UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Modernizing Electricity Market Design:	)	Docket No. AD21-10
Resource Adequacy in the Evolving	)	
Electricity Sector	)	

PRE-CONFERENCE STATEMENT OF ISO NEW ENGLAND INC.

ISO New England is pleased to offer these written comments in advance of the first conference in this series, to be held on March 23, 2021. We hope these comments facilitate the Commission's consideration of capacity markets as a means of ensuring resource adequacy. As indicated herein and in the attached joint statement with the New York ISO and PJM, ISO New England remains committed to its capacity market as an essential tool to ensure reliability.

New England's Forward Capacity Market Plays a Critical Role

The objective of New England's Forward Capacity Market (FCM) is to cost-effectively meet the region's reliability objectives by ensuring that there are adequate numbers of resources able to perform as expected.[1] FCM meets this objective by paying sufficient compensation in excess of energy and ancillary services market revenue – the "missing money" – to procure supply to meet the mandatory "1-day-in-10-years" standard promulgated by the Northeast Power Coordinating Council.

This function includes compensating resources that do not run often, to ensure they remain available if they are needed for reliability. As New England's fleet adds more low marginal cost, intermittent resources, revenues in the energy market will be systematically reduced – just as we are increasing the need for those infrequently-run balancing resources to provide energy when intermittent and other "just in time" resources cannot. As a result, the capacity market's "missing money" function will be increasingly important to ensure that we retain sufficient balancing resources to ensure reliability.

In addition to retaining needed resources, FCM uses a transparent price signal to attract cost-effective new entry when the market has fewer total resources than the 1-in-10 requirement. Equally important, FCM must also provide a transparent price signal for higher-cost resources to exit when the market has more resources than the 1-in-10 requirement.

FCM's capacity demand curves are expressly designed to provide those price signals.[2] Using a novel marginal-reliability-based capacity demand curve, the market directly links the

[1] *See, e.g.,* Performance Incentives Market Rule Changes, Transmittal Letter of ISO New England Inc. at pp. 26-27 and Testimony of Matthew White on Behalf of ISO New England Inc. at pp. 4-5, *ISO New England Inc.,* Docket No. ER14-1050-000 (Jan 17, 2014).

[2] *See* Prepared Testimony of Christopher Geissler and Matthew White at pp. 40-47, Demand Curve

price paid to the incremental reliability value of the procured capacity. Specifically, the curve's engineering-economic basis quantifies the marginal reliability impact of each possible increment of capacity procured. The capacity demand curve prevents the market from awarding capacity obligations to resources with incremental costs in excess of the reliability benefits, whether the system is short (where reliability benefits associated with capacity are significant) or long (where the reliability benefits associated with capacity are modest).[3]

The Ancillary Services Markets Are Important but Cannot Supplant the Capacity Market

Ancillary services markets play a vital role in compensating resources for specific energy production characteristics. Today, they are focused on procuring sufficient on-call supply to cover one or two generator outages. In the evolving power system, the ancillary services markets will, over time, expand to cover greater energy supply contingencies; the region may also want to consider markets for specific temporally-important services such as flexibility (i.e., fast ramping) and sub-cycle energy injections to support system frequency (i.e., inertia). These new ancillary services markets can help to create incentives for the development of resources with the characteristics needed in the evolving power system, including flexibility and energy storage, and their creation would move money into these markets (and out of the capacity market).

It has been suggested that ancillary services markets could eventually supplant the capacity market's role in ensuring resource adequacy. While this concept is worthy of further study, we are skeptical that it is practically achievable, and certainly not in the next decade, given our experience with the difficulty in designing and securing approval of new (and potentially expensive) ancillary services markets. This is particularly true were we to try to parse the necessary reliability services currently encompassed in the capacity market.

Most significantly, however, ISO-NE does not believe that the energy and ancillary services markets can produce anywhere near the level of revenue necessary to achieve resource investment consistent with the 1-in-10 standard that FCM currently meets. In fact, by our calculations, to achieve the required level of resource adequacy, the energy and ancillary services markets in New England would have to be designed based on a Value of Lost Load of approximately $180,000/MWh – or 20 times higher than the $9,000/MWh energy price posted in ERCOT during the recent storm.[4]

Design Improvements, *ISO New England Inc.,* Docket No. ER16-1434-000 (Apr. 15, 2016).

