(2) Each Transmission Enhancement Charge shall be a monthly charge based on all costs and applicable incentives associated with a particular Required Transmission Enhancement for which the Transmission Owner is responsible.

(3) A Transmission Owner's annual transmission revenue requirement associated with a Required Transmission Enhancement shall be determined pursuant to either (i) a unilateral filing by the Transmission Owner under Section 205 of the Federal Power Act and the FERC's rules and regulations thereunder; or (ii) a formula rate in effect applicable to the Transmission Owner's rates for Network Integration Transmission Service, including the costs associated with Required Transmission Enhancements.

(4) Each Transmission Enhancement Charge applicable to Network Customers and Non-Zone Network Customers shall be recalculated annually to reflect the annual revisions to the billing determinants used by the Transmission Provider to calculate charges to Network Customers for Network Integration Transmission Service under Section 34.1 of the PJM Tariff. The Transmission Provider shall post on its Internet site by October 31 of each calendar year each recalculated Transmission Enhancement Charge that shall be effective during the subsequent calendar year.

(5) Each Transmission Enhancement Charge applicable to customers using Point-To-Point Transmission Service shall be calculated monthly to reflect the billing determinants used by the Transmission Provider to determine charges for customers of Point-To-Point Transmission Service in accordance with Section 25 of the PJM Tariff.

(6) Each Transmission Enhancement Charge payable by an owner of a Merchant Transmission Facility pursuant to Section (b) of this Schedule shall be calculated as a fixed monthly charge.

(7) If a Transmission Owner chooses to recover the cost of Required Transmission Enhancements through the operation of a formula rate as described in Section (a), the Transmission Owner must make an informational filing with the Commission one year from the date the selecting Transmission Owner's formula rates go into effect, and each year thereafter, providing a detailed list of the costs the Transmission Owner has incurred, and the revenues the Transmission Owner has received to provide service.

(d) Recovery of Transmission Enhancement Charges.

(1) Responsible Customers shall pay Transmission Provider all applicable Transmission Enhancement Charges as required by this Schedule 12 in addition to all other charges for transmission service for which such Responsible Customers are responsible under the Tariff.

- (2) Transmission Provider shall collect all applicable Transmission Enhancement Charges from each Responsible Customer on a monthly basis. Transmission Provider shall remit or credit all revenues received from Responsible Customers under this Schedule 12 to the Transmission Owner(s) that established such charge or to the appropriate authority in a region other than PJM in the case of Transmission Enhancement Charges established in such region in connection with a Required Transmission Enhancement constructed pursuant to an Appendix B Agreement, to be distributed in accordance with the applicable tariff or agreement governing the distribution of such charges in such region.

(e) Crediting of Revenue from Transmission Enhancement Charges. In recognition that a Transmission Owner's charges for Network Integration Transmission Service set forth in Attachment H are established based upon the Transmission Owner's total cost of providing FERC-jurisdictional transmission service, including the costs associated with Required Transmission Enhancements, revenue from a Transmission Owner's Transmission Enhancement Charges for a billing month shall be credited pursuant to this Schedule 12 to the Network Customers in the Transmission Owner's Zone (including, where applicable, the Transmission Owner) and Transmission Customers purchasing Firm Point-to-Point Transmission Service for delivery in the Transmission Owner's Zone in proportion to their Demand Charges (including any imputed Demand Charges for bundled service to Native Load Customers) for Network Integration Transmission Service and Reserved Capacity for Firm Point-to-Point Transmission Service; provided that such credits shall be reduced by the amount of any applicable incentives included in such Transmission Enhancement Charges.

ATTACHMENT B

Schedule 12
(Clean Format)

SCHEDULE 12
Transmission Enhancement Charges

(a) Establishment of Transmission Enhancement Charges.

(i) Establishment of Transmission Enhancement Charges by Transmission Owners and Entities That Will Become Transmission Owners. One or more of the Transmission Owners may be designated to construct and own and/or finance Required Transmission Enhancements by (1) the Regional Transmission Expansion Plan periodically developed pursuant to Schedule 6 of the Operating Agreement or (2) any joint planning or coordination agreement between PJM and another region or transmission planning authority set forth in Schedule 12-Appendix B (“Appendix B Agreement”) (collectively, for purposes of this Schedule 12 only, “Regional Transmission Expansion Plan”). Section 1.7 of Schedule 6 of the Operating Agreement recognizes that Transmission Owners, subject to obtaining any necessary regulatory approvals, may seek to recover the costs of Required Transmission Enhancements and obligates PJM Settlement to collect on behalf of Transmission Owner(s) any charges established by Transmission Owners to recover the costs of Required Transmission Enhancements. If a Transmission Owner is designated by the Regional Transmission Expansion Plan to construct and own and/or finance a Required Transmission Enhancement, such Transmission Owner may choose any of the following cost recovery mechanisms, subject to the crediting procedures set forth in section (e) below:

- (1) Decline to seek to recover the costs of Required Transmission Enhancements from customers until such time as it makes a filing pursuant to Section 205 of the Federal Power Act to revise its Network Integration Transmission Service rates;
- (2) Make a filing pursuant Section 205 of the Federal Power Act and the FERC’s rules and regulations to establish the revenue requirement with respect to a Required Transmission Enhancement, without filing to revise its rates for Network Integration Transmission Service generally; or
- (3) Establish the revenue requirement with respect to a Required Transmission Enhancement through the operation of a formula rate in effect applicable to its rates for Network Integration Transmission Service.

A charge established to recover the revenue requirement with respect to a Required Transmission Enhancement is hereafter referred to as a “Transmission Enhancement Charge.” Transmission Enhancement Charges of one or more Transmission Owners for Required Transmission Enhancements shall be established in accordance with this Schedule 12.

(ii) Establishment of Transmission Enhancement Charges With Respect to Required Transmission Enhancements Constructed by Entities in Another Region. The revenue requirement with respect to a Required Transmission Enhancement constructed pursuant to an Appendix B Agreement in another region by an entity designated by such other region shall be governed by the tariffs or agreements in effect in such region. Transmission Enhancement Charges to recover the costs of such Required Transmission Enhancement for which PJM is

responsible shall be determined in accordance with this Schedule 12. Other than with respect to a Required Transmission Enhancement constructed pursuant to an Appendix B Agreement, no PJM Network or Transmission Customer will bear cost responsibility for any required transmission upgrades in another region as a consequence of a Required Transmission Enhancement included in the Regional Transmission Expansion Plan.

(iii) Transmission Facilities Not Eligible for Cost Responsibility Assignment. Any alternating current (“A.C.”) facilities or direct current (“D.C.”) facilities that are Attachment Facilities, Local Upgrades, Merchant Network Upgrades, Merchant Transmission Facilities, Network Upgrades, Supplemental Projects, or any other Transmission Facilities that operate or are planned to be operated in a manner that requires customers to subscribe to transmission service over such facilities or to a portion of the electric capability of such facilities shall not be eligible for cost responsibility assignment pursuant to this Schedule 12.

(iv) Entities Not Yet Eligible to Become Transmission Owners. For purposes of this Schedule 12 only, the term, “Transmission Owner,” shall include any entity that undertakes to construct and own and/or finance a Required Transmission Enhancement pursuant to a designation in the Regional Transmission Expansion Plan to construct and own and/or finance such Required Transmission Enhancement, even if such entity is not yet eligible to become a party to the Consolidated Transmission Owners Agreement. Nothing in the PJM Tariff nor the Consolidated Transmission Owners Agreement shall prevent an entity that undertakes to construct and own and/or finance a Required Transmission Enhancement pursuant to a designation in the Regional Transmission Expansion Plan to construct and own and/or finance such Required Transmission Enhancement from recovering the costs of such Required Transmission Enhancement through this Schedule 12.

