

2013 Annual Report of the Consumer Interest Liaison



New York Independent System Operator



The mission of the NYISO, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:

- ♦ *Maintaining and enhancing regional reliability*
- ♦ *Operating open, fair and competitive wholesale electricity markets*
- ♦ *Planning the power system for the future*
- ♦ *Providing factual information to policy makers, stakeholders and investors in the power system*



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MESSAGE FROM THE CONSUMER INTEREST LIAISON

The purpose of the Annual Report of the Consumer Interest Liaison is to provide a summary of the major initiatives undertaken by the NYISO's Consumer Interest Liaison over the past year. The 2013 Annual Report is the second time we will be reporting on a full year of activities of the Consumer Interest Liaison since my appointment to the position in October 2011. During 2013 we continued with our support of the End Use Sector's participation in the activities of the NYISO. The objective of this support is to make this participation as effective as possible. Summaries of committee and working group meetings were provided on a weekly basis and we also started to post them on the Consumer Interest Liaison webpage on the NYISO website. We also continued to meet with representatives of the End Use Sector on a monthly basis, mostly via conference call. The focus of these calls is to provide the topics that committees and working groups expect to discuss over the next 6 to 8 weeks. The expectation is that this information will help the End Use Sector plan and allocate their limited resources more effectively. A new activity that we initiated during 2013 was training/information sessions on topics chosen by members of the End-Use Sector. The first such session was held in August 2013 and we plan to offer two sessions every year. Additionally, we continued to respond to inquiries from the End-Use Sector and send out email reminders of events and activities at the NYISO.

Finally, we performed comprehensive consumer impact analyses on the topics identified for 2013 and presented our findings to the relevant committees and working groups. The results of these impact analyses are fully discussed in this report. A very large portion of our effort during 2013 was working on the New Capacity Zone (NCZ) consumer impact analysis. Over the course of approximately eight months, we made five presentations to the Installed Capacity (ICAP) Working Group, the first in September 2012 and the fifth in April 2013.

We are expecting a busy and exciting year during 2014. This report briefly describes the projects that we have identified for consumer impact analysis for the coming year. We look forward to continuing our role of supporting the work of the End-Use Sector.

Tariq N. Niazi
Consumer Interest Liaison
New York Independent System Operator
January 2014

INTRODUCTION

The New York Independent System Operator (NYISO) is responsible for the reliable and efficient operation of New York's bulk power system, managing the flow of power on more than 11,000 circuit-miles of electrical transmission lines on a continuous basis -- 24 hours-a-day, seven-days- a-week. The NYISO also administers and monitors the wholesale electricity markets serving New York State, conducting auctions that bring together load-serving entities looking to purchase power and the suppliers offering to sell it. The objective is to operate the grid and electricity markets in a reliable and efficient manner at the lowest production cost to serve the public interest and provide benefit to consumers.

As part of its evolving array of responsibilities, the NYISO undertook several initiatives expressly intended to foster and enhance the voice of end-use consumers, improve education and outreach, and increase the transparency of NYISO processes and actions. Among these initiatives was the creation of the position of Consumer Interest Liaison, which was established to serve as a key point of contact for consumer interests and to conduct impact analysis of NYISO market initiatives.

Tariq Niazi, formerly with the New York State Consumer Protection Board (CPB), was named the Consumer Interest Liaison In 2011. As the former director of the CPB Utility Intervention Unit and Chief Economist for 30 years, Mr. Niazi has extensive experience representing the interests of electricity consumers.

This report outlines the projects and initiatives undertaken by the NYISO Consumer Interest Liaison during 2013.



NYISO Governance

The NYISO has a shared governance process that enables stakeholders to play a significant role in decision-making. Stakeholders participate in the governance of the NYISO through three standing committees: the Management Committee (MC), the Business Issues Committee (BIC), and the Operating Committee (OC). Each of these committees oversees their own working groups, task forces and subcommittees. These forums provide stakeholders with the opportunity to discuss, debate and, in the committees, to vote on issues regarding the administration of the markets, the operation of the New York's bulk power system, and planning for future system reliability. In 2013, the NYISO conducted over 260 meetings, including monthly sessions of the three standing committees and almost daily meetings of sub-committees, task forces, and working groups.

The NYISO's governing documents establish specific responsibilities for the three standing stakeholder committees. These committees perform their responsibilities in accordance with each committee's by-laws and in coordination with work performed by NYISO management and staff. Stakeholders perform an array of duties in the shared governance process, including:

- *reviewing and recommending candidates for Board vacancies,*
- *developing and reviewing technical guidelines for operation of the bulk power system,*
- *developing and reviewing enhancements in market design,*
- *developing and reviewing system planning reports, and*
- *reviewing preparation of and approving the NYISO's annual budget.*

NYISO stakeholders also share responsibility with the NYISO Board of Directors in developing and approving proposed changes to the NYISO's governing documents and federally approved tariffs. The Management Committee must endorse any proposed change to the NYISO's governing documents before it can be filed for review by the Federal Energy Regulatory Commission (FERC) under Section 205 of the Federal Power Act.¹

In 2008, the FERC cited the collaborative results of the NYISO's shared governance system, stating, "The Commission commends NYISO and the stakeholders for working together to resolve many issues..."²

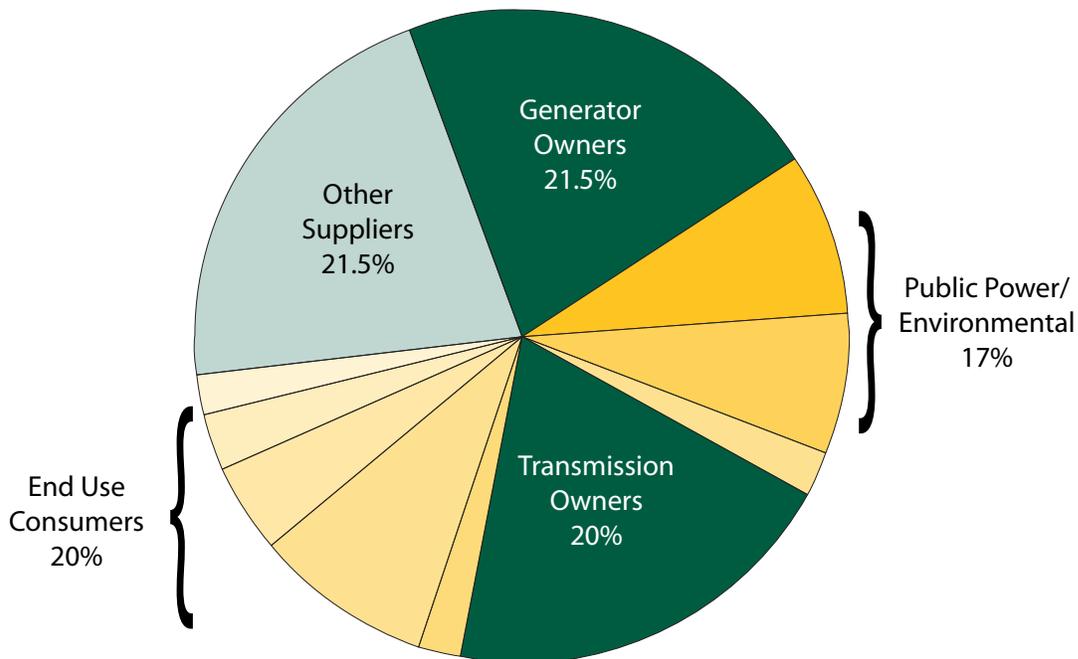
NYISO stakeholders include all participants in the NYISO markets categorized into five sectors that include Transmission Owners, Generation Owners, Other Suppliers, End-Use Consumers, and Public Power/Environmental. Voting in the stakeholder committees is conducted by representative of each sector. Each stakeholder's vote in a committee is equal to a percentage of its sector's allocated voting shares. Actions by the committees require a 58% vote of approval to pass. The voting shares are allocated among the sectors and subsectors as follows:

- *Generation Owners - 21.5%*
- *Other Suppliers - 21.5%*
- *Transmission Owners - 20.0%*
- *End Use Consumer - 20.0%*
 - ✓ *Large Consumer (9.0)*
 - ✓ *Large Consumer – Government Agencies (2.0)*
 - ✓ *Small Consumer (4.5)*
 - ✓ *Government - Statewide Consumer Advocate (2.7)*
 - ✓ *Government - Small Consumer & Retail Aggregators (1.8)*
- *Public Power and Environmental Parties - 17.0%*
 - ✓ *State Power Authorities (8)*
 - ✓ *Municipal and Cooperatively Owned Electric Systems (7)*
 - ✓ *Environmental Parties (2)*

In addition, entities with significant interests in a Sector may join the NYISO shared governance process as non-voting members. Staffs of the New York State Public Service Commission (PSC) and the Federal Energy Regulatory Commission (FERC) participate as non-voting entities in the work of these committees.



NYISO Shared Governance Voting Sectors



Access to NYISO Management and Board of Directors

The NYISO Board of Directors provides stakeholders the opportunity to meet regularly with Board Members and directly share their opinions and concerns. The Board Liaison Committee of the Management Committee conducts a meeting immediately following the NYISO Board of Directors' monthly meetings. The Liaison Committee meetings provide a forum for open dialogue that offers the Board members an opportunity to gain insight into the concerns of customers and other interests in the wholesale electricity markets. Additionally, the NYISO Board Members host an annual Joint Board/Management Committee meeting to review current issues with stakeholders.



