146 FERC ¶ 61,043
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Acting Chairman;
Philip D. Moeller, John R. Norris,
and Tony Clark.

New York Independent System Operator, Inc. Docket No. ER14-500-000

ORDER ACCEPTING TARIFF FILING SUBJECT TO CONDITION AND DENYING WAIVER

(Issued January 28, 2014)

1. On November 29, 2013, 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) pursuant to section 205 of the Federal Power Act (FPA).[1] The proposed tariff revisions define the demand curves for the Installed Capacity (ICAP) market for the 2014/2015, 2015/2016, and 2016/2017 Capability Years.[2] The filing also proposes to establish the first ICAP demand curve for the new Locality encompassing Load Zones G, H, I and J (G-J Locality), and it proposes a phase-in of the new demand curve parameters for the G-J Locality. The filing includes the results of the periodic review of the ICAP demand curves.

2. In this Order, the Commission accepts NYISO's proposed tariff revisions, subject to NYISO refiling to reflect the Demand Curve parameters without any phase-in adjustment. The Commission rejects NYISO's proposed phase-in of the new demand curve parameters for the G-J Locality and NYISO's associated request for waivers. The following discussion addresses only protested issues, as all other non-protested factors are found to be supported, reasonable, and are accepted.

[1] 16 U.S.C. § 824d (2012).

[2] NYISO's capability year consists of the summer capability period and the winter capability period that runs from May 1 through October 31 and November 1 through April 30.

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 on a long-term basis taking into account reliability contingencies. The amount of ICAP, in megawatts, required to provide adequate resources to meet reliability contingencies for the New York Control Area (NYCA) includes the Installed Reserve Margin (IRM), which is currently 18 percent. The ICAP obligations for LSEs and the spot market auction prices for the associated monthly ICAP requirement are determined using separately established downward-sloping ICAP demand curves. NYISO determines the locational ICAP requirement for NYCA. There are currently separate location-specific ICAP requirements for LSEs in New York City (NYC) and Long Island (LI), which reflect the existence of transmission constraints in those areas. In this filing NYISO proposes an additional locational ICAP requirement for the new capacity zone, the G-J Locality.

4. Section 5.14.1.2 of the Services Tariff requires NYISO to perform a triennial review to determine whether the parameters for the ICAP demand curves should be adjusted. Specifically, section 5.14.1.2 of the Services Tariff requires that the periodic review assess:

> (i) the current localized levelized embedded cost of a peaking plant in each NYCA Locality, the Rest of State, and any New Capacity Zone, to meet minimum capacity requirements, and (ii) the likely projected annual Energy and Ancillary Services revenues of the peaking plant over the period covered by the adjusted ICAP Demand Curves, net of the costs of producing such Energy and Ancillary Services. . . . The periodic review shall also assess (i) 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; (ii) the appropriate translation of the annual net revenue requirement of the peaking plant determined from the factors specified above, into monthly values that take into account seasonal differences in the amount of capacity available in the ICAP Spot Market Auctions; and (iii) the escalation factor and inflation component of the escalation factor applied to the ICAP Demand Curves. For purposes of this periodic review, a peaking unit is defined 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, and a peaking plant is

> defined as the number of units (whether one or more) that constitute the scale identified in the periodic review.[3]

The remaining provisions of section 5.14.1.2 provide the process by which the above review takes place, and they provide that the demand curves as approved by the ISO Board of Directors incorporating the results of the periodic review, shall be filed with the Commission.

5. The demand curve values ICAP on the y-axis in $/kW-month and ICAP quantity on the x-axis expressed as percentage of the Minimum Installed Capacity Requirement for NYCA, NYC, LI, or G-J Locality, as applicable. The maximum value for each ICAP demand curve is 1.5 times the net cost of new entry (Net CONE) or the estimated localized levelized cost per kW-month to develop a new peaking unit with energy and ancillary services revenues subtracted in each locality or in the rest of state, as applicable. The intersection of 100 percent of the ICAP requirement and an adjusted Net CONE determines the ICAP reference point. Two defined points, the ICAP reference point and the zero crossing point (set at 112 percent for NYCA, 115 percent for G-J, and 118 percent for NYC and LI), articulate a line segment with a negative slope that will result in higher values for capacity as available capacity declines.

II. Summary of the November 27, 2013 Filing

6. On November 27, 2013, NYISO filed revisions to the Services Tariff that implement revised ICAP demand curves for Capability Years 2014/2015, 2015/2016, and 2016/2017. NYISO states that the filing presents the results of the periodic review of the ICAP demand curves specified in section 5.14.1.2.11.[4] In addition to updating the existing curves for NYC, LI, and the NYCA, NYISO states that this filing also proposed to establish the first ICAP demand curve for the new locality encompassing Load Zones G, H, I, and J (the "G-J Locality"). NYISO is also proposing a "phase-in" of the new

[3] Services Tariff § 5.14.1.2.

[4] NYISO states that prior to the present ICAP demand curve review, NYISO retained FTI Consulting to perform a comprehensive review of the New York capacity markets. FTI Consulting's report[4] contained three recommendations that NYISO states had a bearing on the development of the NYISO staff report (NYISO Staff Report). NYISO states that those recommendations related to: (i) the use of a combined cycle combustion turbine facility instead of a simple cycle combustion turbine to establish the cost of new entry (CONE); (ii) the feasibility of using a demand response resource to establish those CONE values; and (iii) the use of an incremental reliability value approach as the basis for setting zero crossing points.

demand curve parameters for the G-J Locality that NYISO believes will ameliorate the potential short-term consumer impacts that result from creating the new locality.

7. NYISO states that in accordance with the Services Tariff provisions, in the third quarter of 2012, it solicited proposals from qualified consultants to identify appropriate methodologies and to develop the ICAP demand curve parameters for the three Capability Years beginning May 2014. NYISO adds that it retained the team of National Economic Research Associates, Inc. (NERA), with Sargent and Lundy (S&L) as NERA's subcontractor (collectively identified as NERA/S&L). NYISO explains that NERA/S&L began their analysis in November 2012 and participated in twelve ICAP Working Group meetings between December 2012 and August 2013, during which stakeholders provided feedback on NERA/S&L's assumptions, methodologies, analysis, estimates, and preliminary results. On August 2, 2013, according to NYISO, NERA/S&L released the final version of their report.[5]

8. NYISO states that on September 6, 2013, as amended on September 12, NYISO staff submitted the NYISO Staff Report to the Board, which evaluated the NERA/S&L Report, addressed oral and written comments received through the stakeholder process and from the NYISO Market Monitoring Unit (MMU), and set forth NYISO staff's recommendation of demand curve parameters.[6] NYISO states that the NYISO Staff Report accepted all but two of NERA/S&L's conclusions. Specifically, contrary to the NERA/S&L conclusions, the NYISO staff recommended: (i) no changes to the existing zero crossing points used for NYC, LI, and NYCA; and (ii) a change in temperature and relative humidity assumptions in some locations in determining net ICAP revenues.

9. NYISO states that on October 2, 2013, stakeholders provided written comments to the NYISO Board of Directors (Board) on the final NERA/S&L Report and the NYISO Staff Report and made oral arguments to the Board on October 14, 2013. The Board then determined that stakeholders had made a strong case that further review was warranted concerning the selection of the proxy peaking unit (proxy unit) for NYC, LI, and the G-J Locality and it explained to stakeholders that it was seeking additional information on the topic and would share the results of the review during the first week of November 2013 and provide additional opportunities for stakeholder input.

10. NYISO retained the Brattle Group (Brattle) with Licata Energy & Environmental Consulting (Licata) to conduct further analysis. NYISO states that after discussions with NERA/S&L, NYISO staff, and manufacturers and vendors of turbines and selective

[5] NYISO Filing Attachment III.

[6] NYISO Filing Attachment IV.

catalytic reduction emissions controls (SCR), Brattle and Licata produced the Brattle Report.[7] It concluded that the Siemens SGT6-5000F(5) class frame simple-cycle combustion turbine (F class frame) with SCR should be the proxy unit for NYC, LI, and the G-J Locality. NYISO made this report available to stakeholders on November 1 and invited written stakeholder comments, which were submitted by November 8. On November 7, NYISO posted responses to sixteen written questions that IPPNY had submitted on November 5. NYISO states that, after considering all of the information available, the Board approved the Brattle Report's conclusion regarding proxy unit selection and approved all of the other recommendations in the NYISO Staff Report. The Board then directed NYISO to file proposed ICAP demand curves based on those determinations.

11. Section 5.14.1.2 of the Services Tariff specifies that the ICAP demand curve update shall be based upon and consider the following: (a) the current localized levelized embedded cost of a peaking plant in each NYCA Locality, the Rest of State, and any New Capacity Zone, to meet minimum capacity requirements; (b) the likely projected annual Energy and Ancillary Services revenues of the peaking plant over the period covered by the adjusted ICAP demand curves, net of the costs of producing such Energy and Ancillary Services, under conditions in which the available capacity would equal the minimum Installed Capacity requirement plus the capacity of the peaking plant; (c) 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; and (d) the appropriate translation of the annual net revenue requirement of the peaking plant determined from the factors specified above, into monthly values that take into account seasonal differences in the amount of capacity available in the ICAP Spot Market Auctions.

III. Notice, Interventions, and Protests

12. Notice of NYISO's November 29, 2013 filing was published in the *Federal Register*, 78 Fed. Reg. 76,829 (2013), with interventions, and comments due on or before December 20, 2013. Motions to intervene were filed by; East Coast Power, LLC; Exelon Corporation; PSEG Energy Resources & Trade LLC and PSEG Power New York LLC; NRG Companies; Calpine Corporation; Dynegy Marketing and Trade, LLC; Brookfield Energy Marketing LP; Empire Generating Co., LLC; Invenergy LLC; New Athens Generating Company, LLC; Astoria Generating Company, L.P.; Pace Energy & Climate

[7] Independent Evaluation of SCR Systems for Frame-Type Combustion Turbines, Report for ICAP Demand Curve Reset, The Brattle Group (November 1, 2013) ("The Brattle Report").

Center and Natural Resources Defense Council; Environmental Advocates of New York; and CPV Valley, LLC.

13. Independent Power Producers of New York, Inc. (IPPNY); Electric Power Supply Association (EPSA); TC Ravenswood, LLC (Ravenswood); Multiple Intervenors[8] and the City of New York (collectively, Multiple Intervenors); The New York Supplier and Environmental Advocate Group[9] (NY-SEA Group); Astoria Generating Company, L.P. and the NRG Companies (jointly, Indicated Suppliers); and Entergy Nuclear Power Marketing, LLC (Entergy) filed motions to intervene and protests. The New York Transmission Owners[10] (NYTOs) filed a motion to intervene and comments.

14. The New York State Public Service Commission (NYPSC) filed a notice of intervention and comments.

15. On January 6, 2014, Multiple Intervenors and Entergy filed answers.

16. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2013), the notice of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

17. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2013) prohibits an answer to a protest or to an answer unless otherwise

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[8] Multiple Intervenors states that it is an unincorporated association of approximately 55 large industrial, commercial and institutional energy consumers with manufacturing and other facilities located throughout New York State. In this proceeding we use the term "Multiple Intervenors" to include the City of New York in addition to these facilities.

[9] The NY-SEA Group is comprised of Dynegy Marketing and Trade LLC; Empire Generating Co., LLC; Exelon Corp.; Invenergy LLC; The PSEG Companies; Brookfield Energy Marketing, LP; New Athens Generating Company, LLC; Environmental Advocates of New York; Natural Resources Defense Council; the Pace Energy & Climate Center; and LockPort Energy Associates, L.P. Each member of the NY-SEA Group has separately intervened in this proceeding.

[10] For purposes of this intervention, the New York Transmission Owners consists of Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Long Island Power Authority, New York Power Authority, New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation.

ordered by the decisional authority. We will accept the answers filed in this proceeding because they have provided information that assisted us in our decision-making process.

IV. Discussion

A. Choice of Proxy Unit

18. NYISO states that the Services Tariff requires that the demand curve reset review "shall assess… the current localized levelized embedded cost of a peaking unit in each NYCA Locality and the Rest of State" to meet minimum capacity requirements.[11] NYISO adds that for purposes of updating the ICAP demand curves, "a peaking unit is defined 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."[12] NYISO states that, according to Commission precedent, the facilities must be able to be "practically constructed" and "economically viable," as well as "able to comply with all applicable environmental limitations and utilize commercially available, proven technology."[13]

19. With respect to the use of dispersed generating resources or demand side resources as the peaking technology, NYISO states that, it discussed this possibility with stakeholders in the 2010 demand curve reset and committed to considering the use of demand response as the peaking unit in the current reset cycle. NYISO states that the FTI Report recognized that demand response is an important participant in capacity markets but explained that neither the cost nor the offer price of demand response was an appropriate measure of the long-run cost of capacity. The NYISO Staff Report agreed with the FTI Report that demand response technology should not be considered as a potential peaking unit in this reset and the Board endorsed that recommendation.

1. The Selection Process

a. Comments and Protests

20. EPSA, Entergy, IPPNY, Indicated Suppliers, and Ravenswood object to the process by which the NYISO Board came to the conclusion to use the F class frame unit

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[11] Services Tariff § 5.14.1.2.

[12] *Id.*

[13] *New York Independent System Operator, Inc.*, 134 FERC ¶ 61,058, at 37 (2011) (2011 Demand Curve Order).

with SCR as the proxy unit technology for NYC, LI, and the G-J Locality. The parties argue that the retention of Brattle, a second consultant so late in the process, violated the spirit of the procedural requirements of NYISO's Services Tariff. They claim that because Brattle was solicited at the final stage of the stakeholder process and without the use of a stakeholder-reviewed request for proposals, the two-weeks analysis period and the one week given for stakeholder review and input were too short for meaningful review in violation of the Services Tariff requirement that NYISO provide stakeholders with the opportunity to review and comment on the consultant's data, assumptions, and conclusions. Indicated Suppliers argue that given the importance of the ICAP demand curves, the Services Tariff and ICAP Manual provide for a lengthy process that is intended to allow the proposed ICAP demand curves to be thoroughly reviewed and vetted by stakeholders. Further, according to Indicated Suppliers, the process by which NYISO retained Brattle and Licata has been shrouded in secrecy. While the Services Tariff requires NYISO to develop "with stakeholder review and comment" a request for proposals for a consultant "to provide independent consulting services to determine recommended values for the factors specified above, and appropriate methodologies for such determination,"[14] according to Indicated Suppliers, NYISO has not disclosed the terms on which Brattle and Licata were retained.

21. Entergy contends that, in arriving at the conclusion that the F class frame unit with SCR is a proven technology, the Brattle Group utilized broad assumptions and sources that have not been included in this proceeding.[15] IPPNY asserts that the request for proposal to choose the consultant was designed to ensure that only qualified consulting firms without any conflicts of interest could bid. However, according to IPPNY, Brattle is not truly unbiased in that Brattle could not find contrary to its recommendation of the F class frame to PJM two years earlier without damaging its reputation. IPPNY adds that Brattle's advice was rejected at the time by NYISO as lacking in rigor.

