165 FERC ¶ 61,011
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Kevin J. McIntyre, Chairman;
Cheryl A. LaFleur, Neil Chatterjee,
and Richard Glick.

New York Independent System Operator, Inc. Docket No. ER18-1743-001

ORDER ACCEPTING TARIFF FILING

(Issued October 5, 2018)

1. On June 5, 2018, as amended on August 9, 2018, New York Independent System Operator, Inc. (NYISO) filed revisions to sections 2.12 and 5.11 of its Market Administration and Control Area Services Tariff (Services Tariff)[1] pursuant to section 205 of the Federal Power Act (FPA).[2] The proposed tariff language revises the methodology used to determine Locational Installed Capacity Requirements in the Installed Capacity (ICAP) market. The proposed revisions also renumber certain tariff sections and eliminate obsolete language.

2. In this order, we accept NYISO's proposed revisions to its Services Tariff, effective October 9, 2018.

I. Background

3. Each year, New York State Reliability Council, L.L.C. (NYSRC) establishes the Installed Reserve Margin (IRM) for the upcoming Capability Year, which spans the period beginning May 1 of a given year and ending April 30 of the following year. The IRM is expressed as a percentage, and NYISO multiplies this value by the forecasted peak load for the New York Control Area (NYCA) to calculate the statewide minimum ICAP requirement for each Capability Year, which is expressed in MW.

[1] NYISO, Services Tariff, NYISO MST, 2.12 MST Definitions - L (8.0.0) and NYISO MST, 5.11 MST Requirements Applicable to LSEs (8.0.0).

[2] 16 U.S.C. § 824d (2012).

4. NYISO's ICAP market[3] rules require all load-serving entities (LSEs) to purchase a specified amount of capacity to count toward this statewide minimum, based on each LSE's coincident peak load. LSEs with customers in certain transmission-constrained areas, defined as Localities, must fulfill a portion of their respective purchase obligations from capacity resources electrically located within those areas (Locational Minimum Installed Capacity Requirements, or LCRs). NYISO has designated three such Localities: the G-J Locality, which is composed of load zones G, H, I, and J in the Lower Hudson Valley; New York City (Zone J), which is nested within the G-J Locality; and Long Island (Zone K).

5. NYISO's current methodology for determining LCRs is called the "Unified Method" because it incorporates the methodology used by NYSRC to determine the IRM.[4] The Unified Method was developed prior to the existence of NYISO and its administered markets. The Unified Method recognizes the fact that the loss-of-load-expectation (LOLE) reliability standard used by NYSRC in setting the IRM may be achieved by carrying many different combinations of ICAP in various locations.[5] With the creation of the G-J Locality, NYISO supplemented the Unified Method with steps to calculate the LCR for the G-J Locality.

6. Since 2016, NYISO and stakeholders have been exploring alternatives to the Unified Method, because of concerns that it was not designed to accommodate nested Localities (such as the G-J Locality), and that anomalous LCR results had been observed when generators entered or exited the G-J Locality.[6]

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[3] The ICAP market is designed to ensure that there is sufficient generating capacity available to supply energy needs while providing adequate operating reserves. The product bought and sold in the ICAP market is called unforced capacity (UCAP). UCAP represents the amount of ICAP that is available at a particular time; it is the amount of ICAP available adjusted for periods that resources are not available to supply ICAP due to forced outages.

[4] The current methodology is also known colloquially by stakeholders as the "Tan 45" methodology. For consistency in this order, we refer to the current methodology as the "Unified Method."

[5] NYISO June 5, 2018 Transmittal at 3.

[6] Deficiency Response, Attachment I at 2–4. *See infra* P 10.

II. Summary of NYISO's Filing

A. June 5, 2018 Filing

7. NYISO states that the Alternative LCR Methodology uses an economic optimization algorithm to minimize the total cost of capacity for the NYCA, which will result in lower total ICAP costs than the LCRs established using the Unified Method. Moreover, NYISO asserts that the Alternative LCR Methodology will maintain the 0.1 days/year LOLE reliability standard, respect the NYSRC-approved IRM, and avoid violations of transmission security limits.[7]

8. NYISO maintains that the LCRs resulting from the Alternative LCR Methodology are within the range of historical LCRs (i.e. under the Unified Method) given comparable system conditions, while minimizing the total NYCA cost to procure ICAP and reducing the volatility of the LCRs due to changes in existing ICAP. NYISO also claims that the proposed tariff revisions would result in a more transparent and specific description of the objectives that NYISO seeks to achieve, and the methods NYISO will use, in determining LCRs.[8]

B. Deficiency Letter

9. On July 10, 2018, Commission staff issued a deficiency letter requesting further information from NYISO (Deficiency Letter). Staff asked NYISO to explain in greater detail the Alternative LCR Methodology, including how the economic optimization is designed, and how it satisfies each of NYISO's stated objectives of increased transparency, predictability, and robustness. Staff also asked NYISO to compare the Alternative LCR Methodology with the Unified Method, and to elaborate on how the transmission security limits function in practice.

C. Deficiency Response

10. NYISO filed its response to the Deficiency Letter on August 9, 2018 (Deficiency Response). In its response, NYISO provides background on its stakeholders' three-year effort to develop the Alternative LCR Methodology which began in January of 2015 and culminated with NYISO's June 5, 2018 filing. NYISO explains that it selected GE Energy Consulting (GE) to assist it in the development of a linear programming optimization tool that iterates with the GE Multi-Area Reliability Simulation Software

[7] NYISO June 5 Transmittal at 3.

[8] *Id.* at 3–4.

Program (GE MARS) to minimize the cost of capacity objective function while achieving the applicable 0.1 days/year LOLE reliability standard.

11. NYISO states that it and its stakeholders set three goals for the Alternative LCR Methodology. It should: (1) enhance the transparency and the predictability of the LCR results by eliminating undue variability; (2) improve the stability of the LCR results and allow them to move appropriately with system changes such as changes to transmission topology and changes to the net cost of new entry (CONE), which are indicative of the costs to invest in a new peaking resource within each Locality; and (3) be robust by setting requirements to attract capacity where it provides the reliability benefits to meet the resource adequacy standard at the lowest costs, can consistently be administered with any configuration of Localities, and can be modified to incorporate additional constraints that may be deemed necessary in the future.[9]

12. NYISO explains that the Alternative LCR Methodology uses the Constrained Optimization by Linear Approximation method, which executes iterative linear approximations of the constraints and objective functions to find a least cost solution. According to NYISO, the GE MARS probabilistic model determines the LOLE constraint function for the system modeled at the NYSRC-determined IRM, and the transmission security limits act as reliability-based constraints limiting how low the LCRs in each Locality can be set when achieving the least cost solution. Finally, as the result of its sensitivity analyses, NYISO uses net CONE elasticity curves taken from the ICAP Demand Curve parameters to inform the costs of each iteration of LCRs.[10]

13. NYISO further explains that the Alternative LCR Methodology increases transparency because it mitigates the variability that has been observed using the Unified Method with regard to generator entry and exit outcomes, and in turn allows the LCR calculations to appropriately react to transmission and other system changes (e.g., load forecast uncertainty). NYISO contends that this will allow market participants that participate in the year-long IRM and LCR processes to better understand how changes to the system—as well as any changes to the IRM database and modeling protocols introduced through the NYSRC Installed Capacity Subcommittee annual study work—will impact the calculation of LCRs on a year-to-year basis.[11]

14. NYISO states that, while it does not otherwise share the IRM database, LSEs and interested stakeholders can continue to participate in transparent discussions involving

[9] Deficiency Response, Attachment I at 4–5.

[10] *Id.*, Attachment I at 5–6.

[11] *Id.*, Attachment I at 11.

NYSRC and its Installed Capacity Subcommittee regarding the various inputs that are developed annually for the IRM, and which are then used by NYISO to form the basis of the LCR study. NYISO explains that it develops and presents to stakeholders the topology that is input into the GE MARS database for use in the IRM study, the LCR study, and in the various studies conducted by NYISO pursuant to its Reliability Planning Process. The topology and other inputs are also reviewed at the Electric System Planning Working Group, ICAP Working Group, and the NYSRC Installed Capacity Subcommittee, which is open to participation by market participants and other interested parties.[12]

15. NYISO also states that, similar to the transparency with which NYISO conducted the market design development for the Alternative LCR Methodology, it will present to the ICAP Working Group and the Market Issues Working Group its annual development of the net CONE curves to be used in the Alternative LCR Methodology. NYISO states that these net CONE curves will be based on the results of the ICAP Demand Curve annual update procedures set forth in section 5.14.1.2.2 of the Services Tariff. NYISO further states that the transmission security limits will be developed annually using the transmission security planning requirements and reported to stakeholders prior to use in the Alternative LCR Methodology. Finally, NYISO states that it will post a public version of the procedure used to develop the LCR values, including the methods used to develop transmission security limits, net CONE curves, and the mechanics of running the optimization. According to NYISO, this is consistent with current practice and will help explain the details of the LCR calculation process to stakeholders, thereby allowing them to independently monitor the annual calculations.[13]

16. According to NYISO, these processes established for the Alternative LCR Methodology should provide a greater opportunity for LSEs to evaluate, anticipate, and better understand the annual LCR determinations and will provide enhanced transparency, predictability, and stability to the LCR results.

