122 FERC ¶ 61,064
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Joseph T. Kelliher, Chairman;
Suedeen G. Kelly, Marc Spitzer,
Philip D. Moeller, and Jon Wellinghoff.

New York Independent System Operator, Inc. Docket No. ER08-283-000

ORDER ACCEPTING TARIFF SHEET

(Issued January 29, 2008)

1. On November 30, 2007, The New York Independent System Operator, Inc. (NYISO) filed a revised tariff and supporting documentation to update its Installed Capacity (ICAP) Demand Curve for the 2008/2009, 2009/2010 and 2010/2011 Capability Years, to be effective January 29, 2008. In this order the Commission accepts the revised tariff sheet, effective January 29, 2008, as proposed.

I. Background

2. In 2003, the Commission accepted tariff sheets to NYISO's Market Administration and Control Area Service Tariff (Services Tariff) which established the ICAP Demand Curve.[1] ICAP Demand Curves define the amount of ICAP that each load serving entity (LSE) has to obtain for the following month. They are intended to improve system and resource reliability by valuing the ICAP resources available above the system's required levels, and providing more effective economic signals for new investment. The ICAP Demand Curves are used in monthly ICAP spot market auctions.

3. Section 5.14.1(b) of the Services Tariff[2] requires NYISO to perform a triennial review to determine whether the parameters for the ICAP Demand Curve should be adjusted. In 2005, NYISO completed its first triennial review and filed revised tariff

[1] *N.Y. Indep. Sys. Operator, Inc.*, 103 FERC ¶ 61,201; *reh'g denied*, 105 FERC ¶ 61,108 (2003).

[2] New York Independent System Operator, Inc., FERC Electric Tariff, Original Volume No. 2 (Services Tariff), Seventh Revised Sheet No. 157.

sheets to implement ICAP Demand Curves for Capability Years 2005/2006, 2006/2007, and 2007/2008. The Commission accepted the proposed revisions, with modifications.[3]

4. According to NYISO, beginning in the third quarter of 2006, NYISO began the process for its second triennial review. After soliciting proposals from qualified consultants, NYISO selected the team of National Economic Research Associates, Inc. (NERA) with Sargent and Lundy (S&L) as a subcontractor (collectively, Consultants). The Consultants held 13 meetings with NYISO market participants and other interested parties before the August 15, 2007 release of their final report for stakeholder review and comment. Then, on August 31, 2007, as amended on October 5, 2007, NYISO staff, taking into account the Consultants' report, the views of interested parties, and the recommendations of NYISO's independent Market Advisor, submitted its report to the NYISO Board of Directors (Board). Interested parties then presented in written and/or oral comments their views to the Board. The comments were reviewed by the Board, NYISO staff and the independent Market Advisor. The Board asked NYISO staff to review some of the assumptions underlying the analyses. After studying that review, the Board approved the changes to the ICAP Demand Curves on November 13, 2007.

5. On November 30, 2007, pursuant to section 205 of the Federal Power Act,[4] NYISO proposed revisions to section 5.14.1(b) of the Services Tariff – *Demand Curve and Adjustments*. The filing includes the detailed reports of each of the consultants and NYISO staff. In addition, the filing includes testimony from NYISO's independent Market Advisor supporting the proposed revisions to the ICAP Demand Curves. The major revisions proposed in this filing involve assumptions dealing with the choice of technology to be used for the peaking units, the expected levels of capacity, revenues for energy and ancillary services, and the inflation escalation factor.

II. Notice, Interventions and Protests

6. Notice of NYISO's November 30, 2007 filing was published in the *Federal Register*, 72 Fed. Reg. 71,132 (2007), with interventions and comments due on or before December 28, 2007. By notice of December 14, 2007, the comment period was extended to December 31, 2007. Motions to intervene were filed by: Bear Energy LP; Competitive Power Ventures, Inc.;[5] Dynegy Northeast Generation, Inc. and

[3] *N.Y. Indep. Sys. Operator, Inc.*, 111 FERC ¶ 61,117, *reh'g denied*, 112 FERC ¶ 61,283 (2005).

[4] 16 U.S.C. § 824d (2000).

[5] Competitive Power Venture's motion was styled as a motion to intervene and comments; however, the motion did not include any comments.

Sithe/Independence Power Partners, L.P; NRG Companies;[6] and, jointly, PSEG Power LLC and PSEG Energy Resources & Trade LLC.

7. Motions to intervene and comments were filed by: New York Municipal Power Agency (NYMPA); New York State Consumer Protection Board (Consumer Protection Board); and Niagara Mohawk Power Corporation d/b/a/ National Grid (Niagara Mohawk).

8. A notice of intervention and protest was filed by the New York State Public Service Commission (New York Commission). Motions to intervene and protests were filed by: the City of New York, the New York City Economic Development Corporation, Consumer Power Advocates, and the New York Energy Consumers Council (NYC Advocates); KeySpan-Ravenswood, LLC (KeySpan); Multiple Intervenors;[7] and New York Transmission Owners (Transmission Owners).[8] A motion to file an out-of-time protest was filed jointly by PSEG Power LLC and PSEG Energy Resources & Trade LLC (PSEG Companies).

9. Motions to intervene, comments and protests were filed by: Independent Power Producers of New York, Inc. (IPPNY);[9] and New York Suppliers.[10]

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[6] The NRG Companies are: NRG Power Marketing Inc, Arthur Kill Power LLC, Astoria Gas Turbine Power LLC, Dunkirk Power LLC, Huntley Power LLC, and Oswego Harbor Power LLC.

[7] Multiple Intervenors is an unincorporated association of approximately 50 large industrial, commercial and institutional energy consumers with manufacturing and other facilities located throughout New York, primarily in the Rest of State (ROS) region.

[8] The New York Transmission Owners are: 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, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation.

[9] IPPNY is a not-for-profit trade association with more than 100 members involved in the development and operation of electric generating facilities and the marketing and sale of electric power in New York.