(v) Effective Date. The assignment of cost responsibility or classification of Required Transmission Enhancements either (1) made by the Transmission Provider prior to February 1, 2013, or (2) applicable to Required Transmission Enhancements approved by the PJM Board pursuant to Section 1.6 of the PJM Operating Agreement prior to February 1, 2013 are set forth in Schedule 12-Appendix. Except as specifically set forth herein, nothing in this Schedule 12 shall change the assignment of cost responsibility or classification of Required Transmission Enhancements included in Schedule 12-Appendix. The assignment of cost responsibility or classification of all other Required Transmission Enhancements shall be set forth in Schedule 12-Appendix A.

(b) Designation of Customers Subject to Transmission Enhancement Charges.

(i) Regional Facilities and Necessary Lower Voltage Facilities. Transmission Provider shall assign cost responsibility on a region-wide basis for Required Transmission Enhancements included in the Regional Transmission Expansion Plan that (1) (a) are A.C. facilities that operate at or above 500 kV; (b) constitute a single Required Transmission Enhancement comprising two A.C. circuits operating at or above 345 kV and below 500 kV, where both circuits originate from a single substation or switching station at one end and terminate at a single substation or switching station at the other end, regardless of whether or not the two circuits are routed in the same right-of-way (“Double-circuit 345 kV Required

Transmission Enhancement”); (c) are A.C. or D.C. shunt reactive resources (such as capacitors, static var compensators, static synchronous condenser (STATCON), synchronous condensers, inductors, other shunt devices, or their equivalent) connected to a Transmission Facility described in clause (a) or (b) of this subsection, or (d) are D.C. facilities meeting the criteria set forth in subsection (b)(i)(D) (collectively, “Regional Facilities”), or (2) new A.C. Transmission Facilities or expansions or enhancements to existing Transmission Facilities that operate below 500 kV (or 345 kV in the case of a Regional Facility described in clause (1)(b) of this subsection) or new D.C. Transmission Facilities that do not meet the criteria of subsection (b)(i)(D) that must be constructed or strengthened to support new Regional Facilities, based on the planning criteria used by the Transmission Provider in developing the applicable Regional Transmission Expansion Plan (“Necessary Lower Voltage Facilities”) as follows:

(A) Cost responsibility for Regional Facilities and Necessary Lower Voltage Facilities shall be allocated among Responsible Customers as defined in this Schedule 12 as follows:

(1) Fifty percent (50%) shall be assigned annually on a load-ratio share basis as follows:

(a) With respect to each Zone, using, consistent with section 34.1 of the Tariff, the applicable zonal loads at the time of such Zone’s annual peak load from the 12-month period ending October 31 preceding the calendar year for which the annual cost responsibility allocation is determined; and

(b) With respect to Merchant Transmission Facilities, (1) for the calendar year following the year in which it initiates operation, the actually awarded Firm Transmission Withdrawal Rights associated with its existing Merchant Transmission Facility; and (2) for all subsequent calendar years, the annual peak load of the Merchant Transmission Facility (not to exceed its actual Firm Transmission Withdrawal Rights) from the 12-month period ending October 31 of the calendar year preceding the calendar year for which the annual cost responsibility allocation is determined.

(2) Fifty percent (50%) shall be assigned as follows:

(a) In the case of a Required Transmission Enhancement included in the Regional Transmission Expansion Plan to address one or more reliability violations or to address operational adequacy and performance issues (collectively, “Reliability Project”), in accordance with the distribution factor (“DFAX”) analysis described in subsection (b)(iii) of this Schedule 12; and

(b) In the case of a Required Transmission Enhancement included in the Regional Transmission Expansion Plan to relieve one or more economic constraints as described in section 1.5.7(b)(iii) of Schedule 6 of the Operating Agreement (“Economic Project”), in accordance with the methodology described in subsection (b)(v) of this Schedule 12.

(B) (1) Except for transformers that are an integral component of a Regional Facility, transformers connected to Lower Voltage Facilities, as defined in section (b)(ii) of this Schedule 12, shall not be considered Regional Facilities or Necessary Lower Voltage Facilities; and (2) Transmission Facilities that are not Regional Facilities and deliver energy from a Regional Facility to load shall not be considered Necessary Lower Voltage Facilities.

(C) With respect Required Transmission Enhancements that qualify as Regional Facilities under subsection (b)(i)(1)(b) or subsection (b)(i)(D)(2) of this Schedule 12,

(1) where the Required Transmission Enhancement includes both new Transmission Facilities and pre-existing Transmission Facilities, cost responsibility under this section (b)(i) shall apply only to the cost of the new Transmission Facilities plus the original cost less accumulated depreciation of pre-existing Transmission Facilities that are included in Schedule 12-Appendix or Schedule 12-Appendix A;

(2) cost responsibility shall be assigned under this section (b)(i) only after the Required Transmission Enhancement goes into service as a Double-circuit 345 kV Required Transmission Enhancement or a Double-circuit D.C. Required Transmission Enhancement; and

(3) cost responsibility shall be assigned under this section (b)(i) for any CWIP permitted to be recovered before the Required Transmission Enhancement goes into service only after such Transmission Facilities are approved in a Regional Transmission Expansion Plan as a Double-circuit 345 kV Required Transmission Enhancement or a Double-circuit D.C. Required Transmission Enhancement.

(D) A Required Transmission Enhancement included in the Regional Transmission Expansion Plan that is a D.C. facility, consisting of D.C. lines (i.e., wires or cables) and A.C./D.C. converters, shall be a Regional Facility only if:

(1) such D.C. facility comprises two poles and operates at a voltage of ± 433 kV D.C. or above; or

(2) such D.C. Facility constitutes a single Required Transmission Enhancement comprising two D.C. circuits where (i) both circuits originate from a single substation or switching station at one end and terminate at a single substation or switching station at the other end, regardless of whether or not both circuits are routed in the same right-of-way, and (ii) each such circuit consists of two poles and operates at a voltage of ± 298 kV D.C. or above (“Double-circuit D.C. Required Transmission Enhancement”).

(ii) Lower Voltage Facilities. Transmission Provider shall assign cost responsibility for Required Transmission Enhancements that (a) are not Regional Facilities; and (b) are not “Necessary Lower Voltage Facilities” as defined in section (b)(i) of this Schedule 12 (collectively “Lower Voltage Facilities”), as follows:

(A) If the Lower Voltage Facility is a Reliability Project, Transmission Provider shall use the DFAX analysis described in subsection (b)(iii) of this Schedule 12; and

(B) If the Lower Voltage Facility is an Economic Project, Transmission Provider shall use the methodology described in subsection (b)(v) of this Schedule 12.

(iii) DFAX Analysis for Reliability Projects.

(A) For purposes of the assignment of cost responsibility for Reliability Projects under subsection (b)(i)(A)(2)(a) and subsection (b)(ii)(A) of Schedule 12, the Transmission Provider, based on a computer model of the electric network and using power flow modeling software, shall calculate distribution factors, represented as decimal values or percentages, which express the portions of a transfer of energy from a defined source to a defined sink that will flow across a particular transmission facility or group of transmission facilities. These distribution factors represent a measure of the use by the load of each Zone or Merchant Transmission Facility (collectively, “Responsible Zone”) of the Required Transmission Enhancement, as determined by a power flow analysis. In general, a distribution factor can be represented as:

Distribution Factor = (After-shift power flow – pre-shift power flow) / Total amount of power shifted

Total amount of power shifted = Modeled incremental megawatt transfer to a given Load Deliverability Area or Merchant Transmission Facility

Pre-shift power flow = Megawatt flow over the Required Transmission Enhancement before the incremental megawatt transfer

After-shift power flow = Megawatt flow over the Required Transmission Enhancement after the incremental megawatt transfer

When calculating such distribution factors:

(1) All distribution factors are calculated with respect to the Required Transmission Enhancement subject to cost allocation under subsection (b)(i)(A)(2)(a) and subsection (b)(ii)(A) of this Schedule 12.

