

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**Joint Technical Conference on New York Markets) Docket No. AD14-18-000
& Infrastructure)**

**WRITTEN STATEMENT OF EMILIE NELSON,
VICE PRESIDENT – MARKET OPERATIONS, ON BEHALF OF
THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.**

The Federal Energy Regulatory Commission’s (“FERC”) *Supplemental Notice of Technical Conference* (“Supplemental Notice”) specified that the NYISO (and the independent Market Monitoring Unit (“MMU”)) would report on the following issues during the first panel at the November 5 technical conference (“November 5 Conference”) in this proceeding.

[T]he recent performance of NYISO’s capacity market. NYISO will also describe current initiatives it is undertaking, and hurdles it is facing, as it seeks to improve performance of its capacity market to attract adequate investment in resources and infrastructure to efficiently meet New York State’s reliability/resource adequacy needs. NYISO will provide information on recent investments made in resources and infrastructure through NYISO’s markets and transmission planning efforts, and discuss the implementation of the new capacity zone in the Lower Hudson Valley. NYISO will provide a brief update on preparedness for the upcoming winter.

The NYISO intends to address these issues, and any questions that may arise concerning them, at the November 5 Conference. It has prepared this written statement to complete the record by providing more detailed responses than is possible during a panel discussion. This written statement also addresses a number of issues that will be discussed by the panels at the November 5 Conference.

As set forth in more detail below, the NYISO’s capacity market has worked, and is working, well. Along with the energy market, it has sent economic signals that have attracted investment to the locations where it is needed. It already appears to be incenting new investment

in the lower Hudson Valley. The NYISO is also well-prepared for the coming winter. Of course, markets are continually evolving, and the NYISO is currently exploring several potential enhancements. The NYISO will carefully consider input received at the November 5 Conference and will work with its stakeholders to address any recommendations that may emerge in this proceeding.

I. Background

A. The Evolution of the NYISO's Capacity Market

The NYISO's capacity market design was developed over the course of years of collaborative effort by the NYISO, the New York State Public Service Commission ("NYPSC"), and New York stakeholders. FERC has also consistently supported the use of capacity market mechanisms in New York.

Installed Capacity¹ ("ICAP") requirements were first established in New York as a reliability measure decades before the NYISO was formed. As the proponents of creating the NYISO explained in 1999, "[t]he requirement that LSEs provide ICAP is a continuation of an important regional reliability practice, reserve sharing, that has historically been implemented in the New York Control Area by the [New York Power Pool]. Reserve sharing benefits all customers by ensuring adequacy of supply, even under unusual supply or demand circumstances, at least cost."² Similarly, Con Edison first developed a "locational" requirement that a

¹ Capitalized terms that are not otherwise defined herein have the meaning set forth in the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff").

² See Member Systems of the New York Power Pool, *Filing in Compliance with the Commission's Orders Regarding the Comprehensive Proposal to Restructure the New York Wholesale Electric Market*, Docket No. ER97-1523-000 at 43 (April 30, 1999) (April 30, 1999 Filing).

substantial portion of New York City load be served by capacity physically located in the city years before the NYISO existed.³

The NYISO's current capacity market design originated in the 1990s with the NYPSC's "Competitive Opportunities" initiative⁴ and FERC's open-access and tight power pool reforms under Order No. 888.⁵ At that time, New York's transmission-owning utilities ("TOs") proposed to retain existing ICAP requirements under a market-based regime administered by the NYISO. They planned for the NYISO to establish a capacity requirement for each Load Serving Entity, to accommodate bilateral ICAP transactions, to establish locational minimum installed capacity requirements ("LCRs"), and to conduct capacity auctions. The TOs asserted that implementing a capacity market would support New York State's retail access initiatives and reliability.⁶ In addition, Con Edison proposed market power mitigation measures for divested generation in New York City, including capacity mitigation measures.⁷ The NYPSC supported the TOs'

³ See *Consolidated Edison Company of New York, Inc., Localized Market Power Mitigation Rules Applicable to Sales of Capacity, Energy, and Ancillary Services from Specified Generating Units in New York City*, Docket No. ER98-3169-000 at 10 (June 1, 1998) ("Con Edison historically has maintained sufficient capacity inside the City to assure continued reliability.") ("Con Edison Mitigation Filing").

⁴ *In the Matter of Competitive Opportunities Regarding Electric Service*; Opinion No. 96-12, Case Nos. 94-E-0952 *et al.* (May 20, 1996).

⁵ *Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, 61 FR 21540 (May 10, 1996), FERC Stats. & Regs. ¶ 31,036 (1996), *order on reh'g*, Order No. 888-A, 62 FR 12274 (Mar. 14, 1997), FERC Stats. & Regs. ¶ 31,048 (1997), *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in relevant part sub nom. Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000) (TAPS v. FERC), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

⁶ See April 30, 1999 Filing at 22-23.

⁷ See Con Edison Mitigation Filing at 10-15.

initiatives.⁸ FERC accepted the core features of the TOs' capacity-related proposals in 1998 and 1999.⁹

The NYISO commenced operations in late 1999. In 2000, it designated New York City and Long Island, which had traditionally been recognized as transmission-constrained regions, as "Localities." Each Locality was assigned its own LCR, which recognized the impacts of transmission constraints on resource adequacy. The NYISO also began to assign individual Load Serving Entity ("LSE") capacity requirements, and to conduct capacity auctions, for the entire New York Control Area ("NYCA") and for each Locality.¹⁰ In 2001, the NYISO introduced "Unforced Capacity" ("UCAP") metrics and other improvements to incentivize better performance by capacity resources. These initiatives were supported by the NYPSC and accepted by FERC.¹¹

In 2002 and 2003, the NYPSC proposed that the NYISO adopt a sloped demand curve to recognize the marginal reliability value of maintaining incremental capacity resources beyond the minimum needed to comply with reliability requirements.¹² The sloped demand curve construct was adopted by the NYISO, accepted by FERC,¹³ upheld in federal court,¹⁴ is still in

⁸ See, e.g., April 30, 1999 Filing at 47-48 (summarizing the NYPSC's consistent support for TO ICAP initiatives.)

⁹ See *Consolidated Edison Co. of New York, Inc.*, 84 FERC ¶ 61,287 (1998); *Central Hudson Gas & Electric Corp.*, 88 FERC ¶61,138 (1999); 89 FERC ¶ 61,109 (1999).

¹⁰ See *New York Independent System Operator, Inc.*, 90 FERC ¶ 61,319 (2000).

¹¹ See *New York Independent System Operator, Inc.*, 96 FERC ¶ 61,251 (2001).

¹² The NYPSC first proposed that the NYISO adopt sloped ICAP Demand Curves in May 2002. See *New York Independent System Operator, Inc.*, Docket No. ER03-647-000 (March 21, 2003) at 2; *Comment of the New York State Public Service Commission*, Docket No. ER03-647-000 (April 11, 2003) (outlining the economic rationale for establishing sloped ICAP Demand Curves.)

¹³ See *New York Independent System Operator, Inc.*, 103 FERC ¶ 61,201, *reh'g denied*, 105 FERC ¶ 61,108 (2003).

¹⁴ See *Electricity Consumers Resource Council*, 407 F.3d 1232 (D.C. Cir. 2003).

use today,¹⁵ and has become a model for other markets.¹⁶ The NYISO establishes a sloped ICAP Demand Curve for each Locality and for the NYCA as a whole. Thus, there are separate capacity market prices to signal the need for investment in each Locality.

During 2007 and 2008, the original Con Edison mitigation measures were replaced with “supplier-side” measures for New York City. The NYISO also adopted “buyer-side” mitigation rules to discourage “uneconomic entry” in New York City.¹⁷ Both measures are meant to prevent both “under-mitigation” and “over-mitigation” that could lead to artificial price increases or to artificial price suppression.¹⁸ FERC has emphasized that it is important to the markets, and to their ability to attract investment, that the NYISO strike this difficult balance.

Also in 2007, the NYISO began to explore the creation of rules to govern the establishment of new Localities (or “capacity zones”) with their own LCRs and ICAP Demand Curves. In 2011, the NYISO and the TOs proposed factors for determining whether to create new zones, which were subsequently modified so that new zones would be established based

¹⁵ See *New York Independent System Operator, Inc.*, 146 FERC ¶ 61,043 (2014) (accepting the NYISO’s most recent triennial ICAP Demand Curve reset filing.)