[10] The New York Suppliers, who own and operate significant generation facilities in New York State, are: AES Eastern Energy, L.P.; Astoria Generating Company, L.P., a US Power Generation Company; Entergy Nuclear Power Marketing, LLC; and the Mirant Parties (Mirant Energy Trading, LLC; Mirant New York, LLC; Mirant Lovett LLC; and Mirant Bowline, LLC).

10. On January 15, 2008, Niagara Mohawk filed an answer to the protest by New York Suppliers, while the Transmission Owners filed an answer responding to various protests. On January 18, 2007, NYISO filed an answer to various protests and on January 22, 2007, AES filed an answer to New York Suppliers.

III. Procedural Matters

11. Pursuant to Rule 214 of the Commission's Rules of Procedure, 18 C.F.R. § 385.214 (2007), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

12. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure,[11] prohibits an answer to a protest or to an answer unless otherwise ordered by the decisional authority. We are not persuaded to accept the answers and will, therefore, reject them.

IV. Discussion

13. The Commission commends NYISO and the stakeholders for working together to resolve many issues regarding the restated ICAP Demand Curves. The substantive comments and protests filed by the parties in this proceeding had already been vetted through the stakeholder process specified in NYISO's Services Tariff and ICAP Manual. Thus, the comments and protests were limited and focused. Although NYISO and the stakeholders were not able (or required) to file a settlement agreement, it is apparent that the filing represents a consensus on many topics. The Commission agrees with NYMPA that the proposal represents a reasonable compromise between the parties' interests in a proceeding that was contentious, with a number of parties holding divergent views.

14. As discussed below, the Commission reviewed NYISO's section 205 filing and finds the proposed revisions to the ICAP Demand Curves to be just and reasonable. NYISO's triennial review necessarily rests on many interrelated assumptions. NYISO supports these assumptions with substantial evidence, and the resulting ICAP Demand Curve falls within a zone of reasonableness. Relative to the demand curves that currently apply for the 2007/2008 capability year, the proposed reset demand curves for the 2008/2009 capability year are generally lower for Long Island (LI) and New York City (NYC) and higher for the New York Control Area (NYCA). To obtain the demand curves for the 2009/2010 and 2010/2011 Capability Years, an escalation factor of 7.8 percent is applied to the 2008/2009 demand curves. The Commission recognizes that an ICAP Demand Curve developed by using other assumptions may also produce a just and reasonable demand curve. Protestors have recommended various alternative assumptions, some that would result in lower curves than those proposed by NYISO and some that would result in higher curves. The Commission finds that the protestors have

[11] 18 C.F.R. § 385.213(a)(2) (2007).

not shown NYISO's assumptions to be unjust and unreasonable and, thus, their recommended modifications to certain aspects of NYISO's proposal have not been shown to be necessary to produce just and reasonable demand curves. Therefore, we have not adopted their modifications.[12]

A. Selection of Peaking Units

1. NYISO's Proposal

15. NYISO states that the choice of a peaking technology is one of the most significant issues affecting the ICAP Demand Curve update. The Services Tariff states that for purposes of updating the ICAP Demand Curves, a peaking unit is defined as a unit with technology that results in the lowest fixed costs and highest variable costs among all other units' technology that are economically viable.[13] NYISO proposes two different peaking units – one for NYC and LI and another unit for the rest of the state (ROS). However, the ICAP Demand Curve which is used for ROS is based on the ICAP requirements established for the NYCA by the New York State Reliability Council.

16. NYISO proposes to use the 7FA frame peaking unit for NYCA. NYISO notes that the 7FA has a lower fixed cost on a $/kW basis than the other alternatives. In addition, the 7FA is consistent with NOx emission restrictions for NYCA. Further, it produces the

[12] The Commission does not need to show that other proposals that arguably fall within a zone of reasonableness are not just and reasonable and, indeed, we must approve NYISO's proposals if supported as just and reasonable even if there are other just and reasonable proposals. *See, e.g., Midwest Indep. Trans. Sys. Operator*, 118 FERC ¶ 61,209, at P 67 (2007) ("Although we agree that higher [cost allocation] percentages could be just and reasonable (upon proper evidentiary showing), given that the Midwest ISO has successfully supported the justness and reasonableness of its proposal, we must approve that proposal even if there are other just and reasonable ways to allocate transmission costs.). *See also FPC v. Conway Corp*., 426 U.S. 271, 278 (1976) ("there is no single cost-recovering rate, but a zone of reasonableness"); *United Distribution Companies v. FERC*, 88 F.3d 1105, 1169 (D.C. Cir. 1996) ("FERC correctly counters that the fact that AEPCO may have proposed a reasonable alternative to SFV rate design is not compelling. The existence of a second reasonable course of action does not invalidate the agency's determination"); *PJM Interconnection L.L.C.*, 119 FERC ¶ 61,318, at P 116 (2007) (*citing "Complex" Consol. Edison Co. v. FERC*, 165 F.3d 992, 1004 (D.C. Cir. 1999)); *Cal. Indep. Sys. Operator, Corp.*, 119 FERC ¶ 61,076, at P 14 (2007); *S. Cal. Edison Co.*, 73 FERC ¶ 61,219, at 61,608 n. 73 (1995) (*citing Cities of Bethany. v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir.), *cert. denied*, 469 U.S. 917 (1984)).

[13] Services Tariff, § 5.14.1(b), Seventh Revised Sheet No. 157.

lowest net cost of new entry. Finally, the 7FA was used to develop the previous ICAP Demand Curve update for an NYCA unit.

17. NYISO proposes to use the aeroderivative LMS-100 peaking unit for developing the ICAP Demand Curves for NYC and LI. NYISO notes that the LMS-100 has the lowest fixed cost on a $/kW basis among the viable alternatives. NYISO states that this is a new unit and that there is only one LMS-100 unit in operation in the United States (in South Dakota). Nevertheless, NYISO believes that the LMS-100 is a promising technology because, *inter alia*, the gas turbine in the LMS-100 unit has over 100 million hours of operating experience in aircraft engines and industrial applications. Furthermore, the construction process and requirements for the LMS-100 are similar to those of more commonly available units. NYISO states that there are five LMS-100 units in the NYISO queue. Finally, according to NYISO, the LMS-100 meets NOx emission restrictions for NYC and LI.

