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

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| PJM Interconnection, L.L.C. | ) | Docket No. EL14-94-000 |
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# ANSWER AND MOTION FOR LEAVE TO ANSWER OF THE INDEPENDENT MARKET MONITOR FOR PJM

Pursuant to Rules 212 and 213 of the Commission's Rules and Regulations,[1] Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM[2] ("Market Monitor"), submits this answer and motion for leave to answer the answer filed in this proceeding by FirstEnergy Solutions Corporation ("FirstEnergy") on December 18, 2014.[3] FirstEnergy offers no substantive defense of the inaccurate calculations of the marginal costs of energy that will result from application of the current rule, which is subject to a section 206 investigation in this proceeding. FirstEnergy has no substantive response to the Market Monitor's assertions that FirstEnergy's approach would result in offer caps in the capacity market that are too high and that would constitute the exercise of market power if permitted. This is clearly true and unrebutted for FirstEnergy's specific offers that triggered this proceeding. FirstEnergy explicitly recognizes that market-based offers less than cost-based offers may reflect actual marginal costs but has no proposed

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1 18 CFR § 385.212 & 385.213 (2014).

2 Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff ("OATT").

3 In support of its December 18th answer, FirstEnergy attaches a Supplemental Declaration of Dr. Shaun D. Ledgerwood ("Ledgerwood").

solution. The Market Monitor's proposal is based on the facts of the PJM markets and how market participants actually behave in those markets. The current rule should be rejected as unjust and unreasonable and replaced with the Market Monitor's proposal.

## I. ANSWER

### A. FirstEnergy Recognizes the Issue But Has No Substantive Defense for the Current Rule, which Ignores the Best Evidence of Marginal Costs.

FirstEnergy recognizes that units' market-based offers may equal actual marginal costs even when such offers are less than the units' cost-based offers. FirstEnergy states (at 3) that: "Units engaging in this behavior are not <u>necessarily</u> indicating, however, that their incremental cost of production is equal to the lower market-based offer."(Emphasis added.)

Once it is recognized that unit's actual marginal costs are or may be revealed in market-based offers, it is clear that such offers must be used in the net revenue calculation if it is to be accurate.

FirstEnergy does not accept that solution but proposes no other solution to this problem.

In fact, FirstEnergy appears to be willing to accept what they agree is the resulting overcompensation. Witness Ledgerwood states (at para. 12): "As discussed in my previous Declaration in this proceeding, underestimation of the net Projected PJM Market Revenues allows resources to recover profits above those needed to incentivize continued market participation, to the benefit of system reliability but at the expense of having potentially unnecessary units remain online."

The assertion that overcompensation is acceptable because it increases reliability above the level that would result from a competitive market is inconsistent with the basic PJM competitive market design. That this is FirstEnergy's only substantive response indicates the weakness of their position.

FirstEnergy still does not deny that FirstEnergy's market-based offers, which resulted in this Section 206 proceeding, reflected actual marginal costs.

The Market Monitor has observed that market participants calculate and submit market-based offers below the maximum allowed cost-based offer in order to compete effectively in the energy market, and that they do so frequently. The failure to account for the fact that market participants reveal their actual marginal costs when they are below the permitted cost-based offers is a defect that renders the current approach unjust and unreasonable. FirstEnergy not only ignores this fundamental point but would accept the resultant overcompensation without recognizing that this result is unjust and unreasonable and inconsistent with competitive markets.

FirstEnergy asserts (at 9) that the various irrational results that would follow from their interpretation of the net revenue rule should be ignored because they are anomalous. But FirstEnergy would have the entire net revenue policy turn on the anomalous situation in which a unit submits an energy offer below its marginal costs.

