



Pivotal Supplier test need not account for local market power created by binding constraints in the fast start pricing solution. The August 30<sup>th</sup> Filing inappropriately provides PJM discretion to define fast start resources through an undefined and unenforceable process. The August 30<sup>th</sup> Filing should be rejected, and PJM should be directed to make a new compliance filing within the proper scope of the Fast Start Order.

## I. COMMENTS

### **A. Day-Ahead Uplift Payments to Virtuals and Reserves are Out of Scope of the Fast Start Order and Out of Scope of the Compliance Filing.**

The Fast Start Order requires PJM to introduce only one type of uplift payment, which is the “lost opportunity cost payments to offset the incentive for over-generation or price chasing.”<sup>4</sup> The required lost opportunity cost payment applies only to the suppliers of real-time energy. As the August 30<sup>th</sup> Filing states, “it is apparent that there is no opportunity for resources to deviate from dispatch in the day-ahead market.”<sup>5</sup> Therefore, the Fast Start Order requires no uplift payments specific to day-ahead market clearing. PJM’s compliance with the Fast Start Order does not require uplift payments for changes to virtual transaction clearing or day-ahead scheduling reserve clearing due to fast start pricing. The introduction of additional uplift payments to day-ahead energy transactions and day-ahead reserves is beyond the scope of the Fast Start Order. These uplift payments were a very late addition to PJM’s implementation plan, were referenced by PJM only in PJM’s final presentation to stakeholders, were not included in the PJM Brief and were not required or requested by the Fast Start Order.<sup>6</sup>

If fast start prices send the correct price signal, every market transaction should be exposed to fast start prices. Nonetheless, the August 30<sup>th</sup> Filing introduces new uplift

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<sup>4</sup> Fast Start Order at P 17.

<sup>5</sup> August 30<sup>th</sup> Filing at 23.

<sup>6</sup> See Initial Brief of PJM Interconnection, L.L.C., (Docket No. EL18-34) (February 12, 2018) (“PJM Brief”).

payments to virtual transactions, including INCs, DECs and UTCs, price sensitive demand, day-ahead interchange import and export transactions, and Day-Ahead Scheduling Reserves. The new uplift payments would shield a subset of market participants from fast start prices. The proposed payments would undo the fast start pricing settlement of transactions that economically clear the day-ahead market based on the dispatch run, paying them the difference between the fast start prices and their bid or offer. For example, a DEC could bid load at a frequently committed fast start resource's bus. The bid would be higher than the fast start resource's incremental energy cost, but lower than the fast start resource's Composite Energy Offer. When the fast start resource sets price, the DEC would receive an uplift payment equal to the difference between its bid and the fast start price. Instead of allowing the market to reveal that the DEC is not economic and not contributing to day-ahead and real-time price convergence by allowing it to lose money, the DEC receives a payment that rewards uneconomic bidding.<sup>7</sup>

The August 30<sup>th</sup> Filing claims that the proposed day-ahead uplift eligible transactions would be "uneconomic to the seller" at the prevailing fast start prices.<sup>8</sup> The fast start prices may be higher than the virtual demand bids (or lower than the virtual supply offers), but the Fast Start Order rejected arguments that, due to its inherent discrepancies between economic market clearing and pricing, fast start pricing is uneconomic. Instead, the Fast Start Order found that "fast-start pricing will better inform investment decisions and increase overall market surplus."<sup>9</sup> If the findings in the Fast Start Order are true, market participants should not be shielded from fast start prices through uplift payments that reverse exposure to fast start prices. Day-ahead energy purchases at fast start prices fund the higher revenues that suppliers receive under fast start pricing. This is the intended

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<sup>7</sup> An INC transaction on the opposite side of a constraint from a fast start resource would face a similar situation by offering higher than the expected fast start clearing price. A UTC transaction targeting a constraint relieved by a fast start resource would also face the same situation.

<sup>8</sup> August 30<sup>th</sup> Filing at 19.

<sup>9</sup> Fast Start Order at PP 35–42.

reallocation of market surplus from buyers to sellers described in the Fast Start Order, and the full financial exposure of all market participants to fast start prices is required if the PJM market is to realize the long term market benefits claimed by the Fast Start Order. PJM's proposal would undo the impact of the Fast Start Order for many virtual transactions.