III. Notice of Filing and Responsive Pleadings

17. Notice of NYISO's filing was published in the *Federal Register*, 83 Fed. Reg. 26,995 (2018), with protests and interventions due on or before June 26, 2018. The New York Public Service Commission filed a notice of intervention. Timely motions to intervene were filed by City of New York; Multiple Intervenors;[14] Long Island Power

[12] *Id.*, Attachment I at 15.

[13] *Id.*, Attachment I at 15.

[14] Multiple Intervenors states that it is an unincorporated association of approximately 60 large industrial, commercial, and institutional energy consumers, and

Authority and its wholly owned subsidiary, Long Island Lighting Company (collectively, LIPA); NRG Power Marketing LLC and GenOn Energy Management, LLC (collectively, NRG Companies); Entergy Nuclear Power Marketing, LLC; Consumer Power Advocates; Central Hudson Gas & Electric Corporation (Central Hudson), Consolidated Edison Company of New York, Inc. (Con Edison), Orange and Rockland Utilities, Inc. (O&R), New York Power Authority, Niagara Mohawk Power Corporation (Niagara Mohawk), Rochester Gas and Electric Corporation, New York State Electric & Gas Corporation, and Power Supply Long Island (collectively, New York Transmission Owners); and Helix Ravenswood, LLC (Ravenswood). Potomac Economics, Ltd., in its capacity as the NYISO Market Monitoring Unit (MMU), filed a motion to intervene out-of-time on July 11, 2018.

18. City of New York, Multiple Intervenors, and Consumer Power Advocates (collectively, Consumers) filed joint comments in support of NYISO's filing. MMU also filed comments in support of NYISO's filing.

19. LIPA and Ravenswood each filed protests of NYISO's filing. Central Hudson, Con Edison, O&R, and Niagara Mohawk (collectively, Companies) filed a joint answer to LIPA's protest. LIPA filed an answer to the answer of Companies.

20. Notice of the Deficiency Response was published in the *Federal Register*, 83 Fed. Reg. 40,508 (2018), with protests and interventions due on or before August 30, 2018. Ravenswood and LIPA each filed protests to the Deficiency Response. NYISO filed an answer to LIPA's protest, and LIPA filed an answer to NYISO's answer.

IV. Discussion

A. Procedural Matters

21. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2018), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

22. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d) (2018), the Commission grants MMU's late-filed motion to intervene given its interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

23. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2018), prohibits an answer to a protest or answer unless otherwise ordered by the decisional authority. We accept the answers filed by Companies, LIPA,

that the outcome of this proceeding will have a significant impact on the electricity costs incurred by Multiple Intervenors' members.

and NYISO because they have provided information that assisted us in our decision-making process.

B. Substantive Matters

24. As an initial matter, we reject protestors' arguments regarding the sufficiency of detail in NYISO's filing.[15] We find that the Deficiency Response sufficiently supplements the record for us to render a decision in this proceeding. We therefore also find that no material question of fact remains in the record before us, and reject protestors' requests that we establish hearing and settlement judge procedures.[16]

25. As discussed below, we accept the Alternative LCR Methodology and find that it is just and reasonable (section IV.B.1). We also find that the Alternative LCR Methodology results in LCRs, and thus capacity costs (in each Locality and in the NYCA) that are reasonably aligned with the associated reliability benefits, and therefore dismiss protestors' arguments to the contrary (section IV.B.2). We find the remaining uncontested revisions to be just and reasonable.[17] We next discuss the contested revisions.

1. Alternative LCR Methodology

a. Comments in Support

26. Consumers agree with NYISO that the Unified Method has produced counterintuitive and unpredictable outcomes for a number of years, because it was developed prior to creation of the G-J Locality, and therefore NYISO has simply appended the LCR calculation for that Locality at the end of the Unified Method.[18]

27. Consumers emphasize that the stakeholder process for developing the Alternative LCR Methodology took over three years, and therefore there can be no legitimate argument that the process was rushed, or that it ignored legitimate avenues of inquiry.[19]

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[15] LIPA June 26 Protest at 6–9; LIPA August 30 Protest at 2–4; Ravenswood June 26 Protest at 5–7; Ravenswood August 30 Protest at 2.

[16] June 26 Protest at 42–43; LIPA August 30 Protest at 30; Ravenswood June 26 Protest at 15–16; Ravenswood August 30 Protest at 2.

[17] Uncontested revisions include NYISO's proposed revisions to: (1) amend section 2.12 of the Services Tariff to reflect renumbering within section 5.11 of the Services Tariff, and (2) eliminate an obsolete paragraph located in what NYISO proposes to become renumbered section 5.11.15. NYISO June 5 Transmittal at 5.

[18] Consumers Comments at 2–3.

Consumers argue that the Commission should consider the substantial amount of effort, in terms of quantity, scope, and quality, that has been invested in developing the Alternative LCR Methodology, and find that additional analysis is not needed because it would not result in the identification of incremental benefits or further changes above and beyond the instant filing.[20]

28. MMU notes that capacity markets should be designed to facilitate investment in new and existing capacity by providing efficient price signals that reflect the value of additional capacity in each locality. MMU states that the improved reliability from additional capacity depends on where it is located, so the capacity prices in each location should be proportional to such reliability improvements, which will facilitate investment in the most valuable locations and reduce the overall cost of maintaining reliability.[21]

29. MMU states that, for several years, it has documented inefficiencies resulting from the Unified Method and has recommended that NYISO improve the methodology for setting LCRs. MMU notes that although certain of its recommended design elements did not appear in NYISO's filing, MMU nonetheless supports the Alternative LCR Methodology as a significant improvement over the Unified Method. MMU reasons that the new methodology will result in capacity prices that are more consistent with the incremental value of capacity at each location, thus inducing more efficient investment and, ultimately, lower costs to consumers.[22]

b. Protests and Answers

30. LIPA alleges that its initial analysis has found that NYISO's projected 2018 LCRs (using the Alternative LCR Methodology) do not satisfy the 0.1 days/year LOLE reliability planning standard, and that it has reached a similar conclusion using "raw," unrounded LCR values.[23] LIPA states that it undertook its own analysis, using the best available information, because NYISO provided no documentation to stakeholders or NYSRC confirming that this standard was indeed satisfied under the new methodology. LIPA claims it presented its preliminary findings to NYISO representatives to request additional information and that, because NYISO has not cooperated to-date, there remains a clear and material question of fact as to whether the Alternative LCR Methodology satisfies this reliability planning standard.[24]

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[19] *Id.* at 6.

[20] *Id.* at 7.

[21] MMU Comments at 2.

[22] *Id.* at 3.

[23] LIPA June 26 Protest at 10; LIPA August 30 Protest at 16–18.

31. In addition, LIPA alleges that the cost optimization function used in the Alternative LCR Methodology is flawed because it optimizes costs to achieve the 0.1 days/year LOLE reliability standard, while using cost curves (from the ICAP Demand Curves) that reflect pricing at a level of excess corresponding to a LOLE of 0.072 days/year. LIPA argues that this alleged mismatch means that NYISO is inaccurately assessing zonal LOLE contributions, and that the optimization will overstate Long Island's LCR.[25]

32. Regarding NYISO's proposal to implement transmission security limits as a "floor" on the amount of locational ICAP that must be procured in a Locality, LIPA argues that the nature of the economic optimization under the Alternative LCR Methodology, together with the costs of capacity within New York City, means that the transmission security limit will be the binding value for setting the New York City LCR most of the time. LIPA argues that this is a risky approach because it will, in effect, allow New York City to have less in-city capacity.[26] LIPA states that the transmission security limits are based on the N-1-1 NERC transmission security standard, which is deterministic, and that while it is essential that these limits be respected, NYISO's approach fails to capture more severe outage conditions that can only be considered in a probabilistic methodology.[27] LIPA also alleges that two neighboring Localities, such as New York City and Long Island, can have LCRs that are set using the transmission security limits as floors, but where one zone is less reliable than the other, as measured by

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[24] LIPA June 26 Protest at 10–11.