### B. FirstEnergy's Argument that the Market Monitor's Proposed Rule is Arbitrary and Has No Rationale Has No Merit.

FirstEnergy states (at 6) that under the Market Monitor's approach, "Only if the seller can demonstrate that the market-based offer does not allow the seller to recover its fuel and emissions costs does the IMM propose to revert to the cost-based offer in the offer cap calculation. FirstEnergy and its witness Dr. Ledgerwood argue (*id.*) that this result is arbitrary because a market participant's ability to use its cost-based offer to calculate its net revenues turns on whether it can demonstrate that its market offer is below its fuel and emissions costs.

FirstEnergy does not demonstrate that there is anything arbitrary about the Market Monitor's approach. A rule is not arbitrary simply because it specifies a standard.

FirstEnergy additionally argues that there is no economic rationale for the standard included in the rule. The Market Monitor's approach considers fuel and emissions but not opportunity costs and variable operations and maintenance costs.

FirstEnergy and its witness ignore the fundamental logic of the Market Monitor's proposal. When a unit's offer in the energy market is less than the permitted cost-based offer, the presumption is that the offer reveals the owner's view of the unit's actual marginal cost. As an additional screen and as an effort at compromise, the Market Monitor proposed a test explicitly designed to ensure that such an offer is not clearly below the unit's actual marginal cost. That test is to use what are unambiguously marginal costs, fuel costs plus emissions costs. Any offer less than that level is demonstrably less than marginal costs. Any offer equal to or greater than that level is consistent with a market participant's view of its actual marginal costs, which frequently exclude variable operating and maintenance expense (VOM).[4]

The approach proposed by the Market Monitor is reasonable and provides a logical test or screen for whether an offer is less than marginal costs, which is based on fundamental economics.

FirstEnergy and its witness miss the point of the Market Monitor's proposed test. FirstEnergy and its witness state that the Market Monitor's proposal to use fuel costs and emissions costs as the test of what are unambiguously marginal costs may omit some marginal costs. They are completely correct and also completely miss the point. If a unit's offer excludes VOM costs that are not marginal costs, that offer reveals the unit's view of its actual marginal costs. The unit can include the VOM costs defined in the Cost Development Guidelines (PJM Manual 15) if it wishes. But it cannot have it both ways. The same is true of opportunity costs. Opportunity costs are legitimate marginal costs, if they exist. But if a unit does not include such costs in its offer it is making clear that it does not believe that they are marginal costs for that unit for that day.

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4 As an illustration, effective June 1, 2015, Section 5.6.2 of the Cost Development Guidelines (PJM Manual M15) will explicitly prohibit the inclusion of certain VOM costs in the calculation of cost-based offers. These VOM costs will be excluded because they are not actually short run marginal costs, although they had been permitted under the rules in the guidelines. This exclusion is the result of an agreement reached by PJM members in 2011 and approved by the MRC, and by the PJM Board of Managers on February 8, 2012.

FirstEnergy fails to support its claim that it is legitimate or consistent with a competitive market to offer energy at a loss in order to support making a profit at other times.

FirstEnergy explicitly recognizes that the actual market-based offers below cost-based offers are based on actual marginal costs.

Witness Ledgerwood states (at para. 6):

> To prevent the inefficiencies and added maintenance costs that result from the units intermittently cycling offline, such units are bid into the Day-ahead market at market based offers that are "below-cost" on an hourly basis, but in fact reflect the avoided costs of cycling and other operational considerations when viewed over the broader optimization period. Such market-based offers are not indicative of the unit's hourly marginal costs.

In other words, the market-based offer in fact reflects the actual marginal costs of the units given that they do not intermittently cycle offline. The fact that these are the correct marginal costs actually incurred over the operational cycle of the units is all the more reason to incorporate these offers in the net revenue calculation. Witness Ledgerwood appears to explicitly admit that the costs in the market-based offer are the costs actually incurred while attempting to draw an artificial distinction between the marginal cost of running for one hour and the marginal cost of running over the optimization period.

When read carefully, FirstEnergy's filing strongly supports the Market Monitor's proposed approach. FirstEnergy's filing in fact supports the stronger approach to the problem which is simply to use the lower of the market-based and the cost-based offers. Under the second and stronger approach, PJM market participants will receive appropriate incentives to make competitive offers in the energy and capacity markets.