In 2018, price sensitive demand, DEC bids, up to congestion transactions (UTCs), and exports accounted for 35 percent of PJM day-ahead market demand.<sup>10</sup> PJM's proposal to shield this 35 percent of demand from higher fast start prices at the expense of the other 65 percent of demand is not just and reasonable. In a more efficient market where load becomes increasingly capable of responding to price, the portion of the load eligible for uplift would correspondingly increase, undermining the purpose of the fast start price signals and imposing ever higher costs on the remaining inelastic demand. Meanwhile, UTCs, which do not pay any uplift charges, would qualify for fast start uplift payments.

The August 30<sup>th</sup> Filing claims that not paying uplift to virtual transactions will deter the participation of virtual transactions in the day-ahead market and "reduce any price convergence benefits such transactions have on the day-ahead and real-time prices as intended."<sup>11</sup> Such claims have no merit. Holding aside the fact that there is no empirical evidence that virtuals create price convergence, virtual transactions that only clear the dispatch run and not the pricing run do not directly affect prices. If they do not affect prices, they do not provide price convergence. Therefore, there is not even a hypothetical benefit from encouraging these transactions by paying them uplift.

Uplift payments to virtual transactions also raise market manipulation concerns, because virtuals do not incur physical operating costs or obligations in the day-ahead market. With no physical costs or obligations, offering uplift payments provides a potential revenue stream regardless of the profitability of the virtual transaction based on day-ahead and real-time prices. Under the August 30<sup>th</sup> Filing's proposal, an unprofitable virtual

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<sup>10</sup> 2018 *State of the Market Report for PJM*, Vol. II, Section 3: Energy Market, Table 3-21.

<sup>11</sup> August 30<sup>th</sup> Filing at 20.

transaction could become profitable due to the uplift payment alone. This creates an incentive for market participants to place otherwise unprofitable bids for the sole purpose of receiving the uplift payment. The Commission, PJM and market participants have expended, and continue to expend, considerable resources on addressing the ramifications of past market manipulation of revenue streams to virtual transactions, e.g. the unintended overallocation of PJM's marginal loss surplus to virtual transactions in 2010.<sup>12</sup> The payment of uplift to virtuals as proposed in the August 30<sup>th</sup> Filing creates another opportunity for virtuals to manipulate the PJM energy markets by profiting from uneconomic transactions.

Like virtuals, Day-Ahead Scheduling Reserves have no requirement to operate in real time and therefore face no incentive to deviate from real-time dispatch instructions due to their day-ahead financial position. The August 30<sup>th</sup> Filing needlessly introduces a new uplift payment, beyond the scope of compliance with the Fast Start Order, to shield day-ahead reserves from fast start prices.

In the PJM Brief (at 3), PJM proposed the use of fast start pricing in the day-ahead market in response to the Commission's order instituting the Section 206 proceeding issued December 21, 2017 ("December 21<sup>st</sup> Order").<sup>13</sup> The PJM Brief raised no concerns with inefficient incentives created by day-ahead fast start pricing that would require uplift payments to virtuals or day-ahead reserves. The August 30<sup>th</sup> Filing presents no new evidence supporting increases to uplift to support fast start pricing in the day-ahead market. The proposed day-ahead uplift payments should be rejected.

**B. A Five Minute Generator Make Whole Payment Is Out of Scope of the Fast Start Filing and Is Not Just and Reasonable.**

The August 30<sup>th</sup> Filing also proposes an uplift payment to generators that receive a dispatch instruction to produce more energy than would be economic under the fast start

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<sup>12</sup> See, e.g., *Coaltrain Energy, L.P., et al.*, 154 FERC ¶ 61,002 (January 6, 2016); *FERC v. Coaltrain Energy, L.P., et al.*, Case No. 2:16-cv-732 (S.D. Ohio Dist Ct.), pending; *FERC v. Powathan Energy Fund, LLC*, Civil Action No. 3:15-cv-0452 (E.D. Va. Dist Ct.), pending.

