

158 FERC ¶ 61,028
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;
Cheryl A. LaFleur, and Colette D. Honorable.

New York Independent System Operator, Inc.

Docket No. ER17-386-000

ORDER ACCEPTING TARIFF FILING SUBJECT TO CONDITION

(Issued January 17, 2017)

1. On November 18, 2016, the New York Independent System Operator, Inc. (NYISO) filed revisions to section 5.14.1.2 of its Market Administration and Control Area Services Tariff (Services Tariff)¹ pursuant to section 205 of the Federal Power Act (FPA).² The proposed revisions define the demand curves in the Installed Capacity (ICAP) market for the 2017/2018 Capability Year.³ The proposed revisions also identify the methodologies and inputs to be used for subsequent, annual updates to the ICAP Demand Curves⁴ for the 2018/2019, 2019/2020, and 2020/2021 Capability Years. This periodic review process is known as the ICAP Demand Curve reset.
2. In this order, we accept NYISO's proposed revisions to its Services Tariff, subject to condition that NYISO file, within 30 days of the date of this order, a revised Services

¹ New York Independent System Operator, Inc., NYISO Tariffs, [NYISO MST, 5.14 MST Installed Capacity Spot Market Auction and Installes, 18.0.0.](#)

² 16 U.S.C. § 824d (2012).

³ NYISO's Capability Year consists of the Summer Capability Period (May 1 through October 31) and the Winter Capability Period (November 1 through April 30).

⁴ ICAP Demand Curve is defined as: "A series of prices which decline until reaching zero as the amount of Installed Capacity increases." NYISO, Services Tariff, § 2.9 (16.0.0).

Tariff removing the inclusion of selective catalytic reduction emissions controls (SCR emissions controls) in the peaking plant design for the New York Control Area (NYCA) ICAP Demand Curve. The following discussion addresses only protested issues. NYISO has sufficiently supported all other non-protested proposed revisions and we find them to be just and reasonable.

I. Background

3. NYISO is required to determine the amount of ICAP that each Load Serving Entity (LSE) must acquire to ensure that adequate resources are available to meet projected load, taking into account reliability contingencies. The amount of ICAP, in megawatts (MW), needed to provide adequate resources to meet reliability contingencies for NYCA⁵ includes the Installed Reserve Margin, which is the level of reserve capacity in excess of peak load required. NYISO oversees an auction process that determines the amount and price of ICAP that each LSE must acquire using administratively established downward-sloping ICAP Demand Curves. NYISO determines the total amount of ICAP required for the entire NYISO control area (i.e., NYCA) and separately determines the amount of ICAP required for New York City (NYC), Long Island (LI), and the G-J Locality.⁶ As a result, there are separate ICAP Demand Curves for NYCA, NYC, LI, and the G-J Locality.

4. On July 18, 2016, the Commission accepted NYISO's proposed revisions to its Services Tariff to enhance its existing ICAP Demand Curve reset process.⁷ Specifically, the Commission accepted NYISO's proposals to: (1) increase the period between ICAP Demand Curve resets from three years to four years; (2) estimate net energy and ancillary services revenues using a historical methodology instead of an econometric forecast; and (3) implement annual updates to certain parameters used to establish the

⁵ NYCA includes the entire NYISO control area. *See* NYISO, Services Tariff, § 2.14 (11.0.0).

⁶ NYCA comprises NYC (load zone J), LI (load zone K), the G-J Locality (load zones G, H, I, and J), and Rest of State (all other load zones, which currently includes load zones A through F).

⁷ *N.Y. Indep. Sys. Operator, Inc.*, 156 FERC ¶ 61,039, at P 1 (2016) (ICAP Demand Curve Reset Enhancements Order).

ICAP Demand Curves, so that the ICAP Demand Curves for the three Capability Years after NYISO conducts its periodic review will reflect changes in market conditions.⁸

5. The Services Tariff guides NYISO's ICAP Demand Curve reset process. Section 5.14.1.2 of the Services Tariff (Demand Curve Reset Section) requires NYISO to perform a quadrennial review to identify the methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the relevant ICAP Demand Curve reset process and establish the ICAP Demand Curves for the first Capability Year covered by that process. Specifically, NYISO must assess "the current localized levelized embedded cost of a peaking plant" in NYC, LI, the G-J Locality, and Rest of State (and in any new load zone, if applicable) "to meet minimum capacity requirements" (gross CONE of the peaking plant).⁹ The Services Tariff defines a peaking plant as "the unit with technology that results in the lowest fixed costs and highest variable costs among all other units' technology that are economically viable," which includes "the number of units (whether one or more) that constitute the scale identified in the periodic review."¹⁰ Further, NYISO must assess "the likely projected annual [energy and ancillary services] revenues of the peaking plant for the first Capability Year covered by the periodic review, net of the costs of producing such [energy and ancillary services] . . . including the methodology and inputs for determining such projections for the four Capability Years covered by the periodic review" (net energy and ancillary services revenue offset).¹¹ In addition to details discussed further in this order, NYISO must also assess: (1) "the appropriate shape and slope of the ICAP Demand Curves, and the associated point at which the dollar value of the ICAP Demand Curves should decline to zero" (zero-crossing point); (2) "the appropriate translation of the annual net revenue requirement of the peaking plant . . . into monthly values that take into account seasonal differences in the amount of capacity available in the ICAP Spot

⁸ *Id.* PP 15-16, 27. Specifically, NYISO will update the following parameters each year: (1) the gross cost of new entry (CONE) of the peaking plant for each ICAP Demand Curve based on a composite escalation factor; (2) the net energy and ancillary services revenue estimates for each peaking plant based on updated cost and market price information; and (3) revised values of the ICAP Demand Curves based on both the updated gross CONE and net energy and ancillary services values, and the updated winter-to-summer ratio values. *Id.* P 19.

⁹ NYISO, Services Tariff, § 5.14.1.2.2 (16.0.0).

¹⁰ *Id.*

¹¹ *Id.*

Market Auctions” (winter-to-summer ratio); and (3) “the escalation factor and inflation component of the escalation factor applied to the peaking plant gross cost, including the methodology and inputs for determining such values.”¹²

6. The remaining provisions of the Demand Curve Reset Section of the Services Tariff detail additional procedures for the ICAP Demand Curve reset process, including that the ICAP Demand Curves approved by the NYISO Board of Directors shall be filed with the Commission for incorporation into the Services Tariff. The Demand Curve Reset Section also includes a table that NYISO revises at the time of each ICAP Demand Curve reset to list the points on the ICAP Demand Curves for each Capability Year covered by the most recent ICAP Demand Curve reset.¹³

II. Summary of NYISO’s Filing

7. NYISO proposes to revise the table in the Demand Curve Reset Section of the Services Tariff to define the ICAP Demand Curves for the 2017/2018 Capability Year by specifying the applicable points of the ICAP Demand Curves for the 2017/2018 Capability Year (the maximum point, reference point, and zero-crossing point). In that same table, NYISO proposes for the 2018/2019, 2019/2020, and 2020/2021 Capability Years to state that NYISO will post the applicable points of the ICAP Demand Curves on its website on or before November 30th of the relevant year (e.g., 2017 for the 2018/2019 Capability Year). NYISO also proposes to set forth the gross CONE of the peaking plant and net energy and ancillary services revenue offset values used to define each ICAP Demand Curve for the 2017/2018 Capability Year, which will be updated annually.¹⁴ NYISO proposes to base the ICAP Demand Curve for the G-J Locality on a peaking plant located in load zone G, and to base the ICAP Demand Curve for NYCA on a peaking plant located in load zone F. The remaining details regarding the applicable points of the ICAP Demand Curves for the 2017/2018 Capability Year, and the methodologies and inputs that will be used in conducting the annual updates to define the ICAP Demand Curves for the 2018/2019, 2019/2020, and 2020/2021 Capability Years are set forth in NYISO’s Transmittal Letter and attachments.¹⁵

¹² *Id.*

¹³ *Id.* § 5.14.1.2.

¹⁴ NYISO Transmittal Letter at 46; Proposed Services Tariff § 5.14.1.2.2.3.

¹⁵ Specifically, NYISO attaches to its filing: (1) its proposed revisions to the Services Tariff; (2) an affidavit from Analysis Group, Inc., an independent consultant

8. As contemplated by the Demand Curve Reset Section,¹⁶ NYISO explains that it conducted a process, with stakeholder input, to select an independent consultant for this ICAP Demand Curve reset.¹⁷ The independent consultant selected the peaking plant technology options to be evaluated for each ICAP Demand Curve; developed the necessary design, cost, and performance information for each option; conducted additional analysis; and issued a joint final report, which NYISO attached to its filing.¹⁸

9. NYISO contends that its proposed ICAP Demand Curves and methodologies and inputs are designed to ensure that the ICAP Demand Curves fulfill their fundamental objective of attracting new and retaining existing capacity necessary to ensure achievement of New York State's applicable statewide and locational minimum ICAP requirements. NYISO notes that the basis of the ICAP Demand Curves remains largely unchanged from that approved by the Commission in 2014.¹⁹ NYISO asks that the Commission accept its proposal, effective January 17, 2017.²⁰

III. Notice, Interventions, and Protests

10. Notice of NYISO's filing was published in the *Federal Register*, 81 Fed. Reg. 85,220 (2016), with protests and interventions due on or before December 9, 2016. Calpine Corporation; Direct Energy Business, LLC and Direct Energy Business

(Analysis Group Aff.); (3) the independent consultant's final report from September 13, 2016 (Independent Consultant Final Report); (4) an affidavit from Lummus Consultants International, Inc., an independent consultant subcontracted by Analysis Group, Inc. (Lummus Aff.); (5) an affidavit from David Allen of NYISO (Allen Aff.); and (6) NYISO staff's final recommendations from September 15, 2016 (NYISO Staff Final Recommendations).

¹⁶ NYISO, Services Tariff, § 5.14.1.2.2.4 (16.0.0) (explaining the ICAP Demand Curve reset procedures, including input from an independent consultant).

¹⁷ The independent consultant refers to both the Analysis Group, Inc. (Analysis Group) and its subcontractor, Lummus Consultants International, Inc. (Lummus).

¹⁸ NYISO November 18, 2016 Filing, Attach. III, Ex. D.

¹⁹ *N.Y. Indep. Sys. Operator, Inc.*, 146 FERC ¶ 61,043 (2014) (2013 ICAP Demand Curve Reset Order), *order on reh'g*, 147 FERC ¶ 61,148 (2014) (2013 ICAP Demand Curve Reset Rehearing Order).

²⁰ NYISO Transmittal Letter at 2, 46-47.

Marketing, LLC; NRG Power Marketing LLC and GenOn Energy Management, LLC; Independent Power Producers of New York, Inc. (IPPNY); CPV Valley, LLC; Entergy Nuclear Power Marketing, LLC (Entergy); New York State Energy Research and Development Authority (NYSERDA); the City of New York and Multiple Intervenors²¹ (jointly, City of NY and Multiple Intervenors); the New York Transmission Owners (NYTOs);²² Niagara Mohawk Power Corporation (Niagara Mohawk); and the New York State Department of State Utility Intervention Unit (UIU) filed timely motions to intervene. The New York State Public Service Commission (New York Commission) filed a notice of intervention. NYISO's Market Monitoring Unit (MMU) filed a motion to intervene out of time.

11. Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc. (jointly, the Companies); Entergy; Niagara Mohawk; UIU; and MMU filed comments. City of NY and Multiple Intervenors filed comments and a protest. The New York Commission and NYSERDA (jointly, the State Entities) and NYTOs filed protests. IPPNY filed a limited protest and comments.

12. On December 22, 2016, the following parties filed answers to the comments and protests: NYISO; and NYTOs and City of NY and Multiple Intervenors (collectively, NYTOs, City of NY, and Multiple Intervenors). On December 23, 2016, the following parties filed answers to the comments and protests: City of NY and Multiple Intervenors; the State Entities; IPPNY; and Niagara Mohawk. On January 6, 2017, NYTOs filed an answer to NYISO's and IPPNY's answers. On January 10, 2017, IPPNY filed an answer to NYTOs, City of NY, and Multiple Intervenors' collective answer.

²¹ Multiple Intervenors is an unincorporated association of approximately 60 large industrial, commercial, and institutional energy consumers with manufacturing and other facilities located throughout New York State.

²² NYTOs consist of Central Hudson Gas & Electric Corporation; Consolidated Edison Company of New York, Inc.; Niagara Mohawk Power Corporation; New York Power Authority; New York State Electric & Gas Corporation; Orange and Rockland Utilities, Inc.; Power Supply Long Island; and Rochester Gas and Electric Corporation.

IV. Procedural Matters

13. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure,²³ the notice of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

14. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure,²⁴ we will grant MMU's late-filed motion to intervene given its interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

15. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure²⁵ prohibits an answer to a protest or an answer to an answer unless otherwise ordered by the decisional authority. We will accept the answers filed by NYISO; NYTOs, City of NY, and Multiple Intervenors (collectively); City of NY and Multiple Intervenors (jointly); the State Entities; IPPNY; Niagara Mohawk; and NYTOs, because they have provided information that assisted us in our decision-making process.

V. Substantive Matters

16. We accept, subject to condition, NYISO's proposed revisions to its Services Tariff to define the ICAP Demand Curves for the 2017/2018 Capability Year and to identify the methodologies and inputs to be used for subsequent, annual updates to the ICAP Demand Curves for the 2018/2019, 2019/2020, and 2020/2021 Capability Years.²⁶ Specifically, we accept NYISO's proposed revisions to the Demand Curve Reset Section of its Services Tariff, subject to NYISO filing, within 30 days of the date of this order, revisions to its Services Tariff to remove the inclusion of SCR emissions controls in the peaking plant design for the NYCA ICAP Demand Curve.

17. We next discuss the contested revisions, which pertain to: (1) use of a simple cycle F class frame turbine as the peaking plant technology for all of the ICAP Demand

²³ 18 C.F.R. § 385.214 (2016).

²⁴ *Id.* § 385.214(d).

²⁵ *Id.* § 385.213(a)(2).

²⁶ The Commission can revise a proposal under section 205 of the FPA as long as the filing utility accepts the change. *See City of Winnfield*, 744 F.2d 871, 875-77 (D.C. Cir. 1984). The filing utility is free to indicate that it is unwilling to accede to the Commission's conditions by withdrawing its filing.

Curves; (2) inclusion of SCR emissions controls in the peaking plant design for all ICAP Demand Curves; (3) inclusion of dual fuel capability in the peaking plant designs for the NYC, LI, and G-J Locality ICAP Demand Curves, and use of the gas-only peaking plant design for the NYCA ICAP Demand Curve; (4) peaking plant costs; (5) property tax treatment; (6) natural gas hub selections; (7) level of excess adjustment factors; (8) incorporation of comprehensive shortage pricing into the net energy and ancillary services revenues model; and (9) levelized fixed charge and financial parameters. We find the remaining uncontested revisions to be just and reasonable.²⁷

A. Peaking Plant Technology and Design

18. The Demand Curve Reset Section defines a peaking unit as “the unit with technology that results in the lowest fixed costs and highest variable costs among all other units’ technology that are economically viable.”²⁸ NYISO contends that it applied the following criteria to determine the appropriate peaking plant technology and equipment design for each of the ICAP Demand Curves: (1) the availability of the technology to most market participants; (2) existence of sufficient operating experience to demonstrate that the technology is proven and reliable; (3) whether the technology is dispatchable and capable of being cycled to provide peaking service; and (4) the ability to achieve compliance with applicable environmental requirements and regulations.²⁹

²⁷ Uncontested revisions include NYISO’s proposal to: (1) use only real-time dispatch prices for the net energy and ancillary services revenues model for real-time commitment and dispatch; (2) not reduce net energy and ancillary services revenues estimates for gas-only peaking plants to account for the potential of natural gas unavailability, or for dual fuel peaking plants to account for potential difficulties in replenishing fuel oil; (3) include intraday fuel premium/discount values for determining real-time (or intraday) natural gas prices in the net energy and ancillary services revenues model; (4) use a revised formula for calculating reference point values; (5) continue to use the current zero-crossing point values; (6) update annually the peaking plant costs using a single, NYCA-wide composite escalation factor; (7) use the same net energy and ancillary services revenues model for purposes of the annual updates with data from the most recent 12-month period ending in August; and (8) use the updated peaking plant costs and net energy and ancillary services revenue projections to derive updated ICAP Demand Curves.

²⁸ NYISO, Services Tariff, § 5.14.1.2.2 (16.0.0).

²⁹ NYISO Transmittal Letter at 6 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 60; *N.Y. Indep. Sys. Operator, Inc.*, 134 FERC ¶ 61,058, at P 37 (2011) (2010 ICAP Demand Curve Reset Order), *order on reh’g*, 135 FERC ¶ 61,170

(continued...)

19. NYISO states that a fundamental objective of the ICAP Demand Curves is that the underlying peaking plant should be able to capture sufficient revenues to support market entry if needed to ensure attainment of the applicable minimum capacity requirements. Thus, NYISO explains, it must derive the ICAP Demand Curves based on the costs and net energy and ancillary services revenues of a representative peaking plant that can reliably be constructed and operated in multiple instances if necessary to ensure compliance with the applicable minimum capacity requirements. According to NYISO, establishing the ICAP Demand Curves on the basis of a single least cost design is likely to result in price signals that could sustain the development of only a single facility, which could require reliance on out-of-market action to ensure continued availability of sufficient resources should system conditions dictate a need to develop more than one peaking plant. NYISO contends that its proposal is intended to ensure that the ICAP Demand Curves are capable of providing appropriate price signals regarding the value of capacity in each capacity region, while simultaneously providing the needed revenues to elicit new market entry if and when required to ensure reliability.³⁰

20. As discussed further below, NYISO proposes to continue to use a simple cycle F class frame turbine as the peaking plant technology for all of the ICAP Demand Curves. NYISO also proposes that the peaking plants for all of the ICAP Demand Curves include SCR emissions controls to ensure compliance with applicable environmental requirements. NYISO further proposes to continue to include dual fuel capability for the peaking plant designs for the NYC, LI, and G-J Locality ICAP Demand Curves, and to continue to use a gas-only peaking plant design for the NYCA ICAP Demand Curve. We also discuss the peaking plant costs and property tax treatment below.

1. Peaking Plant Technology

21. Consistent with the last ICAP Demand Curve reset, NYISO proposes to continue to use a simple cycle F class frame turbine as the peaking plant technology for all of the ICAP Demand Curves. According to NYISO, the F class frame turbine remains the technology representing the lowest fixed costs and highest variable costs among all other technologies that were deemed economically viable, consistent with the Services Tariff.³¹

(2011); *N.Y. Indep. Sys. Operator, Inc.*, 125 FERC ¶ 61,299, at P 20 (2008) (2007 ICAP Demand Curve Reset Rehearing Order)).

³⁰ *Id.* at 6-8.

³¹ *Id.* at 7 (citing NYISO Staff Final Recommendations at 40-41; Independent Consultant Final Report at 8-9, 12-18, 93-94; Analysis Group Aff. ¶ 23).

22. NYISO states that certain stakeholders contend that NYISO should instead select a simple cycle H class frame turbine as the peaking plant technology. NYISO explains that these stakeholders argue that a developer proposing to potentially install a simple cycle H class frame turbine with SCR emissions controls recently cleared in the ISO New England Inc. (ISO-NE) forward capacity market auction for the 2019/2020 capacity commitment period. These stakeholders further state, NYISO continues, that in ISO-NE's process to update the CONE value underlying its capacity demand curve construct, its consultants have proposed to base the costs of a simple cycle turbine design on the H class frame turbine. NYISO asserts that the H class frame turbine in simple cycle configuration was not considered in this ICAP Demand Curve reset because, at this time, it is not economically viable, as required by the Services Tariff. NYISO states that the H class frame turbine has not been commercially operated in a simple cycle configuration.³²

23. According to NYISO, the ICAP Demand Curves have never been established using a technology for which there was no actual operating experience. For example, NYISO contends that the F class frame turbine with SCR emissions controls had accumulated approximately 500 operating hours over a seven-month period across four units operating at a single facility in California at the time NYISO proposed to use it as the peaking plant technology in 2013.³³ With regard to the inclusion of the H class frame turbine in ISO-NE, NYISO argues that the project that cleared has not yet commenced construction, nor has it received a siting permit. Moreover, NYISO points out that because the project developer specifically indicated that the project will use the H class frame turbine "or a comparable unit," it is unclear whether the proposed project will ultimately use the H class frame turbine.³⁴ NYISO asserts that it will likely not know until at least mid-2019 whether any simple cycle H class frame unit with SCR emissions controls may become commercially operational and available to potentially demonstrate that such technology is proven and reliable. As for ISO-NE's corresponding CONE determination, NYISO responds that ISO-NE does not have a similar "economic viability" requirement, so ISO-NE's technology selections are irrelevant to NYISO's ICAP Demand Curve reset. NYISO notes that it will continue to monitor the developments related to the simple cycle H class frame unit and determine whether

³² *Id.* at 7-8 (citing NYISO Staff Final Recommendations at 41; Independent Consultant Final Report at 17).

³³ *Id.* at 8 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶61,043 at PP 57-60).

³⁴ *Id.*

sufficient commercial operating experience has occurred to support its consideration in the next ICAP Demand Curve reset.³⁵

a. Comments and Protests

24. IPPNY supports NYISO's proposal to use the F class frame turbine as the peaking plant technology for all of the ICAP Demand Curves. IPPNY agrees with NYISO that the simple cycle H class frame turbine is not economically viable because it has never been operated in a simple cycle configuration and therefore lacks proven operating experience.³⁶ IPPNY acknowledges that a simple cycle H class frame turbine cleared the ISO-NE forward capacity market auction, but asserts that developers in ISO-NE can buy out of their capacity commitments or designate different units to meet these commitments. Further, IPPNY explains that ISO-NE is not bound to an "economic viability" determination like NYISO.³⁷

25. UIU asserts that NYISO's selection of the F class frame turbine as the peaking plant technology for NYCA and the G-J Locality is inconsistent with the Services Tariff because the H class frame turbine is economically viable and has lower capital costs than the F class frame turbine. UIU states that in the last ICAP Demand Curve reset, the Commission found that "an economically viable technology must be physically able to supply capacity to the market," but that economic viability determinations are otherwise a "matter of judgment."³⁸ UIU points to the recent clearing of the H class frame turbine project in ISO-NE's forward capacity market auction. As to arguments that this project might not be completed, UIU argues that the associated capacity obligation of that project is both physical and financial and carries a substantial penalty for noncompliance, meaning the project will become operational and supply physical resources in time for the 2019/2020 capacity commitment period in ISO-NE. UIU also points to ISO-NE's use

³⁵ *Id.* at 8-9 (noting that the independent consultant developed cost and net energy and ancillary services revenue estimates based on the simple cycle H class frame turbine for informational purposes to provide stakeholders a comparison with the F class frame turbine and to provide transparency).

³⁶ IPPNY December 9, 2016 Limited Protest and Comments at 26 (citing NYISO Transmittal Letter at 7-9; NYISO Staff Final Recommendations at 41).

³⁷ *Id.* at 26-27.

³⁸ UIU December 9, 2016 Comments and Protest at 4-5 (quoting 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 21).

of the H class frame turbine for developing the CONE for its upcoming demand curves.³⁹ As for the capital costs of the H class frame turbine, UIU cites the clearing price of \$7.30/kW-month in the recent ISO-NE forward capacity auction in which the H class frame turbine cleared. UIU contends that this price is significantly lower than NYISO's proposed reference price for NYCA and may be below the price an F class frame turbine would require to remain economically viable. According to UIU, this counters NYISO's argument that the project developer in ISO-NE could use a "comparable" technology because that technology would need to be at least as cost-competitive as the H class frame turbine.⁴⁰

b. Answers

26. NYISO contends that it and the independent consultant fully considered the recent events in ISO-NE in determining that, for this ICAP Demand Curve reset, the simple cycle H class frame turbine does not qualify as economically viable, as required by the Services Tariff. NYISO reiterates that the ICAP Demand Curves have never been established using a technology for which there is no actual commercial operating experience. NYISO states that, until a simple cycle H class frame turbine with SCR emissions controls achieves sufficient commercial operating experience to demonstrate that the technology is proven and reliable, its consideration as the peaking plant design in New York remains premature.⁴¹

c. Commission Determination

27. We find NYISO's proposal to continue using the simple cycle F class frame turbine as the peaking plant technology for all ICAP Demand Curves to be just and reasonable. We agree with NYISO that, consistent with the requirements of the Services Tariff, the F class frame turbine remains "the unit with technology that results in the lowest fixed costs and highest variable costs among all other units' technology that are economically viable."⁴² Furthermore, as NYISO states, the simple cycle F class frame

³⁹ *Id.* at 5-6.

⁴⁰ *Id.* at 6-7.

⁴¹ NYISO December 22, 2016 Answer at 5-6.

