

PJM Responses to Questions Regarding the Winter Performance Equivalents Proposal

September 14, 2016

General Statement on Winter Performance Equivalents (WIPes) Proposal:

PJM does not support the WIPes proposal primarily because it seeks to release roughly 16,500 MW of winter capacity from its obligation via an auction process. Such a reduction in winter capacity from what is procured annually directly conflicts with one of the primary objectives of Capacity Performance which is to ensure that the capacity procured for the Delivery Year is available for the entire year whenever it is needed to maintain reliability. PJM stated its need for year-round capacity in its December 12, 2014 Capacity Performance filing¹ which was approved by FERC on June 9, 2015 in its order on the Capacity Performance filing² and then affirmed in FERC's May 10, 2016 Order on Rehearing and Compliance.³ Paragraph 59 of the May 10, Order on Rehearing and Compliance states:

“Permitting non-year-round resources to continue participating could result in a loss of reliability during the fall, winter and spring when PJM will not have as many resources to respond to emergencies, such as a polar vortex. Moreover, PJM has provided reasonable accommodation to permit greater participation in the capacity market by such resource types, including a reasonable transition period and the ability to participate in aggregated offers.”

There has been no new evidence presented since the most recent May 10, 2016 order to refute the orders issued by FERC on Capacity Performance or the principles on which those orders were issued.

1. We note that in the poll, Package C got the most “strong” support (7 to 10) of all packages other than Package D, the one year extension; more than Packages A, B, or E. And the states also supported it strongly.

The polling results for the Seasonal Capacity Resource Senior Task Force available at the link provided below.

<http://www.pjm.com/~media/committees-groups/task-forces/scrstf/20160826/20160826-august-polling-results.ashx>

Slides 15-18 contain the summarized polling results for Package C. Package C received 52 supportive votes between the values of 7 and 10. However, the general voting on the package shows 82% of all respondents do not support Package C.

2. We believe the calculation of the WIPes quantities, as proposed, is basically the same as the calculation of the Extended Summer DR limits, which methodology was in the tariff and Manual 20

¹ <http://www.pjm.com/media/documents/etariff/FercDockets/1368/20141212-er15-623-000.pdf>

² <http://www.pjm.com/media/documents/etariff/FercOrders/1529/20150609-ER15-623-000.pdf>

³ <http://www.pjm.com/Media/documents/ferc/orders/2016/20160510-er15-623-002-et-al.pdf>

until recently removed. Therefore, no new or different reliability analysis methodology is needed to calculate the WIPes quantities, only a minor update to existing, FERC-approved methodology. If you understand otherwise, we'd appreciate it if you could explain so we can clear up any misunderstanding.

The methodology to calculate the Extended Summer DR limits is based on allowing the PJM LOLE to increase by 10% beyond the "1 in 10" standard. As explained in the Capacity Performance filing, PJM believes that relaxing the LOLE standard to accommodate resources with limited availability should only be a temporary measure to allow transition to full CP implementation in 2020/21.

Furthermore, the transitional DR limits are based on a planning model is not designed to reflect all the operational risks that PJM faces in the winter. Simply, the planning model cannot capture all the complexities of real-time operations. For example, PJM's planning model makes two simplifying assumptions regarding generator forced outages: 1) that they are random, and, 2) that they are independent of each other. The last several winters have shown that both of these assumptions do not always reflect real-time operations. The winter forced outage rates have exhibited a strong correlation with lower temperatures and higher loads. PJM has also observed common mode failures across generating units. For example, the disruption of a gas pipeline will force out all single-fuel gas units being served by that pipeline. Neither of these risks is fully captured in PJM's planning model. If the procurement model were to be seasonal via the WIPes proposal or a seasonal capacity market, some analysis of these additional risks would need to be done.

In the Operational Efficiency segment of the RTEP, real-time operational issues are used to provide feedback to the planning process to drive upgrades. PJM believes that resource adequacy should be no different. Recent operating history and trends should impact the procurement of capacity.

