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# Potential Alternative Approach to Expanding the Minimum Offer Price Rule to Existing Resources

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## I. Objective

As identified in the second part of the Resource Investment in Competitive Markets paper issued by PJM in May 2016, regulators and lawmakers may wish to pursue valid public policy objectives through out-of-market subsidies to generation resources. When resources, receiving out-of-market subsidies, offer into wholesale markets at prices that are below their actual costs, they have the potential to suppress wholesale market prices. Over the long term, these subsidies could have a detrimental impact on the ability for competitive wholesale markets to successfully achieve their objective of stimulating the new investment required to maintain long-term resource adequacy. The purpose of this document is to describe a potential, alternative approach to accommodating such regulatory action in a manner that allows competitive wholesale markets, specifically the capacity market, to continue to commit the appropriate amount of resources necessary to maintain resource adequacy while establishing price signals that accurately reflect supply and demand fundamentals and therefore provide support to maintain existing and develop new economic capacity to meet reliability needs.

## II. The Range of Potential Solutions

There appear to be two extremes as to potential solutions the wholesale competitive markets might adopt with respect to this issue. The first would be simply to accept that these subsidies will occur, and not make any wholesale market rule changes to address the impact these public policy actions have on PJM's markets. This approach essentially would accept that subsidies will cause certain generation resources to remain in operation even though they are not competitive in the wholesale market. The wholesale market would then procure the residual quantity of resources necessary to maintain long-term resource adequacy. The potential flaw in this approach is the uncertainty the prospect of subsidies introduces into the wholesale market and its ability to attract investment capital. The fact that, at any time, regulatory agencies could introduce a subsidy for certain resources that would suppress wholesale market prices will very likely eliminate the willingness for competitive suppliers to enter the wholesale market. Therefore, when the subsidies end, the competitive entry may no longer be available to meet the resource adequacy needs of the system.

The other extreme would be to implement rule changes that would expand the Minimum Offer Price Rule (MOPR) that currently applies only to planned natural gas-fired resources such that it would apply to all existing resources as well. This may seem to some like an attractive approach because it would get the prices "right" from the standpoint of establishing and maintaining the competitive price signal on which new entry relies. In the long term, new entry will continue to be necessary in order to fill the gap when existing resources are no longer economically efficient and therefore retire.

However, application of the current MOPR to existing resources has the likely down side of resulting in the commitment of more resources than are necessary to maintain reliability. This would occur whenever a resource for which the offer price is increased under the MOPR rule does not clear, but the regulatory agency decides to subsidize the resource and keep it operating anyway. In this scenario the wholesale market still clears adequate resources to maintain reliability in addition to the subsidized resource. As a result, if and when the subsidizing regulatory agency decides to keep the resource operating anyway, the system has more capacity available to it than it needs to maintain reliability. Further, the load to which the cost of the subsidies is allocated would pay twice for capacity, once through the wholesale auction and again due to the subsidy allocation. Finally, notwithstanding the

Supreme Court's recent *Hughes* decision, the extent to which the scope of MOPR could be expanded presents a legal uncertainty.

## III. An Alternative

PJM believes there may be an alternative solution that balances the goals of maintaining the correct price signal to incentivize and maintain the competitive entry necessary to achieve long-term resource adequacy while also committing only the quantity of capacity necessary in any given delivery year. A two-stage approach to determining cleared commitments and clearing prices in a single capacity auction could potentially balance these objectives. In this design, resources would submit one set of offers into a single capacity auction as they do today. However, the cleared capacity commitments and the clearing prices would be determined in separate stages of this single auction.

### *Stage 1*

Subsidized resources would be removed from the auction along with a commensurate amount of demand with respect to the quantity and location of the removed supply (herein called "related demand"). The capacity auction mechanism would then be executed without these resources and without the related demand in order to establish the quantity of resources required to meet the reliability needs of the system for the subject delivery year. The results of the first stage of the auction would be unit-specific commitments to provide capacity for the relevant delivery year.

Importantly, the subsidized resources would also take on capacity commitments for the delivery year, with performance requirements identical to those resources that cleared the first stage of the auction. However, the subsidized resources that were held out of the first stage of the auction would receive no revenue from the PJM capacity market. Rather, the regulatory authority that had determined that these resources should be subsidized would determine how these resources would be compensated and be solely responsible for providing that compensation. Similarly, the related demand would also not be responsible for paying the clearing price for capacity resulting from the auction, because the regulatory agency subsidizing the resources would decide what price customers representing the related demand should pay for the capacity associated with the subsidized resource and charge that price in retail rates. Conceivably, the retail regulator could establish a rate for the subsidized capacity that mirrors the auction clearing price (calculation of that price is described below) to which any additional subsidy could be applied.