¹⁶ See *ISO New England Inc. and New England Power Pool Participants Committee*, 147 FERC ¶ 61,173 (2014) (accepting adoption of sloped capacity demand curve in New England). See also *Third Triennial Review of PJM’s Variable Resource Requirement Curve*, prepared for PJM Interconnection, LLC by The Brattle Group (May 15, 2014) (describing calculation of PJM’s sloped “variable resource requirement curve,” which performs a function very similar to the NYISO’S ICAP Demand Curves) available at <<http://www.pjm.com/~media/documents/reports/20140515-brattle-2014-pjm-vrr-curve-report.ashx?>>>.

¹⁷ See, e.g., *New York Indep. Sys. Operator, Inc.*, 122 F.E.R.C. ¶ 61,211 (2008).

¹⁸ See, e.g., *New York Indep. Sys. Operator, Inc.*, 143 FERC ¶ 61,217 at P 77 (2013) (noting that buyer-side market power mitigation rules must “appropriately balance the need for mitigation of buyer-side market power against the risk of over-mitigation”) citing *Edison Mission Energy, Inc., et al. v. FERC*, 394 F.3d 964 (D.C. Cir. 2005). (“[Mitigation] may well do some good by protecting consumers and utilities against... the exercise of market power. But the Commission gave no reason to suppose that it does not also wreak substantial harm... that could be cured only by attracting new resources of supply.”); see also *PJM Interconnection, L.L.C.*, 143 FERC ¶ 61,090 at P 27 (2013) (confirming that a PJM buyer-side mitigation tariff proposal “appropriately balances the need for mitigation of buyer-side market power against the risk of over-mitigation.”)

solely on the results of a triennial deliverability study.¹⁹ In 2013, the NYISO proposed to create the “G-J Locality,”²⁰ which is sometimes referred to as the “Lower Hudson Valley Zone,” and to establish an ICAP Demand Curve for it.²¹ The NYISO also adopted supplier- and buyer-side capacity market mitigation measures that apply to any new Locality.²² The NYISO recognizes that these issues are controversial and that consumers have raised concerns about them.

B. Overview of the NYISO’s Capacity Market Structure

The NYISO conducts three auctions. The voluntary “Capability Period” or “strip” auctions cover six month seasonal periods. The voluntary “Monthly” auctions encompass the next following month and any future month in the Capability Period. The mandatory “Spot” auctions are for offers to sell in the upcoming obligation month only. The Spot auctions ensure that LSEs procure their capacity requirements and also send investment price signals. The Spot auctions also reflect supply and demand and produce clearing prices that facilitate voluntary forward contracting.

The Spot auctions use sloped ICAP Demand Curves to establish capacity clearing prices based on offers and other requirements. Separate prices are determined for the NYCA and for each Locality. Thus, there are separate capacity market prices to signal the need for investment

¹⁹ *New York Independent System Operator, Inc. and New York Transmission Owners*, 136 FERC ¶ 61,165 (rejecting additional zone evaluation “criteria” and “considerations” proposed by the NYISO and the TOs and requiring that the NYISO “use the methodology contained in the existing Attachment S Deliverability Test in section 25.7.8 of Attachment S to the NYISO OATT in determining whether to create new zones.”)

²⁰ See *New York Independent System Operator, Inc., Proposed Tariff Revisions to Establish and Recognize a New Capacity Zone and Request for Action on Pending Compliance Filing*, Docket No. ER13-1380 (April 30, 2013).

²¹ See *New York Independent System Operator, Inc., Proposed Tariff Revisions to Implement Revised ICAP Demand Curves and a New ICAP Demand Curve for Capability Years 2014/2015, 2015/2016 and 2016/2017 and Request for Partial Phase-In and for Any Necessary Tariff Waivers*, Docket No. ER14-500-000; and *Unrelated Ministerial Tariff Correction*, Docket No. ER12-360-000 (November 27, 2013).

²² See *New York Indep. Sys. Operator, Inc.*, 143 FERC ¶ 61,217 (2013).

in each Locality. In accordance with the rules, the NYISO proposes revised ICAP Demand Curves for FERC’s review every three years. The curves are established based on the cost of the next unit that would enter the market to meet the peak demand above requirements plus a margin. This method allows the relevant “proxy unit” to recover its costs but does not guarantee that all resources will be made whole. It allows for efficient capacity prices that accurately signal the need for investment while pricing the reliability value of capacity procured above requirements.

The NYISO’s market rules account for the individual performance attributes of each resource. The compensation that resources are eligible to receive from NYISO auctions is based in part on their outage performance. The NYISO calculates these values in advance of the six-month winter and summer Capability Periods.

Capacity can also be sold or procured through bilateral transactions. Approximately 50 percent of capacity requirements are met through bilateral arrangements.

II. November 5 Conference Issues

A. The NYISO’s Capacity Market Is Performing Well

Although the Supplemental Notice focused solely on the capacity market, it is important to evaluate the performance of the capacity, energy, and ancillary services markets together because they are closely integrated and complementary. The markets as a whole should send economic signals that maintain reliability while providing competitive resources an opportunity “to recover both their variable and fixed costs over time.”²³ This is what sound market design,

²³ Commission Staff Report, *Centralized Capacity Market Design Elements*, Docket No. AD13-7-000 (August 2013) (“Staff Report”) at 2.

and applicable legal precedent,²⁴ require and this avoids any potential “missing money problem.”²⁵

Accordingly, this section explains that the NYISO-administered markets, including the capacity market, have performed well and achieved their intended objectives. The markets have sent economic signals that have preserved reliability and attracted investment to the locations where it is needed while accommodating participation by a variety of resource types.

The independent MMU’s annual “State of the Market” reports (“SOM Reports”) have consistently confirmed that the NYISO markets are well-designed and are working properly.²⁶ In addition, in 2013 FTI Consulting conducted an evaluation of the capacity market at the NYISO’s request which concluded that “[t]here are no critical flaws in the design of the New York ISO capacity market that the NYISO and its stakeholders are not currently addressing.”²⁷

²⁴ See, e.g., *ISO-New England, Inc., et. al.*, 131 FERC ¶ 61,065 at P 98 (2010) (“As we stated in *Bridgeport Energy, LLC*, in a competitive market, the Commission is responsible for providing a resource with ‘the opportunity to recover its costs,’ not a guarantee.”); citing *Bridgeport Energy, LLC*, 113 FERC ¶ 61,311, at P 29 (2005) (“[T]he Commission has no obligation in a competitive marketplace to guarantee Bridgeport its full traditional cost-of-service. Rather, in a competitive market, the Commission is responsible only for assuring that Bridgeport is provided the *opportunity* to recover its costs.”)

²⁵ Staff Report at n. 1 (“Ensuring an opportunity to recover both fixed and variable costs over time should avoid the so-called “missing money” problem.”)

²⁶ See, e.g., Potomac Economics, *2013 State of the Market Report for the New York ISO Markets*, at x (“2013 SOM Report”) (“The capacity market continues to be an essential element of the NYISO electricity markets, providing vital economic signals needed to facilitate market-based investment to satisfy the state’s planning requirements. The overall market design and rules governing the capacity market are sound, although this report identifies several areas of improvement.”) <http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Reports/Market_Monitoring_Unit_Reports/2013/2013%20State%20of%20the%20Market%20Report.pdf>; see also Potomac Economics, *2012 State of the Market Report for the New York ISO Markets* at i, 1-2 (April 2013) <http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Reports/Market_Monitoring_Unit_Reports/2012/NYISO2012StateofMarketReport.pdf>. The independent MMU has also recommended certain further market enhancements which the NYISO understands it will discuss at the November 5 Conference.

²⁷ The FTI Report is available at: <http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Studies/Market_Studies/Final_New_York_Capacity_Report_3-13-2013.pdf>. Note that the principal concern

As discussed below, the NYISO is diligently pursuing a measured approach in considering market enhancements.

1. The NYISO's Capacity Market Has Helped to Maintain Reliability

The primary reliability purpose of the capacity market is to maintain resource adequacy. It has been substantially responsible for New York having maintained sufficient reserves to reliably meet forecasted loads for nearly fifteen years. This includes meeting the all-time summer peak load of 33,956 MW on July 19, 2013 and the all-time winter peak load of 25,738 MW on January 7, 2014. This record of success is the intended result of the NYISO's capacity rules and capacity market design, as well as market signals from the energy and ancillary services markets.