[25] LIPA August 30 Protest at 12–14.

[26] LIPA June 26 Protest at 17–18.

[27] LIPA June 26 Protest at 19; LIPA August 30 Protest at 25–26.

LOLE.[28] LIPA argues that the "floor" must instead be based on a uniform minimum reliability standard, reflecting generation adequacy and applied to all individual zones.[29]

33. LIPA also argues that the Commission has consistently recognized that rate-setting calculations, which includes the process for determining LCRs, should produce steady and predictable results, but that the Alternative LCR Methodology fails to do so and thus the Commission should reject it.[30] Ravenswood concurs, arguing that the LCRs produced by the Alternative LCR Methodology are likely to vary significantly based on changes in transmission topology, net CONE, and the addition or retirement of resources.[31] LIPA and Ravenswood both state that comparing the 2017 and 2018 LCR values using the two methodologies reveals that the Long Island LCR value is more volatile under the Alternative LCR Methodology than under the Unified Method.[32] Ravenswood states that NYISO's projections for the New York City LCR increase from 79.7 percent in 2018 to 83 percent by 2020, and 85 percent in 2021, while LIPA claims that NYISO has yet to explain the role that economic optimization played in the volatility observed in these projections.[33] LIPA and Ravenswood both argue, furthermore, that the Alternative LCR Methodology increases Long Island's exposure to exogenous factors outside of its zone, knowledge, or control, and that NYISO declined to analyze and brief stakeholders on the level of sensitivity of the Alternative LCR Methodology to such factors.[34] In its protest

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[28] LIPA explains that the 2018 LCRs, under the Alternative LCR Methodology, correspond to a LOLE for New York City of 0.093 days/year, as compared to Long Island's LOLE of 0.0763 days/year. LIPA June 26 Protest at 20.

[29] *Id.* at 21.

[30] *Id.* at 21–22.

[31] Ravenswood June 26 Protest at 12.

[32] LIPA states that the LCR values for Long Island under the Unified Method are 103.5 percent for both 2017 and 2018, while under the Alternative LCR Methodology, the LCR values are 104.2 percent for 2017 and 107.5 percent for 2018. LIPA June 26 Protest at 23. *See also* Ravenswood June 26 Protest at 13.

[33] Ravenswood June 26 Protest at 13 n.42. *See also* LIPA August 30 Protest at 27.

[34] LIPA and Ravenswood together note, for instance, the potential retirement of the Indian Point nuclear generating station, the increase of upstream transmission interface capability, or changes in effective forced outage rates of generation in New York City. LIPA also explains that when transmission facilities interconnecting into New York City elect Unforced Deliverability Rights (a choice which is not public),

to the Deficiency Response, Ravenswood reiterates its concerns that NYISO failed to conduct sufficient sensitivity analyses pertaining to large generator entry or exit, nor did NYISO's analysis consider multiple changes simultaneously.[35] LIPA also disputes NYISO's characterization of the problems with the Unified Method and generator entry/exit, and asserts that the problems NYISO describes are limited to the G-J Locality, because NYISO's current process for calculating LCRs for that Locality exist as an extension to the Unified Method (as opposed to being part of it).[36]

34. In addition, LIPA asserts that the Alternative LCR Methodology does not produce correct price signals necessary to ensure locational generation adequacy, and that the resulting LCRs would instead hinder effective resource planning. LIPA states that the economic optimization will send the signal to site capacity in one Locality—namely, Long Island—without regard for the need for local capacity in New York City, nor the feasibility of siting new capacity on Long Island. LIPA also states that the economic optimization will require LIPA to evaluate economics in other parts of New York to reliably predict the potential impact of the optimization process in its own service territory. Furthermore, LIPA argues that the quadrennial ICAP Demand Curve process (with annual updates to certain parameters), considered together with the Alternative LCR Methodology, will shorten and complicate economic forecasting for resource planning purposes, possibly leading to short-term and inefficient procurement decisions.[37]

35. LIPA additionally argues that Commission precedent supports the use of robust modeling, so that results are not sensitive to changes in key parameters of the model, but that the Alternative LCR Methodology fails this requirement because it appears highly susceptible to minor changes in inputs.[38] LIPA states that the Unified Method assures that Localities and the NYCA are equally able to withstand deviations from assumed system conditions, by spreading the responsibility in proportion to the ability to respond. LIPA contends that the Alternative LCR Methodology eliminates that measure of flexibility because the approach seeks to shift capacity into cheaper, higher-impact areas, NYISO models these facilities as generation that counts against New York City's LCR. LIPA states that this increases Long Island's LCR because NYISO no longer models these facilities as ties that could support reliability on Long Island. LIPA acknowledges that the Unified Method is also susceptible to this effect, but argues that the Alternative LCR Methodology magnifies it. LIPA June 26 Protest at 24–26 & Exh. B at 17–19. *See also* Ravenswood June 26 Protest at 13–14.

[35] Ravenswood August 30 Protest at 3.

[36] LIPA August 30 Protest at 22–25.

[37] *Id.* at 28–29.

[38] LIPA June 26 Protest at 27–28.

which increases the susceptibility of zones in which the LCRs decrease to inaccurate modeling assumptions or system conditions that differ from those assumed at the time the LCRs were determined.[39]

36. With regard to NYISO's proposed tariff language, LIPA contends that NYISO improperly omits material elements that significantly affect rates, terms, and conditions of service, and thus violates the Commission's "rule of reason."[40] LIPA argues that the elements of the Alternative LCR Methodology omitted from the Services Tariff are not merely administrative matters, but rather constitute material assumptions and standards, including the formula for the objective cost minimization function and the process for calculating transmission security limits. LIPA argues that these omissions give NYISO unwarranted discretion in changing the formula underlying the Alternative LCR Methodology, and fail to capture the relationship between any of the inputs to the methodology.[41] LIPA and Ravenswood both argue that it is problematic that NYISO did not propose including the LCRs in the Services Tariff and submitting annual filings of the LCR for Commission approval.[42] Ravenswood also requests that the Commission require such filings to ensure that all interests are balanced and that neither obligations nor costs will be shifted in a manner that is unexpected, unjust, unreasonable, or unduly discriminatory.[43]

37. LIPA also argues that the proposed tariff language is overly broad and vague, and fails to specify relevant inputs, their weighting, and other key factors, and that NYISO's proposal therefore violates the Commission's regulations.[44] For instance, LIPA points to proposed tariff language describing that NYISO will "take[] into account" cost curves and "respect" transmission security limits in determining LCRs under the Alternative LCR Methodology.[45] LIPA also argues that the treatment of New York City within key variables of the optimization function, as presented in the Deficiency Response, is

[39] *Id.* at 28–29.

[40] *Id.* at 29, n.78 (citing *Cal. Indep. Sys. Operator Corp.,* 122 FERC ¶ 61,271, at P 16 (2008)). *See also* LIPA August 30 Protest at 18–20 (citing, *inter alia*, *KeySpan-Ravenswood LLC v. FERC*, 474 F.3d 804, 811 (D.C. Cir. 2007)).

[41] LIPA June 26 Protest at 31–33.

[42] LIPA August 30 Protest at 21–22; Ravenswood August 30 Protest at 4–5.

[43] Ravenswood August 30 Protest at 4–5.

[44] LIPA June 26 Protest at 34 n.87 (citing 18 C.F.R. § 35.1). *See also* LIPA August 30 Protest at 20–21.

[45] LIPA June 26 Protest at 35–37.

ambiguous. LIPA essentially asserts that certain quantity and price terms, as specified in the function, are susceptible to multiple interpretations as to how New York City, which is nested within the G-J Locality, is treated when optimizing costs for the G-J Locality. LIPA argues that NYISO should be required to explain, and detail within the Services Tariff, the function and how these variables are defined and relate to one another.[46]

38. Finally, LIPA argues that NYISO has failed to demonstrate that its requested effective date, as amended in the Deficiency Response, is necessary or appropriate, and that NYISO remains able to carry out its responsibilities to calculate LCRs using the existing Unified Method.[47] LIPA argues that, should the Commission not reject NYISO's filing, it should suspend the effective date for further consideration pursuant to FPA section 205(d) or set the matter for hearing or technical conference procedures.[48]

39. Companies disputes LIPA's assertions that the LCRs resulting from the Alternative LCR Methodology violate the 0.1 days/year LOLE reliability standard, noting that LIPA concedes it does not possess the data necessary to perform the analysis to reach this conclusion and that, in any case, NYISO is *obligated* to comply with NYSRC's reliability rules.[49] Companies also disputes LIPA's characterization that the transmission security limits set the minimum available capacity at an "inadequate level" and "therefore allow[s] New York City to make a lower contribution to reliability than surrounding localities." Companies argues that these limits instead serve to increase the LCR in New York City (and thus increase capacity costs) above the level it would otherwise be absent these limits.[50] Companies also note that ISO New England, Inc. (ISO-NE) has adopted a

[46] LIPA August 30 Protest at 14–16.

