170 FERC ¶ 61,052
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Richard Glick and Bernard L. McNamee.

ISO New England Inc. Docket No. ER17-795-003

ORDER DENYING REHEARING

(Issued January 24, 2020)

1. On November 6, 2017, the New England Power Generators Association (NEPGA)[1] filed a request for rehearing of the Commission's October 6, 2017 order (CONE Order),[2] accepting revisions to the ISO New England Inc. (ISO-NE) Transmission, Markets and Services Tariff (Tariff) that updated the Cost of New Entry (CONE), Net Cost of New Entry (Net CONE) and Offer Review Trigger Price (ORTP) values used in the Forward Capacity Market (FCM). These revisions were filed on January 13, 2017,[3] pursuant to section 205 of the Federal Power Act (FPA)[4] and accepted effective March 15, 2017.[5] We deny rehearing, as discussed below.

I. Background

2. ISO-NE's FCM includes an annual Forward Capacity Auction (FCA) in which capacity suppliers compete to provide capacity to the New England region three years in

[1] NEPGA states that the views expressed in its rehearing request represent those of NEPGA as an organization but not necessarily those of any particular member. Rehearing for Rehearing of NEPGA, Docket No. ER17-795-003, at 3 (filed Nov. 6, 2017) (Rehearing Request).

[2] *ISO New England Inc.*, 161 FERC ¶ 61,035 (2017) (CONE Order).

[3] ISO New England Inc. Filing of CONE and ORTP Updates, Docket No. ER17-795-001, at 1 (filed Jan. 13, 2017) (January 13, 2017 Transmittal).

[4] 16 U.S.C. § 824d (2012).

[5] *See* CONE Order, 161 FERC ¶ 61,035 at P 6 & n.10.

the future.[6] A resource whose capacity clears the FCA receives monthly capacity payments in return for which it must offer its capacity into the day-ahead and real-time energy markets every day during the relevant capacity commitment period.[7]

3. As part of the FCM design, ISO-NE estimates the cost of developing new resources that may enter the market.[8] CONE (or gross CONE) is the total cost of developing a new resource, without any adjustment for the revenues that the resource might earn outside of the FCM.[9] Net CONE is the gross cost of new entry, minus the profit the resource is expected to earn from providing energy, ancillary services, and other market services.[10] Net CONE is intended to approximate the compensation a new entrant needs from the capacity market in the first year of operation to recover its capital and fixed costs under long-term equilibrium conditions.[11] Estimating Net CONE is done from the perspective of a hypothetical unit of a particular technology type in a particular location in New England, which is referred to as the "reference unit."[12] Broadly, ISO-NE uses CONE and Net CONE values, respectively, to estimate the total and net costs of developing the most economically efficient type of new capacity resource in New England.[13] CONE and Net CONE values are used to set the capacity auction starting

[6] *NextEra Energy Resources*, *Inc. v. FERC*, 898 F.3d 14, 17 (D.C. Cir. 2018) (*NextEra*); *see also* CONE Order, 161 FERC ¶ 61,035 at P 2.

[7] CONE Order, 161 FERC ¶ 61,035 at P 2.

[8] *Id.* P 5.

[9] *Id.* P 5 & n.15 (citing Tariff Section 1.2.2. (Definitions) (101.0.0) ("Cost of New Entry (CONE) is the estimated cost of new entry ($/kW-month) for a capacity resource that is determined by the ISO for each Forward Capacity Auction").

[10] *Id.* P 5.

[11] *Id.* P 5 & n.16 (citing January 13, 2017 Transmittal at 3 (citing Tariff Section 1.2.2 (Definitions) (92.0.0))).

[12] January 13, 2017 Transmittal at Attachment 1, ISO-NE CONE and ORTP Analysis at 5 (CEA Report).

[13] *Id.* at 1.

price and as an input to the calculation of the FCA demand curve.[14] ISO-NE, the Internal Market Monitor (IMM), and the market participants also use the CONE and Net CONE values during the qualification process that precedes each auction.[15]

4. The ORTP values are estimates of the cost of entry for all resource types that may participate in the FCM and are used to screen for new resource offers that may require further IMM scrutiny.[16] The ORTP values are not challenged on rehearing.

5. The Tariff requires ISO-NE to recalculate values for CONE, Net CONE, and the ORTPs every three years, using updated data.[17] For the 2017 update, ISO-NE engaged a consultant, Concentric Energy Advisors (Concentric or CEA), who partnered with Mott MacDonald, an engineering firm, to develop detailed estimates of entry costs for each of the candidate reference units.[18] Concentric and Mott MacDonald prepared a draft report, explaining the methodology they used to estimate the updated values. The draft report was refined through ISO-NE and stakeholder feedback, and ISO-NE included the resultant CEA Report as the substantive basis of its FPA section 205 filing in this proceeding.[19]

6. As noted above, on January 13, 2017, ISO-NE filed the proposed Tariff revisions updating the CONE, Net CONE, and ORTP values.[20] The revised values were to be used

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[14] CONE Order, 161 FERC ¶ 61,035 at P 16 & n.19. Under the Tariff, the starting price is the higher of CONE or 1.6 times Net CONE. Tariff Section III.13.2.4 (Forward Capacity Auction Starting Price and the Cost of New Entry) (44.0.0).

[15] CONE Order, 161 FERC ¶ 61,035 at P 16.

[16] *Id*. ORTPs, the threshold prices for new entry, are the default values applied to capacity seeking to participate in the upcoming auction. They are set by the IMM at the lower end of the competitive range for a particular technology type. *See id.* ¶ 61,035 at P 49.

[17] ISO-NE Tariff Sections III.13.2.4 (52.0.0) and III.A.21.1.2(a) (52.0.0).

[18] January 13, 2017 Transmittal Letter at 2.

[19] *Id*. at 1-2.

[20] *Id*. at 2. ISO-NE also proposed minor uncontested changes to the method for calculating annual adjustments to the CONE, Net CONE, and ORTP values in the years between triennial updates. *See* CONE Order, 161 FERC ¶ 61,035 at P 3 & n.4.

in three successive auctions: (1) FCA 12[21] (held in February 2018) for the capacity commitment period of June 2021 – May 2022; (2) FCA 13 (held in February 2019) for the capacity commitment period of June 2022 – May 2023; and (3) FCA 14 (to be held in February 2020) for the capacity commitment period of June 2023 – May 2024.[22]

7. ISO-NE stated that it based the CONE and Net CONE values on a reference resource that represents "the technology that is expected to be the most economically efficient and that is commercially available to new capacity suppliers."[23] In this proceeding, ISO-NE proposed to change the reference technology for setting CONE from the combined-cycle gas turbine (CC) selected as the reference technology in 2014 to a simple-cycle gas combustion turbine (CT).[24] ISO-NE explained that the CT is the most economically efficient, commercially available resource type, with a Net CONE value of $8.04/kW-month.[25] According to ISO-NE, the next most efficient is the CC, but it has a net CONE value of $10.00 kw/month, over 24 percent higher than the CT.[26] As the Commission has explained, the "significance of the choice of reference unit is that its Net CONE value affects the position of the demand curve," which "must accommodate projects that use a variety of combustion turbine technologies."[27]

8. The Commission accepted the filing, effective on March 15, 2017, the date ISO-NE requested to ensure that the new values would be in place during the initial stages of the FCA 12 qualification process.[28]

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[21] For ease of reference, we refer to the eleventh, twelfth, thirteenth, and fourteenth FCAs as FCA 11, FCA 12, FCA 13, and FCA 14.

[22] CONE Order, 161 FERC ¶ 61,035 at P 3.

[23] *Id*. P 16 & n.18 (quoting January 13, 2017 Transmittal at 9).

[24] *Id*. P 20.

[25] *Id*. P 19; *see also* January 13, 2017 Transmittal at 10.

[26] CONE Order, 161 FERC ¶ 61,035 at P 19; *see also* January 13, 2017 Transmittal at 10.

[27] *ISO New England Inc*., 147 FERC ¶ 61,173, at PP 32-33 (2014) (2014 Demand Curve Order).

[28] CONE Order, 161 FERC ¶ 61,035 at PP 1, 4; *see also* January 13, 2017 Transmittal at 2.

9. On November 6, 2017, NEPGA sought rehearing, asking the Commission to reconsider and find that it is unjust and unreasonable to use the CT as the reference technology and direct ISO-NE to use the CC reference technology as the reference technology for the Net CONE value.[29] NEPGA argues that the Commission erred in the CONE Order by: (1) failing to balance investor interests against the significant benefits conferred to ratepayers; (2) dismissing as irrelevant record evidence showing the starting price ISO-NE proposed is "well below" historical clearing prices; (3) accepting the AURORAxmp (AURORA) dispatch model's results for the purpose of establishing candidate reference units' future energy revenues, but not for determining which type of unit is likely to be built; (4) not basing its finding that a greenfield CT unit is likely to be developed in New England on substantial evidence; and (5) failing to consider all the relevant material evidence supporting the use of a CC as the reference technology.[30]

II. Discussion

A. Balancing Investor and Customer Interests

1. Rehearing Request

10. NEPGA states that the Commission is required to "reasonably balance investor and ratepayer interests," including the impact of its rate orders on the financial integrity of the utility.[31] NEPGA states that capacity suppliers have an interest in relatively consistent FCM parameters that provide an opportunity, on average and over time, to realize a return on investment in capacity resources. NEPGA argues that the Net CONE value the Commission accepted heavily favors customer interests at the expense of investor interests and market efficiency. Therefore, NEPGA contends that, in accepting the Net CONE value, the Commission did not balance the interests of capacity suppliers against what NEPGA asserts are the significant benefits conferred to ratepayers.[32]

11. NEPGA states that the FCM must provide the opportunity for revenues sufficient to meet the capacity supply obligation.[33] However, according to NEPGA, the new Net

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[29] Rehearing Request at 1.

[30] *Id*. at 2-3.

[31] *Id*. at 4 & n.12 (citing *Jersey Cent. Power & Light Co. v. FERC*, 810 F.2d 1168, 1192 (D.C. Cir. 1987) (Starr, J., concurring)).

[32] *Id*. at 2.