The capacity market is structured around the concept of having enough resources to meet a margin above the forecasted peak load, known as the Installed Reserve Margin ("IRM"). The IRM is established annually by the New York State Reliability Council ("NYSRC") based on the Northeast Power Coordinating Council's resource adequacy standard.²⁸ NYSRC Reliability Rules were adopted by the NYPSC, have the force of New York State law, and are permitted to be more stringent than FERC-approved reliability standards under the savings provision in Section 215(i)(3) of the Federal Power Act. The NYSRC's annual IRM determination is based in part on studies and analyses conducted by the NYISO.²⁹ The IRM is used by the NYISO to determine the NYCA Minimum Installed Capacity Requirement and the

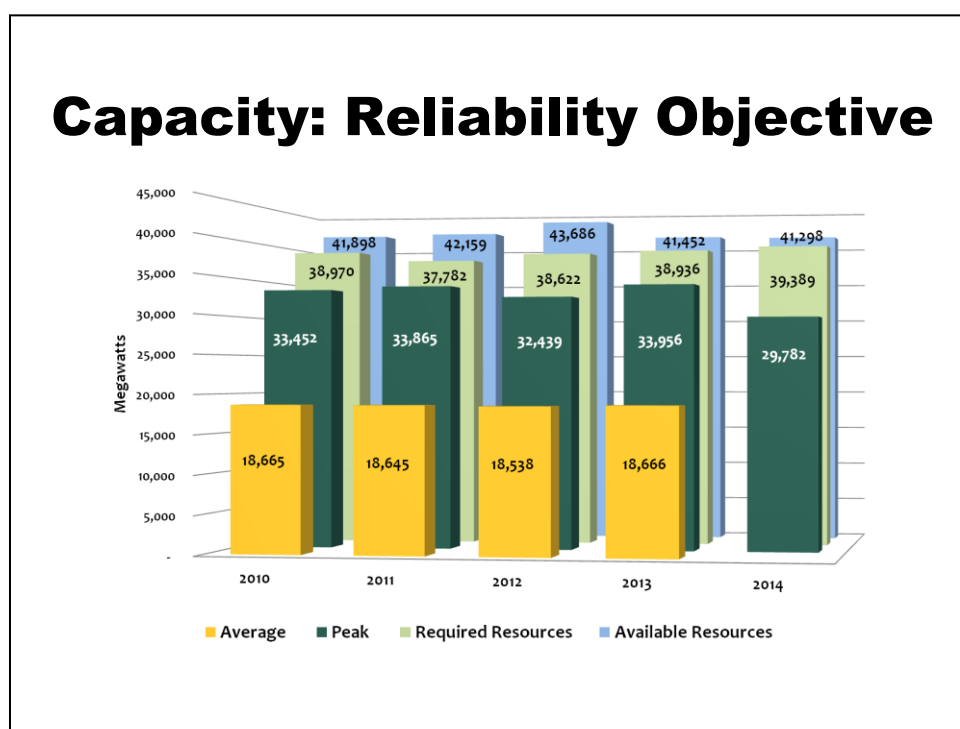
identified by FTI was the need to establish additional capacity zones. That point was subsequently addressed, at least in part, by the creation of the G-J Locality.

²⁸ The NPCC requires the probability of disconnecting firm Load due to a Resource deficiency (Loss of Load Expectancy, or "LOLE") to be, on the average, no more than once in ten years. See *NYISO Installed Capacity Manual* at Section 2.3 (September 2014) available at <http://www.nyiso.com/public/markets_operations/market_data/icap/index.jsp>.

²⁹ The NYSRC submits a filing to FERC and the NYPSC that contains the IRM for their review.

LCRs in accordance with the Services Tariff and consistent with NYSRC and Northeast Power Coordinating Council criteria.³⁰ The NYISO converts these values into NYCA-wide and Locational Minimum Unforced Capacity Requirements, *i.e.*, the specific capacity obligations that LSEs are required to meet.³¹ Thus, the IRM is the foundation of the capacity market and it is by design that the market results in the procurement of sufficient capacity to maintain resource adequacy. Figure 1 depicts the amount of capacity in the market to meet peak load and the margin above requirements.

Figure 1



2. The NYISO's Markets Have Incented and Are Incenting Investments In the Locations Where They Are Needed

As noted above, the energy, ancillary services, and capacity markets work in tandem to encourage investments in the appropriate locations. The energy and ancillary services markets

³⁰ See Services Tariff Section 5.10.

³¹ See Services Tariff Section 5.11.

use Locational Based Marginal Pricing to calculate separate clearing prices for each generator, external location or proxy bus, and for the NYISO's eleven load zones. Some of the attributes of the NYISO energy markets include a five-minute dispatch, simultaneous co-optimization of energy, operating reserves and regulation, pricing techniques to account for gas turbines, and the economic evaluation of import and export transaction. By aligning the dispatch schedules, establishing prices that drive payments to resources, and reflecting the performance of resources in the settlement all on a five-minute basis, the energy markets incent resources to perform consistent with system needs. The NYISO also works diligently in conjunction with its stakeholders to adjust the market design as needed to minimize "out-of-market" operator actions. In addition, the NYISO employs energy scarcity pricing and reserve shortage pricing rules within its five-minute real-time dispatch systems.³² The scarcity and shortage rules help to incent generation and transmission investment consistent with locational needs by allowing prices to rise to reflect genuine scarcity and shortage conditions. The independent MMU's SOM Reports have consistently recognized that these rules are working "reasonably well."³³

Scarcity and shortage pricing played an especially important role in 2013. As the FERC staff noted in a recent report, although there were relatively few shortage events last year they

³² See, e.g., New York Independent System Operator, Inc., 144 FERC ¶ 61,013 (2013) (accepting enhancements to NYISO shortage pricing rules); New York Independent System Operator, Inc., 129 FERC ¶ 61,164 (2009) (finding that the NYISO's then-existing scarcity pricing rules were compliant with Order No. 719's requirements); New York Independent System Operator, Inc. Compliance with Order No. 719, Docket No. ER09-1142-000 at 11 (May 15, 2009) ("The NYISO was the first ISO/RTO to introduce ancillary services demand curves as a means to incorporate scarcity pricing provisions into its markets (and to capture other market design efficiencies). It implemented demand curves for both Operating Reserves and Regulation Service in February 2005 and has used them to set real-time clearing prices during operating reserve shortages ever since. The NYISO's successful experience appears to have been a principal reason why the Commission first proposed making the use of a demand curve one of its four representative scarcity pricing options in the rulemaking that culminated in Order No. 719.").

³³ See, e.g., 2013 SOM Report at ix ("Overall, the market performed reasonably well during shortages")

had “a substantial impact on NYISO’s energy prices, accounting for 7 to 8 percent of average Locational Based Marginal Price in 2013.”³⁴

Although the capacity market cannot reasonably be as dynamic as the energy market, the capacity market does send economic signals to incent investment where it is needed most. The LCRs and the corresponding ICAP Demand Curves align market pricing and outcomes with reliability needs. As system conditions change in the Localities, resources will be incented to stay or enter if prices are high and more supply is needed, and to exit if prices are low and they are not needed. By recognizing that capacity above the minimum requirement can have a reliability value, and paying for it so long as it does have a reliability value, the ICAP Demand Curves also avoid volatility and create a more predictable revenue stream. Thus the capacity market design helps to further encourage market-based development and to preserve reliability.

A well functioning market results in efficient generator additions and retirements consistent with locational price signals. Detailed information on recent capacity additions and withdrawals is provided in the NYISO’s 2014 “Gold Book.”³⁵

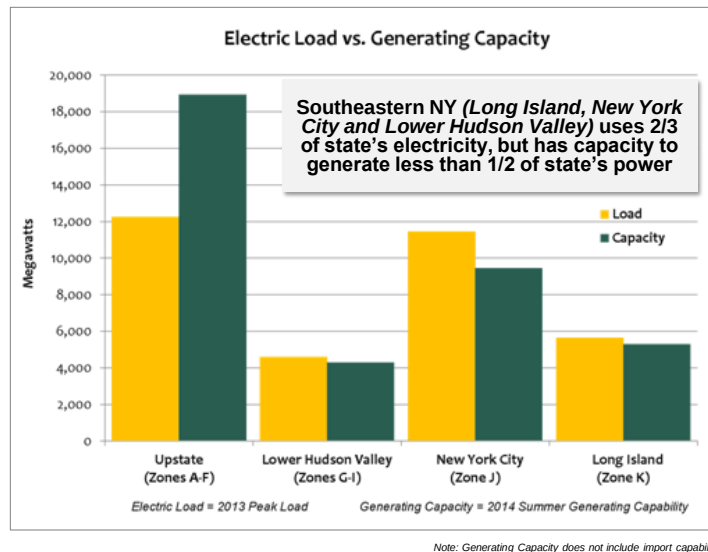
As noted above, locational pricing concepts are well-established in the NYISO’s capacity market. The Long Island and New York City Localities date back to the launch of the NYISO-administered capacity markets in 2000 and reflect the existence of transmission constraints that predate the NYISO and still exist today. Figure 2 depicts, as of 2013, the relationship between the capacity available and the load by location.