(2) The calculation of distribution factors shall be determined using linear matrix algebra, such that distribution factors represent the ratio of (i) a change in megawatt flow on a Required Transmission Enhancement to (ii) a change in megawatts transferred to aggregate load within a Zone or, in the case of a Merchant Transmission Facility, the point of withdrawal associated with Firm Transmission Withdrawal Rights over such Merchant Transmission Facility.

(3) With respect to a Merchant Transmission Facility, zonal peak load shall mean (i) the existing Firm Transmission Withdrawal Rights of the Merchant Transmission Facility being evaluated, if the Merchant Transmission Facility is in service, or (ii) for a Merchant Transmission Facility that is not yet in service, the planned Firm Transmission Withdrawal Rights of the Merchant Transmission Facility being evaluated as identified in the Interconnection Service Agreement in effect for such Merchant Transmission Facility.

(4) In the DFAX analysis, when Transmission Provider models a transfer from generation to all load within an individual Zone, Transmission Provider shall model the transfer to the Zone as a whole (not on a bus-by-bus basis).

(5) In the DFAX analysis, Transmission Provider shall model generation both external and internal to individual Responsible Zones to reflect (a) the boundaries of Locational Deliverability Areas (“LDAs”), and (b) limitations with respect to the reliability objective for moving generation capacity across the transmission system. Transmission Provider shall adopt the Capacity Emergency Transfer Objective (“CETO”), associated with that LDA and calculated for the applicable planning year to be the transfer limitation into the LDA. In modeling the system generation and load, Transmission Provider shall assume that the percentage of the zonal load in the LDA served by external (or internal) generation to the LDA shall equal the ratio of (i) the CETO associated within that LDA (or generation internal with the LDA) to (ii) the sum of (a) the internal generation within the LDA and (b) the CETO associated with that LDA. For the generation dispatch used in calculating the distribution factor, Transmission Provider shall distribute these amounts of external/internal generation among all generation in the PJM Region external to/internal within the LDA, respectively, in proportion to their capacity. For Responsible Zones that are located within LDAs that are also entirely contained in other larger LDAs, the modeling approach and distribution factor calculations shall be repeated for such Responsible Zones for each LDA. The lowest distribution factor derived from these calculations shall be applied to the Responsible Zone in the calculation of the use of the Required Transmission Enhancement.

(6) No cost responsibility shall be assigned to a Responsible Zone unless the magnitude of the distribution factor is greater than or equal to 0.01. Any distribution factor of a smaller magnitude shall be set equal to zero.

(B) a The DFAX analysis will be performed in accordance with the following steps:

(1) Transmission Provider shall calculate a distribution factor and a direction of use for each Responsible Zone by modeling a transfer from all generation in the PJM Region to each Responsible Zone. To establish the use by a Responsible Zone, in megawatts, of a Required Transmission Enhancement, the distribution factor of a Required Transmission Enhancement associated with the resulting transfer modeled by the Transmission Provider to each Responsible Zone shall be multiplied by the Responsible Zone’s peak load.

(2) The Transmission Provider shall separately determine the relative use of the Required Transmission Enhancement by each Responsible Zone in each direction by dividing the megawatts of use by each Responsible Zone determined in Section (iii)(B)(1) by the total use of all Responsible Zones using the Required Transmission Enhancement in the same direction of use.

(3) Transmission Provider shall determine the direction of use percentage of the Required Transmission Enhancement in each direction using a production cost analysis to determine the total use, in megawatt-hours, of the Required Transmission Enhancement by all Zones and Merchant Transmission Facilities in each direction over the course of a year. The Transmission Provider shall calculate the percentage use in each direction by dividing the megawatt-hours of use in each direction by total use in megawatt-hours in both directions of use.

(4) The Transmission Provider shall multiply the relative use by each Responsible Zone of the Required Transmission Enhancement in each direction of use determined in Section (iii)(B)(2), above, by the applicable direction of use percentage determined in Section (iii)(B)(3), above.

(5) The products of the calculation performed in Section (iii)(B)(4), above, shall determine the relative allocation to each Responsible Zone of cost responsibility for the Required Transmission Enhancement.

(C) In the DFAX analysis, the Zones of Public Service Electric and Gas Company and Rockland Electric Company will be treated as one Zone unless and until Rockland Electric Company elects to be treated as a separate Zone in accordance with the terms of the Settlement Agreement And Offer Of Partial Settlement approved by FERC in Docket Nos. ER06-456-000, et al.

(D) Transmission Provider shall round cost responsibility assignments determined using the DFAX analysis described in subsection (b)(iii) of this Schedule 12 to the nearest one-hundredth of one percent.

(E) Transmission Provider shall not account for the ability to adjust use of phase angle regulators (“PARs”) in the DFAX analysis described in subsection (b)(iii) of this Schedule 12. In the DFAX analysis, all PAR angles shall be fixed at their base case settings.

(F) In the DFAX analysis, if the Required Transmission Enhancement is a D.C. facility, the Transmission Provider shall determine cost responsibility assignment as follows:

(1) The Required Transmission Enhancement shall be replaced in the model with a comparable proxy A.C. facility, the impedance of which shall be calculated based on the length of the D.C. facility that was removed from the model multiplied by an approximate per unit/mile impedance value for the proxy A.C. facility.

(2) Where a D.C. facility is an integral part of a Required Transmission Enhancement that also includes A.C. facilities, the methodology described in Subsection (b)(iii)(F)(1) above shall be used only for the D.C. facility segment of such Required Transmission Enhancement.

(3) A D.C. facility used to control flow over portions of the Transmission System shall be modeled with a zero impedance and no control shall be applied.

(G) If Transmission Provider determines in its reasonable engineering judgment that, as a result of applying the provisions of this Section (b)(iii), the DFAX analysis cannot be performed or that the results of such DFAX analysis are objectively unreasonable, the Transmission Provider may use an appropriate substitute proxy for the Required Transmission Enhancement in conducting the DFAX analysis. If a proxy is used that is not specified in this Schedule 12, Transmission Provider shall state in a written report (a) the reasons why it determined the DFAX analysis could not be performed or that the results of the DFAX analysis were objectively unreasonable; (b) why the substitute proxy produced objectively reasonable results; and (3) a recommendation as to what changes, if any, should be considered in conducting the DFAX analysis.

(H) The Transmission Provider shall make a preliminary cost responsibility determination for each Required Transmission Enhancement subject to this section (b)(iii) of Schedule 12 at the time such Required Transmission Enhancement is included in the Regional Transmission Expansion Plan.

(1) When CWIP in connection with a Required Transmission Enhancement subject to this section (b)(iii) of Schedule 12 is entitled to be recovered, the preliminary determination of cost responsibility made at the time that the Required Transmission Enhancement was included in the Regional Transmission Expansion Plan shall be used to assign cost responsibility for such CWIP and such cost responsibility shall remain unchanged until the date the Required Transmission Enhancement goes into service. Once a Required Transmission Enhancement has gone into service, the updated cost responsibility determination provided for in subsection (b)(iii)(H)(2) shall apply.

(2) Beginning with the calendar year in which a Required Transmission Enhancement is scheduled to enter service, and thereafter annually at the beginning of each calendar year, the Transmission Provider shall update the preliminary cost responsibility determination for each Required Transmission Enhancement using the values and inputs used in the base case of the most recent Regional Transmission Expansion Plan approved by the PJM Board prior to the date of the update. All values and inputs used in the calculation of the distribution factor in a determination of cost responsibility shall be the same values and inputs as used in the base case of the most recent Regional Transmission Expansion Plan approved by the PJM Board prior to the determination of cost responsibility.