⁴² NYISO, Services Tariff, § 5.14.1.2.2 (16.0.0); *see also* 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 58.

turbine has been commercially operated in the desired configuration, further demonstrating that the technology is proven and reliable and, thus, economically viable.⁴³

28. We reject UIU's arguments that NYISO should instead select the H class frame turbine for NYCA and the G-J Locality. Simply put, it is difficult to assert that a peaking plant—in this case, the H frame class turbine—is economically viable when it has not been operated in a simple cycle configuration.⁴⁴ Although the Commission has stated that it “does not look for a minimum number of hours in order to determine whether a technology is considered viable,” we find the record of evidence presented in support of the H class frame turbine fails to demonstrate viability.⁴⁵ Evidence regarding recent capacity commitment obligations cleared in ISO-NE for H class frame turbine projects, and ISO-NE's consultant using the H class frame turbine to determine the CONE for upcoming ISO-NE demand curves does not persuade us to the contrary. The relevant H class frame turbine project has not yet begun construction and there are inherent differences between ISO-NE and NYISO that caution against reliance on ISO-NE's demand curve process. For example, NYISO states that ISO-NE is not bound by an “economic viability” determination like NYISO when selecting peaking plant technologies used to establish values for its demand curve construct. According to NYISO, its nearer-term ICAP market construct supports the need for reliance on proven and reliable technologies to serve as the peaking plant.⁴⁶ We note NYISO's commitment to continue to monitor the developments related to the simple cycle H class frame unit and determine whether sufficient commercial operating experience supports its consideration in the next ICAP Demand Curve reset.⁴⁷

2. SCR Emissions Controls

29. NYISO states that, consistent with the last ICAP Demand Curve reset (in 2013), it proposes that the peaking plant designs for the NYC, LI, and G-J Locality ICAP Demand Curves include SCR emissions controls to comply with applicable nitrogen oxides

⁴³ NYISO Transmittal Letter at 8.

⁴⁴ *Id.* at 7-8 (citing NYISO Staff Final Recommendations at 41; Independent Consultant Final Report at 17).

⁴⁵ 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 58.

⁴⁶ NYISO Transmittal Letter at 9 & n.37.

⁴⁷ *Id.* at 9.

emissions requirements in New York State.⁴⁸ Moreover, NYISO explains, due to changes in the applicable environmental requirements since the last ICAP Demand Curve reset, NYISO proposes to alter the previously approved peaking plant design for the NYCA ICAP Demand Curve to now include SCR emissions controls.⁴⁹

30. To be constructed and operate in New York State, NYISO explains that the peaking plant must obtain all necessary air permits, which will require compliance with both New Source Performance Standards and New Source Review permit requirements for applicable pollutants.⁵⁰ NYISO states that the New Source Performance Standards require that each of the peaking plants NYISO evaluated limit nitrogen oxides emissions to less than 15 parts per million by volume (ppmv) at 15 percent oxygen while operating on natural gas. NYISO asserts that the F class frame turbine is the only peaking plant NYISO evaluated that can achieve this requirement without SCR emissions controls, regardless of New Source Review requirements.⁵¹ NYISO also states that the New Source Performance Standards for simple cycle combustion turbines establish a capacity factor limitation for carbon dioxide emissions, which requires a peaking plant to limit its operating hours. For simple cycle F class frame turbines, NYISO states that the applicable capacity factor limit is 38 percent, or an operating hour limit of approximately 3,300 hours per year.⁵²

31. NYISO explains that the peaking plant must also comply with the applicable New Source Review requirements, including the application of Best Available Control Technology and Lowest Achievable Emissions Rule determinations for emissions of

⁴⁸ *Id.* at 9-10 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at PP 57-60).

⁴⁹ *Id.* at 10 & n.39. NYISO states that, in the last ICAP Demand Curve reset, it proposed that the NYCA ICAP Demand Curve peaking plant operate pursuant to a federally enforceable limitation on annual operating hours in lieu of installing SCR emissions controls to achieve compliance with applicable nitrogen oxides emissions requirements.

⁵⁰ *Id.* at 10 (citing NYISO Staff Final Recommendations at 6-10; Independent Consultant Final Report at 19-29; Lummus Aff. ¶¶ 24-29).

⁵¹ *Id.* (citing NYISO Staff Final Recommendations at 7; Independent Consultant Final Report at 19-20; Lummus Aff. ¶ 26).

⁵² *Id.* at 11 (citing NYISO Staff Final Recommendations at 7; Independent Consultant Final Report at 20, 27).

criteria pollutants and precursors. NYISO elaborates that, for a given pollutant, the New Source Review requirements vary depending on whether the facility is located in an area designated as in attainment (where a Best Available Control Technology determination is required) or nonattainment (where Lowest Achievable Emissions Rules apply). For peaking plants in nonattainment areas (i.e., in load zones J, K, and the Rockland County part of G) or that have dual fuel capability, NYISO explains that, given the restrictive threshold for nitrogen oxides emissions in these areas and the much higher nitrogen oxides emissions rates that result from operating on ultra-low sulfur diesel fuel oil, the independent consultant concluded that the peaking plant design must include SCR emissions controls. Thus, NYISO asserts that SCR emissions controls must be included in the peaking plant designs for the NYC, LI, and G-J Locality ICAP Demand Curves, consistent with the last ICAP Demand Curve reset.⁵³

32. For gas-only peaking plants in attainment areas (i.e., in load zones C, F, and the Dutchess County part of G), NYISO states that the applicable environmental regulations allow an alternative compliance option to installing SCR emissions controls to reduce nitrogen oxides emissions. Specifically, NYISO continues, the gas-only peaking plant could operate pursuant to a federally enforceable annual operating hours limit to remain below the threshold for “major source” designation, and application of certain New Source Review requirements.⁵⁴ NYISO contends that, although this alternative compliance option remains available in the regulations, it is not a viable option for a peaking plant in this ICAP Demand Curve reset.⁵⁵

33. Specifically, in addition to obtaining the necessary air permits discussed above, NYISO explains that a peaking plant must also obtain a certificate of environmental compatibility and public need from the New York State Board on Electric Generation Siting (NY Siting Board), pursuant to Article 10 of the New York Public Service Law.⁵⁶ According to NYISO, Article 10 requires the NY Siting Board to find that “the adverse environmental effects of the construction and operation of the facility will be minimized or avoided to the maximum extent practicable.”⁵⁷ NYISO states that Article 10 also

⁵³ *Id.* (citing Independent Consultant Final Report at 23-26; Lummus Aff. ¶ 25).

⁵⁴ *Id.* at 11-12 (citing NYISO Staff Final Recommendations at 8-9; Independent Consultant Final Report at 27-28; Lummus Aff. ¶ 27).

⁵⁵ *Id.* at 12.

⁵⁶ N.Y. Pub. Serv. L. §§ 160-173.

⁵⁷ NYISO Transmittal Letter at 12-13 (quoting N.Y. Pub. Serv. L. § 168(3)(c)).

empowers the NY Siting Board to exercise its authority in granting a certificate regardless of any draft air permits (and accompanying restrictions and limitations contained therein) that may have been issued for a project.⁵⁸ NYISO contends that this independent authority could permit the NY Siting Board to impose more stringent requirements than the air permits issued for a project or simply deny a project's application, preventing it from being constructed.⁵⁹ NYISO contends that environmental thresholds have tightened since the last ICAP Demand Curve reset, such that the annual nitrogen oxides emissions for a peaking plant design without SCR emissions controls are 2.5 times greater than a peaking plant that includes SCR emissions controls. Based on its interpretation of the NY Siting Board's authority under Article 10, NYISO argues that there is significant uncertainty regarding whether the NY Siting Board would grant a certificate to a peaking plant without SCR emissions controls.⁶⁰

34. NYISO also identifies additional relevant factors it considered. First, NYISO states that a review of air permits for electric generators in New York State indicates that no facility has been permitted using an annual operating hours cap in lieu of installing SCR emissions controls to reduce nitrogen oxides emissions during NYISO's existence.⁶¹ Furthermore, NYISO points to recent New York State regulations (which are stricter than federal regulations) requiring reductions in nitrogen oxides emissions from distributed generation facilities.⁶² NYISO also cites recent changes to federal ozone standards and the nitrogen oxides budget under the Cross State Air Pollution Rule (which takes effect May 1, 2017).⁶³

⁵⁸ *Id.* at 13 (citing N.Y. Pub. Serv. L. § 172).

⁵⁹ *Id.*

⁶⁰ *Id.* (citing NYISO Staff Final Recommendations at 8-9; Independent Consultant Final Report at 27; Lummus Aff. ¶¶ 27-29).

⁶¹ *Id.* at 10, 14 (citing NYISO Staff Final Recommendations at 9).

⁶² *Id.* at 14 (citing Rules for Distributed Generation Sources (6 NYCRR Part 222), <http://www.dec.ny.gov/regulations/104487.html>).

⁶³ *Id.* at 14-15 (citing NYISO Staff Final Recommendations at 9-10; Independent Consultant Final Report at 27-28; U.S. Environmental Protection Agency, *Final Cross-State Air Pollution Rule Update* (Sept. 7, 2016), <https://www.gpo.gov/fdsys/pkg/FR-2016-10-26/pdf/2016-22240.pdf>).

35. For these reasons, NYISO contends that a reasonable and representative peaking plant design should include SCR emissions controls in all locations. NYISO argues that failure to include such controls is likely to result in a design that is either incapable of being constructed in New York State or could be constructed in a single, limited one-off circumstance without the ability to be repeated, if necessary. NYISO concludes that this could result in the establishment of ICAP Demand Curves that may ultimately fail to produce adequate price signals to elicit and support new entry into the market when needed to maintain reliability.⁶⁴

a. Comments and Protests

36. IPPNY supports NYISO's proposal to include SCR emissions controls in the peaking plant designs for all ICAP Demand Curves. In addition to NYISO and the independent consultant's reasons, IPPNY attaches to its filing a paper from the environmental consulting firm Ecology and Environment, Inc. (E&E Paper).⁶⁵ IPPNY contends that the E&E Paper shows that a developer would be very unlikely to construct an F class frame turbine peaking plant that was not equipped with SCR emissions controls in any load zone in New York due to siting, permitting, and future market risks.⁶⁶ IPPNY agrees with NYISO that environmental regulations have changed significantly since the last ICAP Demand Curve reset, which now make an operating hour limit infeasible, thereby driving the need for SCR emissions controls for the peaking plant designs in all regions.⁶⁷

37. In addition to regulatory changes, IPPNY asserts that since the last ICAP Demand Curve reset, New York State agencies have: (1) banned hydraulic fracturing of natural gas starting in 2014; (2) rejected an application for a water quality permit for a proposed natural gas pipeline in April 2016; and (3) adopted the Clean Energy Standard, which seeks a 40 percent reduction in carbon dioxide emissions by requiring that 50 percent of all electricity consumed in the state by 2030 be produced by renewable facilities.⁶⁸ With regard to Article 10 of the New York Public Service Law, IPPNY points to the E&E Paper, which posits that a peaking plant without SCR emissions controls is unlikely to

⁶⁴ *Id.* at 15.

⁶⁵ IPPNY December 9, 2016 Limited Protest and Comments at Ex. I.

⁶⁶ *Id.* at 15 & Ex. I.

⁶⁷ *Id.* at 15-16.

⁶⁸ *Id.* at 17.

meet the Article 10 requirement to minimize adverse environmental impacts.⁶⁹ IPPNY concludes that it is highly likely that, due to pressure from environmental groups, the NY Siting Board will condition approval of a peaking plant on the installation of the best technology available, which is SCR emissions controls.⁷⁰ Moreover, IPPNY asserts that the NY Siting Board's granting of a certificate to a peaking plant without SCR emissions controls would be entirely inconsistent with the State's multi-billion-dollar effort to reduce air emissions through the development and maintenance of renewable energy and nuclear facilities.⁷¹

38. IPPNY contends that an operating hour limit is also unlikely to avoid the need for SCR emissions controls because a peaking plant without SCR emissions controls may have difficulty meeting the one-hour nitrogen dioxide National Ambient Air Quality Standard. According to IPPNY, the E&E Paper provides that installing SCR emissions controls may be necessary to model compliance with this standard.⁷² IPPNY claims that, to satisfy the economic viability requirement set forth in the Services Tariff, NYISO must demonstrate that a peaking plant can be replicated in the relevant load zone.⁷³

39. IPPNY disagrees with arguments made during the stakeholder process that Article 10 grants the New York State Department of Environmental Conservation (NYSDEC) the exclusive authority to issue air permits and that the NY Siting Board does not have the authority to require SCR emissions controls if NYSDEC issues an air permit that does not require such controls. IPPNY argues that such arguments ignore the fact that Article 10 states that the issuance of permits by NYSDEC "shall in no way interfere with the required review by the [NY Siting Board] of the anticipated environmental and health impacts relating to the construction and operation of the facility as proposed, or its authority to deny an application for certification and, in the event of such a denial, any such permits shall be deemed null and void."⁷⁴ IPPNY contends that this provision, which is a new source of authority that was not granted to the NY Siting Board under the prior statute, gives the NY Siting Board the authority to perform its own environmental

⁶⁹ *Id.* at 18.

⁷⁰ *Id.* at 17-18 (citing N.Y. Pub. Serv. L. §§ 162-64, 168(2); E&E Paper at 9).

⁷¹ *Id.* at 19.

⁷² *Id.*

⁷³ *Id.* at 19-20 (citing E&E Paper at 5-8).

⁷⁴ *Id.* at 20 (quoting N.Y. Pub. Serv. L. § 172(1)).

review of nitrogen oxides emissions and determine that a project should not be built because it does not minimize nitrogen oxides emissions to the maximum extent practicable.⁷⁵

40. Referencing the Independent Consultant Final Report, IPPNY contends that, even if a developer can obtain an Article 10 certificate without installing SCR emissions controls by accepting an hourly operating limit, it faces the substantial risk that increasingly stringent emissions caps will require it to retrofit its facility with SCR emissions controls later at a cost significantly higher than if it had installed such controls initially.⁷⁶ IPPNY adds that the developer would also face significant outages to install the equipment. If the peaking plant design is not assumed to include SCR emissions controls, IPPNY asserts that these additional risks would need to be captured in the ICAP Demand Curves either by a significantly shorter amortization period than 20 years (NYISO's proposed amortization period) or by an increased required return on equity. IPPNY contends that once these risks are appropriately represented, the annualized cost of the peaking plant design without SCR emissions controls would likely be no lower than the cost of a peaking plant design with SCR emissions controls.⁷⁷

41. The State Entities, City of NY and Multiple Intervenors, UIU, and Niagara Mohawk protest NYISO's proposal to include SCR emissions controls in the peaking plant designs for the NYCA and G-J Locality ICAP Demand Curves.⁷⁸ The State Entities and City of NY and Multiple Intervenors argue that there is no regulatory mandate for peaking plants located in load zones C, F, and G (Dutchess County) to include SCR emissions controls.⁷⁹ For this reason, Niagara Mohawk adds that NYISO's proposal is contrary to NYISO's obligation to select the peaking plant with the lowest fixed costs. According to Niagara Mohawk, without a regulatory mandate to include SCR emissions controls, including the cost of SCR emissions controls in the peaking plant costs for NYCA would be unlikely to incent a new generator in NYCA to include SCR emissions controls in its design, but rather would provide revenues intended to be allocated to

⁷⁵ *Id.* at 20-21.

⁷⁶ *Id.* at 21 (citing Independent Consultant Final Report at 28).

⁷⁷ *Id.*

⁷⁸ Niagara Mohawk's protest is limited to NYISO's proposal to include SCR emissions controls in the NYCA ICAP Demand Curve.

⁷⁹ State Entities December 9, 2016 Protest at 21; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 29.

generators with SCR emissions controls to generators without SCR emissions controls.⁸⁰ Niagara Mohawk asserts that creating a financial allowance for certain environmentally protective technology without corresponding regulations that require its use would reward with higher profits those generators who choose not to install such technology. Niagara Mohawk concludes that this could have the perverse effect of incenting development of generation without SCR emissions controls, thereby adding less environmentally friendly resources to the upstate New York generation fleet and worsening air quality for customers.⁸¹

42. Moreover, the State Entities and City of NY and Multiple Intervenors assert that consumers should not be burdened with a significant increase in capacity costs when there is no discernable requirement for the incremental costs, and no quantified customer benefit from the inclusion of such emissions controls.⁸² The State Entities contend that SCR emissions controls for the peaking plants located in load zones C, F, and G (Dutchess County) would not be cost-effective.⁸³ UIU and the State Entities argue that NYISO did not present a comparison of the costs for an F class frame turbine with and without SCR emissions controls and did not specify the cost of offsets and allowances that must be purchased for each ton of nitrogen oxides actually emitted.⁸⁴ According to the State Entities, this was due to proprietary data, but they argue that this resulted in insufficient available data.⁸⁵ Nevertheless, based on their own calculations, the State Entities argue that a developer would not invest approximately \$26.4 million to save \$273,000 (\$13,650 annually) on avoiding purchasing emissions allowances and offsets, unless there is an affirmative regulatory or legal obligation to do so.⁸⁶ Moreover, the State Entities contend that the optional investment in SCR emissions controls is a

⁸⁰ Niagara Mohawk December 9, 2016 Comments at 4-5.

⁸¹ *Id.* at 8.

⁸² State Entities December 9, 2016 Protest at 21; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 23-24.

⁸³ State Entities December 9, 2016 Protest at 19-21.

⁸⁴ UIU December 9, 2016 Comments and Protest at 8-9; State Entities December 9, 2016 Protest at 18.

⁸⁵ State Entities December 9, 2016 Protest at 18-19.

⁸⁶ *Id.* at 19-21 (explaining the derivation of the cost savings estimate).

large enough cost that a developer would require an economic analysis of the incremental investment, and would not rely solely on speculation of future regulatory outcomes.⁸⁷

43. Furthermore, the State Entities assert that NYISO speculates that the cost to retrofit a peaking plant with SCR emissions controls would be cost-prohibitive if required in the future, but NYISO did not present any estimate of the retrofit costs or any other proof to corroborate this claim. The State Entities and City of NY and Multiple Intervenors argue that, instead, NYISO provided a footnote that the cost to retrofit a peaking plant “that did not contemplate including an SCR [emissions control] at the time of construction” would increase the SCR emissions controls cost by approximately 40 percent.⁸⁸ The State Entities assert that the footnote acknowledged that the independent consultant performed at least a rudimentary analysis of the cost to retrofit a peaking plant with SCR emissions controls. The State Entities claim that, while stakeholders requested the data underlying this estimate and NYISO repeatedly assured stakeholders that this analysis would be reported, only the footnote was provided. The State Entities argue that it is impossible to examine the assumptions underlying the independent consultant’s estimate. Furthermore, the State Entities contend that it cannot be assumed that stricter nitrogen oxides emissions standards in the future, if promulgated, would necessarily require existing facilities to install SCR emissions controls.⁸⁹

44. With regard to NYISO’s arguments about changes in environmental regulations, UIU asserts that NYISO’s justification for including SCR emissions controls is speculative and based on potential future environmental regulatory changes that might prompt developers to install SCR emissions controls to hedge against future risk, contrary to the Commission’s findings in the last ICAP Demand Curve reset that viability of a peaking plant design cannot be based on speculation about future environmental regulations.⁹⁰ UIU argues that NYISO failed to recognize that adding SCR emissions controls to the high-efficiency F class frame turbine may yield little or no benefit,

⁸⁷ *Id.* at 19 (asserting that the optional investment in SCR emissions controls may increase project costs by approximately 13.9 percent in load zone F, 12.5 percent in load zone C, and 12.6 percent in load zone G (Dutchess County)).

⁸⁸ *Id.* at 22 (citing NYISO Staff Final Recommendations at 9-10 & n.11); City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 30-31.

⁸⁹ State Entities December 9, 2016 Protest at 22-23.

⁹⁰ UIU December 9, 2016 Comments and Protest at 7-8 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 74).

and, therefore, would likely not be required by a (hypothetical) future regulation.⁹¹ Niagara Mohawk and City of NY and Multiple Intervenors argue that the only changes to environmental regulations that have gone into effect since the last ICAP Demand Curve reset provide greater flexibility to a peaking plant constructed in NYCA to comply.⁹² In particular, Niagara Mohawk explains that the U.S. Supreme Court held that the U.S. Environmental Protection Agency may not treat greenhouse gas emissions as air pollutants to determine whether a source is a major source required to obtain a Prevention of Significant Deterioration permit, which has the effect of increasing emissions thresholds.⁹³

45. As for NYISO's arguments about Article 10 of New York Public Service Law, the State Entities and City of NY and Multiple Intervenors argue that NYISO interprets the statute erroneously as requiring environmental impacts to be minimized to the maximum extent possible, rather than to the maximum extent practicable.⁹⁴ The State Entities and City of NY and Multiple Intervenors aver that NYISO ignores relevant NY Siting Board precedent in which the NY Siting Board has explicitly rejected the statutory interpretation NYISO urges.⁹⁵ Niagara Mohawk adds that there are no express requirements for SCR emissions controls in Article 10, nor is there any precedent to suggest that the

⁹¹ *Id.* at 8-9. UIU states that the F class frame turbine's low nitrogen oxides emissions level already adheres to federal New Source Performance Standards without the addition of SCR emissions controls. UIU notes that the F class frame turbine can operate for up to 2,500 hours before it reaches the New Source Review requirement threshold. UIU contends that installing SCR emissions controls would therefore add up to \$22 million in costs without yielding commensurate environmental or economic benefits.

⁹² Niagara Mohawk December 9, 2016 Comments at 4-6; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 25.

⁹³ Niagara Mohawk December 9, 2016 Comment at 5 (citing *Util. Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427 (2014)).

⁹⁴ State Entities December 9, 2016 Protest at 30; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 26.

⁹⁵ State Entities December 9, 2016 Protest at 31-32 (citing *Mirant Bowline, L.L.C.*, Case No. 99-F-1164, at 48-49, 51-52 (N.Y. Siting Board Mar. 26, 2002) (Opinion and Order Granting a Certificate of Environmental Compatibility and Public Need Subject to Conditions)); City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 27-28.

NY Siting Board has or would require such emissions controls outside of the downstate New York nonattainment area. Niagara Mohawk contends that, as such, any argument that SCR emissions controls are necessary to obtain a certificate from the NY Siting Board in load zone C or in any other attainment area in NYCA is speculative.⁹⁶ Niagara Mohawk points out that NYISO recognized this in responding to similar arguments in the last ICAP Demand Curve reset, in which NYISO asserted that contentions that Article 10 would be an insurmountable hurdle for peaking plants without SCR emissions controls were based on speculation.⁹⁷

46. The State Entities and City of NY and Multiple Intervenors assert that the NY Siting Board would not impose stricter emissions standards than those specified in an air permit issued by NYSDEC.⁹⁸ The State Entities point to NYSDEC's comments to the NYISO Board of Directors in this proceeding in which NYSDEC explained that the NY Siting Board "has historically relied upon the [NYSDEC's] expertise in assessing environmental impacts and determining the proper air pollution control technology required under the" Clean Air Act.⁹⁹ The State Entities contend that NYISO provides no basis for concluding that the NY Siting Board would depart from long-standing precedent.¹⁰⁰ The State Entities explain that NYSDEC has authorized them to explain that NYISO staff and the independent consultant never discussed with NYSDEC whether a peaking plant without SCR emissions controls could be permitted in load zones C, F, or G (Dutchess County). The State Entities contend that NYISO ignored NYSDEC's written comments that contradict NYISO's characterization of, and conclusions regarding, relevant permitting requirements.¹⁰¹

47. Further, Niagara Mohawk argues that NYISO fails to explain why a developer could not, as a condition of obtaining a certificate under Article 10, agree to an hourly

⁹⁶ Niagara Mohawk December 9, 2016 Comments at 6-7.

⁹⁷ *Id.* at 6 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 72).

⁹⁸ State Entities December 9, 2016 Protest at 22, 32-34; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 29-30.

⁹⁹ State Entities December 9, 2016 Protest at 32, Attach. B at 2-3 (NYSDEC Comments to the NYISO Board of Directors).

¹⁰⁰ *Id.* at 34.

¹⁰¹ *Id.* at 17.

operating limit, similar to those NYISO assumed in the last ICAP Demand Curve reset.¹⁰² The State Entities and City of NY and Multiple Intervenors similarly argue that there has been no relevant change in the regulations that would compel a different outcome here than in the last ICAP Demand Curve reset.¹⁰³ The State Entities add that the Commission's decision in the last ICAP Demand Curve reset was not based on whether the F class frame turbine without SCR emissions controls would minimize environmental impacts, but on whether the peaking plant would comply with all applicable environmental regulations.¹⁰⁴ City of NY and Multiple Intervenors contend that accepting an hourly operating limit in lieu of SCR emissions controls is practicable and economical.¹⁰⁵ The State Entities contend that the hourly operating limit for the F class frame turbine would be 3,300 hours per year, which is above the maximum run time of 2,496 hours estimated for this technology over a three-year historic period.¹⁰⁶ Further, City of NY and Multiple Intervenors explain that the maximum run time is approximately 1,500 hours more in operating time than NYISO proposed in the last ICAP Demand Curve reset.¹⁰⁷

48. The State Entities disagree with NYISO's assertion that no electric generators have been permitted and constructed with an annual hourly operating limit in lieu of installing SCR emissions controls to reduce nitrogen oxides emissions during NYISO's existence.¹⁰⁸ The State Entities and City of NY and Multiple Intervenors provide examples which they claim demonstrate that SCR emissions controls to limit nitrogen oxides emissions are not an absolute requirement to satisfy applicable emissions rates and

¹⁰² Niagara Mohawk December 9, 2016 Comments at 7 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 75).

¹⁰³ State Entities December 9, 2016 Protest at 35; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 24.

¹⁰⁴ State Entities December 9, 2016 Protest at 35.

¹⁰⁵ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 27.

¹⁰⁶ State Entities December 9, 2016 Protest at 25 & n.52.

¹⁰⁷ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 25-26.