[47] LIPA June 26 Protest at 41, 43; LIPA August 30 Protest at 29–30.

[48] LIPA also presented a deficiency letter as an alternative option, but that argument was rendered moot by the Deficiency Letter issued by Commission staff. LIPA June 26 Protest at 41–42.

[49] Companies Answer at 3–5.

[50] *Id.* at 4–6.

similar approach, in which the N-1-1 transmission planning standard is used as an import limit for the purposes of setting a locational capacity requirement.[51]

40. LIPA responds that it did not have the economic optimization algorithm or all of the data needed to replicate NYISO's calculation of the projected 2018 LCRs; however, it did not need to replicate these values to estimate whether the 0.1 days/year LOLE reliability standard would be met. LIPA states that it used GE MARS and the same base case used by NYSRC to set the IRM and NYISO to calculate the LCRs. LIPA also states that, although the base case it receives from NYSRC contains masked and encrypted data, this is irrelevant, since the file still contains the information needed to complete its analysis (e.g. generator outage data).[52] LIPA also reiterates the results of its internal analysis, which it maintains demonstrates that the Alternative LCR Methodology results in LCRs that violate the 0.1 days/year LOLE reliability standard.[53]

41. With regard to Companies' arguments regarding the historical range of LCRs, LIPA responds that those arguments do not explain or resolve the volatility and unpredictability of the Alternative LCR Methodology. LIPA presents a table summarizing the historical IRM values and LCR values (using the Unified Method) for Long Island from 2006 through 2019 and, applying the 4 percent difference between the 2018–19 LCR for Long Island under the Unified Method versus the Alternative LCR Methodology, LIPA estimates that the Alternative LCR Methodology would have (i.e. counterfactually) produced LCRs for Long Island between 98 percent and 111 percent, which are "well above" the historical range. LIPA reiterates its position that the Alternative LCR Methodology relies on a non-public algorithm that produces results that are masked, unexplained, and volatile.[54]

42. LIPA also alleges that Companies mischaracterize LIPA's concerns regarding the transmission security limits. LIPA reiterates its position that the N-1-1 transmission planning standard is inappropriate for use in determining generation adequacy because generation adequacy is a function of a more complex and contingent set of factors. LIPA also disputes Companies' reference to ISO-NE's approach as misleading, and reiterates

[51] *Id.* at n.12.

[52] LIPA July 26 Answer at 2–5.

[53] LIPA July 26 Answer at 5–6; LIPA September 25 Answer at 8–9.

[54] LIPA July 26 Answer at 7–10; LIPA September 25 Answer at 4–5.

its prior positions regarding the suitability of transmission security limits as implemented in the Alternative LCR Methodology.[55]

43. In its answer, NYISO alleges that LIPA has "greatly overstated" the Alternative LCR Methodology's likely impact on Long Island's capacity costs, and reiterates that the resulting LCRs are within the historical range of values. NYISO states that it estimates Long Island's LCR for the 2019–2020 Capability Year will be 103.6 percent (compared to 103.5 percent under the Unified Method), and that LCRs for New York City and the G-J Locality are similarly within the historical range.[56]

44. Regarding the "rule of reason" standard, NYISO asserts that LIPA's arguments are outside the scope of the proceeding, because it is equally applicable to the Unified Method and the Alternative LCR Methodology. NYISO argues that LIPA should file a complaint under FPA section 206 if it wishes to challenge the existing Services Tariff provisions. Alternatively, NYISO argues that the Commission should reject LIPA's arguments on the merits: requiring an annual LCR filing would seriously disrupt and delay the annual processes for setting the IRM and administering the ICAP market. NYISO also argues that since it began calculating LCRs in 1999, the rule of reason has never been interpreted as requiring LCRs to be filed in the Services Tariff, and that "a host of other NYISO reliability determinations" can similarly result in cost impacts, but that none of these determinations trigger filings with the Commission.[57]

45. NYISO also rebuts LIPA's allegations that the Alternative LCR Methodology may result in LCRs that violate the 0.1 days/year LOLE reliability standard. NYISO asserts that LIPA's inability to replicate its results should not cause the Commission to reject NYISO's filing.[58] Regarding the suitability of the transmission security limits, NYISO states that it currently does not apply any additional generation adequacy criteria beyond the 0.1 days/year LOLE reliability standard, and that LIPA has not presented any evidence justifying why such criteria are necessary in New York.[59]

46. Finally, NYISO acknowledges that the Alternative LCR Methodology, by design,

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[55] LIPA July 26 Answer at 11–13; LIPA September 25 Answer at 10.

[56] NYISO Answer at 6–7.

[57] NYISO Answer at 11–13.

[58] NYISO also elaborates on possible reasons why LIPA may be unable to validate NYISO's LCR calculations. *Id.* at 13–15.

[59] *Id.* at 16.

optimizes to a LOLE of 0.1 days/year—as opposed to the LOLE reliability standard associated with the level of excess used by the ICAP Demand Curves, which is smaller 0.072 days/year for the 2018–2019 Capability Year—because this approach allows NYISO to use the same IRM database that the NYSRC uses to set the IRM annually. NYISO argues that stakeholders instead agreed to this simplified approach to avoid unnecessary complications. Specifically, NYISO explains that using an LOLE associated with the level of excess would require developing multiple GE MARS databases that differ from the database used by NYSRC to set the IRM. NYISO states that these complicating steps would need to be done each year to determine the appropriate LOLE value to use as a constraint for the optimization. NYISO also explains that it and stakeholders determined that the most straightforward manner of aligning costs and requirements—in contrast to LIPA's suggestion—is to alter the LCRs solved for by the economic optimization by, at each step of the optimization, subtracting off the level of excess, and then re-running the GE MARS simulation to ensure that the resulting LCRs satisfied the 0.1 days/year LOLE reliability standard.[60] NYISO also rebuts LIPA's assertions that the cost minimization function, as articulated in the Deficiency Response, is incorrectly specified or otherwise flawed. NYISO states that the function, and associated discussion, follows exactly how the ICAP market operates for New York City as a nested Locality within the G-J Locality.[61]

c. Commission Determination

47. We accept as just and reasonable NYISO's proposed revised rules by which the LCR for each Locality will be determined. We find that the Alternative LCR Methodology satisfies the 0.1 days/year LOLE reliability standard while economically optimizing the LCRs to minimize the total cost of procuring capacity in NYCA.

48. We find that the Alternative LCR Methodology results in a cost effective and efficient set of capacity requirements by producing lower overall capacity costs to consumers and continuing to send the appropriate price signals to attract and retain the required investment in resources to maintain a reliable system. As NYISO describes, the Alternative LCR Methodology determines the optimal distribution of capacity across Localities to achieve a least cost solution, while not violating any fixed constraints, and distributes capacity more efficiently based upon the cost of the reliability value for capacity in each Locality.[62]

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[60] NYISO Answer at 17–18.

[61] NYISO Answer at 18.

[62] Deficiency Response, Attachment I at 5.

49. We disagree with LIPA that the Alternative LCR Methodology does not satisfy the 0.1 days/year LOLE reliability planning standard. NYISO explains that GE MARS is run for each iteration of the optimization to ensure that LOLE is met when the model has found the least cost solution and the results are verified by reviewing the outcomes to confirm that the solution meets the LOLE reliability planning standard.[63] Effectively, the optimization will not solve for a solution where the LOLE reliability planning standard is not met. Furthermore, we agree with Companies that NYISO is obligated to comply with NYSRC's reliability rules.[64]

50. We also disagree with LIPA's argument that the Alternative LCR Methodology is flawed because (1) it relies on an IRM database that corresponds to a 0.1 days/year LOLE reliability standard, whereas (2) the ICAP Demand Curves reflect pricing at the level of excess, with a corresponding LOLE of 0.072 days/year.[65] We agree with NYISO's explanation and find that this simplified approach to the economic optimization strikes an appropriate balance by ensuring that the Alternative LCR Methodology satisfies the minimum reliability standard (i.e. 0.1 days/year LOLE) and minimizes total capacity costs, while promoting administrative efficiency by avoiding the need to create duplicate GE MARS databases that are inconsistent with the database used by NYSRC in setting the IRM.[66]

51. LIPA also makes several arguments that the Alternative LCR Methodology results in some Localities being more or less reliable than others. We note that the intent of the LCR is to ensure that sufficient energy and capacity are available in each Locality and that appropriate reliability criteria are met.[67] We are satisfied that the Alternative LCR Methodology meets these objectives, while also minimizing total costs. We affirm that the Localities need only meet the minimum LOLE reliability standard. Moreover, we disagree with LIPA's argument that uniform minimum reliability standards be used instead of the transmission security limits. NYISO explains that it included transmission security limits in the Alternative LCR Methodology to ensure that the optimized LCRs would not result in capacity levels that would meet resource adequacy requirements while having an adverse impact on transmission security of the Localities. That is, as NYISO

[63] *Id.*, Attachment I at 9.