3. We also do not see a need for other reliability studies to implement the proposal. It would of course be valuable to revisit winter CIRs with this, as with any, of the packages; valuable but not necessary for the first year of implementation, so not a barrier to implementation. If you understand otherwise, please explain.

Please see response to question 2.

4. We believe the WIPes auction would be structurally the same as an Incremental auction, meaning little or no software changes would be needed, and the tariff language is straightforward.

The bid/offer and clearing mechanics for the WIPes auction appear to be similar to that of the current Incremental Auction process. However, the meaning of clearing in a WIPes auction versus an Incremental Auction is materially different. This will result in technical changes that would be required to implement the WIPes auction proposal. PJM does not anticipate these changes to be significant.

5. The proposal suggests a minimum (floor) clearing price for WIPes in the first year of implementation. If binding, not all WIPes would sell. This protects against a potentially extreme

result of very low WIPes price, which we feel would be an undesirable outcome suggesting low value of winter capacity. We would be interested in your thoughts on that.

PJM is concerned about the arbitrary nature of the price floor, and it has not been discussed in any detail. This is a significant concern for PJM because it is expected that the WIPes auction clearing price would impact the offers in the annual auction submitted by entities who cleared a WIPE. If the cost of a WIPE is not accurate due to an unforeseen market dynamic, it is inevitable that this would have a negative impact on the annual auction.

6. We would prefer a non-discriminatory solution to the seasonal capacity issue, and as proposed, acquisition of WIPes would be open to all types of resources, subject to protections against acquisitions as an attempt to exercise market power or manipulation. In principle, generators would be interested in WIPes if they face high incremental costs to provide winter capacity, so the protection would perhaps have a safe harbor offer price (at the minimum WIPes clearing price) but if desiring to offer to acquire WIPes at a higher price, a generator would make a showing regarding incremental cost to provide winter capacity. There might also be a safe harbor for small quantities, or small percentage of portfolio, so most likely no detailed reviews of offers would be needed. We would be interested in your thought on this.

This statement appears to look to extend the existing offer cap rules implemented with Capacity Performance where a resource may submit an offer for Net CONE * B without the need to represent their actual cost. This is consistent with the existing rules and seems logical to extend to the WIPes offers.

It is unclear why it would be beneficial to have safe harbor clauses for small quantities or a small percentage of a portfolio. No such similar provisions exist for regular offers.

7. We believe Package C would increase reliability/resource adequacy, because as proposed 1) summer target LOLE is reduced to 0.09, increasing the reliability requirement and resulting in more cleared capacity, and 2) the WIPes quantity is very conservatively set (using LOLE 0.01, and also assuming some winter planned outages, etc.), so winter LOLE is negligible, and overall LOLE declines. If you disagree or believe the impact is unclear, please explain.

PJM does not understand how reliability would increase if the annual LOLE is still 0.10.

8. We believe Package C would lower the cost to consumers, due to increased efficiency, by 1) better tailoring winter capacity acquisition to lower winter needs, resulting in a better match between incremental reliability value and the price paid for winter capacity; and 2) better accommodating participation by seasonal resources. So while perhaps lowering RPM prices is not a PJM goal at present, we hope you will agree that when increased efficiency lowers prices, this is an appropriate outcome. We'd be interested in your thoughts on this, too.

PJM is unaware of any analysis that demonstrates that market efficiency is increased under the WIPes proposal. It seems inevitable that it will reduce capacity costs because of the release of capacity commitments in the winter and the allocation of the WIPes auction revenues back to loads. However, the broader impact of the WIPes implementation, for example, to the energy market or other areas, is unstudied.

Prior to filing Capacity Performance, PJM and the IMM performed a joint analysis⁴ to assess the cost ramifications of Capacity Performance. This study included the additional capacity costs and energy market benefits expected with the Capacity Performance implementation. No such analysis exists for the WIPes proposal. In the joint analysis, PJM and the IMM estimated a significant energy market savings of removing the prior seasonal design in lieu of Capacity Performance. PJM believes analysis in this area needs to be done on the WIPes proposal before any conclusions can be drawn on the efficiency of the WIPes proposal.

