

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New England Power Generators Association, Inc. v. ISO New England Inc.)	Docket No. EL14-7-002
)	
Exelon Corporation and Calpine Corporation v. ISO New England Inc.)	Docket No. EL15-23-002
)	
)	
ISO New England Inc.)	Docket No. EL20-54-000

**BRIEF OF ISO NEW ENGLAND INC.
ON ISSUES SET FOR PAPER HEARING**

Pursuant to the Federal Energy Regulatory Commission’s (“Commission” or “FERC”) July 1, 2020 Order on Remand, Instituting Section 206 Proceeding, and Establishing Paper Hearing Procedures¹ (“Order on Remand”) in the above captioned proceedings, ISO New England Inc. (“ISO-NE” or “ISO”) submits this Brief to address the questions posed by the Commission for consideration in the paper hearing procedures.² In support of this Brief, the ISO submits the Affidavit of Dr. Christopher Geissler, Senior Economist for the ISO, and the Affidavit of Alan McBride, Director of Transmission Services and Resource Qualification for the ISO.

¹ *New England Power Generators Ass’n. v. ISO New England Inc., et al.*, Order on Remand, Instituting Section 206 Proceeding, and Establishing Paper Hearing Procedures, 172 FERC ¶ 61,005 (2020).

² Capitalized terms used but not defined in this pleading are intended to have the meaning given to such terms in the ISO New England Inc. Transmission, Markets and Services Tariff (the “ISO Tariff”). Section III of the ISO Tariff is sometimes referred to herein as “Market Rule 1.”

I. INTRODUCTION

These proceedings address the continued need for an administrative pricing mechanism—the “price-lock”—that has been a feature of New England’s Forward Capacity Market since its inception. Under the Forward Capacity Market rules, a new resource can elect to “lock-in” the initial capacity auction price it receives for multiple subsequent years. A resource with a price-lock is then entered into each succeeding Forward Capacity Auction during the price-lock period at an offer price of zero, ensuring it will receive a Capacity Supply Obligation in each successive year of its price-lock period. This mechanism provides the resource with a constant, certain stream of capacity payments during its price-lock period, rather than the Forward Capacity Auction’s (uncertain) actual capacity clearing price each year of the price-lock period. Existing capacity resources are not eligible for the price-lock.

The history of these proceedings and the various challenges to the price-lock are detailed in the Commission’s Order on Remand, and the ISO provides only a brief recounting of that history here. In various proceedings before the Commission in 2014 and 2015,³ certain New England generators challenged the price-lock provisions on grounds that, among other objections, they are unduly discriminatory and suppress competitive prices in the Forward Capacity Market.⁴ The Commission rejected these arguments,⁵ which prompted appeals to the United States Court of Appeals for the

³ *New England Power Generators Ass’n.*, 146 FERC ¶ 61,039 (2014) (“NEPGA Initial Order”), *order on reh’g*, 150 FERC ¶ 61,064 (2015) (“NEPGA Rehearing Order”); *Exelon Corp.*, 150 FERC ¶ 61,067 (2015) (“Exelon Initial Order”), *order on reh’g*, 154 FERC ¶ 61,005 (2016) (“Exelon Rehearing Order”).

⁴ *Id.*

⁵ NEPGA Initial Order at PP 56-60; NEPGA Rehearing Order at PP 17-19; Exelon Initial Order at P 35; Exelon Rehearing Order at P 18.

District of Columbia Circuit (“D.C. Circuit”). On appeal, the D.C. Circuit highlighted seemingly inconsistent decisions between, on the one hand, the Commission’s acceptance of the price-lock extension in New England (and rejection of challenges), and on the other hand, the Commission’s rejection of an earlier extension filing and other modifications to the price-lock rules in the PJM capacity market.⁶ The D.C. Circuit remanded the New England decisions to the Commission in 2018, directing it to review and reconcile the matter.⁷

In its Order on Remand, the Commission explains that in the intervening years since the generators’ complaints were filed, Forward Capacity Market prices have trended downward, and many modifications have been made to the market’s design.⁸ Accordingly, the Commission finds it “appropriate to provide parties an opportunity to refresh the record on which we will address the issues raised in the court’s remand,”⁹ and also “appropriate to consider ISO-NE’s new entrant rules to determine whether they remain just and reasonable and not unduly discriminatory or preferential.”¹⁰ The Commission’s order emphasizes its “concern[] that any potential effects that the current new entrant rules may have on the FCM clearing price may outweigh the certainty and other benefits that the Commission considered when approving those provisions.”¹¹ To aid it in evaluating these concerns, the Commission poses a series of questions regarding

⁶ *New England Power Generators Ass’n v. FERC*, 881 F.3d 202 (D.C. Cir. 2018) (“NEPGA Decision”).

⁷ *Id.* at 213.

⁸ Order on Remand at P 20.

⁹ *Id.* at P 21.

¹⁰ *Id.*

¹¹ *Id.*

the price-lock mechanism.¹²

The ISO appreciates this opportunity to share its present perspective on the matters at issue, and in this Brief provides responses to the Commission's specific questions.

II. EXECUTIVE SUMMARY

The price-lock provisions date to the Forward Capacity Market's inception, and originally afforded a maximum lock-in period of five years. The intent was to reduce risk for entrants by providing them with capacity price certainty for a period of years. Importantly, at the time there was a "vertical" demand requirement in the Forward Capacity Auction, not a sloped demand curve, thereby increasing the likelihood that clearing a new resource could lower prices significantly for several succeeding years.

To further facilitate new generation entry, in 2014 the ISO extended the duration of the price-lock option, from five to seven years.¹³ The extension reflected an abrupt shift from excess supply conditions to tight market conditions at the time; a paucity of new generation development then underway in New England; and the ISO's concern that merchant generation development was impeded by entrants' perceptions of regulatory risks (such as the Forward Capacity Market's history of setting capacity prices via administrative pricing rules rather than market fundamentals).¹⁴

¹² *Id.* at PP 22-24.

¹³ *ISO New England Inc. and New England Power Pool, Demand Curve Changes*, Docket No. ER14-1639-000 (filed April 1, 2014) ("Price-Lock Extension Filing"); Order Accepting Tariff Revisions, 147 FERC ¶ 61,173 (2014) ("Price-Lock Extension Order"), *reh'g denied* 150 FERC ¶ 61,065 (2015) ("Price-Lock Extension Rehearing Order").

¹⁴ Price-Lock Extension Filing, transmittal letter at 10-12; Testimony of Dr. Robert G. Ethier ("Ethier Testimony") at 30-33.

The 2014 price-lock extension was filed with a host of related capacity market reforms, including the removal of several other administrative pricing mechanisms in the Forward Capacity Market; an initial regional (system-level) sloped capacity demand curve; and a limited exemption to the market's minimum offer price rules for state-sponsored renewable resources. Of note, the ISO indicated in its 2014 filing that it "intends to review the need for and length of the lock-in period after there has been a series of successful auctions using the new demand curve design."¹⁵

As the Commission has recognized, the price-lock provisions inherently entail a balancing of competing interests among consumers, investors in new resources, and incumbent generators.¹⁶ The price-lock provisions shift risk from investors in new capacity resources to consumers; and may further shift payments to new capacity resources over time, such that new entrants may be willing to accept a lower initial capacity price because the price-lock provisions provide a greater assurance of cost recovery during a multi-year price-lock period. As discussed in greater detail in Section IV.A.5, the latter indisputably results in different capacity payment rates for new and existing resources that have nominally identical Capacity Supply Obligations.

Much has changed in New England since the ISO last addressed the price-lock in 2014. It is, therefore, an appropriate time to re-evaluate the need for the price-lock, and to reconsider whether the mechanism continues to be justified in light of the impacts it has on the market and different market participants.

¹⁵ Price-Lock Extension Filing, transmittal letter at 11.

¹⁶ See Price-Lock Extension Order at P 56 (finding that the price-lock extension was "an appropriate way to provide investor assurance" because it achieved a "reasonable balance between incenting new entry and protecting consumers from very high prices" in New England).

Since 2014, the markets have attracted significant new supply resources, even as electricity demand has trended generally downward over the last many years. Numerous enhancements to the Forward Capacity Market design have also been made, several of which help resolve concerns that contributed to the perceived regulatory risks motivating the price-lock extension in 2014. In addition, enhancements to the energy and ancillary services markets have reduced the overall costs to resource developers that must be recovered in the capacity market—often referred to as the (energy and ancillary services markets) “missing money.” Moreover, technological advancements have improved the efficiency of new generation resources over time, and that has further reduced this “missing money.” Together, these developments have led to a significant reduction in the estimated net cost of new entry in New England since 2014.

As the ISO explains in this Brief, a clear directional conclusion from the markets’ evolution is that the price-lock is no longer as important as it once was in enabling the region to achieve the reliability objectives of the Forward Capacity Market. The totality of the observations throughout this Brief cast reasonable doubt upon the necessity of continuing the administrative price-lock mechanism.

However, the available data discussed herein do not permit the ISO to draw definitive conclusions on certain questions posed by the Commission, nor to assert firmly how new entry decisions would differ (retrospectively or prospectively) in the absence of the price-lock provisions. Certain impacts of the price-lock rules are clear, based on economic considerations alone; but those considerations, and extant data, cannot dispositively answer the question of how potential new entry may differ in New England in the future with or without the price-lock mechanism.

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In Section III of this Brief, the ISO summarizes the salient history of the price-lock provisions in New England. That summary focuses on the market conditions that prompted the ISO's proposal to retain and extend the price-lock in 2014 despite the removal at that time of a range of other administrative pricing mechanisms. Section III then discusses how the markets and its performance have evolved since 2014. It concludes that the markets' evolution—including the competitiveness of the Forward Capacity Market and the overall ability of resources to have confidence in their opportunity to recover their costs in the markets—have improved significantly in the intervening years. As a result, the price-lock mechanism is no longer as important as it once was for the region to meet the Forward Capacity Market's reliability objectives.

In Section IV, the ISO responds to the specific (enumerated) questions that the Commission poses in its Order on Remand. Of particular note:

- Data on the use of the price-lock since the Forward Capacity Market's inception, provided in response to Question 1 in Paragraph 22 of the Order on Remand, indicate that while a substantial percentage of new resources elect the price-lock (for varying durations), many do not; for that and other reasons, the data alone provide no definitive conclusions regarding whether the price-lock mechanism is necessary for competitive merchant entry.
- In light of those limitations of the data, the ISO cannot provide a dispositive answer to Question 2 in Paragraph 22 on the continued need for the price-lock as a mechanism to incent new entry. However, we address a number of factors germane to this question—including the evolution of the markets, the potential for alternative

financing mechanisms in the private capital markets, and the ability of other ISO/RTO regions to attract new merchant generation in recent years without a comparable ISO-administered price-lock mechanism. These observations generally cast reasonable doubt upon the necessity of continuing the administrative price-lock mechanism.

- In response to Questions 3 through 5 in Paragraph 22, the ISO considers the “balance of interests” that the Commission weighed when evaluating the potential price suppressive and discriminatory effects of the price-lock, and how evolving market conditions and market rules may change this balance; we generally find that the market’s evolution makes it more difficult to defend the price-lock provisions from such criticisms.
- In response to the Commission’s Questions 1 through 3 in Paragraph 23 on the possibility of a different offer floor price for price-locked resources in successive years of the price-lock period, the ISO identifies a considerable number of complications and challenging design issues that would arise under various alternative offer floor price rules. The ISO can provide the Commission no specific recommendation on an alternative offer floor price rule to the Forward Capacity Market’s existing zero-price rule. In light of the ISO’s conclusions regarding the existing price-lock mechanism, and the substantial problems explained herein with various alternative offer floor price rules, the ISO sees no benefit in pursuing an alternative offer price floor. Indeed, the challenges are sufficiently concerning that the ISO would prefer eliminating the price-lock provisions in their entirety over developing a new administrative pricing scheme to accommodate an offer floor.

- The ISO is not in a position to proffer an alternative replacement rate in response to the questions posed in Paragraph 24. The ISO does not have experience with alternatives, and significant conceptual, technical and stakeholder review would be necessary to productively inform any such alternatives. Further, given the various observations in this Brief regarding the continued need for the price-lock mechanism, the ISO does not believe further consideration of an alternative to the price-lock mechanism should be made a priority presently.

III. HISTORY OF THE FORWARD CAPACITY MARKET PRICE-LOCK AND THE EVOLUTION OF THE MARKETS SINCE 2014

A. Overview of the Forward Capacity Market Price-Lock

A capacity supplier entering a new capacity resource into the Forward Capacity Market (“FCM”) must specify in its pre-auction qualification materials whether, if it is awarded a Capacity Supply Obligation (“CSO”) in the Forward Capacity Auction (“FCA”), the price it receives in the year of entry will continue to apply for up to six additional capacity delivery years (referred to as “Capacity Commitment Periods”).¹⁷ This “price-lock” election must be made prior to the FCA in the resource’s year of entry.

¹⁷ The price-lock rules are specified in Section III.13.1.1.2.2.4 of Market Rule 1 for generation resources, and in Section III.13.1.4.1.1.2.7 for demand response resources. Capacity supplied by imports from outside the New England Control Area (referred to as a New Import Capacity Resource) are not permitted to elect the price-lock unless the resource is associated with an Electric Transmission Upgrade to support the delivery of that capacity from the neighboring control area. *See* Market Rule 1, Section III.13.1.3.5.4. New capacity resources that receive a Capacity Supply Obligation through the Forward Capacity Market substitution auction do not receive a CSO through the primary FCA mechanism, and therefore are not eligible for the price-lock; in addition, resources that qualify for and elect to enter the Forward Capacity Market under a Renewable Technology Resource exemption from the minimum offer price rule are not permitted to elect the price-lock. *See* Market Rule 1, Section III.13.1.1.2.9.

Further, if the supplier elects the lock-in, it is not obligated to do so for the full seven years, but rather may elect to do so for *up to* seven years.

A new resource that clears in the FCA with a price-lock may not “de-list” its capacity for the period of the price-lock.¹⁸ The practical import of this prohibition is that for each subsequent Capacity Commitment Period during which a resource’s price-lock continues to apply, the resource’s qualified capacity will be entered into the FCA as a “price taker,” with a capacity offer price of zero, and the resource will be awarded a Capacity Supply Obligation.¹⁹

B. Price-Lock Implementation and Extension

The price-lock was implemented as part of the original Forward Capacity Market rules, one of several administrative pricing mechanisms resulting from the settlement agreement that created the initial Forward Capacity Market design.²⁰ As initially implemented, a supplier could elect the price-lock for up to five Capacity Commitment Periods (the year of entry plus an additional four years). Starting with FCA 9 (run in February 2015 for the Capacity Commitment Period beginning June 1, 2018), the price-lock was extended by an additional two years (creating a maximum seven-year price-lock duration for new resources).

¹⁸ Market Rule 1, Sections III.13.1.1.2.2.4 and III.13.1.4.1.1.2.7.

¹⁹ Market Rule 1, Section III.13.1.11 also permits resources that had elected a price-lock prior to FCA 9, and which was still in effect, to “opt-out” of the remaining years of the price-lock. This provision was added as part of the Pay-for-Performance capacity market re-design, related to the treatment of such resources under the monthly stop-loss provisions. *See ISO New England Inc. and New England Power Pool, Filings of Performance Incentives Market Rule Changes, ER14-1050-000* (filed January 17, 2014). However, since resources prior to FCA 9 could elect a lock-in of, at most, five years, the price-lock has expired for any resource that entered the market prior to FCA 9, and therefore this provision is no longer operative.

²⁰ *Devon Power LLC*, 115 FERC ¶ 61,340 (2006) (“FCM Settlement Order”) at P 16.

1. The Implementation of the Five-Year Price-Lock and the Forward Capacity Market’s Performance Through FCA 8

When initially proposed, the Commission accepted the price-lock as a mechanism “to provide predictable revenues and facilitate financing for new capacity.”²¹ In other words, the intent was to reduce risk for entrants by providing them with capacity price certainty for a period of years. Importantly, at the time there was a “vertical” demand requirement in the Forward Capacity Auction, not a demand curve. With a vertical demand requirement, the clearing of a large new resource could result in the region meeting and exceeding its Net Installed Capacity Requirement for several years. In such instances, the new resource’s supply could reduce capacity clearing prices for a number of subsequent auctions.²² The price-lock provision protected potential entrants from that downward effect on subsequent capacity clearing prices, as the provision allowed them to receive the initial clearing price for several auctions.

The price-lock may also provide benefits to load interests, as it may lower an entrant’s initial offer price. When this lower offer price sets the capacity clearing price, or allows an entrant to sell capacity that otherwise would not have cleared (at a higher offer price in the absence of the price-lock), the lower offer price reduces the capacity

²¹ *Id.*

²² See *ISO New England Inc.*, Order on Tariff Filing, 146 FERC ¶ 61,038 (2014) (“FCA 8 Order”) at PP 14-16 (discussing the lack of new generation and demand response entering the eighth Forward Capacity Auction (“FCA 8”), the impact that the administrative pricing mechanisms had on the prior auctions, and the ISO’s indication that replacing the vertical demand requirement with a sloped demand curve would address the significant flows in the FCM and allow for the removal of the administrative pricing rules).

clearing price paid to *all* capacity resources that year. In turn, this result can reduce the Forward Capacity Market's total cost to loads.²³

The first several Forward Capacity Auctions exhibited sufficient participation that each auction cleared at the then ISO Tariff-prescribed administrative auction price floor in each of the region's capacity zones.²⁴ However, leading up to the eighth Forward Capacity Auction in February 2014, the ISO raised concerns of "an abrupt change in supply and demand in New England, from a years-long capacity surplus to a potential capacity shortage in the upcoming FCA 8, as well as a general decline in the amount of new resources seeking to participate in the auction."²⁵ Arguing that a complex set of then-existing administrative pricing rules could produce capacity payment rates for FCA 8 that "undermine investor confidence in the long-term stability of FCM revenues,"²⁶ the ISO filed, and the Commission accepted, a replacement administrative capacity payment rate for FCA 8.²⁷

In proposing that rate for FCA 8, the ISO acknowledged the need for reforms to reduce the FCM's reliance on and history of administratively-determined capacity prices. Among those reforms, the ISO indicated that the best long-term solution to these concerns would be the implementation of a downward-sloping demand curve "centered

²³ If, after its first year, a resource's "locked-in" capacity payment exceeds the prevailing market-clearing capacity price (as has frequently occurred), the difference is paid to the price-locked resource in each subsequent year via a form of capacity market uplift. *See* Market Rule 1, Section III.13.7.5.1.1.7.

²⁴ *See* FCA 8 Order at P 5 for a discussion of the auction clearing in the first seven FCAs.

²⁵ *See* FCA 8 Order at P 7.

²⁶ FCA 8 Order at P 14.

