

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

PJM Interconnection, L.L.C.)	
)	Docket No. ER13-2108-000
)	

**COMMENTS OF THE
INDEPENDENT MARKET MONITOR FOR PJM**

Pursuant to the Notice of Technical Conference issued in this proceeding on October 11, 2013, Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM (“Market Monitor”), submits these comments following the technical conference in this proceeding convened November 13, 2013. RPM base residual auctions (BRA) and incremental auctions (IA) cannot perform efficiently unless, consistent with their design, all capacity resources offered are specific physical resources and all cleared capacity resources have obligations that can only be replaced if the obligated resource becomes physically unavailable. Without required modifications to the rules the RPM construct will devolve into a speculative process inconsistent with a competitive, efficient three year forward capacity market construct. The current dynamic, if allowed to continue, will undermine the economics of the capacity market and undermine the reliability of PJM markets.

I. COMMENTS

A. The Efficiency of RPM Base Residual Auctions Depends Upon Offers of Capacity from Specific Physical Capacity Resources That Are Obligated for Delivery if Cleared.

The tariff requirement that all capacity resources, including Demand Resources (DR), be physical is a necessary but not sufficient condition to ensure the efficient and

competitive operation of the PJM capacity market.¹ “Physical” in this context means a resource that is based on an identified physical facility(ties) at a specific location(s), whether generation or DR or energy efficiency (EE), with the identified capability to meet the obligations of a capacity resource. While the demonstration that a specific resource is available uniquely to the seller and that resource has the ability to provide generating capacity or reduction in load are critical preconditions, those demonstrations do not provide any assurance that the underlying position will not be bought out in an incremental auction. For example, the Market Monitor is aware of capacity market sellers of DR that have a demonstrated physical capability and that have bought out of their base residual auction positions in incremental auctions for multiple delivery years.

The arguments that Comverge made at the November 13th technical conference appear to be based on three premises: that it is reasonable to provide a marketing plan for DR rather than physical resources at the time of the BRA; that it is reasonable to buy out of DR positions prior to the delivery year when it is financially advantageous; and that it is reasonable to identify the physical DR sites associated with the sale of DR in a BRA just prior to the delivery year.²

Comverge’s position is narrowly logical but it is based on an incorrect premise and is therefore wrong. The position of Comverge is not consistent with the effective and competitive operation of the PJM capacity market.

The RPM construct is based on the condition that all capacity resources be physical regardless of their type. In actual practice to date, the RPM construct has worked because

¹ See OATT Attachment DD § 5.5; PJM Reliability Assurance Agreement (RAA) Schedules 6, 9 & 10.

² Some of the arguments that Comverge raises in its pleadings also appear to be based on these unstated premises. See Motion to Intervene and Protest of Comverge, Inc., ER13-2018 (August 23, 2013) at 18–19; Motion for Leave to Answer and Answer of Comverge, Inc., ER13-2018 (September 24, 2013) at 11–12.

not only were most capacity resources (generating units) identified physical resources at the time of offers into the BRA but because those capacity resources were also committed to providing the specific physical resources in the delivery year. The PJM tariff should be modified to even more explicitly require that capacity resources must have an identified physical resource prior to making an offer in the BRA. The requirements of the current tariff rules should be further clarified to require that all physical capacity resources are financially viable and that such physical resources are obligated to provide service in the delivery year unless a force majeure event prevents fulfillment of that obligation, combined with appropriate penalties for noncompliance.³

The need for changes to the tariff is driven by the increased role of DR, combined with recent changes to the structure of IAs, which have revealed fault lines in the rules. The tariff apparently did not need to be so explicit when capacity resources were overwhelmingly generating units intended from their inception to provide energy in a delivery year. The combined impact of the increased role of DR, the fact that DR has not been physical at the time of BRA offers, the related fact that DR routinely buys out of its positions in incremental auctions, and the requirement to have three IAs has created a significant problem that requires an explicit solution.⁴ But the issue is not limited to DR. Imports and planned generating resources have also increased the proportion of resources that buy out of their positions. The increased role of imports has led to more careful consideration of the rules required to ensure that imports are physical, that imports can

³ The tariff currently requires that capacity resources be physical prior to offers in the BRA, but given recent discussions on the topic, it would be helpful to further clarify the requirements.

⁴ See Monitoring Analytics, LLC, Analysis of Replacement Capacity for RPM Commitments: June 1, 2007 to June 1, 2013 (September 12, 2013) at 9 (Table 8), 33–36 (This report was included as Attachment to the Answer and Motion for Leave to Answer of the Independent Market Monitor for PJM, ER13-2108 (September 12, 2013). DR buys replacement capacity at a very high rate even after accounting for FERC’s directive to buy out of certain positions as necessary to comply with its order in Docket No. ER11-3322. *PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,108 (2011).

substitute for internal capacity resources and that imports actually provide reliable energy in the promised delivery year.⁵ The PJM market rules should be revised as necessary to ensure that all resource types are treated consistently.

