UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

	)	
New York Independent System Operator, Inc	)	**Docket No. ER21-2460-000**
	)	

MOTION TO INTERVENE OUT OF TIME AND REPLY COMMENTS OF THE NYISO MARKET MONITORING UNIT

Potomac Economics moves to intervene and file reply comments concerning the New York Independent System Operator's ("NYISO's") filing on July 19, 2021 in the above captioned proceeding. These reply comments are limited to addressing arguments raised by Sustainable FERC Project, Natural Resources Defense Council, Advanced Energy Economy and the City of New York (collectively, "Clean Energy and Consumer Advocates", hereafter referred to as "Advocates") on August 23, 2021 requesting that the Commission direct NYISO to pursue tariff changes that would allow energy efficiency aggregations to participate directly in the NYISO capacity markets as supply side resources.

Potomac Economics is the Market Monitoring Unit ("MMU") for NYISO and is responsible for monitoring the electricity markets. Potomac Economics has a unique perspective and responsibility that cannot be represented by any other party. It should therefore be permitted to intervene herein.

I. NOTICE AND COMMUNICATIONS

All correspondence and communications in this matter should be addressed to:

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II. MOTION TO INTERVENE

Potomac Economics is the Market Monitoring Unit ("MMU") for the NYISO. In this role, we are responsible for monitoring and evaluating the performance of the NYISO's capacity, energy, and ancillary services markets. We also are responsible for recommending market design changes to improve the performance of the markets and evaluating design changes proposed by the NYISO or market participants. As the MMU, Potomac Economics has a unique responsibility to ensure the efficiency and integrity of the NYISO power markets. Potomac Economics' interests, therefore, cannot be adequately represented by any other party.

Good cause also exists to permit Potomac Economics' motion to intervene out of time as it has a significant interest in this proceeding.[1] Permitting Potomac Economics to intervene at this time will not prejudice any party in the proceeding as the Commission has not yet acted on the NYISO's filing. Potomac Economics agrees to accept the record in this case as developed to

1 *See, e.g.*, 18 C.F.R. § 385.214(d) (2007) (requirements for motion for late intervention); *Consolidated Gas Supply Corp.*, 20 FERC ¶ 61,305, at 61,599 (1992) (factors considered by Commission in determining whether good cause exists to permit late intervention).

date. For these reasons, Potomac Economics respectfully requests that the Commission grant this motion for leave to intervene out of time in this proceeding.

III. INTRODUCTION AND SUMMARY

In these limited comments, we respond to arguments raised by the Clean Energy and Consumer Advocates ("Advocates") regarding the participation of energy efficiency ("EE") in the capacity market. The Advocates claim that Order 2222 requires direct participation of EE in the capacity market, argue in favor of a supply-side participation model, and request that the Commission direct NYISO to initiate a stakeholder process to "examine EE applications and to identify, evaluate, and rectify barriers to entry of EE resource aggregations".[2]

We agree with the Advocates that investments in EE provide substantial benefits. An efficient market should efficiently reward demand-side participants for reducing their peak load. However, we disagree with the assertion that a supply-side participation model is necessary or superior for EE. Each resource type should interact with the wholesale market in a way that is consistent with its unique characteristics. The most accurate and straightforward way to compensate EE is for buyers and end-use customers that reduce their peak load to face lower capacity and energy charges based on their actual load, which includes the EE load reductions.

The Advocates claim that the supply-side treatment of EE is needed to address barriers to participation by merchant EE providers. However, we do not believe this is true for two reasons. First, such providers can engage with retail customers to sell EE, since such customers receive savings from EE that include the capacity costs savings (as well as energy and allocated infrastructure cost savings). Second, most EE investments in New York are promoted through subsidies through state and utility programs. It is generally advantageous for EE providers to

2 Protest of Clean Energy and Consumer Advocates, August 23, 2021 at p. 33.

participate in these programs rather than operate on an unsubsidized pure-merchant basis. Consequently, there is no barrier to merchant EE participation that needs to be addressed by creating a supply-side option for EE providers. This concern is addressed further in Section III.