²⁷ *Id.* at PP 14, 25.

around a well-supported CONE [cost of new entry value],”²⁸ but that sufficient time was not available to develop such a demand curve before the auction. It nevertheless committed to the development of a demand curve, asserting that replacing the current vertical demand curve with a more elastic (*i.e.*, sloped) curve would “solve significant flaws in the FCM” and “should alleviate the need for administrative pricing rules.”²⁹ In accepting the proposed capacity rate for FCA 8, the Commission directed the ISO to submit a proposed demand curve in time for implementation prior to the next Forward Capacity Auction, FCA 9, to be held in February of 2015.³⁰

2. The Extension of the Price-Lock from Five to Seven Years

The development of a system-wide sloped demand curve proceeded in accordance with the Commission’s directive, and was bundled in an April 1, 2014 filing with three other significant FCM changes.³¹ The first of these changes was the Renewable Technology Resources (“RTR”) exemption, which permitted an exemption from the minimum offer price rules (“MOPR”) in the FCM for a limited quantity of qualifying state-sponsored renewable resources. The second change was the extension of the voluntary price-lock election from five to seven years for new capacity resources. The third change eliminated several administrative pricing rules at the system level (while

²⁸ *Id.* at P 15.

²⁹ *Id.* at P 16.

³⁰ *Id.* at P 30.

³¹ *See* Price-Lock Extension Filing, Docket No. ER14-1639-000 (filed April 1, 2014). This filing contained only the proposal of a system-wide sloped demand curve; as is discussed in more detail below, zonal sloped demand curves were proposed and accepted by the Commission in a later filing that went into effect for FCA 11. *ISO New England Inc. and New England Power Pool Participants Committee*, Demand Curve Design Improvements, Docket No. ER16-1434-000 (filed April 15, 2016) (“MRI Demand Curves Filing”); 155 FERC ¶ 61,319 (2016) (“MRI Demand Curves Order”).

leaving in place the equivalent administrative pricing rules at the zonal level).³² The package of changes was accepted by the Commission over objections from some market participants that the price-lock extension and RTR exemption would suppress capacity clearing prices and were unduly discriminatory.³³

The extension of the price-lock to seven years sought to address concerns that developers raised with the ISO regarding why there were limited proposed new merchant resources in the market at that time. Specifically, as part of its design efforts, the ISO heard from resource developers who had not proposed new resources for entry into the capacity market despite the pending supply and demand imbalance in FCA 8.³⁴ Potential project developers expressed the concern that New England's history of low and administratively determined capacity prices and state-sponsored generation entry signaled "that the market will not be allowed to consistently produce prices that reflect the true Net CONE [net cost of new entry]."³⁵ Developers indicated that these perceived "regulatory risks" were causing them to dramatically discount capacity market revenues for years beyond the then-current five-year price-lock period, and that they would continue to do so until there was a sufficient history of competitive market outcomes.³⁶

The ISO anticipated at that time that extending the price-lock would help reduce developers' perceived "regulatory risk." Developers would have increased certainty over their capacity revenues in years six and seven; that, in turn, would allow them to reduce

³² The corresponding zonal administrative pricing rules were subsequently removed as part of the MRI Demand Curves Filing for FCA 11.

³³ Price-Lock Extension Order, at PP 1, 54-61 (price-lock extension), 81-88 (RTR exemption).

³⁴ Price-Lock Extension Filing, transmittal letter at 10-11; Ethier Testimony at 31-32.

³⁵ Price-Lock Extension Filing, Ethier Testimony at 32.

³⁶ *Id.*

their offer price in the year of entry and enable the Forward Capacity Market to provide new entrants with “a price signal that is more consistent with long run expectations of a stable and robust market design.”³⁷

Two points regarding the ISO’s 2014 proposal of the price-lock extension are worth highlighting. First, in proposing the extension, the ISO indicated that the need for a seven year lock-in should be temporary: “It is expected that recent resource retirements, introduction of a sloped demand curve, and elimination of system-wide administrative pricing will help to establish a robust and stable capacity market, which will render the currently-required regulatory risk premiums unnecessary. This will in turn reduce the need for a seven year lock-in in the future.”³⁸ The ISO expressly stated that it “intends to review the need for and length of the lock-in period after there has been a series of successful auctions using the new demand curve design.”³⁹

Second, as an alternative to extending the price-lock, the ISO “considered addressing [developers’] perceived regulatory risk by setting a relatively high price cap as part of the demand curve and allowing new entrants to reflect the perceived regulatory risk in their [first-year capacity supply] offers.”⁴⁰ Specifically, rather than employing a Forward Capacity Auction price cap at 1.6 times Net CONE as was ultimately filed, the

³⁷ Price-Lock Extension Filing, Ethier Testimony at 32-33.

³⁸ Price-Lock Extension Filing, Ethier Testimony at 35-36. Dr. Ethier continued, “Put another way, if the Commission believes that the instant reforms will result in a good long-term design, taking short-term steps to address the regulatory risk premium will prevent a needless wealth transfer from consumers to producers until the market is sufficiently established that such a regulatory risk premium is not necessary, and will also enable the market design to protect against extreme prices in the event that a future auction is not competitive. And there is little rationale for sending a price signal reflecting a short-term risk created by the regulatory process itself when there are alternative approaches available.” *Id.*

³⁹ Price-Lock Extension Filing, Transmittal Letter at 11; Ethier Testimony at 36.

⁴⁰ Price-Lock Extension Filing, Ethier Testimony at 32.

ISO considered a value of two times Net CONE, which would have established a price cap of \$23.00/kW-month for FCA 9. The ISO ultimately did not file that alternative higher price cap. Dr. Ethier explained the rationale for this decision in his supporting testimony as follows:

Increasing the price cap to \$23.00/kW-month would leave consumers exposed to very high prices in the event that an auction is not competitive, as was experienced in the most recent FCA [8]. Moreover, it is not clear that it is desirable to allow the market price to reflect such a high degree of regulatory risk. These are perceived regulatory risks that are driven by the relative newness of the market design and the history of excess capacity maintained by continued regulatory intervention in New England via six annual auctions with price floors.... As such, these are near-term risks, not long-term features of the market. And while they could be addressed by setting a high price cap, it is consumers who will bear the full brunt of the resulting high capacity market clearing price. It is instead preferable to have consumers reduce these near-term risks by providing a longer lock-in, which will send a price signal that is more consistent with long run expectations of a stable and robust market design.⁴¹

In accepting the price-lock extension, the Commission made several findings that are relevant to the current proceeding. First, it found that “the price lock-in period is directly correlated with the sloped demand curve parameters,”⁴² and that under the initial sloped demand curve design at the time, “if ISO-NE were to maintain the current five-year lock-in, a higher price cap would be needed to achieve the same degree of reliability.”⁴³ Second, it found that “Filing Parties have sufficiently demonstrated that, in the circumstances here, extending the lock-in period is an appropriate way to provide investor assurance, given that the [new] sloped demand curve represents a significant

⁴¹ Price-Lock Extension Filing, Ethier Testimony at 32-33.

⁴² Price-Lock Extension Order at P 55.

⁴³ *Id.*

change in the FCM design.”⁴⁴ Finally, in distinguishing the ISO’s proposal from a PJM proposal that the Commission had rejected, it found that “the extension, as part of the package of Demand Curve Changes, is a reasonable means to address the New England region’s current capacity shortage and investor perceptions regarding risk.”⁴⁵

C. Evolution of the Markets Since 2014

Since 2014, the wholesale electricity markets have matured significantly. Several facets of this maturation are relevant to the questions that the Commission has raised in this proceeding, and are therefore discussed here. As is addressed in more detail in the following section, these changes highlight that, to a large degree, the conditions that supported the introduction of the price-lock at the Forward Capacity Market’s inception, and its subsequent extension in 2014, are no longer in place. It is therefore appropriate for the Commission to reconsider the need for the price-lock, and the factors summarized below may facilitate the Commission’s review.

Specifically, the markets have attracted significant new supply resources,⁴⁶ even as electricity demand has trended downward over the last many years. Numerous enhancements to the Forward Capacity Market design have also been made, several of which help resolve concerns that contributed to the perceived “regulatory risks” and the decision to extend the price-lock in 2014. In addition, enhancements to the energy and ancillary services markets have reduced the overall costs to resource developers that must be recovered in the capacity market—often referred to as the “missing money.”

⁴⁴ *Id.* at P 56.

⁴⁵ *Id.* at P 57.

⁴⁶ The magnitude of this new supply is discussed below, in Section IV.A.1.

Moreover, technological advancements have improved the efficiency of new generation resources, and this has further reduced this “missing money.” Together, these developments have led to a significant reduction in the net cost of new entry and the total investment expenditure “at risk” when a new competitive resource is developed.

1. Since FCA 9 in 2015, the ISO-Administered Wholesale Electricity Markets Have Attracted Competitive New Supply Resources While Demand Has Declined, With Capacity Prices that Reflect Those Market Fundamentals

As noted previously, while the first several Forward Capacity Auctions cleared at a then-existing administrative auction price floor, with more than sufficient supply to meet demand, leading up to FCA 8 in 2014 the region faced a supply and demand imbalance. At the time, the ISO was concerned that insufficient new supply resources were entering the market to meet the region’s demand.

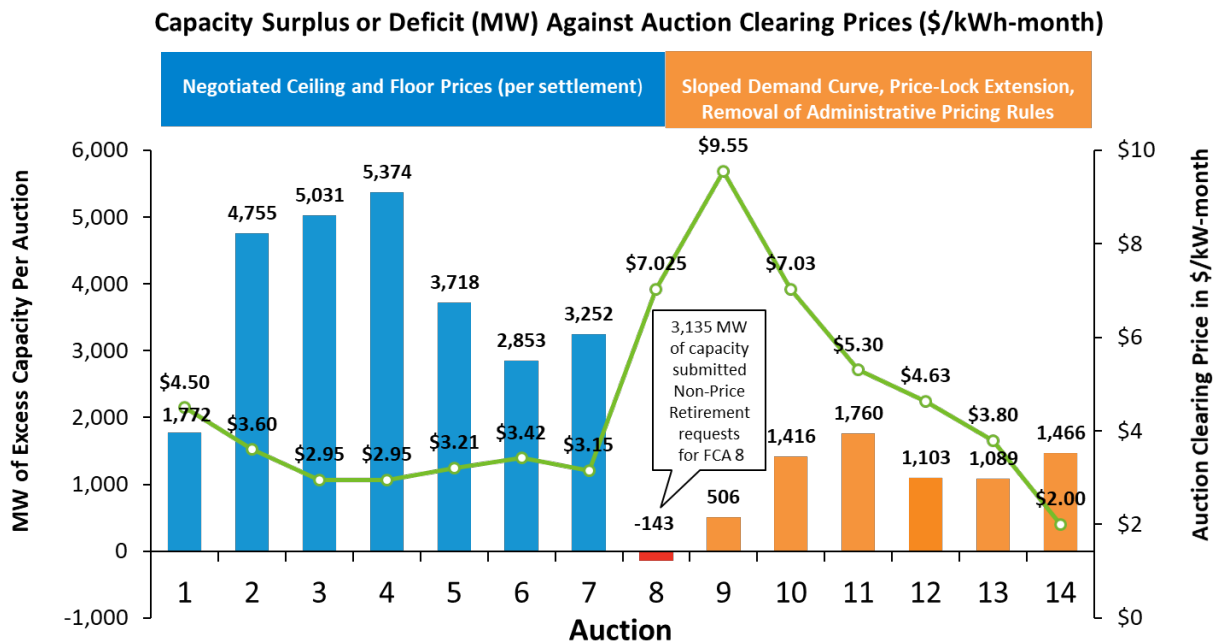


Figure 1 - Changes in Supply Dynamics in FCAs 1-14⁴⁷

⁴⁷ The prices indicated by the green line in Figure 1 are the system-wide (*i.e.*, Rest-of-Pool) Capacity Clearing Prices.

Starting in FCA 9, however, the region has experienced significant new resource entry into the market. The result, as reflected in Figure 1, is that the FCAs have consistently cleared with significant surplus capacity relative to the Net Installed Capacity Requirement in each of the six Forward Capacity Auctions starting with FCA 9.

Importantly, in each of the auctions after FCA 9, the market's capacity clearing prices have reflected supply and demand fundamentals rather than the administrative pricing rules that had specified auction capacity prices previously. As documented in greater detail in Section IV.A.1, considerable new entry occurred in FCA 9 following the tight market conditions in FCA 8. As Figure 1 summarizes, capacity clearing prices have declined since, consistent with the market's continuing excess supply relative to the Net Installed Capacity Requirement.

In summary, while the system was quite tight in FCA 8 in 2014, and the ISO was concerned about the region's ability to meet the 1-day-in-10 Loss of Load Expectation ("LOLE") reliability standard at the time, the system has now experienced multiple years of competitive auctions with surplus conditions.

2. The Region Has Implemented Several Significant Enhancements to the Forward Capacity Market

Since the Commission accepted the price-lock extension, several important enhancements to the Forward Capacity Market have been implemented. Many of these directly address the issues that underlay the region's concerns with the Forward Capacity Market in the FCA 8 and 9 timeframe, including concerns that administrative pricing

rules undermined developers' confidence and willingness to bring forth new competitive merchant projects in the capacity market.⁴⁸

First, the ISO implemented sloped demand curves at both the system-wide and zonal levels. The initial system-wide demand curve implemented for FCA 9 resolved a critical issue with the vertical demand requirement by significantly reducing expected capacity price volatility—*i.e.*, small shifts in supply would no longer potentially produce dramatic changes in prices from year-to-year.⁴⁹ Subsequently, in 2016, the ISO enhanced the demand curve design and introduced zonal demand curves.⁵⁰ Under the enhanced design, the demand curves reflect the marginal reliability impact (“MRI”) of adding an increment of capacity at a location (*i.e.*, in the Rest-of-Pool Capacity Zone or a constrained capacity zone), which in turn helps to ensure that capacity prices more accurately reflect the locational marginal reliability benefit of additional capacity.⁵¹ Furthermore, the MRI-based demand curves were expressly designed to ensure that, on average over time, the market pays the estimated net cost of new entry at the amount of installed capacity necessary to meet the 1-day-in-10 reliability target for the region.⁵²

In accepting the MRI Demand Curves Filing, the Commission found that the “proposed MRI-based methodology will result in demand curves that help address price volatility and potential market power,”⁵³ “will benefit customers by facilitating the

⁴⁸ Price-Lock Extension Filing, Ethier Testimony at 31-32.

⁴⁹ Price-Lock Extension Filing, transmittal letter at 7; Price-Lock Extension Order at P 29.

⁵⁰ See MRI Demand Curves Filing and MRI Demand Curves Order.

⁵¹ MRI Demand Curves Filing, transmittal letter at 2, 5-7.

⁵² MRI Demand Curves Filing, transmittal letter at 7-8.

⁵³ MRI Demand Curves Order at P 21.

procurement of capacity on a cost-effective basis,”⁵⁴ and will allow the ISO to continue to meet the reliability requirements “in a more cost-effective manner than was the case when using the previous, linear system-wide demand curve and the vertical zonal demand curves.”⁵⁵ These features, in turn, should significantly improve confidence in the overall competitiveness of the Forward Capacity Market.

Second, with the creation of the system-wide and zonal demand curves, the ISO was able to remove many of the FCM’s original administrative pricing rules. As explained above, those administrative pricing rules were the stated cause of much of the concern over the FCM’s performance during the first eight Forward Capacity Auctions, and were noted by investors and others involved with the development of new resources as one of the causes for their lack of confidence in the market.⁵⁶ The system-wide administrative pricing rules governing “inadequate supply” and “insufficient competition” scenarios were eliminated with the implementation of the system-wide demand curve for FCA 9.⁵⁷ The zonal administrative pricing rules for similar conditions at the zonal level were eliminated with the implementation of the enhanced MRI-based demand curves (zonal and system-wide) for FCA 11.⁵⁸ As the Commission found in

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *See* Price-Lock Extension Filing, Ethier Testimony at 31-32.

⁵⁷ *See* Price-Lock Extension Filing, Ethier Testimony at 26-27 (“[T]he Commission directed ISO-NE to implement a sloped demand curve in time for FCA 9 in large part because doing so would address the challenging issues raised by setting the administrative price under the Inadequate Supply and Insufficient Competition rules. In concert with a system-wide sloped demand curve for FCA 9, the ISO is permanently eliminating the system-wide Inadequate Supply and Insufficient Competition rules, beginning in FCA 9.”).

⁵⁸ *See* MRI Demand Curves Filing, transmittal letter at 16 (“[T]he Commission has recognized that appropriately designed sloped demand curves reduce the susceptibility of the capacity market to the exercise of market power and provide a basis for eliminating administrative pricing rules. The Demand Curve Design Improvements will put in place sloped zonal demand curves that are

accepting the original system-wide demand curve, “the sloped demand curve represents an important improvement to the FCM, as it will address some of the challenges presented by the use of a vertical demand curve in previous auctions, including, among other things, the Commission’s concerns regarding price volatility and the administrative pricing provisions.”⁵⁹

Third, the Renewable Technology Resource exemption from the MOPR was replaced with the Competitive Auctions with Sponsored Policy Resources, or “CASPR.”⁶⁰ As the ISO explained in its filing of the CASPR rules, the RTR exemption rules could produce an “FCA clearing price below its competitively-based capacity level;”⁶¹ in contrast, CASPR was developed expressly “to meet the region’s objectives of accommodating the entry of sponsored new resources into the FCM over time *and* maintaining competitive capacity pricing.”⁶²

In sum, as the Commission has recognized, the combination of Forward Capacity Market initial and enhanced sloped demand curves, the removal of numerous administrative pricing rules, and the introduction of CASPR all serve to improve the competitive functioning of the Forward Capacity Market. In so doing, they more accurately align capacity prices with the reliability value of the capacity procured.

much more resistant to the exercise of market power and thereby facilitate the elimination of the administrative pricing rules.”) (internal citations omitted).

⁵⁹ Price-Lock Extension Order at P 29.

⁶⁰ *ISO New England Inc.*, Revisions to the ISO New England Transmission, Markets and Services Tariff Related to Competitive Auctions with Sponsored Policy Resources, Docket No. ER18-619-000 (filed January 8, 2018) (“CASPR Filing”); Order on Tariff Filing, 162 FERC ¶ 61,205 (2018).

⁶¹ CASPR Filing, Testimony of Dr. Christopher Geissler at 18.

⁶² CASPR Filing, transmittal letter at 1.

Existing mechanisms such as the MOPR, help ensure that clearing prices accurately reflect the competitive cost of new entry when needed; CASPR helps to facilitate the entry of state-sponsored renewable resources within that framework.⁶³ Collectively, these mechanisms help to address the underlying issues cited by investors in the 2014 timeframe as causing “a lack of confidence in the New England market because of the regulatory risk that the market will not be allowed to consistently produce prices that reflect the true Net CONE when needed.”⁶⁴

3. Several Additional Enhancements to the Energy and Ancillary Services Markets Decrease the “Missing Money” that Investors Must Recover Through the Forward Capacity Market

The Forward Capacity Market is intended to provide new resources in the wholesale markets, when needed to meet the region’s resource adequacy standards, an opportunity to recover their costs of entry into the market *net* of their anticipated energy and ancillary service markets’ revenues. As such, enhancements to the energy and ancillary service markets that increase or decrease new resources’ expected revenue will also impact the “missing money” that a resource must recover through the Forward Capacity Market.