### C. The Market Monitor's Proposed Language Includes a Compromise to Address FirstEnergy's Theoretical Concerns, but the Use of the Lower of Price-Based or Cost-Based Offers Remains the Market Monitor's Preferred Approach Because It Is the Most Transparent and Practical Approach.

The approach proposed by the Market Monitor is reasonable and provides a logical test or screen for whether an offer is less than marginal costs, which is based on fundamental economics.

But it would also be reasonable to simply use the lower of the price based and cost-based energy offers to determine net revenues and therefore the offer caps in the capacity market. This is consistent with appropriate incentives and would avoid the issues that FirstEnergy raises about the Market Monitor's screen. In addition, use of the lower of priced-based or cost-based offers is the most transparent and practical approach because it is easily understood and easily implemented. In addition, the Market Monitor, PJM and Market Participants have had significant experience applying this approach, and there is no evidence or reason to believe that this approach resulted in an inaccurate calculation of Projected PJM Market Revenues during the seven years that this approach was implemented.

The question to be addressed in choosing between the two alternatives proposed by the Market Monitor is whether there are any legitimate reasons for a unit to offer in the energy market at less than its marginal costs. Taking a loss in one market in order to profit in another market is not a legitimate reason. Taking a loss in the energy market with the expectation that the loss will be covered in the capacity market is not a legitimate reason. Offering below cost in order to ensure that unit is dispatched, rather than simply turning the unit on, is not a legitimate reason.

### D. The Market Monitor's Proposal Allows for Recovery of the "Missing Money" but Appropriately Does Not Provide Incentives to Offer Less than Cost in the Energy Market.

FirstEnergy and Dr. Ledgerwood argue that the Market Monitor's proposal "frustrates the role of RPM in providing the 'missing money' needed to assure long-term reliability" because it would "deny cost recovery for any hour in which the LMP clears below a resource's cost-based offer."[5] This argument misses the basic purpose of the PJM market design and tries to raise a reliability red herring in support of anti-competitive behavior.

Here FirstEnergy and witness Ledgerwood make another fundamental mistake in their assessment of the PJM market design. FirstEnergy and witness Ledgerwood assert that the purpose of the capacity markets is to make units whole for the missing money that results from offering below cost in the energy markets. This reveals a basic misunderstanding of the PJM capacity market design.

The capacity market is designed to provide the money that is missing from the energy market when participants behave competitively in the energy market. Behaving competitively in the energy market means making offers based on actual marginal costs. Behaving competitively does not include making offers in the energy market that are below actual marginal costs with the expectation that any resulting shortfall will be subsidized in the capacity market. FirstEnergy's proposal is inconsistent with competitive behavior in the energy market which should be competitive on a standalone basis. It would be inappropriate to provide an incentive for units to offer below their marginal costs in the energy market. The result would not be competitive.

### E. FirstEnergy's Arguments that Self Scheduling Does Not Address Its Cycling Concerns Have No Merit.

In response to the Market Monitor's argument that market participants can avoid unwanted cycling by self scheduling, FirstEnergy claims (at 8) that self scheduling denies PJM the ability to "dispatch a unit in response to price."

FirstEnergy is wrong about self scheduling. FirstEnergy mistakenly asserts that self scheduling necessarily means block loading a unit. That is not correct. A unit can simply be

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5 FirstEnergy at 8, Ledgerwood at para. 11.

started by the unit owner and operated at any level it chooses, including its minimum level. A unit can be started by the unit owner and made available for dispatch by PJM over its entire operating range.

### F. FirstEnergy's Arguments About Mitigation in the Energy Market Miss the Point.

FirstEnergy states (page 3): "Importantly, when a unit submits an offer below cost into the energy market, the unit is affirmatively declaring its willingness to produce energy at the stated offer price, even if that offer price is below the resource's actual incremental cost of production."

