

158 FERC ¶ 61,038  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;  
Cheryl A. LaFleur, and Colette D. Honorable.

PJM Interconnection, L.L.C.

Docket No. EL14-37-000

ORDER ON SECTION 206 INVESTIGATION

(Issued January 19, 2017)

1. On August 29, 2014, the Commission instituted an investigation, pursuant to section 206 of the Federal Power Act (FPA),<sup>1</sup> concerning PJM Interconnection, L.L.C.'s (PJM) proposed tariff revisions concerning the application of its Financial Transmission Rights (FTR) forfeiture rule (FTR forfeiture rule) to Up-to Congestion (UTC) transactions and how uplift is, or should be, allocated to all virtual transactions in PJM.<sup>2</sup> Pursuant to the August 29, 2014 Order, Commission staff convened a technical conference on January 7, 2015, after which parties filed comments.

2. In this order, we find that PJM's current application of its FTR forfeiture rule to virtual transactions is no longer just and reasonable. PJM currently evaluates virtual transactions on an individual basis to determine if the FTR forfeiture rule should be applied. We find that an individual transaction approach does not accurately consider the net impact of a market participant's overall portfolio of virtual transactions on a constraint related to an FTR position. Instead, as we explain further below, a portfolio approach that evaluates the net effect of a participant's entire virtual portfolio – including Incremental Offers (INCs), Decrement Bids (DECs), and UTCs – accurately

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<sup>1</sup> 16 U.S.C. § 824e (2012).

<sup>2</sup> *PJM Interconnection, L.L.C.*, 148 FERC ¶ 61,144 (2014) (August 29, 2014 Order). Pursuant to section 206 (b) of the FPA, the August 29, 2014 Order established a refund effective date of September 8, 2014.

represents the effect of a participant's virtual transactions on a constraint related to an FTR position.<sup>3</sup>

3. With regard to the issue of how uplift is, or should be, allocated to all virtual transactions, we hold that issue in abeyance pending the outcome of any final rule resulting from the Notice of Proposed Rulemaking (NOPR) being issued concurrently with this order which explores uplift allocation in a broader context.<sup>4</sup>

4. We direct PJM to make a compliance filing implementing our determinations, as more fully discussed below, within 90 days, to be effective as of the date of this order. Finally, for the reasons discussed below, we will not order refunds resulting from our requirement to adopt a portfolio approach.

## **I. Background**

### **A. PJM's Filing in Docket Nos. ER13-1654-000, et al.**

5. On June 10, 2013, PJM filed revisions to its Open Access Transmission Tariff (Tariff) and Amended and Restated Operating Agreement (Operating Agreement) to define UTC transactions as virtual transactions and clarify the rules concerning the use of such transactions (June 2013 Filing). PJM stated that the proposed revisions reflected the

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<sup>3</sup> There are three types of virtual transactions in PJM: INCs, DEC, and UTCs. An INC is defined as an offer to sell energy at a specified source location in the day-ahead market. A cleared INC results in scheduled generation at the specified location in the day-ahead market. See Sections 1.3.9A of Schedule 1 of the PJM Operating Agreement.

A DEC is defined as a bid to purchase energy at a specified sink location in the PJM day-ahead market. A cleared DEC results in scheduled load at the specified location in the day-ahead market. See Sections 1.3.1E of Schedule 1 of the PJM Operating Agreement.

A UTC is a bid in the day-ahead market to buy congestion and losses between two points. As proposed by PJM, a UTC would be defined in PJM as a virtual transaction that combines an offer to sell energy at a source, with a bid to buy the same megawatt quantity of energy at a sink where such transaction specifies the maximum difference between the Locational Marginal Prices (LMP) at the source and sink. See Attachment K - Appendix Section 1.10.1A(c-1) of the PJM Operating Agreement.

<sup>4</sup> *Uplift Cost Allocation and Transparency in Markets Operated by Regional Transmission Organizations and Independent System Operators*, 158 FERC ¶ 61,047 (2016) (Uplift NOPR).

evolution of UTC transactions from financial hedges of real-time congestion charges associated with physical transactions to purely virtual products.<sup>5</sup> PJM also proposed to extend its existing FTR forfeiture rule to UTC transactions and to evaluate UTC transactions based on the distribution factor of the flow from the transaction source to the transaction sink on a given constraint impacting an FTR path.<sup>6</sup>

6. On August 9, 2013, the Commission accepted PJM's proposed tariff revisions conditioned upon PJM's submission of a compliance filing further explaining how it intended to apply the FTR forfeiture rule to UTC transactions.<sup>7</sup> PJM's FTR forfeiture rule evaluates a virtual transaction against "any other bus" to determine whether the transaction is at or near a constraint related to a participant's FTR. Since, under the June 2013 filing, a UTC would be evaluated using its own source and sink, the Commission stated it was unclear how PJM intended to apply the "at any other bus" requirement in its proposed tariff to UTCs. The Commission also required PJM to make an informational filing within six months describing the financial performance of UTCs, INCs, and DECs, as well as these transactions' effects on uplift.

7. PJM submitted its compliance filing to the August 9, 2013 Order on September 6, 2013 in Docket No. ER13-1654-001 (September 2013 Compliance Filing).<sup>8</sup> PJM explained that it does not need to apply the "at any other bus" requirement to UTCs as it does to INCs and DECs.<sup>9</sup> UTC transactions are explicitly defined between a source location and a sink location, which PJM considers a scheduled path. Since the path is

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<sup>5</sup> PJM Interconnection, L.L.C., Docket No. ER13-1654-000, June 2013 Filing, Transmittal Letter (Transmittal) at 3-7. PJM did not propose any tariff changes to the application of the FTR forfeiture rule to INCs and DECs in Docket No. ER13-1654-000.

<sup>6</sup> As discussed below, this source-sink approach differed from the evaluation PJM had used for INCs and DECs under the FTR forfeiture rule.

<sup>7</sup> *PJM Interconnection, L.L.C.*, 144 FERC ¶ 61,121 (2013) (August 9, 2013 Order). The August 9, 2013 Order also directed PJM to submit, as part of a compliance filing, revised tariff provisions to establish the criteria for determining the valid source-sink paths for UTC transactions and the maximum spread between source and sink prices. August 9, 2013 Order at P 23. PJM submitted these revised tariff provisions regarding the criteria for determining valid source-sink paths for UTC transactions and the maximum spread between source and sink prices as part of its compliance filing.

<sup>8</sup> We note that in an order issued in Docket No. ER13-1654-001 concurrently with this order, the Commission accepts PJM's September 2013 Compliance Filing, effective August 9, 2013.

<sup>9</sup> September 2013 Compliance Filing at 14-16.

already defined by the transaction, PJM argued it did not need to make any assumptions about where the energy is flowing.

8. On December 18, 2013, Commission staff issued a data request seeking further information regarding the application of the FTR forfeiture rule. On January 16, 2014, PJM submitted answers to the data request in Docket No. ER13-1654-002. On February 7, 2014, PJM submitted the informational filing on uplift, the “Report on the Impact of Virtual Transactions.”<sup>10</sup>

**B. Docket No. EL14-37-000, Section 206 Investigation**

9. In the August 29, 2014 Order, the Commission found that the information provided by PJM in the June 2013 Filing, the September 2013 Compliance Filing, and the January 16, 2014 data request responses was insufficient to determine whether or not differences exist between UTCs and INCs/DECs which would justify a difference in the application of the FTR forfeiture rule, or whether the current FTR forfeiture rule continues to be just and reasonable when applied to INCs, DEC, and UTCs. With regard to uplift, the Commission noted that PJM stated in its Report on the Impact of Virtual Transactions that both UTCs and INCs/DECs affect uplift; however, only INCs and DEC are currently subject to uplift charges.<sup>11</sup>

10. As noted, the Commission directed staff to hold a technical conference, which staff held on January 7, 2015, to explore these issues. The Notice of Technical Conference stated that the technical conference would explore whether: (1) PJM’s FTR forfeiture rule as it applies to UTC transactions and INCs/DECs is just and reasonable; and (2) PJM’s current uplift allocation rules associated with UTC transactions and INCs/DECs are just and reasonable.