[64] *See supra* P 39.

[65] *See supra* P 31.

[66] *See supra* P 46.

[67] NYISO, Services Tariff, NYISO MST, 2.12 MST Definitions – L (8.0.0) (defining "Locational Minimum Installed Capacity Requirement").

explains, the transmission security limits are consistent with reliability standards because they represent the ability of the transmission system to support deliveries of energy to the Localities.[68] Given each Locality's unique transmission constraints, we find this is reasonable for NYISO to assign a unique "floor" for each Locality rather than utilize a uniform standard.

52. We disagree with arguments that the Alternative LCR Methodology produces unpredictable, unstable, and volatile results. NYISO conducted numerous sensitivity analyses, which demonstrate that the Alternative LCR Methodology reduces existing variability of the LCR results. For example, NYISO demonstrates how an increase in the transmission interface limits in the Lower Hudson Valley will result in changes to the LCRs in the Lower Hudson Valley and New York City that are appropriately responsive to the change in transfer capability. NYISO explains that in comparing sensitivity analyses for the Unified Method and the Alternative LCR Methodology, the Alternative LCR Methodology produces results that are much less volatile with regard to generation additions and retirements, and results in appropriately sized and intuitive shifts in LCRs when transmission topology changes occur. Furthermore, NYISO explains that the sensitivity analyses produced results that fall within the range of historical LCR values.[69] Contrary to LIPA's arguments, NYISO has adequately demonstrated that the Alternative LCR Methodology is appropriately sensitive and responsive to changes in inputs. Moreover, the Alternative LCR Methodology was designed to work consistently regardless of the number or configurations of the Localities.[70]

53. We also reject LIPA's arguments that NYISO improperly omits material elements regarding the Alternative LCR Methodology from the Services Tariff. We instead find NYISO's Services Tariff revisions to be consistent with the Commission's "rule of reason." As the Commission has stated,

> [u]nder the rule of reason, the Commission does not require such contracts to be filed unless they significantly affect rates and services. In deciding what must be filed, the Commission balances the need for full disclosure of pertinent contracts, which provide real benefits to existing and potential customers, against the burden that would be imposed by requiring public utilities to file contracts that do not significantly affect rates and services.[71]

[68] Deficiency Response, Attachment I at 26-27.

[69] *Id.*, Attachment I at 25.

[70] *Id.*, Attachment I at 23.

[71] *PacifiCorp*, 127 FERC ¶ 61,144, at P 11 (2009) (*PacifiCorp*).

The rule of reason recognizes that there are an "infinitude of practices affecting rates and services,"[72] and "allows the Commission to exercise its discretion to allow utilities to forego filing particular contracts or practices."[73] Consistent with the foregoing principles, NYISO's Services Tariff sets forth the process for determining the LCRs for each Locality and outlines the parameters of the LCR calculation.[74] We are also satisfied that NYISO provides stakeholders with sufficient transparency into the LCR-setting process.[75] NYISO explains that the LCRs will be produced at the end of a year-long collaborative process among NYISO and NYSRC, which is conducted in an open and transparent manner and the results of which are made available through the stakeholder process and posted online.[76] We find that the Services Tariff contains sufficient

[72] *City of Cleveland v. F.E.R.C.*, 773 F.2d 1368, 1376 (D.C. Cir. 1985).

[73] *PacifiCorp*, 127 FERC ¶ 61,144, at P 9 n.14 (citing *Pub. Serv. Co. of Colo.*, 67 FERC ¶ 61,371, at 62,267 (1994)). *Town of Easton, Maryland v. Delmarva Power & Light Co.*, 24 FERC ¶ 61,251, 61,531 (1983) ("[A]s we have stated on several occasions "the determination of what agreements 'affect or relate to' electric service within the purview of section 35.2(b) must be judged by the rule of reason.") (quoting *Pacific Gas and Elec. Co.*, 7 FERC ¶ 61,267, at 61,565 (1979), *affirmed*, *Pacific Gas and Elec. Co. v. F.E.R.C.*, 679 F.2d 262 (D.C. Cir. 1982)).

[74] NYISO, Services Tariff, NYISO MST, 5.11 MST Requirements Applicable to LSEs (8.0.0), § 5.11.4.

[75] We also find that NYISO's proposed tariff language is not impermissibly vague or ambiguous, as LIPA argues. LIPA August 30 Protest at 21 (citing *PJM Interconnection, L.L.C.*, 150 FERC ¶ 61,122, at PP 51-52 (2015) (*PJM*)). *PJM* does not require that the Commission reject any tariff language using the term "take into account," as the protest seems to suggest. Rather, *PJM* dealt with proposed tariff language that did not contain sufficient criteria or other method by which capacity acquisition determinations would be made beyond a reference to "taking into account" particular concerns. *PJM*, 150 FERC ¶ 61,122 at P52. That is not the case with NYISO's proposed tariff language. LIPA's reference to *Hudson Transmission Partners* is similarly inapposite. LIPA August 30 Protest at 18 n.49 (citing *Hudson Transmission Partners, LLC v. NYISO*, 145 FERC ¶ 61,156, at PP 89-90 (2013) (*Hudson Transmission Partners*)). In *Hudson Transmission Partners*, we required NYISO to make a compliance filing because its approach was "based on undisclosed assumptions and . . . lacking in transparency." *Hudson Transmission Partners*, 145 FERC ¶ 61,156 at P 89. The Commission directed NYISO to make a compliance filing explaining how the scaling factor was calculated and supporting the methodology. *Id.* at 90. In this case,

NYISO has provided sufficient information on the Alternative LCR Methodology and we do not require additional detail.

information regarding the determination of LCRs to satisfy the requirement that practices significantly affecting rates and services be filed and that the "rule of reason" does not require NYISO to make further revisions to the Services Tariff or require the LCRs to be approved through annual filings.

54. Lastly, we are not convinced by LIPA's arguments regarding NYISO's requested effective date and see no reason that NYISO should not be permitted to implement the Alternative LCR Methodology upon Commission approval.

2. Alignment of Reliability Costs and Benefits

a. Comments in Support

55. Consumers note that NYISO acknowledged that there is a potential for some customers to pay higher capacity costs in certain years as a result of the Alternative LCR Methodology, but that such localized impacts do not render NYISO's proposal unjust or unreasonable.[77]

56. Consumers dispute protestors' allegations that the Alternative LCR Methodology results in some customers newly subsidizing other customers. Consumers instead argue that there has been no comparative analysis of possible cost shifting under the Unified Method, and that the fact that it produced counterintuitive results suggests that some inequitable allocation of costs could have existed.[78] Consumers also maintain that the LCRs resulting from the Alternative LCR Methodology do not exceed historical fluctuations for Long Island, when viewed both in nominal terms (i.e. comparing LCR values from year to year) and in relative terms (i.e. comparing the annual percentage change relative to the prior year's LCR).[79]

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[76] Deficiency Response, Attachment I at 15–16.

[77] Consumers Comments at 3.

[78] *Id.* at 4.

[79] *Id.* at 5.