### *Stage 2*

The subsidized resources and the related demand would be re-inserted in stage 2. However, the resources would be inserted at a reference price that approximates what a competitive offer for those resources would be absent any subsidy. The reference price at which each subsidized resource was entered into stage 2 of the auction would be a technology-based, locational approximation for each resource's going forward costs, similar to the default Avoidable Cost Rates currently in the PJM Tariff. The result of stage 2 would be the price that each resource that cleared in the first stage of the auction was paid for its committed capacity for the relevant delivery year.

Resources that offered at a price below the auction clearing price in the second stage but that did not receive a commitment from the first stage would not receive a commitment and would not be paid through the auction.

Figure 1. Offered Supply and Demand Curve

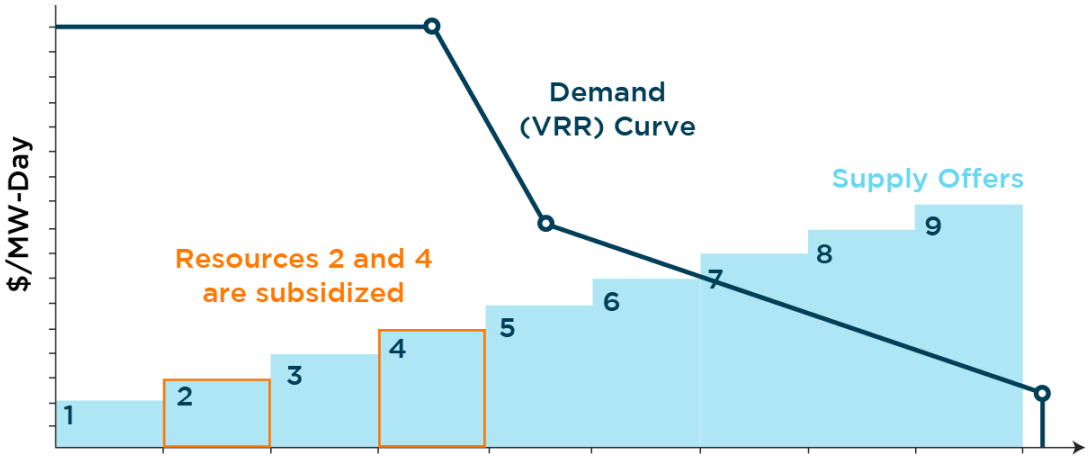



Figure 2. Stage 1: Subsidized Supply Offers and Equivalent Demand Removed

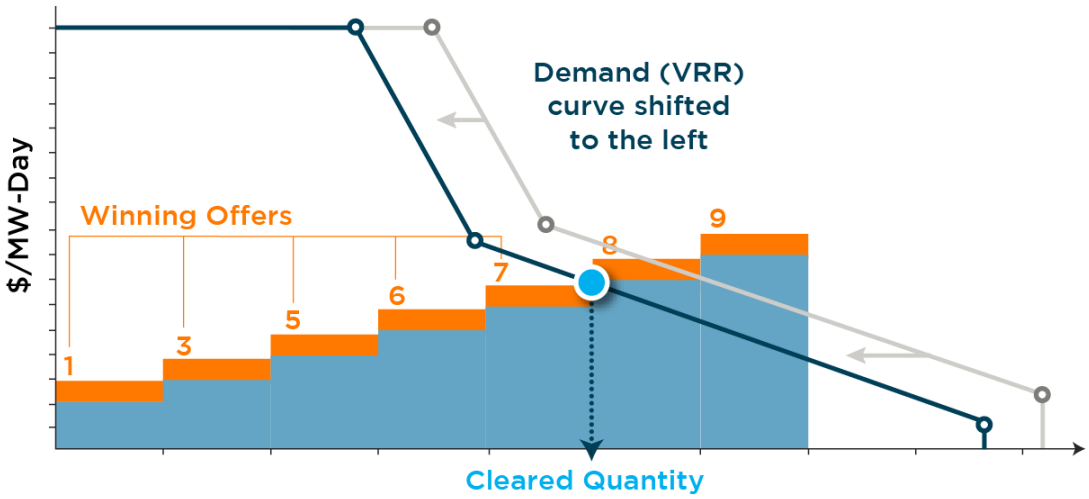
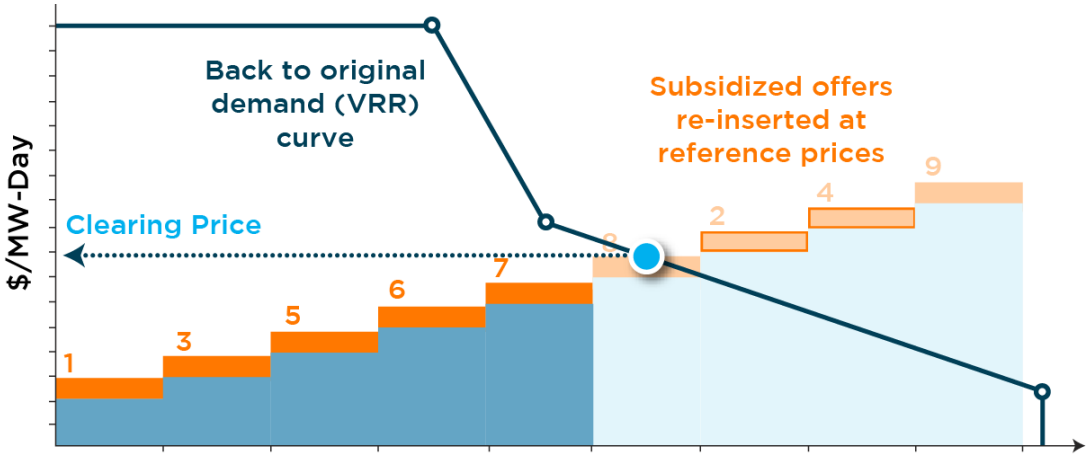