18. NYISO's proposal reflects a 6.35 percent cost escalation from previous estimates for the LMS-100 based on updated information from the Consultants. The updated costs were provided by the Consultants on October 2, 2007, reflected in the revised NYISO staff report dated October 5, 2007, and discussed at the open meeting with NYISO's Board held on October 15, 2007.

2. Comments & Protests

19. Protestors contend that the LMS-100 unit lacks sufficient cost and operating history and request that the LM-6000 unit be used in its place. In this regard, IPPNY notes that in contrast with the LMS-100, the LM-6000 is a proven technology with substantial and verifiable operating and cost experience. KeySpan notes that the LM-6000 consists of only an aeroderivative gas turbine whereas the LMS-100 incorporates two other major components – a low-pressure compressor based on industrial gas turbines and an intercooler that reduces the temperature of the airflow before it enters the high-pressure compressor in the aeroderivative engine. KeySpan notes that this is the first time these three components have been combined in an electric generation facility and is concerned that the integration of these facilities might not work as well as each component working individually. Given these factors, parties disagree with the proposed 12 percent forced outage rate for the LMS-100.

20. Several protestors contend that the LMS-100 located in South Dakota is not representative of a new unit in one of the most populated areas of the United States because NYC's energy and ancillary services are heavily mitigated, which will make the owner of a new peaking facility heavily dependent upon NYC capacity market revenues. Several protestors note that after NYISO made the instant filing, NYISO announced that the five LMS-100 units in its queue were to be replaced with a combined-cycle unit.

21. Protestors also object to the use of the updated cost information for the LMS-100 unit. The New York Commission and Consumer Protection Board concur with the use of the LMS-100 technology, however, they request that the updated cost information not be used at this time. Transmission Owners also object to NYISO's October 5, 2007 cost update. The New York Commission and Transmission Owners contend that by updating the costs so late in the triennial review process, NYISO violated its procedures, as set forth in NYISO's Tariff and ICAP Manual.[14] NYC Advocates object to the use of the updated cost data without the concurrent use of updated performance data.

3. Commission Determination

22. The peaking unit chosen for the development of an ICAP Demand Curve is critical because the cost of the unit is the single largest fixed-cost component used to set ICAP demand curves. The Commission finds that NYISO's proposal to use the 7FA peaking unit for developing the capital cost estimate for NYCA is reasonable. This unit represented a new technology for the NYCA in the last triennial review. The Commission approved the unit, over protests, and it has proven to be a reliable, economically-feasible choice. The unit has the lowest fixed cost on a $/kW basis compared with viable alternatives. We note that the increased cost of installing a Frame 7A peaking unit is a primary component in the increase in the proposed demand curves for ROS.Nevertheless, IPPNY supports the 7FA unit and no party objects to the continued use of this unit as the technology with the lowest fixed costs and highest variable costs among all other units' technology that are economically viable for construction in the ROS.

23. The Commission finds that NYISO's proposal to use the LMS-100 peaking unit for NYC and LI is reasonable. The 7FA is not a viable peaking unit for NYC and LI because it does not satisfy NOx requirements. Further, technological improvements suggest that the LM6000, which was used for developing the ICAP Demand Curves for the previous three capacity years, no longer represents the peak technology with the lowest fixed cost. Instead, a newer LMS-100 technology is proposed as a viable technology that results in the lowest fixed costs. Although not yet a widely adopted technology, eleven units have been sold (not just listed in a queue) in California and two in Canada, and one LMS-100 unit located in Groton, South Dakota, has been in commercial operation since July 2006. This unit has been operating without any recurring issues or major problems, with reliability trending up, and availabilities in the

[14] *Citing* N.Y. Indep. Sys. Operator, Inc., Installed Capacity Manual, § 5.6.6; Services Tariff, First Revised Sheet No. 157B.

upper 80 percent range.[15] This is an adequate track record. In addition, construction of a second unit has begun at the same location and it is slated to be in service in June 2008.[16] Therefore, the Commission finds that the use of the LMS-100 technology in developing the capital costs of a peaking unit for NYC and LI is reasonable.

24. Although no party raised concerns with the substance of the updated costs, several protestors note that NYISO did not follow the procedures set forth in the NYISO's Tariff and ICAP Manual by updating the costs for the LMS-100 without allowing stakeholder 30 days to provide the Board with supplemental analysis for the Board's consideration. However, stakeholders were informed of NYISO's intention to update the LMS-100 cost estimates in August 2007, had an opportunity and did comment on such plans, had an opportunity to address the cost update in oral arguments before the Board in October 2007, and had 31 days in which to comment upon the instant filing. Therefore the Commission finds that commenters were afforded adequate opportunity to express their views on the cost update and their procedural rights were not violated.

25. NYC Advocates object to the use of updated cost data without the concurrent use of updated performance data. However, throughout the triennial review process, parties had the opportunity to propose updates to other items. The fact that no one provided update performance data does not invalidate the updated cost data for the LMS-100. Further, as described by NYISO's independent Market Monitor, Dr. Patton, NYISO updated the cost to improve the accuracy of the ICAP Demand Curve parameters, as the costs for the LMS-100 have been rapidly changing.[17] Further, NYISO notes that the Consultant's methodology has already taken into account other factors such as performance data and operating costs that may affect the ICAP Demand Curves, so there is no need to reevaluate other factors. Accordingly, the Commission finds that NYISO's updated cost proposal is reasonable.

B. Level of Capacity

1. NYISO's Proposal

26. NYISO states that assumptions about the expected level of capacity (relative to the minimum ICAP requirement) will affect the estimated level of energy and ancillary

[15] NYISO November 30, 2007 Filing, Attachment 4, Exhibit B, NERA Report at 26.