11. The following parties made presentations at the technical conference: Appian Way Energy Partners (Appian Way); the Financial Marketers Coalition; Inertia Power LP; J. Aron & Company; Monitoring Analytics, LLC acting as the Independent Market Monitor for PJM (PJM Market Monitor); PJM; Potomac Economics; Red Wolf Energy Trading (Red Wolf); Twin Cities Power Holdings, LLC; and Yes Energy, LLC.

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<sup>10</sup> *Report on the Impact of Virtual Transactions*, filed February 7, 2014 in Docket No. ER13-1654-000 and also filed on May 29, 2015 as an attachment to PJM’s comments in Docket No. EL14-37-000. Contrary to its initial statements in the June 2013 Filing, PJM stated in the February 2014 Report that UTCs affect unit commitment and dispatch.

<sup>11</sup> August 29, 2014 Order at P 13; *Report on the Impact of Virtual Transactions* at 3, 10.

12. Post-technical conference comments were filed by: Acorn Energy Trading, LLC (Acorn); Angell Energy, LLC (Angell); Appian Way; Dominion Resources Services, Inc. (Dominion); Dyon, LLC (Dyon); EDF Trading North America, LLC (EDFT); eXion Energy, Inc. (eXion); the Financial Marketers Coalition;<sup>12</sup> Inertia Power I, LLC and Twin Cities Power Holding, LLC (Inertia/Twin Cities); Kass Commodities; Lawrence Smith; Old Dominion Electric Company and Southern Maryland Electric Cooperative (Electric Cooperatives); PJM; PJM Industrial Customer Coalition (PJMICC); PJM Market Monitor; PJM Utilities Coalition; Red Wolf; SESCO Enterprises LLC (SESCO); Step2 Capital Incorporated (Step2 Capital); Vitol Inc. (Vitol); XO Energy, LLC (XO Energy); and Yes Energy, LLC.

13. Responsive comments to the post-technical conference comments were filed by: eXion, Inertia Power I, LLC, Twin Cities Power Holdings, LLC, Dyon, and Angell (collectively referred to herein as Select Financial Marketers); the Financial Marketers Coalition; and the PJM Market Monitor.

14. Answers to responsive comments were filed by the PJM Market Monitor and PJM on July 17, 2015 and July 27, 2015, respectively.

15. On July 22, 2015, the Financial Marketers Coalition filed a Motion to Lodge a June 23, 2015 PJM analysis of uplift cost allocation proposals.

## **II. Notice of Section 206 Investigation and Responsive Pleadings**

16. Notice of the institution of the section 206 proceeding and the refund effective date was published in the *Federal Register*, 79 Fed. Reg. 53,189 (2014).

17. Timely motions to intervene were filed by: American Electric Power Service Corporation; Appian Way; Boston Energy Trading and Marketing LLC; Black Oak Energy LLC; Calpine Corporation; Consumer Advocate Division of West Virginia, The Dayton Power and Light Company; DC Energy, LLC; Dominion; Dufossat Capital; Dyon; Duke Energy Corporation; Electric Power Supply Association; Elliott Bay Energy Trading Company, LLC; Exelon Corporation; the Financial Marketers Coalition; Great Bay Energy; H.Q. Energy Services (U.S.) Inc.; Inertia Power I, LLC; J. Aron & Company; Macquarie Energy LLC; Maryland Public Service Commission; Monterey MA, LLC; North Carolina Electric Membership Corporation; NRG Companies; PJMICC; PJM Market Monitor; PSEG Companies; Red Wolf; RTO Trading Energy, LLC; Solios; Twin Cities Power Holdings, LLC; SESCO; and XO Energy.

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<sup>12</sup> For purposes of this filing, the Financial Marketers Coalition consists of: Dufossat Capital; Monterey Enterprises, LLC; Red Wolf; and XO Energy.

18. The FirstEnergy Companies filed a timely motion to intervene and comments.

19. Motions to intervene out-of-time were filed by: Acorn; Angell; Bartram Lane LLC; Buckeye Power, Inc.; Conch Energy Trading, LLC; DC Energy Southwest LLC; Delaware Division of the Public Advocate; Direct Energy Business Marketing, LLC; Duquesne Light Company; Dyon; East Kentucky Power Cooperative; EDFT; eXion; Falcon Energy, LLC; Greene Energy LLC; Kass Commodities; Liberty Hill Power LLC; LM Power, LLC; NextEra Energy Power Marketing, LLC; Old Dominion Electric Cooperative; Pure Energy, Inc.; Solea Energy, LLC; Southard Energy Partners; Southern Maryland Electric Cooperative; Vandelay Holdings, LLC; Vitol; Yasmin Partners LLC; and Yes Energy, LLC.

### **III. Procedural Matters**

20. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2016), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

21. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d) (2016), we will grant the late-filed motions to intervene given their interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

22. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2016), prohibits an answer to an answer or protest unless otherwise ordered by the decisional authority. We will accept the answers filed in this proceeding because they have provided information that assisted us in our decision-making process.

### **IV. Discussion**

23. This section addresses the FTR forfeiture rule. As discussed further below, we find the current application of the FTR forfeiture rule to be unjust and unreasonable and find a portfolio approach, advocated by the PJM Market Monitor, to be just and reasonable. Additionally, as discussed further below, we hold in abeyance the issue of how uplift is, or should be, allocated to all virtual transactions, pending the outcome of any final rule in the Uplift NOPR proceeding.

#### **A. FTR Forfeiture Rule**

24. This section discusses: (1) the current application of the FTR forfeiture rule; (2) whether the FTR forfeiture rule is just and reasonable; (3) proposed revisions to the FTR forfeiture rule; (4) treatment of FTR counterflows; and (5) other matters. Various commenters recommend revising the FTR forfeiture rule's current use of a worst-case scenario approach. PJM recommends using generation- or load-weighted reference buses

and the PJM Market Monitor proposes a portfolio approach. Other commenters representing load recommend retaining the current FTR forfeiture rule. As discussed further below, we find that the FTR forfeiture rule as currently applied is not just and reasonable and find instead that evaluating the net effect of a participant's entire virtual portfolio – including INCs, DEC, and UTCs – is just and reasonable.

### **1. Description and Current Application of the FTR forfeiture rule**

25. In 2000, PJM established the FTR forfeiture rule for INCs and DEC in order to prevent market participants from using virtual transactions to create congestion that benefits their related FTR positions.<sup>13</sup> Under the FTR forfeiture rule, an FTR holder forfeits the profit from its FTR when it submits an INC or a DEC at or near the source or sink location of the FTR that results in a higher LMP spread in the day-ahead energy market than in the real-time energy market.<sup>14</sup> At that time, UTCs were not defined as virtual transactions in PJM and thus were not covered under the FTR forfeiture rule.

26. To apply the FTR forfeiture rule, PJM evaluates whether a market participant's virtual transaction affects its FTRs. PJM estimates how energy injected (or withdrawn) for the virtual transaction impacts the system as it is withdrawn (or injected) elsewhere on the system. Since an INC or a DEC is transacted at a single location, PJM chooses a corresponding withdrawal point for each INC and a corresponding injection point for each DEC. The corresponding location, which the tariff describes as "any other bus," is the bus that PJM deems to be the worst-case scenario. That is, PJM selects as the corresponding location the injection or withdrawal out of all transactions by any market participant that results in the highest percentage of the transaction's total energy flowing over the constraint related to the FTR path. Since PJM's selection is based solely on the worst case, one market participant's INC, for example, may be paired with a different market participant's DEC to calculate the worst-case scenario flow.