[3] *Id.* at pp. 17-33.

[4] This figure is the MRI Scaling Factor for the fifteenth Forward Capacity Auction. The Scaling Factor is the expected long-run marginal cost to acquire sufficient resources to achieve a loss of load equal to 0.1 in New England over time. The value is updated and published annually as part of the FCM Demand Curve development process and is $184,702/MWh for the most recent completed auction. *See* details at https://www.iso-ne.com/static-assets/documents/2020/08/a02_pspc_2020_08_25_demand_curves_v2.xlsx, 'Readme' tab, Scaling Factor values.

The Forward Capacity Market Must Evolve

While we believe that capacity markets are still the right vehicles for ensuring resource adequacy, they must evolve. In part, FCM must transition from achieving "resource adequacy" to promoting "energy adequacy." "Resource adequacy" is a term that evolved in centrally planned, cost of service systems. It was historically linked to the procurement of sufficient nameplate generation capacity (appropriately weighted by historic outage rates) and it generally assumed that generators had sufficient, and stable, input sources of energy to convert to electricity when called upon. We know from experience that such a definition of resource adequacy is no longer sufficient, ***because the energy inputs to generators are no longer sufficient or stable under a variety of conditions***. Instead, the capacity market must evolve to ensure "energy adequacy" – resources that can provide on-call electrical energy for extended periods when energy is unavailable from intermittent generation and generation with "just in time" fuel sources.

The introduction of FCM's Pay For Performance (PFP) incentive began this evolution to energy adequacy.[5] Through PFP, the capacity market obligation evolved from an obligation to build and maintain "nameplate" capacity to an obligation to provide the ISO with energy when there are insufficient thirty-minute operating reserves. The next step in the evolution includes a project to revise the capacity accreditation of various resource types, which may require modifications to capacity clearing and qualification procedures to ensure we are not crediting resources for more than their actual reliability benefit to consumers.

Most immediately, the evolution of FCM necessitates examination of the Minimum Offer Price Rule (MOPR). Given the states' more active role in resource procurement and the resulting shift in the resource mix, New England must address concerns about FCM's failure to account for the capacity provided by sponsored resources that do not clear the market as a result of the application of the MOPR. Elimination of the MOPR must, however, be consistent with the maintenance of reliability, which is the primary goal of FCM.

Specifically, without taking additional action, the elimination of the MOPR creates risk for investors in unsponsored resources, because increasing numbers of renewable resources will tend to reduce energy prices and – if the MOPR is eliminated – capacity prices as well. These disincentives matter, because, for many years to come, a reliable power system will continue to be dependent on merchant generation facilities. Accordingly, ISO-NE believes it is important to identify market rule changes that would eliminate the MOPR (and thereby give capacity credit to sponsored resources), while appropriately compensating merchant resource investment for that higher level of risk.

[5] Performance Incentives Market Rule Changes, *ISO New England Inc.,* Docket No. ER14-1050-000 (Jan 17, 2014).

Conclusion

We understand that there are significant challenges ahead. These include facilitating the clean energy transition that our states have spearheaded, while simultaneously continuing to ensure reliability – a task that has achieved even more importance in light of the recent events in Texas. We hope to work closely with our states and stakeholders to meet these challenges.

Thank you for the opportunity to submit these written comments

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Foundational Market Objectives for a Reliable Future Grid

The purpose of competitive wholesale electricity markets is to achieve a reliable power system at the lowest possible cost. As public policies to address climate change grow in importance, the imperative to harmonize the competitive wholesale markets with these policies while continuing to ensure grid reliability is abundantly clear.