Since 2014, the ISO has implemented a number of enhancements to the energy and ancillary services markets that improve price formation in these markets and, generally, provide suppliers with greater opportunity to earn higher revenues through those markets. These enhancements therefore tend to reduce the net cost of new entry

⁶³ The ISO implemented the minimum offer price rules for FCA 8. *See* Order on Compliance Filing, 142 FERC ¶ 61,107 (2012) (accepting the ISO’s proposed minimum offer price rules for implementation in February 2013, in advance of the FCA 8 qualification period).

⁶⁴ Price-Lock Extension Filing, Ethier Testimony at 32.

that must be recovered by investors in competitive resources through the Forward Capacity Market. Major market enhancements include the following:

- Energy Market Scarcity Pricing Enhancements: These changes, implemented in 2014, increased the Reserve Constraint Penalty Factors for 10 and 30-minute reserves.⁶⁵ These enhancements increase the price that resources are paid for energy and reserves in real-time during scarcity conditions. In so doing, they further increase incentives for resources to be available to perform during such periods, and to invest in resource technologies that are able to earn these higher prices.
- Fast-Start Pricing Enhancements: These technical changes to the price-setting eligibility rules for fast-start resources have allowed these resources to set prices more often, increasing the energy and reserve prices paid to *all* resources supplying those products immediately after contingencies, during high load conditions, and in stressed system operating conditions generally.⁶⁶ The fast-start pricing enhancements were implemented in 2017.
- Removal of the Peak Energy Rent mechanism: This modification removed the Peak Energy Rent, or “PER” mechanism, which was a downward adjustment applied to monthly payments to capacity suppliers in order to reduce any potential incentive for a supplier to withhold energy and increase real-time energy prices; it

⁶⁵ *ISO New England Inc.*, Compliance Filing of Two-Settlement Forward Capacity Market Design, Docket No. ER14-2419-000 (filed July 14, 2014), order accepting in part and rejecting in part, *ISO New England Inc.*, 149 FERC ¶ 61,009 (2014), *reh’g denied ISO New England Inc.*, 153 FERC ¶ 61,224 (2015).

⁶⁶ *ISO New England Inc. and New England Power Pool*, Revisions to Fast-Start Resource Pricing and Dispatch, Docket No. ER15-2716-000 (filed September 24, 2015); accepted October 19, 2015 by delegated letter order.

also served as a hedge for load against high real-time energy prices.⁶⁷ The PER mechanism was removed effective June 2019, out of recognition that other aspects of the markets more effectively addressed the underlying concerns.

- **Development of the Energy Security Improvements:** In April of this year, the ISO filed the Energy Security Improvements, or “ESI,” which, if accepted by the Commission, will increase compensation in the energy and ancillary services markets to appropriately compensate resources for certain essential reliability services that are not currently priced in the day-ahead energy and ancillary services markets.⁶⁸ As the ISO has explained in detail in the ESI filing, these enhancements provide new revenue streams to a range of existing (and future new) resources in the ISO-administered markets, helping to ensure they are compensated, at market-based prices, for the energy security-related reliability services they provide.

4. Technological advancements have reduced the cost of entry for new resources participating in the markets

In general, technological advancements reduce the costs that developers must recover through the Forward Capacity Market to build new generation facilities. This reduction can occur because the costs of building a generation facility decrease (lowering the developer’s up-front costs), or because new generation facilities are more efficient (and therefore expect to earn greater energy and ancillary service revenues). Both are

⁶⁷ *ISO New England Inc. and New England Power Pool*, PER Mechanism Changes, Docket No. ER15-1184-000 (filed March 6, 2015; accepted May 5, 2015 by delegated letter order, 151 FERC ¶ 61,096 (2015)).

⁶⁸ *ISO New England Inc.*, Compliance Filing of Energy Security Improvements Addressing New England’s Energy Security Problems, Docket Nos. EL18-182-000 & ER20-1567-000 (filed Apr. 15, 2020).

consistent with the experience in New England, where estimated Net CONE values have decreased substantially since 2014. Specifically, for FCA 9, the Net CONE value, calculated based on the cost to build a combined cycle gas turbine,⁶⁹ was \$11.08/kW-month.⁷⁰ Starting in FCA 12, the Net CONE value decreased to \$8.04/kW-month, using a then-lower-cost simple cycle gas turbine as the reference technology.⁷¹ The ISO is currently in the process of updating the Net CONE values, for use starting with FCA 16 to be held in February 2022, and it is anticipated that the Net CONE value will decrease further, with a new value under \$7.00/kW-month.⁷² As the net cost of new entry has decreased, capacity suppliers need to receive significantly less revenue in the Forward Capacity Market for entry to be economically viable.

D. Assessing the Continued Need for the Price-Lock

When employing administrative mechanisms in competitive markets, it is important to continually assess whether the benefits of these mechanisms outweigh their drawbacks as the markets evolve. As discussed above, as part of the Forward Capacity Market's evolution, many of the administrative pricing rules have been removed—now replaced by market enhancements that better support competitive outcomes grounded in market fundamentals. However, the price-lock remains an administrative pricing

⁶⁹ The reference technology used in the Net CONE calculation is the technology that is expected to be the most economically efficient and that is commercially available to new capacity suppliers.

⁷⁰ Price-Lock Extension Order at P 15.

⁷¹ *ISO New England Inc.*, Order Accepting Filing, 161 FERC ¶ 61,035 (2017) at PP 15, 19.

⁷² See presentation of Concentric Energy Advisors to the NEPOOL Markets Committee, August 2020 meeting materials, slides 30-37, available at https://www.iso-ne.com/static-assets/documents/2020/08/a4_a_iii_cea_presentation_cone_and_orfp_analysis.pdf.

mechanism from the original Forward Capacity Market design that persists under current market rules.

The Commission found the initial price-lock and associated zero-price offer requirement to be just and reasonable because it provides “predictable revenues and facilitates financing for new capacity.”⁷³ The Commission accepted the 2014 extension of the price-lock from five to seven years as “a reasonable means to address the New England region’s current capacity shortage and investor perceptions regarding risk.”⁷⁴ It further found that, “in the circumstances here, extending the lock-in period is an appropriate way to provide investor assurance, given that the sloped demand curve represents a significant change in the FCM design,”⁷⁵ and further that “if ISO-NE were to maintain the current five-year lock-in, a higher price cap would be needed to achieve the same degree of reliability.”⁷⁶

Given the significant changes, both in market conditions and in the ISO-administered markets’ designs, since the region last revisited the role of the price-lock in 2014, it is an appropriate time to re-evaluate its need, to assess whether it is still justified on the grounds identified by the Commission for its initial acceptance and extension. The ISO’s re-evaluation indicates that, for a number of reasons, the price-lock is no longer as important as it once was to achieving the FCM’s reliability objectives, and may not be necessary for meeting the stated objectives identified by the Commission in its prior determinations that the price-lock (and its extension) were just and reasonable.

⁷³ FCM Settlement Order, 115 FERC ¶ 61,340 (2006) at P 16.

⁷⁴ Price-Lock Extension Order at P 57.

⁷⁵ *Id.* at P 56.

⁷⁶ *Id.* at P 55.

In particular, the market's performance since the price-lock extension attenuates the rationale for continuing the price-lock provisions. Since 2014, the FCM has experienced capacity surpluses relative to the Net Installed Capacity Requirement in each of the six annual Forward Capacity Auctions that have taken place since the ISO began the numerous market reforms identified above, with significant levels of competitive new entry in each auction. As a result, the market has competitively achieved its resource adequacy objectives in each of these auctions, under a market structure that relies more heavily on supply and demand fundamentals rather than administrative pricing mechanisms. This supports the notion that the market's price-formation process, and ability to attract new entry, is "robust and stable."⁷⁷ Of course, as noted in Section II earlier, it is not possible to determine whether the same level of competitive new entry since 2014 would have materialized without the price-lock. However, the fact that the system is now long of its capacity target, when coupled with the market reforms that improve the overall competitiveness of the market, indicates that the need for special mechanisms to incent new entry is demonstrably lower today than when the price-lock was introduced and extended.

The enhancements to the Forward Capacity Market implemented over the last six years speak to the perceived "regulatory risks" that prompted a lack of confidence in the FCM by developers of new resources in the 2014 timeframe.⁷⁸ The implementation of

⁷⁷ See Price-Lock Extension Filing, Ethier Testimony at 35-36 ("It is expected that recent resource retirements, introduction of a sloped demand curve, and elimination of system-wide administrative pricing will help to establish a robust and stable capacity market, which will render the currently-required regulatory risk premiums unnecessary. This will in turn reduce the need for a seven year lock-in in the future.").

⁷⁸ See Price-Lock Extension Filing, Ethier Testimony at 31-32.

sloped demand curves at both the system-wide and zonal levels permitted the removal of many of the administrative pricing rules, thereby reducing those rules' interference with supply and demand fundamentals when clearing the auction. The introduction of the MRI-based demand curves for FCA 11 further improved the auctions' alignment of resources' costs with capacity's reliability benefit when determining capacity prices and market outcomes. Furthermore, the region has continued its efforts to address the increases in state-sponsored renewable resources through, first, the implementation of the RTR exemption, and then its replacement with the CASPR mechanism. Collectively, these enhancements to the Forward Capacity Market help to mitigate the issues that developers cited as the cause for their hesitancy to enter the market in the 2013-14 timeframe,⁷⁹ and which motivated the ISO to propose the price-lock extension to seven years at that time.⁸⁰

The introduction of the MRI-based demand curves resolves a further concern that prompted the retention of the price-lock mechanism and its 2014 extension. As discussed above, as an alternative to the price-lock extension approved for FCA 9, the ISO considered, but ultimately rejected, increasing the price cap on the system-wide sloped demand curve, which the Commission found "would be needed to achieve the same degree of reliability" in the absence of the price-lock extension.⁸¹ The MRI-based demand curves, however, were developed using a different reliability model. For this model, the demand curve price cap is no longer used to determine expected system

⁷⁹ See Price-Lock Extension Filing, transmittal letter at 10-11; Ethier Testimony at 31-32.

⁸⁰ *Id.* Price-Lock Extension Order at P 57 (finding that the extension of the price-lock was "a reasonable means to address the New England region's current capacity shortage and investor perceptions regarding risk.").

⁸¹ *Id.* at P 55.

reliability. Instead, the demand curve's price is set to Net CONE at the Net Installed Capacity Requirement, and all other values of the (system and zonal) demand curves are scaled by the marginal reliability impact of capacity.⁸² As such, the choice of the price cap does not impact the shape of the MRI-based demand curves and instead only determines the Forward Capacity Auction Starting Price. As the Commission noted, this methodology will generally procure capacity in a cost-effective manner⁸³ and produces results that are consistent with the region's reliability standard.⁸⁴

Finally, as explained above in Sections III.C.3. and III.C.4, enhancements to the energy and ancillary services markets, as well as the overall reduction in the costs to develop competitive new generation resources, have reduced the "missing money" that capacity suppliers must obtain through participation in the Forward Capacity Market in order to fully recover their costs. This is palpably evident in the substantial decreases in estimated Net CONE, from \$11.08/kw-month for FCA 9 to under \$7.00/kw-month for FCA 16 (*see* Section III.C.4). Under these conditions, administrative features such as the price-lock become less important as investors expect to recover a larger share of their total development costs via energy and ancillary services revenues, and therefore are less reliant on the capacity market as the means to recover their costs.

In summary, the history of the market's competitive performance since 2014, the capacity market enhancements that remove the underlying conditions that prompted investors' concerns, their ability to recover a greater proportion of their costs through the

⁸² *See* MRI Demand Curves Filing, transmittal letter at 7-8.

⁸³ MRI Demand Curves Order at PP 30-33.

⁸⁴ *Id.* at PP 38-40.

energy and ancillary services markets, and the overall reduction in the costs to enter the market, all provide resource developers with sound reasons to have greater confidence in the competitiveness of the markets, and in their ability to recover their costs, in the absence of the price-lock, when new entry is needed to meet the system's resource adequacy objectives. These factors also address the underlying concerns that prompted the introduction of the price-lock, and the Commission's acceptance of its extension in 2014. Therefore, the underlying conditions that supported the introduction of the price-lock and its extension are no longer in place.

IV. RESPONSE TO COMMISSION QUESTIONS

A. Response to Commission Questions on the Continued Need for the Price-lock in its Entirety (Paragraph 22)

22.1 How many resources have taken advantage of the price-lock to date?

In Attachment A of this Brief, the ISO provides a data table ("Price-Lock Elections Table") summarizing the number of resources and the quantity of capacity (MW) that have elected the price-lock in each of the 14 Forward Capacity Auctions that have been run to date. For completeness, this table also provides information on the number of resources and quantity of capacity (MW) that were eligible to receive the price-lock, but did not elect the price-lock, as well as the total number of resources and quantity of capacity that were classified as "new" but were not eligible to elect the price-lock (for various reasons discussed below).

a. Interpreting the Price-Lock Election Table’s columns

For each of the 14 Forward Capacity Auctions run to date, the Price-Lock Elections Table includes four columns, labeled [a] through [d]. An additional four columns at the far right of the table, labeled “Total,” provide a summation across all the FCAs. As such, there are 60 total columns that provide data on price-lock elections.

The far left column, [a], provides the total number of new resources that participated in the Forward Capacity Auction and satisfied the criteria specified in each of the table’s rows. This count includes resources that were awarded a CSO, as well as those that participated in the auction but were not awarded a CSO. The second column from the left, [b], provides the same tally as [a], except in terms of qualified capacity (in MW),⁸⁵ rather than number of resources. Again, it includes all capacity from resources that participated in the auction and satisfied the relevant criteria in each table row. The third column, [c], specifies the total number of resources that were awarded a CSO in the relevant FCA and meet the conditions specified in each table row. And finally, the fourth column, [d], tabulates the total qualified capacity (in MW) awarded a CSO corresponding to the resources in column [c].

The relationship between these columns can be understood using a numerical example. Imagine that two new resources that participate in the FCA satisfy the criteria specified in the row, and each has 10 MW of qualified capacity. One of these resources receives a Capacity Supply Obligation for its entire 10 MW, and the second one does not.

⁸⁵ Qualified Capacity is the amount of capacity a resource may provide in the summer or winter in a Capacity Commitment Period, as determined in the Forward Capacity Market qualification processes. Section III.13.1.1.2.5 of Market Rule 1 specifies treatment of Qualified Capacity for New Generating Capacity Resources.

In this situation, Column [a] would specify a count of 2, indicating that a total of two new resources satisfied the row's conditions in the given FCA. Column [b] would specify a value of 20 MW, the total amount of qualified capacity of those two resources. Column [c] would show a value of 1, as only one of the two resources was awarded a CSO, and column [d] would show a value of 10 MW, the total amount of capacity awarded CSOs for those resources.

b. Interpreting the Price-Lock Elections Table's rows

The Price-Lock Elections Table includes four sections and 22 rows, where each section covers the universe of new resources considered, and each row in a section specifies a more specific condition or set of conditions.

Section I includes the entire universe of resources that are eligible to select the price-lock and includes a total of nine rows. Row [1] tabulates the number of resources and MW of capacity that, while eligible to select a price-lock, elected not to do so. Rows [2] through [6] then provide the tallies for resources that did elect the price-lock, where row [2] represents resources that elected a two-year price-lock, row [3] a three-year price-lock, and so on. Row [6] corresponds to resources that elected a seven-year price-lock as, to date, no resource in the region has opted for a six-year price-lock. Observe that row [6] is blank for the first eight auctions, as the maximum price-lock duration was not extended from five years to seven years until FCA 9. Row [7] provides the summation of rows [2] through [6], and therefore represents the total number of resources and quantity of capacity that elected a price-lock of any length for the FCA. Row [8] sums rows [1] through [6], and therefore provides the total number of resources and quantity of capacity that was eligible for the price-lock (including those that did not elect it). Finally, row [9]

divides row [7] by row [8]. For the columns that tabulate resources (columns [a] and [c]), this row provides the percent of resources that elected the price-lock out of the set of resources that were eligible. For the columns that tabulate MW of capacity (columns [b] and [d]), this row provides the percent of MW that elected the price-lock out of the set of capacity MW that were eligible.

Section II provides the same nine rows as Section I, numbered [10] through [18], but with one important difference. Rather than including the entire universe of resources that were eligible to select the price-lock, it *excludes* demand response resources and is therefore limited to generating resources. This allows Section II to focus on resources whose capacity reduces any gap between supply and demand, rather than those that may not because the FCM rules provide that demand-side resources may be “reconstituted” into the FCA’s forecast load.⁸⁶ In this section of the Price-Lock Elections Table, row [10] tabulates the resources and MW of capacity from generating resources that were eligible to elect the price-lock, but chose not to do so. Row [11] then provides data on the number of eligible generating resources that elected a two-year price-lock, and so on through row [15], with totals represented in rows [16] and [17] and the percent of generating resources and MW that elected the price-lock out of those eligible in row [18].

Section III provides information on the set of resources that are treated as new in the FCA, but are not eligible to elect the price-lock. Row [19] includes the number of new resources and quantity of capacity MW that elected the Renewable Technology

⁸⁶ In the Forward Capacity Market, the ISO “grosses-up” or “reconstitutes” the load forecast to account for the capacity of demand response resources that participate as supply-side resources in the market. This results in an increase in the load forecast in an amount that is to track the quantity of demand response that receives a CSO in a capacity auction. This reconstitution is largely an accounting exercise, to ensure that the inclusion of demand response as capacity supply does not interfere with the ability of the FCM to achieve its reliability objective.

Resource exemption from the MOPR, and under the rules of that RTR exemption, were not eligible for the price-lock.⁸⁷ This row is left blank for the first 8 FCAs, as the RTR was not introduced until FCA 9. Row [20] includes import capacity resources and corresponding qualified capacity MW, most of which are categorically not eligible to elect the price-lock.⁸⁸ Finally, row [21] adds rows [19] and [20] to provide a count of the total number of resources and MW that were ineligible to elect the price-lock.⁸⁹

Finally, Section IV includes a single row, [22], which sums the total number of new capacity resources and their total quantity of capacity MW. This includes both eligible and ineligible resources, and is the sum of rows [8] and [21].

c. Number of Resources and Quantity of MW Electing the Price-Lock: Totals

Together, these columns and rows provide detailed information about the number of resources and quantity of capacity that have elected the price-lock in each Forward Capacity Auction, and across all 14 auctions. Before assessing how participation and price-lock elections have evolved, we first discuss the elements of the data in the Price-Lock Elections Table that are responsive to the specific Question 22.1 presented by the Commission in its Order on Remand.

As shown in the values for rows [7] and [8] in columns labeled ‘Total’ at the far right of the table, a total of 494 resources that participated in the FCA elected the price-

⁸⁷ See *supra*, fn 17.

⁸⁸ *Id.*

⁸⁹ In tabulating both new entry and price-lock elections, the Price-Lock Elections Table focuses on the primary auction, and does not consider capacity awards that occur in the substitution auction, run after the primary auction, where new resources cannot elect a price-lock.

lock over all 14 FCAs to date. Over this period, there were 1,421 resources eligible to elect the price-lock (row [7], column [a] and row [8], column [a], respectively).

When translated into capacity MW, 19,999 MW out of 32,987 MW of new capacity offers that were eligible elected the price-lock (row [7], column [b] and row [8] column [b], in the ‘Totals’ columns for all 14 FCAs at the far right of the table).