¹⁰⁸ State Entities December 9, 2016 Protest at 17-18.

standards.¹⁰⁹ The State Entities and City of NY and Multiple Intervenors point to NYSDEC's comments to the NYISO Board of Directors, in which NYSDEC explains that evaluations are performed on a case-by-case basis and that the use of SCR emissions controls to control nitrogen oxides emissions may not be required or appropriate in every case, such as where other control measures are available or where the facility accepts federally enforceable permit conditions to limit emissions below the applicable thresholds.¹¹⁰ Furthermore, the State Entities cite to NYSDEC's statements that no regulatory change since the last ICAP Demand Curve reset increases the likelihood that SCR emissions controls will be required.¹¹¹

49. The State Entities and City of NY and Multiple Intervenors argue that, while NYISO identifies several regulatory developments that it claims demonstrate a general trend toward stricter controls on nitrogen oxides emissions, they are irrelevant and lack probative value to whether to include SCR emissions controls in determining the peaking plant designs for NYCA and the G-J Locality ICAP Demand Curves. First, they assert that NYISO's citation to new state regulations that reduce nitrogen oxides emissions from existing distributed generation facilities (the Part 222 Rules) is inapposite because these rules apply to existing behind-the-meter generation, not to new peaking plants, and address a gap in existing regulations.¹¹² Furthermore, the State Entities and City of NY and Multiple Intervenors contend that, while NYISO explains that the U.S. Environmental Protection Agency lowered the National Ambient Air Quality Standard for ozone, NYISO did not assert that the revised ozone standard might impact peaking plants located in load zones C, F, and G (Dutchess County).¹¹³ They add that this change only impacts the New York City metropolitan area, including Long Island, Westchester,

¹⁰⁹ *Id.* at 18 (providing as examples Danskammer Generating Station (effective February 24, 2015), Reenergy Black River LLC (effective November 1, 2013), Indeck-Oswego Energy Center (effective December 14, 2015), and Samuel A Carlson Generation Station); City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 26.

¹¹⁰ State Entities December 9, 2016 Protest at 27; City of NY December 9, 2016 Comments and Protest at 21.

¹¹¹ State Entities December 9, 2016 Protest at 27.

¹¹² *Id.* at 28-29; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 32-33.

¹¹³ State Entities December 9, 2016 Protest at 28; City of NY and Multiple Intervenors December 9, 2016 Comments at 33.

and Rockland Counties; therefore, the State Entities contend that the impact in other load zones, if any, is uncertain and speculative.¹¹⁴ Lastly, the State Entities and City of NY and Multiple Intervenors argue that, while NYISO explains that the U.S. Environmental Protection Agency reduced New York's seasonal nitrogen oxides emissions budget under the Cross State Air Pollution Rule, NYSDEC's comments responded that the modified standard will not have "any noticeable impact on control requirements."¹¹⁵ City of NY and Multiple Intervenors add that the ICAP Demand Curve reset is supposed to look at the facts and circumstances, including laws and regulations, as they exist at the time of establishing the ICAP Demand Curves; therefore, they contend that it would be premature to assume the implementation of regulations that have not been adopted.¹¹⁶

50. As for NYISO's assertion that failure to include SCR emissions controls is likely to result in a design that is either incapable of being constructed or only constructed in a single, limited one-off circumstance, the State Entities contend that the Services Tariff does not state that NYISO must evaluate whether the peaking plant design may be repeated, if necessary, or how many times its construction may be repeated during the ICAP Demand Curve reset period.¹¹⁷ City of NY and Multiple Intervenors similarly contend that the ICAP Demand Curve reset process is limited to the evaluation of the potential development of a single peaking plant.¹¹⁸ The State Entities and City of NY and Multiple Intervenors argue that NYISO's suggestion that a peaking plant without SCR emissions controls should not be selected because it might not be repeatable is based on a false interpretation of the Services Tariff and assumes, without support, that

¹¹⁴ State Entities December 9, 2016 Protest at 28-29; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 33.

¹¹⁵ State Entities December 9, 2016 Protest at 29, Attach. B at 3 (NYSDEC Comments to the NYISO Board of Directors); City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 33.

¹¹⁶ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 34.

¹¹⁷ State Entities December 9, 2016 Protest at 36.

¹¹⁸ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 22.

NYSDEC would cap the number of generating plants that may be constructed without SCR emissions controls.¹¹⁹

b. Answers

51. Responding to protests that the additional environmental regulations NYISO cites may not be applicable to the emissions requirements of a peaking plant located in load zones C, F, and G (Dutchess County), NYISO contends that its examples demonstrate the general trend of ever more stringent nitrogen oxides emissions requirements in New York for electric generators. NYISO argues that this regulatory environment, coupled with the material risk that a new natural gas-fired generator may be unable to obtain the necessary permits and approvals for construction and operation in New York absent the installation of back-end control technology, demonstrates the need for the peaking plant to include SCR emissions controls in all locations.¹²⁰

52. NYISO argues that, contrary to the State Entities' allegations, NYISO staff and the independent consultant discussed the alternative compliance option of an hourly operating limit in lieu of installing SCR emissions controls with NYSDEC. According to NYISO, they discussed that this approach had been applied in the last ICAP Demand Curve reset and it was confirmed that this alternative remains available under the applicable regulations. NYISO states that it and the independent consultant therefore reevaluated the alternative compliance option during this ICAP Demand Curve reset. NYISO explains that it and NYSDEC also discussed changes in the applicable environmental regulations since the last ICAP Demand Curve reset.¹²¹

53. With regard to NY Siting Board precedent, NYISO argues that the cases cited by the protesters were issued under the predecessor to the current Article 10 statute and may no longer be relevant to determinations of the NY Siting Board under the current regulatory paradigm. NYISO explains that, unlike its predecessor, the new Article 10 statute that was enacted in 2011 provides the NY Siting Board with additional authority to act irrespective of any draft permits and conditions relating to NYSDEC issues.

¹¹⁹ State Entities December 9, 2016 Protest at 36-37; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 22.

¹²⁰ NYISO December 22, 2016 Answer at 8 n.30.

¹²¹ *Id.* at 7 n.28.

NYISO emphasizes the new authority as including the “authority to deny an application for certification.”¹²²

54. NYISO also responds to the State Entities’ reference to electric generators constructed in New York without SCR emissions controls. NYISO contends that the referenced facilities are irrelevant to the current conditions faced by a new peaking plant developed in New York given the vintage and nature of the facilities cited, as well as the fundamental differences in environmental requirements and control technology that existed when these facilities initially commenced operations.¹²³

55. The State Entities and City of NY and Multiple Intervenors contend that IPPNY incorrectly assumes that the implementation of the Clean Energy Standard would require a peaking plant to include SCR emissions controls to get certified. The State Entities and City of NY and Multiple Intervenors explain that, while the Clean Energy Standard is part of a strategy to reduce greenhouse gas emissions, it does not target nitrogen oxides emissions, and would only require modest increases in renewable generation during this ICAP Demand Curve reset period.¹²⁴ With regard to future regulatory changes, the State Entities respond that any new nitrogen oxides emissions standard would not specify compliance, meaning several options would be available—not only installing SCR emissions controls.¹²⁵

56. The State Entities and City of NY and Multiple Intervenors also argue that IPPNY mischaracterizes the authority of the NY Siting Board. They assert that, contrary to NYISO’s claims, Article 10 does not contain new authority; instead, they assert that it is substantially the same as the current New York Public Service Law Article 10 statute relative to the issuance of NYSDEC permits.¹²⁶ The State Entities and City of NY and

¹²² *Id.* at 8-9 (quoting N.Y. Pub. Serv. L. § 172).

¹²³ *Id.* at 9-10. According to NYISO, the referenced facilities either began operating when environmental requirements were fundamentally different (e.g., Danskammer Generating Station commenced operations in 1951) or recently switched fuel sources (e.g., Reenergy Black River LLC retrofitted and upgraded in 2014 to operate using biomass).

¹²⁴ State Entities December 23, 2016 Answer at 5-6; City of NY and Multiple Intervenors December 23, 2016 Answer at 3-5.

¹²⁵ State Entities December 23, 2016 Answer at 6-7.

¹²⁶ *Id.* at 8-9; City of NY and Multiple Intervenors December 23, 2016 Answer at 7-8.

Multiple Intervenors add that three of the five New York State agencies that are members of the NY Siting Board (the Department of Public Service, NYSDEC, and NYSERDA) have submitted comments as part of this ICAP Demand Curve process disagreeing with NYISO's interpretation of the Article 10 process.¹²⁷

57. The State Entities and City of NY and Multiple Intervenors further assert that the E&E Paper is based on speculation. They point out that it incorrectly focuses on several units permitted outside of New York State and almost all of those units permitted in New York are located in load zones J and K, instead of in load zones A through F.¹²⁸ Moreover, the State Entities argue that NYSDEC agreed to an approach and assumptions for modeling one-hour nitrogen oxides National Ambient Air Quality Standards. Further, the State Entities explain that a facility seeking a permit from NYSDEC has some flexibility in the operating parameters used to comply with this standard, which NYSDEC will then assume in the model to demonstrate compliance with this standard. The State Entities conclude that in load zones C, F, and G (Dutchess County), it is likely that a developer would adjust all potential operating parameters allowed by NYSDEC to demonstrate compliance without using SCR emissions controls.¹²⁹

c. Commission Determination

58. We accept, subject to condition, NYISO's proposal to include SCR emissions controls in the peaking plant design for the NYC, LI, and G-J Locality ICAP Demand Curves. However, we reject as unsupported NYISO's proposal to include SCR emissions controls in the peaking plant design for the NYCA ICAP Demand Curve. Accordingly, we require NYISO to submit a compliance filing, within 30 days of the date of this order, revising its Services Tariff to remove the inclusion of SCR emissions controls in the peaking plant design for the NYCA ICAP Demand Curve. As part of that compliance filing, we direct NYISO to update any and all inputs affected by this determination.

59. With regard to protesters' arguments regarding NYISO's proposal to include SCR emissions controls in the peaking plant design for the G-J Locality ICAP Demand

¹²⁷ State Entities December 23, 2016 Answer at 8 n.16; City of NY and Multiple Intervenors December 23, 2016 Answer at 6.

¹²⁸ State Entities December 23, 2016 Answer at 9-11; City of NY and Multiple Intervenors December 23, 2016 Answer at 8-9.

¹²⁹ State Entities December 23, 2016 Answer at 12-13.

Curve,¹³⁰ we note that the current ICAP Demand Curve for the G-J Locality is based on a peaking plant design with SCR emissions controls.¹³¹ We agree with NYISO and IPPNY that nothing has changed since the last ICAP Demand Curve reset that would reduce the need for SCR emissions controls in the G-J Locality.¹³² Rather, we agree with NYISO that, for the Rockland County portion of load zone G, a nonattainment area for purposes of New Source Review requirements with very restrictive nitrogen oxides emissions thresholds, the peaking plant design must include SCR emissions controls. Furthermore, as NYISO explains, there are much higher nitrogen oxides emissions rates that result from operating on a dual fuel peaking plant's alternative fuel source.¹³³ Because the G-J Locality includes a nonattainment area (the Rockland County portion of load zone G), NYISO appropriately concluded that the G-J Locality peaking plant design must include SCR emissions controls. Moreover, as discussed further below, we accept NYISO's proposal to include dual fuel capability in the peaking plant design for the G-J Locality, which further supports the need for SCR emissions controls in the G-J Locality. Therefore, we find that there is sufficient evidence in the record to conclude that NYISO's proposal to include SCR emissions controls in the peaking plant design for the G-J Locality ICAP Demand Curve is just and reasonable.

60. As for NYISO's proposal to include SCR emissions controls in the peaking plant design for the NYCA ICAP Demand Curve, we find that NYISO has not supported that proposal as just and reasonable, and therefore, we reject that aspect of NYISO's filing. In the last ICAP Demand Curve reset, NYISO proposed that the NYCA ICAP Demand Curve peaking plant operate pursuant to a federally enforceable limitation on annual operating hours in lieu of installing SCR emissions controls to achieve compliance with applicable nitrogen oxides emissions requirements. NYISO now contends that, due to changes in the applicable environmental requirements since the last ICAP Demand Curve reset, it should alter the previously approved peaking plant design for the NYCA ICAP

¹³⁰ We note that no party protests NYISO's proposal to include SCR emissions controls in the peaking plant design for the NYC and LI ICAP Demand Curves.

¹³¹ See 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 57 (approving use of the F class frame turbine with SCR emissions controls as the peaking plant design for the NYC, LI, and G-J Locality ICAP Demand Curves).

¹³² NYISO Transmittal Letter at 9-10; IPPNY December 9, 2016 Limited Protest and Comments at 15-16.

¹³³ NYISO Transmittal Letter at 11; Independent Consultant Final Report at 23-26; Lummus Aff. ¶ 25.

Demand Curve to now include SCR emissions controls.¹³⁴ We disagree. First, it is undisputed that SCR emissions controls are not required for peaking plants located in load zones C and F in NYCA.¹³⁵ In addition, NYISO admits that the F class frame turbine can meet the New Source Performance Standard requirement to limit nitrogen oxides emissions while operating on natural gas without SCR emissions controls.¹³⁶ For the New Source Performance Standards capacity factor limitation for carbon dioxide emissions, NYISO explains that a peaking plant can limit its operating hours to approximately 3,300 hours per year in lieu of installing SCR emissions controls.¹³⁷ Likewise, NYISO states that for a gas-only peaking plant in an attainment area (i.e., in load zones C and F of NYCA), the New Source Review requirements allow the plant to operate pursuant to a federally enforceable annual operating hours limit to remain below the threshold for “major source” designation, and application of certain New Source Review requirements.¹³⁸

61. Despite all of these statements, NYISO contends, without further support, that the New York Public Service Law Article 10 permitting and certification process makes the alternative compliance obligations unviable.¹³⁹ NYISO’s conclusion that a peaking plant design without SCR emissions controls risks not obtaining necessary approvals under Article 10 is speculative. As the Commission found in the last ICAP Demand Curve reset, “[w]hile there is always a risk that regulations will change in the future, we cannot base the finding of viability on speculation that the [U.S. Environmental Protection

¹³⁴ NYISO Transmittal Letter at 10 & n.39.

¹³⁵ State Entities December 9, 2016 Protest at 21; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 29; Niagara Mohawk December 9, 2016 Comments at 4.

¹³⁶ NYISO Transmittal Letter at 10 (citing NYISO Staff Final Recommendations at 7; Independent Consultant Final Report at 19-20; Lummus Aff. ¶ 26); *see also* UIU December 9, 2016 Comments and Protest at 8 (explaining that the F class frame turbine’s low nitrogen oxides emissions level already adheres to federal New Source Performance Standards without the addition of SCR emissions controls).

¹³⁷ NYISO Transmittal Letter at 11 (citing NYISO Staff Final Recommendations at 7; Independent Consultant Final Report at 20, 27).

¹³⁸ *Id.* at 11-12 (citing NYISO Staff Final Recommendations at 8-9; Independent Consultant Final Report at 27-28; Lummus Aff. ¶ 27).

¹³⁹ *Id.* at 12.

Agency] or New York State regulators will act at some point in the future;” rather, the ICAP Demand Curve reset process takes place every four years “so that changed circumstances, such as new regulations, can be taken into account.”¹⁴⁰

62. We find more compelling the statements from NYSDEC and evidence that New York State has issued air permits and Article 10 certificates for electric generators without SCR emissions controls in recent years. Specifically, NYSDEC stated in its comments to the NYISO Board of Directors that its permit reviews are fact specific, so SCR emissions controls to limit nitrogen oxides emissions “may not be required or appropriate in every case, such as where other control measures are available or where a facility accepts federally-enforceable permit conditions to limit emissions below the applicable thresholds.”¹⁴¹ With regard to the NY Siting Board requiring SCR emissions controls when NYSDEC has not, NYSDEC states that the NY Siting Board “has historically relied upon [NYSDEC’s] expertise in assessing environmental impacts and determining the appropriate air pollution control technology required.”¹⁴² Moreover, the State Entities provide examples of electric generators that have been permitted and constructed in New York with an annual hourly operating limit in lieu of installing SCR emissions controls to reduce nitrogen oxides emissions during NYISO’s existence.¹⁴³ Although IPPNY contends that changed attitudes towards fossil fuels in New York will result in pressure on the NY Siting Board to condition issuance of a siting certificate on the developer making its plant as clean as possible,¹⁴⁴ we are more persuaded by NYSDEC’s comments and NY Siting Board precedent than speculation about future public involvement in Article 10 certification proceedings. Although NYISO argues that

¹⁴⁰ 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 74.

¹⁴¹ State Entities December 9, 2016 Protest, Attach. B at 2 (NYSDEC Comments to the NYISO Board of Directors).

¹⁴² *Id.*, Attach. B at 2-3 (NYSDEC Comments to the NYISO Board of Directors); *see also id.* at 22, 32-34 (asserting that the NY Siting Board would not impose stricter emissions standards than those specified in an air permit issued by NYSDEC); City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 29-30 (same).

¹⁴³ As one example, the State Entities point to the Indeck-Oswego Energy Center, which has an air permit effective as of December 14, 2015, without SCR emissions controls and is located in load zone C. *Id.* at 17-18; NYSDEC, *Issued Title V Permits*, http://www.dec.ny.gov/dardata/boss/afs/issued_atv.html (last visited Dec. 22, 2016).

¹⁴⁴ IPPNY December 9, 2016 Limited Protest and Comments at 17-19 (citing N.Y. Pub. Serv. L. §§ 162-64, 168(2); E&E Paper at 9).

the new Article 10 statute was enacted in 2011, it is unclear why the new authority of the NY Siting Board did not require the inclusion of SCR emissions controls in the NYCA peaking plant design for the 2013 ICAP Demand Curve reset, but requires their inclusion now.¹⁴⁵

63. We agree with protesters that NYISO fails to explain why a developer could not, as a condition of obtaining a certificate under Article 10, agree to an hourly operating limit, similar to those NYISO assumed in the last ICAP Demand Curve reset.¹⁴⁶ In fact, the State Entities contend that the hourly operating limit for the F class frame turbine would be below the maximum run time estimated for this technology over a three-year historic period,¹⁴⁷ and City of NY and Multiple Intervenors add that the maximum run time is approximately 1,500 hours more in operating time than NYISO proposed in the last ICAP Demand Curve reset.¹⁴⁸

64. While NYISO also identifies additional relevant factors it considered (New York State regulations requiring reductions in nitrogen oxides emissions from distributed generation facilities, and recent changes to federal ozone standards and the nitrogen oxides budget under the Cross State Air Pollution Rule),¹⁴⁹ we are persuaded by the State Entities' and City of NY and Multiple Intervenors' responses.¹⁵⁰

¹⁴⁵ NYISO December 22, 2016 Answer at 8-9.

¹⁴⁶ Niagara Mohawk December 9, 2016 Comments at 7 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 75); City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 27.

¹⁴⁷ State Entities December 9, 2016 Protest at 25 & n.52.

¹⁴⁸ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 25-26.

¹⁴⁹ NYISO Transmittal Letter at 14–15 (citing Rules for Distributed Generation Sources (6 NYCRR Part 222), <http://www.dec.ny.gov/regulations/104487.html>; NYISO Staff Final Recommendations at 9–10; Independent Consultant Final Report at 27–28; U.S. Environmental Protection Agency, *Final Cross-State Air Pollution Rule Update* (Sept. 7, 2016), <https://www.gpo.gov/fdsys/pkg/FR-2016-10-26/pdf/2016-22240.pdf>).

¹⁵⁰ First, they assert that the New York State regulations apply to behind-the-meter generation that is already in existence, not to new peaking plants. State Entities December 9, 2016 Protest at 28-29; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 32-33. Next, they contend that the revised ozone standard will not impact peaking plants located in load zones C and F, but, rather, will only impact

(continued...)

Specifically, we agree that each of the recent regulatory changes, for the purposes of the instant ICAP Demand Curve reset, will not impact load zones C and F so as to require the inclusion of SCR emissions controls in the peaking plant design for those zones.

65. NYISO argues that failure to include SCR emissions controls is likely to result in a peaking plant design for NYCA that is either incapable of being constructed in New York State or could only be constructed in a single, limited one-off circumstance without the ability to be repeated, if necessary. NYISO concludes that this could result in the establishment of ICAP Demand Curves that may ultimately fail to produce adequate price signals to elicit and support new entry into the market when needed to maintain reliability.¹⁵¹ On this point, we disagree with the State Entities and City of NY and Multiple Intervenors that the peaking plant design choice is about the potential development of a single peaking plant.¹⁵² The peaking plant represents the hypothetical marginal unit, and, therefore, must be able to be replicated.¹⁵³ But as for NYISO's concern that not including SCR emissions controls in the peaking plant design for NYCA could result in inadequate price signals to elicit and support new entry, NYISO has not shown that, for the current ICAP Demand Curve reset, a peaking plant in NYCA would not be able to be replicated without SCR emissions controls. As discussed above, the State Entities provide several examples of electric generators with higher emissions than the F class frame turbine that have been permitted and constructed in New York without SCR emissions controls. These examples also provide evidence of facilities being

the New York City metropolitan area. State Entities December 9, 2016 Protest at 28; City of NY and Multiple Intervenors December 9, 2016 Comments at 33. Lastly, they argue that the modified nitrogen oxides emissions budget under the Cross State Air Pollution Rule will not have any noticeable impact on control requirements. State Entities December 9, 2016 Protest at 29, Attach. B at 3 (NYSDEC Comments to the NYISO Board of Directors); City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 33.

¹⁵¹ NYISO Transmittal Letter at 15.

¹⁵² State Entities December 9, 2016 Protest at 36-37; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 22.

¹⁵³ 2010 ICAP Demand Curve Reset Order, 134 FERC ¶ 61,058 at P 37 (“[O]nly reasonably large scale, standard generating facilities that could be practically constructed in a particular location should be considered”); IPPNY December 9, 2016 Limited Protest and Comments at 19-20 (citing E&E Paper at 5-8).

permitted using an alternative option to SCR emissions controls, contrary to NYISO's claims.

66. IPPNY argues that, even if a developer can obtain an Article 10 certificate without installing SCR emissions controls, the developer faces the substantial risk that increasingly stringent emissions caps will require it to retrofit its facility with SCR emissions controls later at a significant cost.¹⁵⁴ However, neither NYISO nor IPPNY demonstrates that a peaking plant in NYCA will need to install SCR emissions controls after the facility is operational. Moreover, as discussed above, such speculation cannot be the basis for selecting a peaking plant design in this ICAP Demand Curve reset.

67. We are therefore not persuaded based on the record before us that the F class frame turbine without SCR emissions controls in NYCA is not "economically viable." We therefore reject NYISO's proposal to include SCR emissions controls in the peaking plant design for NYCA and require NYISO to submit a compliance filing, within 30 days of the date of this order, revising its Services Tariff to remove the relevant tariff provisions.

3. Dual Fuel Capability

68. NYISO proposes to continue to include dual fuel capability for the peaking plant designs for the NYC, LI, and G-J Locality ICAP Demand Curves. NYISO also proposes to continue to use the gas-only peaking plant design for the NYCA ICAP Demand Curve that the Commission approved in the last ICAP Demand Curve reset.¹⁵⁵ NYISO notes that its proposal for NYCA differs from the independent consultant's recommendation to include dual fuel capability in all ICAP Demand Curves.¹⁵⁶ NYISO states that, similar to the last ICAP Demand Curve reset, certain stakeholders oppose the inclusion of dual fuel capability for the G-J Locality ICAP Demand Curve, while other stakeholders oppose the continued use of a gas-only peaking plant design for the NYCA ICAP Demand Curve.

69. According to NYISO, the conditions that the Commission found justified the inclusion of dual fuel capability for the NYC, LI, and G-J Locality ICAP Demand Curves in the last ICAP Demand Curve reset remain unaltered. For NYC and LI, NYISO

¹⁵⁴ IPPNY December 9, 2016 Limited Protest and Comments at 21.

¹⁵⁵ NYISO Transmittal Letter at 15 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 83).

¹⁵⁶ *Id.* (citing Independent Consultant Final Report at 32-33; Analysis Group Aff. ¶¶ 23, 28-30).

explains that there are local electric reliability rules that require dual fuel capability. Furthermore, NYISO continues, nearly all generators in NYC and LI are interconnected to the local distribution companies' natural gas systems, which impose dual fuel capability requirements on electric generators in their natural gas tariffs. Since dual fuel capability is mandatory in NYC and LI, NYISO contends that dual fuel capability must be included in the peaking plant design for these load zones.¹⁵⁷

70. For load zones C and F in NYCA, and for load zone G in the G-J Locality, however, NYISO explains that there are no mandatory dual fuel capability requirements imposed by local electric reliability rules. With regard to mandatory dual fuel capability requirements in local distribution companies' natural gas tariffs, NYISO states that generators in these load zones have the option to directly interconnect to an interstate natural gas pipeline instead. NYISO explains that it evaluated factors other than mandatory dual fuel capability requirements in these load zones to determine whether to include dual fuel capability for the peaking plant designs for the relevant ICAP Demand Curves.¹⁵⁸ NYISO contends that, during periods of high natural gas prices, dual fuel capability can result in increased revenues through the option to operate on oil and serve as a hedging mechanism to mitigate electricity price spikes, as evidenced by the winter 2013/2014 period.¹⁵⁹ Moreover, NYISO asserts that dual fuel capability provides reliability benefits in light of the growing reliance on natural gas for generation in New York. NYISO further notes concerns with the ability to expand the capability of interstate natural gas pipeline systems in New York, given recent denials of natural gas pipeline permits by the State.