³⁴ *Price Formation in Organized Wholesale Electricity Markets, Staff Analysis of Shortage Pricing in RTO and ISO Markets*, Docket No. AD14-14-000 (October 2014) at 34.

³⁵ New York Independent System Operator, *2014 Load & Capacity Data Report* at Sections II and III, available at http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resource_s/Planning_Data_and_Reference_Docs/Data_and_Reference_Docs/2014_GoldBook_Final.pdf.

Figure 2

Regional Load & Capacity



In order to address a longstanding transmission constraint, in 2014 the NYISO established a new Locality encompassing the lower Hudson Valley region and New York City, and an ICAP Demand Curve for it. For the sole purpose of developing the new ICAP Demand Curve, the NYISO created an “Indicative LCR” for the new zone.³⁶ Once the new zone was created, the NYISO established the actual LCR for the new zone at the same time and in the same manner that it established the current LCR for New York City and Long Island.³⁷

³⁶ See Services Tariff Section 5.16.3 (“This Indicative NCZ Locational Minimum Installed Capacity Requirement will be used solely for establishing revised ICAP Demand Curves in accordance with 5.14.1.2.”)

³⁷ The NYISO agrees with FERC’s ruling that “Indicative” LCRs are not used to determine whether a new zone should be created or to define zonal boundaries. See, e.g., *New York Independent System Operator, Inc.* 147 FERC ¶ 61,152 at P 27 (2014) (“In the August 13, 2013 Order, the Commission found that NYISO is not proposing to change its methodology for calculating Locational Capacity Requirements in this proceeding and that the Indicative Locational Capacity Requirement for the new capacity zone is not used to determine whether a new capacity zone should be created or to establish the new capacity zone boundary; it is used solely for establishing an ICAP Demand Curve for the new capacity zone, in accordance with section 5.14.1.2 of the Services Tariff. Similarly, the price

The NYISO is mindful of the fact that the creation of the new zone has led to wholesale capacity price increases that have had retail price implications.³⁸ But the NYISO believes that the creation of the new zone was necessary, fully consistent with tariff requirements, and will benefit all New York consumers over time. Needed investments in resources in the lower Hudson Valley are now being made that will bolster long-term reliability and lower capacity prices in the region as they enter service. Publicly announced investments at this time include the return to service of the Danskammer Generating Station³⁹ and the potential restoration of Bowline Unit 2 to its full capacity.⁴⁰ The NYISO estimates that for the 2015/2016 Capability Year, total capacity costs in New York will be approximately \$400 million lower due to the increases in supply driven by the creation of the new zone.

Figure 3 depicts the locations of proposed new resources and Figure 4 depicts projected future capacity costs in New York.

impact in the new capacity zone is not a factor in determining whether to create a new capacity zone.”) (footnote omitted).

³⁸ The NYISO proposed to phase-in the price impacts of creating the new zone and ICAP Demand Curve. That proposal was not accepted. *See, e.g., New York Independent System Operator, Inc.*, 147 FERC ¶ 61,148 at PP 53-65 (2014).

³⁹ *See* Danskammer Energy LLC “Notice of Intent to Return Danskammer Generating Station Units 1-6 to Service,” September 29, 2014, available at <http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resource/s/Planned_Generation_Retirements/Planned_Retirement_Notices/Notice%20of%20Intent%20to%20Return%20Danskammer%20Generating%20Station%20to%20Service.pdf>.

⁴⁰ *See, e.g.,* 147 FERC ¶ 61,148 at P 17 (2014) (“NRG has stated that the recent approval of a new capacity zone with implementation to take effect beginning on May 1, 2014, greatly improves the prospects of NRG restoring its Bowline 2 unit.”)

Figure 3

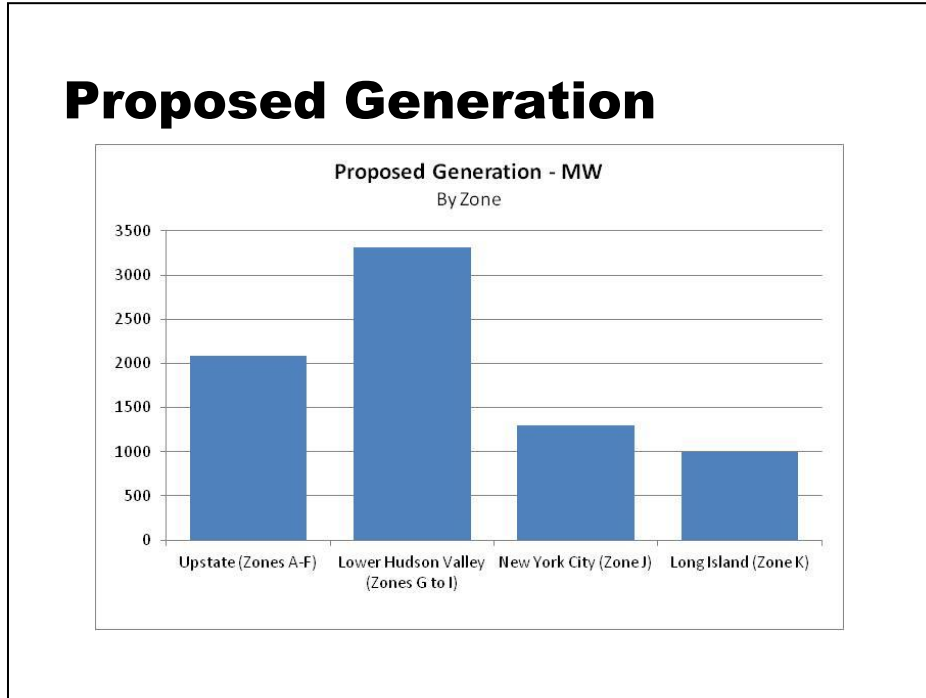
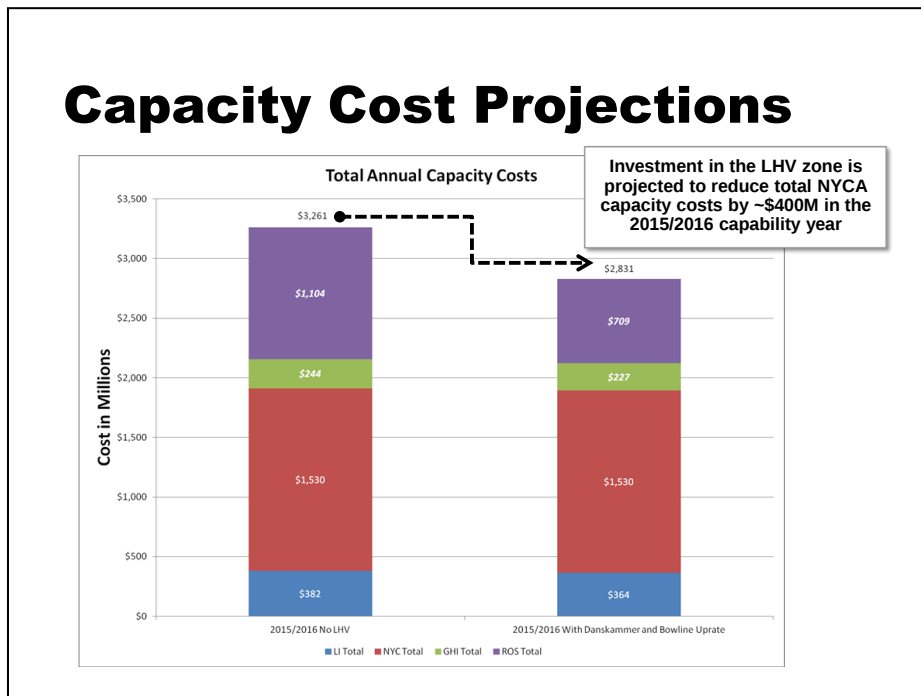


Figure 4



The NYISO is cognizant of New York State's transmission development initiatives that might alleviate the constraint that led to the creation of the new zone. The NYISO has begun

discussions with stakeholders to examine the groundwork for consideration of possible rules to eliminate zones that arguably cease to be needed in the future⁴¹ and has explained that it will be performing a consumer impact analysis as part of this evaluation.⁴²

In short, in the words of the Supplemental Notice, the capacity market is already working to “attract adequate investment in resources and infrastructure to efficiently meet New York State’s reliability/resource adequacy needs.”