A mandatory supply-side EE model would not significantly improve opportunities for EE resources to be appropriately compensated, but it would have major negative drawbacks. In our role as independent market monitor in other markets with supply-side EE models, we have observed several key disadvantages of this approach including:

- Inaccurate Capacity Accreditation – Unlike distributed generation or active demand response, EE is a passive reduction in load that cannot be directly controlled or measured. Accrediting EE as a supply resource requires the use of statistical estimates that rely on many uncertain assumptions, while a demand-side participation model incorporates them into the overall load forecast. Additionally, it can be very difficult to estimate the savings that are *caused* by the EE participant. (See Section V.A for further discussion)

- Adverse Incentives – Treating EE as supply creates a strong incentive to over-estimate savings since the estimated savings are the basis for the participant's compensation. This issue is especially problematic since estimated savings can be difficult or impossible to measure and verify. At least two referrals of such conduct have been submitted to FERC enforcement for such conduct in markets that allow EE to participate on the supply side. When EE remains on the demand side, these incentive concerns do not arise because compensation is not based on participants' estimates of the savings. (See Section V.B for further discussion)

- Cost Shifting to Other Customers – Supply-side treatment of EE leads to shifting of capacity charges among and/or within load areas. This is necessary to collect the additional capacity revenues that are paid to EE suppliers. As a result, since loads that benefit from lower capacity obligations do not bear the costs of the payments to the EE providers, these costs must be shifted to other customers in the market. (See Section V.C for further discussion)

- Double-Compensation for EE Providers – It is extremely difficult to prevent double compensation for the same service when EE is treated as supply. This is because an end-user may be compensated through both a reduction in the capacity component of its retail bill and indirectly through the wholesale capacity payment for the same reduction in load. This double compensation necessarily comes at the expense of other customers. When end-users have access to retail rate structures that incentivize peak load reduction, the likelihood of double compensation is increased. (See Section V.D for further discussion)

- Inaccurate Load Forecasting – Supply-side treatment of EE introduces additional complexity in load forecasting by requiring the ISO to anticipate the quantity of EE supply that will be offered in the next auction when estimating 'gross' load. In other markets this has led to large errors in the gross load forecast that inflated capacity market demand to the detriment of consumers. (See Section V.E for further discussion)

Supply-side treatment of EE is not only unnecessary to appropriately reward investments in EE, but it also comes with major costs as described above. Therefore, we encourage the Commission to refrain from mandating that the NYISO pursue such an approach. The remainder of these comments provide additional discussion of the disadvantages of a supply-side EE model.

IV. A SUPPLY SIDE EE MODEL IN NYISO WOULD PRIMARILY DIRECT PAYMENTS TO RATEPAYER-FUNDED UTILITY PROGRAMS

The Advocates assert that a supply-side EE mechanism is needed to address barriers faced by "merchant (non-utility)" EE providers.[3] However, utilities and government agencies in New York play leading roles in implementing EE through programs that are supported by retail rate charges authorized by the Public Service Commission.[4]

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[3] Protest of Clean Energy and Consumer Advocates, August 23, 2021 at p. 23.

[4] In 2020, the New York State Public Service Commission authorized incremental electric energy efficiency budgets for the state's investor-owned utilities totaling $900 million for the period 2021-2025, bringing the total

New England provides a useful comparison because ISO-NE has allowed supply-side participation of EE since 2010 and most New England states also strongly promote EE. In ISO-NE, merchant EE accounted for just 18 MW (0.7 percent) of total EE participation in the last Forward Capacity Auction, while the vast majority was made up of utility (2,471 MW) and government (325 MW) programs.[5] Hence, the most significant impact of supply-side treatment of EE would be to direct large capacity payments towards utility programs whose program goals and budgets are largely determined through the regulatory process. Such payments are not needed to fund EE investments since the funding is provided through the retail rates, rather they simply shift the ultimate responsibility for the costs to other loads in the capacity market that are not benefiting from the energy efficiency. In addition, this supply-side structure introduces problems associated with measurement, double compensation, adverse incentives, and load forecast error described in the following section. It is thus far from clear that a mandatory supply side model for EE is an efficient means to promote economic EE investment in NYISO.

