UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	Docket No. EL14-37-000

REPLY COMMENTS OF THE
INDEPENDENT MARKET MONITOR FOR PJM

Pursuant to the Commission's Notice Inviting Post-Technical Conference Comments issued in this proceeding April 29, 2015, Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM[1] ("Market Monitor"), submits these reply comments. The Market Monitor responds to the comments submitted by PJM and certain power marketers to the Commission's Notice Inviting Post-Technical Conference Comments issued in this proceeding April 29, 2015, which are unsupported and without merit, and, to the extent any of these recommendations are accepted, would weaken the application of the rule and its ability to protect PJM markets from manipulation.

[1] PJM Interconnection, L.L.C. ("PJM") is a Commission-approved Regional Transmission Organization. Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff ("OATT") or the PJM Operating Agreement ("OA").

I. REPLY COMMENTS

A. The Current FTR Forfeiture Rule Does Not Assume Collusion.

PJM states, with support from other participants,[2] that "the worst case approach captures activity that should fall under the FTR forfeiture rule only if one assumes the two Market Participants are colluding…"[3] [4]

PJM's statement is not correct. The current approach does not assume collusion between participants and PJM did not make that assertion when the rule was filed with the Commission.[5] The current approach correctly reflects the fact that power flows cannot be controlled or directed. When power is injected (INC), it is distributed throughout the transmission system and can be withdrawn at any node. The identity of the load at that point is not relevant to the analysis. A participant can impact the value of an FTR with an individual virtual bid without colluding with such load or even knowing who they are.

The point of the FTR forfeiture rule is to capture the impact of an INC on any constraints that it affects. That is currently done by assuming, correctly, that power is injected at the INC and is withdrawn at the withdrawal point with the most significant effect on flow on the constraint. The current test includes both a high threshold (75 percent difference between the dfax of the virtual bid and the worst case sink or source) and use of the worst case withdrawal or injection point. If the worst case logic is to be modified, the

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2 *See* Post-Technical Conference Comments of Exion Energy, Inc., Docket No. EL14-37-000 (May 29, 2015).

3 Comments of PJM Interconnection, LLC, Docket No. EL14-37-000 (May 29, 2015) at 4.

4 The worst case method means the method that uses the largest impact withdrawal point for a DEC or the largest impact injection point for an INC. The worst case is not about probabilities; the worst case does happen as a consequence of how power flows.

5 See PJM Interconnection, LLC, Docket No. ER01-773-000, Letter Order issued January 26, 2001.

threshold must also be modified because the high threshold is based explicitly on the use of the worst case withdrawal bus.

B. Positions of Single Participants in Isolation Are Not Relevant to Test

On the basis of the collusion argument Inertia/Twin Cities argue that "[t]he FTR Forfeiture Rule should take into consideration each Market Participant's positions in isolation."[6] Under this approach each of the participant's individual virtual bids would be considered relative to the worst case injection or withdrawal point only from among the portfolio of virtual bids placed by that participant.

Considering only a single participant's transactions in isolation, on a transaction by transaction basis on a constraint, would open new possibilities for market manipulation. Consider, for example, a participant transacting only in INCs. Such a participant has no withdrawal points and therefore would, according this approach, never impact the value of an FTR. Nonetheless the INC injections are withdrawn from the transmission system and may thereby affect the value of an FTR owned by the same entity. The current FTR forfeiture rule captures these effects.

The impact of a single participant's portfolio on one or more constraints can only appropriately be measured using a portfolio netting approach.[7] The Market Monitor's proposed portfolio netting approach would net a single participant's impacts on a constraint, so that helpful transactions cancel harmful transactions, and such net impacts are compared to the entire volume of all virtuals on a given constraint and the thresholds are appropriately calibrated.

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[6] *See* Post-Technical Conference Comments of Inertia Power I, LP and Twin Cities Power Holdings, LLC, Docket No. EL14-37-000 (May 29, 2015) ("Inertia/Twin Cities")) at 14.