57. MMU states that it agrees with certain concerns raised by LIPA in the stakeholder process. In particular, MMU states that NYISO's simulation results presented in the stakeholder process revealed that Long Island's LCR (under the Alternative LCR Methodology) was driven partly by the fact that Long Island provides a low-cost means to relieve transmission constraints between Upstate and Southeast New York, rather than because of the specific reliability needs of Long Island consumers. Even so, MMU states that it does not believe that this is cause for the Commission to reject NYISO's filing because any effect on cost allocation is an indirect consequence of the rule that allocates costs based on where the capacity is procured, rather than to the areas that benefit from the capacity. On balance, the MMU contends that the current cost allocation rules, together with LCRs resulting from the Unified Method, have resulted in substantial fluctuations in the share of capacity costs allocated to various zones, and that the Alternative LCR Methodology results in LCRs that produce an allocation of capacity costs that is reasonably consistent with prior years.[80]

58. MMU concludes that the current linkage of the cost allocation to LCRs raises equity concerns, but that these concerns exist under the Unified Method, and that in the long run, NYISO should consider improvements in the cost allocation via the stakeholder process. However, MMU reiterates that the Alternative LCR Methodology is a clear improvement to the status quo, is independent of the cost allocation rules, and therefore should be accepted by the Commission.[81]

b. Protests and Answers

59. LIPA argues that the Alternative LCR Methodology causes Long Island to bear additional capacity costs to provide a greater portion of the reliability of the G-J Locality and New York City, and therefore undermines the concept of mutual support between neighboring systems or zones. LIPA states that the Alternative LCR Methodology seeks asymmetry, in that it favors shifting LCRs to the zone with the higher reliability benefit and lower costs. LIPA presents analysis, using loss of energy expectation (LOEE) as a metric,[82] which it states demonstrates the asymmetric zonal reliability contributions—and

[80] MMU Comments at 3–4.

[81] *Id.* at 5.

[82] LOEE is related to LOLE, but the two reliability metrics are distinct. LOLE is a probabilistic measure of how often a day will occur in which it is expected that load is unable to be served due to generation inadequacy (i.e. a measure of the likelihood of a generation inadequacy event) and, as discussed in the Background section, is expressed in terms of days/year. By comparison, LOEE is a probabilistic measure of how much *energy* is unable to be delivered due to generation inadequacy events over a given period

by implication, reliability costs—between New York City and Long Island that will be engendered by the Alternative LCR Methodology.[83] Referring to its internal analysis, LIPA states that adding 200 MW of capacity to Long Island, and assuming NYISO's projections of the 2018 LCRs, reduces Long Island's LOEE by 10.22 MWh, while reducing LOEE in New York City by 13.61 MWh and in the Lower Hudson Valley (zones G, H, and I) by 6.76 MWh, which LIPA states translates to nearly 74 percent of the reduction in unserved energy accruing to zones outside Long Island. Conversely, LIPA states that adding 200 MW of capacity within New York City would only result in 6 percent of reliability benefits, again measured in terms of LOEE, accruing to Long Island.[84]

60. LIPA also argues that similar asymmetries exist when measuring reliability benefits in terms of LOLE. For example, LIPA states that under the Unified Method, the Lower Hudson Valley (zones G, H, and I, collectively), New York City, and Long Island contribute in "roughly equal measure to LOLE," and asserts that this equivalency is lost under the Alternative LCR Methodology.[85] To illustrate this point, LIPA compares the ratio of the LOLE values for New York City and Long Island, under the Unified Method versus the Alternative LCR Methodology.[86]

61. LIPA argues that, because New York City's LOLE increases (i.e. New York City is less reliable) while Long Island's LOLE decreases, this "further undermines any notion of mutual support, and makes clear that the increased LCR [on Long Island] amounts to a subsidy for [New York City]."[87] In addition, LIPA states that Long Island has

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of time, and can be expressed in terms of MWh/year. *See* North American Electric Reliability Corporation, *Probabilistic Adequacy and Measures* at 14 & 16 (Apr. 2018), https://www.nerc.com/comm/PC/Documents/2.d_Probabilistic_Adequacy_and_Measures_Report_Final.pdf.

[83] LIPA June 26 Protest at 11–12.

[84] LIPA June 26 Protest at 13, 16, n.27; LIPA September 25 Answer at 6–8.

[85] LIPA June 26 Protest at 13.

[86] LIPA states that, under the Unified Method, New York City's LOLE is 0.081 days/year and Long Island's LOLE is 0.0841 days/year, which LIPA characterizes as New York City contributing 96.3 percent as much to reliability as Long Island. Under the Alternative LCR Methodology, LIPA states that New York City's LOLE is 0.093 days/year, while Long Island's LOLE is 0.0763 days/year. Using the same ratio, LIPA states that New York City is at 121.9 percent of the Long Island LOLE contribution, which constitutes a significant departure from the prior equivalency of LOLE contributions. *Id.* at 17.

historically had LCRs higher than its peak load and has maintained a significant portfolio of generation resources on Long Island to meet its future, projected load growth. LIPA argues that the Alternative LCR Methodology will require LIPA to pay higher prices for existing surplus capacity and, in the long run, acquire more new capacity to principally benefit New York City.[88] LIPA notes that, at the same time, the Alternative LCR Methodology results in LCRs below historical levels for New York City, which would reduce its ability to assist Long Island in the event it was facing generation inadequacy (as well as the rest of New York State, should inadequacies arise there).

62. Finally, LIPA states that, should the Commission accept the Alternative LCR Methodology, it should require NYISO to propose a cost allocation methodology that "assigns costs at least 'roughly commensurate' to benefits."[89] LIPA cites *Illinois Commerce Commission v. FERC* to support its arguments that the Commission must "[compare] the costs assessed against a party to the burdens imposed or benefits drawn by that party," and that the Commission "is not authorized to approve a pricing scheme that requires a group of utilities to pay for facilities from which its members derive no benefits, or benefits that are trivial in relation to the costs sought to be shifted to its members."[90] LIPA notes that from the beginning of the stakeholder process in which the Alternative LCR Methodology was developed, NYISO had contemplated cost allocation implications associated with the economic optimization of LCRs.[91] However, LIPA argues that NYISO now ignores the cost allocation issues implicated by the Alternative LCR Methodology, and that the NYISO Board of Directors unsatisfactorily offers to consider these issues through a separate stakeholder process in the future.[92] LIPA argues that without a corresponding cost allocation methodology, the Alternative LCR Methodology will directly contravene the "beneficiary pays" principle, and cannot be approved as just and reasonable. To advance its position, LIPA cites Commission precedent from 2003 in rejecting NYISO's proposed statewide socialization of costs associated with the Thunderstorm Alert reliability program.[93]

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[87] *Id.* at 13–14.

[88] *Id.* at 14–15.

[89] *Id.* at 37, 41.

[90] LIPA August 30 Protest at 10 n.27 (citing *Illinois Commerce Commission v. FERC*, 576 F.3d 470, 475 (7th Cir. 2009), *on remand, PJM Interconnection, L.L.C.,* 138 FERC ¶ 61,230 (2012), *reh'g denied,* 142 FERC ¶ 61,216 (2013), *review granted and cause remanded by, Ill. Commerce Comm'n v. FERC,* 756 F.3d 556 (7th Cir. 2014)).

[91] LIPA June 26 Protest at 38.

[92] LIPA August 30 Protest at 7–8; LIPA September 25 Protest at 5–6.

63. Ravenswood advances similar arguments as LIPA. Ravenswood asserts that the cost savings realized by the Alternative LCR Methodology may be the result of shifting costs from one Locality to another, and that the methodology ignores cost causation principles and creates unnecessary rate shock.[94] Ravenswood states that the Alternative LCR Methodology will result in increased LCRs on Long Island that will require LIPA to retain excess capacity that it might have otherwise retired. Ravenswood states that NYISO has not conducted adequate studies to assess how the Alternative LCR Methodology will perform in practice, nor has NYISO nor the Board of Directors explained how the short-term cost increases for Long Island customers can be deemed just and reasonable, or compliant with the prohibition against unduly preferential or discriminatory rates pursuant to FPA section 205(b).[95]

64. Ravenswood also argues that MMU has recently reported that net revenues have been inadequate to ensure that all suppliers in New York City are able to recover their going-forward costs, and that these revenue shortfalls will only be exacerbated by the Alternative LCR Methodology. Ravenswood states that NYISO has failed to explain how such rate reductions can be considered just and reasonable, given that rates are meant to balance "the investor and the consumer interests" and must ensure that, at a minimum, generators have "the opportunity to recover [their] costs."[96] Ravenswood argues that NYISO should not "myopically tinker" with isolated aspects of its market design, such as the LCR methodology, without considering whether its rules in combination will produce rates that will adequately compensate, and provide for continued investment in, generators that are needed for reliability.[97]

65. Finally, Ravenswood argues that, should the Commission not reject NYISO's filing, the Commission should suspend the effectiveness of the tariff provisions for the maximum period under the FPA, and establish hearing and settlement procedures to explore the cost allocation issues raised in this proceeding. Ravenswood states that NYISO's filing does not propose any mechanism to ease rate shock for consumers or generators, and asserts that it is plainly not just and reasonable to propose the Alternative LCR Methodology without any such mechanism.[98] Ravenswood argues that such a

[93] LIPA June 26 Protest at 39–40; LIPA August 30 Protest at 9–10.