Access is also critical to the Consumer Interest Liaison. To keep consumers informed in a timely and efficient manner, it is very important for the Consumer Interest Liaison to have access to NYISO resources. Mr. Niazi has direct access to NYISO Senior Staff and is afforded the cooperation of all NYISO departments allowing the Consumer Interest Liaison to fully perform all necessary functions.

Formation and Objectives of the Consumer Interest Liaison

In 2009, FERC ordered all ISOs and RTOs to improve their “responsiveness to customers and stakeholders and ultimately the consumers who benefit from and pay for electricity services.” Support for this concept was voiced by Market Participants at the 2010 Sector Meetings, and by the Consumer Protection Board, the Public Service Commission and the NYISO Board of Directors..

Stakeholders identified areas for attention, including:

- *Expanding the transparency of NYISO operations, markets and initiatives*
- *Enhancing the ability of End Use Sector members to participate in NYISO governance by improving their understanding of the increasingly technical issues*
- *Expanding interaction and communication between NYISO Board, Senior Management and end use consumers*
- *Increasing sensitivity to the impact of its markets on consumers*
- *Increasing information sharing about the NYISO, grid operation, markets, smart grid and initiatives*

The NYISO developed and implemented a comprehensive, pro-active consumer program to provide both strategic and operational value to the NYISO and the consumers it serves. In May of 2011, the NYISO Board of Directors, in a response to an appeal to amend the NYISO tariffs to provide funding for a consultant to represent the End Use Consumer sector in the NYISO stakeholder governance process and before regulatory bodies, voluntarily adopted several measures intended to improve the voice of New York’s end-use consumers. The Board:



- *amended the NYISO's corporate mission statement to explicitly state that a core objective is to serve the public interest and provide consumer benefits;*
- *established the Consumer Interest Liaison to facilitate the flow of information between the NYISO and the End Use Sector members and to assist members of that sector to prioritize issues of interest as they are deliberated in the shared governance process;*
- *created an independent Consumer Advisory Council to provide the NYISO with recommendations as to how best to serve the interests of New York electricity customers; and*
- *directed NYISO staff to assess the projected impacts of wholesale market initiatives, where appropriate, in order to further inform all stakeholders.*

In October of 2012, FERC approved a New York State Public Service Commission (PSC) plan to allocate and distribute \$78 Million in funds for the benefit of electric energy consumers resulting from a Stipulation and Consent Agreement between FERC and a NYISO market participant.³ The PSC plan calls for a \$48 Million refund to electric energy consumers, \$20 Million to aid in the development of advanced technologies and \$10 Million to support consumer advocacy through the NYS Utility Intervention Unit (UIU). This decision reflects the importance FERC has placed on the consumer in the energy market, and a commitment to ensuring that markets are developed to benefit consumers.

The PSC indicated that its proposal was to “establish a long term funding mechanism to support comprehensive end-user advocacy at the NYISO and at FERC. Heightening the capabilities and strengthening the voice of the consumer at the NYISO should help in the development of new procedures or rules to identify and prevent market manipulations detrimental to consumers.”⁴

The Consumer Interest Liaison is working with the PSC to enhance and improve the support given to the New York consumers. It is anticipated that this role will evolve as the markets and consumer needs change.



Role of the Consumer Interest Liaison

The Consumer Interest Liaison meets with each of the sectors engaged in the shared governance process to understand relevant issues from each sector's point of view. This input helps the Consumer Interest Liaison to ensure that its communication of current information is relevant and useful. These meetings aid in determining the areas in which the End Use sector members may require more support. The office of the Consumer Interest Liaison produces the following activities.

Weekly Summaries

Each week the Consumer Interest Liaison produces a weekly summary of activity and sends it to the End Use Consumer mailing list. Summaries of committee meetings and working groups are presented to keep consumer stakeholders informed of relevant issues. FERC filings and orders for the week are included. Also, relevant notices are highlighted such as meeting reminders, deadlines for input, and NYISO manual revisions, just to name a few. These summaries are also posted on the Consumer Interest Liaison section of the NYISO web site.

Monthly End Use Consumer Conference Calls

Each month a conference call is conducted with the End Use Consumer stakeholders and the Consumer Interest Liaison. At the beginning of every month, the Consumer Interest Liaison meets with NYISO Product and Project Management to review the upcoming meeting and working group schedules. This information is then conveyed to the End Use Consumer group during this call to assist in tracking issue progress and milestones. Also, relevant projects, current issues and training topics are discussed on the monthly call.

Consumer Inquiries

Frequently, End Use Consumers have questions and inquiries for the NYISO. These inquiries are frequently questions on NYISO policy, meeting activity, or relating to Consumer Impact Analyses. The Consumer Interest Liaison is in a unique position to answer these inquiries directly or seek the assistance of a subject matter expert to clarify issues consumers may face.



Email Reminders

On a daily basis the NYISO sends out several emails through several email databases. The NYISO Technical Information Exchange (TIE) email list is the primary list for notices. There are also mailing lists for each committee and working group, as well as several specialized mailing lists such as “Generator Operators”, “Demand Response”, “Main Contacts”, etc. The Consumer Interest Liaison participates as a recipient of all these mailing lists and summarizes and resends important relevant and pertinent emails to the End Use Consumer email list. Although this acts as a duplicate mailing, it affords end users the security of not missing important information.

Consumer Interest Liaison Training

Through discussion with the End Use Consumer group, the Consumer Interest Liaison determined there was an ongoing need for a better understanding of specific areas of the NYISO market. By providing training on the complex NYISO markets and processes, End Use Consumer stakeholders would be better informed on current market issues and therefore, able to make better decisions on issues concerning the markets.

The Consumer Interest Liaison committed to presenting two training sessions per year, for 2013 and going forward.

Using End Use Consumer input, the topics of the first training presentation of 2013 were:

- *Demand Response in the Real-Time Energy Market*
- *Provisional Average Coincident Load*
- *Demand Curve – Proxy Plant*
- *Coordinated Transaction Scheduling (CTS with PJM)*

The NYISO Training department worked closely with the Consumer Interest Liaison and the appropriate Subject Matter Experts (SMEs) to develop training presentations to maximize the accuracy and impact of the material.

The first training session was held on February 13, 2013. Gina Craan of the NYISO Training Department presented the topics to an interested group of stakeholders with several discussions delving deeper into the subject material as the End Use Consumers gained a better understanding of the market issues.

A second training session was developed and based on input from Consumer Sector stakeholders. The following topics were chosen:

- *Installed Capacity Market Mitigation*
- *Overview of the Interconnection/Class Year Process*
- *Deliverability Process Overview*
- *Overview of the Daily Energy Report*

In this case it was determined the presentations would be developed and presented by the SMEs. The NYISO Market Monitoring and Analysis and the NYISO Planning Departments worked with the office of the Consumer Interest Liaison to develop informative presentations on the complex issues requested.

The second session was held at the NYISO on August 7, 2013. There was excellent participation by the stakeholders with discussions resulting in an excellent opportunity to gain knowledge into complex areas of NYISO processes.

The Consumer Interest Liaison will continue these informative, timely training sessions through 2014 and beyond as it has proven to be of value to the representation of the End Use Consumer sector.



Consumer Impact Analysis

The Consumer Interest Liaison evaluates the value and services the NYISO provides the consumer by conducting impact analyses. Questions like how will the new market rule impact reliability of the bulk power system, and will the new market rule impact the competitiveness and efficiency of the market are systemically analyzed by using a specific criteria.

The analysis is a formal process designed to include qualitative and quantitative metrics for each of the areas analyzed. The Consumer Impact Analysis is an analysis that consists of assessing a new market rule and reviews the impacts under four evaluation areas: Reliability, Cost Impact/Market Efficiencies, Environment/New Technology, and Transparency. Each study area is described below.



- a. The impact on *Reliability* analyzes how a new project improves the reliability of the current system. Naturally, a project would not be implemented if it caused reliability issues or concerns.
- b. The impact on *Cost Savings/Market Efficiency* analyzes the overall costs and benefits of implementing a project. It also reviews whether the project improves market operations and produces proper price signals to help spur investment.
- c. The impact on *Market Transparency* assesses the extent to which the project will impact the transparency and clarity of market rules.
- d. The impact on the *Environment* reviews how the project may affect the environment, focusing primarily on emission levels.



The Consumer Impact Analysis Project list is a subset of the NYISO projects selected during the annual Budget Project Prioritization Process. The Consumer Impact Analysis list is presented to the Stakeholders annually for their input. This process occurs after the annual Budget Project Prioritization Process has been approved by Stakeholders. The annual Budget Project Prioritization Process typically begins mid-year and ends late in the third quarter of the same year with the Board of Directors approving the annual budget. Prior to the Board's approval, NYISO staff and stakeholders discuss the proposed projects and budgetary costs for the year during the Budget and Priority Working group meetings. The projects that are included on the Consumer Impact Analysis Project list have met one or more of the analysis guidelines. The guidelines are as follows:

- *Anticipated net production cost impact of \$5 million or more*
- *Expected consumer impact from changes in energy or capacity market prices is greater than \$50 Million per year*
- *Incorporates new technology into NY Markets for the first time*
- *Allows or encourages a new type or category of market product*
- *Creates a mechanism for out-of-market payments for reliability*

A preliminary list of approved projects to undergo an impact analysis is reviewed with stakeholders at a working group meeting to receive stakeholder feedback. In 2012 the following projects were identified for a consumer impact analysis:

- *The New Capacity Zone*
- *Coordinated Transaction Scheduling (CTS) with NYISO and PJM*
- *Provisional and Incremental ACLs for SCRs*
- *Demand Response in the Real Time Energy Market*5*



Consumer Impact Analyses for 2013

Consumer Impact Analysis: New Capacity Zone (NCZ)

Background

The purpose of this impact analysis was to develop the potential consumer impacts of the NYISO's proposal to establish an NCZ. Our analyses encompassing different NCZ boundaries including the NCZ comprised of Load Zones G, H, I, and J (accepted by the Federal Energy Regulatory Commission "G-J Locality.") The impact analysis describes simulations performed to provide information on projected impacts that the creation of the NCZ might have on ICAP Spot Market Auction prices, and thus on capacity portion of wholesale customers' bills, in comparison to not creating the NCZ. The analysis also reviewed potential impacts on the environment, reliability and transparency from the creation of the NCZ.