[7] *See* Comments of the Independent Market Monitor for PJM, Docket No. EL14-37-000 (May 29, 2015) at 4.

C. A Load/Generation Weighted Reference Bus Approach Would Arbitrarily Weaken the Current Rule.

The current FTR forfeiture rule uses the largest impact node on the other side of a transaction, and remains the appropriate choice as long as a non-portfolio approach is implemented. PJM's proposal to use a load or generation weighted reference bus, rather than the largest impact bus, does not work under the current, non-portfolio approach.[8] PJM's proposed approach would result in the use of inconsistent dfax values. The calculation of injection related dfax values would be inconsistent with the calculation of withdrawal based dfax values.

The current rule includes both a high threshold (75 percent difference between the dfax of the virtual bid and the worst case sink or source) and use of the worst case withdrawal or injection point. If a load or generation weighted reference bus only approach were implemented, the 75 percent threshold would also need to be reevaluated and reduced. Otherwise the PJM proposal would simply functionally eliminate the FTR forfeiture rule.

If the FTR forfeiture rule is to be significantly modified, the Market Monitor recommends that the Market Monitor's portfolio approach be implemented rather than the various proposals to weaken or eliminate the impact of the rule by selectively modifying portions of the rule.

D. Injections and Withdrawals at Hubs and Interfaces Should Be Included in a Portfolio Approach to the Rule.

PJM states (at 5) "Due to the fact there are thousands of transactions that clear at these hubs, it is highly unlikely that individual Market Participants (or their Affiliates)

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[8] Transcript of the January 7, 2015 Technical Conference on Financial Transactions in PJM, Docket No. EL14-37-000 (January 7, 2015) at 39.

could engage in behavior that would otherwise trip the FTR forfeiture rule." The Market Monitor disagrees.

Hubs and interfaces are currently excluded because virtual transactions are processed individually, and it is unlikely that a single virtual transaction at a large trading hub could increase the value of an associated FTR. However, a portfolio approach to the FTR forfeiture rule would consider the net impact of many transactions at once. It is possible that an entire portfolio of transactions could impact a hub and increase FTR values. Therefore these nodes should not be excluded from a portfolio based approach. If a participant's portfolio has little impact on a hub, then it will not be subject to forfeiture. However, if a participant's portfolio has a large impact on a hub, these transactions may increase the participant's FTR values, and therefore appropriately be subject to FTR forfeiture. The rule should be designed to address this issue rather than simply excluding the possibility on the basis that it is highly unlikely.

E. Reliance on Individual Enforcement Actions Is an Inferior Approach to Deterring Manipulative Behavior.

EDF advocates individual enforcement actions with no clear thresholds instead of the application of a standing FTR Forfeiture Rule.[9] Individual enforcement actions are not a substitute for generally applicable ex ante rules and cannot protect the market in a way comparable to a rule. An individual enforcement approach would require examining each individual transaction each hour for violations. Under EDF's proposed approach there are no clear thresholds. If one violation is discovered, it may or may not be an issue. If a second and a third violation are discovered, the pattern may or may not be an issue. If a pattern meeting an undefined standard were discovered, then the violations would be referred to FERC's Office of Enforcement, initiating another round of investigations. It could easily

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[9] *See* Post-Technical Conference Comments of EDF Trading North America, LLC, Docket No. EL14-37-000 (May 29, 2015) ("EDF") at 6.

take years for one individual participant's forfeitures for one subset of transactions to be finally determined while others engaged in the same behavior or there were multiple referrals for the same behavior. An enforcement action approach, relative to a rule based approach, is inefficient, non-transparent and of limited value as a deterrent to market manipulation. Such a rule is unclear and effectively unenforceable, which may be the point.