27. The FTR forfeiture rule has a 75 percent trigger threshold; that is, the rule is triggered if the net distribution factor between the transaction bus and the worst-case scenario bus is at least 0.75 (i.e., at least 75 percent of the energy flowing between those

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<sup>13</sup> An FTR is a financial contract entitling the holder to a stream of revenues (or charges) based on the day-ahead hourly congestion price difference across an energy path. The FTR is defined from a point of receipt (source) to a point of delivery (sink). See Section 1.1 of PJM Manual 6 (Financial Transmission Rights).

<sup>14</sup> See PJM Operating Agreement Section 5.2.1 (b). For purposes of the FTR forfeiture rule, a company and its affiliates are treated as one entity. See PJM Operating Agreement, Attachment M – Appendix, Section VI.

two points is reflected in the constraint). Section 5.2.1 (c) of the PJM tariff defines the 75 percent trigger threshold:

For purposes of [the FTR forfeiture rule] a bus shall be considered at or near the [FTR] delivery or receipt bus if seventy-five percent or more of the energy injected or withdrawn at that bus and which is withdrawn or injected at any other bus is reflected in the constrained path between the subject [FTR] delivery and receipt buses that were acquired in the [FTR] auction.

28. As PJM explained in the September 2013 Compliance Filing, in applying the FTR forfeiture rule to UTCs, PJM does not use the worst-case scenario used for INCs and DEC<sub>s</sub>.<sup>15</sup> PJM explained that since UTCs, by definition, consist of an injection (source) and withdrawal (sink), the FTR forfeiture rule instead considers the path of the transaction itself to determine whether the 75 percent threshold is triggered.

## **2. Whether the FTR Forfeiture Rule is Just and Reasonable**

29. The FTR forfeiture rule was initially proposed by PJM to address concerns raised by the PJM Market Monitor that a market participant could inflate the value of its FTR paths through the purchase of INCs or DEC<sub>s</sub>.<sup>16</sup> The proposal was unopposed and approved by the Commission via delegated authority. Now some commenters argue against the FTR forfeiture rule, while the PJM Market Monitor argues that a FTR forfeiture rule is an efficient, effective means of deterring market manipulation. As discussed further below, we find that a revised version of the FTR forfeiture rule is a just and reasonable way of addressing concerns that a market participant's virtual transactions will benefit its FTRs. We discuss below specific modifications required to ensure that PJM's specific FTR forfeiture rule is just and reasonable.

### **a. Comments and Pleadings**

30. EDFT states that the FTR forfeiture rule, in its current form, impedes competitive behavior. EDFT claims that it is difficult for market participants to comply with the rule, in part because the triggers underlying the rule are based on unpublished Day-Ahead results. EDFT favors instead a market design in which a market monitor examines individual activity to determine whether it is competitive or uneconomic.<sup>17</sup> A case-by-case approach, EDFT contends, will avoid potential false positives and better determine whether a market participant is transacting in a competitive manner.

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<sup>15</sup> September 2013 Compliance Filing at 14-16.

<sup>16</sup> PJM Interconnection, L.L.C., Docket No. ER01-773-000 at 2.

<sup>17</sup> EDFT Comments at 1-3, Attachment A at 9-11 and 13-15.



31. XO Energy also questions the need for the FTR forfeiture rule. XO Energy contends that, in its current form, the FTR forfeiture rule creates economic risks for utilities seeking to hedge their positions because small changes in the Real-Time market can have significant financial impacts. XO Energy states that economic incentives combined with increased numbers of participants trading at a larger number of nodes will promote convergence and most effectively eliminate the potential for manipulation.

32. The PJM Market Monitor argues that individual enforcement actions, of the sort that EDFT proposes, are not a substitute for generally applicable *ex ante* rules, and that they cannot protect the market in the same way as a rule. The PJM Market Monitor maintains that an enforcement action approach – relative to a rule based approach – is inefficient, non-transparent, and of limited value as a deterrent to market manipulation.<sup>18</sup>

**b. Commission Determination**

33. We find that a version of the FTR forfeiture rule, as modified herein under our section 206 authority, is a just and reasonable way in PJM to address concerns that a market participant will enter into virtual transactions to benefit its FTR positions. We have concluded that the use of virtual transactions with the intent to benefit FTR positions constitutes cross-product manipulation.<sup>19</sup> An FTR forfeiture rule serves to deter such manipulation. The Commission initiated this section 206 proceeding to determine whether PJM's FTR forfeiture rule was designed and implemented in a way that makes it meaningfully effective.<sup>20</sup> Considerations to eliminate the rule are therefore outside the scope of this proceeding as the underlying concerns that led PJM to implement the rule remain.

**3. Revisions to the FTR Forfeiture Rule in Response to the Commission's Section 206 Proceeding**

34. The notice of technical conference sought input from parties on every major aspect of the FTR forfeiture rule's design. Specifically: (1) whether to review individual transactions or portfolios; (2) which virtual transactions may instigate FTR forfeiture, or

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<sup>18</sup> PJM Market Monitor Reply Comments at 5-6.

<sup>19</sup> *MISO Virtual and FTR Trading*, 146 FERC ¶ 61,072, at P 13 (2014) (“The Commission emphasizes that using virtual trades to create artificial congestion in the Day-Ahead market for the purpose of enhancing the value of FTR positions violates the Commission's Anti-Manipulation Rule.”). *See also Constellation Energy Commodities Group, Inc.*, 138 FERC ¶ 61,168 (2012).

<sup>20</sup> August 29, 2014 Order at P 12.

be part of a portfolio; (3) whether the FTR forfeiture rule should continue to look at the “worst-case” scenario bus; and (4) at what level should the trigger threshold for FTR forfeiture be set. As further discussed below, we find that a portfolio approach, as proposed by the PJM Market Monitor, is just and reasonable.

**a. Comments and Pleadings**

**i. Individual Transactions vs. Portfolio**

35. In response to the Commission’s technical conference questions, the PJM Market Monitor argues that an FTR forfeiture rule should account for the net impact of a participant’s entire virtual portfolio on a constraint related to an FTR position, including INCs, DEC, and UTCs. Under this “portfolio approach,” a UTC would be included in the participant’s portfolio as an injection (INC) at its source point and as a withdrawal (DEC) at its sink point. The PJM Market Monitor argues that the net effect of a participant’s entire virtual portfolio is a better measure of the participant’s effect on a constraint than the effect of each of a participant’s individual virtual bids considered in isolation or in some combination with another injection or withdrawal point. A participant’s portfolio may contain virtuals that both help and hurt the constraint. The PJM Market Monitor concludes that this possibility is not captured under the current rule.<sup>21</sup>

36. The Electric Cooperatives filed comments in support of the portfolio approach arguing that the FTR forfeiture rule should assess a market participant’s and its subsidiaries’ impact on the market by evaluating their entire portfolio and not just individual transactions.<sup>22</sup> XO Energy stated that the current FTR forfeiture rule should be stricken in its entirety, but notes that if a rule is to be applied, it should measure a market participant’s net total impact on a constraint. XO Energy explained that using a portfolio-based approach lessens the impact of choosing an arbitrary reference because it calculates the impact of all the participants’ positions uniformly and not one by one.<sup>23</sup>

37. PJM does not support a portfolio approach to the FTR forfeiture rule. PJM argues that the portfolio approach expands the FTR forfeiture rule in ways that may reduce market efficiencies. PJM believes this method may discourage virtual trading at

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<sup>21</sup> PJM Market Monitor Comments at 4.

<sup>22</sup> Electric Cooperatives Comments at 8.