V. A SUPPLY SIDE EE MODEL IS NOT NECESSARY AND CREATES SIGNIFICANT PROBLEMS

A. Supply Side Treatment of EE Introduces Risk of Inaccurate Accreditation

Supply side treatment of EE would require the NYISO to estimate, monitor and verify the demand reduction provided by each EE aggregation. This process adds significant complexity and uncertainty, with the potential for inaccurate accreditation. In very few cases, the impact of EE can be precisely measured (such as replacement of a piece of equipment that is metered individually before and after the replacement). In almost all cases, the impacts must be

utility electric EE program budgets to $1.9 billion for that period. See "Order Authorizing Utility Energy Efficiency and Building Electrification Portfolios through 2025", NYPSC Case 18-M-0084, January 16, 2020.

5 Avadhish Dewal, "Fifteenth Forward Capacity Auction for the 2024-25 Capacity Commitment Period – Demand Capacity Resource Summary", presentation to ISO-NE Demand Resources Working Group on April 28, 2021.

estimated based on a combination of statistical correlations and assumed parameters. A variety of key inputs inevitably depend on stipulated assumptions. Examples include the degree to which EE-driven load reduction was directly caused by the aggregator receiving credit (as opposed to reductions that would have occurred anyway), the period of time for which savings attributed to the aggregator are incremental to what would otherwise have occurred, and a variety of assumptions about how the EE product will be operated. For example, a program intended to promote energy efficient light bulbs must make assumptions about:

- What light bulb the consumer would have otherwise purchased, if any;
- Whether the bulb installed; and
- Whether the light bulb is likely to be on in peak load hours, which depends on where it is assumed to have been installed;

Other markets that allow supply side participation of EE address these challenges through complex frameworks to estimate and monitor EE impacts. Estimating the impact of each EE resource puts the ISO in the position of having to oversee and audit a potentially large number of programs. These frameworks have been unable to ensure accuracy. Alternatively, when EE is properly reflected on the demand side, it directly results in a reduction of the actual measured load of the individual end-use customer and the load area where it is located.

Supply-side accounting of EE would become increasingly complex and uncertain as the NYISO moves towards an enhanced capacity accreditation framework. The NYISO is presently considering MRI and ELCC techniques to accredit capacity suppliers.[6] These techniques recognize that as new technologies are deployed, the timing of critical hours for resource adequacy may reflect a constantly evolving array of circumstances (such as evening net peaks,

[6] Zach T. Smith, Ryan Patterson and Emily Conway, "Capacity Accreditation", presentation to NYISO Installed Capacity Working Group on August 30, 2021.

days of low intermittent output, winter peaks, and others) and not just the annual summer peak load hour. To be consistent with the standards applied to other capacity suppliers under such an approach, estimates of EE load reduction would need to continually reflect the probabilistic timing of system needs. This would exacerbate the complexity and inaccuracy of the process, compared to demand-side accounting of customers' actual metered load.

B. Supply Side Treatment of EE Produces Adverse Incentives

Allowing EE to remain on the demand-side of the market provides more efficient incentives because compensation for participants and customers that invest in EE is based on the customer's actual savings rather than savings that are estimated by the participant or less closely tied to *estimated* load reduction under peak conditions. Therefore, participants do not have the same ability to increase their market-based compensation by asserting inflated savings.

In contrast, transitioning to a supply-side model requires that the savings be estimated, measured and verified as discussed above. Because of the inherent difficulties in measuring and verifying such savings, supply-side EE approaches create adverse incentives to exaggerate savings. For example, some EE providers in other markets have procured point-of-sale data from retailers for relatively efficient products, then used this data to calculate savings by assuming the consumer would have purchased relatively inefficient products. In these cases, the providers may or may not provide substantial incentives to cause consumers to procure EE products they would not have procured otherwise. At the highest level, supply-side EE approaches generally create incentives to: a) maximize the estimated savings (not necessarily the actual savings) and b) minimizing the costs of the program, which can be accomplished by not offering substantial rebates or other incentives to customers. This is different than most state-sponsored EE programs where the bulk of the funding is used to provide incentives for customer to engage in EE. These adverse incentives have contributed to extreme cases where exaggerated savings were claimed by participants that were not taking material actions to facilitate incremental EE actions by consumers. At least two referrals of such conduct have been submitted to FERC enforcement for such conduct in markets that allow EE to participate on the supply side.