22. On the other hand, Multiple Intervenors, NYTOs, and NYPSC argue that the process of choosing the proxy unit technology was consistent with NYISO's Services Tariff. Multiple Intervenors argue that parties have been on notice of the potential use of a frame unit with SCR technology since early May 2013, when the issue was first raised. In fact, Multiple Intervenors assert that stakeholders specifically requested that NYISO staff and consultants develop cost estimates with respect to the frame unit with SCR for consideration of all parties and, ultimately, the NYISO Board. They argue further that

[14] Indicated Suppliers December 20, 2013 Protest (quoting Services Tariff § 5.14.1.2.1).

[15] Entergy December 20, 2013 Protest at 34.

NYISO informed all parties that those cost estimates would be included in NYISO staff's draft recommendations.

23. Multiple Intervenors argue that the actions taken by the Board are well within their authority pursuant to section 5.14.1.2.9 of the Services Tariff, which provides that the Board has the authority to review and adjust the ICAP demand curves recommended by NYISO staff. Moreover, they argue, section 5.14.1.2.11 of the Services Tariff establishes that the ICAP demand curves filed for Commission approval be those demand curves approved by the NYISO Board. Multiple Intervenors argue that the Board ensured the procedural rights of all parties by establishing the additional process not required by the Services Tariff and that the Commission has previously held that such procedural safeguards are just and reasonable and would not result in overturning a decision by the NYISO Board to review and consider supplemental information during the latter stages of the ICAP demand curve Reset process.[16]

b. Answers

24. NYTOs argue in their answer that the Board had a sufficient record and was fully authorized under the Services Tariff to approve the F class frame unit with SCR as the proxy unit for NYC, LI, and the G-J Locality without further due diligence, based on the stakeholder comments received in early October and the entire record before it. With the additional analysis by Brattle, stakeholders were given additional time to address an issue that had been pending for months. Multiple Intervenors also argue that the process undertaken by NYISO was open, fully transparent, consistent with the requirements of the NYISO Services Tariff, and ensured the due process rights of all interested parties.

25. With respect to claims that NYISO lacked tariff authority to select the F class frame with SCR or to retain Brattle/Licata, NYISO asserts that while section 5.14.1.2 of the Services Tariff establishes an extensive, and collaborative stakeholder process for the selection of independent consultants to develop recommended ICAP demand curve parameters, the NYISO Board is responsible for deciding what is to be proposed to the Commission. NYISO states that protestors' reading cannot be squared with: (1) the fact that section 5.14.1.2.9 of the Services Tariff empowers the Board to "review and adjust" consultant and staff recommendations after hearing stakeholder arguments; (2) section 5.14.1.2.11's unambiguous statement that NYISO will file demand curves "as approved by the ISO Board of Directors"; and (3) various other provisions in the tariffs, NYISO's

[16] *New York Indep. Sys. Operator, Inc.*, 122 FERC ¶ 61,064, at P 24 (2008) (2008 Demand Curve Order).

organic agreements, and Commission precedent that make independent Boards ultimately responsible for decision making in ISOs/RTOs.[17]

26. NYISO also responds that the Board already had a sufficient basis to exercise its authority to select the F class frame with SCR before it retained Brattle/Licata in that certain stakeholders had made a strong case for its adoption, the Commission had authorized PJM to use a similar technology for a similar purpose, and certain units in California (Marsh Landing units) had been in commercial operation for nearly six months, with all available information indicating that they were satisfying all applicable permit requirements. NYISO adds that, given both the commercial operation of the four Marsh Landing units under California's stringent emissions requirements and the significant fixed cost savings associated with the F class frame with SCR, the Board did not believe it could reasonably ignore these considerations. NYISO adds that it would be without reason or merit to interpret the Services Tariff to deprive the Board of its ability to conduct additional due diligence.

27. NYISO asserts that the Board went above and beyond the tariff's requirements by providing the greatest practicable transparency and opportunity for stakeholder input on the report produced by Brattle/Licata. Further, NYISO states that because Brattle/Licata was not retained for the purpose specified in section 5.14.1.2.1 of the Services Tariff, its selection was not subject to the request for proposal requirements.

28. NYISO also responds that allegations of bias in favor the F Class Frame with SCR technology are unsupported and irresponsible. NYISO states that it is a not-for-profit, impartial, and independent entity and Brattle/Licata personnel testify to the fact that they were directed to provide an independent review of a single issue, and to base their judgment on the ascertainable facts. NYISO's filing includes supplemental affidavits from Mr. Chupka and from Mr. Licata that state that further review and additional discussions with SCR manufacturers have reinforced and confirmed their initial judgment regarding the viability of the F class frame with SCR technology.[18]

[17] NYISO cites to the 2008 Demand Curve Order where the Commission accepted modifications to NERA recommendations. 2008 Demand Curve Order, 122 FERC ¶ 61,064 at PP26, 31, 60-61.

[18] NYISO January 9, 2014 Answer, Supplemental Licata Aff. ¶¶ 36-39 and Supplemental Chupka Aff. ¶ 5.

c. Commission Determination

29. Several protestors object to the process by which NYISO chose to use the F class frame unit with SCR as the proxy unit technology for NYC, LI, and the G-J Locality. While we agree with the protestors that NYISO's change to the unit it selected could have been done in a timelier manner, we find that NYISO did not violate its Services Tariff. We agree that the process by which NYISO develops the demand curves is designed to allow for meaningful stakeholder review and input. The Board ordered NYISO to conduct further due diligence in response to stakeholder input. This action allowed the Board and stakeholders to review all of the most up-to-date information possible and gather more stakeholder input to this information before the Board made its final decision. The Services Tariff gives the Board clear authority to accept or reject any of the recommendations in the NYISO Staff Report based on the information available to them at the conclusion of stakeholder arguments.[19] In this instance, the Board gave stakeholders an additional opportunity to provide input before acting on the choice of a proxy unit. Therefore, we find that the Board acted within its authority to conduct additional due diligence regarding the viability of the F class frame unit with SCR and their authority to reject a recommendation contained in the NYISO Staff Report. Furthermore, we note that stakeholders have the opportunity to pursue their positions in the instant proceeding and indeed have done so. We therefore conclude that stakeholders' procedural rights have not been violated. While we conclude that NYISO did not violate the Services Tariff or the procedural rights of stakeholders, we suggest that in the future NYISO perform this process with more transparency in order to avoid any appearance of impropriety and allow adequate time throughout the entire process for stakeholders to voice their opinions and concerns.

2. Selection of the F Class Frame Unit with SCR for Long Island, NYC, and G-J Localities

a. NYISO's Proposal

30. NYISO states that after reviewing the Brattle Report and the stakeholder response, NYISO staff concluded that an F class frame with SCR was a technically and economically viable proxy unit technology for the following reasons: (1) the Brattle Report distinguished the failed F class frame with SCR installations from today's technology,[20] which is more advanced; (2) the Brattle Report provided additional

[19] Services Tariff Section 5.14.1.2.11.

[20] NYISO states that the Brattle Report determined that the prior failures were due to poor engineering design specifications, inappropriate construction, and the use of a catalyst that is now off the market.

information regarding the continued successful operation and compliance with applicable environmental requirements by an existing F class frame unit with SCR, the Marsh Landing Station in California; and (3) Marsh Landing now has three additional months of operating data and this nearly equals the data that existed on the LMS100 at the time that the Board concluded that the LMS100 was viable in the 2007 demand curve reset,[21] thus, according to NYISO, the reasons the Commission relied upon then, i.e., that it was a combination of mature and proven technologies, support finding that the F class frame with SCR is viable today; (4) the Brattle Report detailed other examples of hot temperature SCR applications functioning well in the electric generating sector; (5) NYISO's reliance on data from Marsh Landing is consistent with Commission precedent;[22] (6) NYISO has more reason to believe that there is significant commercial interest in developing F class frames with SCRs than was the case at the time that the NERA/S&L Report was completed; and (7) the NERA/S&L Report, the Brattle Report, Meehan Affidavit, and Chupka Affidavit all affirm that there is no question that the F class frame with SCR units are the lowest fixed cost and highest variable costs option and are thus "economically viable" in NYC, LI, and the G-J Locality.

31. NYISO states that given its agreement with Brattle/Licata that the F class frame with SCR is technically and economically viable, it should be the peaking unit for NYC, LI, and the G-J Locality. NYISO adds that the total capital cost of the LMS100 proxy plant is approximately $100 million more than the F class frame with SCR in all zones. NYISO asserts that Brattle's conclusion that SCR and F class frame units are two mature, proven technologies that can readily be integrated with proper engineering and design is reasonable and well-supported. NYISO states that the F class frame with SCR satisfies the Services Tariff requirement "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," and the Board accepted NYISO's recommendation.

b. Comments and Protests

32. EPSA, Entergy, NY-SEA, Ravenswood, IPPNY, and Indicated Suppliers protest NYISO's proposal to select a proxy unit that utilizes the F class frame unit with SCR technology for the Long Island, NYC, and G-J Localities. Protestors state that the

[21] NYISO states that in the 2007 ICAP Demand Curve reset NYISO proposed and the Commission ultimately accepted the LMS100 as a proxy unit, even though certain stakeholders protested to the Commission that the viability of the LMS100 had not yet been demonstrated.

[22] NYISO Filing at 15 (citing *New York Indep. Sys. Operator, Inc.*, 125 FERC ¶ 61,299, at P 22 (2008)).

Services Tariff requires utilization of an economically viable technology and a proven technology[23] and they argue that NYISO has failed to show that the F class frame unit meets these requirements.

33. Protestors disagree with NYISO's reliance on the Marsh Landing Station as evidence of viability. First, IPPNY and Indicated Suppliers argue that the Brattle Report failed to provide critical operating data related to Marsh Landing, such as "ammonia slip" data, which is a necessary prerequisite for a finding that the F class frame with SCR is economically viable. IPPNY states that while Marsh Landing operated 82 hours during the peak operating season in the third quarter of 2013, peaking plants in New York are expected to operate more than 1500 hours during the peak season. Second, IPPNY argues, the Marsh Landing operating data is not probative because that data is not representative of the hours that a peaking plant in New York is expected to operate. Third, IPPNY contends that the NOx emissions data from Marsh Landing suggest that the SCR systems are already struggling to perform based on the fact that their nitrogen oxide or NOx emissions are close to or above the permit limit about half of the time. Fourth, IPPNY argues that the Brattle Report fails to provide any data regarding the amount of excess ammonia that exits the stack at Marsh Landing, which IPPNY explains, is a key indicator of SCR performance.

34. Indicated Suppliers assert that consistent with the NERA Report and the NYISO Staff Report, an F class frame with SCR does not, at this time, meet the Services Tariff requirements for a proxy unit. Indicated Suppliers state that the conclusions in these reports reflect concerns regarding the feasibility of operating an SCR with high exhaust temperatures, the short track record of Marsh Landing, and the prior failures of F class frames with SCR in Kentucky and Puerto Rico.

35. Indicated Suppliers argue that in the second demand curve reset order,[24] the Commission approved the LMS100, which while not yet widely adopted, had sold eleven units and had five units in the NYISO interconnection queue. By contrast, Indicated Suppliers argue, NYISO has not provided any evidence that there have been any purchases of additional F class frame units with SCR or that anyone is even taking initial steps to install such technology in southeastern New York.

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[23] Entergy December 20, 2013 Protest at 32; IPPNY December 20, 2013 Protest at 2 (citing 2008 Demand Curve Order, 122 FERC ¶ 61,064, at P 23 (2008)); NY-SEA December 20, 2013 Protest at 7-8.

[24] *New York Indep. Sys. Operator, Inc.*, 122 FERC ¶ 61,064 (2008).

36. Indicated Suppliers also argue that there is no indication that NERA/S&L engaged in any analysis of whether an F class frame with SCR is capable of switching fuel within the prescribed 45-second timeframe. Indicated Suppliers point out that although the Licata affidavit states that he was able to verify the ability to switch fuels with the manufacturer, Siemens, there is no documentation to support the claim. Indicated Suppliers assert that NYISO has not been able to point to an F class frame, with or without SCR, in operation anywhere that has demonstrated the 45-second fuel switching capability, and as a result, suppliers argue, the Commission should find that NYISO has not adequately proven that the F class frame with SCR is a viable proxy unit for NYC and the G-J Locality.

37. Indicated Suppliers further argue that NYISO's cost calculations for an F class frame with SCR are unsupported and erroneous. First, Indicated Suppliers argue that even if an F class frame with SCR facility is feasible, it is difficult to verify the accuracy of the cost estimates. Also, Indicated Suppliers assert, certain aspects of the cost analysis could not be completed due to the lack of available data and the fact that NYISO staff was not recommending the F class frame with SCR as the proxy unit at the time of the initial report. Second, Indicated Suppliers argue, NYISO has provided no evidentiary support that the 2 percent adder represents the actual cost of the fuel switching capability.

38. Third, Indicated Suppliers argue that the weighted average cost of capital estimates prepared by NERA/S&L that were used in developing net CONE did not account for the risk premium that would be required if an F class frame unit with SCR were used. Indicated Suppliers cite reasons why a developer of an F class frame with SCR will face more risk than with an LMS100 or an F class frame without SCR. These risks include the uncertainty of the technical feasibility of this technology, increased risk of cost overruns related to NYISO estimates, the fact that the F class frame is less efficient and less flexible than the LMS100, and the additional risk from future capital cost reductions and maturation of the technology. Indicated Suppliers argue that while the Brattle Report concluded that S&L's cost estimates for the F class frame unit were acceptably accurate and conservatively high, Indicated Suppliers do not believe there was enough information for S&L or Brattle to make such a conclusion.

39. In addition, protestors reject the Brattle Report's reliance upon operating data from two other examples of hot temperature SCR applications, the McClellan power plant and the McClure power plant, both located in California. Indicated Suppliers and IPPNY argue that reliance on the McClellan and McClure power plants is misplaced because they are GE Frame turbines of a different class that are much smaller and have much lower exhaust temperatures than the F class frame unit. Also, IPPNY argues, the McClellan power plant only operates approximately 50 hours per year, which is not representative of the thousands of hours a year a peaking plant in New York is expected to operate.

40. Entergy and Indicated Suppliers argue that NYISO has failed to prove that the F class frame unit with SCR is a proven technology because evidence demonstrating successful operation of the F class frame technology on oil or gas is not available. Entergy notes that this finding was echoed in the analysis conducted by NERA/S&L along with NERA/S&L's recommendation that the LMS100 unit with SCR technology be used as the proxy unit for the three NYISO Localities.[25] Indicated Suppliers state that NYISO's November 29, 2013 filing does not identify a single facility, existing or planned, that combines an F class frame with SCR and the required dual fuel capability, much less with the additional capability required in New York. Indicated Suppliers also state that in NYC, in order to maintain reliability, Con Edison requires that fuel switching be automatically accomplished within just 45 seconds of experiencing low system gas pressure or loss of gas.[26] They question whether the F class frame with SCR is capable of switching fuel within the prescribed 45-second timeframe and assert that there is no documentation provided to support Licata's statement that it verified such a capability through conversations with the manufacturer. They argue that there is no indication that NERA/S&L engaged in any analysis of whether an F class frame with SCR is capable of switching fuel. Further, IPPNY states that the Brattle Report provides no evidence regarding whether an F class frame unit with SCR burning fuel oil can control NOx emissions to levels required under New York State law. The SCR system at Marsh Landing, IPPNY argues, is distinguishable because it burns natural gas only.