<sup>13</sup> *PJM Interconnection, L.L.C.*, 161 FERC ¶ 61,295 (2017).

price.<sup>14</sup> This occurs when the fast start price is lower than the dispatch run price for a flexible marginal resource. This uplift payment is not required by the Fast Start Order. Current uplift rules already compensate generators for energy produced when the revenues from the energy market do not cover their offer. This payment is called Balancing Operating Reserve credits. This payment is calculated taking into account the revenues and offer of a generator over a period of time (e.g. day-ahead committed hours or minimum run time). The current payment ensures that generators following PJM's instruction do not run at a loss. The proposed payment would provide additional revenue to the resource on a five minute basis, even if the resource does not require uplift to cover the operating costs associated with its commitment. The new August 30<sup>th</sup> Filing uplift payment is not required, it is unnecessary and it should be rejected.

**C. A Five Minute Dispatch Differential Lost Opportunity Cost Credit Is Not Just and Reasonable.**

The August 30<sup>th</sup> Filing proposes to provide a Dispatch Differential Lost Opportunity Cost ("LOC") credit to resources "instructed by PJM to provide fewer MW of energy than the MW dispatched from the pricing run would otherwise indicate."<sup>15</sup> The August 30<sup>th</sup> Filing fails to discuss the fact that it proposes to pay the Dispatch Differential LOC credit on a five minute basis without regard for the overall profitability of the resource commitment. A resource could earn large profit margins for hours due to fast start prices and receive Dispatch Differential LOC credits on top of those profits. If fast start prices fall below the resource's incremental offer for a five minute interval, the August 30<sup>th</sup> Filing proposes another make whole payment for that interval.<sup>16</sup>

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<sup>14</sup> August 30<sup>th</sup> Filing at 17, proposed OA Schedule 1 § 2.5.1(a).

<sup>15</sup> August 30<sup>th</sup> Filing at 21.

<sup>16</sup> August 30<sup>th</sup> Filing at 17, proposed OA Schedule 1 § 2.5.1(a).

Under the prevailing PJM Market Rules, uplift ensures that a resource that follows PJM's dispatch instructions does not operate at a loss.<sup>17</sup> The rules were originally designed to ensure that units did not operate at a loss for the entire operating day and were modified to use segments equal to the greater of the minimum run time or the day-ahead schedule. The August 30<sup>th</sup> Filing changes that paradigm by creating a five minute by five minute target revenue guarantee for resources. Extending the PJM uplift payment structure to a revenue guarantee paradigm is not just and reasonable and is not the purpose of the Fast Start Order.

The Dispatch Differential LOC should be included only consistent with the existing uplift structure. The Dispatch Differential LOC should be included as an uplift cost, and the net of all revenues and costs for the operating day, or relevant segment of the day, would be paid if the resource following dispatch operates at a net loss. The August 30<sup>th</sup> Filing's proposal to use the "greater of" revenues and "lesser of" costs approach would be appropriately applied to the entire operating day, or relevant segment of the day.<sup>18</sup>

#### **D. The Tariff Requires Further Details About the Dispatch and Pricing Runs.**

The August 30<sup>th</sup> Filing includes new language in Operating Agreement, Schedule 1, Sections 2.2 and 2.5 that describes the use of a dispatch run and pricing run for the implementation of fast start pricing. The proposed language does not include sufficient detail to ensure that fast start pricing is correctly implemented. The August 30<sup>th</sup> Filing states that the dispatch run and the pricing run will use algorithms with the same objective

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<sup>17</sup> According to PJM, "Uplift payments are made to market participants for operating a unit under specific conditions as directed by PJM to ensure that they recover their total offered costs when market revenues are insufficient or when their dispatch instructions diverge from their dispatch schedule." Drivers of Uplift, <<https://pjm.com/markets-and-operations/energy/drivers-of-uplift.aspx>>.

<sup>18</sup> See August 30<sup>th</sup> Filing at 22, proposed Operating Agreement, Schedule 1, section 3.2.3(f-5)(iii).

function, and that the pricing run will, in addition, apply integer relaxation for fast start resources.<sup>19</sup> The filing also describes the inputs to the dispatch run.