We conducted multiple analyses of the potential impacts of alternative NCZ boundary configurations using a variety of assumptions and over a number of different timeframes that were presented to stakeholders at five different stakeholder meetings. Stakeholder input was considered at various stages of the analyses, and some analyses were conducted at stakeholders' request. For this Annual Report we discuss two wholesale consumer price impact analyses. We focus on them because, as we stated at the time, they reflect the most likely assumptions and therefore the most likely impacts of creating the proposed NCZ in comparison to not creating the NCZ, and therefore they were more informative to stakeholders than other scenarios discussed in stakeholder meetings. Some of the other cases analyzed included assumptions regarding future conditions with a lower degree of likelihood, while others evaluated an NCZ configuration, comprised of Load Zones G, H, I, J, and K ("G-K").

Overview

The first analysis, discussed in Section A, was a forward-looking 2013 case.⁷ It provided information on likely short-term consumer impacts. The second analysis, discussed in Section B, was a forward-looking 2018 case. It provided information on likely longer-term consumer impacts. The results of both the simulations for 2013 and 2018 were not intended to be a forecast of prices and they did not reflect hedging

or other actions Market Participants may take to manage capacity costs. Moreover, the ICAP Demand Curve for the NCZ was only in its early stages of development so alternate information was utilized in its place. They simulations were intended to provide information on an effect of creating the NCZ. In addition, Section C summarizes potential impacts that the NYISO's establishment of its proposed NCZ would have on reliability, the environment and transparency.

Both the 2013 and 2018 forward-looking analyses indicated that capacity prices would increase in Load Zones G, H, and I as a result of creating the G-J Locality. A key reason for creating an NCZ is to provide the capacity price signals for investment in new economically efficient capacity resources and to retain existing economically efficient resources within the NCZ. Over the past several years, there have been a number of generation plants retiring and mothballing in Load Zones G- J. The creation of an NCZ would send a more efficient price signal which would influence capacity investment decisions.⁸ The forward-looking analyses show no increases in capacity prices in other Load Zones from the creation of the G-J Locality.

Consumer Impact Analysis for 2013

Price Impact Comparison with 2012

The 2013 impact analysis considered both the Summer Capability Period and Winter Capability Period impacts with their differing inputs by performing simulated ICAP Spot Market Auctions for the months of August 2013 and November 2013. It utilized 2012 ICAP Spot Market Auction offer data for those same months, but instead of using the 2012/2013 Capability Period Locational Minimum Installed Capacity Requirements ("LCRs") for Zones J and K, it utilized the Load Zones J and K 2013/2014 LCRs, and adjusted the capacity auction data for known and expected retirements and mothballs of capacity resources. Specifically, it assumed the following changes in the amount of Unforced Capacity (UCAP) that had participated in the August and November 2012 Monthly Auctions:⁹

- *Load Zones A – F (referred to herein as “new Rest of State” and to which the NYCA ICAP Demand Curve would be applied): 390.3 MW in August 2013 (relative to August 2012) and 55.5 MW in November 2013 (relative to November 2012).*



- *Load Zone G: 476 MW for both August and November 2013.*
- *Load Zone K: 3.3 MW for both August and November 2013.*

Similarly, the 2013 impact analysis assumed the following capacity additions to the quantities of UCAP offered into the August and November 2012 ICAP Spot Market Auctions:¹⁰

- *For August 2013: 154.6 MW with the G-J Locality and 77.0 MW if there were no NCZ.*
- *For November 2013: 180.9 MW with the G-J Locality and 85.9 MW if there were no NCZ.*

The simulated auctions for August and November 2013 yielded the results summarized in Tables 1 and 2 below. These results were based on a \$15.69 simulated reference price (i.e., the average of the Load Zone J and NYCA reference prices) for the August 2013 simulation and \$15.39 reference price for the November 2013 simulation, and a 112% zero crossing point for the proposed G-J Locality, based on a G-J Locality LCR equal to 89.3% for the August 2013 simulation and 89.9% for the November 2013 simulation. The derivation of the LCRs is described below.¹¹

Table 1* -- August 2013 Auction Simulation Results				
Scenario	NYCA	Zone J	Zone K	G-J Locality
Aug. 2012 - Actual Results	\$1.90	\$10.64	\$3.56	
Aug. 2013 without G-J Locality	\$4.56	\$15.16	\$7.59	
Aug. 2013 with G-J Locality	\$4.37	\$15.16	\$7.59	\$9.34

***NOTE TO TABLE: Differences between actual auction prices and the results of the Consumer Impact Simulation shown in Table 1 are driven by such factors as changes in load forecasts, Locational Capacity Requirements, unit retirements and mothballs, capacity additions and the determination of new Demand Curves which are significantly affected by changes in the selection of the proxy unit in the Demand Curve reset process.**

Table 2 -- November 2013 Auction Simulation Results

Scenario	NYCA	Zone J	Zone K	G-J Locality
Nov. 2012 - Actual Results	\$0.71	\$3.36	\$0.71	
Nov. 2013 without G-J Locality	\$2.29	\$7.91	\$3.77	
Nov. 2013 with G-J Locality	\$2.07	\$7.91	\$3.77	\$5.35

The simulations based on various assumptions for 2013 showed that capacity prices in Load Zones J and K would be the same with or without the G-J Locality. They also showed that prices in the new Rest of State would be lower with the NCZ than without it. Prices in Load Zones G, H, and I would be higher than NYCA ICAP Spot Market Auction prices prior to the establishment of the NCZ.¹² A comparison of the first two rows in Tables 1 and 2 clearly demonstrates that the price increase from 2012 to 2013 is not the result of the creation of the NCZ. These price increases in the 2013 simulation are a result of retirements and mothballings. The increase also reflects the 2.3% escalation of the ICAP Demand Curve from the 2011/2012 ICAP Demand Curve to the 2013/2014 ICAP Demand Curve. The third rows in these tables show prices that result with and without the creation of the G-J Locality. A region by region examination indicates that prices do not change in Load Zones J and K, while they decrease in Load Zones A-F (i.e., the new Rest of State).

2013 Annual Impact Simulation Analysis

The NYISO next estimated the annual increase in UCAP payments for 2013 based on several key assumptions. The LCRs for the Load Zones J and K in the August and November 2013 Monthly Auctions were based on the 2013/2014 LCRs approved by the NYISO stakeholder Operating Committee for the 2013-2014 Capability Year, which were 86% for New York City and 105% and for Long Island. For the August 2013 simulation, we used an 89.3% LCR for the G-J locality and for the November 2013 simulation we used 89.9% LCR for the G-J locality.¹³



Consistent with current rules, the analyses provided that LSEs in a Locality pay for the UCAP and excess (i.e., the amount over the LCR that clears in the ICAP Spot Market Auction.) Therefore, the NYISO assumed that Load Zone J would pay for Load Zone J and for additional G-J Locality UCAP up to 89.3% and 89.9% of load for August and November, respectively, plus a *pro rata* share of G-J excess, plus the remaining UCAP at the actual Summer 2013, and Winter 2013/2014 NYCA ICAP Demand Curve price, plus a *pro rata* share of the NYCA excess.

The NYISO also assumed that Load Zone K LSEs would pay for Load Zone K UCAP and excess, plus remaining UCAP at the NYCA ICAP Demand Curve price, plus a *pro rata* share of the NYCA excess. Load Zone G LSEs would pay for 89.3% and 89.9% of Load for August and November, respectively, at the simulated G-J Locality ICAP Demand Curve price, plus a *pro rata* share of the G-J Locality excess, plus remaining UCAP at the NYCA price, plus a *pro rata* share of NYCA excess. LSEs in Load Zones A-F would pay for UCAP at the NYCA Demand Curve price plus a *pro rata* share of NYCA UCAP excess.

Based on these assumptions, the NYISO estimated the annual changes in capacity payments for 2013 in both a summer and winter month, for various Load Zones, and the total dollar impact of the creation of the NCZ. The results are summarized in Table 3 below. It shows the expected increase in capacity payments for Load Zones G, H, and I, an expected decrease in payments for the new Rest of State, a relatively small increase in annual payments for Load Zone J, and no change in annual payments for Load Zone K. Because of the uncertainty inherent in developing such estimates the NYISO rounded them all to the nearest million dollars.¹⁴

The results for the August 2013 data and the November 2013 data were used to develop an annual estimate. The annual value was calculated by multiplying the results of the one summer and one winter month each by six for the number of months in a Capability Period.¹⁵

Table 3 shows that based on the simulation, the only Load Zones in which capacity payments increase as a result of creating the NCZ are G, H and I. Those Load Zones had been paying NYCA ICAP Spot Market Auction prices.”¹⁶

Table 3 -- Estimated Annual Impacts on Capacity Payments for 2013

2013 Dollar Impact (in Millions)					Total \$ Im- pact
Load	Rest of State	Zones GHI	Zone J	Zone K	
Summer with NCZ (G-J)	\$58	\$39	\$165	\$45	
Summer without NCZ (G-J)	\$60	\$22	\$164	\$45	
% Increase	-3.30%	77.30%	0.60%	0%	
\$ Impact/Month	-\$2	\$17	\$1	\$0	
Winter with NCZ (G-J)	\$29	\$23	\$90	\$23	
Winter without NCZ (G-J)	\$32	\$12	\$90	\$23	
% Increase	-9.30%	91.70%	0%	0%	
\$ Impact/Month	-\$3	\$12	\$0	\$0	
Annual \$ Impact	-\$33	\$173	\$6	\$0	
Total \$ Impact					\$146

NOTE TO TABLE: All Summer/Winter figures were calculated using the monthly value, and rounded to the nearest million dollars. All percentages were calculated based on the rounded figures.