41. IPPNY also observes that the emissions limits in NYC, LI, and the G-J Locality are more stringent than the emissions limits applicable to all of the generating plants that were reviewed in the Brattle Report.

42. IPPNY argues that the fact that S&L confirms that the F class frame with SCR has a significant cost advantage yet there are no orders being placed for this type of unit, means that the market has rejected the F class frame with SCR because its fixed cost advantage is outweighed by its operational uncertainty. This is in stark contrast, IPPNY points out, to the position of the LMS100 in 2007, which had many units sold and in the queue.

43. On the other hand, Multiple Intervenors argue that the Commission should adopt NYISO's proposed proxy unit technology. For the G-J Locality, LI, and NYC demand curves, Multiple Intervenors argue that the F class frame unit merely represents the

[25] Entergy December 20, 2013 Protest at 33.

[26] Indicated Suppliers December 20, 2013 Protest at 26 (citing Consolidated Edison Co. of New York, Inc., EP-7100-10. Transmission Planning Criteria, § 1.13 (November 22, 2011)).

combination of two very mature and viable technologies. They argue that the Commission previously recognized the viability of the technology when it approved PJM's proposal to base its demand curves on the very same technology.[27] Multiple Intervenors assert that the NOx emissions limits that apply in California, where the Marsh Landing Station operates, are equivalent to the most restrictive limits that apply in New York (2.5 tons per year), and that the Marsh Landing Station has demonstrated its ability to maintain emissions within the applicable permit limitations.

44. Multiple Intervenors assert that the Commission has previously determined that an alternative technology with a limited historical track record may qualify as a proxy unit in New York in connection with the 2008-2011 demand curve reset process. In 2007, they argue, NYISO proposed the use of the LMS100 technology despite the fact that only a single LMS100 unit was in commercial operation in the U.S. They explain that when the Commission approved the use of the LMS100 unit during the previous reset process for 2008-2011, only a single such unit was in operation, and had only operated 587 hours, compared to the over 4000 hours of operational experience for the three frame units with SCR technology facilities. Multiple Intervenors contend that these figures demonstrate the viability of the frame unit with SCR technology and prove it should be used as the proxy unit for NYC and the G-J Locality.

45. Moreover, Multiple Intervenors argue that the Brattle Study distinguishes the prior examples of SCR deployments with frame units that were relied upon by NYISO consultants in recommending not using the technology for purposes of this ICAP demand curve reset process. Specifically, they explain, NYISO consultants noted the unsuccessful deployments of the technology at the Central Cambalache facility in Puerto Rico and the Riverside Generating Company facility in Kentucky. Multiple Intervenors state that that Brattle Report distinguishes those unit failures for several reasons. First, they explain, those projects were undertaken in the late 1990s and early 2000s and thus do not represent the technological advancements over the intervening years, which are reflected in newer installations like the Marsh Landing Station. Additionally, the Brattle Study found that those unsuccessful deployments were the result of improper design and/or use and therefore do not undermine the viability of the technology as a general matter.

46. Multiple Intervenors further argue that selection of the frame unit with SCR technology is also mandated by section 5.14.1.2 of the Services Tariff, which requires the peaking unit to be one with the lowest fixed costs and highest variable costs. They argue that this is because the fixed costs of the LMS100 are 70 percent higher than the fixed costs of the frame unit with SCR in the Lower Hudson Valley and more than 60 percent

[27] *PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331 (2006).

higher than a frame unit with SCR in New York City. They contend that continued reliance on LMS100 technology would result in artificially inflated ICAP demand curves for the G-J Locality and NYC and impair their ability to provide appropriate price signals regarding the need for, and value of, additional capacity within those regions.

47. Multiple Intervenors explain that the Marsh Landing Station was constructed as a result of California's statutorily mandated long-term resource planning requirements, which, although it is a very different resource planning paradigm than that of New York, it does not undermine the significance of the Marsh Landing Station in demonstrating the commercial viability of the frame unit with SCR technology. In response to the argument that the risk of the Marsh Landing Station is less than that of a unit in New York, Multiple Intervenors argue that the Marsh Landing Power Purchase Agreement has a term of only 10 years, compared to the expected operational life of a generation facility, which is likely 30 years or more, meaning the power purchase agreement offsets only a limited portion of the risk that would otherwise be borne by the generator, NRG, had the facility been constructed on purely a merchant basis. In conclusion, they assert that the competitive procurement process through which the Marsh Landing Station was selected further demonstrates its viability.

48. The NYPSC argues that the use of an F class frame unit with SCR technology is appropriate in light of strict environmental regulations in NYC and the G-J Locality. The NYPSC contends that it is viable technology because the two technologies have been successfully coupled to meet those strict standards, as demonstrated by the successful operation of the Marsh Landing Station in California. The NYPSC also asserts that there is precedent in selecting this technology as a proxy unit in PJM, citing to the fact that PJM bases its demand curves on this same technology.

c. Answers

49. NYTOs argue that it is legally insufficient for the protestors to assert that their preferred proxy unit is better or more appropriate than the one filed by NYISO. They assert that the NYISO proposal is clearly within the zone of reasonableness outcomes and the protestors have not met their burden to establish that the rates produced by NYISO's proxy units are unjust and unreasonable.

50. Multiple Intervenors argue that given its demonstrated technical viability, selection of the frame unit with SCR is mandated by section 5.14.1.2 of the NYISO Services Tariff. The fixed costs of the LMS100 are more than 70 percent higher than the fixed costs of the frame unit with SCR in the Lower Hudson Valley, and more than 60 percent higher than a frame unit with SCR located in New York City. They further argue that continued reliance on the LMS100 technology would result in artificially inflated ICAP demand curves for the G-J Locality and NYC capacity regions and significantly impair the ability of such ICAP demand curves to provide appropriate price signals regarding the need for, and the value of, additional capacity within such regions.

51. NYISO asserts that claims that Brattle/Licata did not have sufficient time to prepare a reliable analysis are inaccurate and misleading. NYISO adds that, in contrast to NERA/S&L, Brattle/Licata focused on a single issue and was able to build on the work of NERA/S&L. According to NYISO, Brattle/Licata approached the exhaust temperature issue as a primary question for their evaluation and also more closely investigated the causes of the failed SCR applications in Kentucky and Puerto Rico with an effort to determine if those failures were caused by inherent technical challenges for SCR presented by the F class frame turbines and how SCR and catalyst may have subsequently evolved to address these issues. NYISO asserts that the successful operation of the four Marsh Landing units is relevant in this proceeding and there is ample data showing that the units have been meeting their permit requirements going back to their initial startup.[28] NYISO states that Marsh Landing complied with permit conditions, with NOx emissions of 2 ppm demonstrated.[29] With respect to ammonia slip data,[30] NYISO states that the data provided shows ammonia slip values well below the 10 ppm levels specified in the Marsh Landing air permit.[31]

52. NYISO responds to protestors' assertion that the McClellan and McClure facilities are not valid references for the viability of the F class frame with SCR and that neither is an F class frame. NYISO asserts that both are clearly relevant to the engineering design issues of operating high temperature SCR applications, including those with dual fuel capability. Further, according to NYISO, Mr. Licata provides additional information showing that there are multiple SCRs on frame units in the United States and Japan that have operated for years above 900 degrees Fahrenheit.

53. Further, the Supplemental Licata affidavit describes the numerous design flaws and engineering failures that contributed to the problems at the Kentucky facility and why it is reasonable to conclude that the various errors would not be repeated today.

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[28] NYISO specifies that this includes EPA data from the commercial operation of the first unit in May 2013 through the end of September 2013 as well as compliance testing data going back to January 2013. NYISO adds that although the facility did not run frequently in the third quarter, there is nothing to suggest this is attributable to SCR performance but rather to a lack of demand for the units' output at the time.

[29] The Supplemental Licata Affidavit cites a report submitted to the California Air Pollution control Board's Bay Area Air Quality Management District on June 6, 2013 (Compliance Report).

[30] *See* IPPNY December 20, 2013 Protest at 16-17.

[31] Supplemental Licata Aff. ¶ 36

54. NYISO also argues that economic viability is not necessarily the same as widespread market acceptance but rather the term refers to technologies that can supply capacity and energy to the market and that while S&L believes that the F class frame should not be found to be viable until at least twelve months of operating data was available, the Services Tariff imposes no such requirement. NYISO states that other parties isolate individual factors that the Commission considered in its orders accepting the LMS100, but, according to NYISO, there is, at a minimum, as much reason to conclude that the F class frame with SCR is economically viable today as there was for the LMS100 in 2007-2008.[32] NYISO states that according to IPPNY consultant Mr. Younger, NYISO should err on the side of selecting a proxy unit that is known with certainty to be economically viable in order to avoid the alleged risks that the cost of market suppression and out-of-market subsidies will be borne by consumers. NYISO responds that the Services Tariff does not allow, and does not require, NYISO to mitigate the risk of market suppression by a bias toward more expensive proxy units and higher demand curves. Further, according to NYISO, Mr. Younger's argument fails to recognize the risks associated with selecting a proxy unit that reflects an unrealistically high cost of new entry.[33]

55. NYISO argues that its cost calculations for the F class frame with SCR were accurate, well-supported, and consistent with calculations approved in prior ICAP demand curve reset orders. It also argues that there is no need to include an additional risk premium in the capital costs for the F class Frame with SCR because this is not a "first-of-a-kind" technology.

56. NYISO responds to the assertion by Indicated Suppliers that the Marsh Landing units and other F class frames with SCR are unable to switch from firing natural gas to firing ultra-low sulfur diesel within 45 seconds, a requirement established by Consolidated Edison for all units interconnected in New York City. NYISO provides the Licata affidavit, including an email from a Siemens engineer, attesting to the fact that the Siemens turbine could meet the 45-second requirement.

[32] NYISO January 9, 2014 Answer at 24.

[33] NYISO states that ICAP demand curves that significantly exceed the actual cost of new entry in a Locality could result in the construction of more capacity in that Locality than actually require, and such an overbuild, would artificially increase the excess capacity of any other Localities in which the Locality was nested and in the NYCA as a whole.

d. Commission Determination

57. We find that NYISO's proposal to use the F class frame unit with SCR technology peaking unit for developing the capital cost estimate for NYC, LI, and the G-J Locality is reasonable. With regard to this choice, protestors first argue that the dual fuel requirement in NYC and proposed for the G-J Locality undermines the viability of the frame unit with SCR to serve as the proxy unit in these Localities. On the record before us, NYISO states that there is no technical difference between the design of SCR technology for burning both gas and oil for the LMS100 and a frame unit.[34] NYISO's technical expert concludes that performance of the SCR burning Ultra Low Sulfur Diesel (ULSD) can be expected to be equivalent or even better than its performance achieved burning natural gas.[35] It is true that the Marsh Landing units do not have dual fuel capability. However, NYISO's consultant points out that the designer of the SCR technology for Marsh Landing stated that the SCR design "would not have to change if it were to burn ULSD."[36] Therefore, we find that NYISO's conclusion that an F class frame unit with SCR will be able to comply with dual fuel requirements is a reasonable one.

58. Protestors including Entergy, EPSA, IPPNY, and Indicated Suppliers argue that there is insufficient industry experience to conclude that the F class frame with SCR is a viable technology. However, as stated by Multiple Intervenors and the NYPSC, through September 2007, the Marsh Landing units nearly equaled the operation of the LMS100 unit that provided an adequate basis upon which the Commission concluded such technology was viable in the 2008-2011 demand curve reset. NYISO and commenters also cite the McClellan and McClure power plants, which are Frame units equipped with SCR technology. These units provide more than 4,000 hours of additional operating experience. McClellan and McClure power plants are not F class units and they are smaller than the F class frame unit, but they are evidence of SCR technology working as intended on a Frame unit. The Commission does not look for a minimum number of hours in order to determine whether a technology is considered viable. In this case, there is a difference of opinion as to whether the Marsh Landing Station provided enough hours, and we find the record of evidence presented in support of the frame unit with SCR is adequate in order to find that NYISO reasonably concluded that the F class frame with SCR is a viable technology and able to serve as the proxy unit in NYC, LI, and the G-J Locality.

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[34] Licata Affidavit at 11.

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

[36] *Id.*

59. Protestors further argue that the examples of failed units are probative to determine that the F class frame with SCR is not a viable technology. We disagree. NYISO and their consultants distinguished these units from the technology in question in this proceeding. The Brattle Report attributed the failed incidents to outdated technology and poor engineering design and NYISO states that technology has advanced since those failures and there is now evidence of successful high and mid-high temperature SCR applications. We believe that NYISO sufficiently distinguished the failed units in Puerto Rico and Kentucky, both of which occurred over 10 years ago,[37] in order to reasonably determine that these failed units did not have a bearing on whether an F class unit with SCR would be able to successfully operate today.

60. Protestors also argue that because the F class frame unit with SCR does not have proposed units in the queue, it is not considered commercially accepted, and is therefore not a viable option. We find that this argument is misplaced. The Commission stated in the 2008 demand curve reset that the Services Tariff does not specify a definition of "economic viability."[38] An economically viable technology must be physically able to supply capacity to the market, but other than this requirement, the Commission stated that economic viability determinations are a "matter of judgment."[39] NYISO states that it believes that an F class frame unit with SCR could be "practically constructed" in southeastern New York, and that it would supply both energy and capacity economically into the market. NYISO also states that the F class frame unit with SCR satisfies the five criteria that NERA/S&L uses to determine viability.[40] While protestors argue that

[37] The Cambalache Unit in Puerto Rico was fitted with SCR technology that failed to operate as expected from 1999 to 2001. The failures were attributed to catalyst poisoning arising from a grade of fuel oil which did not meet the manufacturers' requirements. The Riverside Facility in Kentucky was fitted with SCR in 2001 and was not successful. This failure was attributed to improper installation and engineering. Brattle Report at 15-16.

[38] *New York Indep. Sys. Operator, Inc.*, 125 FERC ¶ 61,299, at P 20 (2008).

[39] *Id.*

[40] *See* Supplemental Chupka Affidavit at P 6 (citing NERA/S&L Report at 18). The five criteria that NERA uses to determine viability are: (1) The technology can comply with applicable Federal and New York State environmental requirements; (2) The technology is commercially available, i.e., it is not in a pilot or demonstration phase of development, and it has been successfully operated to generate electricity; and it is replicable; (3) The technology is utility plant scale, i.e., it can be interconnected at transmission rather than distribution voltages; (4) The technology is available to most

(continued…)

"market acceptance" is material to the question of economic viability, we find that NYISO's method of judging economic viability is a reasonable one. NYISO provided information sufficient to conclude that the F class frame unit with SCR can be practically constructed in each Locality and is economically viable. We find that there is enough information in the record to conclude that NYISO's proposal to use the F class frame unit with SCR as the proxy unit in NYC, LI, and the G-J Locality is a reasonable one.