(iv) Spare Parts, Replacement Equipment And Circuit Breakers. Transmission Provider shall assign cost responsibility for spare parts, replacement equipment, and circuit breakers and associated equipment, included in the Regional Transmission Expansion Plan as follows:

(A) Spare parts that are part of the design specifications of a Required Transmission Enhancement at the time such Required Transmission Enhancement is first included in the Regional Transmission Expansion Plan shall be considered part of the Required

Transmission Enhancement for the purpose of applying the cost threshold described in subsection (b)(vi) of this Schedule 12 and cost responsibility for such spare parts shall be assigned in the same manner as the Required Transmission Enhancement. Cost responsibility for spare parts independently included in the Regional Transmission Expansion Plan and not a part of the design specifications of a Required Transmission Enhancement as described above in this subsection shall be assigned to the Zone of the owner of the spare part, if the owner of the spare part is a Transmission Owner listed in Attachment J of the Tariff. If the owner of the spare part is not a Transmission Owner listed in Attachment J of the Tariff, cost responsibility shall be assigned on a pro rata basis to the zones that bear cost responsibility for the owner's Required Transmission Enhancements.

(B) Replacement equipment that is part of the design specifications of a Required Transmission Enhancement at the time the Required Transmission Enhancement is first included in the Regional Transmission Expansion Plan shall be considered part of the Required Transmission Enhancement for the purpose of applying the cost threshold described in section (b)(vi) of this Schedule 12 and cost responsibility for such replacement equipment shall be assigned in the same manner as the Required Transmission Enhancement. Cost responsibility for Required Transmission Enhancement replacement equipment independently included in the Regional Transmission Expansion Plan and not a part of the design specifications of a Required Transmission Enhancement as described above in this subsection, shall be assigned to the same Zones and/or Merchant Transmission Facilities and in the same proportions as the then-existing assignments of cost responsibility for the facilities that the replacement equipment is replacing.

(C) Circuit breakers and associated equipment that are part of the design specifications of a Required Transmission Enhancement at the time the Required Transmission Enhancement is first included in the Regional Transmission Expansion Plan shall be considered part of the Required Transmission Enhancement for the purpose of applying the cost threshold described in subsection (b)(vi) of this Schedule 12 and cost responsibility for such circuit breakers and associated equipment shall be assigned in the same manner as the Required Transmission Enhancement. Cost responsibility for circuit breakers and associated equipment independently included in the Regional Transmission Expansion Plan and not a part of the design specifications of a transmission element of a Required Transmission Enhancement as described above in this subsection, shall be assigned to the Zone of the owner of the circuit breaker and associated equipment if the owner of the circuit breaker is a Transmission Owner listed in Attachment J of the Tariff. If the owner of the circuit breaker is not a Transmission Owner listed in Attachment J of the Tariff, cost responsibility shall be assigned on a pro rata basis to the zones that bear cost responsibility for the owner's Required Transmission Enhancements.

(v) **Economic Projects.** Transmission Provider shall assign (i) fifty percent (50%) of cost responsibility for Economic Projects that are Regional Facilities; and (ii) full cost responsibility for Economic Projects that are Lower Voltage Facilities; as follows:

(A) Transmission Provider shall assign cost responsibility for Economic Projects that are accelerations of Reliability Projects as described in section 1.5.7(b)(i) of Schedule 6 of the Operating Agreement ("Acceleration Projects") by performing and comparing (1) a DFAX analysis consistent with the methodology described in subsection (b)(iii) of this

Schedule 12, and (2) a methodology that is intended to act as a proxy for expected economic benefits from reduced Locational Marginal Prices (“LMP Benefit”) over the period that the reliability-based enhancement or expansion is to be accelerated (“LMP Benefits Methodology”). The LMP Benefits Methodology shall determine cost responsibility assignment percentages to Zones and Merchant Transmission Facilities in the following manner. The LMP Benefit to a Zone shall be deemed to be equal to the reduction in Locational Marginal Price payments made by Load Serving Entities as a result of the Acceleration Project assuming the customers purchase all energy needs from the PJM Interchange Energy Market, and LMP Benefits so calculated shall be converted into percentage cost responsibility assignments for the affected Zones. The LMP Benefits Methodology shall not incorporate the financial effects of allocations of Auction Revenue Rights or Financial Transmission Rights. The LMP Benefit to a Merchant Transmission Facility shall be deemed to be equal to the proportionate share of assigned cost responsibility using the DFAX analysis and the assignments of cost responsibility to other Zones in the LMP Benefits Methodology shall be proportionately adjusted, as necessary, to reflect this treatment of Merchant Transmission Facilities to ensure that the total allocation for any economic-based Required Transmission Enhancement equals one hundred percent. If, after performing both analyses and comparing the percentage cost responsibility assignments for the affected Zones calculated pursuant to the DFAX analysis and the LMP Benefits Methodology, the results do not indicate at least a ten percentage point cost responsibility assignment differential between the two methods for any Zone, cost responsibility for the Acceleration Project shall be assigned using the DFAX analysis. If, after performing both analyses and comparing the percentage cost responsibility assignments for the affected Zones calculated pursuant to the DFAX analysis and LMP Benefits Methodology, the results indicate at least a ten percentage point cost responsibility assignment differential between the DFAX analysis and the LMP Benefits Methodology for any Zone, cost responsibility for the Acceleration Project for the period of time the Reliability Project is accelerated (i.e. the period between the date the Reliability Project actually goes into service and the date the Reliability Project originally was scheduled to go in service in the PJM Board approved Regional Transmission Expansion Plan) shall be assigned using the LMP Benefits Methodology. For all periods other than the period of time the Reliability Project is accelerated, cost responsibility for such an Acceleration Project shall be assigned in accordance with the provisions of this Schedule 12 governing the assignment of cost responsibility of Regional Facility Reliability Projects or Lower Voltage Facility Reliability Projects, as applicable.

(B) Transmission Provider shall assign cost responsibility for Economic Projects that are modifications to Reliability Projects as described in section 1.5.7(b)(ii) of Schedule 6 of the Operating Agreement in accordance with the provisions of this Schedule 12 governing the assignment of cost responsibility of Regional Facility Reliability Projects or Lower Voltage Facility Reliability Projects, as applicable.

(C) Transmission Provider shall assign cost responsibility for Economic Projects that are new enhancements or expansions that could relieve one or more economic constraints as described in section 1.5.7(b)(iii) of Schedule 6 of the Operating Agreement to the Zones that show a decrease in the net present value of the Changes in Load Energy Payment determined for the first 15 years of the life of the Economic Project. The Change in Load Energy Payment for each year shall be determined using the methodology set forth in Section

1.5.7(d) of Schedule 6 of the Operating Agreement. Cost responsibility shall be assigned based on each Zone's pro rata share of the sum of the net present values of the Changes in Load Energy Payment only of the Zones in which the net present value of the Changes in Load Energy Payment shows a decrease.

(vi) Required Transmission Enhancements Costing Less Than \$5 Million.

Notwithstanding Section (b)(i), (b)(ii), (b)(iv) and (b)(v), cost responsibility for a Required Transmission Enhancement for which the good faith estimate of the cost of the Required Transmission Enhancement (a) prepared in connection with the development of the Regional Transmission Expansion Plan and (b) provided to the PJM Board at the time the Required Transmission Enhancement is included for the first time in the Regional Transmission Expansion Plan, does not equal or exceed \$5 million shall be assigned to the Zone where the Required Transmission Enhancement is to be located. The determination of whether the estimated cost of a Required Transmission Enhancement does not equal or exceed \$5 million shall be based solely on such good faith estimate of the cost of the Required Transmission Enhancement regardless of the actual costs incurred. The estimated cost of a Required Transmission Enhancement shall include the aggregate estimated costs of all of the transmission elements approved by the PJM Board at the time such elements are included in the Regional Transmission Expansion Plan that collectively are intended (i) in the case of a Reliability Project, to resolve a specific reliability criteria violation, or (ii) in the case of an Economic Project, provide a specific LMP Benefit. Where a Required Transmission Enhancement subject to this section (b)(vi) consists of a single transmission element or multiple transmission elements that will be located in more than one Zone, each Zone shall be assigned cost responsibility for the transmission elements or portions of the transmission elements located in such Zone. Merchant Transmission Facilities shall not be assigned cost responsibility for a Required Transmission Enhancement subject to this Section (b)(vi).