71. Based on these factors, NYISO proposes to include dual fuel capability in load zone G (and, therefore, in the G-J Locality),¹⁶⁰ consistent with the peaking plant design the Commission approved in the last ICAP Demand Curve reset for the G-J Locality. NYISO argues that the G-J Locality is a relatively geographically constrained region, and that, therefore, the inclusion of dual fuel capability is important for providing increased

¹⁵⁷ *Id.* at 15-16.

¹⁵⁸ *Id.* at 16.

¹⁵⁹ *Id.* at 17 (citing NYISO, *Winter 2013-2014 Cold Weather Operating Performance*, at 22 (Mar. 13, 2014), http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2014-03-13/Winter%202013-1014%20NYISO%20Cold%20Snap%20Operations%20EGCW-MIWG.pdf).

¹⁶⁰ NYISO proposes to base the ICAP Demand Curve for the G-J Locality on a peaking plant located in load zone G.

siting flexibility by allowing for site selections that would require either an interconnection to a local distribution company natural gas system or an interstate natural gas pipeline. According to NYISO, this siting flexibility would increase the potential to identify a location that coincidentally minimizes both electric and natural gas interconnection costs. NYISO adds that the G-J Locality is primarily located downstream of constraints on the interstate natural gas pipeline system. Thus, NYISO continues, current concerns regarding the ability to expand natural gas pipeline infrastructure and capacity in New York underscore the reliability benefits gained from dual fuel capability.¹⁶¹

72. Considering the same factors, NYISO proposes to continue to use the gas-only peaking plant design for NYCA. NYISO contends that the circumstances presented in load zones C and F are distinguishable from the G-J Locality. NYISO explains that load zones C and F are far less geographically constrained than the G-J Locality and generally present greater availability of sites and infrastructure (both electric and natural gas) with which a new facility could interconnect. Moreover, NYISO continues, natural gas supply conditions in load zones C and F are, at least in the near term, more favorable than in the G-J Locality because this region is generally located upstream of interstate natural gas pipeline constraints and has connections to natural gas supplies from the nearby shale gas producing regions. NYISO asserts that its interconnection queue also indicates that developers proposing conventional generation projects in load zones C and F are generally not including dual fuel capability at this time. NYISO therefore concludes that a gas-only peaking plant design for NYCA remains just and reasonable.¹⁶²

a. Comments and Protests

73. All commenters either support or do not oppose NYISO's proposal to include dual fuel capability for the peaking plant designs for the NYC and LI ICAP Demand Curves. However, commenters disagree on NYISO's proposal to include dual fuel capability for the peaking plant design for the G-J Locality ICAP Demand Curve and to continue to use a gas-only generator for the NYCA ICAP Demand Curve.

74. The Companies, IPPNY, and Entergy support NYISO's proposal to include dual fuel capability for the peaking plant design for the G-J Locality ICAP Demand Curve. The Companies argue that dual fuel capability enhances electric reliability because, as New York grows more reliant on natural gas generators, dual fuel capability will be a critical safety net against a contingency on the natural gas system that could threaten

¹⁶¹ NYISO Transmittal Letter at 17-18.

¹⁶² *Id.* at 18.

electric reliability. The Companies add that dual fuel capability also helps local distribution companies contribute to electric reliability during coincident periods of high demand on the electric, natural gas, and steam systems. The Companies further assert that dual fuel capability is consistent with New York State policy supporting increased reliance on intermittent renewable resources, which will need to be firmed up with traditional, non-intermittent resources. The Companies also contend that dual fuel capability can mitigate price spikes in times of high natural gas prices, potentially saving customers money.¹⁶³ IPPNY adds that the need for siting flexibility in the G-J Locality and increased reliance on natural gas as the predominant fuel for generation remain key considerations supporting the need for dual fuel capability.¹⁶⁴

75. Entergy argues that dual fuel capability should be included in the peaking plant design for the G-J Locality because it is consistent with past Commission determinations and properly takes into account ongoing geographic and system limitations in the G-J Locality. Entergy contends that no facts have changed since the Commission approved the inclusion of dual fuel capability in 2013 that warrant reaching a different conclusion here.¹⁶⁵ Indeed, Entergy asserts that increases in natural gas demand in the G-J Locality since the last ICAP Demand Curve reset reveal an increased need to maintain dual fuel capability.¹⁶⁶ Entergy adds that NYISO has documented natural gas shortage conditions in the G-J Locality over the past several winters. Entergy further contends that NYISO has long lauded the importance of dual fuel capability for operational flexibility and limiting the exposure of New York consumers to extreme price spikes.¹⁶⁷

76. In contrast, City of NY and Multiple Intervenors, the State Entities, and UIU protest the inclusion of dual fuel capability for the G-J Locality. City of NY and Multiple Intervenors and the State Entities argue that NYISO should not include dual fuel capability in load zones where such capability is not required. They argue that dual fuel

¹⁶³ Companies December 9, 2016 Comments at 4.

¹⁶⁴ IPPNY December 9, 2016 Limited Protest and Comments at 7-8.

¹⁶⁵ Entergy December 9, 2016 Comments at 6-7 (noting that these issues were explored in the last ICAP Demand Curve reset process in 2013).

¹⁶⁶ Entergy points to the conversion of a coal-fired facility to a natural gas-fired facility, the return of derated natural gas capacity to service, and construction of a new natural gas-fired combined cycle facility. *Id.* at 8.

¹⁶⁷ *Id.* at 8-10.

capability in load zone G is neither required by law or regulation, nor economically justified.¹⁶⁸ Moreover, they contend that NYISO's proposal to include dual fuel capability for the G-J Locality is contrary to the requirement in the Services Tariff to choose a peaking plant design with the "lowest fixed costs and highest variable costs among all other units' technology that are economically viable" because it would increase capital costs in load zone G by \$18.5 million (eight percent) over a peaking plant design without dual fuel capability without justification.¹⁶⁹

77. With respect to NYISO's argument that including dual fuel capability in the G-J Locality provides a form of fuel assurance, City of NY and Multiple Intervenors argue that this is not the appropriate proceeding to develop fuel assurance solutions.¹⁷⁰ Rather, City of NY and Multiple Intervenors contend that including dual fuel capability, when not required, would result in consumers paying artificially increased costs without a guaranteed benefit in return.¹⁷¹ The State Entities add that a developer is not compensated for providing reliability benefits and, therefore, is unlikely to assume an optional, incremental investment to provide them.¹⁷² UIU asserts that the relevant inquiry is whether a prospective developer in the G-J Locality would reasonably invest in dual fuel capability as a hedge against reduced capacity revenues. UIU contends that a reasonable investor would not expect to recoup an investment in dual fuel capability in the G-J Locality given the significant capital investment needed to achieve such capability and the absence of specific penalties on gas-only generators that experience fuel delivery restrictions.¹⁷³

78. City of NY and Multiple Intervenors and the State Entities argue that NYISO's consumer impact analysis contradicts NYISO's assertions that including dual fuel

¹⁶⁸ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 13; State Entities December 9, 2016 Protest at 9.

¹⁶⁹ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 13-14 (quoting NYISO, Services Tariff, § 5.14.1.2.2); State Entities December 9, 2016 Protest at 2-3, 8.

¹⁷⁰ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 15.

¹⁷¹ *Id.*

¹⁷² State Entities December 9, 2016 Protest at 15.

¹⁷³ UIU December 9, 2016 Comments and Protest at 9-10.

capability balances “economic tradeoffs” between the increased cost of dual fuel capability and the increased revenue potential.¹⁷⁴ In particular, they contend that, looking at five years of historical data, NYISO concluded that the incremental costs of including dual fuel capability were only outweighed by the potential incremental revenues associated with that capability in one year, which included an extreme weather event.¹⁷⁵ Moreover, the State Entities explain that they used NYISO’s data to compare revenues from a three-year historic period for a dual fuel and gas-only generator located in load zone G, and concluded that the minimal incremental revenues earned from dual fuel capability would not justify the material capital investment necessary to achieve such capability.¹⁷⁶

79. City of NY and Multiple Intervenors and the State Entities add that NYISO’s speculation that incremental revenues from oil-fired generation could be substantial if certain events occur fails to recognize the low likelihood of such events occurring and of a developer incurring material incremental costs to seek indeterminate and uncertain incremental revenues in the future.¹⁷⁷ The State Entities add that even if such events occur in the future, they may be considered in a future ICAP Demand Curve reset.¹⁷⁸ City of NY and Multiple Intervenors and the State Entities further argue that NYISO admits that new emissions restrictions, decreasing refinery capability in the Northeast, and upcoming carbon reduction targets are making it more challenging to burn oil for generation. They contend that these same considerations undermine reliability benefits associated with dual fuel capability, in addition to the fact that upstate nuclear generators will not retire in the foreseeable future as a result of New York’s Clean Energy Standard.¹⁷⁹

¹⁷⁴ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 14-16; State Entities December 9, 2016 Protest at 10.

¹⁷⁵ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 16-17; State Entities December 9, 2016 Protest at 10-11.

¹⁷⁶ State Entities December 9, 2016 Protest at 9-10.

¹⁷⁷ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 17; State Entities December 9, 2016 Protest at 11.

¹⁷⁸ State Entities December 9, 2016 Protest at 11.

¹⁷⁹ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 17-18; State Entities December 9, 2016 Protest at 15.

80. City of NY and Multiple Intervenors and the State Entities also respond to NYISO's contention that including dual fuel capability is supported by increased siting flexibility and lowered interconnection costs gained by interconnecting with a local distribution company's natural gas system. They argue that NYISO does not present a quantitative analysis with the costs and benefits of interconnecting a peaking plant to a local distribution company's natural gas system, nor with a comparison of the costs of interconnecting a peaking plant to an interstate natural gas pipeline instead, and is therefore incomplete.¹⁸⁰ City of NY and Multiple Intervenors and the State Entities point to MMU's recent analysis of a generation project planned to interconnect directly to an interstate natural gas pipeline. They state that MMU anticipates that developers will seek fuel cost advantages by interconnecting to an interstate natural gas pipeline upstream of natural gas pipeline congestion, but downstream of electricity market congestion, and exploiting price spreads between natural gas trading hubs to the extent practicable.¹⁸¹ They contend that NYISO did not adequately consider this economic incentive to interconnect to an interstate natural gas pipeline, nor the incentive to avoid additional tariff-based costs incurred for local distribution company service.¹⁸² Therefore, according to City of NY and Multiple Intervenors and the State Entities, NYISO failed to demonstrate that a gas-only generator would not be economically viable in the G-J Locality, despite having lower fixed costs than a peaking plant design with dual fuel capability and the fact that dual fuel capability is not required in load zone G.¹⁸³

81. While the Companies support NYISO's proposals to include dual fuel capability in the peaking plant designs for NYC and the G-J Locality, they condition their support

¹⁸⁰ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 18; State Entities December 9, 2016 Protest at 12-13.

¹⁸¹ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 19 (citing Potomac Economics, Ltd., *Assessment of the Buyer-Side Mitigation Exemption Test for the CPV Valley Energy Center Project*, 25 (Mar. 7, 2014), http://www.nyiso.com/public/webdocs/markets_operations/services/market_monitoring/I_CAP_Market_Mitigation/Buyer_Side_Mitigation/Class_Year_2011/MMU%20Report%20re%20MET%20for%20CPV_Final_3-7-14.pdf); State Entities December 9, 2016 Protest at 13-14.

¹⁸² City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 19; State Entities December 9, 2016 Protest at 14.

¹⁸³ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 20; State Entities December 9, 2016 Protest at 14.

on NYISO including in its tariffs a mandatory dual fuel capability requirement for new generators in NYC and the G-J Locality. The Companies argue that, without this mandatory dual fuel capability requirement, NYISO's proposal would impose costs on customers through the ICAP Demand Curves without any guarantee that the customers receive the benefit of service from dual fuel capable generators. The Companies contend that there is no rational basis for NYISO to find that all new generators should have dual fuel capability and to include the costs of that capability in the peaking plant designs for the ICAP Demand Curves, but to not require new generators to have that capability. Although some local distribution companies in NYC and the G-J Locality have dual fuel capability requirements in their natural gas tariffs, the Companies argue that these requirements are insufficient because they apply only to generators that take natural gas service from these local distribution companies.¹⁸⁴

82. With respect to the NYCA ICAP Demand Curve, Niagara Mohawk, City of NY and Multiple Intervenors, and the State Entities support NYISO's proposed continued use of a gas-only generator for NYCA. City of NY and Multiple Intervenors note that NYISO proposes the same technology that it has used for each NYCA ICAP Demand Curve reset since implementation of the ICAP Demand Curves in 2003, and that the considerations and assumptions are substantially similar to the last ICAP Demand Curve reset.¹⁸⁵ Niagara Mohawk and City of NY and Multiple Intervenors agree with NYISO that there are no requirements driving the need for dual fuel capability in NYCA, natural gas availability is greater in NYCA than in other load zones, and economic analysis shows that dual fuel capability would not be cost-effective in NYCA.¹⁸⁶ Niagara Mohawk contends that, because the economics do not support building a generator with dual fuel capability in NYCA, including these costs in the peaking plant design would not incent the adoption of dual fuel capability. Therefore, according to Niagara Mohawk, it would not increase reliability and, rather, would provide revenues meant for generators with dual fuel capability to generators without it.¹⁸⁷ City of NY and Multiple Intervenors

¹⁸⁴ Companies December 9, 2016 Comments at 2, 4-5.

¹⁸⁵ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 10-11.

¹⁸⁶ Niagara Mohawk December 9, 2016 Comments at 14-15; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 11.

¹⁸⁷ Niagara Mohawk December 9, 2016 Comments at 14-15.

add that NYISO demonstrates that generators proposed in 2016 in NYCA generally do not include dual fuel capability.¹⁸⁸

83. In contrast, IPPNY and MMU argue that the Commission should reject the continued use of a gas-only generator for NYCA and should instead require NYISO to include dual fuel capability in NYCA, as the independent consultant recommended.¹⁸⁹ IPPNY asserts that a developer faced with increasingly tight natural gas supply conditions, challenges to siting new natural gas pipelines, and expected changes in the NYISO fleet is highly unlikely to site a new generator without dual fuel capability.¹⁹⁰ IPPNY and MMU contend that the independent consultant's estimate that a gas-only generator would have a lower net CONE than a dual fuel capable generator does not account for several difficult-to-quantify advantages of dual fuel, such as reliability and hedging benefits.¹⁹¹ IPPNY emphasizes the independent consultant's arguments that modest cost increases associated with dual fuel capability may be outweighed by the benefits of having the option to operate on oil when natural gas prices are high. IPPNY points to recent reports NYISO and the Eastern Interconnection Planning Cooperative issued that IPPNY contends demonstrate that dual fuel capability makes more financial and economic sense than obtaining firm transportation capacity on a local distribution company or interstate natural gas pipeline system.¹⁹² MMU contends that, ultimately, the ICAP Demand Curve should reflect the most economical alternative, which is most likely a dual fuel capable generator.¹⁹³

84. IPPNY and MMU contend that certain of the independent consultant's assumptions were not significant for a dual fuel capable generator, but are significant for a gas-only generator. IPPNY and MMU explain that the independent consultant assumed a 10 percent natural gas premium (or discount) on intraday natural gas purchases (or sales) under all conditions, regardless of factors such as the quantity. They state that this

¹⁸⁸ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 11.

¹⁸⁹ IPPNY December 9, 2016 Limited Protest and Comments at 7-8; MMU December 9, 2016 Comments at 7.

¹⁹⁰ IPPNY December 9, 2016 Limited Protest and Comments at 13.

¹⁹¹ *Id.* at 9; MMU December 9, 2016 Comments at 7.

¹⁹² IPPNY December 9, 2016 Limited Protest and Comments at 9-10.

¹⁹³ MMU December 9, 2016 Comments at 7.

assumption made sense for a dual fuel capable generator that would operate on oil when natural gas prices are high, but may over-estimate the net revenues of a gas-only generator on days when natural gas prices are high, thereby underestimating the net CONE of a gas-only plant.¹⁹⁴

85. IPPNY contends that the independent consultant also assumed no days with operational flow orders or other factors that make it difficult to obtain sufficient natural gas, which would be a concern for a gas-only generator that does not have the option to switch to oil.¹⁹⁵ MMU argues that the inclusion of dual fuel capability would make the independent consultant's analysis less sensitive to assumptions about natural gas availability during tight market conditions, and would be more consistent with recent entry decisions in load zone F of NYCA.¹⁹⁶ As more generators retire and more intermittent renewable resources interconnect, IPPNY asserts that there will be an increased reliance on natural gas at a time when natural gas pipeline siting is facing increased difficulties. Moreover, IPPNY notes that historical data on peak winter conditions in New York shows that many gas-only generators have been forced to take derates due to a lack of fuel supply and, even in mild winters, natural gas supply has been stressed. IPPNY further argues that the availability of natural gas supply is different from the availability of shipping capacity. Without additional natural gas pipeline capacity, IPPNY explains that new generators siting in New York will be relying on existing natural gas pipeline capacity, much of which recent NYISO studies show is fully subscribed and already experiencing constraints. Therefore, IPPNY contends that NYISO should include dual fuel capability in NYCA.¹⁹⁷ Pointing out that NYISO is pursuing a project to consider the development of new critical day performance rules that may penalize generators that do not have dual fuel capability or firm natural gas transportation, IPPNY asks that, at a minimum, the Commission direct NYISO to modify its tariffs to automatically adjust the net CONE of the peaking plant and associated reference points when these new performance rules take effect.¹⁹⁸

¹⁹⁴ IPPNY December 9, 2016 Limited Protest and Comments at 9; MMU December 9, 2016 Comments at 7.

¹⁹⁵ IPPNY December 9, 2016 Limited Protest and Comments at 10.

¹⁹⁶ MMU December 9, 2016 Comments at 7-8 (noting that the last 2.3 GW of new entry in load zone F included dual fuel capability).

¹⁹⁷ IPPNY December 9, 2016 Limited Protest and Comments at 9-13.

¹⁹⁸ *Id.* at 14.

b. Answers

86. With regard to protests to NYISO's proposal to include dual fuel capability in the G-J Locality peaking plant design, NYISO argues that protesters seek to relitigate essentially the same arguments that the Commission considered and ultimately rejected in the last ICAP Demand Curve reset. According to NYISO, the circumstances and conditions have not changed, so it is not appropriate to alter the Commission's prior determination on this issue.¹⁹⁹ Moreover, NYISO contends that the peaking plant design and cost elements are based on generic site conditions, and not on the peaking plant in the G-J Locality connecting to a local distribution company natural gas system rather than an interstate natural gas pipeline.²⁰⁰

87. NYISO argues that its consideration of multiple factors, including economics, reliability, and other benefits and costs, in assessing whether an economically viable peaking plant should include dual fuel capability is consistent with Commission precedent. For the G-J Locality, NYISO asserts that it determined that these factors favor inclusion of dual fuel capability. In contrast, for NYCA, NYISO contends that it recognized that the current economics of dual fuel capability for NYCA favor retaining the use of a gas-only peaking plant design.²⁰¹

88. NYISO asks that the Commission not prejudge the outcome of its upcoming initiative to examine fuel/performance assurance in the ICAP market, or otherwise unnecessarily constrain the stakeholder process, by addressing the Companies' and IPPNY's requests relating to requiring dual fuel capability for new generators in NYC and the G-J Locality, and automatically adjusting the net CONE value for NYCA if NYISO develops certain critical day performance rules.²⁰²

89. The State Entities and IPPNY respond to the Companies' request that NYISO include in its tariffs a mandatory dual fuel capability requirement for new generators in NYC and the G-J Locality. The State Entities argue that the Companies' request is outside the scope of this proceeding. The State Entities note that NYISO stakeholders

¹⁹⁹ NYISO December 22, 2016 Answer at 11-12 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at PP 78-83).

²⁰⁰ *Id.* at 11 n.41.

²⁰¹ *Id.* at 13 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 83).

²⁰² *Id.* at 12 n.46.

recently considered whether to impose such a requirement, and only two entities of 57 supported the project. The State Entities add that a dual fuel requirement is unnecessary and would compensate existing gas-only generators for dual fuel capability that they do not have while imposing costs on gas-only generators that have firm natural gas supply. The State Entities contend that dual fuel capability is not economic in load zone G (Dutchess County). Rather, the State Entities assert that the utility of dual fuel capability should be determined on a case-by-case basis in the permitting process.²⁰³ According to IPPNY, the Companies' proposal is unnecessary because: (1) there have been no material changes since the Commission last approved NYISO's proposed inclusion of dual fuel capability in NYC and the G-J Locality; (2) the ICAP Demand Curves are meant to provide developers a reasonable opportunity to recover costs that may be needed to meet reliability needs; and (3) the costs of interconnecting to an interstate natural gas pipeline to avoid dual fuel capability requirements in local distribution companies' tariffs likely exceed the costs of installing dual fuel capability. IPPNY adds that it is not opposed to a tariff requirement that new generators developed in New York in the future assure access to fuel, such as a dual fuel requirement, so long as the tariff provides generators with the opportunity to recover the costs of such requirement.²⁰⁴

90. Niagara Mohawk argues that, contrary to IPPNY's assertion, a gas-only generator taking natural gas transportation service from Niagara Mohawk does not need to have dual fuel capability to avoid an obligation to accept up to 30 days of interruptions per year. Rather, Niagara Mohawk states that a gas-only generator's need for firmer service can be accommodated by negotiating a customer-specific rate with Niagara Mohawk that appropriately reflects the higher level of service.²⁰⁵ Niagara Mohawk therefore contends that it would be unreasonable for NYISO, in calculating net energy and ancillary services revenues, to reduce those revenues on the assumption that a gas-only peaking plant could be off-line for up to 30 days per year. Moreover, Niagara Mohawk asserts that, even if the Commission agrees with IPPNY that net energy and ancillary services revenues should be adjusted because of possible interruptions, it should make clear that any such adjustment must account for the realistic possibility of interruptions, based on historical data in load zone C, rather than simply assuming 30 days of interruptions. Regardless,

²⁰³ State Entities December 23, 2016 Answer at 16-18.

²⁰⁴ IPPNY December 23, 2016 Answer at 14-16.

²⁰⁵ Niagara Mohawk December 23, 2016 Answer at 1-3 (explaining that Niagara Mohawk currently has negotiated service agreements with two large electric generation customers that do not have dual fuel capability).

Niagara Mohawk asks that the Commission not require NYISO to include dual fuel capability in the peaking plant design for NYCA.²⁰⁶

c. Commission Determination

91. We find NYISO's proposal to continue to include dual fuel capability for the peaking plant designs for the NYC, LI, and G-J Locality ICAP Demand Curves and to continue to use a gas-only generator for the NYCA ICAP Demand Curve to be just and reasonable. As NYISO explains, dual fuel capability is mandatory in NYC and LI, so dual fuel capability must be included in the peaking plant designs for these load zones.²⁰⁷ Although there are no mandatory dual fuel capability requirements in load zone G, NYISO and the independent consultant contend that dual fuel capability comes with increased revenue potential, siting benefits, and reliability benefits, plus it can serve as a hedge to mitigate electricity price spikes during times of high natural gas prices. With regard to the G-J Locality specifically, NYISO argues that the G-J Locality is a relatively geographically constrained region; therefore, the inclusion of dual fuel capability is important for providing increased siting flexibility. NYISO adds that the G-J Locality is primarily located downstream of constraints on the interstate natural gas pipeline system. Thus, NYISO continues, current concerns regarding the ability to expand natural gas pipeline infrastructure and capacity in New York underscore the reliability benefits gained from dual fuel capability in the G-J Locality.²⁰⁸ Based on these factors, NYISO and the independent consultant both conclude that a developer would more often than not include dual fuel capability in a new, peaking plant in the G-J Locality.²⁰⁹ We agree.

92. In the last ICAP Demand Curve reset, the Commission found that including dual fuel capability for NYC, LI, and the G-J Locality was just and reasonable. In that proceeding, protesters made similar arguments to those made here. For example, they argued that there is no requirement for dual fuel capability to participate in NYISO's markets and that a generator can bypass local distribution company requirements by directly interconnecting to an interstate natural gas pipeline. In the prior proceeding, the Commission addressed those arguments by finding dual fuel capability necessary to ensure that the peaking plant design could "be sited in the network of a local distribution

²⁰⁶ *Id.* at 3.

²⁰⁷ NYISO Transmittal Letter at 15-16; NYISO Staff Final Recommendations at 4.

²⁰⁸ NYISO Transmittal Letter at 17-18.

²⁰⁹ *Id.* at 17; NYISO Staff Final Recommendations at 5; Independent Consultant Final Report at 32-33.

company,” rather than “hav[ing] to find a site that was close enough to an interstate pipeline and pay fees to obtain firm capacity and to build pipeline in order to connect.”²¹⁰ The Commission cited NYISO’s statement that “these costs could be prohibitively expensive and that the incremental costs of dual fuel capability would be more economical than the estimated cost of interconnecting to an interstate pipeline.”²¹¹ The Commission further emphasized the increased reliance on natural gas as the predominant fuel for generation.