Reference Price is Average of Zone J and NYCA
112% Zero Crossing Point
August 2012 Derates for August 2013 Simulation

Consumer Impact Analysis for 2018

The 2018 analyses estimated the range of expected future prices in all Load Zones due to the creation of an NCZ, based on data from past ICAP Spot Market Auctions, combined with data and assumptions on new entry, retirements, transmission expansion and projected peak load.

The 2018 analysis assumes that there would be a 1000 MW increase in transmission system transfer capability and various capacity resource additions.¹⁷ As in the above-described 2013 consumer impact analysis, the 2018 NCZ ICAP Spot Market Auction prices were based on a \$15.69 reference price for



the August 2018 simulation and \$15.39 for the November 2018 simulation, and a 112% zero crossing point. The analysis did not escalate the 2013 simulated G-J ICAP Demand Curves. Again because of the uncertainty inherent in developing the estimates, and the purpose for which they are presented, the NYISO has rounded them all to the nearest million dollars. Like the 2013 Annual data, the information was only intended to provide an indication of the difference in payments with and without a G-J Locality, and was not intended to be a price forecast.

LCRs utilized in this analysis were based on 2013/14 actual Load Zone J and K LCRs, and the G-J LCR developed as described in footnote 9 above adjusted for load growth to 2018 per the NYISO's 2012 Load and Capacity Data Report (i.e., the "Gold Book").¹⁸ The LCRs for Zones J and K were adjusted for the projected entry and exit of new capacity resources in Load Zones G, H, and I. More specifically, LCRs for Localities J, K, and G-J were derived based on the LCRs described above.

The analysis then cleared the ICAP Spot Market Auction beginning with clearing Localities J and K, then clearing the G-J Locality, and then clearing the NYCA. This sequence allowed the NYISO to take account of the capacity cleared on the Demand Curves for Localities J and K in estimating NCZ prices.¹⁹ The calculation of capacity prices took account of the simulated entry of new capacity in Load Zones G, H, I and J as well as Load Zones A through F. In addition, because the entry of new generation in Load Zones G, H, and I would reduce the LCR for J and K in future capacity market auctions, it was necessary to iterate to a final LCR ratio and simulated entry outcome.²⁰

Specifically, the following capacity resources were assumed to be added to the supply offered in auctions between August 2013 and August 2018:

- *Load Zones A-F (new Rest of State): 73.1 MW with the G-J Locality established and 25.8 MW without it. The difference between these amounts is an estimate of the amount of capacity that would not participate in the capacity market absent the formation of the G-J Locality because of the lack of CRIS.*

- *Load Zone J: Some generation projects were assumed to offer at 75% of the Load Zone J reference price, while new natural gas-fired capacity resources were assumed to offer at 85% of the Load Zone J reference price.*
- *Load Zones G, H, and I: (i) 321 MW of Bowline 2 restored capacity offered at 75% of the NCZ reference price; (ii) 1579.2 MW of new natural gas-fired capacity resources (not including Bowline 2) offered at 85% of the NCZ reference price; and (iii) three 25 MW blocks of demand response offered at 50%, 80%, and 95% respectively of the NCZ reference price.*

The simulation in Table 4 indicates that the creation of the proposed NCZ would result in a lower price for capacity clearing against the NYCA ICAP Demand Curve, and thus a lower payment for capacity by LSEs in Load Zones A-F. It also would result in lower payments by LSEs in Load Zone K, which includes capacity to satisfy the LCR clearing at the Load Zone K ICAP Demand Curve plus excess, and remainder clearing against the NYCA curve plus a share of excess. The capacity prices in Load Zone J would be the same in 2018 with or without a G-J Locality.

Table 4 -- 2018 Auction Simulation Results (with 1000MW Transmission Expansion and Generation Additions)				
Scenario and Auction Month	NYCA	Zone J	Zone K	NCZ
August 2018 -- No NCZ (G-J)	\$8.42	\$15.98	\$9.85	
August 2018-- With NCZ (G-J)	\$8.14	\$15.98	\$9.85	\$9.08
November 2018 -- No NCZ (G-J)	\$7.28	\$15.69	\$7.28	
November 2018 -- With NCZ (G-J)	\$6.80	\$15.69	\$6.80	\$10.49



Table 5 shows that based on the simulated prices in Table 4, the creation of a G-J Locality would result in increased 2018 Capacity payments in Load Zones G, H, and I. That increase is based on the portion of payments incurred to clear the LCR requirement at the G-J Locality ICAP Demand Curve plus excess, and the remainder of the NYCA requirement plus a share of excess.

Table 5 -- Estimated Annual Impacts on Capacity Payments for 2018					
2018 Dollar Impact (in Millions)					Total \$ Impact
Load	Rest of State	Zones GHI	Zone J	Zone K	
Summer with NCZ (G-J)	\$106	\$42	\$191	\$61	
Summer without NCZ (G-J)	\$109	\$41	\$191	\$61	
% Increase	-2.75%	2.43%	0%	0%	
\$ Impact/Month	-\$3	\$1	\$0	\$0	
Winter with NCZ (G-J)	\$94	\$47	\$188	\$44	
Winter without NCZ (G-J)	\$98	\$37	\$188	\$46	
% Increase	-4%	27%	0%	-8.70%	
\$ Impact/Month	-\$5	\$10	\$0	-\$3	
Annual \$ Impact	-\$48	\$66	\$0	-\$18	
Total \$ Impact					\$0

NOTE TO TABLE: All Summer/Winter figures were calculated using the monthly value, and rounded to the nearest million dollars. All percentages were calculated based on the rounded figures.

Reference Price Equals the Average of J and NYCA
 112% Zero Crossing Point
 1000 MW Increase in Transmission System Transfer Capability
 Additional Generation
 August 2012 Derate Factors



Additional Impacts of Establishing the G-J Locality

In addition to evaluating the wholesale capacity price impacts of the creation of the NCZ, we also considered potential impacts on reliability, the environment and transparency.

The Market Monitoring Unit's two most recent State of the Market Reports at that time (2012 and 2013), as well as through the Patton Affidavit, recommended the creation of a new capacity zone in the Lower Hudson Valley in that it would send a price signal to retain existing capacity and to attract needed new capacity.²¹ As of the time of the analysis, approximately 900 MW of generation located in Load Zones G, H and I had retired since 2007 and an additional 400 MW of Bowline generation is on an extended derate. The size of the increase in the LCRs and capacity prices in Load Zones J and K from 2012/2013 to those approved for 2013/14 illustrates that the NYISO capacity market configuration of only J and K Localities and the NYCA as a whole, has the potential to mask price signals. A more efficient price signal would help to retain capacity and attract efficient new capacity and investment which would be in the long run interests of consumers. With the creation of a G-J Locality, capacity prices in the Load Zones G, H, and I are expected to attract new investment, both in existing plants and new capacity resources, and retain economic generation.

The establishment of the G-J Locality increases the likelihood that approximately 125 MW of new capacity resources proposed to be located in the new Rest of State, would be developed. The development of these resources would be more environmentally friendly and can be expected to displace and have less of a physical environmental impact than existing generation.

Conclusion

Based on the analyses described above, some consumers will not see an increase in their payment obligation and others will, as a result of the creation of the G-J Locality. All consumers in the NYCA, including consumers in Load Zones G, H, and I will benefit from improved price signals, which will lead to enhanced system reliability and transmission security, as discussed herein the Patton Affidavit and the Affidavit of Dr. Henry Chao and Mr. John Adams (Chao/Adams Affidavit) in the G-J Locality Filing.²²



Consumer Impact Analysis: Coordinated Transaction Scheduling (CTS) between NYISO & PJM

Background/Overview

The objective of CTS is to improve interchange scheduling efficiency and capture the benefits of regional trading that the current system fails to produce. A joint NYISO/ISO-NE White Paper²³ that evaluated the current trading system across the NYISO/ISO-NE interface identified three reasons for the current trading system not producing all the potential benefits of regional trading:

- *Existing energy trading does not always result in moving power from the lower cost region to the higher cost region*
- *Uneconomic clearing occurs because both ISOs make separate scheduling decisions based on what is economic in their own region and not whether the transaction makes economic sense across the interface*
- *Existing trading rules leave transmission capacity unused that could potentially move additional power from the lower cost ISO to the higher cost ISO in most hours of the year*

CTS allows MPs to place bids based on the price difference between Control Areas (CAs) in 15-minute intervals. Under CTS, MPs can have more certainty of moving lower priced power to the higher priced CA. This option also allows MPs to more fully utilize the amount of transfer capability from one CA to another. The result of both of these actions is a more efficient utilization of resources. This principle holds true across all NYISO external interfaces.

