Energy Efficiency (EE) Participation in NYISO's ICAP Market

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NYISO Competitive Markets as Platform to Achieve CLCPA Goals: NYISO Power Trends 2021

- "One thing that will not change is the NYISO's . . . view that wholesale electricity markets continue to provide the strongest, most powerful platform from which we can meet the needs of the grid in transition."
- "Leveraging wholesale electricity markets, which minimize costs and investment risks to consumers while promoting innovation, is the most powerful means to drive needed energy infrastructure investment to achieve the CLCPA goals."

NYISO Power Trends 2021

- "Competitive wholesale electricity markets provide a powerful platform to attract and use new technologies essential to achieving the transformation envisioned by the CLCPA."
- "As the NYISO collaborates with asset owners, stakeholders, and policymakers to take the aggressive actions necessary to build the grid of the future, we must continue to leverage these competitive markets that shield customers from investment risk."

Energy Efficiency is a Critical Resource for Achieving CLCPA Goals

- CLCPA short-term goals for clean energy resources include 185 TBtu of customer-level energy reduction statewide by 2025.
  - The PSC identified EE as playing "a key role in the achievement of New York State's clean energy goals" (NENY order).
  - Need for energy efficiency is amplified by the transition to clean energy for heating and transportation, which will have a significant impact to increase total electric demand.

Energy Efficiency is a Critical Resource for Achieving CLCPA Goals

- Energy efficiency provides a variety of economic and social benefits by *reliably and permanently reducing demand* and thereby avoiding infrastructure costs.
  - EE lowers customer bills and lessens inequitable energy burdens.
  - EE can enhance effectiveness of other DERs, like solar and batteries.
  - EE creates non-energy benefits, such as positive health impacts from lower emissions, improved comfort and satisfaction in buildings, and increase property values.
  - EE is a tool for driving clean energy solutions into environmental justice communities.

FERC Order 2222 Definition of Distributed Energy Resource Includes Energy Efficiency

- "[We] define a ***distributed energy resource*** as 'any resource located on the distribution system, any subsystem thereof or behind a customer meter.' These resources may include, but are not limited to, resources that are in front of and behind the customer meter, electric storage resources, intermittent generation, distributed generation, demand response, ***energy efficiency***, thermal storage, and electric vehicles and their supply equipment – as long as such a resource is 'located on the distribution system, any subsystem thereof or behind a customer meter.'" (para 114)

- "***we require that each RTO's/ISO's rules do not prohibit any particular type of distributed energy resource technology from participating in distributed energy resource aggregations***." (para 141)

NYISO Forecasts a Significant Role for EE

- NYISO currently considers EE as a load modifier in NYISO forecasts.
- In its baseline forecast, NYISO estimates that EE and codes and standards **(EE/C&S) contribution will grow ~10x between 2022 and 2040**.
  - In its 2021 Gold Book, NYISO estimates peak load reduction of 8,229 MW (column b in table i-1c) and 47,768 GWh (column b in table i-1b) from EE/C&S by 2040. Compare with the 2022 forecast of 860 MW and 5,096 GWh. The 2040 goal estimate is almost 10 x the estimate for 2022.
- The **difference between the EE/C&S contribution in the Low Load Scenario and High Load Scenario by 2040 is 2,605 MW and 15,075 GWh**, which demonstrates how EE plays a critical role for avoiding significant infrastructure costs.
  - EE/C&S in Low Load Scenario = 9,221 MW (column b in Table I-16b) and 53,529 GWh (column b in Table I-16a) by 2040; EE/C&S in High Load Scenario = 6,616 MW (column b in Table I-16b) and 38,454 GWh (column b in Table I-17a) by 2040.

Role For Merchant EE Providers

- While the TO and NYSERDA programs will help fulfill some of the State's EE goals, merchant EE providers can contribute to the effort if they are allowed to participate in NYISO's competitive capacity market.
- Merchant investors in EE do not rely on captive ratepayers for SBC type charges.
- Merchant EE providers participation in the capacity market could lead to more competitive and cost-effective solutions and reduce the overall cost burden on ratepayers.

EE Participation in ICAP Market Facilitates Full Compliance with Order 2222

- The current method of treating EE as a load modifier is one method to account for this resource in the ICAP market.
  - This method should continue as one viable option.
  - However, EE as a reduction in demand for capacity as the *only* option does not comply with FERC Order 2222.
- ICAP market design should *also* allow EE to participate as a supply resource in ICAP auctions, if an EE provider decides to choose this option.
- An efficient capacity market should allow investors in EE as a capacity supply resource the opportunity to compete with other resources to provide the required capacity.
- As a clean and reliable resource needed for NY's energy transition, if EE resources can compete on price, they should be allowed to clear and earn capacity revenue.