Similarly, of the new resources that received Capacity Supply Obligations (*i.e.*, cleared in the auction), 247 elected the price-lock out of 797 that were eligible (row [7], column [c] and row [8], column [c]). In terms of capacity, 7,119 MW out of 13,641 MW that were eligible elected the price-lock (row [7], column [d] and row [8], column [d]).

While many of the new resources that elected the price-lock opted for the maximum duration (five years through FCA 8 and seven years beginning in FCA 9), this duration was far from universal. As the data show, many resources that elected the price-lock chose a shorter duration. For example, out of the 7,119 MW of new capacity that were awarded a CSO and elected the price-lock (row [7], column [d]), 1,840 MW, or 26 percent, elected a three-year price-lock (row [3], column [d]).

Rows [16] and [17] in the ‘Total’ columns show that generating capacity make up a large portion of the resources and MW eligible for the price-lock, and suggest that while such resources follow a similar pattern to other resource types, the percent of generating resources and MW that elected the price-lock is higher than that for all eligible resources, as shown in row [18]. Moreover, much like with all eligible resources, the percent of generating resources *by count* that elected the price-lock tends to be lower than the percent of generating resource *by MW* that elected the price-lock. That comparison

indicates that the system's larger new resources have historically elected the price-lock at a higher rate than the system's smaller new resources.

d. Price-Lock Elections Over Time

Figure 2 below provides a breakdown of the number of resources, by count, that elected the price-lock in each of the 14 FCAs conducted to date. The horizontal axis represents time, with FCA 1 on the far left, followed by FCA 2, etc. The vertical axis represents the total number of resources that elected the price-lock. The figure includes four separate lines that correspond to (i) the number of resources that elected the price-lock (row [7], column [a]), (ii) the number of resources that elected the price-lock and were awarded a CSO (row [7], column [c]), (iii) the number of generating resources that elected the price-lock (row [16], column [a]), and (iv) the number of generating resources that elected the price-lock and were awarded a CSO (row [16], column [c]).

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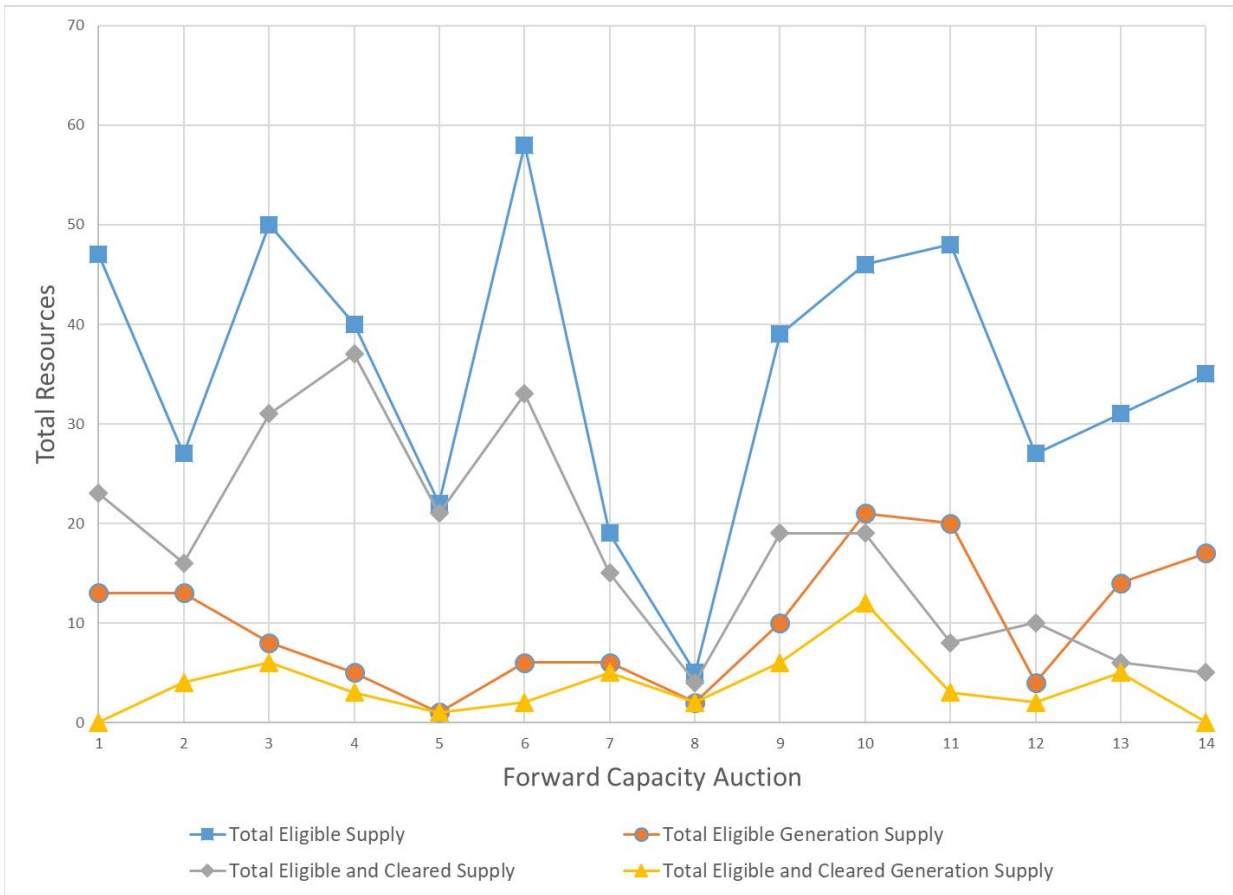


Figure 2 – Potential and Cleared New Resources Electing the Price-Lock

As Figure 2 demonstrates, there is no clear pattern or time trend over these 14 FCAs in the number of resources that elected the price-lock. The count data series in Figure 2 all take a noticeable “dip” in FCA 8, when fewer new resources participated in the FCA and the auction’s supply and demand balance was unusually tight (*see again* Figure 1 in Section III.C.1, above).

Figure 3, below, provides a similar breakdown, except Figure 3 provides information in terms of capacity MW, rather than in terms of the number of resources. More specifically, the figure includes four separate lines that correspond to (i) the quantity of MW that elected the price-lock (row [7], column [b]), (ii) the quantity of MW that elected the price-lock and were awarded a CSO (row [7], column [d]), (iii) the

quantity of MW from generating resources that elected the price-lock (row [16], column [b]), and (iv) the quantity of MW from generating resources that elected the price-lock and were awarded a CSO (row [16], column [d]).

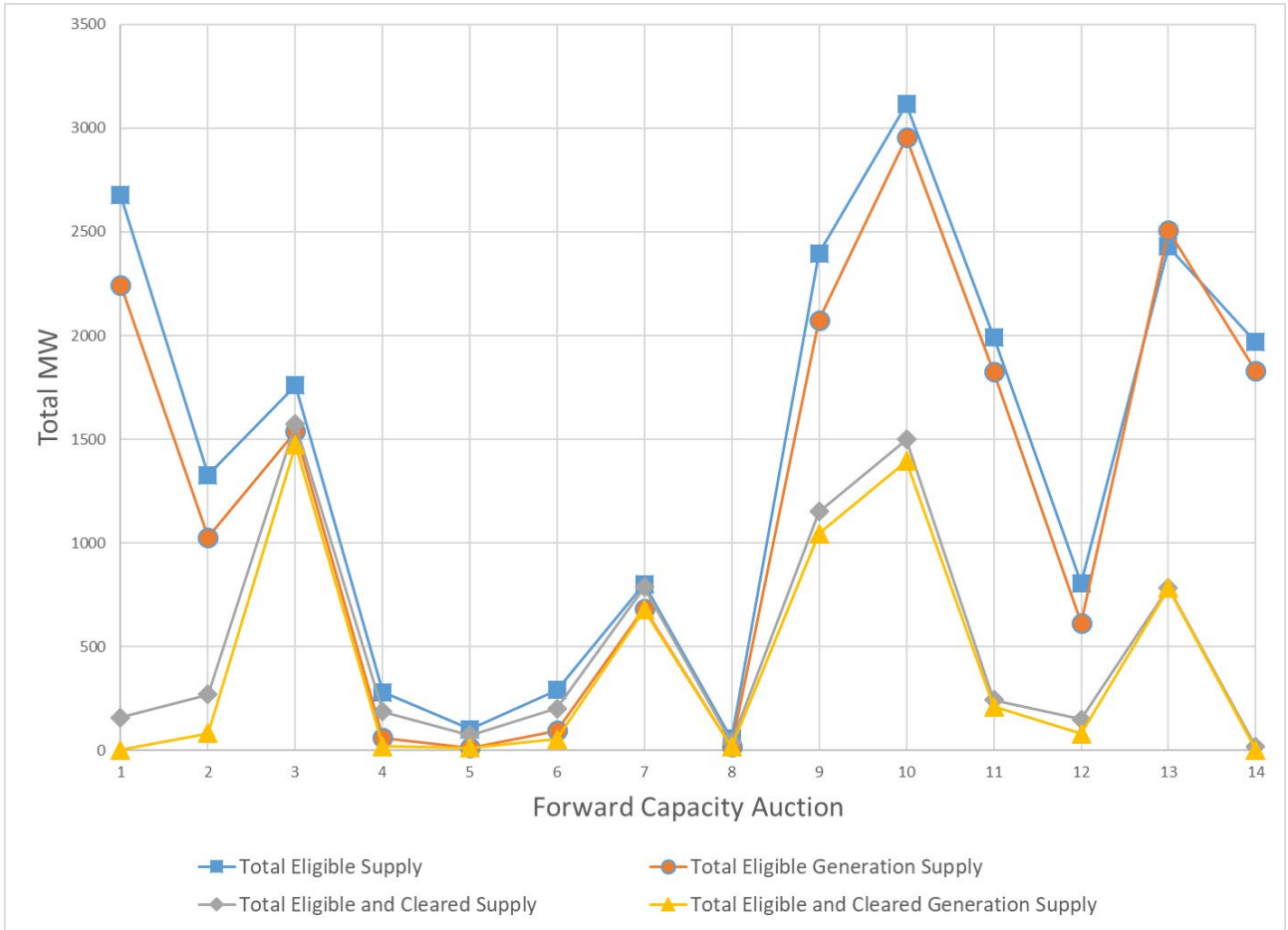


Figure 3 – Potential and Cleared New Resources Electing the Price-Lock (MW)

The data in Figure 3 show no specific time trend overall. From FCA 4 through FCA 8, the total MW of eligible and cleared new resources was relatively low, consistent with the system’s surplus conditions at the time (*c.f.* Figure 2, above).⁹⁰ Since FCA 9, there has been a markedly greater amount of total new resources participating in the

⁹⁰ See *supra*, at Section III.B.1 for a discussions of these conditions.

annual auctions, only a fraction of which acquire CSOs. During this period, generation capacity comprised the majority of all capacity MW eligible for the price-lock, and a majority of all eligible capacity MW that acquired a CSO.

The remainder of this answer considers some additional observations and trends evident from the Price-Lock Elections Table data. These include discussion of the fraction of capacity MW that elected the price-lock, and a comparison of market conditions in 2013-2014, when the ISO extended the price-lock to seven years, relative to market conditions since then.

e. Percent of Eligible Capacity MW Electing the Price-Lock

Figure 4 presents the percent of all eligible capacity that elected the price-lock in each FCA. The horizontal axis again represents time. The vertical axis is the percent of capacity MW that elected the price-lock, for two different categories of resources shown in this graph. The first category, shown in the solid (blue) line, shows the percent of all eligible new capacity MW that elected the price-lock over these 14 FCAs. This corresponds with row [9], column [b], and is calculated as the total eligible capacity MW that elected the price-lock (row [7], column [b]) divided by the total eligible capacity MW (row [8], column [b]).

The second, dashed (orange) line in the figure shows the percent of all eligible new capacity MW with a CSO that elected the price-lock. This corresponds with row [9], column [d], and is calculated as the total eligible capacity that obtained a CSO and elected the price-lock (row [7], column [d]) divided by the total eligible capacity that obtained a CSO (row [8], column [d]).

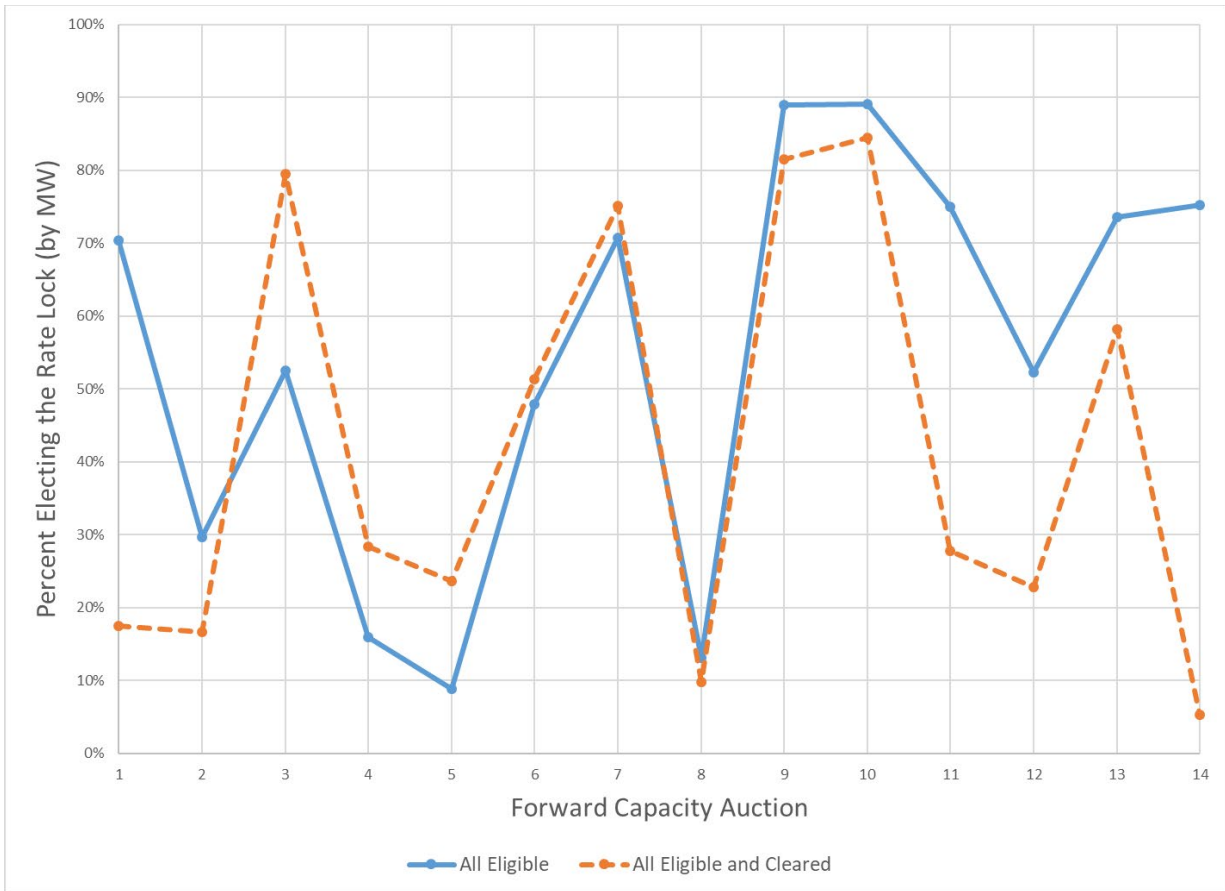


Figure 4 – Price-Lock Elections Over Time

Figure 4 shows that the percent of all eligible new resources that elected the price-lock (in the solid blue line) has varied greatly from auction to auction, from a low of less than 10 percent (in FCA 5) to a high of nearly 90 percent (in FCAs 9 and 10). The percent of all new resources that elected the price-lock and cleared (in the dashed orange line) exhibits similarly large variation over time. As a whole, therefore, the data in Figure 4 do not suggest a clear and consistent time trend in price-lock elections. However, on average a slightly higher percent of eligible new capacity (by MW) has elected the price-lock in the later FCAs (*i.e.*, FCAs 9 through 14) than in earlier FCAs (*i.e.*, FCAs 1 through 8). Specifically, in the first eight FCAs, 44 percent of eligible

capacity MW elected the price-lock, whereas 78 percent elected the price-lock in FCAs 9 through 14.⁹¹

These trends are similar when the analysis is limited to the universe of eligible capacity supply that was awarded a CSO, as shown in the dashed (orange) line. The percent of such capacity MW that elected the price-lock ranges from a low of five percent in FCA 14 to a high of 84 percent in FCA 10. In the first eight FCAs, 45 percent of eligible capacity MW that were awarded a CSO elected the price-lock, whereas 60 percent elected the price-lock in FCAs 9 through 14.⁹²

Broadly, similar observations apply when the analysis is limited to generating capacity resources only. Figure 5 shows the comparable data when the analysis is performed for only new generating capacity resources. As with Figure 4 above, Figure 5 tracks two data series across the fourteen FCAs. The first, in the solid (blue) line, shows the percent of all eligible new generating capacity MW that elected the price-lock. This corresponds with row [18], column [b], and is calculated as the total eligible generating capacity MW that elected the price-lock (row [16], column [b]) divided by the total eligible generating capacity MW (row [17], column [b]).

⁹¹ While this data are not explicitly included in the Price-Lock Election Table, they can be calculated from the data provided. For example, the 44 percent value is calculated by summing the total quantity of MW that elect the price-lock for FCAs 1 through 8 (row [7], column [b]), and dividing this total by the sum of the total quantity of MW that were eligible to elect the price-lock in FCAs 1 through 8 (row [8], column [b]). The same methodology is applied to get the 60 percent value, except the summation now uses the values from FCAs 9 through 14.

⁹² These values can be also calculated from the data provided by dividing the total MW quantity of capacity that was awarded a CSO and elected the price-lock (row [7], column [d]) by the total MW quantity of capacity that was awarded a CSO and was eligible for the price-lock (row [8], column [d]) over the periods of FCA 1 through 8, and 9 through 14.

The second data series in Figure 5, in the dashed (orange) line, shows the percent of all eligible new generating capacity MW that were awarded a CSO that elected the price-lock. This corresponds with row [18], column [d], and is calculated as the total eligible generating capacity that obtained a CSO and elected the price-lock (row [16], column [d]) divided by the total eligible generating capacity that obtained a CSO (row [17], column [d]).