3. Selection of the F Class Frame Unit Without SCR for NYCA

a. NYISO's Proposal

61. NYISO's proxy plant recommendation for the NYCA is the F class frame with dry low NOx combustion for NOx emissions control and a cap on operating hours. NYISO asserts that the cap on annual operating hours prevents the facility from having to conduct an analysis under the Clean Air Act and it could therefore be permitted in the NYCA region while meeting all emissions requirements. NYISO adds that this has been the proxy plant in the NYCA for multiple prior demand curve resets. The Board accepted the NYISO staff recommendation.

b. Comments and Protests

62. The NY-SEA Group, IPPNY, and Indicated Suppliers protest the NYISO proposal's choice of proxy unit for the NYCA Locality. The NY-SEA Group, IPPNY, and Indicated Suppliers assert that developers would not be willing to develop an F class frame unit without SCR in the NYCA Locality due to environmental permitting and commercial risks and, as a result, the proposed proxy unit for the NYCA Locality cannot be considered "economically viable" and cannot be constructed.

63. Specifically, the NY-SEA Group and IPPNY argue that the F class frame unit without SCR cannot be accepted by the Siting Board under New York State's Article 10 permitting process that requires a cumulative air quality impact analysis to determine compliance with the 1-hour NO_2 National Ambient Air Quality Standards, as well as Article 10's Environmental Justice requirements.[41] The NY-SEA Group notes that power

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developers, i.e., there are no commercial terms restricting the ability of a developer to acquire or license the technology and fuel for the technology is not restricted or limited in availability; and (5) The technology is dispatchable by the NYISO to meet the daily or peak load demands. It has peaking or cycling characteristics and is capable of cycling off during off-peak hours on a daily basis. The technology can be started and achieve minimum load within an hour.

[41] NY-SEA Group December 20, 2013 Protest at 16.

plants without SCR technology have not been permitted in New York State since 1993 and thus, claims that permitting of a generator in the NYCA Locality without an SCR to minimize NOx emissions is "improbable, if not impossible."[42] The NY-SEA Group argues that requirements such as these add risk for developers by introducing permitting timing issues and as well as affecting the economic viability of the project.

64. Further, the NY-SEA Group asserts that the proposed proxy unit for the NYCA Locality is not likely to comply with the applicable Greenhouse Gas Best Available Control Technology (BACT) determination requirements under the Federal Clean Air Act.[43] The NY-SEA Group contends that NYISO would have to limit operation of the proposed proxy unit further from 950 hours/year to roughly 781 hours/year in order to stay below the major source threshold for greenhouse gases and avoid triggering a BACT analysis.[44] The NY-SEA Group states that this further limitation would also reduce the proposed unit's capacity factor by 2 percentage points, as well as bring about other economic and financing obstacles.

65. The NY-SEA Group also asserts that NYISO has failed to consider potential upcoming state and federal regulations which have a direct impact on the economic viability of a new unit within a 20-year investment cycle.[45] As an example, the NY-SEA Group states that the U.S. Environmental Protection Agency is currently considering amending certain ozone regulations which could result in more stringent state Reasonably Available Control Technology requirements and in turn, existing combustion units would require uneconomic retrofits to lower emissions. The NY-SEA Group states that risks associated with possible retrofits, and other emission controls in the near future will create issues for a developer seeking financing and demonstrate that the proposed proxy unit for the NYCA Locality cannot be considered an economically viable unit.[46]

66. To the extent the Commission does not direct NYISO to select a proxy unit with an unlimited run time, the NY-SEA Group requests that the Commission require NYISO to select a proxy unit that can at least qualify as an Energy Limited Resource in accordance with the Services Tariff. The NY-SEA Group states that the Services Tariff

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[42] *Id*.

[43] *Id*. at 19.

[44] *Id*. at 20.

[45] *Id*. at 21-22.

[46] *Id*. at 22.

requires that an Energy Limited Resource must be able to operate for at least four consecutive hours each day of the year or at least 1,460 hours/year.[47] The NY-SEA contends that a selected proxy unit must be capable of operating enough hours to qualify, at a minimum, as an Energy Limited Resource.

67. The NY-SEA Group requests that the Commission reject the F class frame without SCR for the NYCA Locality and instead approve NERA/S&L's recommendation of the LMS100 unit with SCR as the proxy unit.[48] In the alternative, the NY-SEA Group requests that the Commission set these issues for a full evidentiary hearing. Also in the alternative, the NY-SEA Group requests that the F class frame unit with SCR be utilized in the NYCA Locality.[49]

68. Multiple Intervenors and the NYPSC support the proposal to use an F class frame unit without SCR in NYCA. The NYPSC asserts that this is the most economically viable technology for this region. Multiple Intervenors assert that the only substantive difference between the last reset and the present one is the level of emissions limitations, i.e., the implications of the 40 tons/year of carbon dioxide or CO_2 emissions limitation, which was not in effect during the last reset process.[50] They argue that even with this change, consultant's modeling indicates that the average annual economic dispatch of the unit would be minimally impacted (with dispatch ranging from 982 hours to 1025 hours),[51] which demonstrates the continued viability of the non-SCR proxy unit for purposes of the present reset. They argue that, given all of this information, the frame unit without SCR is clearly a viable technology and, as required by the NYISO tariff, is clearly the technology that results in the lowest fixed costs and highest variable costs: the LMS100's fixed costs are nearly double the fixed costs of the frame unit without SCR.[52]

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[47] NY-SEA Group December 20, 2013 Protest at 26.

[48] *Id*. at 28.

[49] *Id*.

[50] Change from 100 tons/year of NOx to 40 tons/ year. Multiple Intervenors December 20, 2013 Protest at 19-20.

[51] NYISO Staff Recommendation at 14.

[52] NYISO Staff Recommendation at 18.

c. Answers

69. NYTOs argue that the protesting suppliers have failed to provide any actual evidence that the F class frame unit without SCR is not a viable choice for the NYCA. They further argue that protestors rely on an unproven and speculative assertion that a frame unit without SCR could not be permitted in New York or, even if it were permitted, would not be built due to concerns that future regulatory changes would require modifications that would effectively shut the units down. NYTOs assert that these arguments ignore the due diligence performed by NYISO regarding environmental standards and that speculation about future regulations is inappropriate.

70. Multiple Intervenors argue that capacity suppliers make purely speculative claims as to the manner in which Article 10 theoretically could impact the siting of such a facility in New York, while flatly acknowledging that: (a) no fossil fuel-fired facility, such as the frame unit without SCR, has ever been reviewed under the recently-enacted provisions of Article 10; and (b) no party can accurately predict how the provisions of Article 10 are likely to be applied in practice given the absence of any precedent. They also argue that consideration of the annual operating cap placed on the frame unit demonstrates that it is likely to result in lower CO_2e (a unit of measurement of greenhouse gases) emissions than the LMS100, thereby invalidating any claims that the LMS100 would be required by BACT due to its higher efficiency.

71. NYISO responds that protestors fail to show that the F Class Frame without SCR would be unable to comply with currently applicable environmental regulations. NYISO states that accepting a federally enforceable annual operating limit ensures that the emission of NOx will be below the applicable regulatory significance levels and allows the "major source" to avoid the installation of state-of-the–art emission control technology. NYISO states that it confirmed with the Division of Air Resources of the New York State Department of Environmental conservation that this would be a legitimate permitting approach. NYISO states that it also analyzed the compliance of the F class frame without SCR with New York's CO_2 performance standards for major electric generating facilities and confirmed that it would comply.[53]

72. NYISO states that the possibility that potential future environmental regulation might impact the long-term operational viability of the unit does not suffice to rebut NYISO's conclusion based on known facts that the F class frame without SCR will be viable through the three-year ICAP demand curve reset period. NYISO adds that for this

[53] NYISO states that it confirmed that the permitting of the F class frame without SCR would not be obstructed by a BACT determination because there is no commercially available post-combustion control technology for CO_2.

and previous ICAP demand curve reset studies, environmental control assumptions for the proxy unit have been based on the regulations currently in force, as it is impossible to know what regulatory requirements will be in the future and what controls might be needed to meet them.[54] NYISO also rejects the argument that Article 10 of the New York Public Service Law would be an insurmountable hurdle for the F class frame without SCR because, according to NYISO, is based on speculation and a misreading of Article 10. NYISO also states that the NY-SEA Groups argument that the proxy unit could not comply with the one-hour NO_2 standard when modeled with nearby facilities is speculative as these units are more readily able to demonstrate compliance with the one-hour NO_2 standard during start-up than units with higher combustion NOx emissions that rely on SCR systems for additional NOx control.

73. NYISO further states that the NY-SEA Group's concern that the F class frame without SCR may not be an eligible "Energy Limited Resource" is misplaced. First, according to NYISO, the Services Tariff does not require Energy Limited Resource status for the proxy unit or for a unit to sell capacity in the NYISO market. Second, the limit on the proxy unit's operating hours is not significantly less than the average annual expected estimated dispatch hours for this type of unit,[55] which indicates the unit would not need to participate in NYISO's energy markets as an Energy Limited Resource in order to comply with its operating limits.

d. Commission Determination

74. We are not persuaded by NY-SEA's, IPPNY's, or the Indicated Suppliers' arguments that the frame unit without SCR is not economically viable because of potential future emissions regulations. While there is always a risk that regulations will change in the future, we cannot base the finding of viability on speculation that the EPA or New York State regulators will act at some point in the future. A demand curve reset process takes place every three years so that changed circumstances, such as new regulations can be taken into account. A future reset process would be a more appropriate forum to consider any future developments.

[54] NYISO January 9, 2014 Answer at 30.

[55] NYISO states that the average annual expected estimated dispatch hours for a peaking unit ranges from 982 to 1025 hours. The average consists of units with annual operations that are well under this level as well as units with operations well in excess of 1075 hours per year. The proxy unit's annual operating limitation is 950 hours. NYISO Answer at 34 (*citing* NYISO November 29, 2013 Filing, Attachment IV at 14).

75. With regard to whether the frame unit without SCR can meet emissions requirements and satisfies the Services Tariff requirement of being the lowest fixed cost, highest variable cost unit that is economically viable, we find that it does. The NY-SEA Group argues that the F class frame unit without SCR will not be able to comply with the BACT emission rates required under the Clean Air Act's New Source Review requirements. NYISO states that accepting a federally enforceable annual operating limit ensures that the emissions of NOx will be below the applicable regulatory significant levels (i.e., 40 tons per year) and allows the "Major Source" to avoid the installation of state-of-the-art emission control technology necessary to meet BACT/LAER emission rates typically required under the Clean Air Act's New Source Review preconstruction permitting requirements. We agree. IPPNY and the NY-SEA Group also argue that Article 10 of the New York Public Service Law would preclude the development and siting of the F class frame unit without SCR. NYISO states that this is a new law so the manner in which it would apply to the F class frame unit without SCR is purely speculative at this point. However, as NYISO states, Article 10 requires that, if the facility is likely to result in "any significant and adverse disproportionate environmental impact," the developer must identify specific measures it will take to avoid that impact. NYISO states that the F class frame unit without SCR was designed to comply with such regulations. We are persuaded by the argument and believe that with the cap on operating hours, NYISO has reasonably chosen a proxy unit that best fits the requirements of a peaking unit while taking into account all current environmental regulations.

76. Therefore, NYISO's determination that the frame unit without SCR is economically viable for use as the proxy unit in NYCA is reasonable. NY-SEA also argues that the frame unit without SCR cannot be chosen as the proxy unit because it does not qualify as an Energy Limited Resource. We find that this argument is irrelevant as to the question of what the proxy unit technology should be because there is no such requirement in the Services Tariff.

77. While there are obvious differences of opinion as to what the appropriate proxy unit technology should be for NYCA, there is enough information in the record from NYISO and NERA/S&L for the Commission to conclude that NYISO acted reasonably in proposing an F class frame unit without SCR as the proxy unit in NYCA.

B. Need for Dual Fuel Capability in the G-J Locality

1. NYISO's Proposal

78. NYISO states that in the prior ICAP demand curve reset it was assumed that only the NYC peaking plant would require dual fuel capability. In the current reset, NERA/S&L determined that dual fuel capability was also required for the G-J Locality. The NYISO Staff Report agreed with this conclusion and the Board accepted the NYISO Staff Report's recommendation.

2. Comments and Protests

79. Multiple Intervenors, NYTOs, and the NYPSC argue that the Commission should reject the proposed dual fuel requirement assumption for the proxy unit for the G-J Locality. They assert that NYISO disregards the fact that a generation facility's direct connection to a natural gas pipeline, thereby bypassing the local distribution system, would render any such dual fuel capability unnecessary. Moreover, they observe the generation projects proposed in the NYISO interconnection queue to be added to the Lower Hudson Valley clearly demonstrate that a new natural gas fired facility would be highly unlikely to connect directly to the local distribution system and, instead, would connect directly to a pipeline. The NYPSC cites, for example, the prospective Cricket Valley Energy Project that is seeking to locate in the G-J Locality as a gas-only unit connected directly to the interstate pipeline. Further, NYTOs assert that neither NYISO's interconnection requirements nor its capacity market rules require generators to have dual fuel capability, and there is currently no pending proposal to create such a requirement.

80. Multiple Intervenors further argue that small peaking facilities, in contrast to larger combined-cycle baseload units, would expect to operate on a fairly limited basis and are not heavily reliant on energy and ancillary services revenues to justify their economic viability. In fact, they argue, the analysis demonstrates that the expected annual energy and ancillary services revenue offset for a peaking unit in the Lower Hudson Valley is approximately 50 percent less than the expected offset for a combined-cycle facility in the region. Therefore, they assert, a peaking unit does not possess the same incentive to electively implement dual fuel capability and would be unlikely to do so for economic reasons.

81. In contrast, IPPNY asserts that the consultants and NYISO staff properly concluded that the proxy unit for the G-J Locality must be equipped with dual fuel capability. IPPNY states that both Con Edison's and National Grid's gas tariffs require dual fuel capability to qualify for transportation service. IPPNY asserts that NYISO's approach is reasonable in that new generators in the G-J Locality will install dual fuel capability rather than pay extraordinary rates to secure firm interstate pipeline capacity. IPPNY also argues that as reliance on natural gas as the predominant fuel for generators continues to grow, the proxy unit must include dual fuel capability to be viable. IPPNY also believes that NYISO was correct to require dual fuel capability because the G-J Locality is a highly constrained part of the state with growing concerns about the adequacy of electric system and gas system coordination and the electric system's flexibility to address gas shortages. Entergy also notes its support of the NYISO determination that the proxy unit for the G-J Locality be equipped with dual fuel capability.

a. Answers

82. NYISO states that proxy units in the NYC, LI, and G-J Locality would be subject to the dual fuel capability requirement as a contingency in the event of a system loss of gas supply if the operators purchase gas pursuant to a tariff or a local distribution company. NYISO adds that the Commission should accept NYISO's dual fuel assumption in order to expand the options for the economical siting of the proxy unit because without this capability, the unit could not be on the network of a local distribution company and would have to seek a site within a reasonable distance from an interstate pipeline, obtain firm pipeline capacity from that pipeline, and construct a lateral pipeline to connect to the interstate pipeline at a cost of $2-3 million a mile. Further, according to NYISO, natural gas peaking contracts are not a viable option for the proxy units because these types of contracts have limited availability, are typically not available to units the size of the proxy unit, and often include a provision that requires the purchaser to re-supply the gas purchased on this basis, often within a short period of time.