Having a well documented rule, as currently exists, provides a clear incentive to not manipulate FTR values. Markets lacking clear anti-manipulation rules related to manipulating the value of FTRs have had episodic, high profile, high penalty cases that damage the credibility of competitive markets and raise questions about whether all manipulative activity has been detected and addressed.[10]

F. There Is No Evidence that the Current FTR Forfeiture Rule Discourages Valid Virtual Trading Activities in PJM Markets.

XO Energy argues that the "non-transparent nature in which the (FTR Forfeiture) rule has been interpreted and implemented can have an adverse effects on the market."[11] XO Energy claims (at 8) that "the 'worst case' method has the effect of deterring the competitive benefits that virtual activity fosters."

The FTR rule has been public since its inception and the Market Monitor regularly responds to participants' detailed questions about their forfeitures. The implementation has been transparent. There is no evidence to support the claim that the FTR forfeiture rule has resulted in decreased virtual volumes. On the contrary, the data show that participants know the rules and avoid significant levels of forfeitures. FTR forfeitures are extremely small overall, accounting for less than 0.05 percent and 0.3 percent of all FTR target allocations for the 2013 to 2014 and 2014 to 2015 planning periods.

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[10] *See MISO Virtual and FTR Trading*, 146 FERC ¶ 61,072 (2014); *Deutsche Bank Energy Trading, LLC*, 142 FERC ¶ 61,056 (2013).

[1111] Post-Technical Conference Comments of XO Energy, LLC, Docket No. EL14-37-000 (May 29, 2015) at 7.

G. Treatment of UTCs within the FTR Forfeiture Rule Should Be Consistent with Treatment of INCS and DECs within the FTR Forfeiture Rule.

Specifically, with respect to UTCS, PJM states "the flow of energy from the source to the sink will flow over transmission facilities according to the laws of physics." While PJM now states correctly that UTCs follow the law of physics on the system, PJM's currently implemented method ignores these same laws of physics.[12] It is, and continues to be, the Market Monitor's position that the FTR Forfeiture Rule, as applied to UTCs, should reflect the fact that as the power flows from the UTC source to the UTC sink it flows across constraints. As a result, the net flow from a UTC should be treated the same as an INC when the UTC net flow is an injection and the same as a DEC, when the UTC net flow is a withdrawal, under the FTR Forfeiture Rule.

H. The Incentive to Use Virtual Bids to Increase FTR Values Is Not Self-Correcting.

XO Energy claims (at 12) that an FTR forfeiture rule is not needed because "transactions are profitable when they contribute to convergence and any loss will be self-correcting." Because of this XO claims (at 12) that only "sustained loss and continued behavior should be questioned and examined further."

XO Energy's claim fails to recognize the incentives associated with increasing the value of FTRs in excess of realized real time congestion. So long as the resulting congestion increase is greater than the virtual loss, there is an incentive to engage in the behavior. The FTR forfeiture rule is specifically designed to detect such behavior and deter it by removing the incentive to engage in the activity by forcing the forfeiture of the increased FTR profits.

The current FTR forfeiture rule addresses the convergence issue appropriately. The current rule limits FTR forfeiture to cases where day ahead congestion is greater than real

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[12] Comments of PJM Interconnection, LLC, Docket No. EL14-37-000 (May 29, 2015) at 3.

time congestion and exempts all cases where virtual transactions increase day ahead congestion to a level less than or equal to real time congestion.

If a participant has no FTRs and therefore would not profit from making the FTRs more valuable, there is no limit to the price impacts from a participant's virtual positions. The FTR rule links taking losses on virtual positions to making FTRs more valuable as a form of manipulation which should be prevented by rule.

I. No Evidence that the FTR Forfeiture Rule Creates Economic Risk for Utilities.

XO Energy claims (at 15) that "[t]he FTR forfeiture rule creates huge economic risks for utilities to hedge their transmission position."