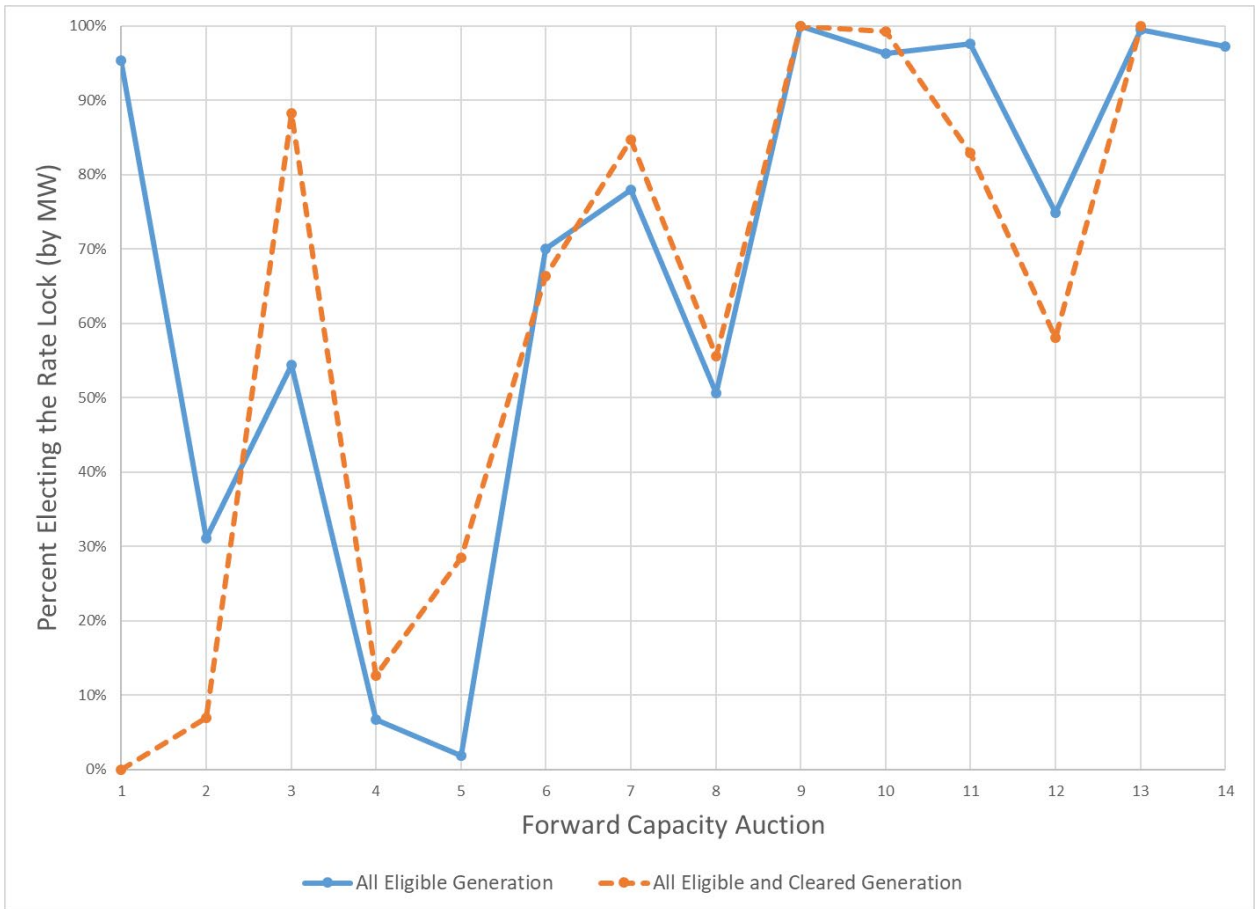


Figure 5 – Price-Lock Elections Over Time for Generating Resources

For all new generation capacity that was eligible for the price-lock (in the solid blue line), the percent of capacity MW that elected the price-lock ranges from a low of two percent in FCA 5 to a high of 100 percent in FCA 9. Moreover, for generating resources that were eligible for the price-lock and that acquired a Capacity Supply

Obligation in the FCA (the dashed orange line), this percent ranges from zero percent in FCA 1 to 100 percent in FCAs 9 and 13.⁹³

f. The data suggests that market conditions differ today from those in place when the ISO proposed extending the price-lock from 5 to 7 years

As noted previously in Section III.B.2, the ISO extended the maximum duration of a price-lock election from five to seven years after FCA 8. As discussed previously in Section III.B.2, at that time the ISO expressed concern about the FCA's ability to attract competitive entry, based on the relatively limited amount of new entry that had occurred in the several FCA's leading up to (and including) FCA 8.

On that issue, Figure 6 is informative. This figure summarizes the data from the Price-Lock Elections Table on total potential and cleared new entry across all 14 FCAs, for resources eligible to elect the price-lock. As with the earlier figures, time (FCA) is on the horizontal axis. The vertical axis is total new capacity MW, measured within four categories. The four categories are: (i) the total qualified MW of eligible supply (from Price-Lock Elections Table, row [8], column [b]), (ii) the total qualified MW that acquired a CSO (from row [8], column [d]), (iii) the total qualified MW from eligible new generation capacity (from row [17], column [b]), and (iv) the total qualified MW from eligible new generation capacity that acquired a CSO (from row [17], column [d]).

⁹³ The dashed orange line does not include a value for FCA 14 because in this auction, no generating resources were eligible for the price-lock and acquired a CSO. As a result, the percent is undefined.

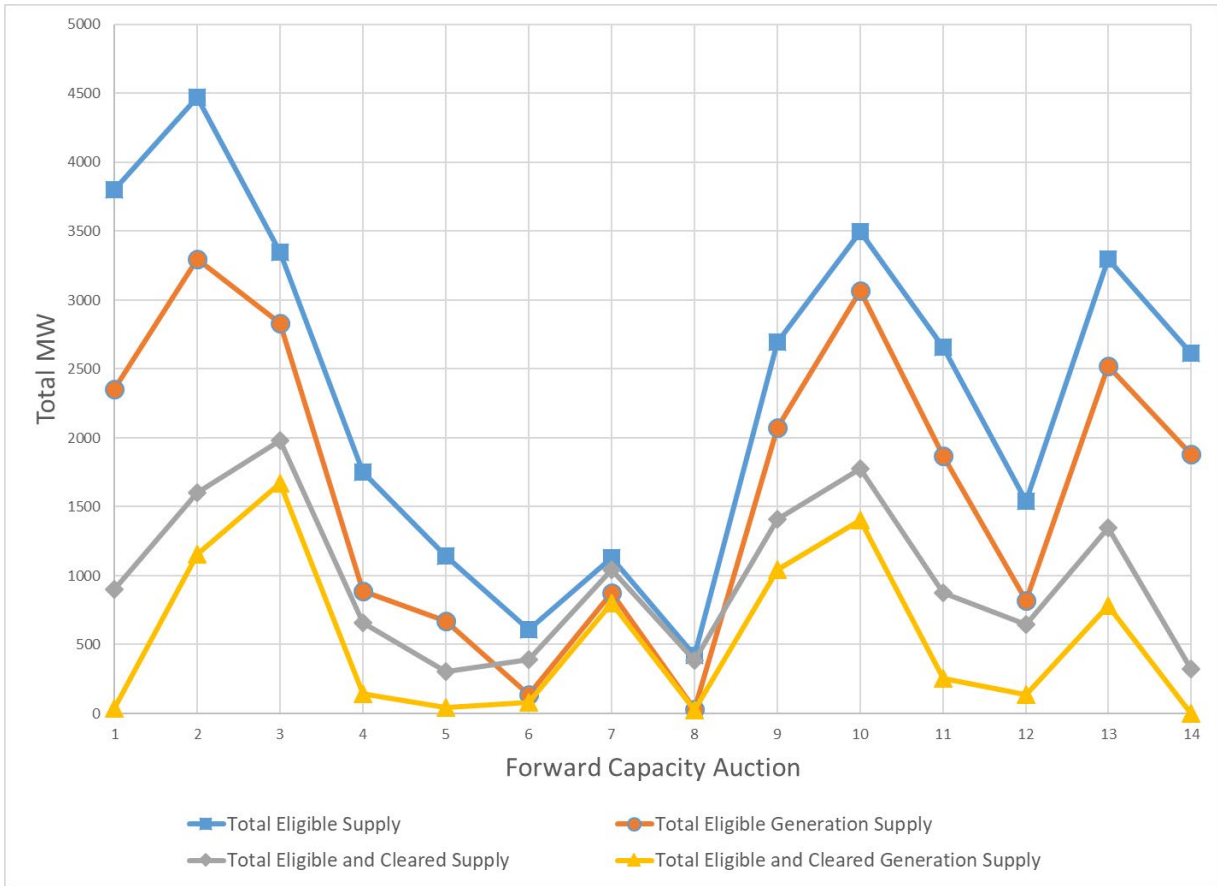


Figure 6 – Potential and Cleared New Entry Over Time (MW)

The data helps to explain why the ISO was concerned with a paucity of new entry (and new generation entry in particular) during the period from FCA 4 through FCA 8, when it then extended the price-lock. As addressed in Section III.B.2 above, in arguing for the price-lock extension, the ISO expressed concern about the FCM’s ability to attract competitive new entry, and that the auction’s history of administrative pricing rules, among other factors, undermined investors’ willingness to develop new projects in New England.

The data corresponding to the first eight auctions in Figure 6 highlight the source of that concern, at that time in the FCM’s history. Each of the four data series during that

period appears to be generally trending downward; by FCA 8, there was a historic low of only 424 MW of potential new capacity eligible for the price-lock.

However, as Figure 6 clearly shows, this downward trend did not continue beyond FCA 8. Rather, beginning in FCA 9, the amount of potential entry increased significantly. As determinants of that increase in potential entry, it is impossible to disentangle the combined effects of significantly changed market conditions (*e.g.*, much higher capacity prices in FCA 9 through FCA 11; *c.f.* Figure 1 in Section III.C.1), or new market rules (*e.g.*, the extension of the price-lock, the introduction of new sloped capacity demand curves, and the elimination of various administrative pricing rules). In the most recent auction, FCA 14, there were 2,618 MW of potential new entry from resources eligible for the price-lock. This represents a substantial increase—more than 500 percent—from the quantity in FCA 8.

* * *

In summary, the data presented in the Price-Lock Elections Table show that 494 new resources elected the price-lock in the first 14 FCAs, and 927 eligible new resources did not. Of the former, nearly 250 resources that elected the price-lock were awarded CSOs in the first 14 FCAs. This corresponds with roughly 7 GW of capacity over this period, or approximately 500 MW per auction. The data do not show a clear time trend regarding the fraction of eligible resources, or their share of all new capacity MW, that elected the price-lock.

22.2 Is a price-lock still needed to incent new entry in ISO-NE?

In Section III.D of this Brief, the ISO described its overall perspective on the continued need for the price-lock mechanism in New England. We refer the reader to that section for a fulsome response to Question 22.2. Below, we summarize our conclusions and caveats, and add several additional observations that have shaped the ISO's thinking on this question.

As explained in Section III.C, much has changed in New England since the ISO last opined on the price-lock in 2014. Specifically, in a sequence of filings, the ISO has done away with the administrative pricing rules that ostensibly created regulatory risk to new investors; this risk was a central rationale for the 2014 price-lock extension.⁹⁴ The FCA has since cleared based on supply and demand fundamentals (*i.e.*, without administrative pricing) in every auction since FCA 9 in 2015. The region has also implemented an innovative system of MRI-based zonal and system demand curves that attenuate the potential for new resource entry to abruptly reduce the following years' capacity clearing prices. Finally, as the data reviewed in response to the Commission's Question 22.1 confirm, the capacity market has successfully demonstrated the ability to attract substantial new generation development since that time. As a result, the system presently faces a situation of excess supply, relative to the Net Installed Capacity Requirement, that is expected to persist until market fundamentals once again signal the need for new competitive merchant project development. As noted in Section III.D, these facts make clear that the underlying conditions that supported the introduction of the price-lock – and its 2014 extension—are no longer in place.

⁹⁴ Price-Lock Extension Filing, Ethier Testimony at 31-32.

The ISO’s perspective is also shaped by other facets of the price-lock mechanism. Of particular note, the price-lock mechanism can reasonably be viewed as providing private investors in new capacity resources with a substitute for acquiring a comparable level of revenue certainty in the form of hedges from the capital markets. Specifically, in the absence of the FCM’s price-lock provisions, a new entrant that seeks comparable revenue certainty would endeavor to arrange revenue hedges through the capital markets (via multi-year revenue puts, spark-spread call options, or functionally-similar financial instruments). As a result, one can view the ISO’s price-lock mechanism as effectively providing investors in new capacity resources with a “free hedge” in the form of a constant capacity revenue stream irrespective of subsequent capacity market conditions during the price-lock period. That “free hedge” is a substitute for entrants incurring, and reflecting in their initial capacity supply offer prices, the true cost—that is, the rate that capital markets would require—for a comparable financial hedge against future market price uncertainty.⁹⁵

That perspective highlights two central effects of the price-lock mechanism. One is that it shifts risk of uncertain future capacity revenues away from the investors in new capacity resources, by instead placing that risk (of above-market payments in future years) onto the region’s electricity consumers. Its second effect is that the mechanism spreads the payments that consumers make to new entrants over time, such that new (price-locked) entrants would be willing to accept a lower initial-year capacity price than

⁹⁵ The ISO is not aware of publicly-available data on the costs facing new entrants to procure comparable financial hedging instruments.

if they acquired equivalent revenue certainty at the true cost of acquiring a comparable financial hedging instrument from the capital markets. Viewed from that perspective, the price-lock mechanism is, in substantive effect, a *de facto* subsidy to new entry.

Our present views on whether the price-lock is necessary to incent new entry in New England have also been shaped by our understanding that other ISO/RTO regions have attracted new merchant generation development in recent years without a comparable ISO-administered price-lock mechanism. This includes new competitive entry that has occurred in PJM (a market with a price-lock limited to certain constrained zones, where the maximum price-lock duration is considerably shorter), in NYISO (which operates a “prompt” capacity market without a three-year forward horizon and without a price-lock mechanism), and in ERCOT (which has no capacity market at all). While each of these regions no doubt has its own unique features that may encourage or inhibit new entry relative to New England, the fact that competitive entry has occurred in those regions without an ISO-administered price-lock comparable to that in New England plainly demonstrates the latter cannot be an absolute necessity for competitive entry to occur generally.

Taken altogether, the totality of the observations throughout this Brief cast reasonable doubt upon the necessity of continuing the administrative price-lock mechanism. That said, as noted in response to Question 22.1 above, the extant “hard” data the ISO is able to provide cannot definitively answer the specific question of whether the “free hedge” in the form of the price-lock mechanism is *necessary* to incent new resource entry, rather than (simply) serving as means to encourage it and (thereby) to lower capacity clearing prices when it occurs.

22.3 Does the price-lock lead to unreasonable price suppression in the entry year?

a. Two conditions are necessary for the price-lock to impact the Forward Capacity Auction clearing price

Before addressing the Commission’s question concerning “price suppression” in the entry year, it is helpful to first provide several observations concerning how the price-lock may impact the clearing price in the Forward Capacity Auction generally.

In order for the clearing price in a Forward Capacity Auction to be affected by the price-lock in the year of entry, two conditions must be met. First, the price-lock must lead a potential entrant to reduce its offer price relative to what it would have offered without the price-lock (Condition 1). This includes cases where an entrant participated in the auction with the price-lock, but would not have participated in the auction in its absence. As noted in response to Question 22.2 above, Condition 1 may apply because of the reduction in financial risk that the price-lock provides the entrant (*e.g.*, it may help lower an entrant’s cost of financing a new resource’s development); or, because the entrant expects that its locked-in price in years two through seven will exceed the competitive clearing price paid to other resources in those years; or both.

Second, the reduction in the participant’s offer price because of the price-lock election must impact the capacity clearing price (Condition 2). This could occur in one of two specific ways: (a) the resource would have been extra-marginal without the price-lock (or would not have offered at all), and by lowering its offer price it is awarded a CSO and thereby displaces another resource and/or increases the market’s total quantity of Capacity Supply Obligation MW awarded; or (b) the resource would have been marginal without the price-lock (*i.e.*, it would have set the clearing price) and it still

clears with the price-lock at a lower offer price, such that its lower offer price reduces the clearing price. The likelihood of Condition 2 is therefore heavily dependent on the degree to which electing the price-lock reduces a new resource's offer price, Condition 1.

As a general matter, it is reasonable to expect that Condition 1 has held true for resources electing the price-lock. Indeed, as discussed above in Section III.B, the price-lock extension implemented for FCA 9 was justified largely on grounds that it would increase the likelihood of a new entrant reducing its offer price in the year of entry.⁹⁶ With respect to Condition 2, it is difficult to assess the fraction of resources that would have been extra-marginal or exactly marginal without the price-lock, because the ISO cannot observe what offer prices new capacity resources would have tendered if, counter to fact, there was no price-lock provision in the FCM rules.

That said, the ISO does observe whether the marginal resource in each FCA is an entrant that elected the price-lock. As noted above, in such circumstances it is plausible that the clearing price would have been higher in the absence of the price-lock provisions. In the last six auctions (beginning with FCA 9), new resource offers that elected the price-lock were marginal in some, but not all, Forward Capacity Auctions. Thus, it is plausible the price-lock impacted (lowered) FCA clearing prices in those auctions. However, since we do not observe the capacity supply offer prices that these entrants *would have* offered in the absence of the price-lock, it is not possible to substantiate quantitative statements concerning the magnitude of the price-lock's potential impact.

⁹⁶ Price-Lock Extension Filing, Ethier Testimony at 30.

b. The market’s evolution since 2014 shifts the balance of interests that are relevant to assessing whether there is “unreasonable price suppression in the entry year”

Whether the Forward Capacity Auction price impact of the price-lock in the year of entry constitutes *unreasonable* lowering of prices, or unreasonable “price suppression,” is a separate issue. That separate issue turns on whether clear evidence demonstrates that prices were lower as a direct result of the price-lock mechanism, and, separately, whether the resulting rate is unreasonable.⁹⁷ On the former, as discussed above, it is not possible to discern the frequency or magnitude of the price-lock impact on FCA prices because we simply do not know the extent to which new entrants would have modified their offer price if the price-lock was not available, or how any such changes would impact auction clearing prices.

In evaluating the reasonableness of the price-lock’s impact on the auction’s clearing prices, the Commission employed a balancing test to weigh “on one hand, setting a price that will retain enough existing resources to maintain reliability and, on the other hand, protecting consumers from overpaying for that capacity and minimizing price volatility that could undermine both investor and consumer confidence in the market.”⁹⁸

⁹⁷ As the Commission is aware, the Federal Power Act does not prohibit any differences in rates *per se*, but rather forbids *unreasonable* differences in rates. 16 U.S.C. § 824d(b) (“No public utility shall, with respect to any transmission or sale subject to the jurisdiction of the Commission, (1) make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage, or (2) maintain any *unreasonable* difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.”) (emphasis added).