[33] *Id*. at 5.

CONE value reduces Net CONE by $3.80/kW-month, causing a $1.55 billion reduction in market-wide capacity revenues at equilibrium from FCA 11 to FCA 12.[34] NEPGA argues that, if the $8.04/kW-month value continues to serve as the basis for Net CONE in FCAs 13 and 14, then capacity revenues will decrease by $4.6 billion (at equilibrium) over the three years during which this Net CONE would be in effect.[35] NEPGA states that, for example, a 500 MW capacity resource would experience a $22.8 million reduction in capacity revenues in a single year, and over $67 million over the three-year period.[36] NEPGA concedes that the Commission acknowledged "the significant impact on cost recovery that such a change would have"[37] but nevertheless contends that the Commission did not consider the impact that the decrease in market value may have on the viability of existing resources or the investment decisions new and existing capacity resources have made, and will make, based on their reasonable expectations of relative consistency in the market design parameters.[38]

12. NEPGA adds that the reduction in the value assigned to capacity follows other changes that have decreased the value assigned to capacity and put downward pressure on capacity clearing prices in recent years, such as the locational marginal reliability impact curves, the new method for projecting behind-the-meter-solar photovoltaics (PV), which decreases peak load projects and Net Installed Capacity Requirements, and flattening of peak demand.[39] NEPGA states that real-time and day-ahead energy markets hit historically low monthly averages several times over the 18 months preceding this filing.[40] NEPGA argues that other potential changes to the market design and market parameters, such as lowering the dynamic delist bid threshold and Competitive Auction and Sponsored Capacity Resources (CASPR), are also likely to depress FCM clearing

[34] *Id*.

[35] *Id*.

[36] *Id*.

[37] *Id*. at 5 & n.17 (citing CONE Order, 161 FERC ¶ 61,035 at P 42).

[38] *Id*. at 5.

[39] *Id*. at 6 & n.20.

[40] *Id*. at 6 & n.21 (citation omitted).

prices and revenues.[41] NEPGA states that "[w]hether a rate, even one within the zone of reasonableness, is unlawful depends on the particular circumstances of the case."[42]

13. NEPGA asserts that, in determining whether a $3.80/kW-month reduction in Net Cone is just and reasonable, the Commission cannot ignore interrelated capacity and energy market trends. Citing the Commission's order on NEPGA's complaint challenging the Peak Energy Rent adjustment mechanism,[43] NEPGA states that, in that proceeding, the Commission looked beyond the effect that the Peak Energy Rent adjustment may have had strictly on capacity market rates, finding that whether a rate is just and reasonable depends on the "overall revenue picture."[44] NEPGA contends that the Commission similarly should consider the total revenue impact of changes to the FCM design and historically low pricing in the energy markets before accepting as just and reasonable a Net CONE value that further and significantly reduces the revenue opportunity for capacity resources.[45]

14. NEPGA asserts that new and existing capacity suppliers have reasonably expected relatively consistent market design parameters and that capacity suppliers have expected and should be able to expect relative consistency in capacity values. NEPGA states that the new CONE value not only affects demand curve positioning but also sends a price signal to market participants that, on average and over time, the FCA will price capacity

[41] *Id*. at 6 & n.22. We note that dynamic de-list bid thresholds were reduced from $5.50 to $4.30 prior to FCA 13, in an order issued on March 9, 2018. *See ISO New England Inc.*, 162 FERC ¶ 61,206 (2018). CASPR was accepted the same day. *See ISO New England Inc.*, 162 FERC ¶ 61,205 (2018).

[42] Rehearing Request at 6 & n.23 (citing *Emera Maine v. FERC*, 854 F.3d 9, 21-22 (D.C. Cir. 2017); *Bangor Hydro-Electric Co*., 122 FERC ¶ 6,038, at P 11 (2008); *Oneok, Inc. v. Learjet, Inc.,* 135 U.S. 1591, 1600 (2015)).

[43] The Peak Energy Rent adjustment is designed to provide load with a hedge against high energy prices and to discourage market manipulation in energy markets. *NEPGA v. ISO New England Inc*., 150 FERC ¶ 61,053, at P 32 n.28 (2015). The Peak Energy Rent adjustment requires suppliers to return "peak energy rents" (that is, those revenues earned when real-time clearing prices exceed an administratively-determined strike price) earned in the energy market to load through rebates made by suppliers through their capacity payments. *Id.* P 3.

[44] Rehearing Request at 7 & n.26 (citing *NEPGA v. ISO New England Inc*., 150 FERC ¶ 61,053 at P 37).

[45] *Id*. at 7.

at Net CONE. NEPGA adds that, although investors understand that the Net CONE value can change from one auction to the next, a 33 percent reduction in Net CONE is a "rate shock" that investors do not, and should not, be required to expect.[46]

15. NEPGA states that the Commission emphasizes the need to apply consistent criteria in assessing potential reference technologies but fails to address the need for "consistency in the *use of the reference technology to provide certainty to the market*" as it did when it accepted the Net CONE value for effect in FCAs 9-11.[47] NEPGA asserts that the Commission's determination in this proceeding represents a significant policy change without a rational explanation. NEPGA states that the several new capacity resources that cleared in the recent auctions, as well as the existing resources that have remained in the FCM through FCA 11, made investment decisions based on a market design that priced capacity according to the Net CONE value in effect, most recently $11.84/kW-month in FCA 11.[48] NEPGA states that, while market participants were aware that ISO-NE may change the reference technology, they reasonably based their investment decisions on the Commission's finding that consistency in the reference technology is necessary, rather than a reversal of that determination that reduces revenues for a 500 MW capacity resource by $22.8 million in one year and $67 million over three years.[49] NEPGA states that, if market participants are required to expect drastic changes in the value attributed to capacity, that risk will likely be reflected in an inefficient increase in FCA offer and clearing prices.

16. NEPGA states that the Commission recognized the need for market certainty in the marginal reliability impact-based demand curve proceeding when it accepted a "transition" to the full marginal reliability impact curve design that modified the curve for up to three FCAs to more gradually convert from the pre-existing values assigned to capacity to those under the marginal reliability impact curve construct.[50] NEPGA states

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[46] *Id*. at 7 & n.28 (noting that in *NEPGA v. ISO New England Inc*., 146 FERC ¶ 61,039, at P 54 (2014), the Commission rejected rate shock the requested rate would have had on consumers).

[47] *Id*. at 7-8 & n.29 (quoting (2014 Demand Curve Order, 147 FERC ¶ 61,173 at P 34) (emphasis added).

[48] *Id*. at 8.

[49] *Id*. at 7-8 & n.29 (citing 2014 Demand Curve Order, 147 FERC ¶ 61,173 at P 34).

[50] *Id*. at 8 & n.31 (citing *ISO New England Inc. and NEPOOL*, 155 FERC ¶ 61,319, at P 62 (2016)) (2016 Demand Curve Order).

that the Commission found that the transition would "attenuate any potential abrupt change[s] in market signals that could produce substantial differences in capacity prices unrelated to actual market dynamics" and that this "methodical transition promotes long-term cost-effectiveness for the market, while promoting investor confidence."[51] NEPGA contends that the Commission should likewise protect these interests in this proceeding by finding that the Net CONE value proposed by ISO-NE is unjust and unreasonable in part due to the rate shock it would impose on the FCM and capacity suppliers. NEPGA argues that the Commission must consider market participant interests in a consistent market structure and the opportunity to recover the costs of providing capacity. Thus, NEPGA insists that the Commission has failed to properly balance these interests in accepting the $8.04/kW-month Net CONE value as just and reasonable and has failed to provide a reasonable explanation for departing from its stated policy of the need for consistency in the market design.[52]

2. Commission Determination

17. We deny rehearing. The Commission appropriately balanced customer and capacity supplier interests,[53] providing an opportunity for suppliers to receive revenues sufficient to recover the costs of meeting their capacity supply obligations, while maintaining reasonable certainty in market design parameters.[54]

18. NEPGA bases its allegations of improper balancing and undue favoritism toward customers on its comparison of projected future revenues from using a CC unit as opposed to the CT reference unit ISO-NE selected to establish Net CONE, noting that the use of the latter reduces projected revenues.[55] NEPGA argues that suppliers must have

[51] *Id*. at 8-9 & n.32 (quoting 2016 Demand Curve Order, 155 FERC ¶ 61,319 at P 62).

[52] *Id*. at 9.

[53] *See, e.g., NextEra,* 898 F.3d at 21 ("[S]etting a just and reasonable rate necessarily 'involves a balancing of the investor and the consumer interest.'") (citing *Wis. Pub. Power Inc. v. FERC*, 493 F.3d 239, 262 (D.C. Cir. 2007) (quoting *Federal Power Comm'n v. Hope Nat. Gas Co*., 320 U.S. 591, 603 (1944)); *New England Power Generators Ass'n, Inc.,* 146 FERC ¶ 61,039, at P 52 (2014); *Hope*, 320 U.S. at 603 (evaluating whether end result of agency's balancing customer interests with utility's "legitimate concern with financial integrity of the company" resulted in reasonable rates).

[54] *See* CONE Order, 161 FERC ¶ 61,035 at PP 36-46.

[55] *See* Rehearing Request at 5-6.

the opportunity to recover the cost of supplying capacity.[56] But such recovery is not guaranteed.[57] Nor are suppliers *per se* entitled to the potentially higher price that could result from continuing to use the CC as the reference unit.[58] In the CONE Order, the Commission explained that the reference unit should produce prices high enough to meet ISO-NE's reliability objective but not so high as to add unnecessary costs.[59] The Commission agreed with ISO-NE that the CT is an appropriate technology because it "is both likely to be built in New England and is significantly more economically efficient than the next lowest cost technology, indicating that the proposed Net CONE value will be high enough to incent new entry into the market, but not so high as to introduce unnecessary costs."[60]

19. Substantial evidence provided by both the engineering-based cost estimates in the CEA Report[61] and empirical evidence from the FCA auction results contradicts NEPGA's contention that use of the CT reference unit will deprive suppliers of a reasonable opportunity to recover costs and earn a return on investment. NEPGA continues to assert on rehearing that Net CONE should be set at the CC-unit based value of $10.00/kW-month, and that basing Net CONE on a CT reference unit is unjust and unreasonable.[62] If NEPGA is correct that a capacity price lower than $10.00/kW-month fails to provide an opportunity to recover a return on investment in capacity, then it should follow private investors would not be willing to invest in new resources in

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[56] *Id*. at 5.