3. Commission Determination

83. We find that the NERA/S&L determination and NYISO's proposal to assume dual fuel capability in NYC, LI, and the G-J Locality is a reasonable one. NERA stated that while new entrants locating outside NYC and LI have the option of connecting directly to interstate gas pipelines, recently installed and proposed gas-fired generating units in and around NYC have opted for and announced they will both directly interconnect to the interstate pipeline and install dual fuel capability.[56] While NYTOs, NYPSC, and Multiple Intervenors argue that it is unreasonable to assume that a generator constructed in the G-J Locality would interconnect to the local distribution system, NYISO and their Consultant believe otherwise. They assert that, because obtaining new firm gas transportation would be expected to be expensive, for a peaker, *i.e.*, a unit without a high capacity factor, a new peaking unit would realistically choose dual fuel capability over primary firm pipeline capacity. We agree. If a proxy unit did not have dual fuel capability, it could not be sited in the network of a local distribution company. The unit would then have 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. NYISO states 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.[57] For these reasons, and the fact that reliance on natural gas as the

[56] NERA/S&L Report at p. 42, fn. 39.

[57] NYISO Answer at 36.

predominant fuel for generators continues to grow, we find that NYISO's assumption of dual fuel capability is a reasonable one.

C. New York City Property Tax Abatement

1. NYISO's Proposal

84. NYISO states that the New York State Legislature enacted legislation in May 2011 that provided property tax abatements of 100 percent of the abatement base for the first 15 years to some electrical generating facilities located in NYC that are either peaking units, as defined by the NYISO tariffs, or units certificated before April 1, 2015 that average no more than 18 run hours per start annually. NYISO states that NERA/S&L indicated that the F class frame unit with SCR meets the hourly run time start criteria for tax abatement and that it is reasonable to assume that a peaking unit in NYC that is completed for operation during the period covered by this demand curve reset would have received its construction permit prior to April 1, 2015. Therefore, NYISO agreed with NERA/S&L's conclusion that the effect of the tax abatement should be accounted for in the determination of the Net CONE for the proxy unit in NYC. The Board accepted the NYISO Staff Report's recommendation.

2. Comments and Protests

85. Indicated Suppliers argue that the proposed ICAP demand curves for NYC are improperly based on the assumption that the existing property tax abatement for electric generating facilities in NYC will continue through the entirety of the current reset period, i.e., through April 30, 2017. Indicated Suppliers argue that assuming the New York Legislature will extend the existing property tax abatement is at odds with the 2011 demand curve reset order,[58] where the Commission ordered NYISO to exclude tax abatement from its calculation of NYC Net CONE because the law at that time meant that tax abatement was "discretionary" and "not a matter of right."[59] Indicated Suppliers argue that because the availability of property tax abatement and the extension of the existing program will be entirely at the discretion of the New York legislature, the Commission must ensure that the ICAP demand curves adopted in this proceeding reflect existing law, not speculation about what the New York legislature may or may not do in the future.

[58] *New York Indep. Sys. Operator, Inc.*, 134 FERC ¶ 61,058 (2011).

[59] *Id.* at P 88.

86. Conversely, Multiple Intervenors and the NYPSC argue that the Commission should adopt the proposed treatment for the New York City tax abatement. They assert that because the proxy unit is assumed to operate during the entirety of the three year period encompassed by the current reset process, and it typically takes two years for new generation facilities to be constructed, to be operational as of May 1, 2014 (the beginning of the 3-year demand curve reset period), the proxy unit would have to obtain a building permit by the April 1, 2015 deadline, and therefore, it would be eligible for the 15-year tax abatement.

87. Multiple Intervenors along with the NYPSC also anticipate that the abatement will be extended in the near future. Multiple Intervenors explain that a measure to extend the current expiration was approved by the New York Legislature earlier this year, but was vetoed by Governor Cuomo because the bill expanded the current tax abatement instead of merely extending it. They state that Governor Cuomo indicated that he would sign a bill that extended the programs without the expansion provisions.

a. Answers

88. Multiple Intervenors assert that regardless of whether the current abatement is eventually extended, the proxy unit for the NYC ICAP demand curve would qualify to receive the as-of-right tax abatement so long as it obtains a building permit prior to April 1, 2015 or in the event that a building permit were not required, commences construction prior to April 1, 2015. By definition, one of those preconditions would have to occur in this case, thereby ensuring the eligibility of the NYC ICAP demand curve proxy unit for the tax abatement.

89. NYISO argues the inclusion of the assumption of NYC property tax abatement is reasonable because it is very likely that the abatement will be legislatively extended, and even if the abatement program is not extended, a unit that has been completed and is in commercial operation during the period in which the ICAP demand curves will be in effect would have necessarily received its permit in time to qualify for the existing abatement.

3. Commission Determination

90. We find that NYISO was reasonable in concluding that the property tax abatement should be assumed in developing the proxy unit Net CONE in NYC. We find it reasonable to conclude that a generator operating during the three year period encompassed by the current reset process (May 1, 2014 through April 30, 2017) would have to obtain a building permit well before the April 1, 2015 deadline in order to be operational by the start of the 3-year demand curve reset period, i.e., May 1, 2014.

91. The issue of whether the tax abatement is extended is irrelevant to the applicability of the abatement to this proceeding because the proxy unit for the NYC ICAP demand

curve would have to had obtained a building permit prior to the April 1, 2015 deadline of the existing statute in order to be constructed and in service for the 3-year demand curve reset that begins May 1, 2014. Therefore, the proxy unit qualifies for the abatement regardless of whether such abatement is ultimately extended.

D. Payments in Lieu of Taxes

1. NYISO's Proposal

92. NYISO states that NERA/S&L recommended a uniform property tax rate in all regions of the state other than NYC of 0.75 percent. This rate, NYISO explains, takes into account the many projects in other jurisdictions that have been able to negotiate agreements on payments in lieu of taxes (PILOT) at rates substantially lower than the originally recommended rate of 2 percent. NYISO agreed with the recommendation and the Board accepted the NYISO Staff Report's recommendation.

2. Comments and Protests

93. IPPNY argues that NYISO erred in modeling the levelized carrying charge with the assumption that the agreed upon tax level will continue for the entire life of an asset. IPPNY asserts that agreements on payments in lieu of taxes typically last for 15 or 20 years at which point the facility goes on the general tax rolls. IPPNY contends that NYISO's error results in understating the levelized fixed charges for anything beyond the normal 15 to 20 year agreement. IPPNY urges the Commission to require NYISO to correct this error.

3. Commission Determination

94. We accept NYISO's proposal to use a uniform tax rate of 0.75 percent in all regions of the state except NYC. We reject IPPNY's argument that NYISO's consultants erred in assuming a 0.75 percent level of taxes over the life of the plant in their model for levelized carrying charges. NERA/S&L found that four projects were able to negotiate PILOT agreements at rates substantially below rates paid in other parts of the state. Three of these projects had escalating tax rates over twenty years. NYISO states that the consultants used a rate that was a balance between the reduced rates that some tax jurisdictions used and the full tax rates from others.[60] The 0.75 percent rate that the consultants arrived at was not an average tax rate, but rather a rate that the consultants determined in order to accurately represent the fact that some generating facilities have reduced tax rates with the localities, while others do not. NYISO states that the property

[60] NYISO Staff Report at 19.

tax rate of 0.75 percent does, in fact, take into account the fact that property taxes will increase after the PILOT Agreements end contrary to IPPNY's assertion. While IPPNY may have estimated a different rate than the one proposed by NYISO, it has not shown that NYISO's or NERA/S&L's assumptions were unreasonable. We find that NYISO's proposal is a reasonable means of using a uniform tax rate while accurately representing available data from all jurisdictions in the state.

E. Development of Levelized Carrying Charges

95. Regarding the levelized carrying charge rate used in developing the levelized Net CONE, NYISO explains that NERA/S&L determined that the rate should be developed using the same methodology used for the previous demand curve reset study, with the exception that the NYC property tax abatement is more appropriately treated as a levelized carrying charge than as a fixed operations and maintenance cost because the tax varies over the plant's useful life (i.e., variable cost).

1. Return on Equity (ROE)

a. NYISO's Proposal

96. NYISO proposes a 50/50 ratio of debt to total capital, a 7.0 percent interest rate on debt, and a 12.5 percent ROE in determining the 9.75 percent weighted average cost of capital. NYISO's proposed ROE was calculated using the Capital Asset Pricing Model (CAPM) (Pricing Model), which, based upon the consultants' original inputs, yielded an average expected ROE of 11.29 percent.[61] Then a 1.21 percent calibration adjustment was added based on the consultants' conclusion that the result yielded by the Pricing Model analysis appeared too low relative to allowed regulated rates of return. Additionally, the consultants noted the potential for the Federal Reserve quantitative easing program to change the historical relationship between government debt costs and market equity costs in a way that may distort the Pricing Model results. Accordingly, the consultants recommended, and NYISO concurred, that a calibration adjustment was necessary to increase the original Pricing Model results.

97. The NYISO Staff Report determined that the cost of capital parameters provided a reasonable balance between what the Pricing Model yields and what other regulated

[61] NERA/S&L Report at pp. 83-88. NYISO estimated this 11.29 percent ROE using a risk-free rate of 3.68 percent (based upon 30-year U.S. Treasury bonds), an equity risk premium of 6.62 percent (based upon historical returns from 1926-2011), and an equity beta of 1.15 (based upon the publicly-traded stocks of merchant generators).

utilities have been allowed and therefore agreed with NERA/S&L's recommendations. The NYISO Board accepted this conclusion.

98. The consultants calculated the calibration adjustment by applying the Pricing Model to a sample of regulated utilities and comparing their expected returns under the Pricing Model to the returns actually allowed by regulators. The consultants determined that the Pricing Model yielded an average expected ROE of 7.72 percent for regulated utilities overall and 7.65 percent for New York utilities, while the allowed ROEs for regulated utilities overall are between 9.5 and 10.0 percent and in New York State are slightly below average at 9.3 percent. The consultants applied the calibration adjustment to increase the Pricing Model return to reflect the difference between the observed Pricing Model returns and the lower-end regulated ROE of about 9.0 percent.[62]

99. NYISO further contends that the equity market premium can deviate from its long-term average, which is likely why the Pricing Model yields ROEs for regulated entities lower than the prevailing ROEs allowed by regulators. As evidence for this deviation, NYISO cites the fact that quantitative easing is keeping long-term government bond yields low, but does not similarly reduce equity costs, meaning the equity market risk premium input used in the Pricing Model will be understated when it is based on the long-term historic average. This bias, NYISO asserts, must be corrected for by utilizing the 1.21 percent calibration adjustment to the Pricing Model results.

100. NYISO contends the calibration adjustment is not a change to NYISO's ROE calculation, but is instead an additional step necessary to conform Pricing Model results to data observed from current financial market conditions.

b. Comments and Protests

101. Multiple Intervenors assert that the Commission should direct NYISO to reduce the ROE input to the 11.29 percent actually calculated by the consultants' original conclusions. The NYPSC asserts that the ROE should be set no higher than 11.3 percent. In support, protestors assert that the ROE calculated by the Pricing Model adequately accounted for the financial risk associated with investment given current market conditions. Therefore, Multiple Intervenors and the NYPSC contend, the calibration adjustment amounts to a duplicative accounting of that risk.

102. Multiple Intervenors further assert that NYISO's proposed ROE value is a significant departure from ROE values recently approved for New York utilities by the NYPSC. Multiple Intervenors note that ROE values approved by the NYPSC and/or

[62] NYISO November 27, 2013 Filing, Meehan Aff. ¶ 21.

recommended by NYPSC staff for adoption in currently active rate proceedings range from 8.7 to 9.4 percent. Multiple Intervenors further note that the 11.29 percent ROE initially calculated by the Pricing Model was 219 basis points above the 9.1 percent average approved/recommended ROE for regulated utilities in New York. Moreover, the NYPSC argues, the calibration adjustment would add over 100 basis points to the Pricing Model's calculation.

103. The NY-SEA Group argues that NYISO's financing assumptions and the 12.5 percent ROE are impractical in determining the economic viability of the proposed proxy units and will give rise to inefficient capacity price signals needed for new development and thus, the reliability of the system. Similarly, Indicated Suppliers contend that the weighted average cost of capital estimates did not account for the risk premium that would be required because the F class frame unit with SCR is a comparatively new technology when compared to the LMS 100 technology. Moreover, Indicated Suppliers argue that the risks associated with this newer technology bring into question whether financing could be secured at a cost that would make the project economically viable.

c. Answers

104. NYISO states that the protestors incorrectly conclude that the 1.21 percent increase was an arbitrary and unjustified adder. NYISO asserts that the addition of 1.21 percent was not to account for risk but, rather, was an adjustment that calibrates the ROE that resulted from the Pricing Model analysis to the regulated ROE, which is much higher. NYISO states that its calibration adjustment is conservative and a higher adjustment could easily be justified, as the regulated ROE in New York is among the lowest in the country.

d. Commission Determination

105. We find that NYISO's proposed ROE value of 12.5 percent is adequately supported by substantial evidence. NYISO argues that unique current conditions in financial markets created a downward bias in the CAPM results, necessitating a calibration adjustment of 1.21 percent to the calculated return on equity of 11.29 percent. Specifically, NYISO argues that the result yielded by the CAPM analysis "appeared potentially too low relative to regulated rates of return and as the CAPM is subject to bias at times during the interest rate cycle" because of the potential impact on the historic relationship between the market returns for government debt and common equities.[63] Given the recent trends of near-historic low yields for long-term U.S. Treasury bond

[63] NYISO November 27, 2013 Filing, Meehan Aff. ¶ 20.

rates, the CAPM's input for the "risk-free" rate, we find that it is a reasonable assumption that the current equity risk premium (which is added to the risk-free rate to calculate the cost of equity data point that determines the slope of the CAPM curve) exceeds the 86-year historical average used as the consultants' CAPM input. The current low treasury bond rate environment creates a need to adjust the CAPM results, consistent with the financial theory that the equity risk premium exceeds the long-term average when long-term U.S. Treasury bond rates are lower than average, and vice-versa. Further, we disagree with the protestors who assert that the calibration adjustment amounts to a duplicative accounting of the risks associated with merchant generation, because the adjustment is tied to how the unique current conditions may distort the results derived from CAPM generally. Contrary to protestors' assertions, NYISO does not argue that the risks of merchant generators, as measured by the beta input, are understated. Instead, NYISO suggests that due to the abnormally low interest rate environment, the CAPM line itself should be redrawn at a higher level and with a steeper slope by raising the equity risk premium input. However, we do not agree that the higher ROE argued for by some generators due to the changed reference unit technology is consistent with the application of the CAPM model.