⁹⁸ Initial NEPGA Order at P 52 (2014) (citations omitted). *See also New York Indep. System Operator, Inc.*, Order Accepting Tariff Sheet, 122 FERC ¶ 61,064 (2008) at P 54 (rejecting use of updated demand curve factors that “do not recognize the need to balance the impact on consumers with the need to provide correct price signals for new generation entry”). The D.C. Circuit has found it reasonable for the Commission to employ this “balancing of interests” test when assessing the reasonableness of a price impact in a market. In *NextEra Energy Resources, LLC v. FERC*, the D.C. Circuit found that the Commission acted reasonably in accepting New

Of further significance, it also considered the totality of a market's design, as well as perceptions of its effectiveness, as factors to be balanced:

We find that the Filing Parties' proposal is a reasonable response to offset the foregoing concerns. The lock-in extension seeks to achieve a reasonable balance between incenting new entry and protecting consumers from very high prices, *all in the context of recent conditions in ISO-NE's market*. We find that Filing Parties have sufficiently demonstrated that, *in the circumstances here*, extending the lock-in period is an appropriate way to provide investor assurance, given that the sloped demand curve represents a significant change in the FCM design.⁹⁹

As the ISO addressed above in Section III.B of this brief, the ISO's endorsement of the price-lock extension in 2014—as well as its defense against claims of unreasonable price-suppression¹⁰⁰—took account of two significant conditions that impacted the ability of the Forward Capacity Market to achieve its reliability objectives. First, there was an increasing concern about the region's ability to meet its reliability objectives, as manifest in FCA 8 where there was limited new entry while the FCM procured less capacity than its Net Installed Capacity Requirement.¹⁰¹ Second, as the ISO explained at the time,

England's proposed RTR exemption when it "balanced the potential for limited price suppression against competing interests in concluding that the renewable exemption to the minimum offer price rule is consistent with the purpose of the forward capacity market." *NextEra Energy Resources, LLC v. FERC*, 898 F.3d 14, 21 (D.C. Cir. 2018). *See also Wisconsin Pub. Power Inc. v. FERC*, 493 F.3d 239, 262 (D.C. Cir. 2007) ("[S]etting a just and reasonable rate necessarily involves a balancing of the investor and the consumer interests." (internal quotes omitted)); *Transmission Agency of N. California v. FERC*, 628 F.3d 538, 549 (D.C. Cir. 2010) ("A rate is not 'unduly' preferential or 'unreasonably' discriminatory if the utility can justify the disparate effect.") (citing *Arkansas Elec. Energy Consumers v. FERC*, 290 F.3d 362, 367 (D.C. Cir. 2002) and *Elec. Consumers Res. Council v. FERC*, 747 F.2d 1511, 1515 (D.C. Cir. 1984)).

⁹⁹ Price-Lock Extension Order at PP 56-57 (emphasis added).

¹⁰⁰ *ISO New England Inc. and New England Power Pool*, Motion for Leave to Answer and Answer of ISO New England Inc., Docket No. ER14-1639-000 (filed May 1, 2014) ("Price-Lock Extension Answer") at p. 20; *see also Exelon Corporation, and ISO New England, Inc.*, Answer of ISO New England Inc., Docket No. EL15-23-000 (filed December 16, 2014) at pp. 10-11.

¹⁰¹ Price-Lock Extension Filing, transmittal letter at 11 and Ethier Testimony at 31-32; Price-Lock Extension Answer at 26; Price-Lock Extension Order at P 57 ("Here, we find that the

developers cited concerns with perceived “regulatory risks” that, in their view, resulted in capacity clearing prices that were too low to permit the recovery of their net costs of entry.¹⁰² These conditions, which if sustained could have resulted in capacity shortages relative to the Net Installed Capacity Requirement and the inability of the region to maintain the reliable operation of the New England electrical system,¹⁰³ may have justified the continued use and extension of the price-lock mechanism at the time, despite its potential impact on clearing prices in the year of entry.

However, as the ISO has explained in Sections III.C and III.D above, both the market rules and market conditions have substantially changed in New England. The region has experienced several years of capacity surplus conditions,¹⁰⁴ with significant potential new entry participating in each auction since FCA 9. These shifts in market fundamentals have been supported by enhancements in both the Forward Capacity Market design as well as the energy and ancillary services market designs. The latter enhancements in particular, in combination with technological advancements that have reduced development costs, mean that new entrants have lower total costs that must be recovered from the capacity market than in years past.

Taken together, these factors may shift the “balance of interests” necessary to determine whether the price-lock remains “reasonable.” The combination of changes

extension, as part of the package of Demand Curve Changes, is a reasonable means to address the New England region’s current capacity shortage and investor perceptions regarding risk.”).

¹⁰² Price-Lock Extension Filing, Ethier Testimony at 31-32.

¹⁰³ See Price-Lock Extension Order at P 55 (finding that the longer price-lock was necessary to achieve the “1-in-10 LOLE” reliability standard without raising the price cap of the sloped demand curve).

¹⁰⁴ See *supra*, Section III.C.1, Figure 1.

since 2014 in market rules and in capacity market outcomes as summarized above, and as described in detail in Section III.C, imply that the underlying conditions that supported the introduction of the price-lock and its extension are no longer in place. Under such conditions, the potential price impacts of the price-lock provisions may no longer remain “reasonable.”¹⁰⁵

22.4 Does the price-lock with the zero-price offer rule result in unreasonable price suppression in years 2-7?

To answer this question, one must compare the FCA clearing prices under the current market rules, where the zero-price offer rule is in effect, to a counter-to-fact situation in which this zero-price offer rule is not in place—and, crucially, some specific alternative rule holds in its stead. That is, in the absence of the zero-price offer rule, there must be some other set of rules that govern how resources receiving the price-lock are priced in the auction in years two through seven. The Commission’s question does not articulate what alternate rule(s) should be used for purposes of this counterfactual analysis. Indeed, some of the Commission’s later questions appear to acknowledge that there are many possible rules that could govern a price-locked resource’s participation in years two through seven, if the zero-price offer rule was replaced.

In the remainder of this response to this question, the ISO assumes that in the absence of the zero-price offer rule in years two through seven, resources that have elected the price-lock will submit “de-list” bids (*i.e.*, capacity supply offer prices) at the

¹⁰⁵ See *NextEra Energy Resources*, 898 F.3d at 21-22 (finding it appropriate for the Commission to update its application of the balancing test to reflect changes in market rules and other market features when explaining why the Commission’s position on the legitimacy of the market impacts of a MOPR exemption for renewables has evolved).

minimum capacity price level for which they would willingly accept a Capacity Supply Obligation for the relevant Capacity Commitment Period. This discussion therefore assumes that there are no new administrative rules governing how their supply is represented (or priced) in the FCA in years two through seven of a price-lock period.

Figure 7 below illustrates the conditions under which the zero-price offer rule would and would not reduce FCA clearing prices, relative to FCA clearing prices in the absence of the zero-price offer rule. This figure includes two panels. The left-hand panel graphically depicts stylized supply and demand curves that illustrate capacity clearing outcomes under two different scenarios. These scenarios are: (i) when price-locked Resource A is subject to the zero-price offer rule as occurs under current rules (with a corresponding aggregate capacity supply curve in the FCA shown in red), and (ii) where the zero-price offer rule is not in effect and price-locked Resource A has a high competitive offer price during the price-lock period after the first year of entry (with a corresponding aggregate capacity supply curve in the FCM shown in blue).

In Figure 7, the offer of Resource A in scenario (i), with the zero price rule, is denoted by 'A^{ZP}' (where the superscript 'ZP' is for zero-price); the offer of Resource A in contrasting scenario (ii), without the zero price rule, is denoted by 'A^C' (where the superscript 'C' is for competitive). The capacity clearing price in scenario (i), with the zero price rule, is denoted by 'P^{ZP}' and determined by where the downward-sloping capacity demand curve (in green) intersects the upward sloping supply curve (in red). In contrast, the capacity clearing price in scenario (ii), without the zero price rule, is denoted by 'P^C' and determined by the price level where the downward-sloping capacity demand curve (in green) intersects the competitive-case upward sloping supply curve (in blue).

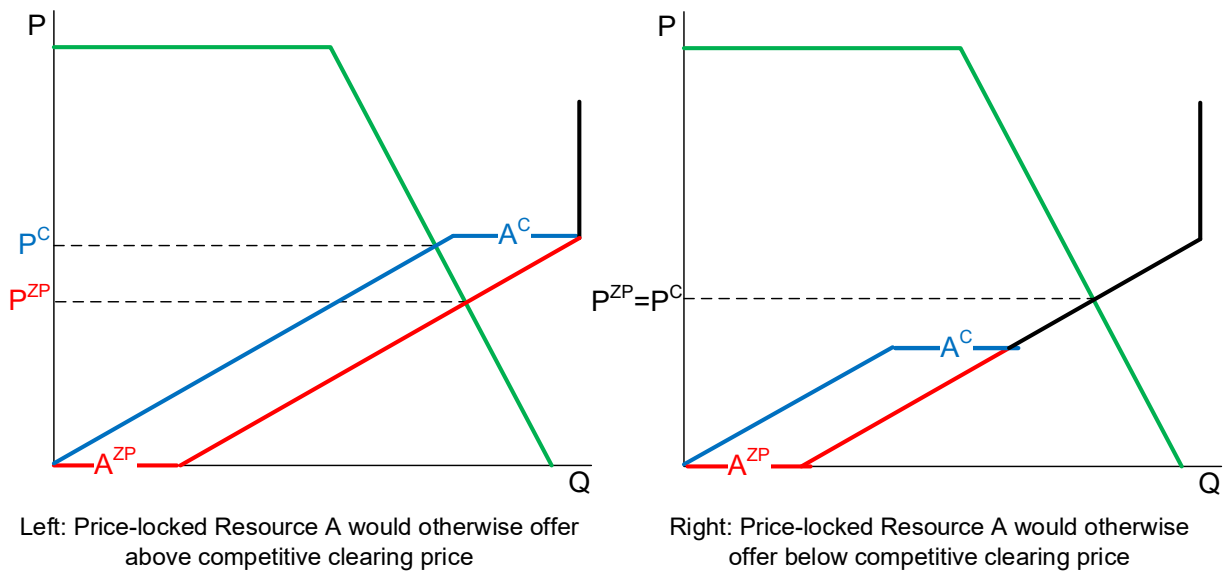


Figure 7¹⁰⁶

As shown in the left panel of Figure 7, when Resource A's competitive offer price *exceeds* the counterfactual capacity clearing price of P^C , the FCA clearing price is reduced by the zero-price offer rule from P^C to P^{ZP} . Thus, when the zero-price offer rule leads a resource to acquire a Capacity Supply Obligation in a year after the first year of entry *and* when, in the absence of the zero-price rule, the same resource would no longer acquire a Capacity Supply Obligation in the same year, *then* we may infer that the zero-price offer rule has lowered the capacity clearing price after the first year of entry (during the price-lock period).

¹⁰⁶ In this figure, and all others in this Brief, the capacity demand curve is drawn using straight (linear) lines for simplicity. In practice, the FCA is conducted using curved (or convex) downward sloping demand curves, consistent with sound engineering-economic principles and the incremental reliability value that capacity provides. The simplification of depicting straight-line demand curves in the present graphical figures does not affect any of the insights or conclusions discussed herein.

There is a contrasting situation that is also important to consider, however. In the right-hand panel of Figure 7, we now change one assumption to illustrate a qualitatively different conclusion. Specifically, in the right-hand panel we consider the situation where price-locked Resource A now has a low competitive offer price during the price-lock period after the first year of entry (with a new corresponding aggregate capacity supply curve in the FCM, shown in blue/black in the right-hand panel).

In the right-hand panel, the offer of Resource A in scenario (i), with the zero price rule, is again denoted ‘A^{ZP}’ (where ‘ZP’ is for zero-price); the offer of Resource A in contrasting scenario (ii), without the zero price rule, is again denoted by ‘A^C’ (where ‘C’ is for competitive).

In the right-hand panel, the capacity clearing price in scenario (i), with the zero price rule, is denoted by ‘P^{ZP}’ and is the same price as before, in the left-hand panel. However, now with Resource A’s lower competitive supply offer price, the competitive clearing price of P^C is lower than shown before in the left-hand panel. As the right-hand panel reveals, in this situation whether the zero-price rule applies to Resource A or not, the FCA’s clearing price *is the same*. Stated differently, in the situation in the right-hand panel where Resource A has a low competitive offer price, the FCA clearing price is not impacted at all by the zero-price offer rule. Rather, the clearing price is P^C both with the zero-price offer rule and under the counterfactual where the Resource A offers its capacity at its competitive price.

As a practical matter, therefore, the answer to the Commission’s question hinges, in significant part, on which situation is more likely to manifest in the actual conduct of the FCM: The panel on the left, or the panel on the right. As the ISO has explained in

prior filings, we expect the right-hand panel to be a more accurate representation of priced-locked resources' competitive offer prices during years two through seven. This is because, in general, "resources are not permitted to de-list at prices higher than their going forward costs (*i.e.*, the costs of operations minus inframarginal revenues), and the going forward costs of recently constructed resources are certainly below Forward Capacity Auction clearing prices. This is true because, most importantly, initial clearing prices include the capital costs for a new resource and, further, such resources are newer than the vast majority of the fleet, and therefore are better designed and more efficient. Better designs result in lower costs."¹⁰⁷

Stated plainly, new resources during the price-lock period are just recently developed, their development costs are sunk, and their operating efficiency means they will tend to have lower going-forward costs and, therefore, lower FCA offer prices than many other capacity resources. Consequently, on the specific question of the impact of the zero-price offer rule on capacity clearing prices in years two through seven, the ISO's perspective remains unchanged from that stated previously, as we continue to believe that the zero-price offer requirement is unlikely to affect FCA prices.¹⁰⁸

22.5 Is the price-lock unduly discriminatory?

For a given Forward Capacity Auction, the price-lock offers one set of pricing rules and payment rates to capacity resources that are new or have recently entered the market (and still are receiving their "locked in" price), and another set of pricing rules

¹⁰⁷ See *Exelon Corp. v. ISO New England, Inc.*, Answer of ISO New England Inc., Docket No. EL15-23-000 (filed December 16, 2014) at 17.

¹⁰⁸ *Id.* at 17-18.

and payment rates to other capacity resources that did not elect a price-lock when new, or for which their price-lock has expired, or that were existing when the price-lock was implemented at the inception of the Forward Capacity Market. Through the lens of a single capacity auction, the price-lock mechanism is indisputably *economically* discriminatory: It results in situations where resources with nominally identical Capacity Supply Obligations are paid different rates for that specific, ISO Tariff-defined service.

As an example: Consider two resources that are entirely identical except insofar as one resource initially cleared in a Forward Capacity Auction held five years ago, and the other in an auction held eight years ago. Both elected the seven-year price-lock, which has expired for the latter but not for the former. These two resources, which are (by assumption) identically-situated with respect to their capabilities, costs, and Capacity Supply Obligations under the Tariff, will nonetheless receive different payment rates in the same Capacity Commitment Period. From an economic standpoint, such outcomes comprise price discrimination.

We take due note that the Commission's question above asks whether the price discrimination that results from the price-lock is *unduly* discriminatory. The question of whether the discriminatory treatment resulting from the price-lock constitutes an *undue* preference or advantage, in contravention of Section 205 of the Federal Power Act, turns on whether the entity claiming discrimination is "similarly situated" to others.¹⁰⁹

¹⁰⁹ See *Advanced Energy Management Alliance v. FERC*, 860 F.3d 656, 670 (D.C. Cir. 2017) (citing *Transmission Agency of N. Cal. v. FERC*, 628 F.3d 538, 549 (D.C. Cir. 2010) ("A rate is not 'unduly' preferential or 'unreasonably' discriminatory if the utility can justify the disparate effect.")). See also *Metro. Edison Co. v. FERC*, 595 F.2d 851, 857 (D.C. Cir. 1979) ("A difference in rate treatment is not unduly discriminatory when the difference is amply justified...").

Disparate treatment of two customer classes does not in and of itself result in an undue preference or advantage if the customer classes are not similarly situated.¹¹⁰

In rejecting arguments that the original five-year price-lock was unduly discriminatory, the Commission focused on the need to mitigate the risks to new entry—risks that were purportedly not faced by existing resources. Thus, in denying the first complaint against the five-year price-lock brought by certain generation companies in 2014, the Commission found that the price-lock (along with the since-removed Capacity Carry Forward Rule) was “appropriately designed to meet particular and distinct goals,”¹¹¹ and further that the price-lock “mitigates price risk” for new entrants.¹¹² When addressing claims of undue discrimination in the price-lock extension proceeding, the Commission emphasized the unique circumstances faced in New England at the time that warranted measures to ensure sufficient new supply would participate in the market:

[T]he lock-in extension represents an attempt to balance numerous considerations. The proposed extension not only addresses specific issues unique to the New England region, such as the real risk of lack of investment when new capacity is needed and a high reliance on merchant entry, but it is also closely linked to the design of the sloped demand curve and the parameters chosen.¹¹³

On rehearing, the Commission reaffirmed that the preferential treatment for new entry into the market was justified by the perceived risks to investors and the potential for capacity shortages:

¹¹⁰ See e.g. *Sw. Elec. Co-op., Inc. v. FERC*, 347 F.3d 975, 981 (D.C. Cir. 2003). See also *Michigan Consol. Gas Co. v. Fed. Power Comm'n*, 203 F.2d 895, 901 (3d Cir. 1953) and *Complex Consol. Edison Co. of New York v. FERC*, 165 F.3d 992, 1012 (D.C. Cir. 1999).

¹¹¹ NEPGA Rehearing Order at P 19.

¹¹² *Id.*

¹¹³ Price-Lock Extension Order at P 58.

[R]esources that are entering the FCM now are not similarly situated to resources that entered the market previously. The perceived risks in the FCM are currently unnaturally high, due to recent market changes and the fact that, in the first six FCAs, price floors set the auction clearing prices. Thus, at this time, offers submitted by new entrants reflect more than the normal volatility that the initial five-year lock-in period was designed to ameliorate.¹¹⁴

Thus, the Commission’s findings on undue discrimination in the 2014 timeframe were largely based on circumstances the Forward Capacity Market faced at that time—when a lack of new entry and the risk of capacity shortages raised significant concerns about the ability of the region to reliably meet its resource adequacy requirements.

As explained in Sections III.C and III.D, the markets have evolved significantly over the last six years. The years of surplus conditions relative to the Net Installed Capacity Requirement, significant new entry participating in each auction, enhancements in market designs, and technological advancements that have improved resource efficiency and reduced development costs, significantly decrease the risks to new entrants in the markets. This reduction in the risks new entrants face lessens concerns that the markets will be able to attract and maintain the level of participation necessary for the FCM to meet its reliability objective. In the face of such changes, it is more difficult to justify the preferential treatment afforded new entrants through the price-lock. The “perceived risks in the FCM” are no longer “unnaturally high”¹¹⁵ and, given the improvements to the MRI-based demand curve design discussed previously, the ISO anticipates that the FCM will clear at the price required to attract new entry when it

¹¹⁴ Price-Lock Extension Rehearing Order at P 32.

¹¹⁵ *Id.*

would otherwise fail to satisfy its resource adequacy objectives, so that the region no longer faces “the real risk of lack of investment when new capacity is needed.”¹¹⁶

22.6 If the price-lock is retained, should the term be shortened and, if so, what would be a just and reasonable term?

As shown in the Price-Lock Elections Table in Attachment A, capacity suppliers exhibit heterogeneous decisions with regard to their price-lock elections. As discussed in our response to Question 22.1, there is no clear time trend associated with the fraction of resources or MW that elected the price-lock across the 14 FCAs conducted to date. Moreover, while many of the resources that elected the price-lock have chosen the maximum duration (five years for FCAs 1 through 8, and seven years for FCAs 9 through 14), this is far from universal, as a number of resources have elected the price-lock for shorter durations. For example, across the 14 FCAs, a total of 113 resources and 1,840 MW of capacity were awarded CSOs with a price-lock duration of three years (shown in row [3], columns [c] and [d] of the “Totals” on the far right of the table).