93. The record here reflects that the rationale the Commission adopted in the last ICAP Demand Curve reset to include dual fuel capability in the G-J Locality continues to hold true.²¹² Moreover, protesters focus on whether potential incremental revenues associated with having dual fuel capability would outweigh the potentially significant capital investment, but they overlook the additional cost of having to site close enough to an interstate natural gas pipeline and of paying for firm capacity in a geographically constrained region.²¹³ The State Entities’ own analysis shows incremental revenues associated with having dual fuel capability,²¹⁴ which would be further bolstered by the avoided costs just mentioned. The Commission continues to find that the inclusion of dual fuel capability for NYC, LI, and the G-J Locality remains just and reasonable.

94. We find the Companies’ request that the Commission require NYISO to include in its tariffs a mandatory dual fuel capability requirement for new generators in NYC and the G-J Locality to be outside the scope of this proceeding, which is limited to establishing the ICAP Demand Curves for the next four years. We note that NYISO states that it is assessing capacity market performance assurance and potential dual fuel capability requirements as part of its stakeholder process and, to the extent it imposes

²¹⁰ 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 83.

²¹¹ *Id.*

²¹² NYISO Transmittal Letter at 17-18; NYISO Staff Final Recommendations at 4-5; Independent Consultant Final Report at 33 (noting changes in New York State’s reliance on natural gas due to increased demand from known new entry).

²¹³ NYISO Transmittal Letter at 18; Allen Aff. ¶ 10; Independent Consultant Final Report at 33.

²¹⁴ State Entities December 9, 2016 Protest at 9-10.

dual fuel capability requirements, NYISO commits to assess any implications of those requirements on the ICAP Demand Curves.²¹⁵

95. With regard to the peaking plant design for NYCA, IPPNY and MMU protest the continued use of a gas-only generator. NYISO contends that the circumstances in load zones C and F in NYCA are distinguishable from those in load zone G in the G-J Locality, although there are no dual fuel capability requirements in load zones G or in load zones C and F. We agree that the different circumstances discussed below justify including dual fuel capability for the peaking plant design for the G-J Locality, but not for NYCA. Specifically, NYISO explains that load zones C and F are far less geographically constrained than the G-J Locality both in terms of greater availability of sites for peaking plants and in terms of infrastructure (both electric and natural gas) with which a new facility could interconnect. Moreover, NYISO asserts that natural gas supply conditions in load zones C and F are more favorable than in the G-J Locality because this region is generally located upstream of interstate natural gas pipeline constraints and has connections to natural gas supplies from the nearby shale gas producing regions. NYISO adds that the potential incremental revenues associated with having dual fuel capability are not outweighed by the potentially significant capital investment in load zones C and F.²¹⁶ We note that, although increased reliance on natural gas for generation and natural gas pipeline siting difficulties could change the natural gas supply conditions in load zones C and F (and NYCA) in the future, the ICAP Demand Curve reset process takes place every four years so that changed circumstances can be taken into account.²¹⁷

96. Also outside the scope of this proceeding is IPPNY's request that the Commission direct NYISO to modify its tariffs to automatically adjust the net CONE of the peaking plant for NYCA and associated reference points if NYISO develops new critical day performance rules that penalize generators that do not have dual fuel capability or firm

²¹⁵ NYISO Transmittal Letter at 16 n.65; NYISO December 22, 2016 Answer at 12 n.46.

²¹⁶ NYISO Transmittal Letter at 18; NYISO Staff Final Recommendations at 5; Allen Aff. ¶ 11.

²¹⁷ See 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 74 ("A future reset process would be a more appropriate forum to consider any future developments.").

natural gas transportation. Moreover, IPPNY's request is based on speculation that NYISO will develop such new tariff requirements.²¹⁸

4. Peaking Plant Costs

97. The Services Tariff requires that NYISO assess “the current localized levelized embedded cost of a peaking plant” for each ICAP Demand Curve.²¹⁹ NYISO contends that the independent consultant conducted an analysis to develop estimates of the capital investment costs for the peaking plant designs for each ICAP Demand Curve, as well as the associated fixed and variable operations and maintenance (O&M) costs for each peaking plant.²²⁰ NYISO states that the capital investment cost estimates include the direct installed costs of the plant, owner's costs, financing costs during construction, and working capital and inventories costs. NYISO explains that the direct installed costs are comprised of the engineering, procurement, and construction costs of each peaking plant, and the associated electric and gas interconnection costs. According to NYISO, other costs not covered by the engineering, procurement, and construction costs, such as social justice costs, financing costs during construction, working capital and inventory costs, and any applicable deliverability costs, are included as part of the owner's cost. NYISO states that engineering, procurement, and construction costs are not site-specific, but, instead, reflect generic sites within each of the relevant load zones assessed. NYISO explains that a contingency was applied to the total direct and indirect project costs to account for the uncertainties inherent in the generic site estimates and the potential for cost increases that could result during detailed design and procurement. Specifically, NYISO proposes to adopt the following peaking plant capital investment cost estimates (in 2015 dollars) recommended by the independent consultant: \$960 per kW for NYCA; \$1,272 per kW for NYC; \$1,313 per kW for LI; and \$1,168 per kW for the G-J Locality.²²¹

98. NYISO states that it assessed whether any of the peaking plants would incur deliverability costs under the prescribed level of excess conditions, as required by the

²¹⁸ *See id.*

²¹⁹ NYISO, Services Tariff, § 5.14.1.2.2 (16.0.0).

²²⁰ NYISO Transmittal Letter at 18-19 (citing Independent Consultant Final Report at 33-48, 109-47; Lummus Aff. ¶¶ 15-22, 32-35).

²²¹ *Id.* at 19.

Commission.²²² NYISO asserts that it determined that the peaking plants in all locations, except LI, were deliverable. For LI, NYISO explains that certain transmission system upgrades would be required to award capacity resource interconnection service rights for the peaking plant, which would cost approximately \$18.48 million.²²³ NYISO states that these costs are included as a separate line item in the owner's cost category of the capital investment cost for NYISO's proposed LI ICAP Demand Curve. NYISO further explains that the required upgrades would not result in the award of any incremental transmission congestion contracts that could offset their costs.²²⁴

99. NYISO explains that the independent consultant also developed the fixed and variable O&M costs, as well as the performance characteristics for each peaking plant design. According to NYISO, fixed O&M costs consist of fixed plant expenses (e.g., plant staff labor costs and routine planned maintenance) and fixed non-operating expenses. Variable O&M costs, NYISO continues, are those costs directly related to the generation of electricity, including start-up costs, which include consumables and major equipment maintenance. NYISO states that the performance characteristics include the average degraded net capacity output, net heat rate, seasonal average dependable maximum net capability capacity ratings, plant start-up time, and fuel required for start-up. NYISO proposes to adopt the fixed and variable O&M costs and performance characteristics that the independent consultant developed for each of the relevant peaking plants.²²⁵

a. Comments and Protests

100. The State Entities protest NYISO's proposed engineering, procurement, and construction costs and UIU protests the overall increase in NYISO's proposed peaking plant capital costs relative to those approved in the last ICAP Demand Curve reset.

101. The State Entities argue that engineering, procurement, and construction costs have increased dramatically since the last ICAP Demand Curve reset without

²²² *Id.* (citing 2010 ICAP Demand Curve Reset Order, 134 FERC ¶ 61,058 at P 53).

²²³ *Id.* (citing NYISO Staff Final Recommendations at 10-13; Independent Consultant Final Report at 41, 112).

²²⁴ *Id.* at 19-20 (citing 2010 ICAP Demand Curve Reset Order, 134 FERC ¶ 61,058 at P 63; NYISO Staff Final Recommendations at 12).

²²⁵ *Id.* at 20.

justification, and therefore request that the Commission direct NYISO to reflect more reasonable estimates or fully explain the increased engineering, procurement, and construction costs. The State Entities assert that the independent consultant's estimates are significantly higher than expected. According to the State Entities, the independent consultant estimates a 32.3 percent increase in load zone C and a 25.7 percent increase in load zone F, largely due to engineering, procurement, and construction cost increases.²²⁶ Acknowledging that cost estimates are inherently uncertain, the State Entities posit that this variation far exceeds what would reasonably be expected to arise in cost estimates separated by only three years.²²⁷

102. UIU protests the overall peaking plant cost estimates, arguing that they exceed actual costs, and requests that the Commission require additional capital cost review to ensure that the estimates used are just and reasonable. UIU claims that the cost of some components have as much as tripled in cost without justification.²²⁸ UIU also asserts that the disparities in peaking plant capital costs between load zones, and relative to recent estimates in the ISO-NE forward capacity market, call into question the soundness of NYISO's proposed cost estimates.²²⁹

b. Answers

103. NYISO answers that the independent consultant's peaking plant capital investment cost estimates were fully vetted with stakeholders and were developed using proprietary power plant cost and performance models, updated vendor budgetary cost estimates, updated labor wages rates, and the independent consultant's prior experience with the development of generation projects in New York. NYISO contends that simple comparisons between cost estimates developed in the last ICAP Demand Curve reset and this one fail to recognize changes in costs. NYISO argues that pricing and estimates for many of the cost categories related to power plant construction vary with time and market conditions (e.g., equipment and bulk materials).²³⁰ NYISO states that the independent

²²⁶ State Entities December 9, 2016 Protest at 53-54.

²²⁷ *Id.* at 54–55.

²²⁸ UIU December 9, 2016 Comments and Protest at 10-11 (presenting a table comparing NYISO's estimated peaking plant capital cost components from 2013 to 2016).

²²⁹ *Id.* at 11.

²³⁰ NYISO December 22, 2016 Answer at 14 (citing Supp. Lummus Aff. ¶¶ 3-5).

consultant also noted that differences in the assumed costs for interconnection are a major driver of the cost differentials between the two ICAP Demand Curve resets. NYISO argues that the independent consultant conducted a rigorous and detailed assessment of electric interconnection costs, including reviewing recent facility interconnections in New York. NYISO states that the independent consultant used an industry standard average cost per inch diameter per mile for natural gas interconnection costs, multiplied by an assumed interconnection length for each location derived from reviewing recent natural gas interconnections in New York.²³¹ NYISO adds that certain assumptions from the last ICAP Demand Curve reset have changed, such as an increase in the on-site fuel storage reserves for peaking plant designs that include dual fuel capability, increasing the cost of dual fuel capability for this ICAP Demand Curve reset. NYISO contends that the independent consultant concluded that the difference between the estimates from the last ICAP Demand Curve reset and this one are within the accuracy of the type of project cost estimates produced for the ICAP Demand Curve reset.²³²

104. With regard to the ISO-NE estimate of the H class frame turbine, NYISO asserts that it is not appropriate to compare capital investment cost estimates in different states and control areas, unless it can be demonstrated that the assumptions on which each estimate are based are identical. NYISO explains that the independent consultant developed cost estimates specific to construction in New York and cost estimates for a similar project in a different region are likely to vary due to differences in the assumptions related to plant design and site conditions, construction approach, electric and gas interconnection design, and labor costs and productivity. Nevertheless, NYISO states that the independent consultant conducted a high level review of the simple cycle H class frame turbine cost estimates ISO-NE developed and concluded that the cost difference between ISO-NE's estimate and the independent consultant's estimate for load zone F are within the accuracy of the type of estimates developed for the ICAP Demand Curve reset.²³³

105. NYISO notes that a developer assessing the construction of a project at a specific site in New York City provided the independent consultant with confidential data regarding the estimated project costs. NYISO states that the project was based on generally the same plant design NYISO proposes in this filing. Although the specific estimated project costs exceeded the independent consultant's estimated costs for the

²³¹ *Id.* at 15 (citing Supp. Lummus Aff. ¶ 5).

²³² *Id.* at 15-16 (citing Supp. Lummus Aff. ¶ 9).

²³³ *Id.* at 16-17 (citing Supp. Lummus Aff. ¶ 7).

NYC ICAP Demand Curve peaking plant design, NYISO contends that the cost differential is likely related to site and project-specific costs and is within the accuracy of this type of estimates developed for this ICAP Demand Curve reset.²³⁴

c. Commission Determination

106. We find that NYISO's proposed peaking plant costs are just and reasonable. Arguments that NYISO provided insufficient justification for certain peaking plant cost estimates contradict evidence in the record detailing the inputs and methodology the independent consultant used to develop these estimates,²³⁵ as well as the results of this analysis, disaggregated by cost component.²³⁶ Moreover, NYISO contends that simple comparisons between cost estimates developed in the last ICAP Demand Curve reset and this one fail to acknowledge changes in costs, such as pricing and estimates related to power plant construction that vary with time and market conditions (e.g., equipment and bulk materials).²³⁷ NYISO adds that certain assumptions from the last ICAP Demand Curve reset have changed, such as an increase in the on-site fuel storage reserves for peaking plant designs that include dual fuel capability, increasing the cost of dual fuel capability for this ICAP Demand Curve reset.²³⁸ We are therefore not persuaded by protesters' arguments and find that NYISO's proposed peaking plant capital costs are just and reasonable and sufficiently supported by the record.

5. Property Taxes

107. NYISO proposes the same property tax treatment for the peaking plants that the Commission approved in the last ICAP Demand Curve reset.²³⁹ Specifically, for the

²³⁴ *Id.* at 17-18 (citing Supp. Lummus Aff. ¶ 6).

²³⁵ Independent Consultant Final Report at 33-42; Lummus Aff. ¶¶ 15-21, 32-35; Supp. Lummus Aff. ¶¶ 3-7.

²³⁶ Independent Consultant Final Report at 108-137 (e.g., for construction, the table separately lists construction labor and materials, plant switchyard, electrical interconnection and deliverability, gas interconnection and reinforcement, site prep, engineering and design, and construction management/field engineering).

²³⁷ NYISO December 22, 2016 Answer at 14 (citing Supp. Lummus Aff. ¶¶ 3-5).

²³⁸ *Id.* at 15-16 (citing Supp. Lummus Aff. ¶ 9).

²³⁹ NYISO Transmittal Letter at 21 (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at PP 90-91, 94).

NYC ICAP Demand Curve, the peaking plant will qualify for the as-of-right 15 year tax abatement provided for under New York State law.²⁴⁰ For years 16-20 of NYISO's proposed amortization period, the peaking plant will be subject to an effective tax rate of 4.8 percent.

108. For the peaking plants located outside of NYC, NYISO proposes to apply an effective tax rate of 0.75 percent for the entire 20-year proposed amortization period. NYISO states that, consistent with the independent consultant's recommendation, it based this proposed tax rate on the assumption that the peaking plants outside NYC will enter into payment in lieu of taxes (PILOT) agreements that will cover the proposed 20-year amortization period. According to NYISO, the independent consultant reviewed 2014 PILOT payment data reported by New York State to identify 11 natural gas-fired generators in the State. NYISO states that the independent consultant calculated effective tax rates for each of these generators, which ranged from 0.2-2.1 percent, with a median of 0.83 percent.²⁴¹

109. Responding to arguments that the proposed 0.75 percent property tax rate for locations outside NYC is too low, NYISO states that it obtained a recent PILOT agreement for a new natural gas-fired, combined cycle facility that is currently under construction in the lower Hudson Valley region. According to NYISO, that PILOT agreement has an average effective tax rate over the first 20 years of 0.18 percent in real dollar terms, which is lower than the effective tax rates for three other recently constructed combined cycle facilities in the State. Therefore, contrary to stakeholders' arguments, NYISO argues that the property tax increase restrictions and public policies favoring renewable resources in New York do not appear to have had an adverse impact on the tax rates afforded to new fossil fuel-fired generators in New York State.²⁴²

110. In addition, NYISO responds to stakeholders that assert that the 0.75 percent tax rate for locations outside of NYC is too high and should be closer to 0.5 percent. NYISO explains that it converted the underlying capital investment cost for each project the independent consultant considered to 2014 dollars and then recalculated the effective tax rates. NYISO states that these effective tax rates range from 0.15-1.6 percent, with a

²⁴⁰ *Id.* (citing N.Y. Real Property Tax Law §§ 489-aaaaaa *et seq.*).

²⁴¹ *Id.* (citing NYISO Staff Final Recommendations at 21; Independent Consultant Final Report at 45-46; Analysis Group Aff. ¶¶ 34-35).

²⁴² *Id.* at 21-22.

median of 0.77 percent. NYISO therefore concludes that 0.75 percent remains a just and reasonable property rate tax for locations outside of NYC.²⁴³

a. Comments and Protests

111. IPPNY supports NYISO's proposed property tax rate of 0.75 percent for locations outside of NYC. IPPNY argues that if any adjustment should be made, it should be to increase the proposed property tax rate because the proposed rate is based on older PILOT agreements that do not reflect recent pressures on municipalities to require higher tax rates from new natural gas-fired generators.²⁴⁴ IPPNY notes that NYISO's proposal is already 0.08 percent less than the median effective tax rate that the independent consultant calculated.²⁴⁵

112. IPPNY contends that there are two recent circumstances that are likely to pressure municipalities to require higher tax rates from natural gas-fired generators. First, IPPNY points to an alleged change in public attitude regarding natural gas-fired generation, which, IPPNY asserts, makes it likely that developers will face more local opposition than they have in the past and will be pressured into providing higher PILOT payments to facilitate the local permitting process.²⁴⁶ Second, IPPNY cites New York's real property tax cap, enacted in 2011, which prohibits local governments and school districts from raising taxes more than two percent or the rate of inflation per year, whichever is less, unless overridden by a local law or resolution.²⁴⁷ IPPNY argues that this law is likely to influence municipalities to negotiate higher tax rates for new natural gas-fired generators to offset lost tax revenues and to placate local citizen's demands to shift more tax burden to new, disfavored developments, such as natural gas-fired generators. IPPNY points out that, although the median effective tax rate NYISO calculated was 0.83 percent, plants in more recent years (i.e., 1999-2004) typically had effective tax rates much higher than the median.²⁴⁸ Indeed, IPPNY adds that the only simple cycle natural gas turbine in the

²⁴³ *Id.* at 22 (citing NYISO Staff Final Recommendations at 48-51).

²⁴⁴ IPPNY December 9, 2016 Limited Protest and Comments at 31.

²⁴⁵ *Id.* (citing Independent Consultant Final Report at 45-46).

²⁴⁶ *Id.* at 32.

²⁴⁷ *Id.* at 32-33 (citing N.Y. Gen. Mun. Law § 3-c).

²⁴⁸ *Id.* at 33. IPPNY notes these values ranged from 0.2-2.01 percent, with a median closer to one percent.

sample data had an effective tax rate of 2.01 percent, indicating that NYISO's proposed property tax rate may be too low.

113. NYTOs and Niagara Mohawk argue that the proposed property tax rate for load zones C and F in NYCA is too high. NYTOs further argue that the proposed property tax rate for load zone G in the G-J Locality is also too high. NYTOs and Niagara Mohawk contend that the property tax rate for a new peaking plant located in load zones C, F, or G should be no higher than 0.5 percent.²⁴⁹ Specifically, NYTOs assert that NYISO disregarded the tax rates paid by four generators in load zones C and F,²⁵⁰ and instead calculated the effective property tax rates for just six generators that do not reasonably reflect the effective property tax rate that a developer of NYISO's proposed peaking plants would expect to pay.²⁵¹ NYTOs point out that, while the median property tax rate was 0.77 percent, the weighted average property tax rate was 0.65 percent.²⁵² Additionally, NYTOs assert that five of the six generators have less than 100 MW of capacity, compared to the roughly 220 MW of capacity that the peaking plant design NYISO proposes in this proceeding would have. NYTOs also contend that NYISO should have excluded the two generators that are located in load zone K (LI) because the amount these generators pay under PILOT agreements is not indicative of the amount that generators in upstate New York would pay. Furthermore, NYTOs argue that three of the four remaining generators have capital costs of less than \$10 million, whereas the capital costs of developing the peaking plant design NYISO proposes in this proceeding in load zones C, F, or G would be in the range of \$183 to \$258 million. These higher capital costs, NYTOs continue, would add to the local tax base, giving the new generator more leverage to negotiate a favorable PILOT agreement with a lower effective property tax rate.²⁵³

²⁴⁹ NYTOs December 9, 2016 Protest at 15; Niagara Mohawk December 9, 2016 Comments at 13.

²⁵⁰ NYTOs December 9, 2016 Protest at 16-17 (referring to Athens (load zone F), Independence (load zone C), Bethlehem (load zone F), and Empire (load zone F), and noting that NYISO also omitted Navy Yard (load zone J/NYC)).

²⁵¹ *Id.* (referring to Saranac (load zone D), Syracuse (load zone C), Freeport (load zone K/LI), Beaver Falls (load zone E), Pinelawn (load zone K/LI), and Carthage (load zone E)).

²⁵² *Id.* at 17 n.29 (citing NYISO Transmittal Letter at 22).

²⁵³ *Id.* at 17-18; *see also* Niagara Mohawk December 9, 2016 Comments at 13-14 (supporting the analysis performed by NYTOs as set forth in NYTOs' protest).

114. Thus, NYTOs assert that a reasonable forecast of the effective property tax rate that a developer of the peaking plant design NYISO proposes that is located in load zones C, F, or G should expect to pay would be based on the amounts paid under PILOT agreements entered into by other upstate New York generators with more than \$10 million in capital investment.²⁵⁴ NYTOs contend that the median effective property tax rate of the five generators that satisfy this criteria is 0.49 percent, with a weighted average property tax rate of 0.47 percent. Using this analysis, NYTOs argue that a reasonable estimate of the annual effective property tax rate of a generator in load zones C, F, or G is 0.5 percent.²⁵⁵

b. Answers

115. NYISO contends that adopting the data segmentation and data point exclusions for which NYTOs and Niagara Mohawk advocate would essentially result in relying on the same data that the Commission determined in the last ICAP Demand Curve reset supported the use of a 0.75 percent property tax rate for all locations outside of NYC. NYISO states that, although the data set NYISO and the independent consultant rely on for this ICAP Demand Curve reset is significantly greater than that used in the last ICAP Demand Curve reset (11 facilities instead of only three), it still represents a small overall set of data points. Therefore, according to NYISO, further segmentation of the data may result in a set of data points that may not be representative of the proposed peaking plants.²⁵⁶ NYISO argues that the data set showed substantial variability across projects as to the effective property tax rates paid under PILOT agreements, but demonstrated a general trend of higher effective property tax rates for smaller sized units. Therefore, NYISO contends that the data supports the selection of a property tax rate toward the higher end of the range of values—0.75 percent.²⁵⁷

²⁵⁴ NYTOs December 9, 2016 Protest at 18 (referring to Athens (load zone F), Independence (load zone C), Bethlehem (load zone F), Empire (load zone F), and Saranac (load zone D)).

²⁵⁵ *Id.* at 18-19.

²⁵⁶ NYISO December 22, 2016 Answer at 18-19 & nn.79-80 (noting that the average MW size of the facilities encompassed by NYTOs' and Niagara Mohawk's proposed data set is more than four times greater than the MW size of NYISO's proposed peaking plant design).

²⁵⁷ *Id.* at 20-21.

116. NYTOs assert that NYISO's segmentation argument is misleading because the independent consultant obtained data from PILOT agreements entered into by 11 generators, but NYISO only considered the six smallest generators. NYTOs reiterate that the generators on which NYISO relied are too small and, therefore, do not accurately reflect the taxes that a new peaking plant would incur. As in their protest, NYTOs argue that location and the amount of capital investment are more relevant than capacity because property taxes are not based on capacity.²⁵⁸

c. Commission Determination

117. We find NYISO's proposed property tax treatment, both within and outside of NYC, to be just and reasonable. We find that NYISO undertook and provided sufficient analysis of recent PILOT agreements in New York to support its proposal. NYISO and the independent consultant selected a reasonable property tax rate that falls within the range of observed effective property tax rates based on current PILOT agreements in New York.²⁵⁹ This proposed property tax rate is also consistent with what the Commission accepted in the last ICAP Demand Curve reset.²⁶⁰ We disagree with protesters that the proposed property tax rate of 0.75 percent for peaking plants located outside of NYC is overstated. While the weighted average property tax rate may have been 0.65 percent, the median was even higher at 0.77 percent.²⁶¹

B. Net Energy and Ancillary Services Revenue Offset

118. The Services Tariff requires NYISO to assess "the likely projected annual [energy and ancillary services] revenues of the peaking plant . . . net of the costs of producing such" energy and ancillary services for each ICAP Demand Curve (net energy and ancillary services revenue offset).²⁶² NYISO states that the net energy and ancillary services revenues model that the independent consultant developed determines the estimated annual net energy and ancillary services revenues that would be earned by each peaking plant based on the prior 36 months of historic data on market prices and variable

²⁵⁸ NYTOs January 6, 2017 Answer at 11-13.

²⁵⁹ NYISO Staff Final Recommendations at 21-22; Independent Consultant Final Report at 45-46.

²⁶⁰ 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 94.

²⁶¹ NYISO Transmittal Letter at 22; NYTOs December 9, 2016 Protest at 17 n.29.