But FirstEnergy cannot and does not assert even hypothetically that market-based offers less than cost-based offers are less than actual marginal costs. The most that FirstEnergy can state (at 3) is: "Units engaging in this behavior are not necessarily indicating, however, that their incremental cost of production is equal to the lower market-based offer."

FirstEnergy recognizes that it is possible that market-based offers less than cost-based offers reflect actual marginal costs. FirstEnergy never states in any of its pleadings that this does not describe FirstEnergy's own behavior, reflected in the offers that led to this proceeding.

FirstEnergy has no proposal to solve the problem. FirstEnergy ignores the problem.

Ignoring the problem is not an acceptable outcome. The current rule is not just and reasonable because it results in the under calculation of net revenues in the energy market and thus in offers in the capacity market that exceed the competitive level.

The Market Monitor has two options for solving the issue. The Market Monitor's options are consistent with competitive outcomes, with appropriate incentives in the energy and the capacity markets and with the PJM market design.

The Market Monitor proposed in its reply brief filed December 3, 2014, that Section 6.8(d) of Attachment DD to the OATT should be revised to state the following:

> Projected PJM Market Revenues for any Generation Capacity Resource to which the Avoidable Cost Rate is applied shall include all actual unit-specific revenues from PJM energy markets, ancillary services, and unit-specific bilateral contracts from such Generation Capacity Resource, net of marginal costs for providing such energy ~~(i.e., costs allowed under cost-based offers pursuant to Section 6.4 of Schedule 1 of the Operating Agreement)~~ and ancillary services from such resource. Marginal costs shall be calculated as equal to the lower of (i) market offers for the sale of energy or ancillary services from such resource or (ii) cost-based offers as defined in Schedule 2 to the Operating Agreement and in PJM Manual 15 (Cost Development Guidelines) or successor rules. However, marginal costs shall be calculated to be equal to the lower market offer only if the market offer is greater or equal to the marginal cost of fuel plus emissions. However, marginal costs for a unit shall be calculated as the cost-based offer when the Capacity Market Seller can demonstrate that the market offer is less than the marginal cost of fuel and emissions allowances for the unit. … [T]he calculation of Projected PJM Market Revenues shall be equal to the rolling simple average of such net revenues as described above from the three most recent whole calendar years prior to the year in which the BRA is conducted.

In the alternative, if the Commission prefers the more straightforward approach preferred by the Market Monitor, Section 6.8(d) of Attachment DD to the OATT should be revised to state the following:

> Projected PJM Market Revenues for any Generation Capacity Resource to which the Avoidable Cost Rate is applied shall include all actual unit-specific revenues from PJM energy markets, ancillary services, and unit-specific bilateral contracts from such Generation Capacity Resource, net of marginal costs for providing such energy ~~(i.e., costs allowed under cost-based offers pursuant to Section 6.4 of Schedule 1 of the Operating Agreement)~~ and ancillary services from such resource. Marginal costs shall be calculated as equal to the lower of (i) market offers for the sale of energy or ancillary services from such resource or (ii) cost-based offers as defined in Schedule 2 to the Operating Agreement and in PJM Manual 15 (Cost Development Guidelines) or successor rules. … [T]he calculation of Projected PJM Market Revenues shall be equal to the rolling simple average of such net revenues as described above from the three most recent whole calendar years prior to the year in which the BRA is conducted.

Either of the above approaches would be just and reasonable, although the second would be preferable.

The current approach is unjust and unreasonable because it would result in offer caps in the capacity market that are too high and that would constitute the exercise of market power if permitted. The failure to account for the fact that market participants reveal their actual marginal costs when they are below the permitted cost-based offers is a defect that renders the current approach unjust and unreasonable. FirstEnergy not only ignores this fundamental point but would accept the resultant overcompensation without recognizing that this result is unjust and unreasonable and inconsistent with competitive markets. Accordingly, the current approach should be replaced by the second of the two approaches proposed by the Market Monitor.

## II. CONCLUSION

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

Respectfully submitted,

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Dated: January 12, 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 12th day of January, 2015.

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