The concept of CTS between NYISO and PJM was first proposed to stakeholders in the fall of 2012. Four joint presentations with PJM and NYISO were held for stakeholders of both Control Areas. Within the NYISO, it was discussed at Market Issues Working Group (MIWG) meetings throughout 2013, and was approved by the Business Issues Committee (BIC) in August 14, 2013 and the Management Committee (MC) in September 30, 2013. The objective of CTS with PJM is similar to that with ISO-NE:

- *Stop the counter-intuitive flows when power flows from the higher priced region to the lower priced region*
- *Increase the utilization of the interface that is currently underutilized even when the flows are going in the right direction*
- *Capture the significant opportunities for market efficiencies; 31% of the time there is more than \$10 price difference between NYISO and PJM*

To evaluate the proposal for stakeholders, the NYISO Consumer Interest Liaison conducted a Consumer Impact Analysis for CTS with PJM to demonstrate the potential impact on the system through the introduction of CTS to the NYISO/PJM interface.

Consumer Impact Analysis

We studied the impact on consumers of implementing CTS between NYISO and PJM along four different evaluation areas: Cost Impact/Market Efficiencies; Reliability; Environment/New Technology; and Transparency.

Cost Impact/Market Efficiencies:

The impact of CTS on market efficiency and cost was developed in three steps. To demonstrate increased efficiency under CTS, we choose two hours where the hourly real time price difference between NYISO and PJM was greater than \$30. During one hour, NYISO prices were higher than PJM and the other hour NYISO prices were lower than PJM. For both hours, we reran the New York Real-Time Dispatch (RTD) and PJM's (SCED) to determine the change in schedule necessary to approximately equalize prices in the NYISO and PJM. The following two hours were chosen for this analysis:

- *1/3/2013 HB19: An increase of 350MW of flow from NY to PJM*
- *2/18/2013 HB 12: An increase of 400MW of flow from PJM to NY*



The prices in NYISO and PJM that resulted after the change in flows are shown in Table 1 below:

Table 1

Local Hour	Original Prices		Revised Prices			
	NYISO	PJM	NY-PJM	Change in MW	NYISO	PJM
1/3/2013 19:00	\$37.50	\$70.03	(\$32.53)	+350MW NY to PJM	\$54.39	\$64.52
2/18/2013 12:00	\$66.45	\$35.38	\$31.07	+400MW PJM to NY	\$45.89	\$36.09

The second step involved computing the dollar impact for those two hours based on revised prices that resulted from the change in schedule discussed in step one. We calculated the base costs for all 11 zones for each five minute interval based on the original costs. Next we calculated for the same 11 zones and five minute intervals the cost based on revised prices. The difference in cost between the base cost at original prices and the cost based on revised prices indicate the costs/savings during the two hours studied. Table 2 below shows the costs/savings as a result of implementing CTS. For the first hour (HB 19:00) on January 3, 2013, NYISO prices were lower than PJM. Implementing CTS would increase flows from the low price CA (NYISO) to the higher priced CA (PJM) resulting in the price increasing in New York and decreasing in PJM. This would result in an increase in total cost to loads in New York as shown in Table 2 (A). For the second hour (HB 12:00) on February 12, 2013, NYISO prices were higher than PJM. Implementing CTS would increase flows from PJM that is the lower priced CA to the NYISO that is the higher priced CA resulting in prices decreasing in New York and increasing in PJM. This would result in a decrease in total costs to loads in New York as shown in Table 2 (B).

Table 2 (A)

Total Cost to Load	
BASE	\$1,289,477
STUDY	\$1,628,502
Net Cost	-\$339,025

Table 2 (B)

Total Costs to Load	
BASE	\$2,202,392
STUDY	\$1,750,413
Net Savings	\$451,979

The third step in developing the impact of CTS on market efficiency/cost was to apply the cost/savings to loads developed in step two to the first four months of 2013. We categorized the data for the first four months of 2013 (January 1 to April 30) into the number of hours where the price difference between NYISO and PJM was less than \$15; between \$15 and \$25; between \$25 and \$35 and greater than \$35 as shown in Table 3. The hours in each category were broken into a positive price difference and a negative price difference, the former indicating that price in NY was higher than PJM and the later indicating that price in PJM was higher than NY. To compute the total impact of CTS over these four months, we applied the total costs/savings derived in Table 2 (A) and Table 2 (B) to the hours in these different categories

- *For the hours where the price difference was between \$25 and \$35 and for the hours where it was greater than \$35 we applied 100% of the total costs/savings from Table 2 (A) and Table 2(B)*
- *For the hours where the price difference was between \$15 and \$25, we applied 50% of the total costs/savings from Table 2 (A) and Table 2(B)*
- *We did not compute any costs/savings for the hours where the price difference was less than \$15*



As shown in Table 3 (Appendix A), the total impact on New York loads if CTS was in effect during the first four months of 2013 would be a cost saving of approximately \$24.8 million.

Table 3

Impact on Loads (Based on 4 Months Through April 30, 2013)					
	Total Hours	Percentage of Total Hours	Percentage of Positive & Negative Price	Cost	Percentage of Hourly Cost
Total Number of Hours	2880				
Positive Price Difference	1523	52.9%			
Negative Price Difference	1357	47.1%			
Price diff \$0 - \$15	2105	73.1%			
Positive	1152	40.0%	54.7%		
Negative	953	33.1%	45.3%		
Price Dif \$15 - \$25	329	11.4%			
Positive	157	5.5%	47.7%	\$35,480,352	50%
Negative	172	6.0%	52.3%	-\$29,156,150	50%
Price Dif \$25 - \$35	129	4.5%			
Positive	58	2.0%	45.0%	\$26,214,782	100%
Negative	71	2.5%	55.0%	-\$24,070,775	100%
Price Dif > \$35	325	11.3%			
Positive	160	5.6%	49.2%	\$72,316,640	100%
Negative	165	5.7%	50.8%	-\$55,939,125	100%
Total \$				\$24,845,724	

We also estimated the potential impact of eliminating fees by extending the analysis shown in Table 3 to also compute the cost/savings when the price difference between NYISO and PJM was less than \$15. As shown in Table 4 (Appendix B), we applied 10% of the costs/savings from Table 2 (A) and Table 2 (B) to the hours when the price difference was less than \$15. The difference in the total costs/savings between Tables 3 and 4 is the potential impact of eliminating fees.

Table 4

Impact on Loads (Based on 4 Months Through April 30, 2013)					
	Total Hours	Percentage of Total Hours	Percentage of Positive & Negative Price	Cost	Percentage of Hourly Cost
Total Number of Hours	2880				
Positive Price Difference	1523	52.9%			
Negative Price Difference	1357	47.1%			
Price diff \$0 - \$15	2105	73.1%			
Positive	1152	40.0%	54.7%	52,067,981	10%
Negative	953	33.1%	45.3%	-32,309,083	10%
Price Dif \$15 - \$25	329	11.4%			
Positive	157	5.5%	47.7%	\$35,480,352	50%
Negative	172	6.0%	52.3%	-\$29,156,150	50%
Price Dif \$25 - \$35	129	4.5%			
Positive	58	2.0%	45.0%	\$26,214,782	100%
Negative	71	2.5%	55.0%	-\$24,070,775	100%
Price Dif > \$35	325	11.3%			
Positive	160	5.6%	49.2%	\$72,316,640	100%
Negative	165	5.7%	50.8%	-\$55,939,125	100%
Total \$				\$44,604,622	

Reliability Impact:

There are no negative impacts to reliability with the adoption of CTS with PJM. There is an anticipated reduction in check out failures as CTS should improve consistency between planned and actual flows across the interface.



Environment Impact:

The use of a broader supply of resources to serve load will lead to a more efficient dispatch across the interface. 15-minute scheduling will provide a wider range of resources/loads over which to absorb variations in wind as well as other generation.

Transparency:

CTS will lead to an improvement in the economic direction of the flow schedule and will consolidate rules and procedures between NYISO and PJM.

Consumer Impact Analysis: Provisional & Incremental ACL for SCRs

Background/Overview

The NYISO worked with Market Participants on several concepts related to the use and calculation of Average Coincident Load (ACL) for Special Case Resources (SCRs). After several presentations and extensive comments by stakeholders, the NYISO proposed SCR rule changes for the following topics:

- *Use of Provisional ACL for SCRs that change Responsible Interface Parties (RIPs)*
- *Allow RIPs to increase the baseline value above the calculated ACL baseline value during a Capability Period*

Improvements to existing market rules were expected to increase the SCR megawatts participating in the Capacity Market. Currently, RIPs are not allowed to use a Provisional ACL for SCRs that have participated in the past with another RIP. RIPs indicated that this may keep resources out of the market for a period of 12-18 months before they have sufficient meter data to enroll with an ACL. The use of Provisional ACL by SCRs that change RIPs has the potential to increase the availability of Demand Response resources.

Similarly, an SCR cannot currently increase its ACL during the capability period. RIPS indicate that for SCRs that experience significant load growth since the prior like capability period, the current rule artificially limits the capacity the resource can offer into the market while requiring that the SCR must provide a greater load reduction when performing than they are given credit for in the market. Permitting RIPS to report an increase to an SCR's ACL value within the Capability Period may increase the ability of resources to provide additional megawatts to the capacity market.

Consumer Impact Analysis

For the purpose of a consumer impact analysis, we evaluated the impact of changes in market rules as they applied to both provisional and incremental ACL along four different evaluation areas: Cost Impact/Market Efficiencies; Reliability; Environment and Transparency.

Cost Impact/Market Efficiencies:

Our analysis of the impact on capacity prices and the annual impact on payments by customers is based on simulating a summer and a winter month auction. For the summer, we simulated the August 2013 spot auction and for the winter, the November 2013 spot auction. These auctions assume a New Capacity Zone (NCZ) comprised of Zones G, H, I, & J. It is difficult to precisely estimate the increase in SCR participation that may result from changes related to the use of Provisional ACL and the ability to report an increase to the ACL. To conduct our analysis and compute the Impact of these changes, we assumed a range of 25 MW to 200 MW of additional SCRs entering the market.