In describing the pricing run, the filing states that PJM will use “the input data from a reference real-time security constrained economic dispatch case.” The filing does not state that PJM will use the input data from the reference dispatch case for the same five minute interval to which the pricing run results are applied. For proper implementation of fast start pricing, it is essential that the only difference between the dispatch run and the pricing run be the addition of integer relaxation in the pricing run. If PJM uses different input offer data, different input resource MW, different input load forecasts, or different input transmission constraints, the results of the pricing run will not be the intended fast start prices for the settled interval. Mismatched inputs for calculating the dispatch and the settled prices for the system would create inaccurate LMP revenues for fast start resources and incorrect dispatch deviation lost opportunity cost payments.

PJM currently uses mismatched inputs to calculate dispatch and prices for the same market interval.<sup>20</sup> This market efficiency issue will be significantly exacerbated by fast start pricing unless addressed clearly in the implementation of fast start pricing. Confidence that the PJM market produces the intended results of fast-start pricing requires that PJM include language in the Operating Agreement dictating that the dispatch run and the pricing run use all the same input data for a single dispatched and settled five minute market interval.

#### **E. PJM Incorrectly Ignores Structural Market Power in the Pricing Run in the Proposed Market Power Mitigation Rules.**

The August 30<sup>th</sup> Filing proposes tariff language that would explicitly prohibit PJM from running the Three Pivotal Supplier (TPS) test for a pricing run solution using integer

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<sup>19</sup> Integer relaxation, as used by PJM in this case, simply means ignoring the actual economic minimum parameter of fast start units and allowing a solution based on unit output between zero and the economic maximum.

<sup>20</sup> See Five Minute Dispatch and Pricing, PJM Issue Tracking, Issue Details <<https://www.pjm.com/committees-and-groups/issue-tracking/issue-tracking-details.aspx?Issue=6DECC213-EC91-4CCF-B75C-3BE72FE0D347>> (Accessed September 7, 2019).

relaxation. PJM would inappropriately add a requirement not required for compliance. The Fast Start Order appropriately does not require this strict prohibition against assessing structural market power in the pricing run. The Fast Start Order found lack of evidence that running the TPS test in the pricing run is necessary.<sup>21</sup> However, the Fast Start Order also found a “potential for the pricing run to produce a different set of binding constraints than the dispatch run, which could impact the mitigation of the incremental energy offer.”<sup>22</sup> Different binding constraints create different local markets. The result is that structural market power may exist in the pricing run that does not exist and is not identified in the dispatch run. Failing to address such structural market power could permit the exercise of market power and the resultant noncompetitive prices. The August 30<sup>th</sup> Filing’s proposed prohibition against executing the TPS test for the pricing run is inappropriate. While the Fast Start Order does not require a TPS test in the pricing run, it leaves open the possibility that, based on further evidence, PJM may employ the TPS test in pricing run solutions to identify market power. PJM inexplicably would create a procedural barrier to implementing the TPS for the pricing run if needed. The prohibition on using the TPS test in the pricing run is beyond the scope of compliance with the Fast Start Order and is not just and reasonable given the lack of evidence that market power can be sufficiently mitigated based solely on the dispatch run solution.

**F. The August 30<sup>th</sup> Filing Fails to Address False Positive and False Negative Shortages.**

The PJM Brief raised the issue of false positive and false negative shortage pricing that may result from separating the dispatch and pricing runs, but the August 30<sup>th</sup> Filing does not address false positive and false negative shortage pricing. The August 30<sup>th</sup> Filing proposes to invoke shortage pricing based solely on the fast start pricing run without

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<sup>21</sup> Fast Start Order at P 127.

<sup>22</sup> *Id* at P 128.

defining how PJM would calculate reserves in determining whether a shortage exists in the pricing run.