The reverse is true. The FTR forfeiture rule protects loads. The FTR forfeiture rule is triggered when virtual activity causes day ahead CLMP to exceed real time CLMP. In such cases, the virtual activity inefficiently increases the costs, and risks, of serving load in the affected area. The FTR forfeiture rule discourages this inefficient virtual activity by preventing any gains from causing this effect, reducing economic risks for utilities.

XO Energy provides no evidence to support this claim. In fact, the opposite is true. Physical participants account for only a small proportion of FTR Forfeitures. In the 2013 to 2014 and 2014 to 2015 planning periods physical participants paid $325,557 of $2,499.4 million (0.010 percent of pre-forfeiture FTR target allocations) and $23,382 of $1,257.8 million (0.001 percent of pre-forfeiture FTR target allocations) of all FTR forfeitures.[13]

J. Virtual Bids and Convergence: Evidence and Purported Benefits.

XO Energy states (at 5) that financial players, using virtual bids, "facilitate price arbitrage, providing liquidity, and promoting competition in the wholesale electricity markets." XO Energy states that "the primary benefit of this participation is reflected in the financial impact on the market, that is, the convergence of day-ahead and real-time prices."

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[13] Historic FTR forfeitures can be found in the Q1 2015 State of the Market Report for PJM. 2015 State of the Market Report for PJM, Q1, Section 13: FTRs and ARRs, p. 422-423.

XO Energy provides no supporting data or evidence. The evidence provided by the PJM and IMM studies do not support XO's claims.[14] In addition, even if XO Energy's claims were true, that does not mean that virtuals cannot be used for manipulative purposes or that there should not be a rule to prevent such manipulation.

K. Economic Incentives of Virtual Bids Are Not Always in Line with the Goal of Convergence.

XO Energy claims (at 15) that, with virtual bids, "[t]he economic incentives are always in line with the goals of convergence."

The economic incentives to use INCs and DECs, absent any other financial position, such as FTRs, are generally consistent with the arbitrage of node specific price differences in day ahead and real time prices. The same is not true of UTCs. It is possible to profit from UTC related arbitrage and not contribute to convergence at one side of the transaction. In other words a UTC can be net profitable if the profit on one side of the UTC transaction exceeds the losses on the other side. A profitable UTC therefore, can contribute to both price divergence on one side and to price convergence on the other side. Analysis of market results shows this to be the rule rather than the exception.[15]

L. UTCs Affect More Than CTs in the Commitment Process.

XO Energy claims (at 22) that UTCs only affect CTs in the commitment process. While it is interesting that XO recognizes that UTCs affect commitment, there is no basis for the claim that UTCs affect the commitment of CTs only.

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[14] *See* 2014 State of the PJM Market for PJM, v. II (August 14, 2014) at 139–178; *see also* IMM MC Webinar presentation of June 24, 2013; PJM June 5th UTC Study (first study) and PJM Presentation to MC Webinar, June 24, 2013 (second study) which can be accessed at: <*http://www.pjm.com/~/media/ committees-groups/task-forces/ttf/20120607/20120607-utc-analysis-construction-presentation.ashx*> ("PJM June 24th UTC Study"); February 7, 2014 PJM UTC Study submitted to the Commission (EL13-1654-000) at 8–9.

[15] See 2015 Quarterly State of the Market Report for PJM: January through March, p. 134. May 18, 2015.

UTCs affect commitment. UTCs affect commitment in constrained hours and they increase the number of constraints that occur in the Day-Ahead Market. PJM's day-ahead commitment process is not limited to the commitment of CTs. The resource types affected by PJM's day-ahead commitment process are dependent on the results of the least cost security constrained commitment and dispatch processes in the PJM Day-Ahead Market, not by the types of virtual bids that affect those results.

II. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to these reply comments as the Commission resolves the issues raised in this proceeding.

Respectfully submitted,

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Dated: June 23, 2015

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Eagleville, Pennsylvania,
This 23rd day of June, 2015.

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