[16] *Id*.

[17] NYISO November 30, 2007 Filing, Attachment 3, Affidavit of Dr. David B. Patton at 4.

services revenues earned by a peaking unit. In general, increasing the capacity level will tend to reduce prices and associated revenues. NYISO proposes a capacity level of 101.5 percent of the ICAP requirement for NYCA,[18] which is 1.5 percent or approximately 600 MW greater than the minimum level of ICAP reserves. NYISO states that the assumptions regarding the level of excess capacity generated many stakeholder comments. Based on stakeholder concerns, NYISO states that the Board requested that additional sensitivity studies for NYCA be performed, and the Board then modified the capacity level recommended by NERA. The Board's decision to reduce the assumed level of excess capacity from 102.8 percent to 101.5 percent for NYCA takes into account the "lumpy"[19] nature of investments in generation and allows for an average amount of capacity in excess of the 100 percent required reserve margin that may result from timely increments of new generation over a 30-year time horizon. In addition, the Board chose the 101.5 percent level because it represents a reasonable indication of the average level of excess capacity that should be expected in NYCA if the margin is never allowed to fall below the 100 percent target. NYISO contends that the proposed capacity level reflects the need to build to meet both locational ICAP needs and NYCA requirements. NYISO's choice of a 101.5 percent level is supported as reasonable by its independent Market Monitor and found to be "not unreasonable" by NYISO's Consultants.[20]

27. NYISO proposes that the ICAP Demand Curves for NYC and LI reflect a level of capacity of 104 percent of the required installed capacity, which is approximately 400 MW above the required reserve in NYC and 200 MW above the required reserve in LI. NYISO states that it proposes a higher level of excess capacity in NYC and LI than in ROS, as it expects that most of the excess capacity in New York will be in these two localities. NYISO notes that the capacity in NYC and LI can be used to meet the NYCA requirement but capacity located in ROS cannot satisfy the locational requirements on LI or in NYC.

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[18] NYISO states that while the capacity in NYC and LI can be used to meet the entire NYCA requirement, capacity located in ROS cannot satisfy the locational requirements on NYC or LI.

[19] In this context, the term "lumpy" refers to the fact that generator capacity levels are typically available in discrete amounts. As a result, it may not be possible to add capacity to exactly match the amount needed to meet load. Rather, in order to meet load, it may be necessary to build a generation unit whose capacity exceeds the amount needed.

[20] NYISO November 30, 2007 Filing, Attachment 3, Affidavit of Dr. David B. Patton at 5. and Attachment 4, Affidavit of Eugene T. Meehan at 20.

2. Comments & Protests

28. Niagara Mohawk supports NYISO's method used to set target ICAP levels. Protestors object to NYISO's proposal to use a capacity level of 101.5 percent for the NYCA. Some protestors argue that the level is too high while others argue that it is too low.

29. Several Parties contend that the 101.5 percent level inflates the net cost of a peaking unit, establishes demand curves reflecting considerably more capacity than required, and results in customers being forced to pay for such capacity. Further, protestors contend that NYISO's proposed methodology violates section 5.14 of the Services Tariff which requires the embedded cost of a peaking unit "to meet minimum capacity requirements." The Consumer Protection Board requests that the level of capacity for NYCA be reduced to 101.0 percent and to 103 percent for NYC and LI. Multiple Intervenors contend that the inclusion of excess capacity for NYCA is inappropriate and should be rejected.

30. Independent Power Producers and New York Suppliers contend that the level of 101.5 percent is too low. They state that it is extremely unlikely that ROS will ever have a scarcity of capacity due to numerous long-term planning and regulatory tools, including NYISO's Comprehensive Reliability Planning Process, and the New York Commission's long-range electric resource planning. Further, they note that ROS has significant imports from neighboring jurisdictions. Independent Power Producers and New York Suppliers further contend that the reduction in the capacity level imposes the risk of non-recovery of costs by generation developers because surplus conditions in most years will never be adequately offset by shortage conditions. They state that NERA's recommended level of excess capacity of 102.8 percent for ROS was methodologically sound, mathematically supported and consistent with the PJM model. They therefore recommend that the Commission reject the 101.5 percent level and approve the 102.8 percent level.

3. Commission Determination

31. The Commission accepts the assumed levels of expected capacity underlying NYISO's proposal. The Commission agrees that some small level of expected capacity over the minimum requirement is appropriate.[21] Section 5.14.1(b)(ii) of the Services

[21] In its April 21, 2005 order accepting NYISO's previous ICAP Demand Curve parameters, the Commission accepted NYISO's proposal to determine the parameters based on energy and ancillary service revenue estimates that would arise when supply conditions are near, but slightly higher than, the minimum capacity requirement. The reason was to create incentives for capacity investment not to fall below the minimum requirement. *See N.Y. Indep. Sys. Operator, Inc.*, 111 FERC ¶ 61,117, at P 46, *reh'g denied*, 112 FERC ¶ 61,283 (2005).

Tariff provides that the triennial review assesses conditions in which the "available capacity would equal or slightly exceed the minimum Installed Capacity requirement." Moreover, the New York planning process is based on an objective of ensuring that capacity does not fall below the minimum requirement, so it is reasonable to assume that the NYCA will experience some level of capacity above the minimum requirement on average over time.

32. The Commission finds that NYISO's proposed level of expected capacity of 104 percent for NYC and LI is consistent with forecasting projections provided by the analysis of NYISO's consultants, which were only challenged by one party, and is consistent with the tariff as it only slightly exceeds the minimum ICAP requirement. Further, because of the lower capacity needs of these two localities compared to the ROS, the addition of the same amount of capacity will have a proportionately greater impact on the level of capacity for NYC and LI. Further, although the Consumer Protection Board proposes a level of 103 percent, it provides no evidence in support of that position or undermining the 104 percent proposal. Therefore, the Commission finds that the 104 percent level of expected capacity for NYC and LI is reasonable.