Based on these data, it is therefore not possible to draw conclusions about how shortening the maximum price-lock duration would impact potential entrants’ willingness to participate in the Forward Capacity Market, the frequency with which eligible resources would elect a price-lock with a shortened term, or how this change would impact auction outcomes more generally. Moreover, these data do not provide guidance as to what durations would or would not be appropriate, if the maximum term was to be shortened.

¹¹⁶ Price-Lock Extension Order at P 58.

Similarly, economic principles do not provide clear answers to this question. The price-lock provisions are an administrative mechanism that stemmed from the original FCM settlement, rather than being developed from standard market design principles. As described in response to Question 22.2, the impact of a different duration may depend, among other things, on the availability of substitute financial instruments to new entrants (both in tenor and cost), and how the Commission proceeds to re-weigh the “balancing of interests” that it has emphasized in its previous decisions on the price-lock mechanism.¹¹⁷ For these reasons, the ISO does not have sufficient information to assert whether, if the price-lock mechanism is retained, a shortened term would be just and reasonable.

B. Response to Commission Questions on Retaining a Price-Lock and Adding an Offer Floor (Paragraph 23)

23.1 How would an offer floor be implemented?

There is no unique or “standard” market design for non-economic administrative rules such as price-lock offer floor prices. Rather, there are a number of critical design questions that would need to be assessed and answered before any such offer floor rule could be developed and implemented. While the ISO has not fully assessed how such an offer floor could be implemented, initial design decisions could produce markedly different market outcomes, as highlighted below.

To shed light on those decisions, our response to this Commission question focuses on three key questions (Design Questions A through C) that would require further consideration to develop a new offer floor rule associated with the price-lock

¹¹⁷ See Price-Lock Extension Order at PP 56-58; Initial NEPGA Order at P 52; Exelon Rehearing Order at P 16.

mechanism in the FCM. For clarity, please note that in the response below, the ISO interprets the Commission's question as pertaining specifically to the value of an offer floor *price* to be used in an FCA, beginning in the second year after a new capacity resource initially clears in the FCA, and applicable to the duration of that resource's price-lock election term.

Our summary conclusions from our initial assessment of various offer floor price approaches is unequivocally critical. As our discussion below conveys, there appear to be numerous challenges and potential concerns with any offer floor price design—a fact that reflects the inherently *ad hoc* nature of such an administrative rule. We are concerned that further examination and design evaluation of possible administrative floor price rules will likely reveal a host of complicated questions and unintended problems, to which there will be no sound economic answers—and, as a direct result, for which there will be no shortage of continued controversy and unproductive future litigation.

Indeed, at present, the ISO can offer the Commission no specific recommendation on an alternative offer floor price rule to the FCM's existing zero-price offer rule, as all alternatives that we consider here appear to suffer significant deficiencies and lack a sound economic basis; moreover, upon close examination, none of the approaches discussed below appear to offer any meaningful benefit relative to the current zero-price offer rule (for reasons explained presently). Indeed, it may well be superior to eliminate the price-lock provisions in their entirety than to require the ISO to develop and implement an entirely new set of complex administrative rules to accommodate an offer floor.

With that summary of our present assessment on the offer floor question the Commission poses, we now turn to a series of key Design Questions and our assessment of implementation issues that arise with various offer floor price mechanisms.

Design Question A: What happens if the offer floor price stipulates a value in excess of the Capacity Clearing Price in the FCA?

In general, when a resource competitively offers its capacity at an offer price exceeding the Capacity Clearing Price in the FCA, it is not awarded a CSO. This outcome is economically sensible, as the resource's offer price indicates that it is not willing to accept an obligation at the market-clearing price. However, this logic does not hold when the resource's capacity is instead offered at an administratively-determined price, and the resource would be paid at a different rate than the clearing price for the same obligation. In the latter circumstances, which are central to the price-lock, there may be no economically sound answer to whether such resources should be awarded a CSO.

That fact is central to Design Question A, and the possible different answers to it can have a significant impact on how an administrative offer floor price rule would affect auction outcomes. The ISO has identified at least three potential approaches that an offer floor price design could take to address Design Question A, each of which we summarize presently.

“Hard” Offer Floor with Uncertain Awards. First, an administrative offer floor price rule could be implemented such that a price-locked resource would *not* receive a Capacity Supply Obligation, nor any compensation, for a Capacity Commitment Period in which its offer floor price exceeded the Capacity Clearing Price in the corresponding FCA (in the resource's applicable Capacity Zone).

Under this approach, such a “hard” offer floor may prevent a newer capacity resource with a low going-forward cost from being awarded a Capacity Supply Obligation during (some or all of) years two-through-seven. As a result, this approach appears to defeat the price-lock mechanism’s purpose of providing capacity revenue certainty during that price-lock period.

It is plausible that this approach would also increase the financial risk for new entrants relative to either the current rules or the situation if the price-lock rules were simply removed entirely, as new resources might only receive compensation in the FCM in a subset of their (nominal) “price-locked” years. As a result, this offer floor design may lead new resources not to elect the price-lock.

“Hard” Offer Floor with Out-of-Market Awards and Capacity Uplift Payments.

A second approach to an administrative offer floor price rule could treat the price-locked resource as extra-marginal whenever the Capacity Clearing Price falls below its offer floor price; yet, though its offer would therefore not be economically awarded a Capacity Supply Obligation in the auction, the rules could nonetheless mandate the resource be awarded a Capacity Supply Obligation and be compensated at its “price-locked” rate. Such an approach would, in effect, provide an out-of-market award (*viz.*, a CSO) whenever the resource’s offer floor price value exceeds the Capacity Clearing Price in the FCA (in the resource’s applicable Capacity Zone).

This approach is a different “hard” offer floor administrative rule that ensures the price-locked resource continues to receive its price-locked rate. However, it introduces new problems. Specifically, by not counting this priced-locked resource’s capacity when conducting the FCA, and then ultimately awarding it a CSO “out-of-market” after the

auction, this approach may award capacity to resources even when their offer price exceeds the appropriate marginal reliability value of capacity (as specified by the FCA’s MRI-based capacity demand curves).

This problematic scenario is illustrated in Figure 8 below. This graph illustrates capacity auction supply and demand curves and two hypothetical resources, Resource A (with a price-lock) and Resource B (without a price-lock). In the graph, capacity quantity (in MW) is depicted on the horizontal axis and price is on the vertical axis. The capacity demand curves are shown in green, and the aggregate and individual capacity supply offers and capacity de-list bids is in blue.

The left-hand panel in Figure 8 shows the FCA outcome with the “hard” offer floor design that employs out-of-market awards. Here, Resource A’s offer floor price exceeds the FCA clearing price, and Resource A would therefore not be economically awarded a CSO in the market clearing of the FCA. In this example, Resource B is economically awarded a CSO because its capacity supply offer price is less than the FCA’s clearing price.

However, under this administrative offer floor price rule approach, *after* the auction clears, Resource A is nonetheless awarded a CSO “out of market” because of its prior election of the price-lock. The difference between its “price-locked” capacity payment rate, and the FCA’s clearing price, would need to be paid to the price-locked resource through (some type of) capacity market uplift payment.¹¹⁸

¹¹⁸ Similarly, the ISO’s current rules employ a form of capacity uplift payment to a price-locked resource, equal to the difference between the resource-specific “price-locked” capacity payment rate and the FCA’s clearing price allocated to load for the same Capacity Commitment Period.

This “out of market” treatment confounds proper economic outcomes, as illustrated in the right-hand panel of Figure 8. In that panel, the final aggregate supply curve from all properly cleared capacity resources has been shifted to the right, to account for the additional “out of market” supply from the price-locked resource. As shown in the right-hand panel, the aggregate capacity of all resources awarded CSOs indicates that Resource B’s costs actually exceed the marginal reliability value that Resource B’s capacity provides. As a result, the auction fails to maximize social surplus (as specified by the set of supply offers and MRI-based demand curves). In other words, Resource B’s costs exceed its benefits to the system; this “hard” offer floor price approach has produced an economically incoherent outcome in the FCM.

Stated more generally, this outcome is clearly inconsistent with the objectives of the MRI-based demand curves and the FCM overall. Unfortunately, it would likely occur anytime that a price-locked resource was not economically awarded a CSO in the FCA because its “hard” offer floor price exceeded the FCA’s clearing price.

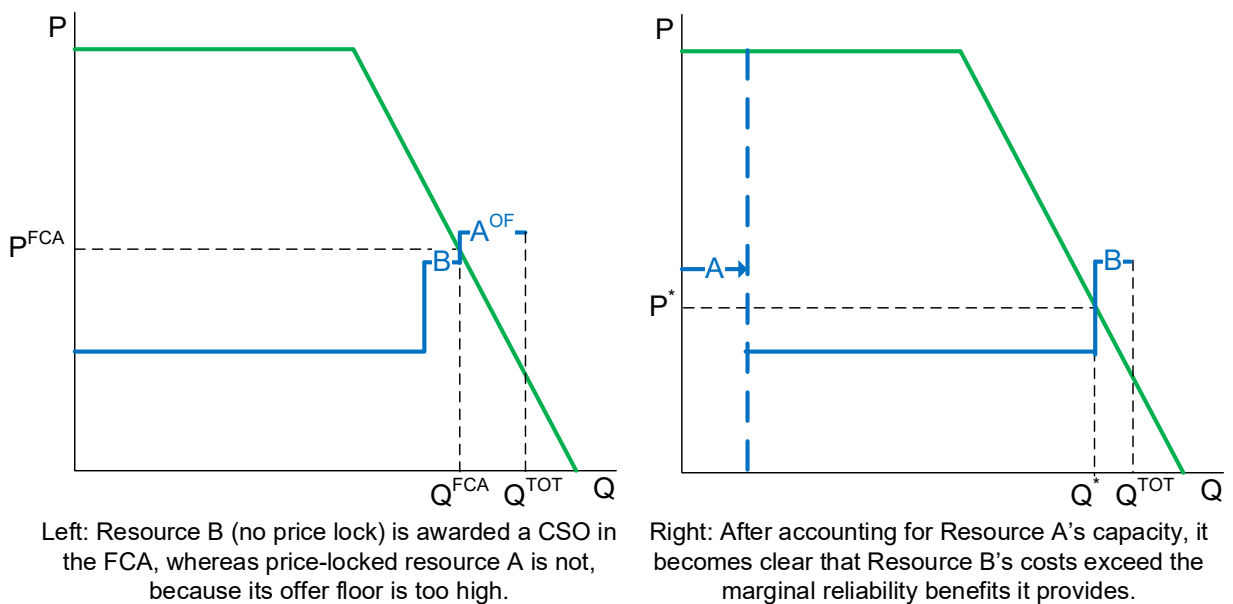


Figure 8 – “Hard” Offer Floor with Out-of-Market Awards and Capacity Uplift Payments

“Soft” Offer Floor with In-Market Awards and Capacity Uplift Payments. A third approach to an administrative offer floor price rule is to employ a “soft” offer floor price that is administratively “adjusted” by the ISO, in some technical manner, to ensure that a resource is awarded a CSO in the FCA.

Through that offer floor price value manipulation, the price-locked resource would be awarded a CSO “in market;” however, its actual capacity payment rate, as determined by its original price-locked rate, may exceed the Capacity Clearing Price of the FCA. In such circumstances, the difference between its price-locked capacity payment rate and the FCA’s clearing price would again need to be paid to the price-locked resource through (some type of) capacity market uplift payment.

This type of “soft” offer floor price approach is by far the most complex administrative rule of those the ISO has considered in connection with the Commission’s Order on Remand. It appears to be conceptually similar to certain features of the New Entry Price Adjustment rules in PJM’s capacity market, applicable (in certain limited circumstances) to price-locked new capacity resources in that market.¹¹⁹ At a conceptual level, this “soft” offer floor price approach appears likely to produce FCA outcomes that are identical to, or very similar to, the existing zero-price offer rule for price-locked resources in the current FCM rules.

To see why, consider the following simple supply-and-demand analysis of FCA outcomes. Figure 9 presents modified supply curves (in blue) from those presented in Figure 8, in order to illustrate FCA outcomes using a version of this “soft” offer price floor approach. In the important case, there is an “initial” offer floor price value for the

¹¹⁹ See PJM Open Access Transmission Tariff, Attachment DD, § 5.14(c).

price-locked resources that would be greater than the FCA clearing price. Thus, Resource A’s administrative offer price value is “adjusted” by the ISO, in a downward direction, so that it is low enough to be awarded a CSO in the FCA. The FCA clearing outcomes are illustrated in this situation in the left-hand panel of Figure 9.

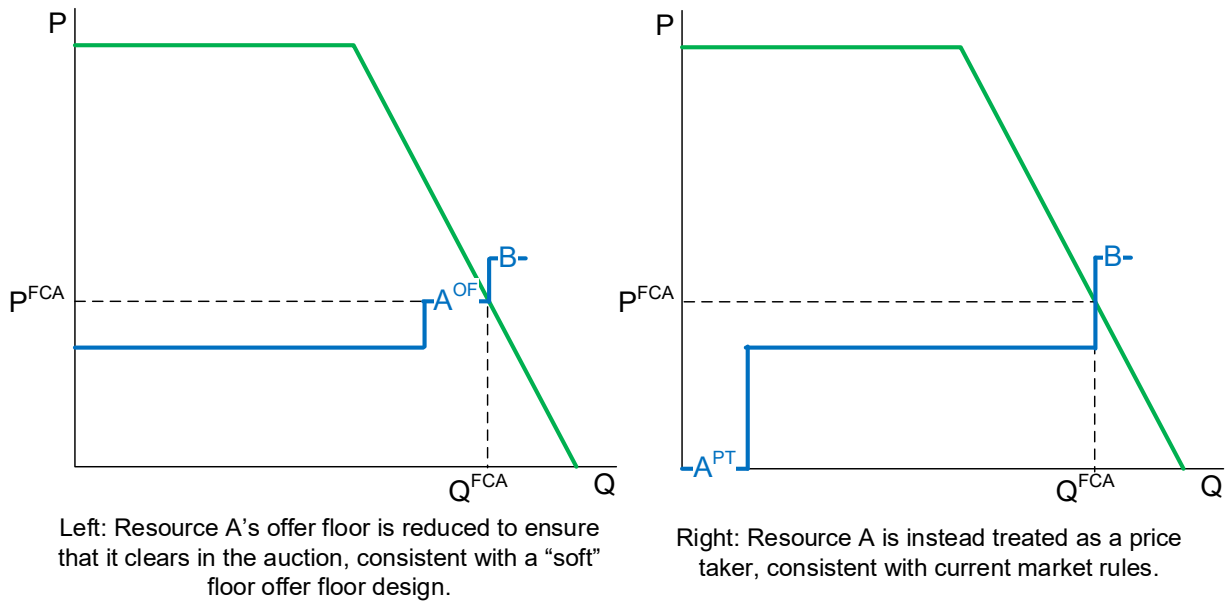


Figure 9 – “Soft” Offer Floor with In-Market Awards and Capacity Uplift Payments

In the right-hand panel of Figure 9, the FCA outcomes are shown under the same conditions except that price-locked Resource A’s offer price is assumed to be entered at zero (as it would be under the existing FCM rules). When Resource A is entered into the FCA at a zero offer price, it appears at the “bottom” of the supply stack—that is, at the very lower-left of the aggregate supply curve for the FCA. As depicted in the right-hand panel, however, that zero-price offer treatment does not change the FCA cleared quantity, or change the FCA clearing price. Rather, it simply “re-orders” the stack of the inframarginal supply offers.

As illustrated in Figure 9, this “soft” offer floor price approach for price-locked resources produces the same auction outcomes as the ISO’s current zero-price offer rule.

Specifically, under either rule, the FCA awards a CSO to Resource A and does not award a CSO to Resource B. And under either rule, the clearing price in Figure 9 is the same value, shown where supply intersects demand at the price level of P^{FCA} .

In practice, because capacity resources in the FCM are typically “lumpy” (that is, they must be cleared in full or not at all, and not “partially” cleared), it is possible that under some conditions there could be differences in the capacity clearing prices between the “soft” offer price value approach and the zero-price offer approach. Such differences depend, in part, on the technically involved procedures that would need to be developed to algorithmically manipulate the “soft” offer floor price value inside of the FCA’s market clearing engine to ensure a “lumpy” price-locked resource continues to clear. Such technically intricate clearing procedures to accommodate administrative rules impede the transparency of auction outcomes generally, but do not change the central economic insights conveyed in Figure 9: Under either the “soft” offer price floor approach or the existing zero-price offer approach, the FCA clearing outcomes and prices would be similar, if not identical.

Importantly, these conclusions and the insights of Figure 9 are not artifacts of specific resource assumptions or this example. Rather, a “soft” offer floor approach would be expected to produce an FCA result that is equivalent or similar to the ISO’s current zero-price rule for price-locked resources. As a result, this “soft” offer floor price approach appears to offer no meaningful impact on auction outcomes, yet comes at the cost of creating a need for new, technically involved algorithms for manipulating the “soft” offer floor price value inside the auction clearing algorithms and, in so doing, undermining the transparency of the market-clearing process overall.

Design Question B: What methodology is used to set the “hard,” or the initial “soft,” offer floor price value applicable to a price-locked resource?

Any administrative offer floor price approach must specify how the specific value of the offer floor price is to be set. This determination is more relevant to the two “hard” offer floor price approaches outlined in connection with Design Question A above; a “soft” offer floor price approach is less likely to produce materially different outcomes than the existing zero-price offer rule in place today, regardless of how an initial “soft” offer floor price value is set (for the reasons described immediately above).

Conceivably, there are an array of possible methodologies for establishing a “hard” or initial “soft” offer floor price numerical value. Possibilities identified earlier in this proceeding, or through prior discussions in the stakeholder process, include:

- Net CONE, or some fraction thereof;
- The resource’s year one clearing price, or some fraction thereof;
- The resource’s year one offer price;
- Some minimum or maximum function that incorporates all or a subset of the three components above, in some *ad hoc* manner or other.

The ISO takes no position on the relative merits of those possible approaches to setting a “hard” offer price value, or an initial “soft” offer price value. That is simply because the ISO can identify no sound economic basis to tender a recommendation to the Commission for any of those potential administrative pricing rules.

Design Question C: Should a priced-locked resource be permitted to offer its capacity into the auction at a price above the offer floor price value?

The term “offer *floor*,” as used by the Commission in framing questions about this topic in the Order on Remand,¹²⁰ suggests that this represents a *minimum* offer price at which a price-locked resource’s capacity can be offered into the FCAs (for FCAs after the auction in which it initially clears within the duration of its price-lock period). This poses a design issue that returns the problematic aspects of the “hard” offer floor price approaches discussed previously.

If an offer floor price value is intended to represent an administratively-determined *minimum*, then a price-locked resource could conceivably offer its capacity into the FCA during the price-lock period at an offer price value in excess of that offer price floor. If a resource chose to do so, and its offer price value exceeded the FCA clearing price (in the resource’s Capacity Zone), then still more administrative rules would be needed to specify how the FCA should deal with that conundrum.