A driver of the energy benefits PJM and the IMM estimated was the availability of cleared capacity for the entire year. The WIPes proposal would unwind that change by releasing 16,500 MW of capacity from a winter commitment. Therefore, it is expected that energy market costs would increase under the WIPes proposal relative to what they would be under Capacity Performance. The magnitude of this change in energy costs is unknown but is a key factor in assessing the efficiency of the WIPes proposal.

Further, the cost reductions in the capacity market achieved by the WIPes proposal are done at the expense of operational reliability. This is a significant issue for PJM and the primary reason why PJM is not supportive of the WIPes proposal.

9. We also believe Package C maintains Capacity Performance just as well as Package A (both allow that the list of resources providing capacity may be slightly different for the summer and winter seasons).

PJM does not agree with this statement. The WIPes proposal results in less capacity available in the winter than the summer. Capacity Performance results in the same capacity available for the entire year regardless of the season. Package A is seeking to improve the aggregation rules so that seasonal capacity resources can aggregate together to provide year-round capacity.

10. We also believe Package C is fully consistent with any revisions to RPM that might be implemented in the future to allow for multi-year commitments. If multi-year capacity commitments are implemented, multi-year WIPE commitments would also be appropriate.

Currently RPM does not have a multi-year commitment nor are there any proposals to incorporate one. It is not possible to determine what parts of the WIPes proposal would fit within a multi-year construct at this time.

⁴ <https://www.pjm.com/~media/committees-groups/committees/elc/postings/capacity-performance-cost-benefit-analysis.ashx>

11. We recognize that with Package C, as with Package A or any solution (or no solution), it may be appropriate to revisit RPM cost allocation (and we note that in PJM’s CP filing, PJM invited FERC to order PJM to file a unilateral cost allocation proposal, suggesting that at that time, PJM saw a need to revisit this). We do not believe that concern about re-opening cost allocation (which has little if any impact on efficiency) should be a barrier to valuable, needed market design changes.

While cost allocation is an issue that PJM sought to address, stakeholders felt that it was best not to discuss the topic at this time. PJM does not believe that the overall cost allocation for capacity is a barrier for the WIPes proposal.

12. We would like to hear any concerns you may have about the feasibility of implementing Package C for May 2017.

If approved by stakeholders and FERC, and the additional aforementioned reliability analysis were able to be completed and any resulting issues addressed, PJM believes it could implement the technical system changes required to implement the WIPes proposal in time for the May 2017 BRA.

13. We would like to hear any other comments you have about the desirability of this package, be it for May 2017 or May 2018.

As stated previously, PJM does not support the WIPes proposal due to a fundamental difference of opinion between PJM and the proposers of the WIPes package regarding the amount of capacity needed to maintain reliability during the non-summer period. The WIPes proposal assumes that less capacity is needed to maintain reliability. This conflicts with the principles of Capacity Performance.

14. Finally, we believe the WIPes proposal (or Package B) would help prepare the PJM system for the substantial increase in renewable resources that is expected over the coming years, which resources, especially wind and solar, are highly seasonal. We do not know what mix of seasonal resources (including not just DR, wind and solar, but also gas-fired generation that may face circumstances with high costs for firm fuel supply) and other resources the market will want to build in PJM, but we believe a seasonal capacity price signal would be valuable in directing additions toward the times of year when they are more needed, which could potentially shift over time as the resource mix evolves. We would also be interested in your thoughts on the longer-term outlook.

It is unclear how the WIPes proposal as currently designed would help prepare the system for a substantial increase in renewable resources. At present, the limit on WIPes is proposed as the Extended Summer DR Limit - about 16,500 MW. If that number remains fixed, it would provide 16,500 MW of room for summer-only resources to clear but provide little availability for winter-only capacity. Further, if the amount of renewable resources increases substantially, it is difficult to see how that fixed limit would prepare the system for such an increase.