²⁶² NYISO, Services Tariff, § 5.14.1.2.2 (16.0.0).

costs (i.e., September through August). NYISO explains that, generally, for each hour of the historic period, the model determines whether each peaking plant should be committed and dispatched to produce energy or provide operating reserves based on a consideration of historic locational based marginal prices (LBMP) and reserve prices (both as adjusted to account for the prescribed level of excess conditions), coincident fuel and emissions allowance prices, non-fuel variable costs, start-up costs, and the operational characteristics of the peaking plant. NYISO asserts that the model also accounts for any operating hour restrictions or limitations imposed on the peaking plant to comply with applicable environmental requirements (which are essentially applied after-the-fact). Finally, NYISO states that the net energy and ancillary services revenues determined by the model are increased by an adder to reflect expected revenues for ancillary services not accounted for in the model. NYISO contends that the net energy and ancillary services revenues model achieves the desired objectives of transparency and predictability, while simultaneously ensuring that the estimates it produces are reasonable and appropriate.²⁶³

1. Natural Gas Hub Prices

119. NYISO states that fuel costs are one of the single largest drivers of variable costs for the peaking plants; therefore, use of reasonable and representative fuel prices is important to the ability of the net energy and ancillary services revenues model to produce appropriate and reasonable results. The Services Tariff provides that the “applicable fuel cost will be based on the applicable daily spot price for [the relevant load zone] published in the specified data source determined as part of” the ICAP Demand Curve reset process.²⁶⁴ NYISO contends that, for natural gas prices, this includes both the data source from which the applicable historical prices are determined, as well as the appropriate natural gas hub for each peaking plant location.²⁶⁵

120. Recognizing that there are multiple available options for each location, NYISO states that it conducted a multi-factor assessment to determine the appropriate natural gas hub for each location, considering: (1) the correlation of natural gas hub prices with LBMPs for the relevant location and the extent to which the natural gas hub prices reflect New York electricity market dynamics; (2) the liquidity and depth of trading activity at

²⁶³ NYISO Transmittal Letter at 22-25 (citing NYISO Staff Final Recommendations at 22-29, 39; Independent Consultant Final Report at 68-85; Analysis Group Aff. ¶¶ 36-46).

²⁶⁴ NYISO, Services Tariff, § 5.14.1.2.2.2 (16.0.0).

²⁶⁵ NYISO Transmittal Letter at 25.

the natural gas hub; (3) the geographic proximity of the natural gas hub to the location at issue; and (4) precedent for the natural gas hub being used in prior ICAP Demand Curve resets and other NYISO studies and evaluations (including NYISO planning studies and evaluations conducted by MMU).²⁶⁶

121. NYISO argues that the first factor has been particularly important for this ICAP Demand Curve reset. NYISO explains that it was readily apparent from a review of historic data that certain candidate natural gas hubs were likely not representative of marginal fuel supply costs in the electricity market, particularly during winter months.²⁶⁷ According to NYISO, natural gas hubs that are not correlated with electricity market dynamics and pricing outcomes may reflect near-term arbitrage opportunities for generators that can obtain access to such lower-cost fuel supplies. However, NYISO continues, these arbitrage opportunities may not reflect natural gas supply pricing under the longer-term equilibrium conditions that are required to be considered in establishing the ICAP Demand Curves. Therefore, NYISO contends that use of these natural gas hubs could result in significantly overstating the net energy and ancillary services revenues, resulting in ICAP Demand Curves that do not provide appropriate price signals regarding the value of capacity.²⁶⁸

122. Based on the multi-factor assessment described above, NYISO proposes the following natural gas hubs: (1) TETCO M3 for load zone C; (2) Iroquois Zone 2 for load zones F and G; and (3) Transco Zn 6 NY for load zones J and K.²⁶⁹ NYISO states that, for most load zones, it proposes the same natural gas hubs as in the last ICAP Demand Curve reset. NYISO explains that the limited changes are the use of Iroquois Zone 2 instead of Tennessee Zone 6 for load zone F, and the use of Iroquois Zone 2 as the sole natural gas hub for load zone G (rather than using Iroquois Zone 2 for the Dutchess County location and TETCO M3 for the Rockland County location). For load zone F, NYISO states that it selected Iroquois Zone 2 over Tennessee Zone 6 because Tennessee Zone 6 is more likely to be affected by electricity market and supply conditions in ISO-

²⁶⁶ *Id.* (citing NYISO Staff Final Recommendations at 22-24, 53-68; Independent Consultant Final Report at 74-80; Analysis Group Aff. ¶¶ 47-53).

²⁶⁷ *Id.* (citing Independent Consultant Final Report at 74-78; Analysis Group Aff. ¶ 48).

²⁶⁸ *Id.* at 26 (describing the sensitivity of reference point prices to the selection of natural gas hubs).

²⁶⁹ *Id.* at 29 (citing NYISO Staff Final Recommendations at 23; Independent Consultant Final Report at 78; Analysis Group Aff. ¶¶ 49-53).

NE than in NYISO. With regard to load zone G, NYISO states that it proposes to use Iroquois Zone 2 as the sole natural gas hub because it is far better correlated than TETCO M3 to LBMPs in load zone G and, therefore, is most reflective of market dynamics in that load zone.²⁷⁰

123. NYISO explains that some stakeholders argue that selection of natural gas hubs should be based solely on geography. Therefore, NYISO states that they advocate for use of Dominion North for load zone C and Millennium East or TETCO M3 for the Rockland County location in load zone G. According to NYISO, other stakeholders, including MMU (as it relates solely to load zone G), ask that NYISO use a “blended” natural gas hub price for load zones G (Iroquois Zone 2, Millennium East, and/or TETCO M3) and C (Dominion North, Millennium East, and/or TETCO M3). Contrary to stakeholders’ assertions, NYISO argues that the Services Tariff does not require NYISO to select natural gas hubs based solely on geography. Rather, NYISO contends that the Services Tariff merely requires that a natural gas hub be selected for each of the relevant locations as part of the ICAP Demand Curve reset.²⁷¹

124. NYISO states that, along with the independent consultant, it fully considered the alternative natural gas hubs for which stakeholders advocated. NYISO contends that it does not recommend using Dominion North and Millennium East because both: (1) are not well correlated with electricity market pricing outcomes and, thus, may not be representative of fuel supply costs that marginal supply resources incur; and (2) have lower levels of trading history and activity in comparison to readily available and reasonable alternatives (e.g., TETCO M3 and Iroquois Zone 2).²⁷² With regard to use of a blended natural gas hub price, NYISO responds that there is no readily available publication that produces a blended price, so NYISO would have to create such a price. NYISO further contends that it does not have any principled rationale for developing what the appropriate blend would be for any given location over the four-year ICAP Demand Curve reset period.²⁷³

²⁷⁰ *Id.* (citing NYISO Staff Final Recommendations at 23; Independent Consultant Final Report at 77-79; Analysis Group Aff. ¶¶ 51-53).

²⁷¹ *Id.* at 30 (citing NYISO, Services Tariff, § 5.14.1.2.2.2).

²⁷² *Id.* (citing NYISO Staff Final Recommendations at 23; Independent Consultant Final Report at 77-79; Analysis Group Aff. ¶¶ 50, 52-53).

²⁷³ *Id.* (citing Analysis Group Aff. ¶ 53).

a. **Comments and Protests**

125. IPPNY and Entergy support NYISO's proposed natural gas hubs, in particular because the natural gas prices at the proposed natural gas hubs correlate with energy prices in the relevant load zone.²⁷⁴ IPPNY supports the independent consultant's multi-factor approach to selecting natural gas hubs that best represent the expected long-run equilibrium between natural gas and electricity markets. IPPNY argues that the independent consultant correctly determined that, in considering geography, it is important to ensure that a logical nexus exists between the natural gas hub selected and the relevant delivery points, rather than simply relying on the locational aspect of geography.²⁷⁵ According to IPPNY's expert, the lack of correlation between other natural gas hubs' prices and higher winter LBMPs suggests that marginal supply from resources in these load zones was not purchasing natural gas that reflected the price at these other natural gas hubs.²⁷⁶

126. Regarding NYISO's proposal to use TETCO M3 for load zone C, IPPNY contends that TETCO M3 is a better choice than Dominion North because TETCO M3 satisfies the independent consultant's multi-factor approach: (1) it correlates with LBMPs, unlike Dominion North; (2) it has significantly higher trading volumes than Dominion North; (3) there is a logical nexus between TETCO M3 and the relevant delivery points; and (4) it has been used in past ICAP Demand Curve resets and in NYISO planning studies. Unlike TETCO M3, IPPNY asserts that there is no logical nexus between the Dominion North natural gas hub and the relevant delivery points because Dominion North is a receipt pool in which pricing reflects the price of natural gas entering the Dominion pipeline from various supply points. IPPNY further argues that, unless generators have firm transportation contracts associated with the supply injection at those receipt points, the price at Dominion North does not reflect what a peaking plant would pay for actual delivered natural gas.²⁷⁷

127. Similarly, for load zone G, IPPNY argues that Iroquois Zone 2 is a better choice than Millennium East because Iroquois Zone 2 satisfies the independent consultant's

²⁷⁴ Entergy December 9, 2016 Comments at 13; IPPNY December 9, 2016 Limited Protest and Comments at 23.

²⁷⁵ IPPNY December 9, 2016 Limited Protest and Comments at 23.

²⁷⁶ Joseph Aff. ¶¶ 10, 22.

²⁷⁷ IPPNY December 9, 2016 Limited Protest and Comments at 23-24 (citing Joseph Aff. ¶¶ 10-12, 14-16, 19).

multi-factor approach: (1) it correlates with LBMPs, unlike Millennium East; (2) it has significantly higher trading volumes than Millennium East, which has very limited historical data; (3) there is a logical nexus between Iroquois Zone 2 and the relevant delivery points; and (4) it has been used in past ICAP Demand Curve resets. IPPNY contends that Millennium East, like Dominion North, is a receipt pool and that pricing at the eastern end of the Millennium East pipeline is increasingly likely to be governed by pricing dynamics in New England. Consequently, IPPNY asserts that the pricing at Millennium East does not reflect the cost to deliver gas to generators in load zone G and is increasingly unlikely to correlate with LBMPs in load zone G.²⁷⁸ Entergy adds that there are substantial price differentials when comparing load zone G energy pricing against both the alternatively proposed Millennium East and TETCO M3 natural gas hubs, making these alternatives unviable.²⁷⁹

128. Neither Entergy nor IPPNY support the use of a blended price and argue that there was no discussion in the stakeholder process of which pipelines should be considered for blending purposes or the weighting to be used, nor are blended prices publicly posted or otherwise readily available.²⁸⁰ IPPNY contends that a blended price would be based on a fictional combined natural gas hub price that would not be available to any facility operating in any load zone.²⁸¹ Entergy asserts that a blended price is unjust and unreasonable because there is no evidence that such a price would align with electricity pricing in the region or be sustainable for the duration of the ICAP Demand Curve reset period.²⁸² Furthermore, IPPNY argues that blended prices would be wholly inconsistent with the reason NYISO adopted the annual update process—to increase transparency to allow market participants to estimate future ICAP Demand Curves using readily available data.²⁸³

129. UIU, MMU, Niagara Mohawk, City of NY and Multiple Intervenors, NYTOs, and the State Entities protest NYISO's natural gas hub selections for load zone C for the

²⁷⁸ *Id.* at 25 (citing Joseph Aff. ¶¶ 22-24, 26, 29, 31).

²⁷⁹ Entergy December 9, 2016 Comments at 14.

²⁸⁰ *Id.* at 13; IPPNY December 9, 2016 Limited Protest and Comments at 25 (citing Joseph Aff. ¶¶ 32-33).

²⁸¹ IPPNY December 9, 2016 Limited Protest and Comments at 23.

²⁸² Entergy December 9, 2016 Comments at 14.

²⁸³ IPPNY December 9, 2016 Limited Protest and Comments at 26.

NYCA ICAP Demand Curve and load zone G for the G-J Locality ICAP Demand Curve.²⁸⁴ They contend that NYISO incorrectly ignored less expensive natural gas hubs, which distorted estimated net energy and ancillary services revenues and may have resulted in NYISO selecting a peaking plant without the lowest fixed costs and highest variable costs to establish the ICAP Demand Curves for NYCA and the G-J Locality. They argue that NYISO's proposed natural gas hub selections for load zones C and G, if accepted, will impose substantial unjustified costs on New York State electricity consumers.²⁸⁵ Instead of using TETCO M3 for load zone C, as NYISO proposes, UIU, Niagara Mohawk, City of NY and Multiple Intervenors, NYTOs, and the State Entities support the use of Dominion North. For load zone G, instead of using Iroquois Zone 2, as NYISO proposes: NYTOs and City of NY and Multiple Intervenors support the use of Millennium East (using TETCO M3 for the first year); the State Entities support the continued use two natural gas hubs (for Rockland County, TETCO M3 for the first year and Millennium East for the following years); and MMU and UIU both support a blended price, but MMU supports a blend of Iroquois Zone 2 and Millennium East, whereas UIU supports a blend of Millennium East and TETCO M3.

130. Looking at the multi-factor assessment that NYISO and the independent consultant used (considering market dynamics, liquidity, geography, and precedent of the candidate natural gas hubs), several protesters argue that factors other than geography should be secondary and should be considered only once a geographically realistic natural gas hub is identified. Specifically, Niagara Mohawk, UIU, City of NY and Multiple Intervenors, NYTOs, and the State Entities argue that fuel price for a peaking plant should not be based on prices for a pipeline that would not realistically serve generation located within the peaking plant's load zone. NYTOs and Niagara Mohawk argue that NYISO's natural gas hub selection for load zone C, TETCO M3, is located more than 100 miles away and not accessible to a peaking plant located in load zone C.²⁸⁶ UIU, Niagara Mohawk, City of NY and Multiple Intervenors, NYTOs, and the State Entities instead support the use of Dominion North, which is physically deliverable to

²⁸⁴ MMU's comments are limited to discussion of the natural gas hub selection for load zone G, and Niagara Mohawk's comments are limited to discussion of the natural gas hub selection in load zone C.

²⁸⁵ *E.g.*, NYTOs December 9, 2016 Protest at 5-6 (citing Cadwalader Aff. ¶¶ 19-22).

²⁸⁶ *Id.* at 5; Niagara Mohawk December 9, 2016 Comments at 9 n.17.

load zone C.²⁸⁷ Similarly, NYTOs argue that NYISO's natural gas hub selection for load zone G, Iroquois Zone 2, is located on the other side of the Hudson River and inaccessible to a peaking plant located in Rockland County in load zone G.²⁸⁸ NYTOs and City of NY and Multiple Intervenors instead support the selection of the Millennium East (using TETCO M3 for the first year) because it goes directly through Rockland County, in addition to having a much lower gas price index.²⁸⁹

131. With regard to the market dynamics factor (the correlation of the natural gas hub prices with LBMPs for the relevant location and the extent to which the natural gas hub prices reflect New York electricity market dynamics), City of NY and Multiple Intervenors and NYTOs argue that this factor should not be considered because the fact that lower natural gas prices do not track LBMPs does not justify basing net energy and ancillary services revenues on the price of natural gas from a higher-priced, inaccessible natural gas pipeline.²⁹⁰ City of NY and Multiple Intervenors further argue that NYISO's position that natural gas hub prices that are not correlated with LBMPs represent near-term arbitrage opportunities is flawed.²⁹¹ According to NYTOs and City of NY and Multiple Intervenors, procuring cheaper natural gas than the marginal natural gas price that sets electricity prices would ensure maximum profits, which is precisely why a new peaking plant would interconnect to the lowest-cost natural gas pipeline accessible in its area.²⁹²

²⁸⁷ UIU December 9, 2016 Comments and Protest at 12; Niagara Mohawk December 9, 2016 Comments at 8-9; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 37-38, 40-41; NYTOs December 9, 2016 Protest at 5; State Entities December 9, 2016 Protest at 38-39.

²⁸⁸ NYTOs December 9, 2016 Protest at 6.

²⁸⁹ *Id.* at 14; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 42-43.

²⁹⁰ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 41-42; NYTOs December 9, 2016 Protest at 9.

²⁹¹ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 38-39.

²⁹² NYTOs December 9, 2016 Protest at 10; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 35-36.

132. The State Entities argue that NYISO's natural gas hub selections offer an arbitrage opportunity that will persist over time because prices on the lower- and higher-cost pipeline alternatives likely will equilibrate over time at a price between the two indices and that historic pricing trends suggest that the lower prices will persist over time.²⁹³ Furthermore, the State Entities argue that NYISO did not justify its assumption that the Millennium East price will equilibrate at a price point sufficiently high to limit the arbitrage opportunity to a short period. While NYISO assumes that commodity costs will equilibrate as the cost of gas from Millennium East increases to converge with the cost of natural gas from other pipelines, the State Entities contend that supply costs from other pipelines will decrease to converge with those from Millennium East. Accordingly, the State Entities argue that a developer could determine that the arbitrage opportunity would justify an interconnection with Millennium East even if natural gas prices gradually increase over time.²⁹⁴

133. Niagara Mohawk, City of NY and Multiple Intervenors, and NYTOs argue that the independent consultant's recommendations are inconsistent with the express provisions of the Services Tariff. Specifically, Niagara Mohawk notes that the Services Tariff provides that NYISO will use a model that "determine[s] whether each peaking plant could earn positive net revenue by producing Energy in each hour over the prior 36 month period," and that "[t]he applicable fuel cost for the peaking plant for [each] Load Zone . . . will be based on the applicable daily spot price for [the] Load Zone."²⁹⁵ Niagara Mohawk, City of NY and Multiple Intervenors, and NYTOs argue that the only sensible reading of the relevant language is that the natural gas costs used to establish net energy and ancillary services revenues must represent historical natural gas costs for units in a specific load zone for which the peaking plant could realistically procure natural gas.²⁹⁶ According to Niagara Mohawk, if the Commission accepts NYISO's logic, it might have, with equal validity, proposed using the Henry Hub price or any other financially settled point, no matter how geographically distant.²⁹⁷

²⁹³ State Entities December 9, 2016 Protest at 40-41 (citing Sano Aff. ¶¶ 18-20).

²⁹⁴ *Id.* at 46.

²⁹⁵ Niagara Mohawk December 9, 2016 Comments at 9 (quoting NYISO, Services Tariff, § 5.14.1.2.2).

²⁹⁶ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 35; Niagara Mohawk December 9, 2016 Comments at 9-10; NYTOs December 9, 2016 Protest at 8-9.

²⁹⁷ Niagara Mohawk December 9, 2016 Comments at 10.

134. NYTOs further explain that the Services Tariff provides that NYISO must determine “the likely projected annual [energy and ancillary services] revenue of the peaking plant for the first Capability Year covered by the periodic review” and that the annual updates to the ICAP Demand Curves for the first capability year are to be based on “the current localized levelized embedded cost of a peaking plant in each NYCA Locality.”²⁹⁸ If, in the “long run,” Dominion North natural gas prices were to rise toward TETCO M3 natural gas prices in load zone C, or Millennium East natural gas prices were to rise toward Iroquois Zone 2 natural gas prices for load zone G, NYTOs argue that neither is relevant to defining the ICAP Demand Curves for the upcoming capability year, or to the annual updates to those ICAP Demand Curves, nor permissible under the Services Tariff.²⁹⁹ City of NY and Multiple Intervenors and Niagara Mohawk similarly argue that net energy and ancillary services revenues should be based on existing circumstances, not econometric forecasts or speculation on possible outcomes that may or may not occur in the future.³⁰⁰ NYTOs also assert that NYISO’s natural gas hub selections are contrary to the intent of the annual updates, which are intended to eliminate the lack of transparency and the speculative nature inherent in long-term price projections. NYTOs contend that projections of future natural gas prices at a given location “in the long run” cannot be used to establish net energy and ancillary services revenues for the initial capability year.³⁰¹

135. UIU and City of NY and Multiple Intervenors contend that Dominion North is sufficiently liquid because it is directly connected to, and highly correlated with, Dominion South—one of the most liquid points in the Northeast.³⁰² The State Entities similarly argue that Millennium East is sufficiently liquid because Platt’s Gas Daily has reported Millennium East trading over the last four years 98.2 percent of the time, which is consistent with Iroquois Zone 2 reporting.³⁰³ Recognizing that Millennium East has

²⁹⁸ NYTOs December 9, 2016 Protest at 7 (quoting NYISO, Services Tariff, § 5.14.1.2.1).

²⁹⁹ *Id.*

³⁰⁰ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 38-40; Niagara Mohawk December 9, 2016 Comments at 10-11.

³⁰¹ NYTOs December 9, 2016 Protest at 8.

³⁰² UIU December 9, 2016 Comments and Protest at 12; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 41.

³⁰³ State Entities December 9, 2016 Protest at 44 (citing Sano Aff. ¶ 11).

limited historical data, City of NY and Multiple Intervenors suggest using TETCO M3 for the first year of historical data, and then Millennium East for subsequent years for load zone G.³⁰⁴ NYTOs argue that NYISO and the independent consultant applied the liquidity factor inconsistently when justifying the natural gas hubs proposed for load zones C and G. According to NYTOs, NYISO and the independent consultant did not choose Dominion North because of its lower level of trading history and activity compared to TETCO M3, but chose Iroquois Zone 2 instead of TETCO M3 in load zone G, even though TETCO M3 has a higher level of trading history and activity. NYTOs explain that SNL Financial, NYISO's data source for the natural gas hub prices, would not publish the price for a natural gas hub on any given day unless it had a high degree of confidence in that price. Therefore, according to NYTOs, because daily prices are published for the Dominion North and Millennium East natural gas hubs, these natural gas hubs are representative of natural gas peaking plants located in load zone C and G, respectively.³⁰⁵

136. If the Commission agrees that Dominion North should not be used for load zone C, the State Entities recommend Dominion South as an alternative. The State Entities contend that Dominion South has long been established as a primary liquid trading point for western and upstate New York and that the index is regularly traded and reported. The State Entities argue that the demarcation between the North and South hubs on the Dominion pipeline have been arbitrarily set outside of load zone C, but that transportation rates are the same regardless of which receipt area is used and both indices are highly correlated. At a minimum, the State Entities assert that Dominion South should be used as a backup reference for days on which trades on Dominion North are not reported.³⁰⁶

137. City of NY and Multiple Intervenors and NYTOs recommend that, for load zone G, it would be reasonable to use TETCO M3 for the first historical year and Millennium East for the subsequent years.³⁰⁷ NYTOs note that the previous ICAP Demand Curve reset used TETCO M3, not Iroquois Zone 2, to calculate net energy and ancillary services revenues in load zone G. NYTOs further note that NYISO

³⁰⁴ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 43.

³⁰⁵ NYTOs December 9, 2016 Protest at 10-11.

³⁰⁶ State Entities December 9, 2016 Protest at 41-42 (citing Sano Aff. ¶¶ 12-13).

³⁰⁷ NYTOs December 9, 2016 Protest at 11; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 43.

explained this choice by stating that, while TETCO M3 was not physically deliverable to Rockland County in load zone G, it was used as a proxy for Millennium East, since Millennium East's prices were not available at the time.³⁰⁸ The State Entities recommend NYISO continue to use two natural gas hubs for load zone G to reflect zonal differences in supply costs and to index Rockland County to the Millennium East natural gas hub.³⁰⁹ The State Entities support the use of the use of the TETCO M3 natural gas hub for first historical year and shifting to the Millennium East gas hub for the subsequent years.³¹⁰

138. MMU argues that neither the Iroquois Zone 2 nor Millennium East are ideal for load zone G and instead recommends a blending of the two indices. MMU contends that if the net CONE of the peaking plant for load zone G is based solely on Iroquois Zone 2, it will lead to excessive investment signals in load zone G, but the resulting new entry would still occur in Rockland County and other areas with lower entry costs. However, according to MMU, if each ICAP Demand Curve reset simply selects whichever county in load zone G that happens to have the lowest net CONE in a particular reset, the resulting ICAP Demand Curves will be lower than necessary to incentivize new investment over the long term in any location within load zone G. For this reason, MMU asserts that it is important to carefully select the most reasonable location as a basis for the ICAP Demand Curve, rather than simply choosing the location that happens to be the lowest cost at a particular point in time, in order to facilitate efficient entry and exit. Therefore, MMU supports a blended price for load zone G from Iroquois 2 and Millennium East.³¹¹ The State Entities argue that, if the Commission declines to adopt Dominion North or South for load zone C and two natural gas hubs for load zone G, it should direct NYISO to use a blend of natural gas hubs, consistent with MMU's recommendation. The State Entities contend that it is easy to determine the blended price when the natural gas trading hubs and blending proportions are specified.³¹²

³⁰⁸ NYTOs December 9, 2016 Protest at 11-12 (citing NYISO, Filing, Docket No. ER14-500-000, at Attach. III, Ex. B, 67 n.50 (filed Nov. 27, 2013)).

³⁰⁹ State Entities December 9, 2016 Protest at 42. The current ICAP Demand Curve for the G-J Locality indexes Dutchess County to Iroquois Zone 2 and Rockland County to TETCO M3.

³¹⁰ *Id.* at 44.

³¹¹ MMU December 9, 2016 Comments at 3-5.

³¹² State Entities December 9, 2016 Protest at 47-48 (suggesting a 50/50 blend of Dominion North or South and Millennium East for load zone C, and a 50/50 blend of Millennium East and Iroquois Zone 2 for load zone G).

139. UIU also recommends that load zone G's natural gas prices be derived from a blend of natural gas hubs to more closely approximate customers' likely actual costs. However, UIU differs from MMU in that UIU recommends a blend of prices from Millennium East and TETCO M3. UIU contends that, although Millennium East represents the most accurate price point, due to its lack of historical pricing data, the Commission should not rely entirely on it for estimating prices.³¹³

140. Niagara Mohawk, City of NY and Multiple Intervenors, and NYTOs provide support for the precedent factor regarding their alternative natural gas hub proposals. Niagara Mohawk, NYTOs, and City of NY and Multiple Intervenors contend that MMU has previously used the prices reported at Dominion North to analyze electricity prices in load zone C, including its 2015 State of the Market Report.³¹⁴ City of NY and Multiple Intervenors add that MMU also used TETCO M3 in that report for load zone G.³¹⁵ Furthermore, NYTOs submit that the precedent factor should be given little weight because the fact that NYISO did not use the alternative natural gas hubs recommended in other NYISO studies, for entirely different purposes and for which long-term econometric forecasts may have been appropriate, is irrelevant to establishing projected net energy and ancillary services revenues for the first year of the ICAP Demand Curve reset period.³¹⁶

b. Answers

141. With regard to protesters' arguments that NYISO should have relied mostly, if not solely, on geography in selecting the appropriate natural gas hubs, NYISO responds that the relevant Services Tariff language is intended to recognize that the ICAP Demand Curve reset involves an assessment of multiple potential locations for a peaking plant. It is not, according to NYISO, intended to prescribe the methodology or factors to be considered in making such determinations. NYISO contends that the appropriate natural gas hubs and the manner in which they should be selected are driven by the ICAP

³¹³ UIU December 9, 2016 Comments and Protest at 12.