2. Amortization Period

a. NYISO's Proposal

106. NYISO states that NERA/S&L revisited the methodology used in previous ICAP demand curve resets, in that it did not strictly assume a fixed amortization period. Specifically, NYISO states that its methodology considers the risk of excess capacity, the slope of the ICAP demand curves and the slope of the energy and ancillary service revenue function. NYISO asserts that a primary benefit of this methodology is that it automatically adjusts the reference price to reflect the slope of the demand curve and therefore can account for revenue volatility associated with alternate slopes.[64] Accordingly, NERA/S&L recommended an economic analysis period of 25 years for the LMS100 unit and of 20 years for the F class frame, a reduction from the periods used in the two previous demand curve resets, which were 30 years. NYISO states that the shortened time period accounts for numerous risks.[65]

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[64] NYISO November 27, 2013 Filing at 24 (citing Meehan Aff. ¶ 14).

[65] NERA Report at 83. NERA/S&L note that the results produced using the recommended shape and slope of the Demand Curves show implied amortization periods of 17.5 years in NYCA and LI, 18.5 years in the G-J Locality, and 14.5 years in NYC. The 25 and 20 year economic analysis period imply these amortization periods used to establish reference prices. For example, were the zero crossing point closer to the origin,

(continued…)

107. First, NYISO states NERA/S&L identified the possibility of technological change, embodied by the recommended change of peaking unit technology, which could result in lower than expected revenue. Such abrupt changes in technology are not accounted for in the 0.25 percent per year adjustment in the current ICAP demand curve model. NYISO notes the technological change from the higher cost LM 6000 to the LMS100 resulting from the 2008 demand curve reset process, as evidence of such an abrupt technology change.[66] NYISO asserts that in the face of such technology changes, investors will want to analyze a recovery period or economic life that is shorter than the physical life of the plant to allow for the potential reduced revenue from competing against new technology.

108. Second, NYISO states that the shortened economic analysis period reflects the possibility of increased environmental regulations. NYISO specifically notes potential for carbon regulations that will apply to what are now new units and will more heavily impact higher heat rate alternatives. NYISO states that this is a consideration in using a shorter, 20-year economic analysis period for the less efficient frame units than the more efficient aeroderivative and combined-cycle units.

109. Third, NYISO states that the demand curve revenue model reflects only a limited set of uncertainties, or deviation from forecast conditions. NYISO further states that the F class frame technology is a less efficient and higher emitting technology than the aeroderivative or combined-cycle units, which increases the risk that generator performance will not be as modeled, and that therefore a shorter amortization period of 20 years is necessary to attract investment. Lastly, NYISO notes that PJM has used an economic analysis period of 20 years for purposes analogous to those cited by NYISO in its own capacity market design.[67]

b. Comments and Protests

110. Multiple Intervenors contend that NYISO and NERA/S&L provide little justification for reducing the 30-year amortization period approved in previous demand curve reset processes. Multiple Intervenors allege that NERA/S&L have articulated only two possible justifications for the proposed 10-year reduction. First, Multiple Intervenors point to NERA/S&L's vague reference to the need to address the risk of merchant generation investment through a reduced amortization period. Multiple Intervenors

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the amortization periods would decrease, raising the reference price to reflect added merchant risk.

[66] NYISO November 27, 2013 Filing, Meehan Aff. ¶ 17.

[67] NYISO November 27, 2013 Filing, Meehan Aff. ¶ 19.

contend that this risk is already addressed by the "risk premium" achieved by the NERA/S&L's proposed ROE value that exceeds 300 basis points.

111. Multiple Intervenors next point to NERA/S&L's assertion that the level of excess capacity assumed in the demand curve presents an additional risk that the amortization period should reflect. Multiple Intervenors and the NYTOs argue that the level of excess capacity is prescribed by the Services Tariff, meaning NYISO's proposal to adopt the NERA/S&L methodology is a tariff violation because NYISO appears to be revising the Services Tariff by adjusting the amortization period. Multiple Intervenors further argue that in the last demand curve reset, NYISO revised section 5.14.1.2 of the Services Tariff to prescribe the level of excess capacity assumption to be used consistently throughout the development of the demand curves going forward. The Commission approved those revisions, and specifically noted that NYISO's proposal "reduced uncertainty and added clarity to the triennial demand curve reset process."[68] Moreover, Multiple Intervenors assert that the Commission observed that NYISO's excess capacity revisions established that the proxy unit would be used as the basis for the excess capacity levels consistently throughout the analyses used to develop the demand curves.[69] Multiple Intervenors contend the Commission's findings dictate that, absent a proposed change to the Services Tariff and subsequent Commission approval, the Commission should reject NYISO's proposal to significantly reduce the assumed amortization period for each demand curve.

112. The NYTOs allege that the technological progress assumptions made by NERA/S&L, which the NERA/S&L now cite as a basis for reducing the amortization period, are identical to those in the last demand curve reset process, during which no reduction to the amortization period occurred. The NYTOs further argue that NERA's own model indicates that each of the plants evaluated will remain economic beyond the 20-year life cycle, and further that simple cycle units older than 40 years are common in New York City. Beyond that, the NYTOs allege, NYISO's proposal ignores the fact that market participants are willing to pay significant amounts for generators that are more than 20 to 25 years old, demonstrating the unreasonableness of assuming that the energy or capacity revenues realized more than 20 or 25 years after a generator enters service have little value. Therefore, the NYTOs contend, it is unreasonable to assume, as NYISO's proposal does, that a developer could not finance the significant residual value of a plant beyond 20 years.

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[68] *New York Independent System Operator, Inc.*, 136 FERC ¶ 61,192, at P 63 (2011).

[69] *Id*. P 64.

113. If NYISO elects to retain its 20-year amortization period assumption, the NYTOs argue, it should revise the residual value assumption for the proxy units to reflect that a 20-to-25-year old generator is more valuable than a 30-year old generator. The NYTOs contend that NYISO's proposal does not properly recognize the additional revenues the proxy unit will achieve over the remainder of its useful life, as demonstrated by the recent announcement that US Power Generating Company will be acquired by Tenaska Capital Management, implying a value of $475/kW for US Power Generating Company's generation. The NYTOs lastly contend that they estimate NYISO's proposed reduction of the amortization period could increase capacity costs by as much as $500 million over the three-year period.

114. The NYPSC argues that NYISO's proposed reduction to the amortization period from 30 to 20 years is unsupported and inconsistent with the operational experience of actual generators in New York State. The NYPSC specifically notes the operational experience of the Siemens SGT6-5000F fleet leader, which has over 104,000 hours of operation. Even with a 40 percent capacity factor, the NYPSC contends, the Siemens unit could run for 30 years and well beyond, assuming proper maintenance.

115. IPPNY contends that NYISO's proposed amortization period of 20 years may be appropriate if all of the following conditions were satisfied: (1) NYISO revises its buyer-side mitigation measures to increase the default offer floor from 75 percent to 100 percent of the Mitigation Net CONE value; (2) the average excess capacity level is modified as discussed in detail in IPPNY's comments; and (3) the demand curve is based upon a reasonable estimate of the cost of a mature and readily available technology. Otherwise, IPPNY asserts that an 18-year assumed capital recovery period for the G-J Locality and NYCA and a 14-year period for NYC are required to give the units a more reasonable period to recover their costs after accounting for the near certainty of uneconomic entry.

c. Answers

116. NYISO states that the decision to adopt an amortization period of 20 years for the frame units and 25 years for the LMS100 unit was explained at length in the Meehan affidavit submitted with NYISO's original filing. According to NYISO, no party provides compelling evidence in support of a different amortization period. Further, according to NYISO, the amortization periods cannot be viewed in isolation of all the parameters considered in the ICAP demand curve reset process. Moreover, NYISO states, the amortization period is not the same as the expected physical lifespan, but rather represents the timeframe over which a reasonable investor expects to recover a return on a potential investment, given a neutral set of assumptions about market conditions. NYISO asserts that, as Mr. Meehan explains, the risk that a developer will not recover his investment during the amortization period is balanced by the potential that revenues will accrue after the amortization period concludes.

d. Commission Determination

117. We accept NYISO's proposed 20-year amortization period as reasonable in light of the inherent technological, market, and environmental risks in investing in the proposed proxy unit. Relative to the previous LMS100 proxy unit, the proposed proxy unit has greater market risk since it has a more limited ability to earn energy market revenues and is thus largely dependent on capacity revenues for cost recovery. In the NYCA the proposed proxy unit with no SCR has restricted run hours that are likely to become more restricted should environmental standards tighten. Retrofitting such a unit may not be economic with existing technology. We conclude that adjusting for these environmental risks and other market risks is appropriate and that a 20-year amortization period is one element of the demand curve reset process that takes these factors into account. For the other capacity zones, we conclude that the shorter amortization period is a reasonable basis for accounting for certain technological risks, such as the added uncertainty of the effect of dual fuel requirements and limited operating experience of SCRs with F-class frame units.

118. It is the Commission's responsibility to determine whether these judgments and the resultant outcomes fall within a zone of reasonableness and we conclude that, in this case, they do. While there are several ways to arrive at demand curve adjustments that fall within that zone, we conclude that, with respect to the amortization period adjustments, NYISO has reasonably selected a 20-year amortization period over which to measure the economic life of the proxy unit. Although a proxy unit may remain economic beyond that period, we find that it is reasonable to expect that significant investment would be required to achieve this outcome and that it would not be appropriate to reflect these additional investment decisions into the demand curve reset process.

3. Original Issue Discount

a. NYISO's Proposal

119. NYISO states that after it issued the NYISO Staff Report, IPPNY argued that some explicit original issue discount costs must be included in the financing charges. NYISO explains that a bond is issued at a discount to its par value (and thus includes an original issue discount) if its coupon rate is less than the return the market requires, given the riskiness of the debt. NERA estimated a 7 percent debt interest rate from the yield to maturity values of currently outstanding debt issues. Were those debt issues to include an original issue discount, the associate cost would be reflected in the yield to maturity values. However, NYISO explains, none of the debt issues analyzed by NERA included an original issue discount, so there was no associated cost embedded within the yield to maturity values. Thus, NERA concluded, an original issue discount is not necessarily typical of all debt financings, contrary to IPPNY's assertion, and a further adjustment for it would not be appropriate. The NYISO Staff Report reflected NERA's conclusion and

the Board concurred with the NYISO Staff Report's conclusion not to include any original issue discount costs in the financing costs.

b. Comments and Protests

120. IPPNY argues that the Commission should require NYISO to correct NERA's debt financing cost assumptions to include original issue discount costs in the calculation. IPPNY states that the NERA/S&L report assumed total financing costs of $5.8 million, which IPPNY asserts, is much lower than recently completed financings of units in New York such as Astoria Energy II and Bayonne Energy Center. IPPNY argues that the cost of debt that is reflected in the demand curve model should be consistent with real world experience and thus should be calculated using financing costs that approximate the properly adjusted average of recently completed financings in New York, some of which have the original issue discount costs imbedded in the cost of debt.

c. Commission Determination

121. We accept NYISO's proposal to exclude any original issue discount costs from financing cost assumptions. IPPNY argues that, based on the financing fees from Astoria and Bayonne, some original issue discount costs should be added to the assumed financing costs in order for the financing costs to be consistent with real world experience. However, as NYISO explains, NERA analyzed debt issues in NYISO and concluded that an original issue discount is not typical of the debt financings in New York.[70] NYISO further explains that the financing cost for Astoria and Bayonne was higher because the debt and equity issuances for those projects were for substantially larger amounts. For the Astoria and Bayonne projects, the total financing fees were comparable when expressed as a percent of total project debt. We therefore find that NYISO's proposal is reasonable.

F. Regulatory Risk

1. NYISO's Proposal

122. NYISO states that NERA/S&L considered whether a special "regulatory risk" adjustment was necessary. NERA/S&L found that a regulatory risk adjustment was not required for either the demand curve model or in the estimated cost of equity due to the NYISO initiatives to develop tariff revisions that would improve its capacity market power mitigation measures. However, NYISO adds that NERA/S&L recommended that

[70] NYISO November 27, 2013 Filing, Attachment IV, NYISO Staff Report at 25-26.

this issue be considered again in future reset processes. The NYISO Staff Report accepted NERA/S&L's conclusion and the Board accepted the NYISO Staff Report's recommendation not to include a special "regulatory risk" adjustment.

123. NYISO adds that the Commission's recently accepted capacity market mitigation measures for the G-J Locality were substantially similar to the established ICAP market power mitigation rules in NYC. Therefore, NYISO contends, it is reasonable to conclude that they are adequate to address the risks that IPPNY would address through an additional risk premium. In addition, NYISO states, the risks facing suppliers were already considered in the development of other ICAP demand curve parameters, e.g., in setting the duration of the amortization period and by making a calibration adjustment to its return on equity estimate to ensure that it appropriately reflected the current market risk premium.

2. Comments and Protests

124. IPPNY argues that the NYISO filing fails to adequately account for the regulatory risks merchant developers face when proceeding with projects in New York State. As an example, IPPNY states that in the NERA/S&L Report, NERA incorporated a separate 10 percent regulatory risk factor to account for the 75 percent of Net CONE offer floor, which could result in capacity prices that never rise above 75 percent of Net CONE. IPPNY explains further that NERA ultimately removed the regulatory risk factor in light of NYISO's efforts to improve mitigation measures in the capacity market. IPPNY disagrees with this conclusion and argues that recent activities demonstrate that incorporating a regulatory risk factor into the demand curve model to address uneconomic entry is required more than ever before, citing recent projects such as the Hudson Transmission Project and the Astoria Energy II generating facility, both of which are supported by long-term power purchase agreements with the New York Power Authority.

125. IPPNY argues that even if NYISO adopts an amendment to increase the offer floor, it is unknown whether the amended mitigation rules will, in fact, prohibit uneconomic entry and the artificial suppression of prices. Specifically, IPPNY believes that the current rules have not adequately stemmed state intervention in NYISO's competitive markets. IPPNY argues that projects supported by long-term above-market contracts with the New York Power Authority (NYPA) as well as subsidized projects that are part of the New York Energy Highway Initiative are examples of uneconomic entry that could suppress market prices and need to be accounted for with a regulatory risk factor.

a. Answers

126. NYISO responds that IPPNY presents no information or evidence that would rebut NYISO's conclusion that the ICAP demand curves are reasonable without including a

regulatory risk adjustment. NYISO reiterates that the Commission has market power mitigation rules in effect and NERA//S&L, in developing the parameters of the new ICAP demand curves, took into account the alleged risks that IPPNY raises. Further, NYISO states that the ICAP demand curve process is not the appropriate vehicle to address IPPNY's claims regarding alleged problems with the NYISO market structure.