<sup>23</sup> XO Energy Comments at 9.

locations where there is a small impact on FTR positions and restrict legitimate market activity that promotes market convergence and increases market efficiency.<sup>24</sup>

38. PJM also does not support applying the rule on a collective portfolio basis, arguing that it would not allow exemptions for virtual transactions that improve day-ahead and real-time convergence. PJM states that the current design of the FTR forfeiture rule exempts virtual transactions from forfeitures to the extent that the congestion on the FTR path in the day-ahead energy market is less than the congestion on the FTR path in the real-time energy market. PJM adds that, even if on average the prices at the locations where the market participant's virtual transactions cleared are closer in day-ahead to real-time than they otherwise would have been without the virtual transactions, the same may not be true for the individual locations themselves. Therefore, PJM continues to support applying the FTR forfeiture rule to individual transactions rather than on a portfolio basis.<sup>25</sup>

39. PJM Utilities Coalition argues that the net impact of a market participant's portfolio should not be assessed because it allows a virtual trader to reduce the impact of the FTR forfeiture rule by netting out manipulative virtual transactions.<sup>26</sup>

40. Dominion argues there has been no analysis demonstrating that a portfolio approach is better than the current individual transaction methodology. Without more detail on a portfolio approach, Dominion states it is difficult to evaluate any improvements to the current approach. Dominion believes that each individual virtual transaction should be evaluated based on its own merits and advocates adding an exemption for profitable virtual transactions.<sup>27</sup>

## ii. Portfolio Composition

41. PJM believes the current exemption for Zones, Hubs, and Interfaces is appropriate because of the liquidity of these trading hubs.<sup>28</sup> PJM argues that it is highly unlikely that traders at these hubs could engage in behavior that would trip the FTR forfeiture rule, and that expansion of the FTR forfeiture rule to these transactions may reduce market

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<sup>24</sup> PJM Comments at 4-5.

<sup>25</sup> *Id.* at 6.

<sup>26</sup> PJM Utilities Coalition Comments at 4.

<sup>27</sup> Dominion Comments at 4.

<sup>28</sup> EDFT filed similar comments, adding that certain aggregate nodes will be similarly competitive. EDFT Comments at 8-9.

efficiencies and convergence between day-ahead and real-time energy markets by discouraging virtual transactions at these locations.

42. PJM states that virtual transactions that improve day-ahead and real-time price convergence should be exempt from the FTR forfeiture rule because these transactions can be viewed as benefiting the market. PJM states that the current exemption covers all transactions where day-ahead congestion is less than real time congestion, including virtual transactions that increase day-ahead congestion without exceeding real-time congestion. PJM states that all of these transactions should be exempt because they improve convergence.<sup>29</sup>

43. The PJM Market Monitor opposes exempting any virtual transactions under a portfolio based approach. It states that the net effect of a participant's entire virtual portfolio is a better measure of the participant's effect on a constraint than the effect of each of a participant's individual virtual bids considered in isolation or in some combination with another injection or withdrawal point.<sup>30</sup>

44. Dominion supports adding an additional exemption for virtual transactions that result in price convergence under the FTR forfeiture rule.<sup>31</sup> On the other hand, Electric Cooperatives argue that there should be no exemption for such transactions because simply improving convergence does not mean that no manipulation of FTR values has occurred.<sup>32</sup>

45. XO Energy states that to the extent a market participant is transacting in both physical and virtual products, the net impact should include all transactions, not just virtual transactions. XO Energy explains that since all transactions are cleared as if they are physical injections and withdrawals, there is no reason to focus solely on virtual transactions when assessing a participant's portfolio net impact.<sup>33</sup>

46. PJM opposes including physical transactions in the assessment of the FTR forfeiture rule, expressing concerns that it may reduce market efficiency.<sup>34</sup> The PJM Market Monitor states that developing an appropriate rule to consider physical

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<sup>29</sup> PJM Comments at 6. Dominion filed similar comments at 4-5.

<sup>30</sup> PJM Market Monitor Post-Technical Conference Comments at 5-6.

<sup>31</sup> Dominion Comments at 4.

<sup>32</sup> Electric Cooperatives Post-Technical Conference Comments at 9-10.

<sup>33</sup> XO Energy Comments at 9-10.

<sup>34</sup> PJM Answer to Technical Conference Questions at 6.

transactions may be beyond the scope of the current proceeding and would require a detailed discussion that would further complicate the issues under consideration here.<sup>35</sup>

47. PJM points out that the FTR forfeiture rule is currently applied to a market participant and its affiliates as defined in the Operating Agreement. But, PJM maintains that this may be insufficient to protect against entities using virtual trades to manipulate FTR values. PJM states that entities may be under common ownership, but may not be considered affiliates under the Operating Agreement because one entity does not “control” the other. Thus, PJM suggests revising the definition of affiliates under the Operating Agreement to include affiliates who are under common ownership. PJM states that this would prevent an entity creating entities that are not affiliates in order to circumvent the FTR forfeiture rule.<sup>36</sup>

### iii. Worst-Case Scenario Bus Evaluation

48. PJM continues to support individually evaluating virtual transactions, and therefore argues that, under this system, INCs and DEC bids should be treated differently than UTCs. In discussing the design of the individual test in its post-technical conference comments, PJM states that the FTR forfeiture rule should no longer be assessed on a “worst case” basis. PJM prefers a generation-weighted reference bus to evaluate DEC bids and a load-weighted reference bus to evaluate INC offers.<sup>37</sup> PJM states that the use of load-weighted buses will more accurately reflect the effects of INCs and DEC bids on system power flows. PJM asserts that using the “worst case” analysis essentially evaluates one market participant’s activity against another, and thus only reflects market manipulation if both parties are colluding. PJM argues that this could result in forfeitures occurring when they should not. PJM continues to support the 75 percent impact threshold, when applied to an individual transaction, stating that it balances the need to catch virtual activity that significantly affects FTR paths against a concern that a lower threshold would result in forfeitures when the impacts of the virtual transactions were merely coincidental to the networked nature of the transmission system.

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<sup>35</sup> PJM Market Monitor Comments at 4.

<sup>36</sup> PJM Comments at 7. A revised definition of FTR holder can be found at 8.

<sup>37</sup> The generation-weighted reference would be calculated using the megawatts of all generators that cleared the Day-ahead Energy Market. The generation-weighted reference would be used as the source location for evaluating DEC bids for purposes of the FTR forfeiture rule instead of using the worst case location. The load weighted reference would be calculated similarly, but using sinks instead of sources, and it would be used for INCs. PJM Comments at 3.

49. The PJM Market Monitor disagrees, arguing that, should the Commission not adopt a portfolio approach, the “worst case” analysis should be retained. The PJM Market Monitor maintains that a “worst case” analysis cannot be limited to a Market Participant’s own portfolio, but must reflect that power injected from any participant can be withdrawn by any participant, not just the one injecting the energy. The PJM Market Monitor argues that this is consistent with power flows which do not follow the “contract path,” and with the current FTR forfeiture rule which does not take the identity of the load (or source) into account in its evaluation. The PJM Market Monitor reiterates that virtual transactions can affect FTR values without colluding, or even knowing who the buyer (or seller) is. The PJM Market Monitor states that should the FTR forfeiture rule be changed to no longer be evaluated on the path where the virtual transactions have the largest effect (meaning worst case), then the 75 percent threshold should likely be reduced or risk effectively eliminating the rule.<sup>38</sup>

50. Many commenters respond that PJM should modify the FTR forfeiture rule to eliminate the use of the worst-case scenario bus in evaluating power flows resulting from an INC or a DEC, and expressed concern that this methodology is overly strict and/or lacks transparency.<sup>39</sup> For example, eXion states that the rule is unduly discriminatory because it arbitrarily pairs INCs with DECs, across all market participants, without any consideration for whether the two positions are related.<sup>40</sup> Vitol argues that market participants do not have sufficient information to determine whether or not their own activity will trigger the rule.<sup>41</sup>

51. Most respondents that oppose using the worst-case scenario to evaluate INCs and DECs favor the use of a load-weighted reference bus as the withdrawal point for an INC and a generation-weighted reference bus as the injection point for a DEC.<sup>42</sup> Acorn and eXion state that the load-weighted or generation-weighted reference bus should only be

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<sup>38</sup> PJM Market Monitor Comments at 3-5; PJM Utilities Coalition Comments at 3.