[57] *See*, *e.g.*, *ISO New England Inc.*, 158 FERC ¶ 61,138, at P 54 & n.155 (2017) (citing *Bridgeport Energy, LLC*, 113 FERC ¶ 61,311, at P 29 (2005)); *see also Hope*, 320 U.S. at 603.

[58] *See ISO-New England Inc.*, 158 FERC ¶ 61,138 at P 58 ("No individual supplier has an entitlement to a specific capacity price."); *see also NextEra*, 898 F.3d at 25 (recognizing that the Commission may change the weight it accords balancing factors to suit changing circumstances).

[59] CONE Order, 161 FERC ¶ 61,035 at PP 38 & n.67 (citing 2014 Demand Curve Order, 147 FERC ¶ 61,173 at P 32); *see also id*. P 41 & n.74 (same).

[60] *Id*. P 41.

[61] CEA Report at 18, Table 8. We note that NEPGA does not directly challenge the numerical analysis in the CEA Report, although it does contest assumptions upon which the analysis is based, as discussed in the last section of this order below.

[62] *See* Rehearing Request at 3-4, 20.

New England for a capacity price less than $10.00/kW-month.[63] However, the FCA auction results do not support this assertion. New natural gas-fired generation resources cleared FCAs 9 and 10 below ISO-NE's estimated Net CONE for a CC unit ($10.00/kW-month). Specifically, in FCA 9, which was held in 2015, two new natural gas resources cleared at a price of $9.55/kW-month,[64] and, in FCA10, which was held in 2016, three more new natural gas-fired resources cleared at a price of $7.03/kW-month.[65] Accepting a reference unit that yields prices closer to what the market prices have been historically does not show favoritism towards customers, but it does contradict NEPGA's assertion that the use of the CT reference unit will result in unreasonably low cost recovery for suppliers.

20. Next, accepting the revised reference technology does not create the uncertainty that NEPGA alleges. First, the Tariff requires the recalculation of the CONE, Net CONE, and ORTP values *at least* once every three years using updated data.[66] So, the

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[63] *Cf. ISO New England Inc.*, 162 FERC ¶ 61,205 at P 21 (noting that capacity markets are designed to "produce a level of investor confidence that is sufficient to ensure resource adequacy at just and reasonable rates").

[64] *See* ISO New England Inc., Forward Capacity Auction Results Filing, Docket No. ER15-1137-000 (filed Feb. 27, 2015); *ISO New England Inc.*, 151 FERC ¶ 61,226 (2015) (accepting FCA 9 results filing).

[65] *See* ISO New England Inc., FCA Results Filing, Docket No. ER16-1041-000 (filed Feb. 29, 2016); *ISO New England Inc.*, 155 FERC ¶ 61,273 (2016) (accepting FCA 10 results filing). We note that, while we do not rely on the results of subsequent auctions to justify the Commission's decision in this proceeding, FCA clearing prices continued the downward price trend after issuance of the CONE Order (and the FCA continued to procure sufficient capacity to meet reliability needs). This tends to confirm that the Commission acted reasonably in accepting the CT as the reference unit and the updated Net CONE, CONE, and ORTP values. *See* ISO New England Inc., Forward Capacity Auction Results Filing, Docket No. ER17-1073-000 (filed Feb. 28, 2017); *ISO New England Inc.*, Letter Order Accepting Eleventh Forward Capacity Auction Results Filing (Apr. 28, 2017); ISO New England Inc., Forward Capacity Auction Results Filing, Docket No. ER18-940-000 (filed Feb. 28, 2018); *ISO New England Inc.*, Letter Order Accepting Twelfth Forward Capacity Auction Results Filing (Apr. 26, 2018); ISO New England, Forward Capacity Market (13) Results Report, https://www.iso-ne.com/static-assets/documents/2018/05/fca-results-report.pdf.

[66] *See* Tariff Section III.A.21.1.2 (Calculation of Offer Review Trigger Prices) (52.0.0); *see also infra* notes 67-69.

Tariff not only requires a triennial update but also allows more frequent updates.[67] In between full recalculations, the CONE, Net CONE, and ORTP values are updated annually using indices that are specified in the Tariff.[68] These explicit Tariff requirements temper the degree to which market participants may reasonably expect the reference technology to remain constant.[69] Markets are not static; nor are values (such as Net CONE, CONE, and the ORTPs) that are designed to reflect the market.

21. The Tariff provisions for a required triennial update and for permissible more frequent updates reflect the reality that market conditions and economically efficient technologies change, and the market participants should anticipate that CONE, Net CONE and the ORTPs will be adjusted to accommodate such changes. Indeed, while the Commission recognized the importance of consistency in market design in the 2014 Demand Curve Order, it also highlighted the importance of regularly reviewing and updating, as necessary, the reference price "since market activity and technology change over time."[70]

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[67] *See* Tariff Section III.13.2.4 (Forward Capacity Auction Starting Price and the Cost of New Entry) (52.0.0) ("CONE and Net CONE shall be recalculated for the Capacity Commitment Period beginning on June 1, 2025 and *no less often* than once every three years thereafter.") (emphasis added).

[68] *See* Tariff Section III.A.21.1.1 (Offer Review Trigger Prices for the Forward Capacity Auction) (52.0.0), values for "Other Resources;" *see also* Tariff section III.13.2.4 (Forward Capacity Auction Starting Price and the Cost of New Entry) (52.0.0) ("CONE and Net CONE shall be recalculated for the Capacity Commitment Period beginning on June 1, 2025 and *no less often* than once every three years thereafter.") (emphasis added); Tariff section III.A.21.1.2(e) (Calculation of Offer Review Trigger Prices) (52.0.0).

[69] Tariff Sections III.13.2.4 (Forward Capacity Auction Starting Price and the Cost of New Entry) (52.0.0) and III.A.21.1.2(a) (Calculation of Offer Review Trigger Prices) (52.0.0); *see also* CONE Order, 161 FERC ¶ 61,035 at P 3 & n.3. And, even if Commission precedent accepting a transition to the full marginal reliability-impact mechanisms reflects a general aim for maintaining market certainty, *see* NEPGA Rehearing Request at 8-9 & n.31, the Tariff's requirement of at least triennial recalculation of the CONE, Net CONE, and ORTP values limits the degree of certainty market participants may reasonably vest in these values.

[70] CONE Order, 161 FERC ¶ 61,035 at P 38 & n.68 (quoting 2014 Demand Curve Order, 147 FERC ¶ 61,173 at P 34).

22. Second, the Tariff does not mandate the use of any particular reference unit. In the CONE order, the Commission expressly clarified that consistency in the use of the reference technology to provide market certainty "*does not mean the reference technology can never change*."[71] Rather, the Commission "emphasize[d] the importance of using consistent criteria to select a reference technology from one triennial update to the next to provide certainty to the market."[72] Contrary to NEPGA's assertions, this finding did not constitute a significant policy change.[73] In the 2014 Demand Curve Order,[74] the Commission accepted ISO-NE's then-proposed reference technology of a CC unit based on three factors: (1) it was likely to be developed in New England; (2) ISO-NE could develop cost and revenue estimates for it with confidence; and (3) it would result in a demand curve that "should produce prices high enough to meet the reliability standard but not so high as to add unnecessary costs."[75] In the CONE Order, the Commission accepted ISO-NE's revised reference CT technology based on its analysis of these same three factors.[76]

23. NEPGA is also mistaken in characterizing the change in Net CONE as a "rate shock," which "investors do not, and should not be required to expect."[77] Investors and market participants would have known that auctions held prior to the inception of this proceeding yielded prices below the 2014 estimate of Net CONE that was based on the CC unit, but still resulted in new natural gas-fired resources (both CC and CT) clearing in capacity zones with market-determined prices.[78] Therefore, it would be reasonable for

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[71] *Id*. P 38 (emphasis added).

[72] *Id*. P 42; *see also id*. P 38 (stating that "the reference technology should be identified using the three criteria enumerated above, and should be evaluated, as needed, to ensure it continues to meet those criteria").

[73] Rehearing Request at 8.

[74] 2014 Demand Curve Order, *rehearing denied*, 150 FERC ¶ 61,065 (2015), *order on remand*, 155 FERC ¶ 61,023 (2016), *reh'g denied*, 158 FERC ¶ 61,138 (2017), *pet. for review denied NextEra*, 898 F.3d 14.

[75] CONE Order at P 38 & nn.66-67 (citing 2014 Demand Curve Order, 147 FERC ¶ 61,173 at P 32).

[76] *See id.*, 161 FERC ¶ 61,035 at PP 39-42.

[77] Rehearing Request at 7.

[78] *See* ISO-NE February 17 Answer at 6 & n.16. (noting that in the auctions conducted in 2015 and 2016, five new gas-fired generating resources cleared the capacity

market participants to expect a new Net CONE value that more closely reflects those clearing prices.

24. We further disagree that the "cumulative effect" of the Commission orders concerning the ISO-NE markets that were issued roughly contemporaneously with the CONE Order, plus the flattening of peak demand growth, result in an unjust and unreasonable rate for capacity.[79] NEPGA raises this argument for the first time on rehearing and the Commission typically does not address new arguments on rehearing.[80] Moreover, even if we were to consider this argument, we would find it unpersuasive. NEPGA has not shown how any evidence, determination, or outcome from the proceedings it cites undermines the CEA Report analysis that supports ISO-NE's proposed Tariff modifications.[81]

25. Indeed, ISO-NE's analysis of roughly contemporaneous events contradicts NEPGA's assertions. Specifically, ISO-NE pointed out in its transmittal letter that "in the past several years there have been several important capacity, energy, and reserve market changes that are likely to favor the development of more flexible resources such as those represented by the CT reference technology."[82] ISO-NE asserted that, starting with the capacity commitment period beginning June 1, 2018, the two-settlement capacity market design (Pay for Performance) links capacity revenues to resource performance during reserve deficiencies.[83] ISO-NE added that reserve constraint penalty

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market at prices less than $10.0/kW-month) (citing CEA Report at 18, Table 8). We further note that market participants would also have known that the CT reference technology is used in neighboring New York and PJM capacity markets. *See* ISO-NE February 17 Answer at 8.