Figure 3. Stage 2: Subsidized Offers Re-Introduced at Reference Prices; Original Demand Curve Used



## IV. Benefits of this Alternative

As noted above, the primary benefits of this approach would be that both the quantity of resources committed to serve the resource adequacy needs of the system and the price signal established by the auction would be correct. The total quantity of resources committed would be the same as would be committed without any subsidized resources, because the sum of the subsidized quantity of resources and the quantity committed through the auction would total the same quantity as if all resources were cleared through the auction. The price signal would be correct because the effect of the subsidies would be removed by clearing the second stage of the auction with the subsidized resources offered in at a competitive level. Further, establishing that competitive level through the use of a standardized reference price that would be codified in the PJM Tariff would eliminate the need to establish such a competitive offer for each subsidized resource through a process such as the one currently utilized for the establishment of unit-specific Avoidable Cost Rates. The subsidized resources and the subsidizing regulatory authority likely would be relatively indifferent to the level of the reference prices because the resource would not be receiving revenues from the capacity market in any case. The regulatory entity will have already decided to compensate the resource as necessary in order to maintain it in operation. The related demand would be indifferent as well, because that demand would be paying the full cost of keeping the subsidized resource in operation whether it is partially through capacity payments to PJM and partially through another cost allocation, or whether it is entirely through an alternative cost allocation.

## V. Drawbacks to this Alternative

The primary drawback to this alternative is the potential of increasing the likelihood that resources could offer into the capacity market at a value lower than the clearing price determined through stage 2, but not clear in stage 1 (and thus not receive a capacity commitment). This situation can and has occurred in the past due to the ability for Market Sellers to specify a minimum quantity (referred to as a “minimum block”) for a resource that must clear in order for any of the resource to clear. There have been cases where the auction has skipped over resources with a minimum block offer because it was a less costly solution to determine a slightly higher clearing price with a smaller quantity of capacity. However, the two-stage concept described here could and likely would increase the probability of that situation occurring more frequently and for more resources. It is unclear whether this potential would have any significant impacts on resource offer behavior in the capacity auctions.

## VI. Issues to be Resolved

The most significant issue to be resolved is the definition of what constitutes a subsidized resource. This issue would need to be resolved to implement any potential solution, with the exception of the “do nothing” approach, and drawing the line between subsidies to which any such rule applies and those to which it does not will be difficult. The potential approach identified here may have the potential benefit of incentivizing regulatory authorities and resources to self-identify and essentially pull themselves out of the auction rather than risk engaging in a protracted proceeding to determine whether such a rule applies to them. This approach might provide that incentive because it expressly eliminates the commitment of more resources than necessary, and therefore eliminates the risk that the load to which the cost of a subsidy would be allocated would pay twice for capacity: once through the capacity auction and again as a result of the subsidy.

The reference prices at which subsidized resources would be re-inserted into the auction for stage 2 would also need to be determined. This could be a relatively straightforward exercise that would be updated periodically along the same lines as the default Avoidable Cost Rates already in the PJM Tariff.

As noted at the outset of this document, this potential alternative approach deals only with the impacts of subsidies in the capacity market. Whether and how impacts of subsidies should be dealt with in other markets, such as the energy market, likely will need to be examined as well.