However, less extreme cases that may result from the supply-side EE incentives likely raise larger concerns because they are more difficult to monitor and identify. Since the savings are highly assumption-driven, subtle changes in the assumptions that are difficult or impossible to validate can substantially inflate the estimated savings. These incentive concerns related to the RTO markets do not exist when EE remains on the demand side of the market since all compensation is based on actual consumption. Finally, even if the actual savings could be measured and verified perfectly, which is not possible for many types of EE, doing so would only mitigate these incentive concerns. It would not address any of the other concerns of treating EE as supply-side resources discussed in these comments.

C. Supply Side Treatment of EE Leads to Shifting Capacity Costs to Other Loads

Supply side treatment of EE generally results in shifting capacity costs among loads. This is because capacity payments to EE resources must be paid for by increasing the total amount of capacity procured. In other markets where EE is treated as supply, capacity market demand reflects estimated 'gross load' (counterfactual load that would occur in the absence of EE that participates as supply), which is higher than actual 'net' load. This step is necessary so that the same load reduction is not both treated as a supply resource and deducted from the load forecast. This extra demand is the source of capacity revenues that are paid to EE suppliers.

Demand that is 'added back' to gross load must be allocated among capacity buyers. The manner in which this allocation is made affects the distribution of remaining capacity costs after the impact of the EE is accounted for. If demand is added back to all load-serving entities

(LSEs) and not just the one whose load was reduced by an EE asset, then capacity costs are artificially shifted among LSEs.[7]

For example, suppose that Utility A has a coincident peak load of 20 MW, and all other utilities have total coincident peak load of 90 MW. If Utility A implements EE measures that reduce its load by 10 MW, Utility A's load becomes 10 MW and the system peak load is 100 MW. Under accurate demand-side accounting, Utility A should pay for 10 MW of capacity and all other utilities should pay for 90 MW. However, if the 10 MW EE resource is treated as a supply resource and load is reconstituted across utilities proportional to their load, then the system's gross peak load is 110 MW, Utility A will have a gross peak load of 11 MW and all other areas will have a gross peak load of 99 MW. In this example, supply-side treatment of EE causes the capacity obligation of customers outside of Utility A to increase to a level that exceeds their share of the overall load.

In principle, cost-shifting among load areas can be reduced by allocating reconstituted gross load to the same load areas where EE investments are made. However, cost shifting also occurs *within* the load area where the EE investment is made, with some end-use customers ultimately bearing a capacity obligation exceeding their actual load. This cost shifting is not the intended purpose of EE investments, but it is a major side effect when EE is treated as supply instead of as a load reduction.

7 This approach is taken in ISO-NE – see Potomac Economics, *2020 Assessment of the ISO New England Electricity Markets*, June 2021 at p. 69.

D. Supply Side Treatment of EE Results in Double Compensation for Some Resources

It is extremely difficult to prevent double compensation for provision of the same service when EE is treated as a supply resource. The relevant service is the EE investment's contribution to resource adequacy by reducing peak load. Wholesale capacity payments are passed through by utilities or load-serving entities to their customers' retail bills. Hence, an end-use customer that reduces its load can reduce its share of capacity payments through its retail rate savings. At the same time, if that customer receives a capacity payment directly or indirectly (e.g., through a third-party installer with whom it contracts) for the same load reduction, then that load reduction is remunerated twice. This is possible only because capacity payments by other customers are increased when EE is treated as supply.

Some end-use customers may not have access to retail rate structures that fully value their contributions to reducing system-wide peak load. This is primarily an issue of retail rate design. However, it is worth noting that double-compensation of EE treated as supply would likely become even more problematic as retail rate design evolves towards more targeted rate structures.[8] If an end-use customer has access to rates that reflect both the capacity price and the customer's peak contribution, a wholesale capacity payment for EE would surely duplicate the reward that customer would receive through reducing its peak load.