[79] *See* Rehearing Request at 5-6 (citing MRI-based curves; new methodology for projecting Behind-the-Meter-Solar PV, decrease in dynamic delist bid threshold, and CASPR, among others).

[80] *See, e.g.*, *Northeast Utils. Serv. Co. v. ISO New England Inc.*, 109 FERC ¶ 61,204, at P 15 & n.21 (2004) ("The Commission has repeatedly looked with disfavor on parties raising new issues and arguments for the first time on rehearing.").

[81] *Cf. NEPGA v. FERC*, 150 FERC ¶ 61,053 at P 32 n.48 (stating that NEPGA had not shown how its alternative proposal met the goals of the Peak Energy Rent adjustment).

[82] January 13, 2017 Transmittal at 11-12 & n.33.

[83] *Id*. at 11.

factors were increased substantially at the end of 2014, which will produce higher reserve market prices during scarcity conditions.[84] Further, ISO-NE noted that, in 2012 and 2013, it increased overall reserve requirements in the real-time and forward reserve markets to account for historical reserve non-performance rates.[85] ISO-NE stated that these changes increase overall reserve revenues and primarily benefit flexible fast-start resources, such as CT units.[86] ISO-NE also noted that, beginning in early 2017, new energy market rules will improve real-time price formation when fast-start resources are deployed.[87] ISO-NE explained that these reserve market changes were not fully accounted for when CONE and Net CONE were set in 2014.[88] ISO-NE states that the "overall revenue impact of these changes is to increase the overall market revenues for a CT resource and, in particular, the expected forward reserve market revenue."[89] ISO-NE states that, taken together, these market changes make CT resources "considerably more attractive financially to potential project developers now than at the time of the 2014 CONE study."[90] In sum, NEPGA has not shown how the cumulative effect of the proceedings it cites counteracts the market changes ISO-NE describes such that using a CT as the reference unit results in unjust and unreasonable rates.

26. Finally, NEPGA asserts that the Commission needs to address the relationship between the capacity and energy markets. Specifically, NEPGA argues that lower energy market revenues should be considered when evaluating the justness and reasonableness of similarly lower capacity market prices. However, resources that participated in FCA 9 and FCA 10 would have been aware of these trends and nevertheless submitted bids low enough to clear the capacity market.[91] The auction results demonstrate that, despite lower capacity and energy market revenues, resources are still willing to participate in the

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[84] *Id*.

[85] *Id*.

[86] *Id*. at 11-12.

[87] *Id*.

[88] *Id*. at 12 n.33.

[89] *Id*.

[90] *Id*. at 12. We note that this 2014 CONE Study is what ISO-NE relied on to support the CC reference unit back in 2014. *See* 2014 Demand Curve Order, 147 FERC ¶ 61,173 at PP 13-17 (describing the 2014 Cone Study).

[91] *See supra* notes 65-66.

capacity market.[92] ISO-NE continues to procure sufficient resources through the capacity market to meet reliability requirements and the results of these auctions do not prove that capacity market prices, even if lower than before, are unjust and unreasonable.[93] These relatively low clearing prices also belie NEPGA's surmise that resources may offer higher bids—leading to higher capacity market clearing prices to absorb the risk of changes in the value attributed to capacity.[94]

B. Evidence of Historical Clearing Prices

1. Rehearing Request

27. NEPGA asserts that the CONE Order is not based on substantial evidence because the Commission dismissed as irrelevant evidence that the revised starting price is well below historical clearing prices for new resources in New England, particularly in import-constrained capacity zones.[95] NEPGA contends that the Commission erred by failing to adhere to or explain its departure from precedent that considers historical information relevant to future outcomes.

28. NEPGA states that the FCA has on several occasions cleared much higher than the CT-based starting price and that by setting the starting price well below historical clearing prices, the market might not allow import-constrained capacity zones to send the price signals necessary to guarantee resource adequacy within the zone.[96]

29. NEPGA disagrees with the Commission's reasons for dismissing this record evidence, including: (1) the FCA is "a forward-looking auction, which should anticipate future market conditions and should not be bound by previous auction results"; and (2) these prior clearing prices are "based in part on administrative rules, rather than

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[92] *See NextEra,* 898 F.3d at 21 (Commission reasonably balanced potential for limited price suppression against competing interests, concluding that renewable exemption to MOPR accords with FCM's purpose).

[93] *See id*. (stating that FCM's purpose is "ensuring that price signals are sufficient to incent existing resources to stay in the capacity market, and new resources to enter, so [ISO-NE] can meet its reliability obligation at least cost") (quoting *ISO-NE Inc*., 155 FERC ¶ 61,023 at P 35).

[94] *See* Rehearing Request at 8.

[95] *Id*. at 9 & n.34 (citing CONE Order, 161 FERC ¶ 61,035 at P 44).

[96] *Id*. at 9 & n.33.

market dynamics."[97] Rather, NEPGA asserts that the pricing in those auctions was dictated by marginal supply offers and rules designed to price capacity competitively in the absence of the supply quantities deemed sufficient for competition.[98] NEPGA states that in most cases the administrative prices applied only to existing resources, whereas new resources cleared at the auction-based capacity clearing price.[99] NEPGA argues that, therefore, and contrary to the Commission's finding, the historical clearing prices that are higher than ISO-NE's proposed starting price are material to determining a just and reasonable Net CONE value.[100]

30. NEPGA notes that in FCA 7, despite administrative pricing being applied in the NEMA/Boston import-constrained capacity zone via the Tariff's Insufficient Competition rule (which is no longer in place),[101] a new resource submitted an offer to leave the auction at $14.99/kW-month.[102] NEPGA asserts that the $14.99/kW-month clearing price therefore was not the product of administrative pricing, but instead was the actual cost for a new entrant. NEPGA adds that, likewise, in FCA 8, new resources were paid the auction-based capacity clearing price that was set by a resource that withdrew from the auction at $14.99/kW-month.[103] NEPGA adds that, admittedly, in FCA 9 the Inadequate Supply rule (which is no longer in place)[104] caused new resources to receive the auction starting price of $17.728/kW-month.[105] NEPGA explains that the Inadequate

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[97] *Id*. at 9-10 & n.35 (quoting CONE Order, 161 FERC ¶ 61,035 at P 45).

[98] *Id*. at 10.

[99] *Id*. at 10 & n.37 (citing NEPGA Answer at 4-8).

[100] *Id*. at 10.

[101] *See* Tariff Section III.13.2.8.2 (Insufficient Competition) (10.0.0).

[102] Rehearing Request at 10 & n.39 (citing ISO New England Forward Capacity Auction Results Filing, Docket No. ER13-992-000, at 5 (filed Feb. 26, 2013) (FCA 7 Results Filing)).

[103] *Id*. at 10 & n.40 (citing ISO New England Forward Capacity Auction Results Filing, Docket No. ER14-1409-000, at 2 (filed Feb. 28, 2014) (FCA 8 Results Filing)).

[104] ISO-NE Tariff Section III.13.2.8.1 (Inadequate Supply) (30.0.0).

[105] Rehearing Request at 10 & n.41 (citing ISO New England Capacity Auction Results Filing, Docket No. ER15-1137, at 2 (filed Feb. 27, 2015) (FCA 9 Results Filing)).

Supply rule[106] was triggered when new supply offers in the capacity zone were less than the demand for new capacity, defined as the difference between the Local Sourcing Requirement and the total existing resources in the capacity zone.[107] NEPGA argues that, in FCA 9, the clearing price for new resources in the SEMA/RI capacity zone was based on actual supply conditions and was necessary to attract new resources within the import-constrained capacity zone when needed to meet resource adequacy and reliability needs.[108]

31. NEPGA argues that the historical evidence showed that import-constrained capacity zones may require higher price signals than those allowed under the starting price to meet zonal resource adequacy needs, especially when zonal capacity is tight.[109] NEPGA states that the Commission has held that the use of historical data is likely to be the most accurate and reliable predictor of future market conditions[110] and frequently relies on historical data to predict future outcomes and establish just and reasonable rates.[111] NEPGA argues that the Commission's longstanding practice of relying on historical data to predict future market outcomes recognizes that "historical data are more objective, readily available, and less subject to manipulation by applicants than future projections" based on more subjective factors.[112] For these reasons, NEPGA contends that the Commission's failure to consider economic clearing prices and price signals as

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[106] *See supra* note 104.

[107] Rehearing Request at 11.

[108] *Id*. at 11 & n.42 (citing *Market-based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities*, Order No. 697-A at P 125, Docket No. RM04-7-001 (Apr. 21, 2008)).

[109] *Id*. at 11.

[110] *Id*. at 11 & n.43 (quoting *ISO-New England Inc*., 119 FERC ¶ 61,045, at P 133 (2007)).

[111] *Id*. at 11 & n.44 (citing *ISO-New England Inc*., 119 FERC ¶ 61,045 (using historical data to establish offer caps in the capacity market); *ISO New England Inc.*, 150 FERC ¶ 61,007, at PP 14-15 (2007) (using historical data to ensure that just and reasonable rates were paid to demand response resources in the wholesale market)).

[112] *Id*. at 11 & n.45 (citing *Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities*, Order No. 697-A, at P 125 (2008)).

evidence of the potential necessary price signals in the future is an unexplained departure from its precedent and is arbitrary and capricious.[113]

2. Commission Determination

32. We deny rehearing. While the Commission often uses historical test years and other information on past performance to predict the future, it is not bound to use these factors alone.[114] In this case, while the Commission reviewed historical clearing prices and considered arguments both supporting and opposing reliance on those prices, it reasonably focused on the three criteria for evaluating the CONE reference unit that were established in the 2014 Demand Curve Order,[115] as discussed above.