³¹⁴ Niagara Mohawk December 9, 2016 Comments at 11-12 (citing David B. Patton, *2015 State of the Market Report for the New York ISO Markets*, A-3 (May 2016)); NYTOs December 9, 2016 Protest at 12; City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 41.

³¹⁵ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 43.

³¹⁶ NYTOs December 9, 2016 Protest at 12.

Demand Curve reset process and the Commission's determinations related thereto, allowing for determinations made from one ICAP Demand Curve reset to another to evolve and appropriately account for the conditions and circumstances attendant to each ICAP Demand Curve reset.³¹⁷

142. Looking to the market dynamics factor, NYISO reiterates that selection of natural gas hubs that lack a historical relationship with electricity market dynamics, like those protesters suggest, presents a significant risk of undermining the accuracy and reasonableness of the net energy and ancillary services revenues produced by the model.³¹⁸ Based on its sensitivity analysis, NYISO contends that use of the protesters' alternative natural gas hubs would lower from the current level the reference point price for the NYCA ICAP Demand Curve by 40 percent and the reference point for the G-J Locality ICAP Demand Curve by 60 percent.³¹⁹ NYISO also argues that its proposed use of TETCO M3 for load zone C and Iroquois Zone 2 for load zone G are not, as alleged, based on the use of forecasted natural gas prices. Rather, NYISO continues, NYISO and the independent consultant used the actual, historic natural gas prices as published by SNL Financial to estimate the net energy and ancillary services revenues for the 2017/2018 Capability Year. NYISO states that the multi-factor test likewise relied strictly on actual, historic natural gas prices for each candidate natural gas hub as reported by SNL Financial.³²⁰

143. Moreover, as for liquidity, NYISO emphasizes that the annual updates process underscores the critical importance of ensuring that the natural gas hubs selected are liquid and exhibit a strong history of robust trading activity to ensure they remain reasonable and appropriate for the duration of the ICAP Demand Curve reset period. NYISO contends that the protesters supporting the use of Millennium East for load zone G (Rockland County) admit the lack of history of trading activity. According to NYISO, the lack of sufficient and available historic data for Millennium East from SNL Financial clearly demonstrates the inappropriateness of using Millennium East at this time. With regard to other alternative natural gas hubs, NYISO states that, over the past four years,

³¹⁷ NYISO December 22, 2016 Answer at 25.

³¹⁸ *Id.* at 26 (citing Supp. Analysis Group Aff. ¶¶ 9-11).

³¹⁹ *Id.* at 26-27.

³²⁰ *Id.* at 24 n.89.

both TETCO M3 and Iroquois Zone 2 have demonstrated persistent levels of substantial trading activity that are far more robust than Dominion North and Millennium East.³²¹

144. With regard to protesters' proposal for blended pricing, NYISO responds that the appropriateness of any price blending requires significant evaluation and discussion with stakeholders prior to being pursued further. NYISO reiterates that the concept was not introduced until after the independent consultant had issued its final report, thereby preventing the necessary assessment, analysis, and stakeholder discussions.³²² Moreover, while protesters argue that blending is simple and recommend blending equally weighted historic prices from certain natural gas hubs, NYISO counters that the use of blended prices is far more complex because NYISO must ensure that the blending methodology will result in an appropriate or reasonable price over the four-year ICAP Demand Curve reset period. According to NYISO, simply developing an average of the prices from two potential natural gas hubs does not necessarily result in net energy and ancillary services revenues estimates and reference prices that are equal to the average of the results produced by the independent use of the underlying natural gas hubs. Instead, NYISO continues, blending is akin to the creation of a new, artificial natural gas hub with its own historic pricing. Furthermore, NYISO expresses concern that blending could result in a process that materially departs from a principled approach to determining the appropriate and representative natural gas hubs for each location and, instead, becomes more of a results-oriented exercise, undermining market confidence in the ICAP Demand Curve reset process to the detriment of all market participants. Lastly, NYISO adds that it does not have sufficient time to conduct the necessary analysis to determine whether blending is appropriate, and, if so, what the correct methodology would be, prior to the Summer 2017 Capability Period capacity auctions that commence in February 2017.³²³

145. IPPNY contends that, while a range of outcomes may be reasonable under certain circumstances, NYTOs and MMU have not demonstrated that NYISO's proposed natural gas hubs are not just and reasonable.³²⁴ According to IPPNY, NYTOs' argument that the geography factor is the most important focuses on only the locational aspect of geography, and ignores the need to ensure that there is a logical nexus at relevant delivery points. Natural gas-fired generators, IPPNY continues, are unable to access natural gas at

³²¹ *Id.* at 27-29.

³²² *Id.* at 29-30 (citing Supp. Analysis Group Aff. ¶¶ 13-16).

³²³ *Id.* at 30-32 (citing Supp. Analysis Group ¶¶ 14, 16).

³²⁴ IPPNY December 23, 2016 Answer at 5 (citing *PJM Interconnection, L.L.C.*, 155 FERC ¶ 61,157, at P 47 (2016)).

the prices reflected by Dominion North and Millennium East because those natural gas hubs represent the price of natural gas injected into the pipelines, and not the price of natural gas withdrawals at the likely location of the peaking plants.³²⁵ IPPNY argues that, because the independent consultant did not assume that the peaking plant in any load zone would hold a firm transportation contract, the amount of congestion on a pipeline directly affects both the price a peaking plant will pay and the availability of shipping capacity. IPPNY argues that Millennium East experiences significant congestion and that the price does not reflect the price paid by a generator relying on natural gas shipped in the secondary capacity release markets downstream of a significant congestion point. Furthermore, IPPNY argues that, even with planned upgrades, Millennium East is likely to remain constrained.³²⁶

146. IPPNY also responds to NYTOs' argument that it is unreasonable to conclude that a peaking plant in load zone G would be built in Dutchess County, rather than in Rockland County where it would have access to Millennium East's much lower natural gas prices. IPPNY argues that, if this were correct, all new natural gas-fired generators would interconnect with Millennium East. While one proposed project (the CPV Valley Energy Center Project) will interconnect with Millennium East, IPPNY contends that there is no evidence that there are other suitable sites that can be interconnected with this pipeline and developed at lower costs than interconnecting with Iroquois Zone 2.³²⁷ Furthermore, IPPNY argues that the CPV Valley Energy Center Project will likely increase congestion on Millennium East, which is expected to lead to equilibration with the Iroquois Zone 2 price over time.³²⁸

147. With regard to protesters' alternatives, IPPNY maintains that Dominion North and Millennium East have consistently shown the least correlation with LBMPs in load zones C and G, respectively.³²⁹ IPPNY contends that the proposed alternatives conflict with other assumptions used in estimating the peaking plant's costs. According to IPPNY, NYISO did not analyze whether suitable siting locations were available near

³²⁵ *Id.* (citing NYTOs December 9, 2016 Protest at 4).

³²⁶ *Id.* at 6-7.

³²⁷ *Id.* at 7.

³²⁸ *Id.* at 8.

³²⁹ *Id.* at 10.

Millennium East or how interconnection costs would differ if the number of potential siting locations is restricted.³³⁰

148. As for MMU's recommendation to use a blended price, IPPNY notes that MMU previously advocated for a blend with the majority based on Iroquois Zone 2, rather than a 50/50 blend. According to IPPNY, in neither case did MMU provide any basis or analysis to support the blending values or the change in blending values.³³¹ Furthermore, IPPNY reiterates that blended prices are not published or publicly available and that there was no discussion in the stakeholder process about how to use a blended rate.³³² Finally, IPPNY argues that if NYISO were to use a blended price, NYISO must also blend every other related cost to accurately reflect the costs faced by the peaking plant in each load zone. NYISO, IPPNY continues, would be required to devise a weighting for these other factors as well, an exercise for which it has no framework.³³³

149. NYTOs, City of NY, and Multiple Intervenors maintain that the ICAP Demand Curves in load zones C and G should be based on the net cost of a peaking plant using a geographically proximate natural gas hub, such as Dominion North or Millennium East, respectively. They argue that the market dynamics, liquidity, and precedent factors should be secondary, applied only to natural gas hubs that are geographically close to the peaking plant. They assert that if NYISO accorded different weights to each of the factors, NYISO would select different natural gas hubs for the same peaking plant location, depending on the relative weight of each factor. They contend that this demonstrates the subjectivity of NYISO's application of these factors and why the objective geography factor must be the basis on which NYISO applies the other factors.³³⁴

150. With regard to whether there is a logical nexus between Dominion North and what a peaking plant in load zone C would pay for actual delivered gas, and between Millennium East and what a peaking plant in load zone G (Rockland County) would pay for actual delivered gas, NYTOs, City of NY, and Multiple Intervenors argue that

³³⁰ *Id.* at 10-11.

³³¹ *Id.* at 11.

³³² *Id.* at 11-12.

³³³ *Id.* at 12-13.

³³⁴ NYTOs, City of NY, and Multiple Intervenors December 22, 2016 Answer at 6.

IPPNY's characterization of the SNL Financial natural gas prices is incorrect. They contend that the company that provides SNL Financial with its natural gas prices confirmed that those prices represent the traded volume weighted average index prices for all trades along a specific geographic portion of the relevant natural gas pipeline.³³⁵ Therefore, contrary to IPPNY's arguments that Dominion North and Millennium East are receipt pools, NYTOs, City of NY, and Multiple Intervenors counter that Dominion North and Millennium East do not represent only the price of natural gas from various supply aggregations entering the relevant pipeline systems.³³⁶ NYTOs, City of NY, and Multiple Intervenors acknowledge that there is a logical nexus between the Iroquois Zone 2 natural gas prices and what a peaking plant in the Dutchess County portion of load zone G would pay for actual delivered natural gas, and thus believe that Millennium East should only be used for the Rockland County portion of load zone G.³³⁷

151. NYTOs, City of NY, and Multiple Intervenors argue that IPPNY's assertions that the Millennium East natural gas hub is likely to be governed by pricing in New England is flawed. First, they assert that NYISO's selection of a natural gas hub based on speculation as to future natural gas prices is unreliable and inconsistent with the Services Tariff.³³⁸ They also argue that consideration of whether Millennium East natural gas prices correlate with LBMPs in load zone G is irrelevant because LBMPs reflect the marginal cost of generation needed to clear the market, and not the cost of a generator using a low cost natural gas supply.³³⁹ Second, they assert that there is a stronger correlation between the Iroquois Zone 2 and New England natural gas prices than

³³⁵ *Id.* at 4-5, Ex. 1 ¶ 7 (Chan Aff.); NYTOs January 6, 2017 Answer at 8.

³³⁶ NYTOs, City of NY, and Multiple Intervenors December 22, 2016 Answer at 4-5.

³³⁷ *Id.* at 5 n.15.

³³⁸ *Id.* at 6 (citing NYISO, Services Tariff, § 5.14.1.2.1); NYTOs January 6, 2017 Answer at 6-7; *see also id.* at 10-11 (arguing that NYISO attempts to avoid the requirement to rely on historical data by improperly focusing on Millennium East only having 2.5 years of historical data, and instead relying on forecasted natural gas prices that do not reflect the cost that generators in a given location would incur to purchase natural gas).

³³⁹ NYTOs, City of NY, and Multiple Intervenors December 22, 2016 Answer at 6-7; NYTOs January 6, 2017 Answer at 9-10.

between the Millennium East and New England natural gas prices.³⁴⁰ Third, they contend that Millennium East continues to increase the volume of natural gas available for transport, while the pipeline serving New England interconnects with Iroquois Zone 2 downstream from its interconnection with Millennium East. According to NYTOs, City of NY, and Multiple Intervenors, this further demonstrates that the Iroquois Zone 2 natural gas prices are more likely to be governed by pricing in New England than Millennium East's.³⁴¹

152. IPPNY argues that NYTOs, City of NY, and Multiple Intervenors fail to take into account the full natural gas costs incurred by a peaking plant. Specifically, IPPNY asserts that since most generators in competitive electric markets do not hold firm transportation contracts, they must rely on natural gas marketers for delivered natural gas, the price of which includes: (1) the price of the natural gas commodity; and (2) the price of transporting natural gas. IPPNY contends that NYTOs, City of NY, and Multiple Intervenors focus on the commodity price at a particular receipt point, which ignores the way that generators, particularly peaking plants, must actually purchase natural gas. Accordingly, IPPNY argues that the price of natural gas should capture the price of natural gas at various delivery points. Also, IPPNY continues, if the natural gas hub is not accurately reflecting congestion on the pipeline, the hub is not an accurate representation of the price of delivered natural gas available to a peaking plant.³⁴²

c. Commission Determination

153. We find NYISO's proposed data sources for natural gas prices, in particular, the selection of the TETCO M3 natural gas hub for the load zone C peaking plant and the Iroquois Zone 2 natural gas hub for the load zone G peaking plant, to be just and reasonable. NYISO has provided reasonable justification for its natural gas hub selection for each load zone, which will ensure that the ICAP Demand Curves are set at appropriate levels to encourage investors to build resources as necessary to meet the reliability needs of the system.³⁴³ NYISO and the independent consultant used a

³⁴⁰ NYTOs, City of NY, and Multiple Intervenors December 22, 2016 Answer at 7-8.

³⁴¹ *Id.* at 8-9.

³⁴² IPPNY January 10, 2017 Answer at 2-7.

³⁴³ NYISO Transmittal Letter at 3 (explaining that the ICAP Demand Curves must be established at a level that provides "sufficient revenues to cover the costs of a peaking plant when market entry by such facility is required to maintain reliability").

multi-factor test to support their selection of natural gas hubs, which included consideration of market dynamics (i.e., the correlation of natural gas hub prices with LBMPs for the relevant location), the liquidity of trading activity at the natural gas hub, the location of the natural gas hub (i.e., geography), and precedent for the natural gas hub being used in other significant NYISO studies and evaluations.³⁴⁴ While consideration of these factors is required neither by the Commission nor by the Services Tariff, we find that the use of this multi-factor test enabled NYISO to select natural gas hubs that are appropriate for each peaking plant location and provided transparency to market participants.

154. We are not persuaded by protesters that NYISO's natural gas hub selections, for which NYISO and the independent consultants considered market dynamics, liquidity, and precedent in addition to geography, are inconsistent with the Services Tariff. The Services Tariff does not require NYISO to base its natural gas hub selections solely on geography; rather, the Services Tariff only requires that NYISO determine the applicable natural gas fuel cost for a peaking plant in each load zone.³⁴⁵ In this instance, we agree with NYISO that, since the alternative natural gas hub proposals do not correlate with LBMPs, they may not represent actual supply costs incurred by the peaking plants.³⁴⁶ Rather, we find that it was reasonable for NYISO and the independent consultant to consider as one factor the correlation of natural gas prices at the selected natural gas hubs with LBMPs for the relevant load zone.³⁴⁷ Furthermore, despite protesters' concerns that the natural gas hub selections for load zones C and G are inadequate because they are not physically deliverable to the relevant load zones, the natural gas hub approved for the Rockland County portion of load zone G in the last ICAP Demand Curve reset was

³⁴⁴ *Id.* at 25 (citing NYISO Staff Final Recommendations at 22-24, 53-68; Independent Consultant Final Report at 74-80; Analysis Group Aff. ¶¶ 47-53).

³⁴⁵ NYISO, Services Tariff, § 5.14.1.2.2.2 (16.0.0) (The "applicable fuel cost will be based on the applicable daily spot price for [the relevant load zone] published in the specified data source determined as part of" the ICAP Demand Curve reset process.').

³⁴⁶ NYISO Transmittal Letter at 25 (citing Independent Consultant Final Report at 74-78; Analysis Group Aff. ¶ 48); *see also* Joseph Aff. ¶¶ 10, 22 (arguing that the lack of correlation between other natural gas hubs' prices and higher winter LBMPs suggests that marginal supply from resources in these load zones was not purchasing natural gas that reflected the price at these other natural gas hubs).

³⁴⁷ *See* NYISO Transmittal Letter at 27-28 (charting natural gas hub prices and LBMPs for the relevant candidate natural gas hubs).

TETCO M3, which is not physically deliverable to Rockland County.³⁴⁸ Therefore, it is consistent with the last ICAP Demand Curve reset to approve the selection of a natural gas hub to estimate net energy and ancillary services revenues that is not physically deliverable to the relevant load zone, so long as its selection has been properly justified, as NYISO has done here.

155. Moreover, we find that it was reasonable for NYISO and the independent consultant to consider as another factor the natural gas hubs' relative levels of trading history and activity. NYISO contends that it does not recommend Dominion North for load zone C or Millennium East for load zone G because both not only fail the first factor discussed above, but also have lower levels of trading history and activity in comparison to readily available and reasonable alternatives (e.g., TETCO M3 and Iroquois Zone 2).³⁴⁹ While certain protesters argue that Dominion North is sufficiently liquid, and others argue that TETCO M3 is more liquid than Iroquois Zone 2, we reiterate that this is only one factor NYISO and the independent consultant considered in selecting the appropriate natural gas hub. Therefore, whether alternative natural gas hubs have more or less liquidity is not dispositive as to whether their use is reasonable in the estimation of net energy and ancillary services revenues, but the lack of sufficient liquidity is an important factor. Similarly, NYISO's consideration of precedential use of a natural gas hub in its studies and evaluations is a useful factor to include in the multi-factor test. That said, in the end, the selection of the appropriate natural gas hubs is a matter of judgment.

156. While protesters propose a variety of alternative natural gas hubs that may be just and reasonable, the Commission need only find NYISO's proposal to be just and reasonable, and not that it is the only or even the most just and reasonable proposal.³⁵⁰

³⁴⁸ NYISO, Filing, Docket No. ER14-500-000, Attach. III (Meehan Aff.), Ex. B, 67 n.50 (filed Nov. 27, 2013) ("While Tetco M3 is not physically deliverable to Rockland County, it is used as a proxy for Millennium."); 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 2 (accepting all non-protested proposals).

³⁴⁹ NYISO Transmittal Letter at 30 (citing NYISO Staff Final Recommendations at 23; Independent Consultant Final Report at 77-79; Analysis Group Aff. ¶¶ 50, 52-53).

³⁵⁰ See *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984) (describing the Commission's authority under section 205 of the FPA as "limited to an inquiry into whether the rates proposed by a utility are reasonable – and not to extend to determining whether a proposed rate schedule is more or less reasonable than alternative rate designs").

Having found NYISO's proposed natural gas hub selections to be just and reasonable, we need not consider alternatives. We agree with the analysis set forth by NYISO that underlies its proposal here. Specifically, since Dominion North's and Millennium East's prices do not correlate with LBMPs as well as the natural gas hubs NYISO selected, and both have lower trading volumes than the natural gas hubs NYISO selected,³⁵¹ we find that NYISO has reasonably weighed the options and selected appropriate natural gas hubs for this ICAP Demand Curve reset. Similarly, we find that NYISO's decision to not use a blended natural gas hub price for load zone G to be just and reasonable. As NYISO states, there is no readily available publication that produces a blended price for the locations at issue and it would be left to NYISO to create such a price.³⁵² Furthermore, protesters do not collectively agree on which natural gas hubs to blend or on the methodology NYISO should use, which further underscores that a blended natural gas price for load zone G for the current ICAP Demand Curve reset may not be just and reasonable.³⁵³

157. We are also not convinced by protesters' arguments that NYISO's natural gas hub selections are inconsistent with the annual updates to the ICAP Demand Curves as required by the Services Tariff. NYISO bases its natural gas hub selections on a multi-factor test, including analyzing the correlation of natural gas prices at those hubs with historical electricity market pricing outcomes. NYISO uses this historical price information, and not econometric forecasts, to calculate the net energy and ancillary services revenues for the first capability year ICAP Demand Curves, and will do the same

³⁵¹ NYISO Transmittal Letter at 30 (citing NYISO Staff Final Recommendations at 23; Independent Consultant Final Report at 77-79; Analysis Group Aff. ¶¶ 50, 52-53).

³⁵² *Id.* (citing Analysis Group Aff. ¶ 53); NYISO December 22, 2016 Answer at 30-32 (citing Supp. Analysis Group Aff. ¶¶ 14, 16).

³⁵³ For example, MMU supports a blend of Iroquois Zone 2 and Millennium East, whereas UIU supports a blend of Millennium East and TETCO M3.

for the annual updates in the subsequent three capability years.³⁵⁴ This is consistent with the intent, as well as the language, of the Services Tariff.³⁵⁵

2. Level of Excess Adjustment Factors

158. The Service Tariff mandates that NYISO determine the cost and revenues of the peaking plant for each ICAP Demand Curve “under conditions in which the available capacity is equal to the sum of (a) the minimum [ICAP] requirement and (b) the peaking plant’s capacity equal to the number of MW specified in the periodic review and used to determine all costs and revenues” (the prescribed level of excess).³⁵⁶ NYISO explains that to calculate net energy and ancillary services revenues for the peaking plants that reflect this prescribed level of excess, the net energy and ancillary services revenues model multiplies historic LBMPs and reserve prices by the relevant level of excess adjustment factor.³⁵⁷

159. NYISO explains that the level of excess adjustment factors are determined using production cost modeling to determine projected LBMPs based on current system conditions and under system conditions that reflect the prescribed level of excess. NYISO states that it determined level of excess adjustment factors by dividing the

³⁵⁴ See, e.g., Independent Consultant Final Report at 74 (“An important factor in our determination of an appropriate gas index was the historical relationship between gas prices and LBMPs.”); NYISO December 22, 2016 Answer at 24 n.89 (explaining that NYISO and the independent consultant used the actual, historic natural gas prices as published by SNL Financial to estimate the net energy and ancillary services revenues for the 2017/2018 Capability Year and to apply the multi-factor test).

³⁵⁵ ICAP Demand Curve Reset Enhancements Order, 156 FERC ¶ 61,039 at P 16 (accepting the new net energy and ancillary services revenues estimation process because it “enables the implementation of annual updates through a formulaic and transparent methodology to reflect market changes in reference prices on a timely and gradual basis”); NYISO, Services Tariff, § 5.14.1.2.2.2 (16.0.0) (“The model will, at a minimum, determine whether each peaking plant could earn positive net revenue by producing Energy in each hour, based on historical prices and the variable costs for each peaking plant over the prior 36 month period . . .”).

³⁵⁶ NYISO, Services Tariff, § 5.14.1.2.2 (16.0.0).

³⁵⁷ NYISO Transmittal Letter at 34; see also NYISO, Services Tariff, § 5.14.1.2.2.2 (16.0.0) (setting forth the formulas for calculating the net energy and ancillary services revenue offset).

projected LBMPs under the prescribed level of excess conditions by the projected LBMPs under current system conditions. According to NYISO, the relevant LBMPs for this ICAP Demand Curve reset were determined using the 2016 Congestion Assessment Resource Integration Study (CARIS) Phase 2 database. NYISO asserts that this is the most current CARIS database representation of the New York market and the assumptions regarding load forecasts, fuel and emission allowance prices, and resource mix changes. Therefore, NYISO contends that the level of excess adjustment factors derived from the CARIS Phase 2 database are just and reasonable.³⁵⁸

160. NYISO points out that some stakeholders advocate for adjustments to the CARIS Phase 2 database to no longer assume the retirement of the Ginna and Fitzpatrick nuclear facilities in 2017 because of the New York Commission's recently issued Clean Energy Standard order.³⁵⁹ NYISO responds that neither Ginna nor Fitzpatrick have formally rescinded their previously issued notices or statements of intent to retire or provided other notification to NYISO that would meet NYISO's CARIS database inclusion rules. NYISO notes that it developed alternative level of excess adjustment factors and results for a revised CARIS Phase 2 database that did not include these retirements.³⁶⁰

a. Comments and Protests

161. UIU argues that NYISO's assumption that the Ginna and Fitzpatrick nuclear facilities will retire is incorrect because of recent regulatory actions taken by New York State, and, as a result, that NYISO's proposed level of excess adjustment factors are also incorrect. Specifically, UIU points to the New York Commission's recent order adopting a Clean Energy Standard, which establishes zero-emissions credits through which the Ginna and Fitzpatrick nuclear facilities would receive an additional \$17.48 per MWh that they generate through 2029.³⁶¹ UIU also argues that the New York Commission's approval of the sale of the Fitzpatrick nuclear facility to Exelon Generation further supports the continued operation of that facility. Moreover, UIU adds that the New York State Reliability Council recently changed the status of the Ginna and Fitzpatrick nuclear facilities to "in-service" in its ongoing Installed Reserve

³⁵⁸ NYISO Transmittal Letter at 34.

³⁵⁹ *Id.* (citing *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard*, Case No. 15-E-0302, at 1 (N.Y.P.S.C. Aug. 1, 2016) (Order Adopting a Clean Energy Standard)).