Table 1 below shows the impact on capacity prices for an additional 25 MW, 50 MW, 100 MW, 150 MW and 200 MW of SCRs entering the market. The columns of Table 1 show the impact on capacity prices by region: NYCA, Zone J, Zone K and Zones GHJ. The third row of Table 1 with no additional SCR megawatts shows prices in each of the regions before the entry of any additional SCR resources. These are the same capacity prices we estimated and presented as part of the NCZ Impact Analysis. The rows of Table 1 that follow show the impact on capacity prices by regions for increasing levels of SCRs resources entering the capacity market, holding participation of other capacity resources constant.



Table 1

MW Additions	Aug-13				Nov-13			
	NYCA	Zone J	Zone K	NCZ (GHIJ)	NYCA	Zone J	Zone K	NCZ (GHIJ)
0 MW SCRs	\$4.37	\$15.16	\$7.59	\$9.34	\$2.07	\$7.91	\$3.77	\$5.35
25 MW SCRs	\$4.33	\$15.08	\$7.57	\$9.27	\$2.03	\$7.83	\$3.76	\$5.28
50 MW SCRs	\$4.28	\$15.00	\$7.56	\$9.20	\$1.98	\$7.75	\$3.74	\$5.21
100 MW SCRs	\$4.19	\$14.84	\$7.53	\$9.05	\$1.89	\$7.60	\$3.72	\$5.08
150 MW SCRs	\$4.10	\$14.68	\$7.49	\$8.90	\$1.80	\$7.45	\$3.69	\$4.94
200 MW SCRs	\$4.01	\$14.52	\$7.46	\$8.75	\$1.71	\$7.30	\$3.66	\$4.81

Tables 2, 3, and 4 show the annual impact on payments by loads for varying levels of additional SCR megawatts entering the market. The annual impacts are based on extrapolating the results of August and November payments to the entire year. We have estimated the annual payments with 25 MW, 100 MW and 200 MW of additional SCRs entering the capacity market, holding the supply of other capacity constant.

Table 2 shows the impact of adding 25 MWs of additional SCRs on the annual capacity payments by loads. Capacity payments decrease in all localities, Zones A-F, Zones G-I, Zones J and Zone K during both the summer and winter. The overall decrease in annual capacity payments by loads is approximately \$21.6 million.

Table 2

Dollar Impact With 25MW Additional SCRs (in Thousands)					Total \$ Impact
Load	Zones A-F	Zones G-I	Zone J	Zone K	
Summer	\$57,960.47	\$39,451.58	\$164,608.00	\$45,231.66	
Summer With Additional 25 MW SCRs	\$57,459.60	\$39,167.70	\$163,768.30	\$45,111.53	
\$ Impact/Month	-\$500.87	-\$283.88	-\$839.70	-\$120.13	
Winter	\$29,214.68	\$23,187.67	\$90,232.91	\$23,255.70	
Winter With Additional 25 MW SCRs	\$28,664.70	\$22,879.71	\$89,300.45	\$23,184.49	
\$ Impact/Month	-\$549.98	-\$307.96	-\$932.46	-\$71.21	
Annual \$ Impact	-\$6,305.10	-\$3,551.04	-\$10,632.96	-\$1,148.04	
Percent Change	-1.21%	-0.94%	-0.70%	-0.28%	
Total \$ Impact					-\$21,637.14
NCZ=G-J Reference Price is Average of Zone J and NYCA 112% Zero Crossing Point					

Table 3 shows the impact of adding 100 MWs of additional SCRs on the annual capacity payments by loads. Capacity payments decrease in all localities, Zones A-F, Zones G-I, Zones J and Zone K during both the summer and winter. The overall decrease in annual capacity payments by loads is approximately \$84.8 million.



Table 3

Dollar Impact With 100MW Additional SCRs (in Thousands)					Total \$ Impact
Load	Zones A-F	Zones G-I	Zone J	Zone K	
Summer	\$57,960.47	\$39,451.58	\$164,608.00	\$45,231.66	
Summer With Additional 100MW SCRs	\$55,687.28	\$38,252.70	\$161,171.00	\$44,846.97	
\$ Impact/Month	-\$2,273.19	-\$1,198.88	-\$3,437.00	-\$384.69	
Winter	\$29,214.68	\$23,187.67	\$90,232.91	\$23,255.70	
Winter With Additional 100MW SCRs	\$26,728.87	\$21,967.97	\$87,452.35	\$22,900.59	
\$ Impact/Month	-\$2,485.81	-\$1,219.70	-\$2,780.56	-\$355.11	
Annual \$ Impact	-\$28,554.00	-\$14,511.48	-\$37,305.36	-\$4,438.80	
Percent Change	-5.46%	-3.86%	-2.44%	-1.08%	
Total \$ Impact					-\$84,809.64
NCZ=G-J Reference Price is Average of Zone J and NYCA 112% Zero Crossing Point					

Table 4 shows the impact of adding 200 MWs of additional SCRs on the annual capacity payments by loads. Capacity payments decrease in all localities, Zones A-F, Zones G-I, Zones J and Zone K during both the summer and winter. The overall decrease in annual capacity payments by loads is approximately \$176.4 million.

Table 4

Dollar Impact With 200MW Additional SCRs (in Thousands)					Total \$ Impact
Load	Zones A-F	Zones G-I	Zone J	Zone K	
Summer	\$57,960.47	\$39,451.58	\$164,608.00	\$45,231.66	
Summer With Additional 200MW SCRs	\$53,404.00	\$37,011.58	\$157,713.50	\$44,402.72	
\$ Impact/Month	-\$4,556.47	-\$2,440.00	-\$6,894.50	-\$828.94	
Winter	\$29,214.68	\$23,187.67	\$90,232.91	\$23,255.70	
Winter With Additional 200MW SCRs	\$24,232.55	\$20,743.01	\$83,752.71	\$22,482.97	
\$ Impact/Month	-\$4,982.13	-\$2,444.66	-\$6,480.20	-\$772.73	
Annual \$ Impact	-\$57,231.60	-\$29,307.96	-\$80,248.20	-\$9,610.02	
Percent Change	-10.94%	-7.80%	-5.25%	-2.34%	
Total \$ Impact					-\$176,397.78
NCZ=G-J					
Reference Price is Average of Zone J and NYCA					
112% Zero Crossing Point					

Reliability Impact:

We do not anticipate any negative reliability impact

Environment Impact:

If additional SCR resources displace other existing resources, it should have a positive environmental impact

Transparency:

We expect no impact on transparency as a result of market rule changes for provisional and incremental ACL.



Topics for Consumer Impact Analysis for 2014

Below is a list of topics scheduled for Consumer Impact Analysis in 2014.

Demand Response: Real Time Energy Market

The NYISO will develop market rules to integrate demand response resources into NYISO's real-time energy markets. The real-time participation by demand response resources may provide benefits as it will provide an alternative source of supply. This meets the analysis screening criteria as it allows or encourages a new type or category of market project.

Criteria for When to Include Mothballed Units in the Forecast

FERC asked the NYISO to consider, in consultation with stakeholders, the need to modify the current Buyer-Side Mitigation (BSM) Rules with regard to mothballed units.²⁴ The NYISO will evaluate and recommend the criteria for determining the set of resources included when forecasting capacity and energy revenues for BSM. The benefit of this project will be improved accuracy in the forecast of capacity and energy revenues that are expected to be available will improve the BSM test. This meets the analysis screening criteria as it is an emergent stakeholder issue.

Possible Mechanisms to Determine the Need for Elimination of Capacity Zones

Mentioned in the August 2013 New Capacity Zone order from FERC²⁵, the NYISO will work with stakeholders to consider if a mechanism is needed to eliminate Capacity Zones. This process will benefit the market as it will lead to the development of a mechanism to eliminate capacity zones if it is determined that such a mechanism is necessary. The NYISO has implementation flexibility in this area and this, therefore, qualifies as a topic for Consumer Impact Analysis.

Predefine Capacity Zones

The NYISO will create a dynamic framework for reflecting locational planning requirements in the capacity market, by predefining a set of interfaces that address potential resource adequacy needs

and highway deliverability constraints. Predefining capacity zones may increase the ability to quickly send location specific price signals to reflect changes in market conditions. This meets the screening criteria as a topic for analysis as it is a significant market design concept.

Market Rule Changes for DR Performance Obligations

The NYISO will develop rules to revise the performance obligation requirements of demand response resources that sell into the NYISO Capacity Market. This will result in improved reliability through clarification of performance requirements. The market rule changes have the potential to allow additional demand response resources to participate in the NYISO markets. As a significant market design concept, this qualifies as a topic of analysis.

Conclusion

The Consumer Interest Liaison office was established to support the end use sector by providing information necessary to keep current with the ever-changing electrical energy market and facilitating informed decisions on relevant issues. As the NYISO market rules change, new products become available and new technology affects the markets, the Consumer Interest Liaison will continue to inform consumers of these changes. Listed below are some areas of interest that the NYISO is currently addressing and the Consumer Interest Liaison office is closely monitoring for possible future analysis.

Incorporating Coordinated Transaction Scheduling (CTS)

As detailed in the Consumer Impact Analysis section of this Annual Report, the objective of CTS is to improve interchange scheduling efficiency and capture more of the benefits of regional trading. By encouraging the exchange of energy from low-cost to higher-cost regions, across a joint interface, the CTS concept reduces the use of more expensive local power if less costly power is available from a neighboring system. The initiative to develop CTS with PJM was approved by the governance structures of the NYISO and PJM in 2013 and is scheduled to deploy in 2014. A new bidding platform was introduced, the Joint Energy Scheduling System (JESS), to facilitate the central management



of regional transaction bids and schedules. The deployment of CTS with ISONE, approved by the Commission in 2012, will follow the deployment of CTS with PJM.