[94] Ravenswood June 26 Protest at 8–9.

[95] *Id.* at 9–10.

[96] *Id.* at 11 (citing *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944) and *Bridgeport Energy, LLC,* 113 FERC ¶ 61,311, at P 29 (2005)).

[97] Ravenswood June 26 Protest at 11–12.

[98] *Id.* at 15.

mechanism would allow parties to "gain experience with the new market design at a reduced risk exposure."[99]

66. Companies responds that LIPA's claims regarding cost increases on Long Island are overstated. Companies states that the point of the Alternative LCR Methodology is that it optimizes capacity requirements for New York State overall while continuing to meet reliability needs, and that the cost impact on Long Island is moderate (i.e. within historical ranges), and accordingly the Commission should accept the proposal as just and reasonable.[100] Companies also argues that the Commission should reject LIPA's request to impose a separate cost allocation scheme for several reasons, namely: (1) NYISO's filing is just and reasonable; (2) any out-of-market cost mechanism would undermine market efficiency; and (3) NYISO's filing as presented is the result of hard-fought compromise, which garnered 77.55 percent stakeholder approval, and imposing any such condition on NYISO (i.e. to require a new cost allocation scheme) is impermissible under FPA section 205.[101]

67. LIPA disputes Companies' characterization of LIPA's request for a new cost allocation scheme as an "out-of-market solution." LIPA states that out-of-market solutions involve payments by third parties that are not jurisdictionally overseen by the Commission, whereas LIPA's request constitutes an "in-market solution" because it involves LSEs participating in the ICAP market. LIPA argues that it is well within the ambit of the NYISO market design, and within NYISO's filing, for the Commission to require NYISO to develop an alternative cost allocation scheme.[102]

68. NYISO responds that, contrary to LIPA's assertions, it considered the need for a new cost allocation scheme. NYISO states that it decided not to pursue cost allocation at this time because the potential cost allocation impacts were relatively small, and NYISO saw no reason to delay the benefits of the Alternative LCR Methodology until after cost allocation questions could be resolved.[103] NYISO also argues that the Commission is not required to exactly match cost and benefits, and that practical implementation concerns and the need for administrative feasibility are legitimate countervailing considerations, as upheld by the courts.[104]

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[99] *Id.* at 16 (citing *ISO New England Inc.*, 147 FERC ¶ 61,172, at P 73 (2014)).

[100] Companies Answer at 6–7.

[101] *Id.* at 7–8, n.17–19 (citing *NRG Power Mktg., LLC and GenOn Energy Mgmt., LLC v. FERC*, 862 F.3d 108 (D.C. Cir. 2017) (internal citations omitted)).

[102] LIPA July 26 Answer at 14 & n.35.

[103] NYISO Answer at 8.

69. NYISO also disputes the applicability of the Thunderstorm Alert precedent. NYISO argues that, in that proceeding, the Commission found that 100 percent of the program's benefits accrued to New York City; whereas NYISO argues that a significant portion of the quantifiable reliability benefits of adding new capacity on Long Island (as a result of an increased LCR) accrue to Long Island.[105]

c. Commission Determination

70. As discussed below, we find that the reliability benefits associated with the LCRs under the Alternative LCR Methodology are roughly commensurate with the costs associated with satisfying those locational capacity purchase obligations, and therefore we disagree with arguments from LIPA and Ravenswood to the contrary. NYISO has also not proposed any change to the cost allocation methodology under the Services Tariff, and we affirm that NYISO is not required to do so as part of its filing.

71. As an initial matter, we find that LIPA mischaracterizes the changes in capacity costs resulting from the Alternative LCR Methodology as a cost allocation issue. As MMU explains, the Alternative LCR Methodology corrects for inefficiently high and inefficiently low relative LCRs resulting from the Unified Method. In turn, this does result in changes in capacity costs for each zone. Those changes, however, do not demonstrate an issue with the cost allocation methodology. LIPA's arguments also seem to ignore the central feature of the Alternative LCR Methodology: a cost-minimization algorithm, which is not inherent to the Unified Method.

72. Also, we disagree with LIPA's arguments that rely on LOEE as evidence of asymmetrical reliability benefits—and by implication, asymmetrical costs—accruing to Long Island versus other Localities or zones. LOLE is a measure of the *likelihood* of a day occurring in which there is at least one generation inadequacy event, whereas LOEE—more commonly known in the industry as Expected Unserved Energy—is a measure of the *magnitude and duration* of generation inadequacy events over a given period of time.[106] The ICAP market is specifically designed to ensure sufficient capacity to satisfy the statewide IRM,[107] which itself is calculated to ensure that the 0.1 days/year

[104] NYISO Answer at 8–9.

[105] NYISO Answer at 10.

[106] North American Electric Reliability Corporation, *Probabilistic Adequacy and Measures* at 14 & 16 (Apr. 2018), https://www.nerc.com/comm/PC/Documents/2.d_Probabilistic_Adequacy_and_Measures_Report_Final.pdf.

[107] NYISO, Services Tariff, NYISO MST, 5.10 MST NYCA Minimum Installed Capacity Requirement (1.0.0).

LOLE reliability standard is met.[108] LOEE is therefore an inappropriate metric by which to evaluate the incidence of reliability benefits, or performance of, the ICAP market, because neither the IRM nor the ICAP market is designed to achieve any reliability standard measured in those terms.

73. We also dismiss LIPA's arguments that rely on LOLE as evidence of asymmetrical reliability benefits—and again, by implication, asymmetrical costs—accruing to Long Island versus other Localities or zones. Specifically, LIPA argues that under the Unified Method, the Lower Hudson Valley, New York City, and Long Island contribute in "roughly equal measure to LOLE," whereas this equivalency is lost under the Alternative LCR Methodology. LIPA's use of ratios of LOLE values for neighboring zones misses the point of the Alternative LCR Methodology, which is to ensure that the 0.1 days/year LOLE reliability standard is met in each of the Localities, and in the NYCA as a whole, at least cost. Whether the LOLE in a given zone or Locality is higher or lower than in a neighboring zone or Locality is irrelevant to whether this fundamental objective is achieved. Furthermore, LOLE is not additive; that is, a higher LOLE in one zone or Locality does not automatically mean that, all else being equal, LOLE must fall in another zone or Locality. We find it is, therefore, irrelevant to describe the LOLE in New York City in terms of its ratio to the LOLE on Long Island.

74. Similarly, we dismiss LIPA's claim that neighboring zones and Localities "lean" on Long Island—because Long Island has historically faced a LCR in excess of its peak load—which LIPA implies warrants an alternative cost allocation scheme. As discussed above, the ICAP market rules require all LSEs statewide to procure the same total ICAP as a percentage of each LSE's peak load, therefore LIPA must procure the same relative amount of ICAP as LSEs in New York City and the Lower Hudson Valley. Rather, the LCRs dictate what portion of each LSE's total ICAP purchase obligation must be locally sourced. Therefore, the fact that LIPA has historically purchased more local ICAP, as a percentage of its peak load, than LSEs in New York City largely reflects the nature of the New York transmission system; namely, that Long Island is import-constrained.

75. We acknowledge that the LCRs resulting from the Alternative LCR Methodology will increase the quantity of ICAP that must be procured from resources located on Long Island and that, all else being equal, this may cause prices to increase in the short run. However, we are not persuaded by LIPA's arguments that these increased LCRs on Long Island will, in the long run, require LIPA to acquire capacity to principally benefit New York City, for the reasons described below.

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[108] NYSRC, Reliability Rule A.1 (Establishing NYCA Installed Reserve Margin Requirements), at Requirement R1.1, http://www.nysrc.org/pdf/Reliability%20Rules%20Manuals/RRC%20Manual%20V43%20Final[4070].pdf.

76. First, LIPA has failed to substantiate its claims, raised by implication of *Illinois Commerce Commission v. FERC*, that Long Island consumers would derive no benefits from—or benefits that are trivial relative to incremental capacity costs of—increased LCRs.[109] We find that the sloped nature of the ICAP Demand Curves inherently acknowledges that reliability benefits continue to accrue, albeit at a diminishing marginal rate, as a Locality adds capacity above the reference value (which corresponds to the LCR).[110] That is, provided that the LCR does not exceed the quantity associated with the zero crossing point,[111] Long Island consumers continue to derive reliability benefits from increased procurement of local capacity (i.e. Long Island's LOLE under the Alternative LCR Methodology decreases, which means that Long Island is *more* reliable than under the Unified Method). For this same reason, we also disagree with LIPA's arguments based on the Commission's determinations regarding cost allocation for NYISO's Thunderstorm Alert program.[112] In that proceeding, the Commission found that the reliability benefits of the program accrued solely to New York City, and on that basis assigned costs solely to LSEs serving load in New York City.[113] Again, we find that capacity added on Long Island benefits consumers on Long Island,[114] in addition to any reliability benefits accruing to neighboring Localities, including New York City. The fact pattern in the Thunderstorm Alert proceeding is not present here, therefore LIPA's analogy is misplaced.