33. With regard to NYCA, the Commission agrees with NYISO that a 101.5 percent average level of expected capacity is a reasonable assumption. As NYISO states, since New York planning authorities are not likely to allow capacity levels to fall below the minimum requirement, it is reasonable to expect that, over time, expected capacity will average somewhat more than the minimum requirement.

34. Thus, the Commission finds that NYISO's recommended level of expected capacity of 101.5 percent of required installed capacity for ROS is reasonable. Moreover, we find that this level is consistent with the Services Tariff. A 1.5 percent increase over the required level falls within the meaning of "slightly," especially since all parties agree to a level of 3-4 percent increase over the required level for NYC or LI.

C. Revenue Offsets for Energy and Ancillary Services

1. NYISO's Proposal

35. NYISO adopts the Consultants' estimates for its proposed revenue offsets. NYISO states that the Consultants' Report estimates expected energy and ancillary services revenue of $9.36/kW-year for the NYCA, $64.89/kW-year for NYC, and $89.98/kW-year for LI. NYISO states that these results are confirmed by NYISO's independent Market Advisor, and when compared with the last Demand Curve update, these figures represent an increase in revenue offsets in NYC and LI (by approximately $12 and $48, respectively) and a decrease for the NYCA (by approximately $11). NYISO adds that the relatively efficient heat rate of the LMS-100 peaking unit is primarily responsible for the increased energy revenues seen for NYC and LI and that the

decrease of energy revenue for capacity in the ROS is caused by explicitly modeling the maintenance-related startup costs of the 7FA units.

36. In regard to the development of these estimates, NYISO states that the Consultants used historical data from the period May 1, 2003 through December 31, 2006 to benchmark the operation of the NYISO system. In addition, it states, the Consultants used a statistical model to identify and vary any causal variables that may impact future prices. NYISO further states that the Services Tariff requires that energy and ancillary services calculations will be done "under conditions in which the available capacity would equal or slightly exceed the minimum Installed Capacity requirement" for the three-year period covered by the proposed ICAP Demand Curves.[22]

2. Comments & Protests

37. PSEG Companies, New York Suppliers, and IPPNY support the net energy and ancillary services revenues as proposed by NYISO, contending that the methodology sufficiently accounts for tight market conditions.

38. Protestors contend that the net revenue offsets for NYCA are under-estimated because of: (1) NYISO's reliance on the recent historical period of substantial excess capacity; (2) NYISO's use of data over the 30-year expected life of the proxy plant; and (3) NYISO's use of an econometric model to estimate energy and ancillary service revenues which assumes a linear relationship between capacity levels and energy prices when such a relationship does not exist.

39. Several protestors contend that NYISO relied on a historical period when substantial excess capacity existed and prices were too low to support investment in new gas fired peakers and thus, the offsets will not properly reflect the projected sharp increase in revenues for energy and ancillary services as the marginal markets for such service become tight. In making this argument, the New York Commission and the Consumer Protection Board contend that when the statewide capacity market is tight, peak-period prices for energy/ancillary services in the upstate region are likely to be comparable to those downstate because the state as a whole is likely to be reliant on downstate peaking capacity. Thus, they assert, net energy revenues for an upstate peaker are likely to move closer to NYC net energy revenues for comparable plants. Therefore estimates of NYC revenues provide a better proxy for what an upstate peaker would earn when the statewide market is tight. The New York Commission concludes that a $16/kW-year adder should be included in any estimate of statewide energy/ancillary services revenues, resulting in a change from $9.36/kW-year to approximately $25/kW-year. In addition, the New York Commission notes that it is promoting mandatory hourly pricing for large customers at the retail level and an increase in the prevalence of hourly

[22] *Citing* Services Tariff, Seventh Revised Sheet No. 157.

pricing should lead to a flattening of the load shape, a condition which should increase the number of hours during which peakers can earn significant net energy revenues.

40. Several protestors contend that the proposed ICAP Demand Curves should be based on estimated energy and ancillary revenues for the three-year period covered by the update instead of using data over the 30-year expected life of the proxy plant. The Consumer Protection Board argues that using the 30-year period has the effect of reducing revenues that a new entrant is assumed to earn from energy and ancillary services and thus increases the Demand Curves and consumer prices. Transmission Owners contend that this use of a 30-year period violates the Services Tariff requirement that the projected revenues be derived from "the period covered by the adjusted ICAP Demand Curves," i.e., three years. Multiple Intervenors argue that the existing ROS Demand Curve should remain in place, but add that if the Commission should determine that changes are necessary, it should compute the energy/ancillary services revenues under conditions at or near the minimum ICAP requirement. Multiple Intervenors conclude that the Commission should direct NYISO to recalculate the energy and ancillary services revenues with capacity levels factored at or very near equilibrium to prevent NYISO from over-estimating the risk factor for new entrants.

41. The Consumer Protection Board argues that NYISO's use of an econometric model to estimate energy and ancillary service revenues assumes a linear relationship between capacity levels and energy prices when such a relationship does not exist.

42. Both the Consumer Protection Board and Multiple Intervenors assert that the return on equity should be calculated using the Commission's Discounted Cash Flow methodology rather than the Capital Asset Pricing Model used by NYISO.

3. Commission Determination

43. The Commission accepts NYISO's proposed revenue offsets for energy and ancillary services. We are not persuaded by the four criticisms raised by protestors regarding the NYISO's estimate of energy and ancillary service revenues. First, protestors argue that NYISO's estimate inappropriately relied on a recent historical period of substantial excess capacity, in conflict with the Services Tariff's requirement that the revenue estimate be based on conditions where capacity equals or slightly exceeds the minimum requirement. However, while the NYISO estimate begins with the recent period of excess capacity, NYISO's Consultants explicitly adjusted for the excess capacity through the use of an econometric estimate of the effects of excess capacity on prices. Thus, NYISO's final estimate reflects capacity conditions that equal or only slightly exceed the minimum requirement, as the Services Tariff requires.

