

Energy Efficiency in Capacity Scarcity Conditions

NEPOOL Markets Committee

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Context and Overview

- Context
 - Capacity Scarcity Condition Event on Labor Day
 - A Monday in September that is a Holiday is outside of both On Peak and Seasonal Peak hours
 - Per FERC Order and ISO compliance tariff language, EE resource owners expected to be entirely excluded from any potential payments or penalties
- Overview
 - FERC Order said to include EE in Pay for Performance only during designated performance hours
 - ISO-NE complied by “excluding” EE from Pay for Performance during non-performance hours
 - EE was not entirely excluded
 - We suggest a simple solution

FERC Order

“89. However, we find that ISO-NE’s proposal is unduly discriminatory with respect to the treatment of energy efficiency resources. As protesters explain, ISO-NE’s proposal assumes that energy efficiency resources **provide zero performance in off-peak hours**, which means those resources must either incur significant costs to measure and verify their load reductions around-the-clock, rather than only in certain peak hours of the year, or face guaranteed negative Capacity Performance Payments during any Capacity Scarcity Condition during off-peak hours. **While it is necessary to track the performance of other types of resources around-the-clock under ISO-NE’s proposed market design, this is not the case for energy efficiency resources.** Energy efficiency resources are not similarly situated to other capacity resources because they do not actively perform in real-time—they represent a pre-determined level of load reduction that is constant as a percentage of that resource’s load—and therefore are not able to respond to the ISO-NE proposal’s performance incentive. Therefore, **we direct ISO-NE to submit** as part of the compliance filing required within 45 days of the date of this order, **Tariff revisions ensuring that energy efficiency resources’ Capacity Performance Payments are calculated only for Capacity Scarcity Conditions during hours in which demand reduction values are calculated under the Tariff for that particular type of resource.**”

Docket ER-14-1050. May 30, 2014. Emphasis added.

Tariff Section III.13.7.2.4

- “... provided, however, that for an On-Peak Demand Resource or a Seasonal Peak Demand Resource, if the Capacity Scarcity Condition occurs in an interval outside of Demand Resource On-Peak Hours or Demand Resource Seasonal Peak Hours, as applicable, then the Actual Capacity Provided and Capacity Supply Obligation associated with any Energy Efficiency Demand Response Assets shall be excluded from the calculation of the resource’s Capacity Performance Score. “
- Tariff language says both the Actual Capacity Provided and the CSO “shall be excluded”

Compliance Filing Letter

Language in filing letter led us to believe that Capacity Performance Score would be set to zero.



See Section Part 1, Section I.A.2, pp. 7-8

- “To comply with the Commission’s directive, the Capacity Performance Score for an Energy Efficiency resource during any Capacity Scarcity Condition outside of those measure hours should be set to zero. “
- **“A resource’s Capacity Performance Score for an interval equals the resource’s Actual Capacity Provided during the interval minus the product of the resource’s Capacity Supply Obligation and the applicable Capacity Balancing Ratio.** By excluding the impacts of any Energy Efficiency assets from both the Actual Capacity Provided and Capacity Supply Obligation terms of that calculation, the resource’s Capacity Performance Score is appropriately calculated ”
- Emphasis added to show that $\text{Score} = \text{ACP} - (\text{CSO} \times \text{BR})$

MC Nov 9, 2017 – Solution for EE on Slide 12

Solution

a. Energy Efficiency (EE)

- On-Peak or Seasonal Peak resources that consist of EE measure types will have an ACP equal to their reported monthly Demand Reduction Value (DRV) during performance months
- EE resources will be required to submit performance data to the ISO in full 24 hour blocks  
 - Resources that fail to submit data, or if the data is not for a full 24 hour period, will be assigned an ACP of zero for the period
- Consistent with the approved exemption for EE resources, there will be no capacity credits or penalties assigned to EE resources in non-On-Peak or non-Seasonal-Peak hours
- On-Peak or Seasonal Peak resources that consist solely of EE measure types that register pursuant to Section 12.8 will not have an ACP or a performance score calculated
 - Resources that register pursuant to Section 12.8 elect to forgo capacity market payments in exchange for a reduction in the forecasted load

Note: Verbal Q&A with Ryan indicated that this is a typo and would be corrected. EE required to submit data only for performance hours.



Understanding

- EE providers understood that during EE performance hours we were fully subject to all payments or penalties.
- Outside of those hours, per the FERC order, our Capacity Performance Score would be zero. No payments nor penalties were available.
- Since Capacity Performance Score = $ACP - (BR \times CSO)$:
 - Set ACP equal to $BR \times CSO$ to make the score zero
- However, this is not the implementation that occurred.

Current Approach

- Across all 32 intervals of the event on Labor Day, system was net short of reserves by 831 MWh. At \$2,000/MWh, total amount of overcollection (penalties – payments) was \$1.6m. If the event happened a week earlier, this amount would have been credited to all resources with a CSO.
- On Labor Day, EE resources were assumed to have Actual Capacity Provided of zero, and thus would have been penalized in the amount of ~\$9.4m
- The difference is charged to all resources with a CSO, per section III.13.7.4.(a).
 - $\$7.8\text{m} = \$9.4\text{m} - \$1.6\text{m}$
 - $\$7.8\text{m} / 35,001 \text{ MW of CSO} = \$222/\text{MW}$

Alternative Approach

- Per the FERC order and the ISO filing letter at page 2:
 - “...ensure that Capacity Performance Payments for energy efficiency resources are calculated only for scarcity conditions that occur during hours in which demand reduction values are calculated for the applicable resource type pursuant to the Tariff.”
- During all On Peak and Seasonal Peak hours, include EE in all portions of the calculations for Actual Capacity Provided, Performance Score, and Balancing Ratio
 - Current approach is correct
- Outside of these hours, “exclude” EE from all of these calculations
 - Actual Capacity Provided and Performance Score need not be calculated for EE, as they are irrelevant. The resource cannot be granted payments nor penalties
 - Would require a change to current calculation of Balancing Ratio

Alternative Approach (con't)

- Balancing Ratio = (Load + Reserve Requirement) / Total CSO
- Outside of EE performance hours, remove CSO associated specifically with energy efficiency from the denominator.
 - Balancing ratio on Labor Day would change from ~0.72 to ~0.77 (on average across all 32 intervals)
 - Would result in the normal situation of an overcollection of \$1.6m.
 - Refund to all resources – **excluding EE** – of ~\$50/MW.
- All resources that are subject to payments or penalties share in the refund.
- This approach truly excludes EE from Pay for Performance rules outside of their performance hours, as the FERC order intended