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[109] *See supra* n.90.

[110] The Commission has previously acknowledged this feature of the sloped ICAP Demand Curve. *See, e.g., N. Y. Indep. Sys. Operator, Inc.,* 103 FERC ¶ 61,201, at P 35 (2003) ("The proposed downward sloping demand curve reflects the decreasing but still positive value of additional reserves….") and *N. Y. Indep. Sys. Operator, Inc.,* 122 FERC ¶ 61,064, at P 62 (2008) ("The zero-crossing point, the point on the demand curve where the curve crosses the x-axis where the value of capacity is zero, and the reference point, the point on the demand curve where the minimum capacity requirement equals the net cost of new entry, determine the slope of the demand curve.").

[111] This is not the case here, given that the zero crossing point for Long Island is fixed at 118 percent of the LCR for the duration of the quadrennial ICAP Demand Curve reset cycle, which ends on April 30, 2021. *See* NYISO, Services Tariff, NYISO MST, 5.14 MST Installed Capacity Spot Market Auction and Installed Capacity Supplier Deficiencies (19.0.0), § 5.14.1.2.

[112] *See supra* P 62 and note 93.

[113] *N. Y. Indep. Sys. Operator, Inc.*, 102 FERC ¶ 61,284, at P 13 (2003).

[114] As long as total installed capacity does not exceed the zero crossing point for the Long Island ICAP Demand Curve.

77. Furthermore, we find that the incremental capacity costs incurred by Long Island consumers are not misaligned with these reliability benefits because of the relationship between LCRs and the ICAP Demand Curves. Specifically, the ICAP Demand Curves, which are a function of net CONE, adjust annually to reflect (in part) escalation in the cost of capacity in each Locality.[115] In turn, the Alternative LCR Methodology relies on the net CONE curves from the ICAP Demand Curves for the purposes of the economic optimization.[116] Therefore, the Alternative LCR Methodology internalizes any changes in capacity costs in determining the optimal LCR values for each Locality and for the NYCA. In sum, we find that the annual update to the ICAP Demand Curve parameters, together with the design of the Alternative LCR Methodology, ensures that benefits and costs are reasonably aligned.

78. Secondly, LIPA has stated that, for years, it has "maintained a significant portfolio of generation resources on Long Island to meet its future, projected load growth."[117] Therefore, to the extent that this capacity exceeds LIPA's total ICAP procurement needs as LIPA represents, we expect that increasing the LCR on Long Island would, in the short run, stand to benefit LIPA's resources by increasing the revenues that LIPA receives for this excess capacity. Furthermore, the reduced LCRs in New York City, for instance, would allow LSEs in New York City to procure some of this excess capacity, thus yielding additional revenues for LIPA's capacity that would otherwise sit idle or, as Ravenswood argues, might have even retired.[118] Given that capacity costs on Long Island are lower, this expected result is both rational and economically efficient. Over time, we would expect the Alternative LCR Methodology to lead to convergence across Localities of the cost of reliability improvement,[119] which would signal that the ICAP market is functioning efficiently. We therefore also disagree with Ravenswood's

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[115] NYISO, Services Tariff, NYISO MST, 5.14 MST Installed Capacity Spot Market Auction and Installed Capacity Supplier Deficiencies (19.0.0), § 5.14.1.2.2.

[116] Deficiency Response, Attachment I at 15.

[117] *See supra* P 61.

[118] *See supra* P 63.

[119] Cost of reliability improvement expresses the estimated capital investment cost of adding an amount of capacity to a zone that improves the LOLE by 0.001. This metric is based on the estimated cost of new investment from the latest ICAP Demand Curve reset study and the marginal reliability benefit of capacity in a particular zone. *See* MMU, *2017 State of the Market Report* at 49 (May 2018), http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Reports/Market_Monitoring_Unit_Reports/2017/NYISO-2017-SOM-Report-5-07-2018_final.pdf.

argument on this point.

79. Thirdly, in the long run, we expect that the price signals provided by increased LCRs on Long Island would help to encourage the development of new generation, transmission, or both, where it is economically efficient: in this case, on Long Island. Over time, this would help alleviate congestion at the UPNY-SENY interface, which would benefit *all* zones in Southeast New York (i.e. on the import-constrained side of the interface), including Long Island, in the form of lower capacity prices that converge with capacity prices in Upstate New York. These price signals on Long Island therefore would produce long-term benefits that outweigh any short-term price effects observed during the transition from the Unified Method to the Alternative LCR Methodology.[120] We also disagree with Ravenswood's arguments regarding rate shock. While we acknowledge that consumers on Long Island will face short-term cost increases relative to the LCRs resulting from the Unified Method, that fact does not *per se* render NYISO's

[120] *N.Y. Indep. Sys. Operator, Inc.*, 144 FERC ¶ 61,126, *reh'g denied, N.Y. Indep. Sys. Operator, Inc.,* 147 FERC ¶ 61,152, at P 17 (2014) ("The reality is that, in the short run, consumers may pay more but doing so is necessary to provide the appropriate price signals to incent developers to build or restore capacity and address a long-standing problem…. The Commission hopes to emphasize that decision-making based only on avoiding price increase in the short-term could threaten reliability and price stability in the long-term."), *appeal denied sub. nom. Central Hudson Gas & Elec. Corp. v. FERC*, 783 F.3d 92, 111 (2nd Cir. 2015).

filing unjust and unreasonable.[121] Rather, what is relevant here is whether capacity costs resulting from the ICAP market are reasonably aligned with reliability benefits. As discussed above, we find that to be the case.

80. We are also not persuaded by LIPA's arguments that NYISO failed to fulfill a commitment to stakeholders to develop a new approach to imposing locational capacity purchase obligations, and thus allocating costs. We are satisfied with NYISO's reasoning that, because NYISO found that the LCRs are within the historical range of LCR values, it determined that the cost allocation methodology need not be changed at this time.[122] We are also persuaded by the MMU's comments regarding this methodology, and encourage NYISO and stakeholders to continue studying this issue, particularly should LCRs resulting from the Alternative LCR Methodology begin to deviate meaningfully from the historical range.

81. Nor are we persuaded by Ravenswood's argument that because the Alternative LCR Methodology decreases LCRs in New York City, this unreasonably reduces capacity prices for resources located there. Ravenswood's argument misses the point of the Alternative LCR Methodology, and of the ICAP market itself. NYISO designed the Alternative LCR Methodology to minimize the total cost of capacity, at the prescribed level of excess, and subject to satisfying the 0.1 days/year LOLE reliability standard while respecting transmission security limits.[123] The ICAP market is designed to ensure that there is sufficient generating capacity available to supply energy needs while providing adequate operating reserves.[124] While ICAP market clearing prices should—on average over time, and together with net energy and ancillary services revenue—provide sufficient revenues to attract investment in the NYCA and Localities to satisfy the

[121] *See, e.g.*, *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,076, at P 484 (2007) (citing 16 U.S.C. § 824d); *see also S. Carolina Pub. Serv. Auth. v. FERC*, 762 F.3d 41, 88 (D.C. Cir. 2014) (upholding cost causation principles of Order No. 1000 despite Commission recognition that some beneficiaries might escape cost responsibility because "nothing requires the Commission to ensure full or perfect cost causation" and recognizing that "feasibility concerns play a role in approving rates," such that the Commission "is not bound to reject any rate mechanism that tracks the cost-causation principle less than perfectly.") (quoting *Sithe/Independence Power Partners, L.P. v. FERC*, 285 F.3d 1, 5 (D.C. Cir. 2002)).

[122] Deficiency Response, Attachment I at 25. *See also* NYISO Answer at 8.

[123] NYISO, Services Tariff, NYISO MST, 5.11 MST Requirements Applicable to LSEs (8.0.0), § 5.11.4.

[124] *See supra* n.3.

0.1 days/year LOLE reliability standard, the mere fact that lower LCRs result in less local capacity being purchased in a specific Locality does not itself render the Alternative LCR Methodology unjust or unreasonable.

The Commission orders:

NYISO's proposed revisions to sections 2.12 and 5.11 of the Services Tariff are hereby accepted, effective October 9, 2018, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.