44. Second, protestors criticize NYISO's use of data over the 30-year expected life of the proxy plant. The Transmission Owners are in error in suggesting that the Services Tariff requires projected revenues be "derived from" only the three-year period covered

by the adjusted ICAP Demand Curves. The full relevant portion of the tariff on the cited tariff sheet provides: "The periodic review shall assess . . . (ii) the likely projected annual Energy and Ancillary Services revenues of the peaking unit over the period covered by the adjusted ICAP Demand Curves, net of costs . . ." Historical data must be relied on to project what will "likely" happen in future periods. However, the tariff is silent as to what data may be used to determine the "likely projected" net revenues over that future three-year period and, therefore, does not preclude the use of a 30-year set of data. The fundamental issue is to estimate what expected revenues would be if capacity levels were equal to or slightly greater than the minimum requirement, not what they would be based on capacity levels that are likely to exist over the next three years. We agree with NYISO that an estimate of energy and ancillary revenues based on a 30-year average is more representative than a three year average as the longer period will better compensate for shorter periods of excess capacity or shortages.

45. In addition, we are not persuaded by the New York Commission's argument that the estimate of energy and ancillary service revenues for the NYCA should be increased by $16/kW-mo. While the difference in peaker energy revenues in the NYCA and in NYC is likely to diminish when capacity is tight, the New York Commission has not demonstrated that the revenue difference would be eliminated, and the NYISO already accounted for the reduced revenue difference when it reduced the assumed level of excess capacity in NYCA from that used in its Consultant's report from 2.8 percent to 1.5 percent.

46. Finally, protestors argue that NYISO's econometric model to estimate energy and ancillary service revenues inappropriately assumes a linear relationship between capacity levels and energy prices, when such a relationship does not exist. However, our analysis of the methodology indicates that it assumed a nonlinear relationship between capacity levels and energy prices. Further, NYISO's Consultants report that its econometric model explains a large percentage – 83 percent – of the underlying variation in electric prices. Thus, the econometric formulation relied on by NYISO is reasonably accurate.

47. The Commission recognizes that in choosing a general methodology and the inputs into the model, judgments must be made and alternative methods and assumptions rejected. It is the Commission's responsibility to determine whether these judgments and the resultant outcomes fall within a zone of reasonableness. In this regard, the Commission notes that the Consultants considered and rejected a competing method, opting for a process that reflects actual price experience. Further, the Consultants' results were confirmed by the analysis of the independent Market Advisor. While there is no perfect method to predict future revenues, we conclude that the method used here falls within a zone of reasonableness and is supported by substantial evidence. Accordingly, the Commission accepts the proposed revenue offsets.

D. Escalation Factor

1. NYISO's Proposal

48. NYISO proposes to increase the reset 2008/2009 ICAP Demand Curve by a 7.8 percent escalation factor to determine the 2009/2010 and 2010/2011 Demand Curves. The escalation factor is derived from the Handy-Whitman Index for power-plant construction as adjusted by an overall inflation factor. NYISO states that, using data for the 2002-2006 period, it projected the annual escalation rate of 5.1 percent based on the average rate of change of the Handy-Whitman Index during the last two years. NYISO adds that, since the Handy-Whitman Index reveals changes in real terms,[23] adjusting for the overall inflation rate of 2.7 percent, as proposed by the Consultants, results in a forecasted escalation rate of 7.8 percent. Therefore, NYISO found it would be reasonable to escalate the ICAP Demand Curves for the 2009/2010 and 2010/2011 Capability Years by 7.8 percent per year. In support, NYISO included the affidavit of Mr. Lawrence who contends that recent data are more relevant for this analysis than longer-term historical averages given the fundamental changes in equipment and raw materials costs over the last few years.[24] NYISO also states that its staff considered alternative scenarios for the escalation rate including different assumptions with the Handy-Whitman Index data and including nonlinear fits. According to NYISO, these resulted in even higher escalation estimates. For example, using a non-linear fit which captures the trend of recent data (including gross domestic product (GDP) inflation) results in an escalation factor of 12.5 percent. Also, using projections from the HWI North Atlantic Index, which provides a regional view of historical costs, produces escalation factors of 9.8 percent for linear fits and 20 percent for non-linear fits. NYISO states that it chose to use the more conservative escalation estimate.

2. Comments & Protests

49. PSEG Companies, New York Suppliers, and IPPNY support the escalation rate as proposed by NYISO, contending that the rate is supported by industry trends and that NYISO's sensitivity studies show it to be at the lower end of potential escalation factors. New York Suppliers state that impending capacity needs on the New York system must be taken into account and that if the escalation rate is set too low and the ICAP Demand Curve price points lag behind actual cost levels, these price points will not be sufficient to induce merchant entry. IPPNY states that it supports retaining the 7.8 percent escalation factor despite strong evidence that the Handy-Whitman Index underestimates current construction cost escalation.

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[23] The Handy-Whitman Index used by NYISO removes the effects of inflation to provide a measure of change in the cost being indexed over time.

[24] NYISO November 30, 2007 Filing, Attachment 6, Affidavit of David Lawrence.

50. Protestors representing consumers contend that the 7.8 percent escalation rate is too high. They emphasize that it is three times the rate of inflation and is contrary to the Department of Energy/Energy Information Agency's (DOE) forecasts that power plant costs will stabilize. These protestors argue that the rate is excessive because it is based on recent short-term increases in the cost of power plant construction, and this produces an outcome inconsistent with historical data and trends. In particular, Niagara Mohawk states that the NYISO study lacks the meaningful economic analysis necessary when forecasting future costs, despite directives in the Commission's order approving the last set of demand curves. Niagara Mohawk and Transmission Owners add that NYISO's projections "dwarf" anything that has occurred over the 33 years, as represented in the DOE data and recommend adjusting the ICAP Demand Curves for the 2009-2010 and 2010-2011 Capability Years by the general inflation rate of 2.7 percent per year. Transmission Owners also disagree with NYISO's reliance on only two years of data from the Handy-Whitman Index, stating that many of the factors underlying the increase in real cost of power plant construction may be temporary and/or reversible. They add that NYISO has provided no evidence to support its assumption that the future impact of these continuing factors will be similar to their impact from 2004 to 2006.

