

Energy Efficiency in PJM Capacity Markets

Issues associated with Energy Efficiency (“EE”) interaction with capacity markets:

1. Customers installing EE measures may not realize an immediate capacity benefit:
 - a. While EE measures will immediately reduce a customer’s energy usage, they do not necessarily have an immediate impact on the customer’s capacity or demand obligation.
 - b. Capacity obligations are assigned to individual customers based on their Peak Load Contribution (“PLC”) tags which are updated annually based on each customer’s usage coincident with the prior summer’s peak loads. While retail rate design varies by company, non-residential customers are typically charge a capacity-type fee based either on the PLC or demand amounts.¹
 - c. Allowing an EE measure to qualify as a capacity resource for a single year appears to be an equitable way to convey the capacity value associated with the EE measure for the transitional period until the PLC or demand values get fully updated.
2. Qualifying EE as a capacity resource after the PLC was updated would require an add-back to avoid over-valuing the capacity benefit of the measure and, prior to when PJM updates its zonal and RTO-wide forecast, would artificially increase other customer’s capacity obligations
 - a. From a capacity perspective, EE generally reduces a customer’s PLC by the same quantity that could “qualify” for sale as a capacity resource. Absent an add-back mechanism, this would overstate the capacity value of the customer’s EE measure.
 - i. Consider a 4 MW customer that installs 1 MW of EE measures; the customer would realize 1 MW of capacity value when their PLC reset from 4 MW to 3 MW, AND would receive an additional 1 MW of revenue from the sale of the qualifying EE capacity, thereby doubling the capacity value of the EE measure.
 - b. Consistent with the forward nature of the RPM contracts, PJM establishes the capacity obligations for each zone and for the RTO roughly 4 years forward. In contrast, the individual customer PLC tags can be updated within a year. This leaves roughly a three year period when one customer’s EE measure could increase the effective capacity obligation of **other** customers.
 - i. Consider the following example of a 12 MW zone that starts with three separate 4 MW customers. If two of the customers implement 1 MW of EE projects each, reducing their PLCs from 4 to 3 MW each, PJM will still require the entire zone to procure 12

¹ Some smaller customers may have capacity obligations assigned based on either annual energy consumption or class-average coincident usage data and therefore may not realize a reduction in PLC tags.

MW worth of capacity. Since the updated PLCs would only add up to 10 MW, everyone’s capacity obligation would have to be artificially increased by 20% which would increase the effective obligation of the third customer (Customer C) who did not install any EE from 4.0 MW to 4.8 MW.

	Customer A	Customer B	Customer C	Total
Initial PLC (MW)	4.0	4.0	4.0	12.0
(% Share)	33%	33%	33%	100%
PLC w/ 1MW EE @ A&B	3.0	3.0	4.0	10.0
(% Share)	30%	30%	40%	100%
Effective PLC after 20% gross-up	3.6	3.6	4.8	12.0
	30%	30%	40%	100%

Recommendations / Rational:

1. Allow EE to measures to qualify as a capacity resource for one delivery year.
 - a. Customers automatically get capacity benefit in subsequent years from the reduction in their PLCs.
2. After the delivery year in which EE clears in an RPM auction, PJM should reduce forecasted load by the amount of EE cleared, until such time as PJM’s normal forecast process captures the EE effect.
 - a. If, for example, 200 MW of new EE in the PSEG zone bids and clears in the next BRA auction for the 2012-2013 delivery, PJM should, at least for RPM capacity purposes, reduce the forecasted load in the PSEG zone by 200 MW for three subsequent BRA auctions (i.e. for the 2013-2014, 2014-2015 and 2015-2016 delivery years).
 - i. This would provide the full societal value of the EE measures to customers BOTH in the PSEG zone as well as to customers RTO-wide through May 2016. For the 2016-2017 delivery year BRA auction, the PJM forecast would automatically capture the effect of the EE measures installed by the summer of 2012.
 - ii. If the 200 MW of cleared EE does not materialize, the EE supplier(s) would be responsible for penalties associated with the 2012-2013 shortfall and, if necessary, PJM could procure incremental capacity for subsequent delivery years through 2nd Incremental Auction mechanism.
 - b. Avoids the need to artificially increase capacity obligation of non-participating customers (e.g. Customer C in above example).