(vii) Modifications of Required Transmission Enhancements. Once a Required Transmission Enhancement is included in the Regional Transmission Expansion Plan, any modification to such Required Transmission Enhancement that subsequently is included in the Regional Transmission Expansion Plan as a separate Reliability or Economic Project shall be considered a separate and distinct Required Transmission Enhancement for purposes of cost responsibility assignment under this Schedule 12. Except as provided in Sections (b)(iv) and (b)(xiv) of this Schedule 12, any cost responsibility assignment that has been made for a previously approved Required Transmission Enhancement shall have no impact on the cost responsibility assignment of such modification.

(viii) FERC Filing. Within 30 days of the approval of each Regional Transmission Expansion Plan or an addition to such plan by the PJM Board pursuant to Section 1.6 of Schedule 6 of the PJM Operating Agreement, the Transmission Provider shall designate in the Schedule 12-Appendix A and in a report filed with the FERC the customers using Point-to-Point Transmission Service and/or Network Integration Transmission Service and Merchant Transmission Facility owners that will be subject to each such Transmission Enhancement Charge ("Responsible Customers") based on the cost responsibility assignments determined pursuant to subsections (b)(i) through (v) of this Schedule 12. Those customers designated by the Transmission Provider as Responsible Customers shall have 30 days from the date the filing

is made with the FERC to seek review of such designation. Such cost responsibility designations shall be the same as those made for the relevant Regional Facility, Necessary Lower Voltage Facility, or Lower Voltage Facility in the Regional Transmission Expansion Plan.

(ix) Regions With Which PJM Has Entered Into an Agreement Listed in Schedule 12-Appendix B . For purposes of this Schedule 12, where costs of a Required Transmission Enhancement are allocated to a region other than PJM pursuant to an agreement set forth in Schedule 12-Appendix B, Responsible Customers for such costs shall be customers in such region. Cost responsibility with respect to the costs of a Required Transmission Enhancements allocated to a region other than PJM shall be allocated within such region in accordance with the applicable tariff or agreement governing the allocation of such costs in such region.

(x) Merchant Transmission Facilities.

(A) For purposes of this Schedule 12, where the Transmission Provider has allocated all or a portion of a Required Transmission Enhancement to a Merchant Transmission Facility, the owner of the Merchant Transmission Facility shall be the Responsible Customer with respect to such Required Transmission Enhancement, and shall pay the Transmission Enhancement Charges associated with the Required Transmission Enhancement.

(B) (1) Transmission Provider shall defer collection of Transmission Enhancement Charges from a Merchant Transmission Facility until the Merchant Transmission Facility goes into commercial operation; provided, however, in the event the commercial operation of a Merchant Transmission Facility is delayed beyond the commercial operation milestone date(s) specified in the Interconnection Service Agreement associated with the Merchant Transmission Facility and the Transmission Provider or Transmission Owner constructing the Required Transmission Enhancement demonstrates that the Merchant Transmission Facility is responsible for such delay, Transmission Provider may begin collecting Transmission Enhancement Charges from the Merchant Transmission Facility prior to the Merchant Transmission Facility going into commercial operation. Transmission Enhancement Charges allocated to a Merchant Transmission Facility for which collection is deferred in accordance with this section (b)(x)(B)(1) shall be recorded in appropriate Transmission Provider accounts for deferred charges and collected in accordance with section (b)(x)(B)(3), below.

(2) Transmission Provider shall base the collection of Transmission Enhancement Charges associated with Required Transmission Enhancements from a Merchant Transmission Facility on the actual Firm Transmission Withdrawal Rights that have been awarded to the Merchant Transmission Facility; provided, however, to the extent that a Merchant Transmission Facility has been awarded less than the amount of Firm Transmission Withdrawal Rights specified in the Interconnection Service Agreement associated with the Merchant Transmission Facility, then Transmission Provider shall record the difference between the amount of Transmission Enhancement Charges collected based on the lesser amount of Firm Transmission Withdrawal Rights and the amount of Transmission Enhancement Charges based on the full amount of Firm Transmission Withdrawal Rights specified in the applicable Interconnection Service Agreement in appropriate accounts for deferred charges and, after the

Merchant Transmission Facility has been awarded the full amount of Firm Transmission Withdrawal Rights specified in the Interconnection Service Agreement, collect such deferred amounts in accordance with section (b)(x)(B)(3), below. Notwithstanding the foregoing, Transmission Provider may collect Transmission Enhancement Charges based on more than a Merchant Transmission Facility's actually awarded Firm Transmission Withdrawal Rights (not to exceed the Firm Transmission Withdrawal Rights specified in the applicable Interconnection Service Agreement) if the Transmission Provider or Transmission Owner demonstrates that the Merchant Transmission Facility is responsible for receiving fewer Firm Transmission Withdrawal Rights than are specified in the applicable Interconnection Service Agreement.

(3) Transmission Provider shall record: (i) in an appropriate deferred asset account, the Transmission Enhancement Charges associated with Required Transmission Enhancements for which collection is deferred in accordance with sections (b)(x)(B)(1) and (b)(x)(B)(2); and (ii) in an appropriate deferred liability account, the revenues associated with the Transmission Enhancement Charges that, absent the deferred charges, would have been due to Transmission Owners or to Transmission Owners' customers as directed by the applicable Transmission Owner. At such time as collection of such deferred Transmission Enhancement Charges are permitted in accordance with sections (b)(x)(B)(1) and (b)(x)(B)(2), the deferred charges (along with appropriate interest) shall be collected from the Merchant Transmission Facility in equal installments over the twelve months following the commencement of the collection of the deferred charges. Such amounts shall be distributed to Transmission Owners or to Transmission Owners' customers as directed by the applicable Transmission Owner, and the Transmission Provider shall make appropriate adjustments to the deferred asset and liability accounts. Transmission Provider shall not be responsible for distributing revenues associated with deferred Transmission Enhancement Charges unless and until such charges are collected in accordance with this section (b)(x)(B), and uncollected deferred Transmission Enhancement Charges shall not be subject to Default Allocation Assessments to the Members pursuant to section 15.2 of the Operating Agreement.

(xi) Consolidated Edison Company of New York. (A) Cost responsibility assignments to Consolidated Edison Company of New York for Required Transmission Enhancements pursuant to this Schedule 12 with respect to the Firm Point-To-Point Service Agreements designated as Original Service Agreement No. 1873 and Original Service Agreement No. 1874 accepted by the Commission in Docket No. ER08-858 ("ConEd Service Agreements") shall be in accordance with the terms and conditions of the settlement approved by the FERC in Docket No. ER08-858-000. (B) All cost responsibility assignments for Required Transmission Enhancements pursuant to this Schedule 12 shall be adjusted at the commencement and termination of service under the ConEd Service Agreements to take account of the assignments under subsection (xi)(A).

(xii) Public Policy Projects.

(A) Transmission Facilities as defined in section 1.27 of the Consolidated Transmission Owners Agreement constructed by a Transmission Owner pursuant to a Public Policy

Requirement but not included in a Regional Transmission Expansion Plan as a Required Transmission Enhancement, shall be as considered a Supplemental Project.

(B) If a transmission enhancement or expansion is proposed pursuant to Section 1.5.9(a) of Schedule 6 of the Operating Agreement which is not a Supplemental Project (“State Agreement Public Policy Project”), the Transmission Provider shall submit the assignment of costs to Responsible Customers proposed in connection with such State Agreement Public Policy Project to the Transmission Owners Agreement Administrative Committee for consideration and filing pursuant to Section 7.3 of the Consolidated Transmission Owners Agreement and Section 9.1(a) of the PJM Tariff. Nothing in this Section (b)(xii) shall prevent the Transmission Provider or the state governmental entities proposing such State Agreement Public Policy Project from filing a proposed assignment of costs to Responsible Customers for such project pursuant to Section 206 of the Federal Power Act.