<sup>39</sup> Inertia/Twin Cities Comments at 2, 14; Electric Cooperatives Comments at 4; eXion Comments at 12, 15; Vitol Comments at 12, 13; Acorn Comments at 2; PJM Comments at 4; EDFT Comments at 5; XO Energy Comments at 7; Financial Marketers Coalition Comments at 29.

<sup>40</sup> eXion Comments at 13.

<sup>41</sup> Vitol Comments at 10.

<sup>42</sup> Inertia/Twin Cities Comments at 14; Electric Cooperatives Comments at 8; PJM Comments at 3; EDFT Comments at 5; XO Energy Comments at 8.

used if an opposing transaction is not included in the market participant's own portfolio.<sup>43</sup>

52. For UTCs, most respondents believe that the power flows associated with the transaction should be evaluated using its own source and sink because the actual impact on a constraint can be determined using these locations.<sup>44</sup> PJM states that applying the rule to UTCs in a different manner than INCs and DEC's is justified because, unlike UTCs, INCs and DEC's clear separately so there may be unequal volumes for an INC/DEC pair. Therefore, the impact of an INC/DEC pair on the constraint may be different from a UTC's impact.<sup>45</sup> The PJM Market Monitor states that the power flows for both types of transactions follow the same rules and therefore the FTR forfeiture rule should be applied consistently for UTC, INCs and DEC's. More specifically, the PJM Market Monitor argues that if a portfolio approach is not adopted, each side of a UTC should be treated as a separate transaction and evaluated using the worst-case scenario base as is done with INCs and DEC's.<sup>46</sup>

53. Acorn and Angell believe PJM should analyze a market participant's virtual positions exclusively in comparison to the opposing positions in its portfolio, or, if none is available, a generation-weighted or load-weighted reference bus.<sup>47</sup> PJM Utilities Coalition, eXion, Inertia Power I, Twin Cities Power Holdings, Dyon, and Angell believe that 75 percent is the appropriate threshold when applied to the worst-case bus.<sup>48</sup>

54. According to Select Financial Marketers, it is impossible for market participants to determine when their trading might trigger the FTR forfeiture rule.<sup>49</sup> To rectify this, Select Financial Marketers state that the rule should be modified so that each market

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<sup>43</sup> eXion Comments at 15; Acorn Comments at 2.

<sup>44</sup> Dominion at 2; Inertia/Twin Cities Comments at 14; Electric Cooperatives Comments at 7; eXion Comments at 12; Vitol Comments at 13; PJM Comments at 3; EDFT Comments at 6; XO Energy Comments at 8; Appian Way Comments at 3.

<sup>45</sup> PJM Comments at 3.

<sup>46</sup> PJM Market Monitor Comments at 2. Given that PJM does not support a FTR forfeiture rule applied on a portfolio basis, PJM did not comment on the trigger threshold for evaluating the net impact of a portfolio on a constraint related to an FTR.

<sup>47</sup> Acorn Comments at 2; Angell Comments at 3.

<sup>48</sup> PJM Utilities Coalition Comments at 1; Select Financial Marketers Answer to Market Monitor and PJM at 17.

<sup>49</sup> Select Financial Marketers Comments at 13.

participant's positions are not considered relative to the worst opposing position placed by another market participant, but instead on a stand-alone basis.<sup>50</sup>

**iv. Trigger Threshold for Forfeiture**

55. The PJM Market Monitor stated that applying the FTR forfeiture rule on a portfolio basis would require the threshold to be reconsidered and significantly reduced.<sup>51</sup> XO Energy notes that if a change to the threshold is proposed, it prefers that the trigger be based on a percentage of flow on the binding constraint. XO Energy argues that if a portfolio approach is adopted, the trigger should be based on a percentage of the total binding MW limit. For example, if a 50 percent threshold was used on a constraint with a 100 MW limit, a participant would need at least a net impact of 50 MW on the constraint to trigger the rule.<sup>52</sup> Electric Cooperatives stated that the impact threshold should be revisited if there is a change in approach to verify that it captures the type of behavior that the rule was intended to address.

**b. Commission Determination**

56. We find PJM's existing FTR forfeiture rule under section 5.2.1(c) of the Tariff to be unjust and unreasonable. In discussing the FTR forfeiture rule as a whole, below, we will address its major design elements, namely, the evaluation of virtual transactions on an individual basis compared to a portfolio basis; the use of the worst-case scenario bus; the applicable trigger threshold; and affiliates. We also address commenters' proposed exceptions to the FTR forfeiture rule.

57. We find that the evaluation of virtual transactions on an individual basis as under the current FTR forfeiture rule does not accurately reflect the net impact of a market participant's overall portfolio of virtual transactions on a constraint related to an FTR position. Rather, the net effect of a participant's entire virtual portfolio – including INCs, DEC, and UTCs – accurately represents the effect of a market participant's virtual transactions on a constraint related to FTR position.

58. We find that a just and reasonable FTR forfeiture rule must accurately reflect a participant's virtual transactions' net impacts on constraints because forfeits should be limited to those who actually increase the value of their FTR positions through their portfolio of virtual transactions. Under the current rule, when individual transactions are evaluated in isolation, the forfeitures are based on a single transaction's contribution to

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<sup>50</sup> Select Financial Marketers Comments at 2, 13-14.

<sup>51</sup> PJM Market Monitor Comments at 4.

<sup>52</sup> XO Energy Comments at 9-10.



flow across a constraint. This may lead to forfeitures from some participants who have offsetting positions elsewhere and thus whose virtual transactions did not actually impact the constraint. Likewise, the rule may fail to invoke forfeiture on some participants who do not impact the constraint with a single transaction but have additive positions elsewhere that, on net, do impact the constraint significantly. Thus, PJM's current methodology, which considers each virtual transaction in isolation, does not properly require forfeitures from those participants whose virtual transactions impact their related FTR positions.

59. We also find the current FTR forfeiture rule's use of the worst-case scenario bus in evaluating power flows inaccurately reflects the impact of a portfolio of virtual transactions on the flow across a constraint. Because inaccuracy in calculating flows across a constraint leads to inappropriate forfeiture amounts, this methodology is unjust and unreasonable. Under the worst-case scenario bus, one market participant's virtual transaction may be compared against another, different market participant's virtual transaction. The assumption that power flows between the market participant's virtual transaction and another market participant's worst-case transaction is not an accurate representation of the incremental power flows created due to the virtual transaction. We find that the load-weighted reference bus is an appropriate and accurate reference to use in calculating power flows across constraints because PJM's day-ahead market optimization calculates system energy components and congestion components of LMP relative to a load-weighted reference bus.<sup>53</sup> This means that the resulting distribution factors, which describe how power flows across the system relative to injections and withdrawals, are derived from the load-weighted reference bus. Using this bus for the FTR forfeiture rule is therefore more consistent with how power flows across the system each hour.

60. To avoid unnecessary forfeitures resulting from a worst-case scenario bus based test, PJM and the PJM Market Monitor have argued that using the "worst-case" bus in order to evaluate the FTR forfeiture rule merited the relatively high, 75 percent threshold. Because we are requiring PJM to revise the FTR forfeiture rule so that it no longer uses the worst-case scenario bus, we also find it unjust and unreasonable to continue to use the 75 percent threshold. Rather, we find it appropriate to use a trigger based on a percentage of the total binding MW limit of the constraint related to the FTR path. We find this method appropriate because it measures actual flow across a constraint and compares it to the total limit, which allows the rule to exempt flows that have small impacts on constraints. The 75 percent trigger was based on a location's proximity to a constraint, which is impractical when considering multiple locations. We note that the California Independent System Operator (CAISO) uses a similar approach based on percentage of

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<sup>53</sup> PJM Market Monitor, "State of the Market Report for PJM – 2015" at 415.

flow across a constraint for its Congestion Revenue Rights (CRR) Settlement Rule.<sup>54</sup> This trigger is also superior to the 75 percent threshold because it relies on relevant information available to a virtual trader that may seek to monitor its own activity. Accordingly, we direct PJM to implement a trigger threshold based on the total MW limit of a binding constraint related to the FTR path. Specifically, to trigger a forfeiture, the net flow across a given constraint attributable to a participant's portfolio of virtual transactions must meet two criteria: (1) the net flow must be in the direction to increase the value of an FTR; and (2) the net flow must exceed a certain percentage of the physical limit of a binding constraint. Although any volume can cause congestion, this second condition recognizes that increased volumes relative to the binding limit are more symptomatic of transactions that increase the value of an FTR.