³⁶⁰ *Id.* at 34-35 & n.150 (citing NYISO Staff Final Recommendations at 71-72).

³⁶¹ UIU December 9, 2016 Comments and Protest at 12-13.

Margin planning process.³⁶² According to UIU, this creates a disconnect between the assumptions used to establish the Installed Reserve Margin and the ICAP Demand Curves.³⁶³ Pointing to NYISO's alternative level of excess adjustment factors calculated assuming the Ginna and Fitzpatrick nuclear facilities would remain in service, UIU contends that this assumption results in meaningful impacts that lower customer costs.³⁶⁴

b. Answers

162. IPPNY asserts that the Commission should accept NYISO's proposal to base the level of excess adjustment factors on the most recent CARIS Phase 2 database without any adjustments to the resource mix. IPPNY contends that the Ginna and Fitzpatrick nuclear facilities would not be included if the CARIS Phase 2 database were developed today because they do not meet NYISO's inclusion rules. IPPNY argues that making an *ad hoc* adjustment to the level of excess adjustment factor process, rather than holding to NYISO's defined rules, would be a substantial step backward in producing a more transparent ICAP Demand Curve reset process. IPPNY adds that the owners of Ginna and Fitzpatrick have not indicated to NYISO that they will return their units to service. IPPNY argues that, until the Ginna and Fitzpatrick nuclear facilities' zero-emissions credits agreements have become effective and all of the approvals necessary to transfer ownership of the Fitzpatrick nuclear facility are obtained, the Ginna and Fitzpatrick nuclear facilities' continued operations are too speculative under NYISO's inclusion rules to revise the CARIS Phase 2 database to include either of them.³⁶⁵

c. Commission Determination

163. We find that NYISO's proposed level of excess adjustment factors are consistent with the Services Tariff requirements and are just and reasonable. As NYISO explains, the CARIS Phase 2 database is the most current CARIS database representation of the New York market and assumptions regarding load forecasts, fuel and emission allowance prices, and resource mix changes.³⁶⁶ In past ICAP Demand Curve resets, protesters have argued that NYISO's level of excess adjustment factors do not adequately account for

³⁶² *Id.* at 13.

³⁶³ *Id.*, Montalvo and Kordonis Aff. ¶ 39.

³⁶⁴ *Id.* at 14-15.

³⁶⁵ IPPNY December 23, 2016 Answer at 17-18 & n.43.

³⁶⁶ NYISO Transmittal Letter at 34.

any risks or unaccounted for changes to the market.³⁶⁷ The Commission has repeatedly found that NYISO's approach to determining the level of excess adjustment factors based on reasoned judgment is just and reasonable.³⁶⁸ We find the same here. NYISO's decision to exclude Ginna and Fitzpatrick is appropriate because neither have formally rescinded their previously issued notices or statements of intent to retire or provided other notification to NYISO that would meet NYISO's CARIS database inclusion rules.³⁶⁹ Nevertheless, we recognize that the New York Commission's Clean Energy Standard—the zero-emissions credits program, in particular—may alter previous plans to retire Ginna and Fitzpatrick.³⁷⁰ The ICAP Demand Curve reset process takes place every four years so that changed circumstances, such as the Ginna and Fitzpatrick nuclear facilities rescinding their previously issued notices or statements of intent to retire, can be taken into account.³⁷¹

3. Impacts of Shortage Pricing

164. NYISO explains that certain stakeholders advocated during the stakeholder process for the development of an unspecified adder to the net energy and ancillary services revenue estimates to account for the resulting changes in shortage pricing from NYISO's implementation of revised shortage pricing costs on November 4, 2015 (known as comprehensive shortage pricing).³⁷² NYISO asserts that the actual impacts of comprehensive shortage pricing on market outcomes and prices are already captured by

³⁶⁷ 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 133.

³⁶⁸ *Id.*; see also *N.Y. Indep. Sys. Operator, Inc.*, 136 FERC ¶ 61,192, at P 60 (2011) (“[W]e find it entirely reasonable for NYISO to determine the level of excess capacity using reasoned and supported judgment.”).

³⁶⁹ NYISO Transmittal Letter at 35; IPPNY December 23, 2016 Answer at 17-18.

³⁷⁰ See *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard*, Case No. 15-E-0302, at 119-152 (N.Y.P.S.C. Aug. 1, 2016) (Order Adopting a Clean Energy Standard) (describing the zero-emissions credits program and finding that Ginna and Fitzpatrick qualify to receive zero-emissions credits).

³⁷¹ See 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 74.

³⁷² NYISO Transmittal Letter at 35 (citing NYISO, Filing, Docket No. ER15-1061-000 (filed Feb. 18, 2015); *N.Y. Indep. Sys. Operator, Inc.*, 151 FERC ¶ 61,057 (2015)).

the net energy and ancillary services revenues model and that the annual update process ensures that these impacts continue to be recognized in a timely manner. Accordingly, NYISO argues that there is no need for an adder to the net energy and ancillary services revenue estimates.³⁷³

a. Comments and Protests

165. The State Entities argue that NYISO's incorporation of comprehensive shortage pricing into the net energy and ancillary services revenues model is inadequate to account for increased energy revenues from comprehensive shortage pricing, and, if not corrected, will result in customers bearing the full cost impact of comprehensive shortage pricing, resulting in unjust and unreasonable ICAP market prices. The State Entities request that the Commission direct NYISO to explicitly account for additional revenue increases attributable to increased reserve requirements and comprehensive shortage pricing in the net CONE calculation.³⁷⁴

b. Commission Determination

166. We find that NYISO's proposed net energy and ancillary services revenues model is just and reasonable without an adder to account for comprehensive shortage pricing. NYISO explains that its net energy and ancillary services revenues model already captures the impacts of comprehensive shortage pricing.³⁷⁵ The State Entities do not convince us otherwise with unsupported assertions that NYISO's proposal is insufficient to account for increased generator revenues from comprehensive shortage pricing.³⁷⁶ Indeed, NYISO states that capturing the impacts of market rule changes, such as comprehensive shortage pricing, "was a primary motivation for the new annual updating process."³⁷⁷

³⁷³ *Id.*

³⁷⁴ State Entities December 9, 2016 Protest at 55-56.

³⁷⁵ NYISO Transmittal Letter at 35.

³⁷⁶ State Entities December 9, 2016 Protest at 56.

³⁷⁷ NYISO Transmittal Letter at 35 (referring to its July 18, 2016 filing to establish the annual update process).

C. Levelized Fixed Charge and Financial Parameters

167. The Services Tariff requires NYISO to, as part of the ICAP Demand Curve reset, assess “the current localized levelized embedded cost of a peaking plant” for each ICAP Demand Curve.³⁷⁸ NYISO explains that this assessment requires NYISO to translate into an annualized level the up-front capital investment costs for each peaking plant, including property taxes and insurance. According to NYISO, this translation accounts for: (1) the weighted average cost of capital that NYISO assumes is required by a developer of the peaking plant to recover its up-front investment costs, plus a reasonable return on that investment; (2) the term in years over which NYISO assumes the developer recovers its up-front investment costs (amortization period); and (3) the applicable tax rates. NYISO states that it derives the weighted average cost of capital from a series of financial parameters related to the development of the peaking plant, including the required return on equity (ROE), cost of debt, and capital structure (as reflected in the debt-to-equity ratio). NYISO contends that its proposed parameters are designed to appropriately reflect the financial risks faced by a developer constructing the peaking plant in New York on a merchant basis.³⁷⁹

168. NYISO proposes an ROE of 13.4 percent. NYISO explains that the independent consultant derived this ROE based on analyzing data from several sources, including estimates for the ROE of certain publicly-traded independent power producing companies. NYISO asserts that this assessment, using the capital asset pricing model, identified ROEs for the independent power producing companies ranging from 10-12.5 percent.³⁸⁰ NYISO contends that, because these values represent a portfolio of projects and financing structures, the independent consultant also reviewed data regarding ROEs for stand-alone project finance approaches to generation projects. NYISO states that this data indicated that the required ROE for a project finance approach was significantly higher and likely in the range of 15 percent or greater. NYISO argues that its proposed ROE of 13.4 percent is based on the independent consultant’s reasoned judgment and experience and balances the lower ROEs seen in the

³⁷⁸ NYISO, Services Tariff, § 5.14.1.2.2 (16.0.0).

³⁷⁹ NYISO Transmittal Letter at 36 (citing NYISO Staff Final Recommendations at 20-21; Independent Consultant Final Report at 54-66, 148-59; Analysis Group Aff. ¶¶ 54-70).

³⁸⁰ *Id.* at 36-37 (citing Independent Consultant Final Report at 59-60; Analysis Group Aff. ¶¶ 64-65).

asset portfolios of independent power producing companies and the higher ROEs seen in the project finance approaches.³⁸¹

169. NYISO proposes a cost of debt of 7.75 percent. According to NYISO, the independent consultant determined the proposed cost of debt value based on its review of debt costs for independent power producing companies, which indicated that debt costs have ranged from five to eight percent since 2013.³⁸² NYISO contends that the independent consultant chose 7.75 percent, which is toward the high end of the range, because it is consistent with more recent generic debt costs of firms with ratings similar to those of independent power producing companies (close to eight percent in recent months).³⁸³

170. NYISO proposes a debt-to-equity ratio of 55 percent debt to 45 percent equity based on analysis of independent power producing companies' capital structures. NYISO explains that the independent consultant found that current independent power producing companies' capital structures reflected higher levels of debt compared to historic levels. NYISO contends that the independent consultant recommended a lower debt value to: (1) recognize announcements by several independent power producing companies that they will seek to deleverage their current capital structures; and (2) provide greater consistency with the information obtained from other sources indicating a likely lower debt level for merchant projects similar to the peaking plant than is currently evidenced by the portfolio-wide capital structures.³⁸⁴

171. NYISO proposes a 20-year amortization period, which NYISO contends reflects the same value the Commission approved for the same peaking plant technology in the last ICAP Demand Curve reset.³⁸⁵ NYISO argues that, given its proposal to continue to use the same peaking plant technology, the independent consultant assessed the currently

³⁸¹ *Id.* at 37.

³⁸² *Id.* (citing Independent Consultant Final Report at 57-59, 148-49; Analysis Group Aff. ¶ 63).

³⁸³ *Id.* (citing Analysis Group Aff. ¶ 63).

³⁸⁴ *Id.* (citing Independent Consultant Final Report at 60-61; Analysis Group Aff. ¶ 66).

³⁸⁵ *Id.* (citing 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at PP 117-118).

approved amortization period and concluded that it remains appropriate and reasonable.³⁸⁶

a. Comments and Protests

172. IPPNY supports NYISO's proposed after-tax weighted average cost of capital, arguing that it is justified by multiple risks faced by developers in New York. Although NYISO proposes a higher after-tax weighted average cost of capital than the Commission approved in the last ICAP Demand Curve reset, IPPNY argues that two factors have changed since the last ICAP Demand Curve reset that support the higher value: (1) NYISO is now projecting flat load growth for at least the next 10 years; and (2) the independent consultant did not account for real-time commitment pricing and did not accurately represent operational flow order conditions.³⁸⁷

173. City of NY and Multiple Intervenors and the State Entities argue that NYISO's proposed ROE, cost of debt, and debt-to-equity ratio are excessive and lack sufficient explanation. With regard to ROE, City of NY and Multiple Intervenors and the State Entities assert that NYISO should lower the ROE to align it with other independent power producing companies and to take into account current, low interest rates.³⁸⁸ They contend that the beta of 1.49 implied by a 13.4 percent ROE is considerably higher than the betas of individual proxy group members, which ranged from 0.89 to 1.35, and suggests the inclusion of a much higher-risk expectation.³⁸⁹ They assert that the independent consultant did not sufficiently explain why the peaking plant warrants a higher-risk expectation, and provided little rationale for recommending an ROE that exceeds the current peaking plant ROE by more than 230 basis points given prevailing low interest rates since the last ICAP Demand Curve reset process.³⁹⁰ Moreover, City of NY and Multiple Intervenors and the State Entities assert that the independent

³⁸⁶ *Id.*

³⁸⁷ IPPNY December 9, 2016 Limited Protest and Comments at 28-30.

³⁸⁸ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 47; State Entities December 9, 2016 Protest at 51.

³⁸⁹ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 45; State Entities December 9, 2016 Protest at 50.

³⁹⁰ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 45-46; State Entities December 9, 2016 Protest at 50.

consultant cited outdated sources³⁹¹ and studies³⁹² that do not warrant reliance by the Commission given likely changes in economic and regulatory circumstances during the intervening years since their respective publications. City of NY and Multiple Intervenors add that ROEs in New York awarded to regulated utilities are around nine percent and, while ROEs for unregulated generation projects may be higher, City of NY and Multiple Intervenors contend that the increase to 13.4 percent appears materially excessive.³⁹³

174. As for NYISO's proposed cost of debt, City of NY and Multiple Intervenors and the State Entities contend that NYISO should reduce the recommended cost of debt from 7.75 percent to 7.42 percent to align with the average of all securities with an investment-grade rating of "B."³⁹⁴ They also assert that NYISO should adjust the cost of debt to

³⁹¹ They argue that the "independent sources" that estimated ROEs for project finance to which the independent consultant cited were issued in 2003 and 2008. City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 46 (citing Independent Consultant Final Report at 60); State Entities December 9, 2016 Protest at 50-51.

³⁹² They assert that the California Energy Commission report to which the independent consultant cited (which presents an independent power producing company ROE of 15.5 percent) was published in January 2010, and is based on data from 2008 for facilities in California. Moreover, they contend that the National Energy Technology Laboratory report to which the independent consultant cited (which presents an independent power producing company ROE of 14.47 percent) appears to reflect an average of capital structure data from 2006, 2007, and 2008 for a diverse group of technologies that included nuclear and renewable facilities. City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 46; State Entities December 9, 2016 Protest at 50-51.

³⁹³ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 47.

³⁹⁴ City of NY and Multiple Intervenors and the State Entities note that the independent consultant presented information to stakeholders showing that the average of all securities with a given investment grade of "B" was 7.42 percent. *Id.* at 48; State Entities December 9, 2016 Protest at 52-53.

account for the likelihood that a project would be more likely to utilize secured debt than unsecured debt, as assumed by the independent consultant.³⁹⁵

175. Lastly, City of NY and Multiple Intervenors and the State Entities argue that NYISO's justification for the proposed debt-to-equity ratio is inadequate and that, instead, NYISO should increase the debt-to-equity ratio (i.e., debt increased relative to equity) to reflect current market conditions and recent data relative to independent power producing companies' capital structure.³⁹⁶ They note that the independent power producing companies in the independent consultant's proxy group had much higher debt shares that ranged from 68.8-75.6 percent, a higher leverage than in previous years. They posit that the data identifies a trend of much higher independent power producing companies' debt-to-equity ratios that started approximately one year ago and appear to be continuing. According to City of NY and Multiple Intervenors and the State Entities, the independent consultant does not claim that the trend is likely to moderate or reverse course. Moreover, they assert that the studies to which the independent consultant cited in support of a lower debt-to-equity ratio are outdated and reflect circumstances that likely have changed since their publication.³⁹⁷

b. Answers

176. With regard to the proposed ROE, NYISO contends that the independent consultant clearly explained to stakeholders that it did not intend to use the same exact methodology used in prior ICAP Demand Curve resets, but rather thought that the ROE should reflect the risks attendant to merchant investment in a peaking plant in New York. To that end, NYISO states that the independent consultant used the results of the capital asset pricing model for certain publicly traded independent power producing companies as one relevant data point, but also reviewed relevant data and information pertaining to the required ROE for a stand-alone project finance approach. NYISO argues that the

³⁹⁵ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 48 (citing Independent Consultant Final Report at 58); State Entities December 9, 2016 Protest at 53.

³⁹⁶ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 47-48; State Entities December 9, 2016 Protest at 52.

³⁹⁷ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 47-38; State Entities December 9, 2016 Protest at 52.

proposed ROE provides an appropriate reflection of the likely project-level ROE required to support the merchant development of a new peaking plant in New York.³⁹⁸

177. As for cost of debt, NYISO reiterates the process the independent consultant undertook to select 7.75 percent (reviewing recent data regarding debt costs for independent power producing companies and data of generic debt costs incurred in more recent months by entities with similar credit ratings to independent power producing companies). NYISO adds that the median cost of debt for entities with similar credit ratings to independent power producing companies over the 12 months from May 2015-May 2016 was 7.75 percent.³⁹⁹

178. NYISO also counters arguments about its proposed debt-to-equity ratio. Specifically, NYISO contends that the independent consultant assessed independent power producing companies' capital structures and noted publicly available information indicating that historic trends in corporate-wide capital structures are unlikely to persist. NYISO states that the debt-to-equity ratio also reflects differences between project-level and corporate-level capital structures. NYISO notes that use of a more leveraged debt-to-equity ratio, as protesters recommend, would place upward pressure on the resulting weighted average cost of capital values.⁴⁰⁰

c. Commission Determination

179. We find that NYISO's proposed levelized fixed charge and financial parameters are just and reasonable. With regard to NYISO's proposed 13.4 percent ROE, we find that NYISO adequately supports its proposal with substantial evidence. NYISO's proposal is based on ROEs for publicly traded independent power producing companies, independent estimates of ROEs as an element of the cost of new plant generation, and estimates of ROEs for stand-alone project finance approaches.⁴⁰¹ As the Commission stated in the last ICAP Demand Curve reset, "[i]t is the Commission's responsibility to determine whether these judgments and the resultant outcomes fall within a zone of reasonableness."⁴⁰² While NYISO's proposed ROE exceeds the calculated average ROE

³⁹⁸ NYISO December 22, 2016 Answer at 33-34 (citing Supp. Analysis Group Aff. ¶¶ 22-25).

³⁹⁹ *Id.* at 35 (citing Supp. Analysis Group Aff. ¶ 21).

⁴⁰⁰ *Id.* at 35-36 (citing Supp. Analysis Group Aff. ¶¶ 26-28).

⁴⁰¹ NYISO Transmittal Letter at 37; Independent Consultant Final Report at 59-60.

⁴⁰² 2013 ICAP Demand Curve Reset Order, 146 FERC ¶ 61,043 at P 118.

for the sampled independent power producing companies, we find that it falls within a zone of reasonableness because it appropriately accounts for investor risks in the New York market by considering the higher ROEs for stand-alone project finance approaches to generation development found to be in the range of 15-20 percent.⁴⁰³

180. With regard to NYISO's proposed cost of debt, we find that NYISO has appropriately balanced available data from past years, which indicate historically low debt costs for independent power producing companies, with evidence from recent months showing generic debt costs closer to eight percent for firms with similar ratings to the independent power producing companies that the independent consultant evaluated.⁴⁰⁴ Further, we agree that selection of a cost of debt on the high end of the observed values is consistent with the greater risk posed by a single peaking plant, in comparison to an independent power producing company, as noted by the independent consultant.⁴⁰⁵ With regard to City of NY and Multiple Intervenors and the State Entities' assertion that NYISO should adjust the cost of debt to account for the likelihood that a project would be more likely to utilize secured debt than unsecured debt,⁴⁰⁶ they do not support this request nor demonstrate that NYISO's proposed cost of debt is unjust and unreasonable. We therefore decline to require NYISO to revise its proposed cost of debt as they request.

181. Likewise, we are not swayed by protesters' arguments that NYISO's proposed debt-to-equity ratio is unjust and unreasonable. Rather, we find that NYISO appropriately considered that the choice of capital structure varies depending on many factors, including the nature of revenue streams, structure of a project's management, and the nature of capital supporting an investment.⁴⁰⁷ Moreover, NYISO explains that the

⁴⁰³ Independent Consultant Final Report at 60; *see also* IPPNY December 9, 2016 Limited Protest and Comments at 30 (describing increased investor risks in New York as including uncertainty over the exit of nuclear plants, new capacity entering the market in support of state clean energy goals, lack of long-term contracts, uncertainty over changes in regional markets and energy policies, and siting and development concerns).

⁴⁰⁴ Independent Consultant Final Report at 57-58, 148-49; NYISO Transmittal Letter at 37.

⁴⁰⁵ Independent Consultant Final Report at 58.

⁴⁰⁶ City of NY and Multiple Intervenors December 9, 2016 Comments and Protest at 48 (citing Independent Consultant Final Report at 58); State Entities December 9, 2016 Protest at 53.

⁴⁰⁷ Independent Consultant Final Report at 60.

debt-to-equity ratio reflects differences between project-level and corporate-level capital structures.⁴⁰⁸ NYISO also cites announcements by several independent power producing companies that they will seek to deleverage their current capital structures and information indicating a likely lower debt level for merchant projects similar to the peaking plant than is currently evidenced by the portfolio-wide capital structures.⁴⁰⁹ We therefore find that NYISO's proposal sufficiently balances current trends towards higher leverage with these mitigating factors, producing a just and reasonable debt-to-equity ratio.

VI. Miscellaneous

182. NYISO proposes to continue to use load zone F as the location for determining the parameters of the NYCA ICAP Demand Curve, consistent with prior ICAP Demand Curve resets.⁴¹⁰ NYISO states that, although the calculated reference point values for each location considered for the NYCA ICAP Demand Curve are the same, load zone F results in the lowest annual net CONE value for the NYCA ICAP Demand Curve.⁴¹¹

183. MMU argues that neither load zone C nor load zone F are ideal for determining the parameters for the NYCA ICAP Demand Curve because persistent transmission constraints and natural gas price differences between regions will lead to long-term differences in the value of new investments between the two areas. Specifically, MMU contends that the net CONE in load zone C is likely to differ from the net CONE in load zone F over the long term, owing to transmission constraints between load zones A-E and load zone F and natural gas pipeline constraints from western New York to eastern New York. MMU asserts that these conditions are likely to yield inefficient investment signals, and that the only way to address this problem efficiently is to create a zonal boundary between load zone A-E and load zone F. MMU acknowledges that this would require the designation of a new capacity zone under the Services Tariff and that the recently conducted deliverability test found no need for a new capacity zone. However, MMU claims that this deliverability test does not consider many other relevant factors

⁴⁰⁸ NYISO December 22, 2016 Answer at 35-36 (citing Supp. Analysis Group Aff. ¶¶ 26-28).

⁴⁰⁹ NYISO Transmittal Letter at 37 (citing Independent Consultant Final Report at 60-61; Analysis Group Aff. ¶ 66).

⁴¹⁰ NYISO Transmittal Letter at 39 (citing NYISO Staff Final Recommendations at 40-41).

⁴¹¹ *Id.* (citing NYISO Staff Final Recommendations at 40-41).

and only occurs every four years. MMU therefore requests that the Commission order NYISO to define capacity zones consistent with the interfaces it already uses in its planning models so that the capacity markets will provide signals that are consistent with NYISO's planning reliability needs.⁴¹²

184. NYISO responds that MMU's request is beyond the scope of this proceeding. NYISO explains that, in accordance with the terms of the Services Tariff, it conducted the required new capacity zone study and determined no need to create a new capacity zone at this time. Further, NYISO states that it conducted a deliverability assessment for each of the peaking plants assessed as part of this ICAP Demand Curve reset, as required by Commission precedent, and determined that the peaking plants for load zones C and F are fully deliverable.⁴¹³

185. The State Entities, IPPNY, and City of NY and Multiple Intervenors similarly respond that MMU's request is outside the scope of this proceeding.⁴¹⁴ The State Entities and IPPNY emphasize that NYISO recently studied the issue and concluded that there is no need for a new capacity zone.⁴¹⁵ The State Entities and City of NY and Multiple Intervenors also assert that the ICAP Demand Curve reset process is not a long-term planning activity, nor should it theorize potential long-term market outcomes or devise solutions to them.⁴¹⁶ The State Entities further argue that MMU's concerns arise from congestion on the natural gas and electric transmission systems, but that, since congestion will be reflected primarily in energy market prices, it is not the capacity market that should be changed. Rather, the State Entities contend that congestion between load zones C and F will encourage efficient investment in natural gas pipelines and electric transmission lines, and, therefore, that this natural market dynamic should be expected to

⁴¹² MMU December 9, 2016 Comments at 5-7.

⁴¹³ NYISO December 22, 2016 Answer at 24-25 n.93.

⁴¹⁴ State Entities December 23, 2016 Answer at 14; IPPNY December 23, 2016 Answer at 13; City of NY and Multiple Intervenors December 23, 2016 Answer at 10-11.

⁴¹⁵ State Entities December 23, 2016 Answer at 14; IPPNY December 23, 2016 Answer at 13.

⁴¹⁶ State Entities December 23, 2016 Answer at 14-15; City of NY and Multiple Intervenors December 23, 2016 Answer at 10.

resolve the conditions that MMU instead proposes to address by creating a new capacity zone.⁴¹⁷

186. We find MMU's argument that NYISO re-define its capacity zones consistent with the interfaces it already uses in its planning model to be outside the scope of this proceeding, which is limited to establishing the ICAP Demand Curves for the next four years based on the load zones as currently defined. We note that NYISO has a clearly defined process for designating new capacity zones.⁴¹⁸

The Commission orders:

(A) NYISO's proposed revisions to section 5.14.1.2 of the Services Tariff are hereby accepted, effective January 17, 2017, subject to condition, as discussed in the body of this order.

(B) NYISO is hereby directed to submit a compliance filing within 30 days of the date of this order, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

⁴¹⁷ State Entities December 23, 2016 Answer at 15-16.

⁴¹⁸ NYISO, Services Tariff, § 5.16 (2.0.0).