Supply-Side Participation Provides Operational Benefits and Improves Market Outcomes

- **Yield Binding Capacity-Market Commitments:** Supply-side participation of EE requires binding forward contract commitments, which enable the market operator to have more confidence in the quantity and delivery of EE measures relative to demand-side participation, which does not require any binding supplier commitments.
- **Improve Load Forecasts:** Accounting for EE entirely on the demand side understates the volume of EE measures forecasted by the ISO due to the inherent conservatism in the load forecasting process.
- **Reduce Barriers to EE:** Allowing supply-side participation of EE reduces market barriers for merchant EE providers, which means certain cost-effective EE resources targeted by merchant providers would not be developed without supply-side treatment.

The Brattle Group prepared two new papers that highlight the importance of EE participation as a supply-side resource in capacity markets

- *The Benefits of Energy Efficiency Participation in Capacity Markets* (April 2021)
- *Efficiency in the Midcontinent ISO Resource Adequacy Construct: The Advantages Of A Supply-side, Gross Accounting Framework* (April 2021)
  - Both papers are available at https://info.aee.net/how-to-optimize-energy-efficiency-benefits-in-wholesale-markets.

Proven Experience in Other RTOs

- Several adjacent RTOs have a track record of more than 15 years of successful integration of EE as a capacity resource.
- Regional variations exist, but all allow EE to participate as capacity supply.
- Sufficient requirements must and do exist to ensure reliable capacity delivery.
- Implementation in NYISO should look similar, with appropriate specifics to account for unique ICAP market design.

Design Components of EE Proposal

The following design elements need to be developed further:

- **Qualification** of EE providers;
- **Participation criteria** in various capacity auctions;
- **Verification**: Proof of Delivery, adequate tracking and reporting, financial penalties for non-performance; and
- **Proper Accounting** of EE resources.

Qualification of Merchant EE Providers

- Like other new capacity supply resources, new EE resources should be subject to qualification for upcoming auctions.
- Proponents of EE should demonstrate industry experience, availability of funding, and valid plan to deliver proposed MW at or before start of delivery year.
- Only qualified organizations with clear plans should be allowed to qualify.

Participation of Merchant EE Providers

- Once qualified, EE providers should be allowed to participate in all auctions like any other capacity resource.
- EE providers should be allowed to gain or shed capacity obligations, or trade with other qualified capacity resources, in the same manner applied to any capacity resource.
- Once obligated, EE provider must demonstrate performance for entire life of the resource, in amounts up to or exceeding obligated quantity.

Verification of Merchant EE Providers

- EE resource owner must demonstrate delivery of obligated MW.
- Although Measurement & Verification (M&V) of EE may be new to many market participants, the M&V industry has existed for several decades with a track record of proven results.
- M&V activities include verification of measure installation, calculation of electrical savings, impact of various factors on total savings, and coincidence with season peak hours.
- M&V requirements already in use in NY may be suitable. Neighboring RTOs use protocols consistent with the **International Performance Measurement and Verification Protocol (IPMVP®).**

Proper Accounting of Energy Efficiency

- Each MW of EE must be accounted for in *either* the supply-side or the demand-side, *but not both*.
- Neighboring regions take different approaches to reconstitute (or "add-back") some amount of supply-side EE to correctly account for MWs of EE to be served.
- The approach used in NY should be tailored to the timing and specifics of NYISO's ICAP market.

Summary of the Benefits of EE Participation in ICAP Market

- Consistent with NYISO's commitments to leverage markets to drive needed energy infrastructure investment to achieve the CLCPA goals.
- Full compliance with FERC Order 2222.
- A more efficient ICAP market that sets and meets more accurate capacity requirements.
- Allows the opportunity for additional merchant investment in the ICAP market, producing a more efficient market for the ultimate end-use customers.

Next Steps

- NYISO should indicate in its Order 2222 compliance filing with FERC in July 2021 that EE is not currently included in its DER participation model, but that it commits to expeditiously working with stakeholders to expand the model to facilitate EE participation in the capacity market, which it will include in a separate filing with FERC by a specific date.
- A participation model for EE (whether an independent model or in conjunction with other DER participation) should be developed.