(xiii) Replacement of Transmission Facilities. Unless determined by PJM to be a Required Transmission Enhancement included in a Regional Transmission Expansion Plan, cost responsibility for the replacement of Transmission Facilities, as defined in section 1.27 of the Consolidated Transmission Owners Agreement, shall be assigned to the Zonal loads and Merchant Transmission Facilities responsible for the costs of the Transmission Facilities being replaced.

(xiv) Multi-Driver Projects.

(A) Assignment of Proportional Multi-Driver Project Costs. The Transmission Provider shall assign cost responsibility for Proportional Multi-Driver Projects in proportion to the relative percentage benefit that each driver of a Proportional Multi-Driver Project addresses, respectively, reliability violations or operational performance (“reliability”), economic constraints (“economic”) and/or Public Policy Requirements (“public policy”) as follows:

(1) As part of the open planning process provided for in Section 1.5.10(h) of Schedule 6 of the Operating Agreement, the Transmission Provider employs the Proportional Method to develop a Proportional Multi-Driver Project, by determining which of the following drivers a Proportional Multi-Driver Project addresses: reliability, economic, or public policy, and the extent to which each such driver contributes to the size, scope, and estimated costs of such Proportional Multi-Driver Project (irrespective of the reliability cost allocation treatment that is otherwise accorded an incremental market efficiency modification thereto pursuant to Section (b)(v)(B) of this Schedule 12). The Transmission Provider shall identify the contribution of each driver in terms of a percentage totaling 100 percent for all such drivers at the time that each Proportional Multi-Driver Project is submitted to the PJM Board for approval and included in the Regional Transmission Expansion Plan. The percentage contribution of each driver shall be based on the ratio of the estimated cost of each project that the Multi-Driver Project replaces to the total of the estimated costs of all projects combined into the Multi-Driver Project.

(2) Once a Proportional Multi-Driver Project is approved by the PJM Board,

the percentage contributions of each driver shall not be changed unless the PJM Board subsequently approves an upgrade or modification to the Proportional Multi-Driver Project. In that event, the cost responsibility for the Proportional Multi-Driver Project, including any costs incurred prior to the upgrade or modification, will be determined as if it were a new Proportional Multi-Driver Project, such that the percentage contribution for each driver shall be established anew.

(B) Assignment of Incremental Multi-Driver Project Costs. The Transmission Provider shall assign cost responsibility for Incremental Multi-Driver Projects as defined in Section 1.15B of Schedule 6 of the Operating Agreement using the same methodology described in Section (b)(xiv)(A)(1) treating the estimated cost of modifying the original project as if it were the estimated cost of a separate project included in a Proportional Multi-Driver Project. Any costs that had been expended on the original project prior its designation by Transmission Provider as an Incremental Multi-Driver Project shall be included in the calculation of the Incremental Multi-Driver Project pursuant to this Section (b)(xiv)(B).

(C) The Transmission Provider shall separately assign cost responsibility for the costs assigned to each driver pursuant to this Section (b)(xiv) in accordance with the provisions of Schedule 12 governing the assignment of cost responsibility for a single driver project of each driver's respective type (reliability, economic or public policy). Except as provided in Section (b)(xiv)(D), cost responsibility will be assigned based on the final voltage and configuration of the Multi-Driver Project determined in accordance with Sections (b)(i), (b)(ii), or (b)(vi) of Schedule 12.

(D) Notwithstanding the cost assignments that would otherwise be provided for in Section (b)(xiv)(C) of this Schedule 12, if a Multi-Driver Project includes a public policy driver that is the result of the State Agreement Approach provided for in Schedule 6, Section 1.5.9 of the Operating Agreement and is a Regional Facility as defined in Section (b)(i) of this Schedule 12 and such Multi-Driver Project would not be a Regional Facility but for the inclusion of the public policy driver, then the percentage of costs of such Multi-Driver Project assigned to the non-public policy drivers in accordance with the procedures set forth in in Section (b)(i)(A)(1) shall be twenty percent (20%) and the percentage of costs assigned to the non-public policy drivers of such Multi-Driver Project in accordance Section (b)(i)(A)(2) shall be eighty percent (80%), and not the fifty percent (50%) cost responsibility percentages provided for in Section (b)(i)(A)(i) and Section (b)(i)(A)(2), respectively, of this Schedule 12.

(xv) Required Transmission Enhancements to Address Transmission Owner Planning Criteria. Notwithstanding Sections (b)(i), (b)(ii), (b)(iv) and (b)(v), cost responsibility for any Required Transmission Enhancements that are included in the Regional Transmission Expansion Plan, but which would not have otherwise been so included but for the fact that they address individual Transmission Owner FERC filed planning criteria as filed in FERC Form No. 715 and posted on the PJM website, shall be assigned to the Responsible Customers in the Zone of the Transmission Owner that filed such planning criteria. Merchant Transmission Facilities shall not be assigned cost responsibility for a Required Transmission Enhancement subject to this Section (b)(xv).

(xvi) Required Transmission Enhancements Designed to Address Reliability Violations on Transmission Facilities Operating Below 200 kV. Notwithstanding Section (b)(ii), cost responsibility for any Required Transmission Enhancements that are included in the Regional Transmission Expansion Plan to address reliability violations on Transmission Facilities that are designed to operate at below 200 kV and, pursuant to Section 1.5.8(n) of Schedule 6 of the Operating Agreement, were not included in a Schedule 6, Section 1.5.8(c) proposal window, shall be assigned to the Responsible Customers in the Zone where the Required Transmission Enhancement is to be located.

(xvii) Required Transmission Enhancements Constructed As Targeted Market Efficiency Projects Under The Midcontinent Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. Coordinated System Plan. Notwithstanding Sections (b)(i), (b)(ii), (b)(iv), (b)(v) and (b)(vi), cost responsibility for the costs of a Required Transmission Enhancement that is included in the Regional Transmission Expansion Plan because it is a Targeted Market Efficiency Project (“TMEP”) identified in the Coordinated System Plan periodically developed pursuant to the Joint Operating Agreement Between the Midcontinent Independent Transmission System Operator, Inc. and PJM Interconnection, L.L.C. (“PJM-MISO JOA”) and assigned to PJM pursuant to Section 9.4.4.2.5 of the PJM-MISO JOA, shall be assigned among Zones and Merchant Transmission Facilities in accordance with this Section (b)(xvii). Using the Targeted Market Efficiency Project study conducted pursuant to Section 9.3.7.2(c) of the PJM-MISO JOA in which the TMEP was identified, the Transmission Provider shall determine, in accordance with Attachment K-Appendix, Section 5.1 of the Tariff, the average annual Transmission Congestion Charges experienced by Market Buyers in Zones and at Merchant Transmission Facilities attributable to the targeted Reciprocal Coordinated Flowgate during the two historical calendar years prior to the study year of the Targeted Market Efficiency Project study. In making this determination, the Transmission Provider shall net any increases in Day-ahead and Real-time Prices paid by Market Buyers in a Zone or at a Merchant Transmission Facility against any decreases in Day-ahead and Real-time Prices paid by Market Buyers in such Zone or at such Merchant Transmission Facility attributable to the targeted Reciprocal Coordinated Flowgate. Where a single TMEP is constructed to reduce Transmission Congestion Charges attributable to more than one targeted Reciprocal Coordinated Flowgate, the Transmission Provider shall net any increases in Day-ahead and Real-time Prices paid by Market Buyers in a Zone or at a Merchant Transmission Facility against any decreases in Day-ahead and Real-time Prices paid by Market Buyers in such Zone or at such Merchant Transmission Facility attributable to all targeted Reciprocal Coordinated Flowgates. Cost responsibility shall be assigned based on each Zone’s and Merchant Transmission Facility’s pro rata share of the sum of the net Transmission Congestion Charges paid by Market Buyers only of the Zones and Merchant Transmission Facilities in which Market Buyers experienced net Transmission Congestion Charges.