3. The NYISO’s Capacity Market Recognizes and Accommodates Various Resource Types While Incenting and Rewarding Based on Performance

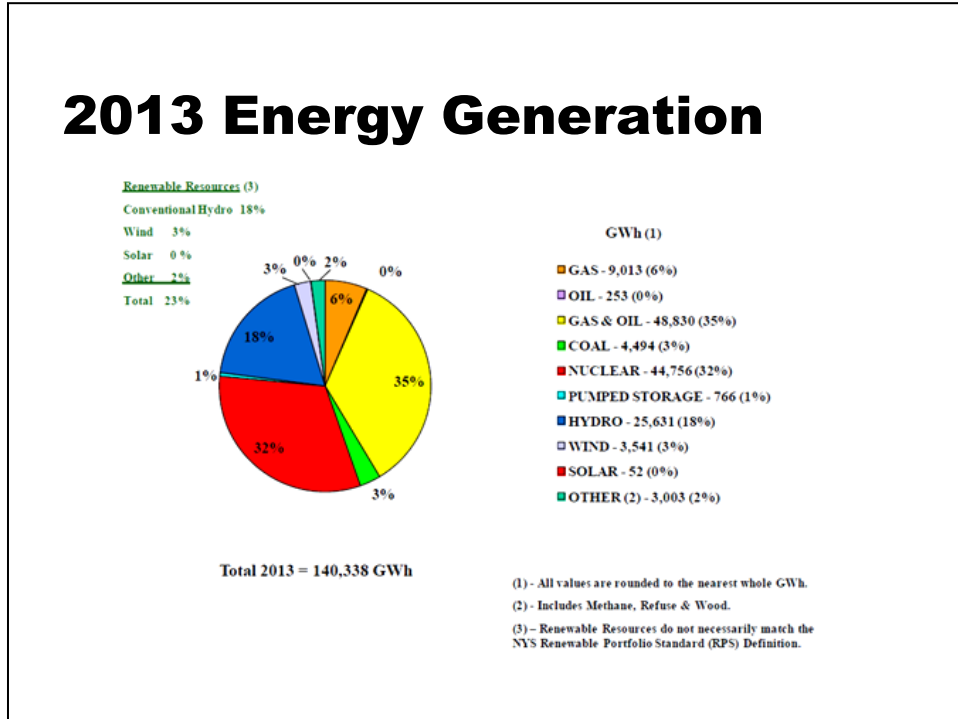
Participation in the New York capacity market is open to various resource types. Conventional generation, renewable resources including intermittent resources, imports from other regions, and, at this time, demand response⁴³ are all able to participate in the capacity market. The NYISO will work with its stakeholders on accommodating the participation of innovative technologies that emerge in the future. As shown in Figure 5, below, New York has a diverse mix of generation resources.

⁴¹ See, e.g., NYISO Staff Presentation to October 30, 2014 Joint MIWG/ICAP Working Group Meeting, *Capacity Zone (Locality) Elimination*, available at <http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2014-10-30/Capacity_%20Zone_%20Elimination_Final_103014.pdf>.

⁴² *Consumer Impact Analysis: 2015 Project List*, available at <http://www.nyiso.com/public/webdocs/markets_operations/committees/bic/meeting_materials/2014-10-15/agenda_08_2015%20Project%20List%20consumer%20impact%20analysis.pdf> at 9.>

⁴³ Demand response provides another operating tool to manage system reliability when demand is highest. The United States Court of Appeals for the District of Columbia Circuit’s decision to vacate Order No. 745, *Elec. Power Supply Ass’n v. FERC*, 753 F.3d 216 (D.C. Cir. 2014), has raised questions concerning the continued participation of demand response resources in organized capacity markets. The NYISO will work, with its stakeholders, to develop an approach to continue to recognize the reliability and economic benefits of demand response resources if the court’s rationale is interpreted to apply to demand response participation in organized capacity markets. Further action from the courts or guidance from FERC could guide the direction and scope of these efforts. See *Motion to Intervene and Comments of the New York Independent System Operator, Inc.*, Docket No. EL14-55-000 at 5 (October 22, 2014) (urging the Commission to “provide as much guidance as possible in the near future regarding its interpretation of the scope and implications of *EPSA*” to ameliorate uncertainty created by the *EPSA* ruling.)

Figure 5



The real-time performance of each resource impacts how much capacity it can provide and how much revenue it has an opportunity to make in the capacity and energy markets. Performers that are reliably available have an opportunity to make more, poor performers less. These rules encourage resources to be available when needed. They have contributed to significant increases in the performance of capacity resources that have improved availability since the start of the capacity market in 2000. The NYISO estimates that the overall performance of traditional generation types in New York is roughly 10 percent better now than it was prior to restructuring and the launch of competitive markets.

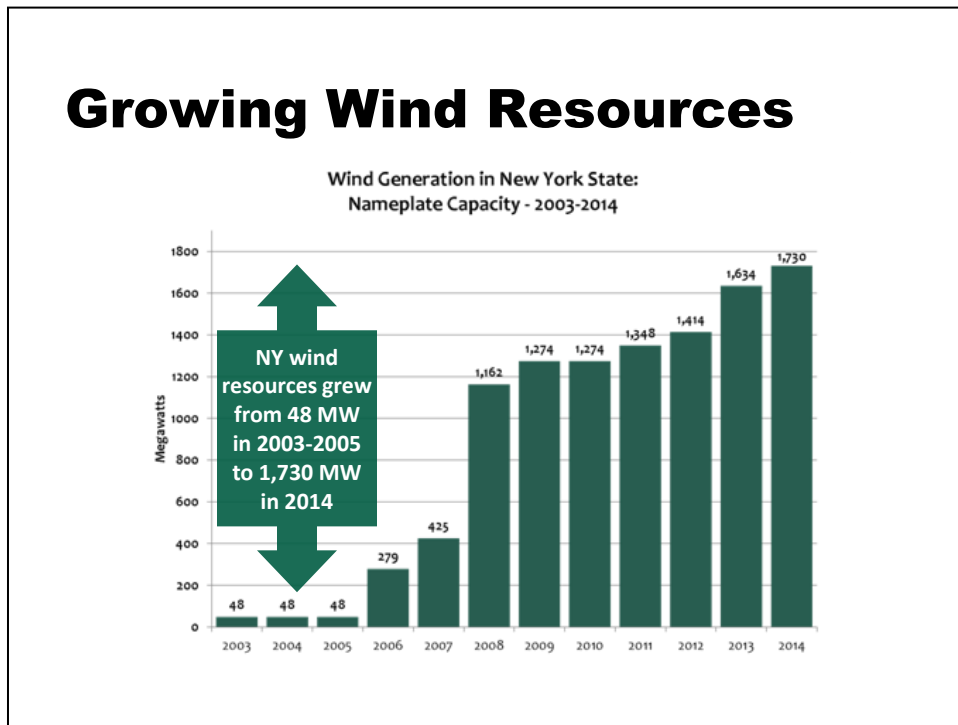
The Supplemental Notice indicates that the second panel at the November 5 Conference will focus on “whether, and to what extent, NYISO’s capacity market should play a role in attracting investment in resources and infrastructure to meet public policy objectives.” Open

markets provide an avenue for competitive resources to be compensated for the value they provide towards system reliability. They thereby accommodate public policy by providing a means for resources to compete to satisfy the goal of a reliable system.

The NYISO has helped to achieve beneficial environmental gains by incorporating new technologies such as wind and solar resources. The amount of wind resources in the State has grown substantially over the past decade as shown in Figure 6, below. The NYISO has rules that accommodate participation by these technologies by recognizing their specific operating characteristics. As an example, the NYISO incorporated centralized wind forecasting in the energy market, developed a means to include wind resources in Real-Time dispatch, and more recently commenced operation of a new state-of-the-art Control Center to position New York well for the future. The NYISO will use that same expertise in its ongoing work with the NYPSC and stakeholders on the NYPSC's Reforming the Energy Vision proceeding initiatives.