61. We agree with PJM's suggestion that the FTR forfeiture rule consider entities that share common ownership, but are not considered affiliates. With the removal of the worst-case scenario bus, such entities may be able to collectively manipulate FTR values without triggering the FTR forfeiture rule if they are considered individually.

62. Based upon the foregoing, we direct PJM to submit a compliance filing within 90 days of the date of this order to modify section 5.2.1(c) of its Tariff to: (1) evaluate the net impact of a market participant's entire portfolio of virtual transactions on its FTR positions; (2) measure the portfolio's net impact using the load-weighted reference bus; (3) revise the threshold for triggering forfeiture to reflect the previous two changes; and (4) consider all virtual transactions held by entities that share common ownership as part of the same portfolio.

63. We disagree with commenters' concerns that a portfolio approach will discourage transactions with small impacts on FTR prices and at liquid locations such as Zones, Hubs and Interfaces. While this may be true under a threshold based on net distribution factors, use of a threshold based on a percentage of the total MW limit of a binding constraint related to an FTR path will only capture portfolios of transactions that have a clear impact on the FTR path, and therefore the value of FTRs. In addition, a market participant that nets out its transactions must do so in a way that prevents it from impacting congestion in order to meet the threshold. Lastly, with the elimination of the worst-case scenario bus, the methodology is transparent, as market participants will be able to monitor their own activity to determine if they are significantly impacting a

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<sup>54</sup> CAISO's CRRs are financial instruments that enable CRR holders to manage congestion cost variability based on LMP. These rights are acquired primarily for offsetting congestion costs that occur in the day-ahead market. *See* CAISO website, <https://www.caiso.com/participate/Pages/MarketProducts/CongestionRevenueRights/Default.aspx>.

constraint related to an FTR position. Accordingly, we direct PJM to submit a compliance filing within 90 days of the date of this order to modify its Tariff to include virtual transactions and FTRs sinking or sourcing at Zones, Hubs and Interfaces in its evaluation of whether to trigger the FTR forfeiture rule.

64. Contrary to the comments of the PJM Utilities Coalition, we do not expect that a portfolio approach will mute the price signals associated with the FTR forfeiture rule. We believe that the redesigned FTR forfeiture rule will appropriately discourage virtual traders from attempting to use virtual transactions to manipulate their FTR positions. It will also reduce the risk of a virtual traders triggering forfeiture for reasons outside their control. We disagree with Dominion that a portfolio approach is untested. We note that CAISO uses a similar portfolio approach in its application of an FTR forfeiture rule, which CAISO refers to as its Congestion Revenue Rights (CRR) Settlement Rule. Under its tariff, CAISO determines that congestion has been significantly impacted on a constraint if the flow impact of a CRR holder's entire portfolio of virtual awards exceeds 10 percent of the flow limit for each transmission constraint. CAISO then adjusts CRR revenues accordingly.

65. Several commenters suggested exemptions to a portfolio approach. We disagree with Dominion and PJM that there should be an additional exemption for virtual transactions that improve day-ahead and real-time market price convergence. As an initial matter, we note that the current exemption to forfeitures will be retained for FTRs where the difference in price between the source and sink of the FTR is less in the day-ahead market than the real-time market (i.e., "FTR path convergence"). We emphasize that such FTR path convergence involves the relative price difference between two nodes in the day-ahead versus real-time, and thus may or may not translate into the price convergence between the day-ahead and real-time at individual nodes – under either the existing FTR forfeiture rule or the rule as modified herein. Nevertheless, to the extent that certain virtual transactions align with FTR paths that converge, the current exemption for FTR path convergence will extend to those virtual transactions.

66. Dominion argues for a specific exemption under the FTR forfeiture rule for virtual transactions that result in price convergence. We agree with PJM that such an exemption would not be practical on a portfolio basis as a portfolio may contain both price converging and price diverging individual virtual transactions. Our finding is consistent with the current practice where virtual transactions that improve day-ahead and real-time convergence at a single node are not exempt from the FTR forfeiture rule and we decline to require this as an additional exemption. Under a portfolio-based approach, it is the aggregate impact of the portfolio that is relevant, not the characteristics of individual transactions.

67. We note that, based on the record here, there is insufficient support to require PJM to change its current practice to require consideration of physical transactions in

evaluating a market participant's portfolio. While we acknowledge that certain physical transactions could be used to manipulate FTR values, we agree with the PJM Market Monitor that a more detailed discussion and further information is needed to consider expanding the rule in such a manner.

#### **4. FTR Counterflows**

68. Currently, counterflow FTRs are exempt from the FTR forfeiture rule. Counterflow FTRs pay out when congestion flows in the opposite direction of the prevailing flow. The holder of a counterflow FTR assumes the obligation to pay actual congestion costs on a defined pathway. In other words, the holder of a counterflow FTR has assumed the risk that the delivered price of electricity at the sink point of the pathway might be higher than the price at the source point of the pathway and is paid an amount out of the FTR auction for taking on the congestion risk. A counterflow FTR typically has a negative financial value; which is to say that a party who acquires a counterflow FTR is paid a price out of the auction for assuming the congestion risk associated with the counterflow position.<sup>55</sup> Various commenters including PJM and the PJM Market Monitor argue that counterflow FTRs and virtual transactions that relieve congestion should not be exempt from the FTR forfeiture rule. As further discussed below, we find that counterflow FTRs and virtual transactions that relieve congestion should not remain exempt from the FTR forfeiture rule.

##### **a. Comments and Pleadings**

69. PJM, the PJM Market Monitor, and Dominion agree that counterflow FTRs as well as virtual transactions that relieve congestion should not be exempt from the FTR forfeiture rule.<sup>56</sup> PJM states that a counterflow FTR holder can increase its FTR profits by using virtual transactions to reduce day-ahead congestion. PJM acknowledges that there is not a significant incentive to bid in this way because virtual counterflow transactions can reduce congestion in the day-ahead energy market while this congestion may still materialize in the real-time energy market, resulting in less profitable virtual transactions. The PJM Market Monitor and PJM agree that even if it is riskier for a party to attempt to reduce congestion to increase the value of a counterflow FTR, that does not remove the incentive to manipulate the value of counterflow FTRs.

70. Select Financial Marketers and EDFT disagree and argue that removing the current exemption of counterflow FTRs from the FTR forfeiture rule would lead to a

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<sup>55</sup> As described in PJM's [FTR Revenue Stakeholder Report](#) at 8.

<sup>56</sup> Dominion Comments at 4-5; PJM Comments at 5-6; PJM Market Monitor Comments at 5-6.

decrease in counterflow transactions.<sup>57</sup> Select Financial Marketers argue that counterflow FTRs are inherently more risky than prevailing flow FTRs,<sup>58</sup> and that removing the exemption would add additional risk, thus, rendering a counterflow FTR a less viable transaction and leading to decreased transaction volume.