Integer relaxation means that PJM will ignore the actual economic minimum parameter of fast start units, allowing a solution in the pricing run based on unit output between zero and the economic maximum. But units cannot and do not actually operate at MW levels between zero and the economic minimum. If a unit clears at a MW level between zero and the economic minimum, the MW between the operating point and the economic minimum point will appear to be available reserves under integer relaxation. If PJM allows capacity between zero and the economic minimum of fast start resources to satisfy the synchronized reserve requirement in the pricing run, the pricing run will include more capacity than the dispatch run because units cannot actually operate at that point and will be at economic minimum in the dispatch run and in reality. Counting the added capacity below economic minimum as reserves would eliminate shortages in the pricing run even when PJM dispatch observes a shortage. This would be a false negative shortage, an actual shortage in the dispatch run that does not convey to the pricing run.

Alternatively, PJM could not permit capacity below the economic minimum of fast start resources to satisfy the synchronized reserve requirement in the pricing run, because it cannot physically provide reserves. The pricing run converts synchronized reserve MW on flexible resources to energy when it dispatches fast start resources down below their economic minimum output. If the composite offers (including start costs, no load costs and incremental costs) of fast start resources exceed the reserve penalty factors, the pricing run will not dispatch a fast start resource to resolve a shortage. The pricing solution would result in shortage pricing. This would be a false positive shortage, a shortage in the pricing run that does not exist in the dispatch run.

In a January 29, 2018, presentation to stakeholders, PJM suggested that the dispatch run pass information to the pricing run regarding shortage conditions to avoid false

positive and false negative shortages.<sup>23</sup> The Market Monitor agrees with that PJM proposal. Consumers should not bear the cost of false positive shortages and should not avoid shortage costs due to false negative shortages. The purpose of shortage pricing is to correctly signal reliability conditions, and reliability conditions can only be measured in the dispatch run. The implementation of fast start pricing should not interfere with the efficient use of shortage pricing. PJM should include its January 29, 2018, proposal to avoid false positive and false negative shortages in its tariff. PJM's proposed tariff does not define whether the pricing run will count MW below the economic minimum of fast start resources as reserves. PJM's proposed tariff does not define any process for addressing false positive and false negative shortages. PJM should include these details in the tariff.

**G. The Tariff Should Not Provide for PJM Discretion in Defining Fast Start Resources.**

The August 30<sup>th</sup> Filing proposes that PJM determine which resources are capable of being defined as fast start through an undefined process.<sup>24</sup> The proposed language includes no standards for PJM's determination of fast start resource status. The proposed tariff language places no bounds on PJM's discretion in changing a resource's fast start status. For example, the August 30<sup>th</sup> Filing does not state whether PJM can change the fast start status of a resource in real time, whether a change to fast start status requires consultation with the market seller, or what reasons PJM may use in determining a change to fast start status.

A just and reasonable implementation of fast start pricing requires that PJM define a transparent, consistent, and nondiscretionary process in its tariff, including consequences for fast start resources that fail to meet their offered notification plus start times in the Real-Time Energy Market. Fast start resources should be required to have a total notification and start time of less than one hour in their offer parameters submitted to PJM in both price-

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<sup>23</sup> "FERC Docket EL18-34-000: Fast-Start Pricing," PJM Presentation to the Energy Price Formation Senior Task Force (January 29, 2018) at 7, <<https://www.pjm.com/-/media/committees-groups/task-forces/epfstf/20180129/20180129-item-08-fast-start-206-response.ashx>>.

<sup>24</sup> August 30<sup>th</sup> Filing at 5.

based and cost-based offers. PJM should not have the authority to alter the offered parameters in its market systems. Providing false or misleading information to PJM in those parameters is equivalent to lying to PJM which is prohibited under the market behavior rules enforceable by the Commission.<sup>25</sup>

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<sup>25</sup> See 18 CFR § 35.41(b) (“A Seller must provide accurate and factual information and not submit false or misleading information, or omit material information, in any communication with the [Commission](#), [Commission](#)-approved market monitors, [Commission](#)-approved regional [transmission](#) organizations, [Commission](#)-approved independent system operators, or jurisdictional [transmission](#) providers, unless Seller exercises due diligence to prevent such occurrences.”).

## II. CONCLUSION

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

Respectfully submitted,



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Date: September 17, 2019

## 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 17<sup>th</sup> day of September, 2019.



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