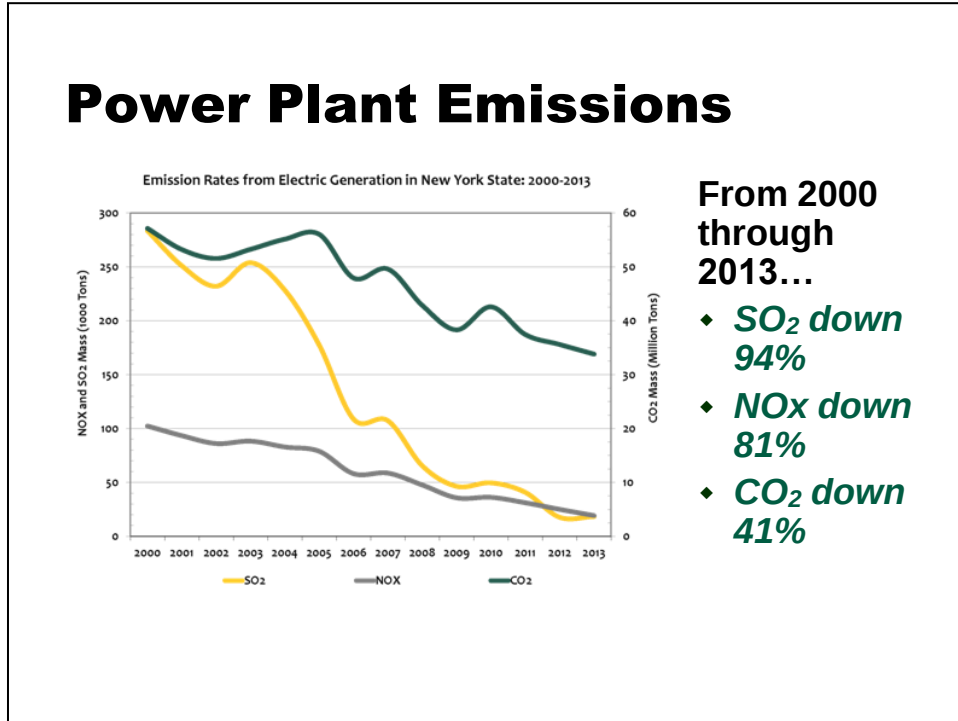
Much of the investment in New York since the start of the NYISO has been in clean, efficient combined cycle units that have reduced harmful emissions. Six thousand MW of older, and generally higher emitting, generation has retired or ceased operation since the start of the capacity market. As discussed below, the NYISO has favored an exemption from buyer-side capacity market power mitigation for renewable energy resources. It has also supported a repowering exemption that could facilitate older existing plants making upgrades which, for example, to be more environmentally friendly. These proposed rule changes would eliminate a potential impediment to entry by projects that are unlikely to be vehicles for artificial price suppression.

Figure 6



New York participates in the Regional Greenhouse Gas Initiative (“RGGI”), a multi-state public policy initiative that broadly seeks to reduce emissions from the power sector. The NYISO’s markets allow generators to reflect the cost of emissions in their energy bids. For example, charges to generators for their carbon dioxide emissions as part of RGGI have reduced power fleet CO₂ emissions in the Northeast by making large emitters more expensive to operate. Figure 7 below summarizes the emissions reductions experienced in New York. In addition, the NYISO recognizes the need for environmental control technology in the calculation of the cost of the proxy unit used to establish the ICAP Demand Curves.

Figure 7



The NYISO expects that the existing market design is sufficiently flexible to accommodate the NYPSC’s preference that the capacity market “help attract investments to help meet public policy objectives.”⁴⁴ The capacity and energy markets can do this without losing their ability to “send correct signals to support the procurement and retention of resources needed to deliver reliable energy.” The NYISO does not see any need to make a fundamental change to what the Supplemental Notice refers to as the “capacity market product definition” in order to address public policy objectives, or for other reasons, at this time.⁴⁵ As noted below, however,

⁴⁴ *PSC and FERC to Hold Joint Technical Conference*, Press Release, available at <<http://www.ferc.gov/media/news-releases/2014/2014-4/10-30-14-nypsc.pdf>>.

⁴⁵ See *Post-Technical Conference Comments of the New York Independent System Operator, Inc.*, Docket No. AD13-7-000 at 5 (January 8, 2014) (“NYISO AD13-7 Comments”) (explaining that there was no evidence, and that no party had argued, that the “single capacity product model” used in New York was “inconsistent with reliability or inimical to new technologies.”)

the NYISO is considering measured market enhancements to strengthen resources' incentives for good performance during critical operating periods.

4. Coordination of the Capacity Market with NYISO Planning Processes

The Supplemental Notice asks how the NYISO coordinates “its planning processes and its capacity market.” Reliability needs are identified and solutions solicited by the NYISO’s comprehensive planning processes under Attachment Y to its Open Access Transmission Tariff. These processes provide for advanced planning studies to anticipate and identify future resource needs. When necessary, planning processes also allow for the solicitation of market-based or regulated projects – a “gap solution” – to meet those needs.⁴⁶ To date the NYISO has never had to use its Attachment Y gap solution authority to take more direct action to encourage the development of needed resources. This is an indication that the NYISO’s markets provide strong market signals for the bulk power system. The NYISO is working with the NYPSC and stakeholders on transmission planning initiatives to facilitate investment in transmission resources.

The Supplemental Notice also asks how “the planning of transmission, generation and other resources [is] coordinated between retail and wholesale markets?” in New York. The NYISO’s load forecasts, which are used to establish LSE capacity requirements, incorporate retail planning related data and information. To the extent that retail programs decrease the wholesale demand on the system, they can reduce the overall capacity needs. NYISO planning processes and studies also recognize the local transmission plans of the TOs.

⁴⁶ See NYISO OATT at Section 31.2.5.10.

B. Current Initiatives to Further Enhance the NYISO Capacity Market

Although the NYISO markets work well, the NYISO is interested in making them work even better. In fact, the NYISO is already working on market enhancements, including the initiatives that are discussed in this written statement, to further link compensation with performance and send even better market signals. But it bears repeating that the NYISO's markets are already working well and that changes should be measured.

1. Fuel and Performance Initiatives

The NYISO and its stakeholders are exploring the creation of additional market-based incentives for resources to be available to meet the real-time needs of the NYCA at times when there is a particular risk of a reduction in real-time resource availability due to factors including high demand from neighboring areas and fuel supply uncertainty. These conditions are most likely to arise on summer or winter peak days but could also be required during “shoulder” periods if certain factors exist. It is imperative that scheduled resources actually be available for real-time operation during these periods. Although the NYISO's current market designs already incent performance, consideration of fuel assurance is increasingly important given the widespread expectation that New York, and other regions, will be more reliant on natural gas-fired resources in the future. Figures 8 and 9 illustrate the clear trend towards natural-gas fired resources.