71. XO Energy, PJM Utilities Coalition, and Electric Cooperatives all acknowledge that holders of counterflow FTRs can manipulate congestion to benefit their FTR positions, but do not assert that all counterflow FTRs be subject to the FTR forfeiture rule. Rather, they agree that PJM should have some measure of flexibility in its ability to scrutinize potentially manipulative use of virtual transactions.<sup>59</sup>

**b. Commission Determination**

72. We do not find compelling EDFT's and the Select Financial Marketers' view that including counterflow FTRs in the FTR forfeiture rule will reduce the volume of these positions. EDFT has not demonstrated that there would be a reduction. Moreover, parties are able to monitor their own transactions' impact due to the elimination of the worst case scenario bus.

73. We find that counterflow FTRs and virtual transactions that relieve congestion should not remain exempt from the FTR forfeiture rule. Holders of counterflow FTRs are able to manipulate congestion to benefit their FTR position and should be subject to forfeiture. As described above, a portfolio approach accurately reflects a set of virtual transactions' effect on the value of a related FTR position. We find that counterflow FTRs should also be included in a portfolio's evaluation because their value can be increased by virtual transactions just like prevailing flow FTRs. Therefore, as part of the compliance filing directed here, PJM must submit tariff revisions to apply the FTR forfeiture rule to counterflow FTRs.

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<sup>57</sup> Select Financial Marketers Comments at 16-17; EDFT Comments at 7-9.

<sup>58</sup> Select Financial Marketers argue that counterflow FTRs inherently incur more risk due to the risk that the delivered price of electricity at the sink might be higher than the price at the source.

<sup>59</sup> XO Energy Comments at 10-12; PJM Utilities Coalition Comments at 4; Electric Cooperatives at 9-10.

## 5. Other Matters

### a. Comments and Pleadings

74. If PJM continues to rely on the FTR forfeiture rule, EDFT argues that the rule should not require forfeiture when FTR positions are not leveraged<sup>60</sup> relative to the size of the virtuals with which they interact. EDFT also supports changing the design to a tiered rule where the first pass would consider each transaction on its own and the second pass would take into account the net impact of a market participant's portfolio.<sup>61</sup>

75. XO Energy states that the FTR forfeiture rule cannot be applied to UTCs in the same manner as INCs and DECAs because they are not treated the same in the Day-Ahead market. However, XO Energy avers that if the FTR forfeiture rule is to be applied to UTCs, the "playing field" should be leveled by allowing UTCs to be traded at all available nodes without a bid cap.<sup>62</sup>

76. The Financial Marketers Coalition notes that the PJM stakeholders, after revising the FTR forfeiture rule to account for UTCs, intended to "harmonize" the way the rule applies to all virtual products. The Financial Marketers Coalition therefore encourages the Commission to allow the UTCs revisions to remain, and direct the stakeholders to proceed with harmonizing the way the rule applies to INCs and DECAs. The Financial Marketers Coalition further states that any FTR forfeiture rule should be narrowly tailored so that it does not penalize valid and rational market behavior, which is accomplished by designing the rule so that it considers a market participant's portfolio internally, not as compared to others.<sup>63</sup>

77. Vitol states that the FTR forfeiture rule should be refined to eliminate barriers to legitimate virtual transactions. To do this, Vitol advocates making the FTR forfeiture rule processes more transparent so that market participants can better assess the extent to which their FTR revenues are at risk. Vitol also contends that the FTR forfeiture rule should settle promptly, ideally the next day.<sup>64</sup>

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<sup>60</sup> EDFT defines financial leverage as the condition where the gains from the suspected manipulation target must exceed any intentionally incurred losses. EDFT Post-Technical Conference Comments, Attachment A at 4.

<sup>61</sup> EDFT Comments at 6-7.

<sup>62</sup> XO Energy Comments at 12-15.

<sup>63</sup> Financial Marketers Coalition Comments at 30.

<sup>64</sup> Vitol Comments at 11, 14-15.

78. Select Financial Marketers contend that the FTR forfeiture rule should not claw back the entire profit associated with the FTR position, which is overly punitive, but only claw back the increased profit.<sup>65</sup>

**b. Commission Determination**

79. Certain parties argue that the forfeiture rule discouraged virtual transactions in PJM's markets. We disagree. Although PJM's forfeiture rule has been in existence since 2001, no convincing evidence was provided by parties that the FTR forfeiture rule has discouraged virtual transactions. We find that the revisions to the FTR forfeiture rule, as described below, will increase transparency in the rule's application by better allowing virtual traders to monitor their transactions and avoid unnecessary or accidental forfeitures.

80. We disagree with EDFT's support for a tiered evaluation of the FTR forfeiture rule. It is not necessary to first consider each transaction on its own, as it is the net impact of market participant's entire portfolio of virtual transactions that most accurately measures the impact on a constraint. We also decline to exempt leveraged positions from the FTR forfeiture rule. EDFT points out that the revenue derived from a suspected manipulation benefiting position must exceed any losses incurred for the manipulation to be profitable overall. In this case, the losses would be incurred on the virtual transactions, with the FTR serving as the benefiting position. We acknowledge that leverage may play a part in a cross-product manipulation but it is not a necessary condition. We decline EDTF's proposal to replace the FTR forfeiture rule with a series of enforcement actions to be initiated when appropriate by PJM or the PJM Market Monitor. As noted above, considerations to eliminate the FTR forfeiture rule are outside the scope of this proceeding. However, we acknowledge that the FTR forfeiture rule does not preclude any enforcement actions involving virtual transactions and FTR positions.

81. As discussed above, we expect the revised FTR forfeiture rule developed in this proceeding to help address the transparency and consistency concerns expressed by parties such as Vitol. While we will not require PJM to alter its procedures to settle forfeiture in the day after the operating day, we encourage PJM to resolve forfeitures in a reasonably prompt manner.

82. We decline Select Financial Marketers' request that the FTR forfeiture rule only forfeit the increased profits associated with an FTR position instead of the entire profit. Select Financial Marketers have not offered support to justify finding that PJM's current

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<sup>65</sup> Select Financial Marketers Comments at 2, 13-14.

forfeiture process is unjust and unreasonable. However, we acknowledge that alternative methods of adjusting profits, including the request by Select Financial Marketers, warrant further attention. We therefore encourage PJM to consider whether alternative methods of adjusting profits when the rule has been triggered would be appropriate.

**B. UTC Uplift Allocation**

**1. Comments and Pleadings**

83. With regard to the issue of how uplift is, or should be, allocated to all virtual transactions, PJM, the PJM Market Monitor, and load, such as the Electric Cooperatives, PJM Utilities Coalition, PJMICC, and Dominion, argue that UTCs contribute to uplift and thus should be allocated uplift, while financial marketers generally argue the opposite. PJM and the PJM Market Monitor assert that UTCs impact transmission system losses and transmission flows in the day-ahead market and thus impact congestion patterns and the commitment and dispatch of resources in congested areas.<sup>66</sup> PJM states that because UTCs either impact uplift or have the potential to cause uplift, they should be charged uplift even if the exact effect on uplift for any particular UTC transaction cannot be determined.<sup>67</sup> Various commenters take the opposite position, contending that UTCs should not be allocated uplift and that there is insufficient evidence that the current uplift allocation solely to INCs and DECs is unjust and unreasonable under FPA section 206.<sup>68</sup> Many of these commenters also argue that the critical question is whether they increase or reduce uplift, not whether UTCs affect unit commitment and dispatch.<sup>69</sup>

84. If UTCs are allocated uplift, commenters offer varying approaches for doing so. PJM and the PJM Market Monitor support allocating uplift to UTCs in a manner similar to the allocation for INCs and DECs.<sup>70</sup> However, other commenters argue that it would be unjust and unreasonable to allocate UTCs uplift at levels similar to INCs and DECs,

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<sup>66</sup> PJM Comments at 11; PJM Market Monitor Comments at 6-7.

<sup>67</sup> *Id.* at 12.

<sup>68</sup> Acorn Comments at 1; Angell Comments at 1; Dyon Comments at 1; eXion Comments at 3; Financial Marketers Coalition Comments at 34; Red Wolf Comments at 29-30.