33. Further, and significantly, as the Commission concluded in the CONE Order, "zonal capacity prices in previous auctions may not reflect the actual cost of new entry for resources on a going forward basis."[116] The Commission noted that "[p]revious capacity auctions have cleared at prices both above and below the proposed Net CONE values."[117] The Commission explained that new sloped system-wide and zonal demand curves based on the marginal reliability impact of capacity did not go into effect until FCA 11.[118] These new curves allowed FCA clearing prices to reflect more accurately the actual reliability value of capacity.[119] The zonal demand curves used prior to FCA 11 were vertical, not sloped, resulting in prices that were sometimes based in part on

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[113] *Id*. at 11.

[114] *See, e.g., Hope*, 320 U.S. at 602 ("Under the statutory standard of 'just and reasonable' it is the result reached not the method employed which is controlling.") (citation omitted).

[115] *See* CONE Order, 161 FERC ¶ 61,035 at PP 38-41; *see also supra* P 22, listing factors for evaluating Net CONE.

[116] *See id*. P 44.

[117] *See id.*; *see also* ISO New England, Forward Capacity Market (13) Results Report at 2-3, https://www.iso-ne.com/about/key-stats/markets#fcaresults (showing clearing prices both above and below the proposed Net CONE value ($8.04/kW-month); *see supra* PP 28-31, discussing values above proposed Net CONE.

[118] *See* CONE Order, 161 FERC ¶ 61,035 at P 44.

[119] *Id*.

administrative rules, as NEPGA acknowledges.[120] Thus, while NEPGA reiterates on rehearing that the prices resulting from prior auctions, including administrative prices, are essential to establishing the starting price going forward,[121] we disagree that such price information is critical here because those earlier prices were the result of a different market design, one that did not necessarily reflect the market outcomes that would have occurred under the current market design, which includes sloped demand curves. While an administrative price may be necessary during certain periods to correct for market imperfections and incent capacity offers to ensure reliability, it is not necessarily the price that would have occurred without administrative rules. Furthermore, when the CEA Report supporting this filing was prepared, ISO-NE no longer used administrative pricing to determine prices in the FCM. Today, ISO-NE no longer relies on administrative mechanisms to set prices, and entities are expected to make their decisions regarding FCM participation based on market information. Thus, we continue to find that historical capacity prices may not reflect the actual cost of new entry for resources on a going forward basis.

34. We disagree with NEPGA's assertion that the higher clearing prices in import-constrained zones before the advent of marginal reliability impact-based curves should be considered the "actual cost of new entry."[122] While administratively-determined prices in certain zones for auctions that were conducted under the old demand curve design were higher than the updated Net CONE value, the administratively-determined prices cannot be equated with the "actual cost of new entry" of any resources because auctions that utilize administrative pricing rules do not serve to equate the costs of the marginal unit to the auction clearing price. As for the "several occasions" when the FCA cleared higher than the starting price based on the Net CONE values accepted in this proceeding, those infrequent instances occurred under prior market rules. A number of subsequent changes to the market design make it unreasonable to deem administratively-set or anomalously high prices in import-constrained zones to be actual new entry costs.[123] For example,

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[120] *See* Rehearing Request at 10.

[121] *See id*.

[122] *Id*.

[123] For example, in FCA 10, Bridgeport Harbor 6, a 484 MW CC unit and Canal 3, a 333 MW CT unit, both cleared at a price of $7.03 per kW-month, well-below the $12.864/kW-month auction starting price based on the CT technology. *See ISO New England Inc.*, Forward Capacity Auction Results Filing, Docket No. ER16-1041-000 (filed Feb. 29, 2016) Attachment A, at 16 (ID numbers 38206 and 38310).

price formation[124] improvements, such as shortage pricing,[125] and revised offer caps[126] better ensure that new resources receive appropriate compensation for their contributions to the energy and ancillary services markets.[127] These improvements to the energy and ancillary service markets help ensure that new resources will be willing to enter constrained zones. Thus, we continue to disagree with NEPGA's contention that the several instances when historical clearing prices were higher than ISO-NE's proposed starting price are material to determining a just and reasonable Net CONE value.

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[124] *See generally Settlement Intervals and Shortage Pricing in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 825, FERC Stats. & Regs. ¶ 31,384 (2016) (Order No. 825) (cross-referenced at 155 FERC ¶ 61,276).

[125] *See* Order No. 825, FERC Stats. & Regs. ¶ 31,384 at P 7 (stating that "shortage pricing for any dispatch interval during which a shortage of energy or operating reserves occurs will . . . also ensure that resources operating during a shortage are compensated for the value of the service that they provide, regardless of whether the shortage is short-lived.").

[126] *See Offer Caps in Markets Operated by Regional Transmission Operators and Independent System Operators,* Order No. 831, 157 FERC ¶ 61,115, at P 1 n.1 (2016), *order on reh'g and clarification*, Order No. 831-A, 161 FERC ¶ 61,156 (2017) (requiring regional transmission organizations (RTOs) and independent system operators (ISOs) such as ISO-NE to cap each resource's "incremental energy offer"—the portion of an energy resource's supply market offer that can vary depending on output or demand levels—at the higher of $1,000/megawatt-hour (MWh) or that resource's verified actual or expected cost-based incremental offer; requiring RTOs/ISOs to cap verified cost-based incremental offers at $2,000/MWh when calculating locational marginal prices). In Order No. 831, the Commission explained that these requirements will reduce the likelihood that offer caps will suppress prices below the marginal cost of production, as well as ensure that fair compensation for generators and more efficient resource dispatching from grid operators. *Id.* PP 34-43.

[127] To the extent that NEPGA is challenging the starting price, we reiterate that the starting price is the result of a formula that is beyond the scope of this proceeding. *See* CONE Order, 165 FERC ¶ 61,065 at P 43.

C. AURORA Modeling Results

35. AURORA is a commercially-available, hourly energy market dispatch simulation software.[128] AURORA incorporates a variety of standard assumptions, including forecasts of natural gas prices and emissions allowance prices, a load forecast, and other factors that may affect future wholesale electricity prices in New England.[129] ISO-NE's consultant, Concentric, used AURORA to estimate the future energy revenues that the candidate technologies for setting CONE would receive during the year for which the resource committed its capacity.[130] Specifically, Concentric developed a 20-year forecast of hourly, zonal energy prices by ISO-NE load zone.[131] Then, using AURORA's forecast hourly energy prices, Concentric used a simplified resource-specific algorithm to estimate each candidate reference technology's operating hours each year, along with the resource's projected energy market revenue, fuel costs, emissions costs, and variable operating costs.[132] Each resource's projected energy market revenue minus its operating costs comprises its estimated net energy revenue. The estimated hourly net energy revenue was calculated for each year of the facility's projected 20-year life.

36. For its projected Locational Forward Reserve market and Real-Time Reserve market revenues, Concentric relied on historical information.[133] Concentric created a $/MWh value for locational forward reserves and real-time reserves, for both 10-minute spinning and 30-minute operating reserves, based on historical reserves clearing prices, FCM revenues, average on-peak and off-peak hours per month, and unit forced outage

[128] January 13, 2017 Transmittal at 8; *see also* CEA Report at 49 (explaining that AURORA is a "chronological-dispatch simulation model widely used in the industry for price forecasting and market analysis").

[129] *See* January 13, 2017 Transmittal at 8.

[130] CEA Report at 49. The estimated future energy revenues, Pay for Performance revenues, and ancillary services revenues, are then netted against the gross CONE value to produce the Net CONE value. *See* January 13, 2017 Transmittal at 8.

[131] CEA Report at 49.

[132] *See* January 13, 2017 Transmittal at 8; *see also* CEA Report at 49-62.

[133] *See* January 13, 2017 Transmittal at 8; *see also* CEA Report at 49-64.

rates, during the FCA 2-FCA 6 Capacity Commitment Periods (June 1, 2011 – May 31, 2016).[134]

1. Rehearing Request

37. NEPGA asserts that the Commission erred by accepting the AURORA dispatch modeling results for the purpose of determining projected Locational Marginal Prices (LMPs), but not for the purpose of predicting capacity buildout in New England.[135] NEPGA states that the AURORA dispatch simulation modeling ISO-NE used to produce projected LMPs also modeled the economic addition of new resources over the study period, adding 13 new CC units, four new wind resources, and no new CT units. NEPGA states that the Commission accepted the AURORA LMP results for purposes of projected energy market revenues, but found that the AURORA buildout of 13 new CC units was "not conclusory" as to whether CTs are likely to be developed in New England.[136] NEPGA states that the projected LMPs, however, were dictated in part by the modeled resource mix, and likewise the modeled additions to the system depended in part on the LMPs produced by the model. NEPGA asserts that the LMPs and capacity buildout are therefore interdependent. NEPGA contends that accepting the LMPs but not the capacity buildout as conclusive, when the results are interdependent, is arbitrary and capricious and not the product of reasoned decision making.[137]

38. NEPGA states that the AURORA model dispatches generation economically and projects capacity additions and retirements in order to balance the model. NEPGA adds that AURORA balances supply and demand in the model by performing a capacity build-out based on the relative economics of several modeled technologies. NEPGA asserts that one of the key inputs to the AURORA LMP forecast is "a schedule of plant additions and retirements."[138] NEPGA states that the schedule in this case included actual new resources and announced retirements, projected new renewables, and projected new gas-fired generation, which therefore dictated the heat rates and other generation attributes upon which the LMPs are based. NEPGA asserts that the build-out of CC units over CT

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[134] *See* January 13, 2017 Transmittal at 8; *see also* CEA Report at 62-64.

[135] Rehearing Request at 2, 12.

[136] *Id*. at 12 & n.46 (citing CONE Order, 161 FERC ¶ 61,035 at P 39).

[137] *Id*. at 12.

[138] *Id*. at 12 & n.48 (citing CEA Report at 49).

units indicates that CCs, not CTs, will be the predominant economic resource based on the LMPs produced by the AURORA model run.