Figure 8

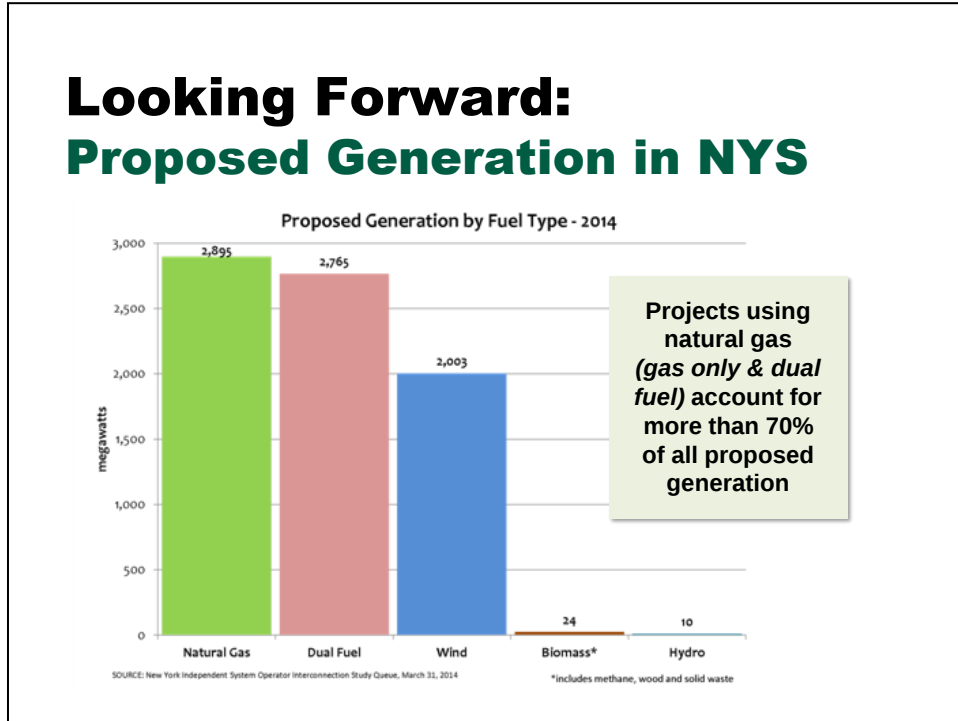
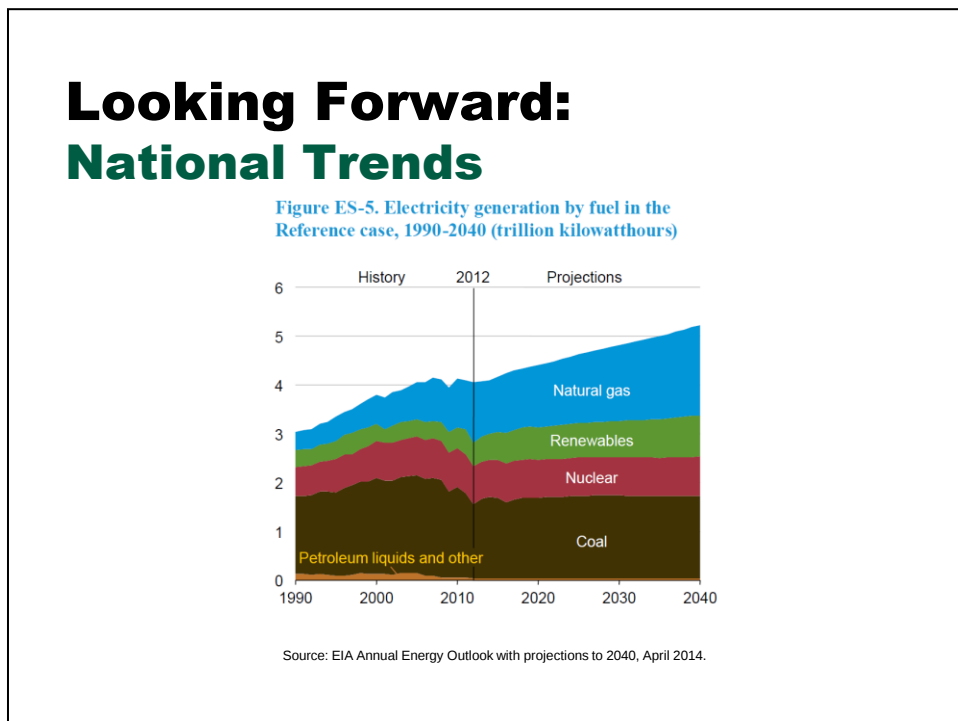


Figure 9



A number of interrelated potential energy and capacity market enhancements are under consideration to address these issues. The NYISO intends to move forward with these initiatives, which are currently proceeding through its stakeholder process, in a timely and measured manner.

For the energy and ancillary services markets, the NYISO is building on its existing shortage and scarcity pricing rules through its coordinated “Comprehensive Shortage Pricing,” and “Comprehensive Scarcity Pricing” proposals.⁴⁷ The two proposals are being designed to further incent the desired short and long-term responses from all resources. Briefly, “Comprehensive Shortage Pricing” would enhance the use of demand curves to reflect the gradually increasing value of reserves and regulation as the system becomes more constrained. “Comprehensive Scarcity Pricing” would ensure that the energy market fully reflects the value of demand reductions under the NYISO’s reliability-based demand response programs. In general, these initiatives should make the economic signals from the energy and ancillary services markets even more effective. Beyond these initiatives, the NYISO is also participating in FERC’s ongoing proceeding in Docket No. AD14-14-000 concerning scarcity and shortage pricing.

Among other benefits, improved shortage and scarcity pricing could reduce the need for resources to rely on capacity revenues, thereby relieving pressure for capacity market compensation. Moving a greater portion of total revenues away from the capacity market, and its well-functioning but nevertheless quasi-administrative ICAP Demand Curves, and having

⁴⁷ See, e.g., *Comprehensive Shortage Pricing*, NYISO Presentation to Market Issues Working Group (October 30, 2014) available at <http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2014-10-30/Comprehensive%20Shortage%20Pricing%20October%2030%20MIWG%20FINAL.pdf> (including proposed tariff provisions).

energy market components better priced in their own market would likely result in greater efficiency. It would also facilitate a more level playing field for resources that are more dependent on energy revenues to compete in New York's electricity markets.

With respect to the capacity market itself, the NYISO is considering possible rule changes to provide additional incentives to maximize resource availability during tight operational periods. The PJM Interconnection, LLC ("PJM") and ISO-New England, Inc. ("ISO-NE") are considering, or have already taken, similar steps. The NYISO is focused on developing targeted incentives that would apply to a limited number of critical operating days and complement, not replace, existing performance evaluation and compensation rules.⁴⁸

The NYISO recognizes that neighboring regions are either proposing to introduce, or already have, new "capacity performance products."⁴⁹ Their initiatives may increase capacity prices in those regions and thus provide an incentive for New York resources to export more capacity to them, which could reduce capacity levels in New York. The NYISO is exploring and is poised to timely implement any needed responses. This measured approach is likely to be prudent for New York given the existence of effective shortage and scarcity pricing rules that the NYISO intends to further improve in the near future (as discussed above).

⁴⁸ See, e.g., *Fuel Assurance Initiative: Fuel and Performance Incentives Critical Operating Day Incentives*, NYISO Presentation to Installed Capacity Working Group (October 27, 2014), available at <http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_icapwg/meeting_materials/2014-10-27/ICAP%20WG%20FA%20Initiative%20Presentation.pdf>.

⁴⁹ See, e.g., *PJM Capacity Performance Updated Proposal* (October 7, 2014), available at <<http://www.pjm.com/~media/documents/reports/20141007-pjm-capacity-performance-proposal.ashx>>; *ISO New England Inc. and New England Power Pool*, 147 FERC ¶ 61,172 (2014) (addressing New England capacity performance proposals.)

2. Evaluation of Forward Capacity Market Construct

As noted above, the NYISO currently administers six month Capability Period auctions, as well as auctions that encompass shorter time periods, and a triennial ICAP Demand Curve reset process. It does not currently have a multi-year forward capacity auctions as do PJM and ISO-NE. This does not mean that resources in New York cannot make longer-term forward arrangements. The existence of the NYISO's competitive monthly ICAP Spot market auction gives existing resources and potential developers an efficient economic signal to respond quickly to changing conditions and allows for longer term contracts. New York market participants can and do execute longer-term bilateral capacity contracts. Thus, in the words of the Supplemental Notice, long-term bilateral contracts are already a "feasible alternative procurement mechanism for New York" Moreover, relying solely on regulated bilateral contracts and not having a capacity market would shift risks to customers, whereas the NYISO's competitive capacity market leaves risks with suppliers and investors.

The Supplemental Notice asks if the capacity market should "provide a longer revenue certainty period (e.g., 3, 5, or 10 years)?" Previous NYISO reviews have concluded that a longer forward period was not necessary in New York.⁵⁰ But the NYISO is now taking a fresh look at the question. A forward auction might be desirable to the extent that it could facilitate investments and result in earlier notice of resources that will exit the market. On the other hand, a forward auction system might result in over-procurement and may diminish the ability to recognize and quickly respond to changing market conditions. The NYISO will not make any

⁵⁰ Staff Report at n. 23, citing FTI Consulting, *Evaluation of the New York Capacity Market*, at xi-xiii (Mar. 5, 2013), available at http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Studies/Market_Studies/Final_New_York_Capacity_Report_3-13-2013.pdf; The Brattle Group, *Cost-Benefit Analysis of Replacing the NYISO's Existing ICAP Market with a Forward Capacity Market*, at 3 (June 15, 2009), available at http://www.brattle.com/_documents/uploadlibrary/upload789.pdf.

decisions on this subject until the ongoing evaluation is complete and it has had time to discuss the results with stakeholders and the independent MMU.

As a general matter, the NYISO does not believe that there is a single ideal “revenue certainty period.” If the NYISO concludes that it should pursue a forward capacity auction at this time, it will not mean that all centralized capacity markets should necessarily include such a mechanism. Similarly, if the NYISO decides not to move to longer-term forward auctions, the decision should not be construed as criticism of the PJM or ISO-NE market designs.