For example, should that situation be treated as in the approach with a “*Hard’ Offer Floor with Uncertain Awards*,” as described above under Design Question A? In that case, the resource would not receive a CSO or its corresponding capacity payment, which appears contrary to the intent of retaining a price-lock entirely. Or, should that situation be treated as in the approach with the “*Hard’ Offer Floor with Out-of-Market Awards and Capacity Uplift Payments*,” as also described above? In that case, the same problematic scenarios described earlier with that approach would then apply again here.

¹²⁰ See Order on Remand at P 23.

Summary. The key Design Questions highlighted in the ISO’s answer to Question 23.1 raise broader concerns. With administratively complex addenda to a market’s pricing rules, such as an offer floor price for price-locked resources, there appear to be numerous difficulties and potential concerns. We are concerned these problems may have no sound economic solutions, and as a result, will engender continued controversy and future litigation. Cognizant of that unproductive prospect, the ISO prefers to avoid creating complex new administrative mechanisms in its markets; as the region learned in the early years of the Forward Capacity Market,¹²¹ such uneconomic artifices tend to prevent these markets from producing economically sound outcomes, reduce investor confidence, and often have unforeseen consequences.

23.2 Would an offer floor require significant market redesign?

The answer to this question is entirely dependent on how the offer floor price mechanism would work. As discussed above, there are many different approaches to an offer floor price. Those approaches may have widely varying implications with respect to design complexity, auction procedures, and software implementation work.

While the ISO has not assessed in detail the market redesign work necessary to accommodate a new approach to an offer floor price, certain approaches appear highly likely to entail substantial complexity and extensive implementation work. In particular, the implementation work is likely to be especially significant if it would require changes that interact with the FCA’s Descending Clock Auction, a “live” auction format where bids and offers to sell capacity are collected as the auction is run.

¹²¹ *See supra*, Section III.B for a discussion of these issues.

To the best of the ISO’s knowledge, a “soft” offer floor price approach has never been implemented in the context of a Descending Clock Auction. On initial consideration, that could require substantial changes to the auction software, procedures, and possibly its duration. For example, a requirement to “adjust” a resource’s supply offer (to ensure that it is awarded a CSO) during the course of a “live” Descending Clock Auction could require new, intricate technical (and non-transparent) procedures, and pose yet-to-be-evaluated design problems that would need to be resolved before such an approach could be implemented.

23.3 What would be the timeline for implementing an offer floor in ISO-NE?

For the reasons summarized previously, at this stage, it is premature to offer any potential timeline. In order to answer this question, the ISO would need to both better understand how the price floor mechanism would work, and more fully assess how it interacts with other auction elements, including the Descending Clock Auction procedures and its associated information technology system. This would require the ISO’s technical staff to fully detail and evaluate a final design; any collateral redesign rules would need to be codified in the ISO Tariff and brought through the stakeholder and regulatory process for Commission review; robust consultation with the ISO’s auction software vendor(s) would be needed to evaluate the new rules’ technical feasibility and to carry out the ISO’s extensive implementation, verification, and testing procedures; and such a new rule’s implementation could necessitate coordination and re-scheduling of other, potentially higher-priority market enhancements and software system upgrades to accommodate the foregoing work.

Based on the limited information presently available on those implementation and redesign questions, and the significant further assessment work that would be necessary to assemble that information, it would be premature for the ISO to speculate on a timeline for implementing a new offer floor price mechanism in the FCM.

C. Response to Commission Questions on Imposing an Alternative Replacement Rate (Paragraph 24)

The ISO is not in a position to proffer an alternative replacement rate to the current price-lock at this time. The ISO does not have experience with alternatives (*i.e.*, modern risk-reducing financial instruments such as revenue hedges) that would serve a comparable purpose to the price-lock provisions. Further, the ISO has not performed an assessment of potential alternative market designs to that end; significant conceptual, technical and stakeholder review would be necessary to productively inform any such alternatives. Therefore, the ISO cannot constructively put forth, at this time, thoughtful alternatives to the price-lock provisions to resolve potential concerns related to unreasonable price suppression or undue discrimination.

Importantly, at this time, the ISO does not believe further consideration of an alternative to the price-lock mechanism should be made a priority. The various observations in this Brief reasonably lead to the conclusion that the price-lock mechanism is no longer as essential as it once was to meet the Forward Capacity Market's reliability objectives. That conclusion prompts two additional concerns about pursuing alternatives to the price-lock mechanism. First, it is not clear what objective that endeavor would serve, given market conditions in New England presently and for the foreseeable future. Second, to the extent that such an endeavor might be considered at some future point in

time when it may merit revisiting—when the supply and demand balance may have shifted from its current state—it is unlikely an analysis conducted at *this* time will accurately predict the state of the markets and the factors unexpectedly inhibiting new investment at that future date. It is therefore unlikely that the endeavor will be effective in designing an alternative mechanism to resolve the specific problem confronting the market and new investment needs at that time. In short, if the markets further evolve to the point where a mechanism is necessary to attract new entry in order to meet the region’s reliability objectives, it would be best to develop such a mechanism once the problem is understood and its root causes evident.

For the foregoing reasons, the ISO is not able to provide a well-conceived alternative replacement rate in response to Questions 24.1 through 24.3.

CONCLUSION

The ISO submits this Brief in support of the Commission's further evaluation of the price-lock mechanism in the Forward Capacity Market, and respectfully requests that the Commission give due consideration to the data and information submitted herein, as well as the ISO's analysis thereof, in performing its evaluation.

Respectfully submitted,

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August 24, 2020

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Holyoke, Massachusetts, this 24th day of August 2020.

/s/ Julie Horgan
Julie Horgan
eTariff Coordinator
ISO New England Inc.

ATTACHMENT A

Price-Lock Elections Table

	FCA 1				FCA 2				FCA 3			
	[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]
	Qualified		CSO		Qualified		CSO		Qualified		CSO	
	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
I. All Eligible Resources												
[1] No Rate Lock Election	87	1124	54	743	115	3148	53	1337	64	1589	31	407
[2] 2-Year Rate Lock Election	0	0	0	0	2	10	0	0	11	63	2	5
[3] 3-Year Rate Lock Election	11	27	11	27	1	6	1	6	31	1604	23	1509
[4] 4-Year Rate Lock Election	0	0	0	0	2	17	2	8	0	0	0	0
[5] 5-Year Rate Lock Election	36	2651	12	130	22	1294	13	254	8	93	6	58
[6] 7-Year Rate Lock Election	-	-	-	-	-	-	-	-	-	-	-	-
[7] All Eligible and Elected	47	2678	23	157	27	1327	16	268	50	1760	31	1573
[8] All Eligible	134	3802	77	900	142	4475	69	1605	114	3349	62	1979
[9] Percent that Elect Rate Lock	35%	70%	30%	17%	19%	30%	23%	17%	44%	53%	50%	79%
II. All Eligible Generators												
[10] No Rate Lock Election	4	110	2	40	26	2273	14	1076	15	1292	6	197
[11] 2-Year Rate Lock Election	0	0	0	0	0	0	0	0	0	0	0	0
[12] 3-Year Rate Lock Election	0	0	0	0	0	0	0	0	6	1508	5	1469
[13] 4-Year Rate Lock Election	0	0	0	0	0	0	0	0	0	0	0	0
[14] 5-Year Rate Lock Election	13	2243	0	0	13	1026	4	81	2	31	1	4
[15] 7-Year Rate Lock Election	-	-	-	-	-	-	-	-	-	-	-	-
[16] Gen Eligible and Elected	13	2243	0	0	13	1026	4	81	8	1538	6	1473
[17] Total Eligible Gen	17	2353	2	40	39	3299	18	1157	23	2830	12	1670
[18] Percent that Elect Rate Lock	76%	95%	0%	0%	33%	31%	22%	7%	35%	54%	50%	88%
III. Ineligible Resources												
[19] Ineligible RTR	-	-	-	-	-	-	-	-	-	-	-	-
[20] Ineligible Import	2	658	0	0	8	2613	5	1529	8	1751	8	817
[21] All Ineligible	2	658	0	0	8	2613	5	1529	8	1751	8	817
IV. Total												
[22] Total New	136	4460	77	900	150	7088	74	3134	122	5100	70	2796

FCA 4				FCA 5				FCA 6				FCA 7			
[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]
Qualified		CSO		Qualified		CSO		Qualified		CSO		Qualified		CSO	
#	MW	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
88	1470	59	472	95	1043	39	233	43	317	19	191	21	331	18	260
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	128	27	90	19	56	17	34	27	146	26	105	7	66	4	63
0	0	0	0	0	0	0	0	0	0	0	0	1	5	1	5
12	150	10	97	3	44	4	38	31	145	7	97	11	730	10	717
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	278	37	187	22	101	21	72	58	291	33	202	19	802	15	785
128	1749	96	659	117	1143	60	305	101	608	52	393	40	1133	33	1045
31%	16%	39%	28%	19%	9%	35%	24%	57%	48%	63%	51%	48%	71%	45%	75%
24	827	15	126	19	656	8	30	9	40	7	27	9	194	6	123
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	39	0	0	1	13	1	12	1	39	0	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	21	3	18	0	0	0	0	5	55	2	53	5	684	4	677
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	59	3	18	1	13	1	12	6	94	2	53	6	684	5	677
29	886	18	144	20	669	9	42	15	134	9	79	15	878	11	800
17%	7%	17%	13%	5%	2%	11%	28%	40%	70%	22%	66%	40%	78%	45%	85%
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	1244	5	831	11	1073	11	871	14	1820	14	1648	13	2323	13	1718
9	1244	5	831	11	1073	11	871	14	1820	14	1648	13	2323	13	1718
137	2992	101	1490	128	2216	71	1176	115	2427	66	2041	53	3456	46	2763

FCA 8				FCA 9				FCA 10				FCA 11			
[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]
Qualified		CSO		Qualified		CSO		Qualified		CSO		Qualified		CSO	
#	MW	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
31	368	22	345	26	298	23	261	30	381	28	276	54	663	51	631
0	0	0	0	0	0	0	0	4	85	4	85	0	0	0	0
0	0	0	0	1	1	1	1	12	21	2	2	0	0	0	0
0	0	0	0	0	0	0	0	1	16	1	16	0	0	0	0
5	56	4	37	28	313	11	92	0	0	0	0	6	94	3	28
-	-	-	-	10	2082	7	1057	29	2993	12	1394	42	1898	5	214
5	56	4	37	39	2396	19	1150	46	3116	19	1498	48	1992	8	242
36	424	26	382	65	2693	42	1411	76	3498	47	1774	102	2655	59	873
14%	13%	15%	10%	60%	89%	45%	82%	61%	89%	40%	84%	47%	75%	14%	28%
4	15	2	12	0	0	0	0	12	113	10	9	4	44	3	43
0	0	0	0	0	0	0	0	1	3	1	3	0	0	0	0
0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	15	2	15	1	7	0	0	0	0	0	0	0	0	0	0
-	-	-	-	8	2068	5	1043	20	2953	11	1391	20	1826	3	210
2	15	2	15	10	2076	6	1044	21	2955	12	1394	20	1826	3	210
6	30	4	27	10	2076	6	1044	33	3069	22	1403	24	1869	6	253
33%	51%	50%	56%	100%	100%	100%	100%	64%	96%	55%	99%	83%	98%	50%	83%
-	-	-	-	14	16	14	16	41	62	34	56	20	31	19	31
21	1737.2	17	1154	15	2722	11	1360	19	2931	13	1361	23	3272	16	1153
21	1737.2	17	1154	29	2738	25	1376	60	2993	47	1417	43	3303	35	1183
57	2161	43	1537	94	5432	67	2787	136	6490	94	3191	145	5958	94	2057

FCA 12				FCA 13				FCA 14				Total			
[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]	[a]	[b]	[c]	[d]
Qualified		CSO		Qualified		CSO		Qualified		CSO		Qualified		CSO	
#	MW	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW	#	MW
95	736	61	501	71	871	53	562	107	648	39	303	927	12988	550	6521
2	4	0	0	0	0	0	0	0	0	0	0	19	162	6	91
0	0	0	0	1	2	1	2	0	0	0	0	138	2058	113	1840
0	0	0	0	0	0	0	0	0	0	0	0	4	38	4	30
14	152	7	56	13	103	0	0	23	216	5	17	212	6040	92	1620
11	650	3	92	17	2324	5	781	12	1753	0	0	121	11700	32	3538
27	806	10	148	31	2429	6	783	35	1969	5	17	494	19999	247	7119
122	1542	71	648	102	3300	59	1345	142	2618	44	320	1421	32987	797	13641
22%	52%	14%	23%	30%	74%	10%	58%	25%	75%	11%	5%	35%	61%	31%	52%
16	206	1	58	2	13	1	0	18	52	0	0	162	5834	75	1741
0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	3
0	0	0	0	0	0	0	0	0	0	0	0	11	1600	8	1483
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	5	77	0	0	50	4158	16	847
4	615	2	80	14	2507	5	781	12	1753	0	0	78	11722	26	3505
4	615	2	80	14	2507	5	781	17	1830	0	0	140	17482	51	5838
20	821	3	138	16	2520	6	781	35	1882	0	0	302	23316	126	7579
20%	75%	67%	58%	88%	99%	83%	100%	49%	97%	N/A	N/A	46%	75%	40%	77%
44	35	43	33	95	336	79	145	332	336	325	317	546	815	514	598
29	3920	15	1136	30	4880	15	1108	27	4364	12	976	229	35307	155	15662
73	3954	58	1169	125	5216	94	1254	359	4700	337	1293	775	36122	669	16260
195	5496	129	1817	227	8516	153	2599	501	7317	381	1614	2196	69109	1466	29901

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New England Power Generators Association, Inc. v. ISO New England Inc.)	Docket No. EL14-7-002
)	
Exelon Corporation and Calpine Corporation v. ISO New England Inc.)	Docket No. EL15-23-002
)	
)	
ISO New England Inc.)	Docket No. EL20-54-000

**AFFIDAVIT OF DR. CHRISTOPHER GEISLER
ON BEHALF OF
ISO NEW ENGLAND INC.**

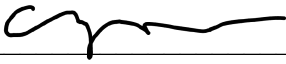
My name is Dr. Christopher Geissler. I am a Senior Economist working in the Market Development Department at ISO New England Inc. (the “ISO”). My business address is One Sullivan Road, Holyoke, Massachusetts 01040.

My primary responsibilities at the ISO include wholesale electricity market design and development. Among my notable, relevant experience, I served as the project lead in designing the demand curves used in the Forward Capacity Market, which help align the region’s procurement of capacity with its marginal reliability impact; I served as the project lead in designing a substitution auction that helps to accommodate state-supported policy resources in the region’s wholesale markets while maintaining competitively-based capacity prices (the competitive auctions with sponsored policy resource, or “CASPR,” project); and I served as the ISO’s lead

economist in evaluating the price treatment of resources retained for fuel security in the Forward Capacity Market. I am also an instructor for numerous market-related sections of the ISO's Wholesale Energy Markets courses for ISO staff and Market Participants.

Prior to joining the ISO in 2013, I received an M.A. and Ph.D. in Economics from Duke University, where I conducted research on competition in regulated industries

In my role as Senior Economist for the ISO, I was responsible for developing the economic analysis that is responsive to the questions the Federal Energy Regulatory Commission has posed in its Order on Remand in this proceeding regarding the Forward Capacity Market's price-lock mechanism.¹ In addition, I assisted in the drafting of the ISO's August 24, 2020 Brief in this proceeding. I declare that the economic analysis and data provided in the ISO's Brief, including but not limited to the evaluation of the evolution of the markets since FCA 9 of the Forward Capacity Market, and the views stated in the Brief regarding the import of that evolution in considering the continued need for the price-lock mechanism, are true and correct to be best of my knowledge and belief. My attestation, however, does not apply to the data provided in Attachment A to the ISO's Brief, as Alan McBride, Director of Transmission Services and Resource Qualification at the ISO, is separately attesting to the accuracy of that data.



Christopher Geissler, Senior Economist
ISO New England, Inc.

Executed on August 24, 2020.

¹ *New England Power Generators Ass'n. v. ISO New England Inc., et al.*, Order on Remand, Instituting Section 206 Proceeding, and Establishing Paper Hearing Procedures, 172 FERC ¶ 61,005 (2020).

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New England Power Generators Association, Inc. v.)	
ISO New England Inc)	Docket No. EL14-7-002
)	
Exelon Corporation and Calpine Corporation v.)	
ISO New England Inc.)	Docket No. EL15-23-002
)	
)	
ISO New England Inc.)	Docket No. EL20-54-000

**AFFIDAVIT OF ALAN MCBRIDE
ON BEHALF OF
ISO NEW ENGLAND INC.**

My name is Alan McBride. I am a Director of Transmission Services and Resource Qualification at ISO New England Inc. (the "ISO"). My business address is One Sullivan Road, Holyoke, Massachusetts 01040.

I joined the ISO in June 2006 and for the following four years my primary responsibility was as Project Manager of New Generation Qualification for the Forward Capacity Market. In 2010, I became the Manager, Area Transmission Planning for northern New England, and continued in that position until 2015, when I became Director of Transmission Services. In that position, I have been responsible for the oversight of the ISO's interconnection process for new Generating Facilities and Elective Transmission Upgrades. In November 2019, my responsibilities were

expanded to include the qualification of resources in the Forward Capacity Market (FCM). Accordingly, my current title is Director of Transmission Services and Resource Qualification.

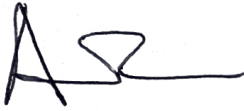
Before joining the ISO, I worked at Dynegy Inc. and then at Calpine Corporation. At both companies, I supported various transmission-related activities associated with the development, interconnection, and commercial operation of merchant generation facilities. Prior to joining Dynegy, I worked at Power Technologies Incorporated (now a division of Siemens Industries), where I conducted various transmission analysis studies, including the system impact studies of several proposed generating facilities.

I have 23 years of experience in various aspects of power transmission system analysis and transmission services. I hold a B.S. degree in Electrical Engineering from University College Dublin, in Ireland, a Master's degree in Electric Power Engineering from Rensselaer Polytechnic Institute, and an M.B.A. degree from Purdue University.

I am providing this affidavit in support of certain data provided by the ISO as part of its initial brief in this proceeding, in response to the Federal Energy Regulatory Commission's (the "Commission") first question in Paragraph 22 of the Order on Remand.¹ That question asks for data regarding the number of resources that have taken advantage of the Forward Capacity Market price lock to date. Given my responsibilities at the ISO, and in particular my work overseeing the qualification process in the Forward Capacity Market, I am familiar with the data maintained by the ISO that are responsive to the Commission's first question in Paragraph 22 and in Attachment

¹ *New England Power Generators Ass'n. v. ISO New England Inc., et al.*, Order on Remand, Instituting Section 206 Proceeding, and Establishing Paper Hearing Procedures, 172 FERC ¶ 61,005 (2020).

A. I oversaw the collection and verification of the data that the ISO is providing in response to the first question in Paragraph 22 and in Attachment A, and I declare that this data are true and correct to the best of my knowledge and belief.



Alan McBride, Director of Transmission Services and Resource Qualification
ISO New England, Inc.

Executed on August 24, 2020.