39. NEPGA states that the Commission reasons that the AURORA build out is not conclusory because it does not "model all intricacies of ISO-NE's markets, particularly the ancillary service markets" and therefore does not "reflect all of the revenue streams a developer would consider when determining whether to build a new resource."[139] NEPGA acknowledges that, indeed, because the AURORA model does not include ancillary service market revenues in its capacity build-out, it may not fully reflect the relative economics of CTs. NEPGA asserts that, nevertheless, the exclusive build-out of 13 new CC units, combined with other evidence presented by NEPGA, indicate that the AURORA results are material. NEPGA states that it explained that the AURORA build-out is consistent with the CT heat rates and capacity factors assumed by ISO-NE, including a 9,220 Btu/kWh heat rate and 113 hours of operation per year on average.[140] NEPGA states that, by comparison, the AURORA model's build-out of 4,246 MW of baseload CC units reflects a heat rate of 6,752 Btu/kWh.[141]

40. NEPGA argues that the AURORA build-out of CC units should be accepted as conclusive, or at the very least material, given the Commission's acceptance of the LMPs that are derived, in part, from the capacity build-out produced by the model.[142] Thus, NEPGA argues the Commission's acceptance of the AURORA modeling for one purpose but not another is arbitrary and capricious and not the product of reasoned decision making.

2. Commission Determination

41. We deny rehearing and affirm the Commission's determination that using the AURORA software model to calculate future energy revenues for candidate potential reference resources does not compel selection of a CC as the reference technology.[143] The purpose of using the AURORA model in the Net CONE calculations was solely to develop an energy price forecast specific to New England. Estimating future prices is

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[139] *Id*. at 13 & n.49 (quoting CONE Order, 161 FERC ¶ 61,035 at P 39).

[140] *Id*. at 13 & n.50 (citing NEPGA Answer, Attachment A, Prepared Surrebuttal Testimony of Tanya L. Bodell at 3) (Bodell Testimony).

[141] *Id*. at 13 & n.51 (citing Bodell Testimony at 3).

[142] *Id*. at 13.

[143] CONE Order, 161 FERC ¶ 61,035 at PP 39, 45.

only "one component of a much broader analysis to determine the appropriate reference technology."[144] This broader analysis includes factors specific to the New England markets, such as how each candidate technology participates in the region's Multi-Product Forward and Real-Time Reserve markets, which AURORA is not able to model accurately.[145] It includes consideration of ancillary services and reserve markets and other cost and financial information. AURORA does not have the functionality to model New England's multi-product forward and real-time reserve markets and therefore AURORA was not used for this purpose.[146] And, AURORA does not incorporate other detailed cost and financial information that ISO-NE's consultant, Concentric, and its expert witness, Mott MacDonald, analyzed for the candidate reference technologies for the New England system.[147] As the Commission explained in the CONE Order, "because AURORA does not model all of the intricacies of ISO-NE's markets, particularly the ancillary services markets . . . the AURORA model's results are not conclusory as to the technologies likely to be developed in ISO-NE in the future."[148] AURORA's results "do not reflect all of the revenue streams a developer would consider when determining whether to build a new resource."[149]

42. The fact that AURORA adds CC resources, and not CT resources, as new resources is unremarkable. As ISO-NE's expert explained, AURORA does not model the ISO-NE reserve markets accurately and CT units are projected to earn a large portion of their total non-capacity revenues from the reserve market.[150] In contrast, CC resources

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[144] *Id*. P 31. *See also* ISO-NE February 17 Answer at 18 ("[W]hile AURORA is a sophisticated and useful tool for estimating future energy prices, it does not itself produce results that identify which type of resource should serve as a reference technology for purposes of establishing CONE and Net CONE values.").

[145] ISO-NE February 17 Answer at 18.

[146] *Id*.

[147] *Id*.

[148] CONE Order, 161 FERC ¶ 61,035 at P 39.

[149] *Id*.

[150] *See* CEA Report at 65 (projecting CTs will receive most of their revenue from ancillary services markets, while CCs will receive most of their revenue from the energy market); ISO-NE February 17, 2017 Answer at 18.

are projected to earn most of their revenues from the energy market.[151] Thus, it is neither unexpected nor determinative that AURORA does not add CT resource types.

43. NEPGA argues that the projected LMPs were dictated in part by the modeled resource mix and likewise the modeled additions to the system depended in part on the LMPs produced by the model. While this is to some extent true—the type of resource will affect the energy price and, as noted above, energy prices will indicate which resource is likely to be built to meet energy market demands—these results are not determinative because they are only part of the equation. It is important to consider all revenue streams and which revenue streams will support which resource. Because revenue streams from ancillary and reserves markets must be considered along with energy revenues when selecting the appropriate reference technology, forecasted energy prices and the selection of the appropriate reference unit are not so interconnected as to invalidate the use of AURORA for its intended purpose, forecasting energy market revenues.[152]

44. The fact that AURORA does not comprehensively model all markets does not render it invalid for the purpose for which it was intended: forecasting energy market prices or LMPs.[153] While a software that models energy prices based on the resource mix ISO-NE expects to see might be preferable, the lack of such a model does not render the commercially-available model that ISO-NE actually used invalid for the purpose for which it was designed: to model energy prices.[154]

45. Thus, we conclude that NEPGA has not shown that AURORA is inaccurate for the purpose for which it is designed, forecasting energy market prices, and affirm the reasonableness of using AURORA for this limited purpose.

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[151] *See* CEA Report at 65; ISO-NE February 17, 2017 Answer at 18.

[152] "AURORA's limited purpose was to produce the future energy price estimates that are a component of the much broader analysis required to identify the appropriate reference technology." ISO-NE February 17 Answer at 18.

[153] CONE Order, 161 FERC ¶ 61,035 at P 45 (explaining that the fact that AURORA is not designed to accurately model all of ISO-NE's markets "does not render AURORA's forecasts of future energy prices unjust and unreasonable," and confirming that "AURORA is the most appropriate tool for forecasting energy prices").

[154] *Id*. PP 31-31; ISO-NE February 17 Answer at 14-20.

D. Substantial Evidence - Greenfield CT Unit

1. Rehearing Request

46. NEPGA argues that the Commission's finding that a greenfield simple-cycle frame CT Unit is likely to be developed in New England is not based on substantial evidence.[155] Highlighting the Commission's citation to the clearing of multiple CTs (fairly contemporaneously with the issuance of the CONE Order) to support its finding that simple-cycle frame CTs are likely to be developed in New England,[156] NEPGA insists that the Commission's reliance on this evidence is misplaced for two reasons.

47. First, NEPGA points to distinctions among CT reference unit technologies. NEPGA states that, as explained in its protest, seven new natural gas generators cleared in FCAs 7-10.[157] Four of those units were CCs, two were aeroderivative CTs, and one was a simple-cycle frame CT.[158] NEPGA emphasizes that only one simple-cycle frame CT, the Canal 3 Unit in Southeastern Massachusetts,[159] cleared in recent auctions. NEPGA states that, by ostensibly conflating simple-cycle and aeroderivative CT technologies, the Commission determined that the clearing of multiple CT "projects"[160] weighed in favor of a finding that the simple-cycle frame CT is likely to be developed in New England. NEPGA asserts that aeroderivative CTs are entirely different technologies than the simple-cycle frame CT upon which ISO-NE bases its proposed Net CONE value.[161] NEPGA asserts that, therefore, to the extent the Commission relied on

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[155] Rehearing Request at 14.

[156] *Id*. at 14 & n.53 (citing CONE Order, 161 FERC ¶ 61,035 at P 39).

[157] *Id*. at 14 & n.55 (citing Protest at 18).

[158] *Id*. at 14 & n.56 (citing Protest at 18, 26).

[159] *Id*. at 15 & n.58 (citing CONE Order, 161 FERC ¶ 61,035 at P 59 n.70).

[160] *Id*. at 15 & n.59 (citing CONE Order, 161 FERC ¶ 61,035 at P 39).

[161] *Id*. at 14 & n.53 (citing CONE Order, 161 FERC ¶ 61,035 at P 39). NEPGA states that the Commission references "several CT units in development in New England," including, for example, "two CTs being added at Medway." *Id*. n.53 (citing CONE Order, 161 FERC ¶ 61,035 at P 39 n.71). NEPGA states that, as it showed in its protest, however, the Medway CTs are aeroderivative CTs, a reference technology for which ISO-NE projected a separate Net CONE value, and not the simple-cycle frame CT at a greenfield site that serves as the basis for ISO-NE's Net CONE proposal. *See*

aeroderivative CTs as historical evidence of "multiple CTs"[162] clearing in recent auctions to support its acceptance of the simple-cycle CT as the reference unit, the record evidence does not support that finding.

48. Second, as to greenfield versus brownfield development sites, NEPGA states that the Net CONE value accepted by the Commission is based on a CT greenfield site development, whereas the simple-cycle frame CT that cleared in recent auctions is being developed on an existing or "brownfield" power plant site. NEPGA argues that there is a material distinction between basing Net CONE on a previously undeveloped or "greenfield" unit, rather than a brownfield unit. NEPGA states that ISO-NE's consultant, Concentric, chose not to develop a Net CONE value for a brownfield CT unit, explaining that brownfield sites "are highly variable in terms of characteristics and the extent of the re-use of existing facilities" and that "to reasonably estimate the development costs for brownfield sites was challenging and uncertain."[163] NEPGA states that the only historical evidence that the simple-cycle frame CT is likely to be developed in New England is that a single brownfield development simple-cycle frame CT has cleared the market, yet the CT-based net CONE value proposed by ISO-NE could be higher if it had developed a Net CONE value for the type of CT development that has actually cleared the market. NEPGA emphasizes that the uncertainty in projecting a brownfield Net CONE value would appear to violate the Commission's criteria that ISO-NE must be able to develop a cost estimate "with confidence."[164]

49. Thus, NEPGA contends that the Commission failed to reasonably consider the substantial evidence before it that reference technologies other than a simple-cycle frame CT are likely to be developed in New England. NEPGA argues that the Commission also unreasonably accepted a Net CONE value based on a simple-cycle frame CT greenfield development when no such project has been developed in New England. NEPGA argues that the Commission's finding that a simple-cycle frame CT at a greenfield site is likely to be developed is not based on substantial evidence.

NEPGA Protest at 18 (discussing the clearing of two CT aeroderivative projects but only one (simple-cycle) frame CT project).