In the absence of a firm commitment at the time of the BRA offer to provide physical resources in the three year forward delivery year, the RPM construct devolves into a speculative process inconsistent with a three year forward capacity market construct. If RPM were a one year forward construct, there would be no need to address this issue. The three year forward RPM construct was implemented in order to permit competition from new entry. The three year forward construct was not implemented to permit or to facilitate speculation in the physical capacity market.

The logic of Comverge's arguments ignores the relevance of product comparability and underestimates the impact of DR on the capacity market. Markets are defined for specific products. When there is a high degree of substitutability across products, market boundaries are less precise. But there are no substitutes for capacity as defined in RPM. DR is sold as capacity directly and not as a substitute. But DR is not comparable to generating capacity along a number of dimensions including: that limited DR is callable for a maximum of 60 hours during summer peak hours; that DR has not been held to its obligation to be physical; that lead times for DR development are much shorter than for generating resources; and that entry costs for DR, especially the inferior limited DR product, are much lower than for generating capacity.⁶

These features of DR have made the sale of DR in base residual auctions the sale of an option in the BRA rather than the sale of a commitment to physical delivery of a product.

⁵ See PJM filing, Docket No. ER14-503 (November 29, 2013).

⁶ PJM's definition of separate limited DR, extended summer DR and annual DR product types effective for the 2014/2015 delivery year did not meaningfully prevent limited DR and extended summer DR from substituting for generation and annual DR, as evidenced by the auction results including the minor price differences among cleared products.

Most capacity in RPM is existing, physical generating units. The fact that DR is effectively an option in the BRA under the current interpretation of the tariff gives DR an unfair advantage in the capacity market and results in the suppression of capacity market prices below the competitive level.

For example, consider the actual case where an existing coal fired generating unit has already incurred the cost of complying with environmental regulations prior to the current BRA, those costs are included in the unit's capacity market offer during the capital recovery factor (CRF) period, and the coal unit does not clear as the result of lower offers by limited DR. The owner of the coal unit has already made its investment in environmental compliance and committed to remaining in business for multiple years. In that situation, the owner of the coal unit has an incentive to offer at zero in incremental auctions in order to ensure at least some capacity market revenues available to cover unit costs. Such offers tend to decrease the price in the incremental auction which further contributes to the incentive for the DR seller to buy out of their position, replacing DR with coal generation in this example.

The net effect of this dynamic is that the DR provider has made a substantial profit from the exercise of its option without ever approach a customer or identifying a physical source for its DR offer, while the coal fired generation is committed to provide energy in the delivery year for a capacity price well below the competitive price established in the base residual auction. The DR provider has provided nothing and the generation owner has effectively paid the DR provider the difference between the base residual auction price and the incremental auction price.

This process, identified in this example, is what can be termed false arbitrage because it will never lead to price convergence, will continue to lead to price divergence and will continue to create profitable incentives for this behavior to be repeated.

What is the risk to the DR provider? When there is no capacity to buy in the incremental auction or the cost of capacity in the incremental auction is greater than the DR provider wants to pay, the worst case is that the DR provider is unable to fulfil its RPM

commitment and pays the penalty rate. The penalty rate caps the risk to the DR provider at the higher of 20 percent of the BRA price or \$20 per MW-day.⁷

There are other exacerbating factors in addition to the behavior of DR providers. PJM has routinely overforecasted the load and therefore the demand for capacity in BRAs. The current rules include three IAs with complex rules including a requirement that PJM sell back excess capacity which has frequently been at a price of zero, further depressing the price in incremental auctions. The current rules impose offer caps on existing resources that have additional available capacity due, for example, to an improvement in Equivalent Demand Forced Outage Rate (EFORd) performance that can be well below the BRA clearing price. These offers also contribute to depressing the price in incremental auctions.

This unsustainable, unsupportable and uncompetitive dynamic should not be permitted to continue. The dynamic, if allowed to continue, will undermine the economics of the capacity market and undermine the reliability of PJM markets. When examined closely, the existing dynamic does not reflect a rational market design. The facts have emerged to demonstrate the issues with the design and this is the time to fix the design.

The solution is to both require that all offers in the BRA, and in subsequent IAs, have identified physical resources prior to the BRA, and the IAs, and that all cleared offers have an obligation to provide those physical resources in the delivery year, combined with appropriate penalties for noncompliance.