51. The New York Commission states that a more realistic escalation rate would be 2.3 percent, which is consistent with the inflation rate and available data. The New York Commission contends that construction costs tend to track general inflation and that electric utility construction costs tend to closely coincide with general construction material costs since materials represent two-thirds to three-quarters of total power plant construction costs. The New York Commission argues that the long-term history of construction material costs confirms that a significant escalation rate is not warranted.

52. Multiple Intervenors reiterate these arguments and request that the Commission either direct NYISO to recalculate the escalation rate using a longer historical period and normalizing the data, or only apply the 2.7 percent component of the escalation rate recommended by NERA.

53. The Consumer Protection Board, while in agreement with the arguments made by Niagara Mohawk and Transmission Owners, recommends using the average annual growth rate for the Handy-Whitman Index over the last 33 years of 0.2 percent and adding to it the general inflation factor of 2.7 percent for an overall escalation rate of 2.9 percent.

3. Commission Determination

54. First, we note that the escalation rate has no bearing on the ICAP demand curves for the 2008/2009 capability year, and second, we note that the choice of an escalation factor is essentially a judgment informed by an analysis of cost and inflation trends. The Commission accepts NYISO's proposed annual escalation rate of 7.8 percent that equals the sum of the estimated percentage change in the Handy-Whitman Index for power-plant

construction and an overall measure of inflation. Although some protestors have suggested that the escalation rate should be based only on a general inflation factor, the Commission does not agree that a general inflation factor, on its own, sufficiently accounts for expected changes in power plant construction costs, and finds that it is reasonable to rely on the Handy-Whitman Index as it is an index specifically tailored to the utility industry. The Commission concurs with NYISO that using inflation factors representing the GDP or the HWI North Atlantic Index do not recognize the need to balance the impact on consumers with the need to provide correct price signals for new generation entry.

55. That leaves the question of what period of time should be used in calculating the average change in the Handy-Whitman Index. The Commission finds NYISO's judgment to use an average of recent data reasonable in light of "the fundamental changes in equipment and raw materials costs over the last few years" as noted in the Affidavit of Mr. Lawrence.[25] While another period could have been chosen, NYISO's choice of this recent period falls within the zone of reasonableness and is supported by substantial evidence. The Commission concurs with NYISO that in light of higher escalation estimates, the proposed 7.8 percent is reasonable and will balance the impact on consumers with the need to provide correct price signals for new generation entry. Accordingly, the Commission accepts the 7.8 percent escalation rate. The escalation rate can be readjusted in the next triennial if circumstances change, but at this time, these estimates are reasonable.

E. Miscellaneous Risk Factors and Docket No. EL07-39

1. NYISO's Proposal

56. NYISO states that its Consultants used a different methodology for assessing market risks in that they fixed the weighted average cost of capital, debt to equity ratio, and other variables and adjusted the amortization period to account for certain risks. NYISO states that NYISO's Consultants, NERA and S&L, considered many risks that a developer would measure when deciding whether to invest in New York. NYISO states that among these risks the Consultants factored in was the probability that a generator would recoup only 50 percent of the required capacity revenue. The Consultants assumed that this probability would be 0.2. However, NYISO's independent Market Adviser, Dr. Patton, stated that this risk is premised on the risk that uneconomic entry would occur to undermine market price signals.

57. NYISO states that NYISO staff concluded that the additional risk associated with uneconomic entry should not be reflected in the construction of the ICAP Demand Curve.

[25] NYISO November 30, 2007 Filing, Attachment 6, Affidavit of David Lawrence at 14.

Rather, in NYISO staff's view, uneconomic entry should be subject to appropriate market power mitigation measures, as determined in other proceedings. Therefore, on that basis, the NYISO Board accepted the NYISO staff's recommendation to remove the Consultant's additional risk factor. NYISO states that, although there are non-market-based risks that can impact prices in the capacity market it is difficult to quantify this risk based on observable information. It states that explicitly modeling the future expected excess capacity in each market provides an adequate method to reflect this risk.

2. Comments and Protests

58. New York Suppliers oppose NYISO's elimination of the additional risk factor that assumed a 20 percent probability of a generator recovering 50 percent of capacity revenue and urge the Commission to reinstate it. New York Suppliers argue that NYISO's rationale for eliminating the additional risk factor – that the additional risk factor is intended to address uneconomic entry and is being addressed in another proceeding (Docket No. EL07-39)[26] – is not compelling, and does not reflect all of the reasons that justify the additional risk factor. New York Suppliers state that it is not reasonable to rely on the proceeding in Docket No. EL07-39 for addressing uneconomic entry. That is because the proceeding may not be completed, and the issue may not be resolved, before the ICAP Demand Curves for at least the 2008-2009 Capability Year become effective on May 1, 2008. New York Suppliers request, at a minimum, that the additional risk factor be incorporated back into the ICAP Demand Curves until such time that the uneconomic entry mitigation issues are fully resolved. Moreover, in New York Suppliers' view, there are a number of factors in addition to uneconomic entry that also create a bias toward maintaining excess capacity levels in New York State, including, for example, the long-term contract proceeding currently under way before the New York Commission.

59. The Consumer Protection Board supports the NYISO decision to remove the additional risk factor for the reasons advanced by NYISO. That is, the risk addressed by the additional risk factor – the risk of uneconomic entry – should be addressed by mitigation.