(c) Determination of Transmission Enhancement Charges. In the event that any Transmission Owner recovers the cost of a Required Transmission Enhancement through a Transmission Enhancement Charge, such charge shall be determined as follows:

- (1) Transmission Provider shall identify in writing and post on the PJM Internet site the Required Transmission Enhancement(s) to which each Transmission Enhancement

Charge corresponds. The Transmission Enhancement Charge with respect to a Required Transmission Enhancement shall recover the applicable Transmission Owner's annual transmission revenue requirement associated with the Required Transmission Enhancement.

(2) Each Transmission Enhancement Charge shall be a monthly charge based on all costs and applicable incentives associated with a particular Required Transmission Enhancement for which the Transmission Owner is responsible.

(3) A Transmission Owner's annual transmission revenue requirement associated with a Required Transmission Enhancement shall be determined pursuant to either (i) a unilateral filing by the Transmission Owner under Section 205 of the Federal Power Act and the FERC's rules and regulations thereunder; or (ii) a formula rate in effect applicable to the Transmission Owner's rates for Network Integration Transmission Service, including the costs associated with Required Transmission Enhancements.

(4) Each Transmission Enhancement Charge applicable to Network Customers and Non-Zone Network Customers shall be recalculated annually to reflect the annual revisions to the billing determinants used by the Transmission Provider to calculate charges to Network Customers for Network Integration Transmission Service under Section 34.1 of the PJM Tariff. The Transmission Provider shall post on its Internet site by October 31 of each calendar year each recalculated Transmission Enhancement Charge that shall be effective during the subsequent calendar year.

(5) Each Transmission Enhancement Charge applicable to customers using Point-To-Point Transmission Service shall be calculated monthly to reflect the billing determinants used by the Transmission Provider to determine charges for customers of Point-To-Point Transmission Service in accordance with Section 25 of the PJM Tariff.

(6) Each Transmission Enhancement Charge payable by an owner of a Merchant Transmission Facility pursuant to Section (b) of this Schedule shall be calculated as a fixed monthly charge.

(7) If a Transmission Owner chooses to recover the cost of Required Transmission Enhancements through the operation of a formula rate as described in Section (a), the Transmission Owner must make an informational filing with the Commission one year from the date the selecting Transmission Owner's formula rates go into effect, and each year thereafter, providing a detailed list of the costs the Transmission Owner has incurred, and the revenues the Transmission Owner has received to provide service.

(d) Recovery of Transmission Enhancement Charges.

(1) Responsible Customers shall pay Transmission Provider all applicable Transmission Enhancement Charges as required by this Schedule 12 in addition to all other charges for transmission service for which such Responsible Customers are responsible under the Tariff.

- (2) Transmission Provider shall collect all applicable Transmission Enhancement Charges from each Responsible Customer on a monthly basis. Transmission Provider shall remit or credit all revenues received from Responsible Customers under this Schedule 12 to the Transmission Owner(s) that established such charge or to the appropriate authority in a region other than PJM in the case of Transmission Enhancement Charges established in such region in connection with a Required Transmission Enhancement constructed pursuant to an Appendix B Agreement, to be distributed in accordance with the applicable tariff or agreement governing the distribution of such charges in such region.

(e) Crediting of Revenue from Transmission Enhancement Charges. In recognition that a Transmission Owner's charges for Network Integration Transmission Service set forth in Attachment H are established based upon the Transmission Owner's total cost of providing FERC-jurisdictional transmission service, including the costs associated with Required Transmission Enhancements, revenue from a Transmission Owner's Transmission Enhancement Charges for a billing month shall be credited pursuant to this Schedule 12 to the Network Customers in the Transmission Owner's Zone (including, where applicable, the Transmission Owner) and Transmission Customers purchasing Firm Point-to-Point Transmission Service for delivery in the Transmission Owner's Zone in proportion to their Demand Charges (including any imputed Demand Charges for bundled service to Native Load Customers) for Network Integration Transmission Service and Reserved Capacity for Firm Point-to-Point Transmission Service; provided that such credits shall be reduced by the amount of any applicable incentives included in such Transmission Enhancement Charges.

ATTACHMENT C

Affidavit of Paul McGlynn

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.

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Docket No. ER17-____-000

AFFIDAVIT
OF
PAUL F. McGLYNN

I. Introduction

1. My name is Paul F. McGlynn and my business address is 2750 Monroe Blvd., Audubon, Pennsylvania 19403.
2. The purpose of my affidavit is to explain the cost assignment methodology proposed by the PJM Transmission Owners to establish cost responsibility for Targeted Market Efficiency Projects (“TMEPs”) among Zones and Merchant Transmission Facilities (“MTFs”) in the PJM Interconnection, L.L.C. (“PJM”) Region. As I explain below, the proposed cost assignment methodology ensures that the costs of a TMEP are assigned only to those Zones and MTFs that benefit from the proposed project in proportion to their benefit.

II. Background

3. I am employed by PJM, a regional transmission organization (“RTO”), as Senior Director of the System Planning Division.
4. As Senior Director of the System Planning Division, I am responsible for all aspects of the transmission planning analysis conducted by PJM. My responsibilities include assessing long-term transmission system adequacy and reliability to recommend bulk

transmission system expansion or enhancement options; integrating the results of the baseline reliability analysis with the market efficiency and generation and merchant transmission interconnection analyses into the overall Regional Transmission Expansion Plan (“RTEP”) for PJM; and managing System Planning Division analytical staff. I also serve as chair of the PJM Transmission Expansion Advisory Committee (“TEAC”).

5. I have been employed by PJM since 2007. Prior to joining PJM, I was employed by PECO Energy, a subsidiary of Exelon, for 21 years where I began work as an Engineer in the Electrical Engineering Division. I was promoted to Manager of Engineering in Transmission and Substations in 1995. I transferred to System Operations in the Operations Planning Department in 1998. I was promoted to Shift Manager in System Operations in 1999 and to Manager in Operation Planning in 2001. I became Manager in Transmission Control in 2003.
6. At PECO, I was responsible for engineering and design of transmission and substation equipment, including protective relay systems; providing engineering and technical support of PECO’s transmission and substation organization; short-term transmission system planning studies, developing operating procedures and preparing and presenting training courses; directing the real-time operation of the Transmission System; short-term transmission planning, outage coordination, dispatcher training, procedure development and real-time control room support; and managing the real-time personnel and activities of the transmission control center.
7. I am a licensed Professional Engineer in the Commonwealth of Pennsylvania. I hold a Bachelor of Science degree in Electrical Engineering from the Pennsylvania State

University and a Master of Science degree in Electrical Engineering from Drexel University.

III. The Targeted Market Efficiency Project Study Process

8. On December 30, 2016, PJM and the Midcontinent Independent System Operator Inc. (“MISO”) proposed revisions to the PJM-MISO Joint Operating Agreement (“JOA”) in order to add TMEPs as a class of projects eligible for interregional coordination and cost assignment.¹ The PJM and MISO Filings are currently pending before the Commission. As explained in the PJM and MISO Filings, TMEPs are low-cost, short lead time projects that are intended to address historical congestion issues occurring at Reciprocal Coordinated Flowgates along the PJM border with MISO. Unlike traditional Market Efficiency Projects, which are studied and developed based on projected long-term future congestion, TMEPs are intended to deliver “quick hit” solutions to existing congestion in PJM and MISO, and are therefore planned in response to historical congestion that likely will continue to persist into the foreseeable future.
9. In order to be eligible for approval by the PJM and MISO boards of directors and for interregional and regional cost assignment, a proposed TMEP must satisfy several requirements.² Specifically, TMEPs must (1) be evaluated as part of a joint study process

¹ *PJM Interconnection, L.L.C.*, Revisions to MISO-PJM JOA, Docket No. ER17-718-000 (filed Dec. 30, 2016); *Midcontinent Independent System Operator, Inc.*, Targeted Market Efficiency Amendments to MISO-PJM JOA, Docket No. ER17-721-000 (filed Dec. 30, 2016) (collectively “PJM and MISO Filings”).