The Advocates argue that without a supply-side participation model, investments in EE may result in savings for retail consumers but provide no compensation for third-party merchant EE providers who invest and take risk in the project. This is simply not true. In practice, these entities cannot be considered as completely separate in the context of an EE investment. For

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8 For example, many commercial and industrial customers in New York are already exposed to demand-billed and time-varying retail rates, and utilities have introduced opt-in pilot rate structures for residential customers featuring demand-based charges in response to the NYPSC's Reforming the Energy Vision (REV) initiative.

example, suppose a merchant EE provider that earns capacity revenues offers efficient devices to end-use customers at discounted prices. If the end-use customers pay for at least part of the cost of the devices, then the EE provider's ability to offer the resource into the capacity market is subsidized by the retail savings that customers expect to earn from the same load reduction. In this example, the retail customer and the provider together are compensated twice for a single load reduction.

The Advocates may be correct in stating that there are factors which limit the participation of non-utility providers in the EE market. These may include less favorable treatment of merchant providers compared to utility programs that are subsidized through regulated charges and/or retail rate structures that don't adequately encourage reduction of peak demand for some customers. However, they do not justify the need for wholesale market changes that would result in widespread cost-shifting and double compensation in order to offset perceived deficiencies in other areas.

E. Supply Side Treatment of EE Does Not Inherently Improve Load Forecast Accuracy

The Advocates argue that supply side treatment of EE will improve NYISO's load forecast by incentivizing EE aggregators to provide binding estimates of EE deployment to the ISO.[9] While there is merit to improving information sharing, benefits to the NYISO load forecast are likely to be small given that the NYISO's capacity market is operated on a spot basis and the final peak load forecast used in the capacity market is determined just six months prior to the first summer auction. It would be difficult to ensure that EE offered in the spot auction just prior to the delivery month is truly incremental to baseline efficiency improvement that would

9 Protest of Clean Energy and Consumer Advocates, August 23, 2021 at p. 26-27.

ordinarily be captured in the net load forecast. This is because NYISO's load forecast considers prior year load and thus is affected by the actual impact of recent trends in EE deployment.

The experience of ISO-NE suggests that inclusion of EE on the supply side may actually increase load forecast error in the capacity market. This is because the need for a mechanism to add back EE to gross load requires the ISO to anticipate the amount of EE that will participate as supply in each auction. This introduces an additional administrative source of forecast error beyond the ordinary challenge of forecasting net load. For example, we have found that in ISO-NE, the gross load forecast used in the FCA 15 auction (conducted in February 2021) was artificially inflated by at least 947 MW due to errors in estimating EE participation, and would have been inflated by 378 MW even after methodological improvements proposed by ISO-NE and approved by the Commission in Docket ER20-2869.[10] It is thus not clear that treatment of EE as supply would result in a net improvement to the accuracy of the load forecast used in the capacity market.

VI. CONCLUSION

For the reasons discussed in these comments, we respectfully recommend that the Commission refrain from mandating that NYISO implement a supply-side EE participation framework or initiate stakeholder proceedings to pursue such a framework, as requested by the Advocates. A mandatory supply side model would likely provide few benefits in terms of encouraging additional economic EE, while creating a host of problems associated with measurement and accreditation, cost shifting, adverse incentives, double compensation, load forecast modeling.

[10] Potomac Economics, *2020 Assessment of the ISO New England Electricity Markets*, June 2021 at p. 67-68.

Fundamentally, such an approach is unnecessary because customers that adopt EE measures can benefit directly or indirectly from reduced capacity obligations when EE is reflected on the demand side of the market.

Respectfully submitted,

/s/ David B. Patton

David Patton
President
Potomac Economics, Ltd.

September 14, 2021

CERTIFICATE OF SERVICE

I hereby certify that I have this day e-served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 14th day of September 2021 in Fairfax, VA.

/s/ David B. Patton

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