3. Commission Determination

We find that NYISO was reasonable in accepting NERA/S&L's recommendation that no additional regulatory risk factor be incorporated into the demand curve parameters. We reject IPPNY's assertion that the market power mitigation measures are inadequate to address regulatory risk. We note that in two recent proceedings involving the potential exercise of buyer side market power, the Commission took decisive action, based on NYISO's existing market power mitigation tariff safeguards, to ensure that uneconomic entry will not occur.[71] Additionally, NYISO has underway three initiatives that further facilitate economic entry including (1) a repowering exemption, (2) a merchant plant exemption, and (3) raising the offer floor under the buyer-side mitigation rules from 75 percent to 100 percent of Net CONE.[72] While we cannot completely rely on measures that have not yet been implemented, the fact that these measures are underway leads us to believe that NYISO is considering a reasonable, balanced approach to address the risks that IPPNY believes should be reflected in the ROE. Therefore, we agree with NYISO that a regulatory risk adjustment is not necessary at this time.

G. Expected Level of Average Excess Capacity

1. NYISO's Proposal

127. In the most recent demand curve reset order, the Commission directed that net energy revenues be determined at the locational minimum capacity requirements and the NYCA installed reserve margin plus the capacity of the proxy plant. In this proposal, NYISO assumes a one-unit proxy plant. NERA/S&L incorporated that excess capacity level into the development of both expected energy and ancillary services revenues and the Reference Price level used in the proposed demand curves. The NYISO Staff Report agreed with NERA/S&L's calculations and the Board accepted the NYISO Staff Report's recommendation, finding that the NERA/S&L model and its assumptions are reasonable.

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[71] *See Hudson Transmission Partners, LLC v. New York Indep. Sys. Operator, Inc.*, 145 FERC ¶ 61,156 (2013); *see also Astoria Generating Company L.P., et al. v. New York Indep. Sys. Operator, Inc.* 139 FERC ¶ 61,244 (2012).

[72] NYISO November 27, 2013 Filing, Attachment IV, NYISO Staff Report at 23.

2. Comments and Protests

128. IPPNY argues that the excess capacity levels built into the demand curve model for this reset do not adequately account for risks new entrants might face such as forecast error, fluctuations in Installed Reserve Margin and locational capacity requirements, conservativeness of NYISO planning, and the State's focus on acting to prevent capacity shortages. IPPNY further argues that because NYISO has a directive to implement backstop solutions for possible reliability shortfalls, but no corresponding directive to retire plants producing excess energy, the markets have a clear bias towards carrying substantial excess. IPPNY asserts that the demand curves must recognize this excess in order to achieve their fundamental purpose of inducing new merchant entry when needed.

129. IPPNY also argues that NYISO's proposal to substantially reduce the size of the proxy unit directly affects some of the factors that result in the fluctuations of excess capacity. IPPNY argues that the Commission should direct NYISO to double the excess capacity level for the NYCA locality to reflect that the selected proxy unit is now a single unit rather than the pair of units selected in past resets. IPPNY also requests that in future demand curve resets, the Commission should direct NYISO to adopt the MMU's proposal for setting the average excess capacity level for the demand curves. IPPNY notes that the MMU recommends setting the excess capacity level at 1 percent of the capacity requirement, plus 50 percent of the capacity of the demand curve proxy unit.[73]

a. Answers

130. NYTOs and Multiple Intervenors argue that granting IPPNY's request that the Commission require NYISO to double the amount of excess capacity that it has assumed for purposes of its NYCA locality analysis would also force NYISO to violate its Services Tariff, which specifies that the amount of excess capacity that NYISO should assume in its analyses should be equal to the amount of capacity provided by the proxy unit. They assert that IPPNY's request disregards the directives issued by the Commission in the last reset process that these analyses use consistent assumptions regarding the amount of excess capacity.[74]

131. NYISO states that it implemented the directive in the Services Tariff in order to develop the level of excess capacity and IPPNY presents no justification for its requested waiver. NYISO adds that the fact that IPPNY disagrees with the results of that

[73] IPPNY December 20, 2013 Protest at 54 (*citing* MMU 2012 Report at 55).

[74] *New York Independent System Operator, Inc.*, 136 FERC ¶ 61,192, at PP 21-25, 28-31 (2011).

application is not sufficient. Nor, according to NYISO, does the Commission's previous acceptance of a higher level of excess mean that the lower level is a result so unjust, unreasonable, or unlawful that it would justify the waiver of a provision of the Services Tariff. NYISO also states that IPPNY's request that the Commission order NYISO to implement the MMU's proposal in future resets is essentially a request to amend the Services Tariff, which should proceed through the stakeholder process.

3. Commission Determination

132. We find that NYISO's use of the prescribed excess capacity assumption was consistent with its tariff requirements and reasonable. In the most recent demand curve reset, the Commission determined how the level of excess capacity would be set. NYISO amended its Services Tariff to prescribe that level. Specifically, section 5.14.1.2 requires that:

> [t]he cost and revenues of the peaking plant used to set the reference point and maximum value for each Demand Curve shall be determined under conditions in which the available capacity is equal to the sum of (a) the minimum Installed Capacity 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.[75]

In its order in the last demand curve reset, the Commission found that this excess capacity assumption takes into account uncertainties regarding load growth and decentralized investment decision making by competing suppliers.[76] The Commission also stated that the assumptions provide a margin of error to account for load forecasting uncertainties and account for the lumpiness of capacity additions.[77]

133. In the aforementioned demand curve reset, IPPNY made arguments similar to those they make in the instant filing. For example, IPPNY argues about risks regarding fluctuations in the Installed Reserve Margin and uneconomic entry. In the prior Order, the Commission addressed these arguments by stating that IPPNY has not shown how NYISO could predict that changes, if any, will occur in future installed reserve

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[75] NYISO Service Tariff Section 5.14.1.2.

[76] *New York Independent System Operator, Inc.*, 136 FERC ¶ 61,192, at PP 57-59 (2011).

[77] "Lumpiness" refers to the fact that entry and exit necessarily occurs in discrete megawatt sizes for each generation technology.

requirements, and how these predictions should be included in the analysis of the demand curve. Then and now, IPPNY's arguments seem to assert that any risks or unaccounted for changes to the market will place only downward pressure on capacity prices, while in reality, such risks could result in the artificial inflation of capacity prices in New York. In the prior reset proceeding, the Commission accepted as just and reasonable an approach to determining the level of excess capacity based on reasoned judgment, and we believe it is appropriate to do so again here.[78]

H. Zero Crossing Point

1. NYISO's Proposal

134. NYISO proposes to maintain the zero crossing points for the existing capacity zones (118 percent for NYC and LI and 112 percent for NYCA) and use a 115 percent zero crossing point for the G-J Locality. NYISO supports these values based on two analyses, as described below, and discussions with stakeholders and the MMU that agreed on a need for further study of the issue.

135. The zero crossing point is the point on the demand curve where additional capacity provides no measurable reliability benefit. Prior to selecting NERA/S&L to conduct the demand curve reset analysis, NYISO engaged FTI Consulting (FTI) to evaluate the design of its capacity markets, including the determination of its ICAP demand curves and alternative zero crossing points. FTI developed reliability-based demand curves using NYISO's Multi-Area Reliability Simulation model that determined the incremental value of capacity by shifting capacity between zones. A comparison of the FTI-developed reliability-based demand curves with NYISO's existing demand curves showed a close correspondence for capacity levels greater than the target requirement. Although existing and reliability-based demand curves were roughly consistent over this capacity range, FTI's analysis supported slightly flatter curves for LI and NYCA and slightly steeper curves for NYC. The MMU recommended a change to the FTI analysis that would consider adding capacity to a particular zone rather than shifting capacity between zones to develop alternative reliability-based demand curves. His preliminary analysis showed that over the capacity range likely to encompass market clearing (100-112 percent of the requirement); the alternative reliability-based demand curves also corresponded to NYISO's existing demand curves.

136. Based on the FTI analysis and a concern to maintain stable market expectations, NERA/S&L recommended changes to the zero crossing points that partially reflected

[78] *See* 2008 Demand Curve Order, 122 FERC ¶ 61,064 at P 26; *New York Independent System Operator, Inc.*, 136 FERC ¶ 61,192 at P 60.

FTI's findings and an initial zero crossing point for the new zone at 115 percent. However, further discussions with stakeholders and the MMU led NYISO to conclude that the analyses conducted thus far did not provide a sufficient basis for altering the zero crossing points for this demand curve reset. Both the FTI and MMU analyses were sensitive to underlying assumptions, and NYISO concluded that the benefits of changing the zero crossing points were ambiguous and might be offset by adding to market uncertainty.

2. Comments and Protests

137. The NYTOs argue that, for the G-J Locality, the zero crossing point should be set to 114 percent of the requirement, consistent with what, according to the NYTOs, is the only analysis that has been performed of the appropriate zero crossing point for that zone. NYTOs assert that the MMU's representative, Dr. Patton's analysis indicates that the zero crossing point should be set at 114 percent of the ICAP requirement for the G-J Locality and there is no analysis supporting any other figure. Dr. Patton found that the marginal impact that additional capacity in the G-J Locality has when the loss of load expectation reaches zero is when the amount of capacity provided in that Locality is about 114 percent of its requirement.

138. Entergy notes its support of NYISO's determination that the zero crossing point for the G-J locality demand curve should be set at 115 percent.[79] IPPNY also supports NYISO's determination of the zero crossing point. IPPNY asserts that the Commission should find that NYISO properly rejected the NERA Report's flawed recommendation to significantly steepen the NYC demand curve from its current zero crossing point of 118 percent to 116.5 percent. IPPNY argues that the NERA Reports recommendation was flawed in several material aspects including not adjusting financing costs to account for decreased revenue stability, not considering practical implications such as the impact on incentives for retirement or entry of new capacity, considering the zero crossing point in isolation, and the fact that the analysis is sensitive to differing underlying assumptions.

a. Answers

139. NYISO states that it is incorrect to assert that the zero crossing point of 114 percent was recommended by the MMU. According to NYISO, a 114 percent zero crossing point was discussed with stakeholders on August 22, based on the MMU's preliminary results, using a newly proposed methodology and an incomplete data set. NYISO states that the MMU's analysis after receiving the complete data set resulted in a zero crossing point of 114.6 percent. NYISO further states that, in its review of the

[79] Entergy December 20, 2013 Protest at 35-38.

various methodologies and recommendations regarding the zero crossing points, NYISO found that the analyses conducted were highly sensitive to methodology, input assumptions, and transmission system topology and NYISO agreed that adopting any methodology to adjust the zero crossing point at this time could result in fluctuations to the recommended zero crossing point at each demand curve reset, introducing undue volatility and uncertainty in the market.

3. Commission Determination

140. We accept NYISO's proposal to use existing zero crossing points for NYISO's demand curves for this reset period. Zero crossing points and reference points determine the slope of the various demand curves. For given reference levels and capacity levels in excess of the ICAP requirement, the existing zero crossing points yield demand curves that reasonably reflect the value of incremental capacity according to the FTI and MMU analyses. We agree with NYISO's judgment that the existing zero crossing points for the existing capacity zones, given the sensitivities in the analyses to underlying assumptions, do not merit changes at this time. We agree with NYISO that while there are many methodologies to determine the zero crossing point, the sensitive nature of these methodologies to different inputs and assumptions warrants hesitation to just choosing one over another. Adjusting the zero crossing point at this time pursuant to a new methodology could result in fluctuations to the recommended zero crossing point at each demand curve reset and possibly introduce uncertainty to the market. We also accept NYISO's proposed 115 percent zero crossing point for the G-J Locality as reasonable. NYISO states in its answer that when the MMU performed its analysis with the complete data set for the G-J Locality, the result was a 114.6 percent zero crossing point. We do not conclude that the MMU's preliminary analysis determining a 114 percent zero-crossing point is sufficient to override NYISO's recommendation of 115 percent.

V. Proposed Phase-in of the Price Impacts of the ICAP Demand Curve for G-J Locality

1. NYISO's Proposal

141. NYISO states that the proposed ICAP demand curve for the G-J Locality would be effective for the start of the 2014/2015 Capability Year, but in order to reconcile concerns regarding its short-term consumer impacts, NYISO is proposing values that are less than the full net CONE of the peaking plant for the first two years of the ICAP demand curves for the G-J Locality. NYISO reiterates the arguments it previously made in a Request for Reconsideration in Docket No. ER13-1380-000 that a phase-in of price impacts is necessary to ameliorate effects on consumers and mitigate what has been described as potential "rate shock." NYISO states that it continues to believe that a properly structured phase-in would not interfere with long-term investment decisions given the

longer-term revenue forecast horizon typically used by developers so long as a sufficient price signal is present in the third-year of the G-J Locality ICAP demand curve and beyond.

142. NYISO states that for the 2014/2015 Capability Year, the ICAP demand curve is established using the G-J Locality peaking plant net CONE. Under NYISO's proposal, the reference price for the first year would be determined from 76.06 percent of the G-J Locality annual reference value for the peaking plant identified in the Brattle Report.[80] According to NYISO, that determined value is equal to the annual reference value of the 2014/2015 NYCA ICAP demand curve. Thus, NYISO states, the reference price for Load Zones G, H, and I would be similar to the reference price that would have applied in those load zones but for the creation of the G-J Locality. However, NYISO further states that capacity prices in the G-J Locality are not likely to be the same as those in the NYCA for the 2014/2015 Capability Year because of an anticipated lower level of excess capacity in the G-J Locality than in the NYCA, resulting in higher clearing prices for the G-J Locality. Nonetheless, according to NYISO, the magnitude of the price increase would not be nearly as great as it would be if the full G-J Locality reference value were used.

143. NYISO states that for the 2015/2016 Capability Year, the G-J Locality reference price would be determined from 88.03 percent of the G-J Locality annual reference value, which is equivalent to the average of (a) the proposed NYCA annual reference value escalated to 2015/2016 dollars using the escalation factor proposed for all ICAP demand curves and (b) the annual reference value identified by the Brattle Report for the G-J Locality, escalated to 2015/2016 dollars in the same manner.[81] NYISO states that for the 2016/2017 Capability Year, the proposed G-J Locality ICAP demand curves would be set using 100 percent of the inflation-adjusted annual reference value identified in the Brattle Report.

144. In summary, according to NYISO, the proposed phase-in would reduce the potential price increase of the G-J Locality ICAP demand curves (by comparison to curves based on the full annual reference value) for the 2014/2015 and 2015/2016 Capability Years, while steadily increasing prices each year until the full effect is reached in the 2016/2017 Capability Year. NYISO adds that the actual price impacts for those years would depend upon other factors, particularly changes in supply.

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[80] NYISO states that the 2014/2015 G-J Locality annual reference value is a decrease of 7.10 percent compared to the 2013/2014 NYCA annual reference value.