[162] *Id*. at 14 & n.57 (citing CONE Order, 161 FERC ¶ 61,035 at P 39).

[163] *Id*. at 15 & n.60 (citing CEA Report at 17).

[164] *Id*. at 15 & n.61 (citing CONE Order, 161 FERC ¶ 61,035 at P 38 (citing 2014 Demand Curve Order, 147 FERC ¶ 61,173 at P 32)).

2. Commission Determination

50. We deny rehearing and affirm that the Commission reasonably accepted ISO-NE's proposed use of a greenfield CT reference unit based on substantial evidence.[165] First, as a threshold matter, in an FPA section 205 proceeding, such as this one, the public utility, here, ISO-NE, only needs to show that its proposal is just and reasonable based on substantial evidence in the record.[166] We reaffirm that ISO-NE has made the requisite showing, as discussed below. The Commission need only consider contrary evidence and alternatives to the extent that such evidence calls into question the selection of a CT unit as a reasonable reference unit.[167] The Commission has done so, as explained below.

51. First, the Commission accepted the proposed CT reference technology because it agreed with ISO-NE that "CTs are likely to be developed in New England because they

[165] *See* CONE Order, 161 FERC ¶ 61,035 at P 39. "Substantial evidence 'is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.'" *S.C. Pub. Serv. Auth.*, 762 F.3d 41, 54 (D.C. Cir. 2014) (quoting *Murray Energy Corp. v. FERC*, 629 F.3d 231, 235 (D.C. Cir. 2011) (*South Carolina*)). Substantial evidence "requires more than a scintilla, but can be satisfied by something less than a preponderance of the evidence." *FPL Energy Me. Hydro LLC v. FERC*, 287 F.3d 1151, 1160 (D.C. Cir. 2002), cited in *Fla. Mun. Power Agency v. FERC*, 315 F.3d 362, 365 (D.C. Cir. 2003).

[166] *See, e.g., City of Winnfield v. FERC*, 744 F.2d 871, 874-75 (D.C. Cir. 1984) (The Commission "need only find the *proposed* rates to be just and reasonable.") (emphasis added); *see also Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,076, at P 45 (2007) ("Since the CAISO filed its proposal under FPA section 205, it must show that its proposed changes are just and reasonable, but it is not required to show that the existing policy is unjust and unreasonable."), *reh'g granted in part and denied in part*, 120 FERC ¶ 61,023, at P 45 & n.34 (2007) ("For a proposal to be acceptable, it need not be perfect nor even the most desirable; it need only be reasonable."), *reh'g denied*, 124 FERC ¶ 61,094 (2008), *aff'd, Sacramento Mun. Util. Dist. v. FERC*, 616 F.3d 520 (D.C. Cir. 2010).

[167] *See Fla. Gas Trans. Co. v. FERC*, 604 F.3d. 636, 645 (D.C. Cir. 2010) ("When reviewing for substantial evidence, we do not ask whether record evidence could support the petitioner's view of the issue, but whether it supports the Commission's ultimate decision.") (citing *Fla. Mun. Power Agency*, 315 F.3d at 368).

are a technology available to developers that is efficient to build and CTs have recently cleared the capacity market."[168]

52. The Commission acknowledged that, at the time it issued the CONE Order, there was only one unit then under development that would use the exact reference technology and that this unit was located at a brownfield site.[169] Nevertheless, the Commission accepted the proposed technology based on ISO-NE's analysis of resource costs combined with the brownfield projects that have cleared in previous FCAs.[170]

53. Additionally, contrary to NEPGA's assertion, when the Commission accepted the revised reference unit, the Commission was cognizant of the distinction between single-cycle and aeroderivative CT units, two of the four main categories of reference units considered in the CEA Report.[171] Even though the Commission noted the development of various aeroderivative CT units,[172] it acknowledged that only one unit was being constructed that used the exact same reference technology as ISO-NE's proposed reference unit.[173] The Commission noted various other CT units under construction (which happen to be aeroderivatives) to support its finding that it is reasonable to select a reference unit other than the original CC reference unit. Furthermore, aeroderivative CT units are higher-priced.[174] The Commission can use evidence that developers are willing to invest in more expensive CT units as proof that they would also be willing to invest in less expensive units.

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[168] CONE Order, 161 FERC ¶ 61,035 at P 39.

[169] *Id*. P 39 & n.70.

[170] *Id*. P 39.

[171] *See* January 13, 2017 Transmittal at 9; CEA Report at 7, Table 2; CONE Order, 161 FERC ¶ 61,035 at P 18.

[172] *See* CONE Order, 161 FERC ¶ 61,035 at P 39 n.71.

[173] *See id*. P 39.

[174] *See* CEA Report at 7, Table 2.

54. Indeed, the fact that more CC units have cleared in the past does not indicate that they will continue to be the technology of choice in the future. As the Commission explained, "market activity and technology change over time."[175]

55. Second, we reaffirm the reasonableness of accepting a reference technology based on a greenfield rather than a brownfield site. In the CONE Order, the Commission acknowledged that, while ISO-NE based its estimate of Net CONE on the deployment of the reference technology at a greenfield rather than a brownfield site, no greenfield CT projects had cleared the capacity auction.[176] However, this proceeding involves selecting a reference technology, as a consistent *standard,* which, as Concentric explained in its report, among other things, requires the availability of "reliable cost information."[177] And estimating development costs for brownfield units is "challenging and uncertain" because "brownfield sites are highly variable in terms of characteristics and the extent of re-use of existing equipment."[178] Therefore, brownfield sites "are not a reliable predictor of future entry costs."[179] NEPGA does not provide any evidence to contradict this assessment. Thus, we continue to find it reasonable to use a greenfield site to calculate reference unit costs because cost information is more reliable and less varied at greenfield sites, in contrast to brownfield sites.

E. Consideration of All Relevant Evidence

1. Rehearing Request

56. NEPGA argues that, by strictly applying the criteria it deemed relevant in the 2014 Demand Curve Order, the Commission failed to address several issues raised and evidence offered by NEPGA. These include: (1) the risk of underestimating the actual cost of new entry; and (2) ISO-NE's reliance on historical reserve market clearing prices as a predictor of future reserve revenues. NEPGA states that a Commission decision that

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[175] *See* CONE Order, 161 FERC ¶ 61,035 at P 38 & n.68 (quoting 2014 Demand Curve Order, 147 FERC ¶ 61,173 at P 34).

[176] *Id*. P 39.

[177] CEA Report at 12.

[178] *Id*. at 17.

[179] January 13, 2017 Transmittal at 7.

does not meaningfully address the evidence before it is not the product of reasoned decision-making and is arbitrary and capricious.[180]

57. NEPGA states that it explained in its protest that basing Net CONE on a simple-cycle frame CT is much riskier to resource adequacy than basing it on a CC unit. NEPGA states that the Commission dismisses this evidence, concluding that it "disagree[s] with NEPGA that the risk of potentially underestimating Net CONE, by choosing a different reference technology than that chosen in the past, is so great that a higher starting value should be chosen purely to mitigate this risk."[181] NEPGA states that, in so doing, the Commission fails to meaningfully address the evidence and arguments offered by NEPGA.

58. NEPGA asserts that the potential harm of underestimating Net CONE is far greater than that of overestimating it. NEPGA states that underestimating Net CONE may cause the market to procure insufficient resources to meet ISO-NE's system-wide or import-constrained capacity zone resource adequacy needs, whereas overestimating Net CONE may cause the market to buy more capacity but at a lower price and with the marginal benefit of greater system reliability. Citing its protest quoting ISO-NE's expert witness in the 2014 Demand Curve Order proceeding, Dr. Ethier, NEPGA states that it provided the following evidentiary support:

> [T]he dangers of understating Net CONE are far greater than the dangers of overstating it, making the choice of the Frame unit (with an estimated New CONE of $8.47/kW-month) much riskier than the choice of a combined cycle unit (with an estimated Net CONE of $11.08/kW-month). If we choose the combined cycle unit as the reference technology and the less expensive Frame unit turns out to be a viable technology (and so Net CONE is set too high), the region will overbuy capacity by some amount, increasing costs. But, for reasons I discuss below, these increased costs would be modest in the context of the entire capacity market. On the other hand, if the lower priced Frame unit is selected as the reference technology and the Frame unit turns out *not* to be a viable technology in New England (and so Net CONE is set too low), the region will procure insufficient capacity, which has a large reliability impact, and the region will likely end

[180] Rehearing Request at 16 & n.62 (citing *Southwest Power Pool, Inc. v. FERC*, 736 F.3d 994, 999 (D.C. Cir. 2013); *PPL Wallingford Energy, LLC v. FERC*, 419 F.3d 1194, 1198 (D.C. Cir. 2005); *PSEG Energy Resources & Trade LLC*, 665 F.3d 203, 208-210 (D.C. Cir. 2011)).

[181] *Id*. at 16 & n.63 (citing CONE Order, 161 FERC ¶ 61,035 at P 44).

> up with a reliability problem that will be very challenging to solve in a timely manner.[182]

59. NEPGA also cites to the Brattle Group's findings, from its report filed in the 2014 Demand Curve Order proceeding, recommending the CC as the reference technology in FCA 9. The Brattle Group found that, "if Net CONE were underestimated by 33%, the market would clear about 2% less capacity on average, but shortages would be expected 50% more often."[183]

60. NEPGA contends that the record evidence establishes that CC units are likely to be developed in New England in the future and that the starting price proposed by ISO-NE may be lower than the price signals necessary to incent new entry when needed, particularly in import-constrained capacity zones. NEPGA argues that, given this record evidence, the Commission's failure to consider the significant harm that may occur as result of underestimating Net CONE renders its decision not the result of reasoned decision making.[184]

61. NEPGA argues that the Commission accepted ISO-NE's projection of forward and real-time reserve revenues without addressing evidence NEPGA offered showing that ISO-NE failed to account for several factors that, if properly considered, would project lower forward and real-time reserve revenues.