3. Commission Determination

60. The Commission accepts NYISO's proposal not to include the additional risk factor. This risk factor appears to address the risk that generators will be unable to recover their full costs because of persistent expected capacity. To the extent that such expected capacity could be caused by uneconomic entry financed by net buyers, the Commission agrees with NYISO that such uneconomic entry should be addressed through appropriate mitigation measures, and such measures are being considered in

[26] *See N.Y. Indep. Sys. Operator, Inc.*, 120 FERC ¶ 61,024 (2007).

Docket No. EL07-39. Whether such uneconomic entry has actually occurred, and whether additional mitigation is needed to prevent uneconomic entry, is also being considered in Docket No. EL07-39, and the Commission will not prejudge the outcome of that proceeding. Thus, the Commission denies the request of New York Suppliers to incorporate the additional risk factor back into the ICAP Demand Curves until such time that the uneconomic entry mitigation issues are fully resolved. The potential for expected capacity may also arise from other sources, such as the long term contract proceeding currently under way before the New York Commission. However, there is no need to address this issue through the additional risk factor, because NYISO's proposal already incorporates this likelihood in developing its estimates of energy and ancillary service revenues and the resulting net cost of new entry.

F. Zero Crossing Point

61. Transmission Owners complain that NYISO did not fully examine the effects of alternative zero-crossing points on costs to customers as the Commission urged in the previous three-year review. Transmission Owners request that the Commission require a supplemental filing within 90 days to address this deficiency.

62. The Commission disagrees with Transmission Owners that the issue of the zero-crossing point was not adequately examined in this update. 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. An increase in the zero-crossing point, causing the demand curve to intersect the x-axis further from the origin, for example 120 percent instead of 118 percent, would make the demand curve flatter. A decrease in the zero-crossing point, causing the demand curve to intersect the x-axis closer to the origin, for example 110 percent, would make the demand curve steeper. NERA's methodology to develop the demand curves recognizes the interdependence of the assumptions determining the reference and zero-crossing points and slope of the demand curve. With a given reference point, evaluating different demand curve slopes is equivalent to considering different zero-crossing points. NERA's methodology evaluated changes to the slope of the demand curve while maintaining the same expected present value to generators.[27] Since no party is concerned that capacity has measurable value beyond the current zero-crossing points of twelve and eighteen percent, studying the zero-crossing point issue amounts to considering the pros and cons of adopting steeper demand curves. NERA's report notes that steeper demand curves, in its judgment, increase risk and uncertainty because a small excess of capacity could make the economics of moth balling and retirement more attractive for marginal

[27] NYISO November 30, 2007 Filing, Attachment 3, Exhibit B, NERA Economic Consulting, *Independent Study to Establish Parameters of the ICAP Demand Curve for the New York Independent System Operator*, (Aug. 2007) at 63.

plants and increase incentives for withholding. NERA concluded that the downside to moving the zero-crossing points closer to the origin exceed the upside. The Commission finds NERA's methodology and its recommendations for zero-crossing points, accepted by NYISO, reasonable and will not require further analysis or an additional filing.

G. Seasonal Differentials

63. The monthly Demand Curve reference points are set to permit a peaking unit to receive the targeted revenues determined by the triennial update over the course of the year. However, the NYISO ICAP market operates in two six-month Capability Periods with greater amounts of available capacity in the winter period attributable to lower ambient temperatures. If available capacity did not vary seasonally, it would be reasonable to assume that 50 percent of the targeted revenues would be collected in each of two six-month Capability Periods. However, greater availability of capacity in the winter results in lower capacity clearing prices and recovery of less than 50 percent of the targeted revenues during the winter period. This necessitates an upward adjustment to the demand curve so that the target revenue would be recovered by the peaking unit annually. Consequently, NYISO's Services Tariff requires that the monthly Demand Curves account for "seasonal differences in the amount of capacity available in the ICAP Spot Market Auctions."[28]

64. NYISO interprets available capacity as the amount of capacity that could be offered into the ICAP auctions, an interpretation that Transmission Owners and Niagara Mohawk do not share. Transmission Owners' witness, Mr. Cadwalader, explains that historically the ratio of winter to summer capacity actually cleared is smaller than the ratio of winter to summer capacity that could be offered.[29] Thus, Transmission Owners and Niagara Mohawk emphasize that a larger share of the annual target revenues are recovered during the winter period than reflected by NYISO's seasonal adjustment. These intervenors propose that available capacity should be defined as capacity that is expected to clear in the market, and not capacity that can be offered. That change could lower the adjusted cost of new entry for NYCA by an amount that could exceed $1.00/kW-month, depending on assumptions, according to Mr. Cadwalader.[30] The NYC Advocates also assert that the seasonal adjustment is larger than needed to offset the effect of increased capacity during the winter period but suggest no alternative.

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[28] Services Tariff, § 5.14.1(b), Seventh Revised Sheet No. 157.

[29] Transmission Owners' December 31, 2007 Protest, Exhibit A. Affidavit of Michael D. Cadwalader at 4.

[30] New York Transmission Owners December 31, 2007 Protest, Exhibit A at Appendix C.

65. New York Suppliers support NYISO's proposed seasonal adjustment. New York Suppliers' witness, Mr. Younger, emphasizes that the analysis supporting the proposed seasonal adjustment took account of the seasonal ratings of capacity available in the NYCA, NYC, and LI, imports, and seasonal differences in Special Case Resources ratings.[31] Furthermore, his review of market bidding data for capacity showed that significant quantities of offered capacity did not clear the market because the market clearing price was too low, but that all of those rejected bids would have cleared the market at prices consistent with new entry. Thus, we agree with his conclusion that failure to clear in the capacity market should not be viewed as indicating that a unit is not available.

66. As one of the many assumptions underlying the development of the capacity demand curves, the Commission accepts NYISO's seasonal adjustment as reasonable and consistent with the Services Tariff.

The Commission orders:

NYISO's Fourth Revised Sheet No. 156B to its Services Tariff is accepted for filing effective January 29, 2008.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

[31] New York Suppliers' December 31, 2007 Protest, Appendix A, Affidavit of Mark D. Younger.