The three Eastern RTOs/ISOs share similar objectives – and face fundamentally similar challenges – in harmonizing their markets with states' climate policy goals. A number of states are facilitating the development and retention of non-emitting generation resources through out-of-market payments in the form of Renewable Energy Credits (RECs), Zero Energy Credits (ZECs), or contracts. Administrative market rules, such as Minimum Price Offer Price Rules (MOPR), were historically implemented to address (buyer-side) market power in capacity markets – yet today are increasingly viewed as costly to consumers and an impediment to states' development of these non-emitting resources. These costs stem from the potential for consumers to pay for resources to meet public policy objectives but to not receive a credit for those resources' contributions to wholesale capacity markets. Maintaining wide participation in regional, competitive wholesale markets benefits consumers greatly by procuring resources in the most efficient manner. As a result, continuing to apply these (buyer-side) market power rules to resources needed to achieve states' climate policy goals is not sustainable and will not fully serve the regions' needs. A fresh approach is warranted.

In considering a path forward, the three Eastern RTOs/ISOs remain committed to capacity markets. Capacity markets, in combination with robust energy and ancillary services markets, provide significantly less volatile investment price signals than an Energy and Ancillary Services (EAS)-only market. As the competitive wholesale markets transition to recognize states' policy goals, we believe five foundational market objectives should stand as guideposts to ensure a reliable, efficient, and increasingly clean power system in the regions we serve. Some are new, some are simply of renewed importance, and all are consistent with time-tested principles of sound markets. They are:

1 | **New Services to Ensure Continued Reliability.** New market products and services will be needed to ensure the power system can meet current and emerging reliability needs. These may include new ancillary services or forward products, to be developed in tandem with and to support the integration of greater renewable energy, storage, and distributed energy technologies. These new services may be static or vary dynamically with changes in system conditions, and must be sufficiently granular and in the right quantities to manage a wide range of operating conditions. Identifying and developing these new products and services, which may address reliability needs as varied as inertia, reserves, ramping, load following or duration capability, will be an ongoing process as technologies continue to evolve. These needs should be identified proactively to ensure a reliable transition to a clean grid. All resources capable of providing these services should be able to compete to provide these products and services in order to drive innovation and minimize cost to consumers.

2 | **Continued Efficient Integration of Demand-Side Resources into Competitive Wholesale Markets.** The transition to the future grid requires a wholesale market structure that allows for new and existing technologies to compete on equal footing. This includes the capability for wholesale price-responsive demand to play an active role in the wholesale markets, and the integration of a wide array of emerging load-shifting and distributed-resource technologies.

3 | **A Focus on Sound Pricing in the Energy Market.** Efficient, transparent prices are the foundation of all successful markets. We must continue to ensure energy and reserve prices accurately reflect these markets' supply and demand fundamentals, every minute of every day. Sound, transparent, actionable and reasonable pricing of all products and services in the day-ahead and real-time markets provides proper incentives for resources to offer flexibly and to be responsive to real-time changes in the system, particularly as conditions transition between when supply is ample and when it is scarce.

4 | **Accurate Assessment of Resource Capacity Contributions to Resource Adequacy.** It is imperative to value capacity resources accurately based on their contributions to reliability, using methodologies such as determining Effective Load Carrying Capability (ELCC). This allows capacity market accreditation and compensation to be properly aligned with individual resources' expected reliability benefit to consumers.

5 | **Capacity Markets Calibrated to Induce Reliable New Entry and Efficient Exit.** As the resource mix transitions with increasing renewable and limited-energy resources, capacity market incentives must be sufficient to encourage resource entry when needed. Such entry may be caused by retirement of existing, higher-cost generation, reduction in resource capabilities, or other factors or by the expected sustained increase in regional load with electrification of the transportation and heating sectors. Changes will be required over time to properly calibrate capacity demand curves, the benchmark net cost of new entry for generation technologies, capacity zones, and other concepts that support efficient price signals for exit and entry decisions by resource owners. Continued focus on the requirement for resources to perform when needed will also be required.

The five objectives summarized above – some new and others re-calibrated to the evolving grid – will help to harmonize the wholesale electricity markets with environmental policy goals and consumer preferences, ensuring a reliable, competitive, and efficient power system for the future. We believe that by adhering to these principles we can work to facilitate states' ability to pursue their policy objectives in concert with the ISO/RTO-administered, competitive wholesale electricity markets.