B. PJM's Proposed Approach Is Inadequate and Does Not Address the Problem as Well as Enforcement and Enhancement of the Existing Rules Would.

PJM's proposed approach to the issue of defining the requirements of DR to be a physical resource does not go far enough to solve an issue that is systematically undermining the performance of the PJM capacity market. PJM's approach proposes a

⁷ The penalty is actually the entity's weighted average resource clearing price plus 20 percent or \$20 per MW-day, but in this example there are capacity sales by the DR seller only in the BRA.

compromise that does not solve the issue and which will lead inevitably to the need for further changes. The tariff should be modified now to fully resolve the identified issues. This, together with parallel filings by PJM on the definition of imports, will comprehensively address the identified issues, stabilize the market rules and permit the PJM capacity market to function competitively and to provide reliability.⁸

PJM rules require that Planned DR must be a specific, physical resource that shall be able to provide the identified reduction in the delivery year, and that the entity offering the Planned DR must demonstrate that it is a specific physical resource at a specific location prior to the offer whether in a BRA or IA or FRR capacity plan.⁹ The timetable and milestones to meet this obligation are subject to verification by PJM at any time prior to the delivery year.¹⁰ This rule requires identification of a specific customer and a specific site, but does not require a contract.

This rule has not been properly enforced. Under the current application of the rules, DR providers may not have identified Planned DR customers, may not have clear plans for implementing DR measures for these customers, and may not receive commitments from new customers until relatively close to the delivery year and well after the RPM BRA is run for that delivery year. This is not consistent with the rules, and it has created a serious issue with the performance of RPM base residual auctions.

PJM's approach would not resolve this issue. It would not address the problem even as well as the existing rules. PJM's approach would not address the problem as well as the preferred option to enforce the existing rules and modify the existing rules to make explicit the obligation of cleared BRA resources to provide physical resources in the delivery year. Even if PJM's approach were to adequately require that capacity offers have an identified

⁸ See PJM filing, Docket No. ER14-503 (November 29, 2013).

⁹ PJM Reliability Assurance Agreement (RAA) Schedule 6 § A.5.

¹⁰ *Id.*

physical resource prior to the BRA offer (as the existing rules provide), the requirement to be physical is not adequate to stop speculative offers in BRAs from DR providers, from importers or from the developers of planned generation. In addition to being physical, cleared offers must create an obligation to deliver that specific resource in the delivery year. In other words, the purchase of and reliance on replacement capacity is only appropriate in circumstances where, for verified force majeure reasons, the specific cleared resource is not available.

C. Technical Conference Issues

The Notice of Technical Conference included five sets of questions that the Commission directed the parties be prepared to discuss. While the answers to these questions are implicit in this filing and the Market Monitor's prior filing, brief direct responses are indicated.

1. First Question¹¹

The Market Monitor proposes an enforceable obligation on sellers of capacity to provide an identified physical resource in the delivery year for each BRA. This enforceable obligation goes beyond the current tariff requirement to have an identified physical resource. Even enforcement of the current tariff requirement would not prevent the use of DR offers in BRAs as an option. Buying out of DR positions would continue to be an acceptable strategy even when resources are required to be physical prior to BRA offers. The enforcement of an obligation to both identify and deliver a physical resource, combined with appropriate penalties for noncompliance, would eliminate the buy out strategy.

¹¹ "According to PJM, RPM markets are physical markets, and any resource bid into an RPM auction should intend to physically provide any offered capacity that clears in the relevant delivery year. Can PJM distinguish between companies purchasing capacity resources in the incremental auctions to make up shortfalls due to difficulties meeting their obligation and companies that arbitrage between the base residual and incremental auctions? How will the informational requirements for DR resources under this proposal help guarantee that DR resources are using the Incremental Auctions as intended?"

Buying out of a position for economic reasons would not be permitted. Buying out of a position for documented reasons of force majeure would be permitted.¹² The Market Monitor recommends that the penalty payment be the BRA clearing price times 2.0, or the entity's weighted average resource clearing price times 2.0, meaning that the net penalty is the BRA clearing price or the entity's weighted average resource clearing price.

This obligation would make it unnecessary to “distinguish between companies purchasing capacity resources in incremental auctions to make up shortfalls due to difficulties in meeting their obligations and companies that arbitrage between the base residual and incremental auctions.”¹³

PJM's approach would not make it possible to distinguish the commitment to provide physical resources and speculation. PJM's approach does not adequately define physical resource as it requires additional support for the assertion of physical resources only under narrow conditions despite the fact that the issue is much broader than those narrow conditions would suggest. In addition, even the correct definition of physical resource is not enough because the accurate definition of a physical resource is still fully consistent with the treatment of offers as a form of speculation rather than an obligation to provide a physical resource.