New York Energy Highway

The NYISO's planning efforts helped to inform the New York Energy Highway initiative launched by Governor Cuomo in his January 2012 State of the State Address. In October 2012, a task force appointed by the Governor issued the Energy Highway "Blueprint", which outlines plans for 3,200 MW of new generation and transmission funded by up to \$5.7 billion in public/private investment. The Energy Highway Blueprint stated, "The NYISO has in place both reliability and economic planning processes that forecast needs and upgrade opportunities looking out over 10 years. The Energy Highway initiative is not intended to replace these processes, but rather to supplement them."²⁶ In 2013, several proposals were presented offering transmission alternatives to increase the supply of energy from more economical upstate resources relieving bottlenecks through the lower Hudson Valley. In 2014, the Public Service Commission will decide which transmission solutions will move forward.

Broader Regional Markets (BRM)

The NYISO's Broader Regional Markets initiative made significant progress in 2013. Through these extensive, collaborative efforts, the NYISO seeks to mend differences, or "seams," in the fabric of neighboring, interconnected grids; thereby enhancing the efficiency of existing resources and reducing costs for power consumers. In addition to the NYISO, the regional initiative involves PJM Interconnection, ISO New England, Midcontinent ISO, Ontario's Independent Electricity System Operator, and Hydro Québec.

Market to Market (M2M) coordinated congestion management between NYISO and PJM commenced in January 2013, which involved joint management of the transmission limits that occur near the borders of their control areas. The new Enhanced Interregional Transaction Coordination (EITC) measures will enable more frequent energy transaction scheduling between the New York and PJM control areas. The move will lower overall system operating costs, provide system operators with

additional resource flexibility and increase the efficiency of real-time markets. This solution is designed to reduce the time commitment for moving power into and out of the state, allowing faster responses to changing conditions.

Also completed in 2013, the Ramapo Phase Angle Regulator (PAR) coordination between NYISO and PJM has demonstrated substantial production cost savings throughout 2013.

Additional future measures to optimize the flow of electricity across the common borders and reduce threats to reliability include the deployment of smart grid technologies that maintain system balance through the use of robust data, communications and automated systems as well as developing a shared understanding of regional natural gas delivery constraints for power generation.

Smart Grid Investment Grant Project

The NYISO's vision for smart grid development in New York has been a collaborative effort by the Public Service Commission, policy makers, industry, and academia to develop and integrate smart grid technologies and business models: (i) to provide consumers with more control over their energy use and opportunities for energy costs savings, (ii) to enhance grid reliability, security, and efficiency, and (iii) to improve the management of intermittent resources and other non-traditional resources within the grid.

The NYISO's work on the Smart Grid Investment Grant Project reached fruition in June 2013. Not only did this initiative mark a bold, new venture by the NYISO, it provided immediate value. The capacitor banks installed as part of the project contributed to our ability to address the challenges of the July heat wave and a new record peak load. The Smart Grid NY Project also included installation of a new statewide Phasor Measurement Unit (PMU) network which will provide system operators with enhanced real-time high-resolution visibility into the power system. PMU data enhances grid operator ability to see and respond to developing issues. Moreover, the PMUs and related technology deployed by the project will help to enhance system awareness in grid operations and set the stage for further advances in the ways we manage the grid.



Energy Market Developments

The abundance of low price natural gas continued to dominate the energy market in 2013. Although prices rose in 2013 over 2012 prices, natural gas was the key to maintaining low energy prices while continuing to reduce emissions. Natural gas currently provides 55% of New York's generating capacity but projects using natural gas (gas and dual fuel) account for 70% of all proposed capacity²⁷.

Breaking a record set in 2006, the sixth day of a persistent heat wave produced record demand for electricity across New York on Friday, July 19, 2013. Between 3 and 4 p.m., the NYISO recorded an hourly average peak load of 33,955 megawatts (MW), surpassing the previous record of 33,939 MW set on August 2, 2006. Throughout the record-setting week, unprecedented levels of generator availability were experienced with every bulk power-producing asset within New York State in operation.

Gas/Electric Coordination

In New York, electricity generated by natural gas more than doubled from 2004 to 2012, growing from 27,000 to 60,000 gigawatt-hours. Looking ahead, natural gas projects account for nearly 70 percent of all proposed generating capacity in the state²⁸. The NYISO, regulators and other stakeholders are working to anticipate and address the potential impacts of increased reliance on natural gas. To this end, early in 2012 the NYISO formed a cross-industry Electric- Gas Coordination Working Group to explore the interrelationship of the two industries and facilitate communications and information sharing among participants.

In May of 2013 the NYISO commissioned a NYCA Pipeline Congestion and Infrastructure Adequacy Assessment study to assess the pipeline and storage infrastructure to serve gas-fired generation across the New York Control Area. The NYISO is also working closely with the Eastern Interconnection Planning Collaborative (EIPC) Gas/Electric System Interface Study. The NYISO will continue to emphasize the importance of Gas/Electric System coordination throughout 2014.



Distributed Energy Resources

The term, “distributed energy resources” (DER) commonly refers to smaller-scale, on-site power generation and storage technologies that supply all or a portion of the end-user customer’s electric load. These technologies also may inject power into a distribution system or a non-utility local network operating in parallel with the utility grid. The technologies include solar photovoltaic, combined heat and power or cogeneration systems, microgrids, wind turbines, microturbines, back-up generators and energy storage.

In December, 2013, the NYISO brought together more than 200 industry experts, regulators and market participants for a workshop to examine the implications of distributed energy resources for the bulk power system and competitive wholesale markets. The workshop featured remarks by several speakers including New York State Public Service Commission Chair Audrey Zibelman, Mason Emmett, deputy director of the Federal Energy Regulatory Commission’s Office of Energy Policy and Innovation, and NYISO President and CEO Stephen Whitley. The event also included several expert panel discussions on the array of issues relating to DERs, including public policy, the state of technology and market structures. Specific topics covered by the four panel discussions included insights into New York State’s views of the current and future role of DERs, understanding the capabilities and limitations of DER technologies, the manner in which DERs are treated in other regional wholesale and retail markets and insights into the customer and utility motivations for installing DERs.

Mr. Whitley said that the event would augment a comprehensive study being initiated to inform the NYISO about DER technologies and their potential implications for the bulk power system and New York’s wholesale markets. He noted that the effort was developed with the NYISO’s stakeholders, and that the NYISO looked forward to working with stakeholders, the FERC and the PSC to shape the future of DER in New York’s wholesale electricity markets.



Endnotes

¹ The NYISO Board is also permitted to pursue such change in advance of Management Committee approval, under exigent circumstances and pursuant to Section 206 of the Federal Power Act in the absence of Management Committee approval. Proposed changes filed under Section 206 are reviewed by FERC under a more stringent standard. The NYISO Board has acted in this manner only on a rare number of occasions.

² *New York Independent System Operator, Inc.*, 122 FERC ¶ 61,064 (2008) (January 29, 2008 Order).

³ See: *Constellation Energy Commodities Group, Inc.*, Docket No. IN12-7-000, *Final Report*, (May 22, 2013).

⁴ *Constellation Energy Commodities Group, Inc.*, Docket No. IN12-7-000 at [http://www3.dps.ny.gov/W/PSCWeb.nsf/a8333dcc1f8dfec0852579bf005600b1/1032df6ce36e122085257687006f39e5/\\$FILE/NYPSC%20Constellation%20Answer%202012-10-15.pdf](http://www3.dps.ny.gov/W/PSCWeb.nsf/a8333dcc1f8dfec0852579bf005600b1/1032df6ce36e122085257687006f39e5/$FILE/NYPSC%20Constellation%20Answer%202012-10-15.pdf).

⁵ Demand Response in the Real Time Energy Market did not undergo a consumer impact analysis in 2013 as the market design had not been finalized. It will be part of the 2014 consumer impact analysis schedule

⁶ The NYISO's Consumer Interest Liaison made presentations to and participated in extensive discussions with stakeholders at the September 11 and December 3, 2012, and the January 30, and March 28, 2013, meetings of the NYISO's ICAP Working Group. An additional presentation responding to requests from stakeholders for more scenarios was also distributed to the April 30, 2013 ICAP meeting. At those meetings, the analyses and their underlying inputs and assumptions, were reviewed and discussed with stakeholders. Stakeholder questions and comments were received and considered. In addition to presentations before, discussions with, and materials provided to, the ICAP Working Group, we also provided additional data and responses to stakeholder questions regarding the analyses

⁷ The NYISO was not proposing to implement an NCZ in 2013 but the 2013 case is instructive because there was more data and therefore less need to rely on assumptions than for any future year.

⁸ See Patton Affidavit submitted in *New York Independent System Operator, Inc.*, Docket No. ER13__000, filed April 29, 2013, at P 16 <http://www.nyiso.com/ViewerDocuments//Filing/Filing697/Attachments/Attchmnt%20XI%20Patton%20NCZ%20Affdvt.pdf>.