62. NEPGA states that the Commission explains that ISO-NE based its Locational Forward Reserve market clearing price projections on a seasonal-weighted average clearing price for each reserve product in each commitment period, less the FCM clearing price, divided by the average number of on-peak hours each month.[185] NEPGA states that the Commission further explains that ISO-NE excluded outlier historical prices to "avoid bias."[186] NEPGA adds that, for real-time reserve revenues, the Commission

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[182] *Id*. at 17 & n.64 (citing Protest at 42 (quoting Prepared Direct Testimony of Dr. Robert G. Ethier on behalf of ISO-NE, Docket No. ER14-1639-000 at 11:13-12:2 (filed Apr. 1, 2014))).

[183] *Id*. at 17 & n.65 (citing Protest at 42 (quoting Prepared Direct Testimony of Dr. Robert G. Ethier on behalf of ISO-NE, Docket No. ER14-1639-000 at 13.2-14.3 & 13:6-9) (filed Apr. 1, 2014))).

[184] *Id*. at 18.

[185] *Id*. at 18 & n.66 (citing CONE Order, 161 FERC ¶ 61,035 at P 46).

[186] *Id*. at 18 & n.67 (citing ISO-NE Feb. 17 Answer at 21).

explains that ISO-NE based its projection on the average price for each reserve product for all off-peak hours and similarly excluded outlier values.[187] NEPGA states that the Commission finds these to be reasonable methodologies for projecting reserve revenues. However, NEPGA states that it presented evidence showing that likely future trends in several critical factors render the historical average prices an unreasonable basis for projecting forward and real-time reserve clearing prices and revenues.

63. NEPGA states that it first explained that natural gas and energy prices strongly influence reserve pricing due to the fuel and opportunity costs resources must incur to provide reserves and that ISO-NE's reserve pricing projections did not take into account the relationship between those factors.[188] NEPGA states that it offered evidence showing that ISO-NE projects reserve revenues to increase over time due, in part, to a constant assumed inflation adjustment, even though CT capacity factors and potential margins for energy sales are declining.[189] NEPGA adds that it also provided evidence showing a bias in the ISO-NE methodology, in that ISO-NE did not project growth in energy revenues, the primary source of revenues for CCs, while inconsistently projecting increasing reserve revenues, the primary revenue source for the CTs.[190]

64. NEPGA states that it went on to show that future changes in forward and real-time operating reserve supply and demand will likely decrease forward reserve revenues in the future.[191] NEPGA asserts that it showed a growing difference between increased supply and flat demand, suggesting a declining price for forward reserves over the forecast period.[192] NEPGA adds that it also offered evidence that Ten-Minute Non-Spinning Reserves have been shown to be price sensitive, indicating that, as supply growth outpaces demand, prices will decrease rather than increase.[193] NEPGA states that,

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[187] *Id*. at 18 & n.69.

[188] *Id*. at 19 & n.70 (citing NEPGA Protest at 32).

[189] *Id*. at 19 & n.71 (citing NEPGA Protest at 32-33).

[190] *Id*. at 19 & n.72 (citing NEPGA Protest at 33).

[191] *Id*. at 19 & n.73 (citing Protest at 33-36).

[192] *Id*. at 19 & n.74 (citing Protest at 34-35).

[193] *Id*. at 19 & n.75 (citing Protest at 34-35).

additionally, it offered evidence showing that new resources types coming on-line will further increase supply in forward and real-time reserves.[194]

65. NEPGA states that ISO-NE's methodologies for predicting future reserve revenues rely on historical forward and real-time reserve clearing prices. NEPGA argues that it offered substantial evidence, however, showing that the historical clearing prices are not reasonable predictors of future reserve revenues. NEPGA contends that the Commission did not address this evidence in its CONE Order, and its failure to do so in this proceeding renders its decision arbitrary and capricious.

2. Commission Determination

66. We deny rehearing. We disagree with NEPGA's contention that the Commission did not address all issues raised and evidence presented, including: (1) the risk of underestimating the actual cost of new entry; and (2) ISO-NE's reliance on historical reserve market clearing prices as a predictor of future reserve revenues, as discussed below.

67. First, NEPGA reiterates its argument concerning the potential reliability risk that could flow from underestimating the CONE and Net CONE values. We continue to disagree with NEPGA's claim that the potential reliability risk associated with underestimating the actual cost of new entry is so great that it is necessary to use a CC reference unit rather than a CT reference unit. ISO-NE already proposed and the Commission already implemented the solution to this potential reliability problem: marginal reliability impact-based demand curves.[195] Indeed, the Commission already addressed this issue in the 2016 Demand Curve Order, when it found that the new marginal reliability impact-based demand curves accepted in that proceeding sufficiently alleviated the concern that underestimating CONE or Net CONE values could create a reliability risk.[196]

68. Prior to the 2016 Demand Curve Order, under the previous linear (or vertical) demand curve design, the reliability risk associated with underestimating versus overestimating entry costs was a valid concern that was addressed by raising the demand curve. The Tariff specified that the linear system demand curve would intersect the installed capacity requirement at a price higher than Net CONE (specifically, at 1.2 x Net

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[194] *Id*. at 19 & n.76 (citing Protest at 35-36).

[195] 2016 Demand Curve Order, 155 FERC ¶ 61,319 at P 5; *see also* 2014 Demand Curve Order, 147 FERC ¶ 61,173 at PP 38-40.

[196] 2016 Demand Curve Order, 155 FERC ¶ 61,319 at PP 38-40.

CONE), rather than at a price equal to Net CONE.[197] The marginal reliability impact-based demand curves accepted in the 2016 Demand Curve Order are expressly designed to avoid the reliability risk previously identified with the old linear demand curve. The Commission explained in the 2016 Demand Curve Order that the convex shape of the new marginal reliability impact-based demand curves essentially eliminates the reliability risk associated with underestimating entry costs. The new marginal reliability impact-based demand curves for the system-wide and import-constrained zones are convex[198] and bend rapidly upward as capacity decreases, assigning an increasingly higher price increase as capacity purchases decrease.[199] These convex curves are steeply sloped at lower capacity quantities when incremental capacity should result in a bigger improvement in reliability.[200] These steep slopes translate into higher prices when capacity supply is short. The slope of the convex curves then flattens at higher capacity quantities when incremental capacity should produce relatively smaller improvement in reliability. In other words, a non-linear demand curve assigns increasingly high prices as capacity purchases decrease, which in turn reduces reliability risk.[201] In contrast, the prior linear curve assigned a constant price increase as the quantity of purchases decrease.[202] Under either curve, ISO-NE will procure less capacity if net CONE is underestimated than if Net Cone were accurately estimated. But because the slope of the non-linear demand based curve is steeper than the existing linear curve, the amount of under-procurement will be smaller under the non-linear curve than under the prior linear curve.[203] As ISO-NE reiterated in this proceeding, the design principles used to establish the new marginal reliability impact-based demand curves more accurately reflect the incremental reliability value of capacity.[204] And, as the Commission reiterated in the CONE Order, "starting in FCA 11, ISO-NE used new sloped system-wide and zonal demand curves based on the marginal reliability impact of capacity, which is intended to

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[197] *See, e.g., id*. P 35.

[198] *Id*. P 8 (citing Transmittal at 6-7).

[199] *Id*. P 38.

[200] *Id*. P 8.

[201] *Id*.

[202] *Id*. P 38.

[203] *Id*.

[204] CONE Order, 161 FERC ¶ 61,035 at P 20 & n.26 (citing January 13, 2017 Transmittal at 10-11).

allow FCA clearing prices to more accurately reflect the actual reliability value of capacity."[205] In sum, under the current market design, the marginal reliability impact-based demand curves address NEPGA's concern about the risk of underestimating the actual cost of new entry.

69. We acknowledge that, while the marginal reliability impact-based demand curves address the problems of over- or under-estimating Net CONE within a certain range, in constrained zones, the price may not rise high enough to incent the offering of sufficient capacity to meet market demand. As discussed above,[206] however, the solution to this challenge is not to deem administratively-set prices to be actual entry costs. Rather, it is critical to recognize that, even if gross CONE is higher in constrained zones, improvements in the energy and ancillary services markets such as price formation improvements,[207] shortage scarcity prices,[208] and offer caps,[209] help ensure that new resources will be willing to enter constrained zones. NEPGA repeats its mistake of equating the administratively-determined prices set in certain import-constrained zones with the "actual new entry costs" of resources in those zones. While administratively-determined prices in certain zones for auctions that were conducted under the old demand curve design were higher than the updated Net CONE value, the administratively-determined prices that were used under the old demand curve design cannot be equated with the "actual new entry costs" of any resources because prices set through administrative processes are not likely to reflect actual costs.

70. We also continue to find unpersuasive NEPGA's arguments challenging ISO-NE's assumptions regarding forward reserve prices. For the Locational Forward Reserve market revenues, ISO-NE calculated a seasonal-weighted average clearing price for each reserve product in each commitment period, minus the FCM clearing price, and divided that value by the average number of on-peak hours each month to generate an average annual price in dollars per megawatt hour. ISO-NE explained that it excludes "the most outlying historical prices" to avoid bias. Similarly, for the Real-Time Reserve market, ISO-NE took an average of the clearing price for each product for all off-peak hours and

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[205] *Id*. P 44.

[206] *See supra* P 33.

[207] *See generally* Order No. 825, FERC Stats. & Regs. ¶ 31,384.

[208] *See id*. P 7; *see also supra* note 125.

[209] *See generally* Order No. 831, 157 FERC ¶ 61,115 (2016), *order on reh'g and clarification*, Order No. 831-A, 161 FERC ¶ 61,156 (2017); *see also supra* note 126.

excluded the outliers.[210] We continue to find this approach reasonable because it precludes extreme results from skewing the average, thus better ensuring that rates fall within the zone of reasonableness.[211]

The Commission orders:

NEPGA's request for rehearing is hereby denied, as discussed in the body of this order.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.

[210] *See* CONE Order, 161 FERC ¶ 61,035 at P 46.

[211] *Cf. Advocating Tariff Equity v. Midcontinent Indep. Sys. Op., Inc*., 156 FERC ¶ 61,234, at PP 50-55 (2016) (discussing tests for identifying high and low cost of equity outliers and the importance of excluding such outliers from the proxy company group used to calculate return on equity).