² See JOA § 9.4.4.1.5.

between PJM and MISO;³ (2) have an estimated installed cost of less than \$20 million in study year dollars; (3) have an estimated in-service date by the third summer peak season from the year the project is approved; and (4) be shown to have expected annual congestion relief over the four year period after the study year on a specific flowgate that is equal to or greater than the estimated cost of the proposed project.

10. In order to determine the expected “annual congestion” relief of a proposed TMEP, PJM and MISO conduct a targeted market efficiency project study (“TMEP Study”). For the purposes of the TMEP Study, annual congestion is calculated using the estimated average historical congestion based on the two historical calendar years prior to the TMEP study period for both load and generator nodes in PJM and MISO, as determined under each RTO’s applicable market rules and using each RTO’s archived market settlement data from the coordinated market-to-market operations of PJM and MISO pursuant to the JOA. With respect to PJM, these market rules are codified in Attachment K-Appendix, Section 5.1 to the PJM Open Access Transmission Tariff (“PJM Tariff”) and in Schedule 1, Section 5.1 of the PJM Operating Agreement. The average annual congestion calculated under the TMEP Study is then reduced by the amounts determined to be due to outages and adjusted to reflect the effectiveness of the proposed TMEP to relieve all or only a portion of the congestion as modeled in the TMEP Study.⁴

³ *Id* § 9.3.2. The PJM and MISO Filings also include proposed revisions to JOA § 9.3.6 to include the process by which TMEPs may be identified through the Coordinated System Plan Study process. *See Id* § 9.3.6.2(c).

⁴ *See id.* § 9.4.4.1.5 (iv) (b), (c).

11. If the results of the TMEP Study show that the expected annual congestion relief over the four year period after the study year is equal to or greater than the estimated cost of the proposed TMEP, and if the TMEP satisfies the other criteria noted above and is approved by the PJM and MISO Boards, the TMEP is eligible for interregional cost assignment. Pursuant to the JOA, the costs are then assigned in proportion to the benefits received by each RTO. Any costs assigned to PJM in this manner are then included in the PJM RTEP and are eligible for regional cost assignment.

IV. Cost Assignment Methodology in PJM for Targeted Market Efficiency Projects

12. The PJM Transmission Owners are proposing revisions to Schedule 12 in order to implement the means by which the costs of TMEPs will be assigned within the PJM Region (“Proposed Methodology”).⁵ Under the PJM Transmission Owners’ Proposed Methodology, the costs of TMEPs within the PJM Region are assigned to those Zones and MTFs in PJM that are shown to have experienced net positive congestion over the two historical years prior to the TMEP study period.
13. To determine the Zones and MTFs in the PJM Region which have experienced congestion, PJM will use the same archived market settlement data from the coordinated market-to-market operations of PJM and MISO used in the TMEP Study to determine a TMEP’s eligibility for interregional cost allocation under the JOA. Use of the data in the TMEP Study is appropriate since, as noted in paragraph 10 above, the TMEP Study

⁵ The methodology will be set forth in a proposed new Section (b)(xvii) of Schedule 12 of the PJM Tariff.

calculates congestion in PJM pursuant to PJM's market rules in Attachment K-Appendix to the PJM Tariff and Schedule 1 of the PJM Operating Agreement.

14. Using the results of the TMEP Study, PJM will determine the total historical annual congestion experienced by each Zone and MTF in PJM. PJM will then make several adjustments in order to ensure that only those Zones and MTFs that experienced net Transmission Congestion Charges for the two years prior to the study year are assigned a portion of the TMEP costs. I discuss each of these adjustments individually below.
15. First, the cost of transmission in PJM is recovered exclusively from load. Accordingly, PJM will only consider historical annual congestion experienced by load, defined as "Market Buyers" under PJM's market rules.⁶ Any indicated congestion in the TMEP Study attributable to generator nodes in PJM will be disregarded.
16. Second, the joint RTO TMEP Study quantifies historical annual congestion in MISO and PJM that is attributable to the Reciprocal Coordinated Flowgate(s) addressed by the TMEP on a nodal level. For purposes of *interregional* cost assignment these data are aggregated on a regional (RTO) level. However, for purposes of cost assignment by Zone and MTF, PJM will use these same nodal data but aggregate all PJM Market Buyer nodal congestion impacts by Zone or at the MTF point of withdrawal. These aggregated Zonal and MTF congestion values will then be the basis for regional cost allocation.
17. Third, PJM will net the nodal congestion effects from all increases in Day-ahead and Real-time prices paid by Market Buyers in a Zone or MTF against the nodal congestion effects from all decreases in Day-ahead and Real-time prices paid by Market Buyers in

⁶ PJM Tariff, Attachment K-Appendix § 5.1; PJM Operating Agreement, Schedule 1, Section 5.1.

such Zone or MTF that are attributable to the targeted Reciprocal Coordinated Flowgate(s) addressed by the TMEP. The result of this calculation will be a single value for congestion impact for each Zone or MTF attributable to the targeted Reciprocal Coordinated Flowgate(s) that nets the cumulative congestion impacts for all hours for all nodes in both the Day-ahead and Real-time markets. This will result either in net positive congestion (increased cost) or net negative congestion (decreased cost) due to constraints at the targeted Reciprocal Coordinated Flowgate(s) for the two years prior to the study period. Only those Zones and MTFs that experienced average net Transmission Congestion Charges (*i.e.*, net positive congestion) due to the Reciprocal Coordinated Flowgate(s) addressed by TMEPs for the two years prior to the study period will be assigned a portion of the costs. This ensures that costs are assigned only to those Zones and MTFs that actually will benefit from the reduction in congestion at the targeted Coordinated Reciprocal Flowgates(s).

18. Lastly, where a TMEP is selected to relieve congestion at multiple Reciprocal Coordinated Flowgates, the congestion impacts determined as described above on each affected Zone and MTF across all targeted Reciprocal Coordinated Flowgates will be netted to ensure that only those Zones and MTFs with net Transmission Congestion Charges attributable to all of the Flowgates targeted by the proposed TMEP are assigned cost responsibility for the TMEP. As stated above, this ensures that costs are assigned only to those Zones and MTFs that will actually benefit from the reduction in congestion over the multiple Coordinated Reciprocal Flowgates targeted by the TMEP.

19. Once PJM has aggregated historical annual congestion by Zone and MTF and has determined the Zones and MTFs that experienced net positive Transmission Congestion Charges for the two years prior to the TMEP Study period, PJM will determine each Zone or MTF's respective cost assignment. To do so, PJM will calculate the total Market Buyer Transmission Congestion Charges incurred by those Zones and MTFs in PJM that experienced net Transmission Congestion Charges, as described above. PJM will then assign the costs to each Zone and MTFs on a *pro rata* basis based on each Zone or MTF's individual net Transmission Congestion Charges relative to the PJM sum total. By way of example, if a Zone experienced 75 % of PJMs total net Transmission Congestion Charges caused by a targeted Reciprocal Coordinated Flowgate, that Zone would be assigned 75 % of PJMs costs of the TMEP planned to address such congestion.
20. Finally, since the cost assignment for TMEPs is based on historical congestion, the cost responsibility analysis for TMEPs will only be performed once, and the resulting cost responsibility assignments will apply over the entire useful life of the TMEP. However, given that no TMEP will have an installed project cost exceeding \$ 20 million and that the costs of the TMEP will be amortized over the entire useful life of the project equipment, the annual cost impact of any individual TMEP on any Zone or MTF should be very small.
21. This concludes my Affidavit.

VERIFICATION

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

Dated this 11 day of April, 2017.

A handwritten signature in black ink, appearing to read "P F McGlynn", with a long horizontal flourish extending to the right.

Paul F. McGlynn
Senior Director
PJM System Planning Division