The NYISO is also considering changes to the frequency of its ICAP Demand Curve reset process. As noted above, the ICAP Demand Curves are currently revised every three years. The NYISO has previously stated that it was worth exploring whether this is too frequent.⁵¹ If the reset were performed less often there could be greater certainty for market participants and a reduction in the frequency of litigation over the demand curve inputs. A longer period between full reset reviews, “automatic” updates to certain ICAP Demand Curve parameters, *e.g.*, based on indices or other sources, might be suitable to prevent the curves from becoming “stale.” On the other hand, the current three-year construct allows a variety of market elements to be recognized and accounted for in the relatively near-term.

3. Buyer-Side Capacity Market Power Mitigation Enhancements

Having appropriate energy and capacity market power mitigation measures that avoid both over- and under-mitigation is important to a well-designed competitive market. The NYISO’s existing buyer-side market power mitigation rules have generally functioned well. They do not appear to have discouraged efficient investments and have resulted in the mitigation of both existing resources and new entrants when mitigation was warranted. These measures

⁵¹ See NYISO AD13-7 Comments at 15.

were initially limited to New York City but have now also been implemented in the new zone and would apply to any new Locality that might be established in the future.⁵²

The NYISO has proposed certain new exemptions from buyer-side mitigation that it believes are justified. But it has not been able to secure the requisite super-majority of stakeholder support required under its shared governance model for the NYISO to submit these improvements to the FERC under Section 205 of the Federal Power Act (“FPA”).⁵³ The NYISO’s shared governance process has generally worked well and successfully led to reasonable compromises among stakeholders for the last fifteen years. The NYISO attributes the difficulty of resolving buyer-side mitigation issues in part to ongoing and possibly anticipated litigation, which can impede productive stakeholder discussions. Recent challenges in achieving adequate support on these matters in the stakeholder process are also partially attributable to stakeholders’ disparate views on these issues.

Specifically, the NYISO has proposed that a new exemption from buyer-side capacity market power mitigation be established for wind, solar, and other kinds of renewable resources.⁵⁴ The NYISO also believes that it would be an improvement to establish a “Competitive Entry Exemption” that would be available to capacity projects that are not receiving support from

⁵² See *New York Independent System Operator, Inc.*, 143 FERC ¶ 61,217 (2013) (accepting tariff revisions “to implement buyer-side and supplier-side market power mitigation measures for new capacity zones.”)

⁵³ NYISO Agreement, Sect. 19.01. While the NYISO could make a “unilateral” filing to bring its desired improvements before the Commission under Section 206 of the FPA, such a filing would have to demonstrate that the existing NYISO capacity market design would be “unjust and unreasonable” without the improvements. By contrast, the NYISO believes that its contemplated incremental enhancements and clarifications would be accepted as “just and reasonable” if they were submitted through other means.

⁵⁴ NYISO presentation to Business Issues Committee, *Proposed ICAP Buyer-Side Mitigation Revisions*, May 20, 2014, available at <http://www.nyiso.com/public/webdocs/markets_operations/committees/bic/meeting_materials/2014-05-12/agenda_07_pres_re_CompetitiveEntryExemption%20May%2012.pd> at 4, and proposed tariff revisions available at <http://www.nyiso.com/public/markets_operations/committees/meeting_materials/index.jsp?com=bic>.

outside of the market unless the support is procured through a competitive and non-discriminatory mechanism. A Competitive Entry Exemption would allow a merchant capacity project to enter without an Offer Floor based on its own assessment of future market conditions. The NYISO continues to be open to working with its stakeholders to try to implement these incremental improvements.

C. Winter Preparedness

Finally, the NYISO has taken actions to ensure that it is well-prepared for the Winter 2014-15 period. The NYISO successfully maintained the system through the several winter 2013/2014 “Polar Vortex” events. In fact, the NYISO’s operations at its new Control Center started in December 2013 and provided its operators with enhanced situational awareness. The NYISO projects positive operating margins for the winter based on normal and severe weather scenarios including consideration of loss of gas.

Prior to Winter 2013/2014, the NYISO had many market features and operational requirements that served New York well and incented efficient performance by resources. In particular, only 9 percent of the total generating resource mix in New York is natural gas-fired power plants with no dual-fuel capability. By contrast, 46 percent of resources in New York burn natural gas with the ability to also burn oil. Dual-fuel capability is especially prevalent in the New York City and Long Island Localities and the NYSRC has long had rules that require certain resources in those regions to switch to burning oil at times in order to prevent natural gas shortages from jeopardizing electric reliability. The existence of significant dual-fuel capability proved helpful to NYISO operators during the Polar Vortex timeframe.⁵⁵

⁵⁵ See, e.g., Technical Conference Presentation by Wes Yeomans, Vice President --- Operations, New York Independent System Operator, Inc., *Cold Weather Operating Performance*, Docket No. AD14-8-000 (April 1, 2014).

In addition, the NYISO's market design already includes elements that facilitate gas-electric coordination and help the NYISO to better manage winter-related events. Suppliers in the NYISO-administered energy and ancillary services markets may offer unique hourly bids and may increase them in real-time based on their expectations of fuel prices. Other ISOs/RTOs currently operate day-ahead markets that do not close until after the natural gas market for day-ahead (timely) nominations and the national secondary market for pipeline capacity trading have closed. By contrast, offers into the NYISO's Day-Ahead Markets for energy and ancillary services are due by 5 a.m. and results are announced by 11 a.m. Thus, suppliers in New York have time to secure natural gas fuel to meet their known energy and ancillary service commitments. The NYISO also has procedures to coordinate with generators on fuel inventory and with all market participants on maintenance outage scheduling.

In addition, for Winter 2014/2015 the NYISO has taken additional steps to improve gas/electric coordination. These include: (i) adding an experienced gas system operator in the control center to monitor daily fuel inventories, conditions on interstate and LDC gas pipelines, and overall gas-electric coordination; (ii) enhancing the ability of resources to update the costs used in their day-ahead reference levels; and (iii) improving operational processes for monitoring supplier fuel inventories in collaboration with generators. The NYISO also understands, based on its pre-season winter fuel inventory assessment, that generators in New York have increased oil inventories, improved arrangements for oil replenishment, established more firm gas transportation, and performed plant winter hardening.

The FERC's recent *Winter 2014-15 Energy Market Assessment*⁵⁶ is consistent with the NYISO's expectation that New York is prepared for the coming winter. The Assessment does

⁵⁶ The assessment is posted at <<http://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2014/10-16-14-A-3.pdf>>.

not identify New York as a region that is especially vulnerable to severe winter issues.⁵⁷ The Assessment also noted generally that the “impact of high winter demand on prices may not be as severe as last year however, as new pipeline capacity in the Northeast should alleviate some bottlenecks within the Marcellus producing region and the New York market area.”⁵⁸

D. Consistency, Market Certainty and Investments

As FERC, the NYPSC, and New York stakeholders continue their consideration of possible changes to the capacity market construct in New York, they should always keep in mind that maintaining a stable market design over time contributes to market certainty. Such certainty is essential to facilitating long-term investment in existing and new resources. That does not mean that market design improvements should never be made. But pursuing too many or drastic changes, in too short a time, could undermine certainty, increase risks, and raise the costs of investment. The NYISO has always tried to balance these competing considerations when working to enhance its own markets. It looks forward to working with both regulators and its stakeholders in pursuing future improvements.

The NYISO hopes that FERC and the NYPSC both will continue to support a capacity market construct. In the long-term it is in the best interest of all stakeholders, and most importantly consumers, for markets to be allowed to operate subject to careful regulatory oversight while remaining open to measured changes.

III. CONCLUSION

The NYISO-administered capacity market is working, and has worked, well. It has helped to preserve reliability while sending economic signals that stimulate investments where

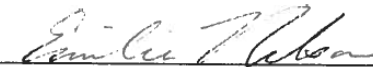
⁵⁷ See *Winter 2014-15 Energy Market Assessment* at 11 (noting extremely high winter future prices for New England but not for New York.)

⁵⁸ *Id.* at 5.

they are needed. It has successfully accommodated different classes of resources and given them incentives to perform well. But the NYISO understands that it will always be possible to do better. It looks forward to working collaboratively with FERC, the NYPSC, and all stakeholders concerning New York's public policy objectives and possible enhancements to strengthen reliability, improve economic signals, and, ultimately, better serve consumers.

ATTESTATION

I have prepared this statement and am familiar with its contents. The contents of this statement are true to the best of my knowledge, information, and belief.


Emilie Nelson

Subscribed and sworn to before me
this 3th day of November 2014


Notary Public

GLORIA KAVANAH
Notary Public, State of New York
No. 4941412
Qualified in Schenectady County
Commission Expires 8/8/2016