⁹ The retirement/mothballing estimates for the impacts on Load Zones A-F (the new Rest of State) reflected the expected mothballing of Units 3 and 4 at NRG's Dunkirk Generating Station and of Niagara Generation LLC's Biomass Facility which were expected to occur by August 2013. It also includes the 63 MW Carthage Energy facility, which at the time of the analysis was expected to retire by November 2013. (On March 14, 2013, after the NYISO completed this analysis, Carthage Energy withdrew its notice of retirement.) The MW amount for Load Zone G accounts for the retirement of the Danskammer Generating Station. The MW amount for Load Zone K is based on the expected retirement of the Montauk Units #2, #3, and #4. These retirements/mothballing estimates were based on the information available at the time the impact analysis was undertaken. It is possible that the formation of the G-J Locality may ultimately reduce the actual level of retirements.

¹⁰ The NYISO developed the capacity addition assumptions from various publicly available data, including data from the NYISO’s interconnection queue. The assumptions were also based in part on non-public information. Therefore, only aggregated quantities of capacity are identified in the impact analysis.

¹¹ ICAP Demand Curve reference prices and zero crossing points for the G-J Locality are necessary inputs to the impact analysis. However, the actual values were not available because they were being developed in the NYISO’s on-going ICAP Demand Curve reset process. The NYISO considered different combinations of reference prices and zero crossing points and selected values to use in the analysis which we believe are within the range of values that might reasonably be expected

¹² The capacity price impacts for Load Zones J and K include the impacts on those zones of the amount of capacity that Load Serving Entities (“LSEs”) in them are required to purchase beyond the LCR requirement. Thus, it incorporates the amount of capacity purchased at the NYCA ICAP Demand Curve reference point and any additional excess capacity that would be purchased based on the clearing price on the relevant Demand Curve. As with Load Zones J and K, the G, H, and I capacity price calculations take account of excess G-J Locality capacity that would be purchased in addition to the LCR amount.

¹³ The NCZ LCR analysis began with a General Electric’s Multi-Area Reliability Simulation Model (“MARS” model) analysis of Load Zones G, H, I, J, and K, i.e., the entire region located on the constrained side of the UPNY-SENY Highway interface. It determined that a 93% LCR would be appropriate for that region. At the time the NYISO proposed the NCZ boundary of Load Zones G, H, I, and J (i.e., excluding Load Zone K) the impact analyses were already well under development. Therefore, the LCR used in the impact analyses for the G-J Locality was extrapolated from the existing simulation data. For the August 2013 simulation, it was calculated by subtracting the Load Zone K LCR in megawatts of UCAP (5,251.6 MW) from the LCR calculated for the Load Zones G-K in megawatts of UCAP (18,289.7 MW). This calculation yielded a G-J LCR of 13,038.1 megawatts of UCAP. This corresponds to an 89.3% G-J LCR. For the November 2013 simulation it was calculated by subtracting the Load Zone K LCR in megawatts of UCAP (5,249.9 MW) from the LCR calculated for Load Zones G-K in megawatts of UCAP (18,624.8 MW). This calculation yielded a G-J LCR of 13,374.9 megawatts of UCAP. This corresponds to an 89.9% G-J LCR. These LCRs were used solely for purposes of the impact analyses.

¹⁴ If the NYISO had not rounded its estimate for Load Zone K to the nearest million dollars it would have shown a relatively small price decrease. Rounding the values for an annual estimate better reflects the purpose of the estimate, i.e., to indicate the payment difference with and without the G-J Locality. For example, the Summer month and Winter month each multiplied by six will not correspond exactly to the annual value due to rounding. The information is only intended to provide an indication of the difference in payments with and without a G-J Locality. It is not intended to be a price forecast.

¹⁵ Given time constraints, and the number of simulations that the NYISO conducted, it was not practicable to estimate an impact for each month. Nevertheless, we believe that this method of calculating annual impacts is reasonable for the purpose for which the annual impacts are provided: i.e., to indicate the difference in UCAP payments in reasonably likely scenarios attributable to the creation of a G-J Locality

¹⁶ Patton Affidavit at P. 8



¹⁷ Various entities have proposed transmission system projects, including projects designed to increase transmission system transfer capability in New York. The NYISO is not taking a position on the likelihood, timing, merits, or benefits of such proposals. The NYISO does believe that the existence of the proposals means that considering an impact scenario that includes 1000 MW increase in transmission system transfer capability would be informative to stakeholders.

¹⁸ See <http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Planning_Data_and_Reference_Docs/Data_and_Reference_Docs/2012_GoldBook_V3.pdf>

¹⁹ We note that the two Localities and NYCA are solved simultaneously and will continue to be after the implementation of the G-J Locality.

²⁰ The necessary iterative process for deriving LCRs for Zones J and K potentially results in distinct LCRs for Load Zones J and K for each set of assumptions regarding zero crossing points and NCZ reference prices and entry prices for the new capacity in Load Zones G, H, and I. These adjustments are necessarily approximated since it was not practical to rerun a MARS simulation of the LCR for each level of entry in Load Zones G, H, and I. Because it was not practical to rerun MARS for the cases being evaluated for each step, an approximation was used to calculate adjusted Load Zone J, Load Zone K, and G-J Locality LCRs. It was observed that the retirement/mothballing of generation located in Load Zones G, H, and I during 2012 caused an upward effect on the Load Zones J and K LCRs from 2012 and 2013. It was calculated that 51% of the megawatt increase in UCAP LCRs would be in Zone J and 49% in Zone K. This 51%/49% ratio was used to approximate the impact of changes in Zones G, H and I capacity on Zones J and K LCRs. Hence, these ratios were applied to reduce the LCRs in Load Zones J and K to the extent that generation entered or returned to service in Load Zones G, H, and I in each specific simulation.

Because Load Zone K is not included in the NCZ, it was necessary to make a second adjustment to the G-J Locality, to account for the fact that when the Load Zone K LCR was reduced, it lowered the total LCRs for each of the J, K, and G-J Localities. Thus, the G-J Locality, and Load Zone J LCRs were also increased to offset the reduction in Load Zone K LCRs.

²¹ See 2012 State of the Market Report for the New York ISO Markets (April 2013) available at <http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Reports/Market_Monitoring_Unit_Reports/2012/NYISO2012StateofMarketReport.pdf> .

²² See, e.g., Patton Affidavit at PP 13, 16; Chao/Adams Affidavit at PP 33-34. ER13-000, April 29, 2013 <http://www.nyiso.com/ViewerDocuments//Filing/Filing697/Attachments/Att%20XIV%20Chao%20Adams%20Affdvt.pdf>

²³ Joint NYISO/ISONE White Paper; January 5, 2011, Inter-Regional Interchange Scheduling (IRIS) Analysis and Options, http://www.nyiso.com/public/webdocs/markets_operations/committees/bic_miwg/meeting_materials/2011-01-21/Agenda_05_-_IRIS_White_Paper.pdf.

²⁴ New York Independent System Operator, Inc., 143 FERC 61,217C Docket ER12-360-001 (2013) (June 6, 2013 Order). http://www.nyiso.com/public/markets_operations/documents/tariffviewer/index.jsp.

²⁵ New York Independent System Operator, Inc., 144 FERC 61,126 Docket ER13-1380-00032 August 13, 2013 Order: http://www.nyiso.com/public/markets_operations/documents/tariffviewer/index.jsp

²⁶ New York Energy Highway Blueprint, pg. 37, Issued 2012 by the New York Energy Highway Task Force <http://www.nyenergyhighway.com/PDFs/Blueprint/EHBPPT/#?page=0>

²⁷ New York Electric System Overview, Rick Gonzales, 7th Annual Fall Conference, Alliance for Clean Energy – New York, October 30, 2013 http://www.nyiso.com/public/webdocs/media_room/publications_presentations/NYISO_Presentations/NYISO_Presentations/NY%20Electric%20System%20Overview%20%20-%20R%20Gonzales%20-%20103013.pdf

²⁸ New York Independent System Operator; 2012 Annual Report, pg 4 http://www.nyiso.com/public/webdocs/media_room/publications_presentations/Annual_Reports/Annual_Reports/2012%20annualreport.pdf



For More Information

In addition to this report from the Consumer Interest Liaison and other documents referenced in this report, various governmental agencies and electric system organizations provide information useful to the electricity consumer, including:

- *Division of Consumer Protection, New York State Department of State* <http://www.dos.ny.gov/consumerprotection>
- *New York State Public Service Commission (PSC)* <http://www.dps.state.ny.us>
- *New York State Energy Research and Development Authority (NYSERDA)* <http://nyserda.org>
- *Federal Energy Regulatory Commission (FERC)* <http://www.ferc.gov>
- *New York State Reliability Council (NYSRC)* <http://www.nysrc.org>
- *North American Electricity Reliability Corporation (NERC)* <http://www.nerc.com>
- *Northeast Power Coordinating Council (NPCC)* <https://www.npcc.org>

In addition, consumer-related information is available directly from the electric utilities serving New York State.

NYISO Publications

The NYISO issues a number of publications related to planning for the future electric grid and markets, critical and evolving energy issues, and new technologies. They are available on the NYISO website, www.nyiso.com.

Power Trends

The annual Power Trends report provides a review and analysis of the forces and factors influencing the future of New York's bulk electricity grid and its wholesale electricity markets.

The "Gold Book"

Published annually, the Load & Capacity Data Report (known as the "Gold Book") presents New York Control Area system, transmission and generation data and NYISO load forecasts. It includes forecasts of peak demand, energy requirements, energy efficiency, and demand response; existing and proposed resource capacity; and current and proposed transmission facilities.

Strategic Plan

The multi-year Strategic Plan outlines the NYISO's vision, mission, core values, and guiding principles, as well as NYISO goals and initiatives for the next five years.

Planning Reports

Reports published include the Reliability Needs Assessment, Comprehensive Reliability Plan, Congestion Assessment and Resource Integration Study, Wind Integration Study, and other documents vital to planning New York's energy future



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