<sup>69</sup> Acorn Comments at 1; Angell Comments at 1; Dyon Comments at 1; eXion Comments at 4; Financial Marketers Coalition Comments at 34; Vitrol Comments at 5-7.

<sup>70</sup> PJM Comments at 10; PJM Market Monitor Comments at 7.



citing differences between these products and their different impacts on unit commitment and uplift.<sup>71</sup>

85. Other parties, such as KASS Commodities, Vitol, Dyon, eXion, and Inertia/Twin Cities, state that to the extent virtual transactions are allocated uplift, a modest and predictable fixed fee would be preferable to volatile uplift charges.<sup>72</sup> However, Dominion, Electric Cooperatives, the Financial Marketers Coalition, the PJM Market Monitor, Red Wolf, SESCO, and XO Energy contend that virtual transactions should not be assessed a fixed rate.<sup>73</sup> Dominion, Electric Cooperatives, PJM, and PJM Utilities Coalition state that any effort to cap uplift responsibility for these virtual transactions would inevitably shift cost responsibility in an unduly discriminatory manner to other market participants.

86. Finally, various financial traders propose uplift allocation approaches used in other regional transmission organizations or independent system operators (RTOs/ISOs).<sup>74</sup> For instance, Financial Marketers Coalition recommends considering various best practices that adhere to cost causation principles, including: hourly, rather than daily, calculation and allocation of uplift fees (done in Midcontinent ISO (MISO) and California ISO (CAISO)); allocation of only day-ahead uplift to virtual transactions (done in Electric Reliability Council of Texas (ERCOT) for Point-To-Point and CAISO for INCs and DEC); and RTO-wide netting of virtual transactions (done in MISO, CAISO, and ERCOT).<sup>75</sup> However, PJM and the PJM Market Monitor highlight the limits of cost causation with regard to uplift allocation.<sup>76</sup> Specifically, PJM and the PJM Market Monitor contend that it is not possible to precisely assess the level at which each transaction or category of transactions has contributed to uplift.<sup>77</sup>

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<sup>71</sup> Red Wolf Comments at 31-32; Financial Marketers Coalition Comments at 38-39; PJM Market Monitor Comments at 10; XO Energy Comments at 21-22

<sup>72</sup> KASS Commodities Comments at 3; Vitol Comments at 9; Dyon Comments at 2; eXion Comments at 6; Inertia/Twin Cities Comments at 9.

<sup>73</sup> Dominion Comments at 9; Electric Cooperative Comments at 17; Financial Marketers at 46-47; PJM Market Monitor Comments at 16; Red Wolf at 39-40; SESCO Comments at 11; and XO Energy Comments at 30.

<sup>74</sup> Appian Way Comments at 10-11; Financial Marketers Coalition Comments at 44-46; Red Wolf Comments at 38-39.

<sup>75</sup> Financial Marketers Coalition Comments at 44-46.

<sup>76</sup> PJM Comments at 12; PJM Market Monitor Comments at 14-15.

<sup>77</sup> PJM Comments at 13; PJM Market Monitor Comments at 14.

## 2. Commission Determination

87. The Commission remains concerned about how uplift is, or should be, allocated to all virtual transactions in PJM, including PJM's different treatment of UTCs as compared to INCs and DECs for purposes of allocating uplift. We hold that issue in abeyance pending the outcome of any final rule in the Uplift NOPR, which explores uplift allocation in a broader context.<sup>78</sup>

### C. Refunds

#### 1. Comments

88. Several parties filed comments addressing whether refunds should be ordered starting from the refund effective date of this proceeding. They maintain that the potential refund obligations in this docket have created uncertainty in the market and negatively impacted companies in PJM, and that the Commission should not order refunds.<sup>79</sup>

#### 2. Commission Determination

89. Pursuant to section 206 (b) of the FPA, the August 29, 2014 Order established a refund effective date of September 8, 2014.<sup>80</sup> In a December 16, 2014 order denying a motion filed by the Financial Marketers Coalition contending that the refund effective date should not apply to uplift relating to UTCs,<sup>81</sup> the Commission explained that the FPA does not give the Commission discretion to establish a refund effective date for only

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<sup>78</sup> *Uplift Cost Allocation and Transparency in Markets Operated by Regional Transmission Organizations and Independent System Operators*, 158 FERC ¶ 61,047 (2016) (Uplift NOPR).

<sup>79</sup> Acorn at 2; Dyon at 2; eXion at 2; Financial Marketers at 8, 24-27; Inertia/Twin Cities at 15.

<sup>80</sup> August 29, 2014 Order at P 15. The FPA requires that whenever the Commission institutes a proceeding under section 206, the Commission shall establish a refund effective date. 16 U.S.C. § 824e (2012).

<sup>81</sup> *PJM Interconnection, L.L.C.*, 149 FERC ¶ 61,252, at P 5 (2014). On September 24, 2014, Financial Marketers Coalition filed a Motion for Clarification and Request for Expedited Consideration asking the Commission to clarify that it did not intend to apply the refund effective date to its investigation of potential uplift allocations to UTC transactions, but only to its investigation into the application of the FTR forfeiture rule.

part of a section 206 investigation, and accordingly, the September 8, 2014 refund effective date applies to all aspects of the section 206 investigation.<sup>82</sup> The Commission stated it would determine whether refunds, are, in fact, appropriate or not at a later date following the close of the record.<sup>83</sup>

90. Although we find PJM's current application of the FTR forfeiture rule tariff unjust and unreasonable, we have determined, in exercising our remedial discretion, that directing refunds, if any, resulting from our requirement to adopt a portfolio approach is not appropriate in the circumstances of this proceeding.<sup>84</sup> As some parties have indicated, they have based market decisions on the current tariff rules that cannot now be revisited, and the Commission has not always ordered refunds when market decisions are affected.<sup>85</sup> Moreover, while market participants were on notice that the FTR forfeiture rule might change, the nature of any change was uncertain. The bids, offers, and decisions market participants made could have been different had they been aware of the nature of the revised FTR forfeiture rule.

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<sup>82</sup> *Id.* P 9.

<sup>83</sup> *Id.*

<sup>84</sup> Since we have held in abeyance the issue of how uplift is, or should be, allocated to all virtual transactions in this proceeding, we reach no decision here on whether refunds relating to the assessment of uplift may be appropriate.

<sup>85</sup> See *Maryland Pub. Serv. Comm'n v. PJM Interconnection, L.L.C.*, 123 FERC ¶ 61,169, at P 49 (2008) (citing *Mirant Energy Trading, L.L.C. v. PJM Interconnection, L.L.C.*, 122 FERC ¶ 61,007 (2008) (setting refund effective date at 5 months because earlier refund would require changing a market determined result)); *PJM Interconnection, L.L.C.*, 107 FERC ¶ 61,223, at P 51 (2004) (declining to order refunds because it would be disruptive to the market to change the FTRs already allocated for the current year); *Bangor Hydro-Electric Company v. ISO New England Inc.*, 97 FERC ¶ 61,339 (2001) (finding that re-running markets even when an error was made would do more harm to electric markets than is justifiable); *Midcontinent Indep. Sys. Operator, Inc.*, 149 FERC ¶ 61,225, at P 61 (2014); *California Indep. Sys. Operator, Corp.*, 120 FERC ¶ 61,271, at P 24 (2007). See also *Pub. Serv. Comm'n of Wisconsin v. Midcontinent Indep. Sys. Operator, Inc.*, 150 FERC ¶ 61,104, at P 92 (2015).

The Commission orders:

(A) PJM's existing Tariff with respect to the application of the FTR forfeiture rule to virtual transactions is hereby found unjust and unreasonable and PJM must implement, to be effective as of the date of this order, the modifications discussed in the body of this order.

(B) PJM is hereby directed to submit a compliance filing within 90 days of the date of this order, reflecting these modifications, as discussed in the body of this order.

(C) The Financial Marketers Coalition July 22, 2015 Motion to Lodge is granted.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.