2. Second Question¹⁴

Generating resources do face comparable informational requirements.¹⁵ In fact, generating resources face higher informational requirements. The Market Monitor's

¹² See PJM Operating Agreement § 18.9 (Force Majeure). The specific rules could explicitly include other force majeure type events if necessary for completeness.

¹³ Notice of Technical Conference at 1.

¹⁴ “Do generating resources face comparable informational requirements? If there are differences, what are the reasons for those differences? Do the existing information requirements for generators reduce the rate with which these resources buy out their obligations in the Incremental Auctions?”

¹⁵ PJM transmittal letter, ER13-2108 (August 2, 2013) at 2.

proposal of an enforceable obligation on sellers of capacity to provide an identified physical resource in the delivery year for each BRA would apply to all capacity resources including internal planned and existing generation and external planned and existing generation.

3. Third Question¹⁶

PJM's approach would require excessive discretion in attempting to determine the extent to which DR providers are relying on physical resources. PJM's screen for physical resources is inadequate and not consistent with the current tariff requirements. The existence of a physical resource does not prevent or disincent the speculative behavior which is the central issue.

A direct obligation to provide physical capacity, combined with appropriate penalties for noncompliance, is clear and enforceable in contrast to the inadequate screens and subjective evaluation of milestones for hundreds of sites proposed by PJM.¹⁷

4. Fourth Question¹⁸

A continuation of the status quo approach to the identified issues will have a negative impact on reliability. Providing discriminatory advantages to DR, which has been predominantly limited DR, increases the reliance of the system on resources with only a

¹⁶ "PJM states that its proposed changes will allow it to make a 'more reasoned assessment' of a DR Provider's reliance on expected commitments. How will PJM determine whether submitted milestones are reasonable? How much discretion will PJM staff exercise in accepting Sell Offer Plans?"

¹⁷ The MMU would have a role in identifying situations in which DR providers were manipulating the market by not providing physical resources. OATT Attachment M § IV.I.1.

¹⁸ "What is the impact on reliability of the observed increase in purchases of replacement capacity through the Incremental Auctions as compared to the Base Residual Auction? What are the effects on price for end-use customers? What evidence is there that DR obligated to perform by the start of a Delivery Year, or replacement capacity purchased through the Incremental Auctions, is less capable of meeting performance obligations than generation or DR that cleared through the Base Residual Auction? Are there indications that the DR that cleared in the Base Residual Auction in zones with high DR penetration is less likely to show up, or perform in the delivery year, than in other zones? Are there other reliability issues that stem from high DR penetration in these zones?"

maximum 60 hour obligation and extremely high strike prices for energy over reliance on generating assets with a 8,760 hour obligation which are the source of low cost energy year round. The limited DR product has significantly suppressed prices in the capacity markets, displacing new generating units and displacing existing generating assets that retire based on the resultant low capacity market prices.¹⁹

Annual DR, based on physical assets identified prior to BRAs and with an obligation to be available in the delivery year is a good product and should compete with other forms of capacity in the capacity market.

5. Fifth Question²⁰

Low prices in incremental auctions are the result of a number of factors, including: that DR is the sale of an option in BRAs which suppresses BRA prices which leads to lower offers by existing generation in incremental auctions; that PJM over forecasts load and then sells excess capacity at zero in incremental auctions; that offer caps in the first two incremental auctions can result in the offer of capacity at very low prices in incremental auctions.

But regardless of the reasons for the low prices, the structure of PJM capacity markets makes it unlikely that incremental auction prices will equal BRA prices as the result of a market dynamic. The BRA is a must offer and must buy auction in which all capacity resources and all load must participate. The capacity auction is not analogous to the day-ahead and real-time energy markets. As one example, load does not have a requirement to bid in the day-ahead energy market.

¹⁹ See, e.g., Monitoring Analytics, LLC, "Analysis of the 2015/2016 RPM Base Residual Auction" (September 24, 2013) at 5; Monitoring Analytics, LLC, "Analysis of the 2014/2015 RPM Base Residual Auction" (April 9, 2012) at 4.

²⁰ "Do the recent series of Incremental Auctions with lower clearing prices than the Base Residual Auction result directly from RPM's market rules or some other factor?"

As a result, the most direct way to address the identified issues associated with speculative behavior by DR providers is to require that all capacity offers including DR offers be physical prior to BRAs and that all capacity offers including DR offers have an enforceable obligation to provide that physical resource in the delivery year, combined with appropriate penalties for non compliance.

II. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to these comments as the Commission considers issues related to capacity markets in this proceeding.

Respectfully submitted,



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Dated: December 3, 2013

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 3rd day of December, 2013.



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