[81] NYISO states that the proposed annual reference value for the 2015/2016 Capability Year represents an increase of 18.29 percent form Capability Year 2014/2015

145. NYISO states that it believes the proposed phase-in appropriately balances short-term consumer interests and the need for investment signals to the G-J locality. NYISO states that by the third year of the proposed phase-in, the ICAP demand curve reference price would increase to 100 percent of the escalated annual reference value, and thus, the phase-in would not unreasonably delay the price signals necessary to attract new investment in the G-J Locality. NYISO asserts that the proposed phase-in is just and reasonable and consistent with prior Commission rulings. NYISO adds that rates are just and reasonable so long as they fall within a "zone of reasonableness" that is bounded on the high end by the requirement to protect consumers against exorbitant rates and at the other end by the "investor interest against confiscation."[82] NYISO states that based upon the NYPSC's predicted retail rate impacts, it is concerned that setting the G-J Locality ICAP demand curve using the full net CONE for the peaking plant might result in "exorbitant" short-term consumer impacts in the first two years of this new Locality. NYISO states that it sees little cause for concern that its proposed phase-in would result in "confiscatory" rates. According to NYISO, efficient new capacity would be attracted to the G-J Locality notwithstanding the fact that the proposed reference prices for the first and second years are derived from a value lower than the full net CONE.

146. NYISO states that if the Commission is concerned that the proposed phase-in would conflict with section 5.14.1.2(i) or any other tariff provision, NYISO asks that it waive those provisions. Section 5.14.1.2(i) specifies that the periodic review of revised ICAP demand curves "shall assess" the "current localized levelized embedded cost of a peaking plant in each NCYA Locality, the Rest of State, and any New Capacity Zone, to meet minimum capacity requirements." According to NYISO, it could be argued that basing the first two years of the G-J Locality ICAP demand curve on a value less than the 100 percent of G-J Locality peaking plant net cost of new entry would be inconsistent with this requirement.

147. NYISO also states that the proposed phase-in would affect the evaluations that NYISO conducts under the buyer-side capacity market power mitigation rules pursuant to Attachment H to the Services Tariff. NYISO explains that the ICAP demand curve is used in both the Part A and Part B exemption tests, to determine the default Offer Floor, and in setting Offer Floors for projects that are subject to mitigation. NYISO requests a limited waiver of the Services Tariff so that rather than utilizing the ICAP demand curves for 2014/2015 and 2015/2016 proposed in this filing when performing the buyer-side mitigation examination of projects in the G-J Locality in Class Years 2011 and 2012 at the time of the completion of the respective Class Years, NYISO would utilize for those

[82] NYISO November 27, 2013 Filing at 42 (citing *Jersey Cent. Power & Light Co. v. FERC*, 768 F.2d 1500 at 1503 (1985)).

years the ICAP demand curve information set forth in Attachment X, i.e., the curves based on the full net cost of new entry of the peaking plant for the G-J Locality. NYISO believes that evaluating these projects using ICAP revenues under the Class Years 2011 and 2012 G-J demand curves is more consistent with the intent to examine the overall, long-term economics of an entry decision, rather than using the G-J Locality ICAP demand curves proposed for this filing.

2. Comments and Protests

148. EPSA requests that the Commission reject NYISO's proposed phase-in of the demand curve for the G-J Locality arguing that no supporting analysis has been presented in support of this proposal. EPSA states that the Commission has previously rejected a phase-in in the underlying proceeding establishing the new capacity zone.[83] Further, EPSA asserts that the new capacity zone proceeding is the appropriate venue in which the Commission should consider the proposed phase-in of the demand curve of the G-J Locality, given that NYISO has filed a Request for Partial Reconsideration raising the same issue discussed here.[84]

149. Entergy states that NYISO's phase-in request is procedurally flawed. Entergy contends that NYISO is legally barred from proposing to phase in the G-J Locality given that the Commission has fully considered and expressly rejected requests to phase-in the G-J Locality demand curve in the New Capacity Zone Order. Therefore, Entergy argues that NYISO's phase-in request represents a collateral attack on the New Capacity Zone Order.[85] In addition, Entergy states that NYISO's phase-in request violates the requirements of the Services Tariff which requires that NYISO submit the full net CONE for each demand curve.[86] Entergy states that NYISO's request to waive these tariff requirements does not meet the Commission's standard for waiver requests.[87]

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[83] EPSA December 20, 2013 Protest at 7 (citing *New York Independent System Operator, Inc.*, 144 FERC ¶ 61,126 (2013) (New Capacity Zone Order)).

[84] On October 28, 2013, NYISO filed a Request for Partial Reconsideration of the New Capacity Zone Order.

[85] *Id.* at 15-19.

[86] *Id*. at 19 (citing Services Tariff, § 5.14.1.2(i)).

[87] Entergy December 20, 2013 Protest at 19. Entergy states that NYISO's waiver request (1) is not limited in scope, (2) does not address a concrete problem, and (3) would have undesirable consequences. Entergy explains that if the waiver request is granted, it

(continued…)

150. Further, Entergy asserts that NYISO's phase-in request fails on its merits. Entergy states that NYISO's reliance on the NYPSC's unsubstantiated retail rate impact calculations to adopt suppressed demand curves for the G-J Locality is unjust and unreasonable given that discounted rates will lead to inefficient outcomes and higher cost impacts on consumers in the long run. Entergy also notes that information regarding possible rate impacts that may occur in the G-J Locality, after establishing the G-J Locality demand curve, have been considered extensively throughout a seven-year time period.[88] Entergy states that the Commission has previously found in the New Capacity Zone Order that a phase-in would delay efficient investment price signals reflecting the higher net CONE associated with the proxy unit in the G-J Locality.

151. Indicated Suppliers argue that NYISO has failed to establish good cause for the required waiver of section 5.14.1.2 of the Services Tariff and the buyer-side market power mitigation rules in Attachment H of the Services Tariff that would be necessary to implement the phase-in proposal. Indicated Suppliers argue that this requested tariff waiver is procedurally deficient, not of limited scope, does not remedy a concrete problem, and will have undesirable consequences, such as harming third parties.

152. IPPNY argues that NYISO's proposal to phase-in the G-J Locality demand curve must be rejected as a matter of law. IPPNY argues that the Services Tariff only instructs and authorizes NYISO to implement the demand curves set at the net CONE for each respective demand curve that results from the periodic review, and does not grant NYISO the proposed discretion to discount the demand curves. IPPNY asserts that allowing a discount would produce inaccurate market signals and therefore have a profound effect on the proper functioning of electricity markets. IPPNY, like Indicated Suppliers, also argues that NYISO has not met the standard to be granted a waiver of its tariff provisions.

153. IPPNY further argues that NYISO's phase-in request represents a collateral attack on the Commission's August New Capacity Zone Order. IPPNY states that in the New Capacity Zone Order, the Commission specifically considered and rejected the proposed phase-in, stating that it would "delay the capacity market's ability to send more efficient price signals." IPPNY argues that there is no new substantiated information and that NYISO's request to mitigate price impacts to retain customers appears to be politically motivated. IPPNY believes that the Commission should uphold its determination in the New Capacity Zone Order and that whatever the outcome of that proceeding, it remains

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would have significant impacts on the New York capacity market by adversely affecting the capacity market clearing prices for the next three years.

[88] Entergy December 20, 2013 Protest at 25.

the only proper avenue for NYISO to seek reconsideration of the matter from the Commission.

154. Multiple Intervenors argue that the Commission should approve the proposed phase-in of the G-J Locality ICAP demand curve. They assert that when NYISO first sought to incorporate the ICAP demand curves into its capacity market, the Commission approved its proposal to utilize a three-year phase-in.[89] Further, they state, the price impacts of the implementation of the G-J Locality are likely to be similar, and may be considerably greater than when the curves were initially implemented. Multiple Intervenors state the although the Commission originally declined to order a phase-in of the G-J Locality, very little information was known as to the likely rate and price impacts upon which the Commission could base a decision. They assert that the proposed phase-in is not anticipated to detrimentally impact the market's ability to send more appropriate price signals to existing or potential capacity supply resources in the Lower Hudson Valley. In fact, they assert, it typically takes two years for new generation facilities to be constructed, the proposed phase-in will send efficient price signals to entities contemplating new investment in capacity and will likely have no impact on the capacity revenues of any party developing new capacity in the G-J Locality. Multiple Intervenors further contend that the enormity of the potential impacts of implementing the new capacity zone ICAP demand curve should not be disregarded, that there is significant risk posed to consumers, and the Commission should act to prevent consumer rate shock by approving phase-in.

155. The NYTOs assert that the proposed phase-in reasonably accommodates competing interests due to the limited term of the three-year demand curve proposal. The phase-in, they argue, will not adversely affect the incentives that the new demand curve provides to construct new generating capacity in the G-J Locality, since it is very unlikely that any new generating capacity built there in response to the price signals provided by the new demand curves, would be in service before the 2016/2017 Capability Year, when the new demand curve would be fully phased in. The NYTOs also state that the Commission has previously approved phase-ins for new market design changes, such as when the first ICAP demand curves in New York were implemented in 2003.

156. The NYPSC argues that a phase-in is necessary to mitigate the price impacts of the implementation of the new demand curve in the G-J Locality. The NYPSC asserts that the Commission should recognize that there are two State transmission initiatives underway that will result in the addition of major transmission facilities in the G-J Locality, significantly easing congestion in that area, and that potential new entrants that

[89] *See New York Independent System Operator, Inc.*, 103 FERC ¶ 61,201, at P 6 and fn. 4 (2003).

will enter the market three or four years from now will not look at the prices from Summer 2014 as a valid and indicative long run price signal. The NYPSC contends that fully implementing the demand curve in the G-J Locality in 2014 will skew short-term prices, and bear no relation to the long-term price signals that the G-J Locality is intended to produce.

a. Answers

157. The NYTOs assert that although the Commission rejected a proposal for a phase-in in the proceeding establishing a new capacity zone in the G-J Locality, NYISO did not propose a phase-in at that time and has subsequently requested reconsideration of the Commission's order. The Commission has not yet acted on the NYISO's reconsideration request. Accordingly, the claim that the NYISO has attempted to do an "end run" around the Commission's prior order is completely erroneous.

158. NYISO reiterates that the NYPSC has stated that the implementation of the G-J Locality without a phase-in could result in a 25 percent retail rate increase to consumers in that region and that rate impacts are likely to cause large employers in the Lower Hudson Valley to experience multi-million dollar increases in annual energy costs which could be very detrimental to job growth and retention in the region. NYISO adds that protestors have not shown that concerns regarding the short-term consumer impacts of establishing a new Locality are unfounded. Nor, according to NYISO have they refuted NYISO's position that the phase-in should not affect the market entry decision for most new generating capacity. Further, NYISO argues that a phase-in would not violate the tariff and it is not a collateral attack on the New Capacity Zone Order accepting the new capacity zone. NYISO states that the New Capacity Zone Order stated that the Commission would not "require" a phase-in, but that finding does not preclude NYISO from proposing one. Further, NYISO notes that its November 27, 2013 filing included a valid and good faith request for a waiver.

159. Entergy submits an affidavit for Mr. Mark D. Younger (Supplemental Younger Affidavit) which states that: (1) during the last seven years, more than 1,250 MW of generating capacity has been lost in the G-J Locality due to retirements and reduced operating capability; (2) no significant generation capacity has been built and demand response participation has been virtually non-existent; (3) The persistent cost differential between the G-J Locality and the rest-of-state region has been clearly documented over the last three reset processes; and (4) NYISO's mere filing of the phase-in proposal brought to a halt the ongoing efforts to bring a significant amount of derated capacity back into the market. Entergy asserts that support for the phase-in proposal is based on factually inaccurate claims and is inconsistent with the underlying structure of the competitive markets in New York, generally, and the capacity market, in particular.

160. Entergy argues that the NYPSC's claims with respect to delaying the creation of a new capacity zone are procedurally barred as the Commission has specifically addressed

and rejected these arguments in the New Capacity Zone Order. Entergy argues that the NYPSC's claims also fail on the merits. Entergy asserts that the NYPSC's proposal to supplant the market with regulated responses in lieu of correcting the market design is likely to lead to the need for further regulated response. Entergy adds that in order to ensure that efficient prices are produced that will foster the addition of new resources and the retention of existing resources to meet the long term reliability of the system and maintain an efficient level of supply in this region, the Commission should deny NYISO's phase-in proposal.

161. Entergy argues that phasing-in the demand curves in the G-J Locality will adversely affect investment in capacity. Entergy asserts that specific evidence was provided in the new capacity zone proceeding that the NRG Companies were "poised to respond swiftly to market signals such as the new Zone, that encourage reinvestment and in anticipation of the new zone, NRG has made preparations to advance the restoration of Bowline [generating facility]."[90] Entergy further argues that the NYPSC's claims to the contrary are inconsistent with the NYPSC's recent adoption of a "wait and see" approach to see if any of the identified 1,500 MW of mothballed and derated generating capacity in this region would respond to these market signals before endorsing further regulated responses.[91]

3. Commission Determination

162. We reject NYISO's proposal to phase-in the ICAP demand curve for the G-J Locality. The Commission previously rejected a proposed phase-in of the ICAP demand curves for G-J Locality in the New Capacity Zone Order and we are not persuaded now to reconsider that decision. Consistent with the New Capacity Zone Order, we find that a phase-in will not ensure that market-clearing prices will guide efficient investment decisions to add or retire capacity resources and meet reliability needs in this region.

163. NYISO states that a phase-in will ameliorate consumer impact of the rate increases that will occur in the G-J Locality as a result of the creation of this new zone. In the New Capacity Zone Order, the Commission stated that stakeholder discussions about the need for a new capacity zone in the Lower Hudson Valley have been ongoing for several years and have provided notice to stakeholders of the need for a new capacity zone. As Entergy states in its protest, information regarding possible rate impacts that may occur in

[90] Entergy January 6, 2014 Answer at 8 (quoting NRG Companies, Answer, Docket No. ER13-1380-003, at 2 (filed Nov. 12, 2013).

[91] *Id*. at 9.

the G-J Locality have been considered extensively throughout a seven-year time period.[92] We find that there was sufficient notice provided so that a phase-in is not necessary to further address "rate-shock" to consumers.

164. As we concluded in the New Capacity Zone Order, a phase-in would delay the capacity market's ability to send more efficient investment price signals to attract and maintain sufficient capacity to meet local demand.[93] We reject the assertion that the time line expected for new construction would ensure that a phase-in would not adversely affect incentives to supply capacity. This argument fails to take into account the potential for shorter term supply responses, *i.e.*, demand response and repowering options, to meet capacity needs. We agree with Entergy's assertion that a phase-in that would suppress prices for a two-year period would discourage competitive supply and could increase the likelihood of regulatory actions to meet capacity needs.[94] For these reasons, we reject NYISO's proposal to phase-in the ICAP demand curve for the G-J Locality and, therefore, we deny NYISO's requested waiver.

165. The proposed tariff revisions are accepted, to be effective January 28, 2014, subject to NYISO refiling to reflect the Demand Curve parameters, without any phase-in adjustment, in section 5.14.1.2 of the NYISO Services Tariff.

The Commission orders:

(A) NYISO's revisions to section 5.14.1.2 of NYISO's Services Tariff are hereby accepted, effective January 28, 2014, subject to the filing condition set forth in the body of this order.

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

[92] Entergy December 20, 2013 Protest at 13.

[93] New Capacity Zone Order at 25-26.

[94] Entergy December 20, 2013 Protest at 26-30.

(B) NYISO's request for a limited tariff waiver is hereby denied.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.