New York Independent System Operator (NYISO)

Section 5 – NYISO Performance Metrics and Other Information

The New York Independent System Operator ("NYISO") is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.

The creation of the NYISO was authorized by the Federal Energy Regulatory Commission ("FERC") in 1998. In November 1999, New York State's competitive wholesale electricity markets were opened to utility and non-utility suppliers and consumers as the NYISO began its management of the bulk electricity grid. The formal transfer of the grid operation responsibilities from the New York Power Pool to the NYISO took place on December 1, 1999.

The NYISO monitors a network of 10,892 miles of high-voltage transmission lines and serves approximately 400 market participants. Through the end of 2009, NYISO market transactions totaled more than $75 billion.

In 2009, installed capacity in the NYISO control area totaled 38,190 megawatts (MW). The NYISO's record peak load of 33,939 MW was recorded in August 2006.

The NYISO is governed by an independent Board of Directors and a committee structure comprised of a diverse array of stakeholder representatives. The members of the NYISO's 10-member Board of Directors have backgrounds in electricity systems, finance, academia, information technology, communications, and public service. The members of the Board, as well as all employees, have no business, financial, operating, or other direct relationship to any market participant or stakeholder. NYISO stakeholder committees are comprised of representatives of market sectors that include transmission owners, generation owners, other suppliers, end-use consumers, public power, and environmental parties.

Since the inception of the NYISO, 95% of the tariff revisions filed with FERC have been developed through consensus among NYISO stakeholders about new market rules and operating procedures. The value of shared governance was noted by FERC in a January 2008 order that stated, "The Commission commends NYISO & the stakeholders for working together to resolve many issues …"

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

- *Maintaining and enhancing regional reliability;*
- *Promoting and operating a fair and competitive electric wholesale markets;*
- *Planning for the power system of the future; and*
- *Providing objective and independent technical information on energy issues.*

A. NYISO Bulk Power System Reliability

The table below identifies which NERC Functional Model registrations the NYISO has submitted as effective as of the end of 2009. In addition, the Regional Reliability Organization (RRO) for the NYISO is noted at the end of the table with a web site link to the specific reliability standards.

- The NYISO has had **no self-reported or audit-identified violations** of NERC or applicable RRO operating reserve standards.
- The NYISO has not shed any load in the New York Control Area ("NYCA") due to a standards violation.

NERC Functional Model Registration	NYISO
Balancing Authority	✓
Interchange Authority	✓
Planning Authority	✓
Reliability Coordinator	✓
Resource Planner	✓
Transmission Operator	✓
Transmission Planner	✓
Transmission Service Provider	✓

Regional Entity	NPCC

Standards that have been approved by the NERC Board of Trustees are available at:
http://www.nerc.com/page.php?cid=2|20

Additional standards approved by the NPCC Board are available at:
http://www.npcc.org/regStandards/Approved.aspx

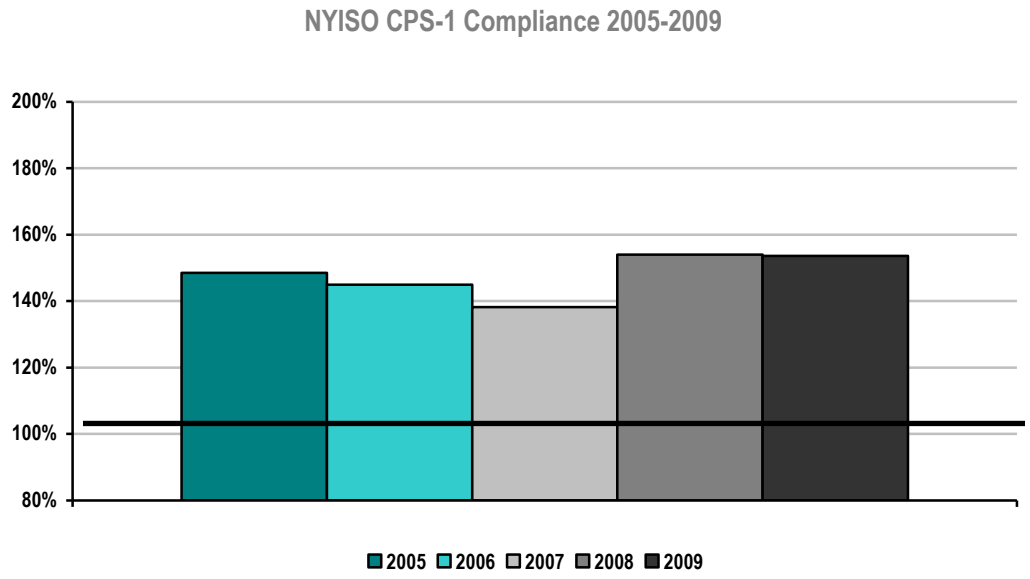
In addition, section 215 of the Federal Power Act, as amended by the Energy Policy Act of 2005, allows the State of New York to "establish rules that result in greater reliability within the state." The NYISO is, therefore, also responsible for complying with rules established by the New York State Reliability Council, L.L.C ("NYSRC"), whose mission is to promote and preserve the reliability of electric service on the New York power system by developing, maintaining, and updating the Reliability Rules which shall be complied with by the NYISO and all entities engaging in electric transmission, ancillary services, energy and power transactions on the New York power system.

The New York State Reliability Council and the Reliability Rules they administer are available at:
http://www.nysrc.org/

Dispatch Operations

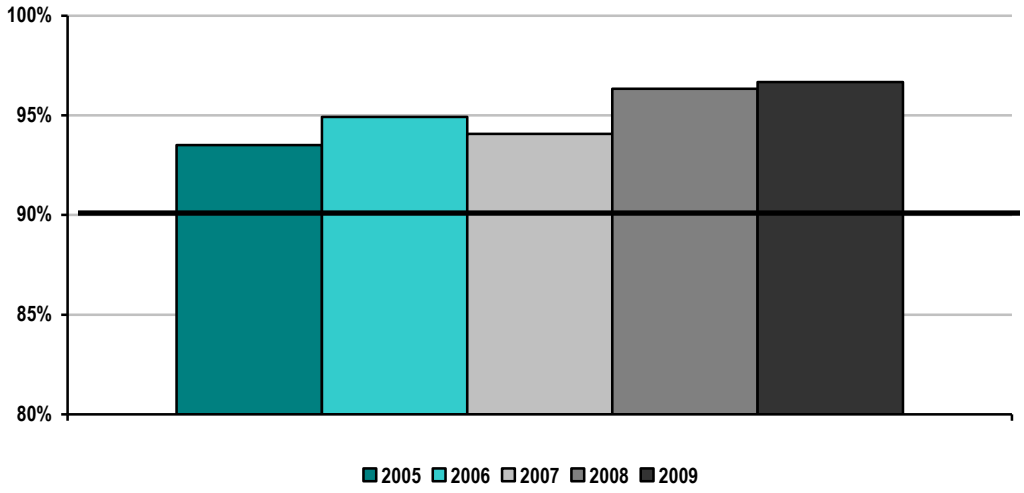
In addition to the on-going review of control performance by NYISO System Operations, a daily review of performance occurs by NYISO Operations staff each business day. The NYISO incorporates CPS compliance in its analysis and establishment of regulation requirements, which are specified by season and hour. The NYISO recently updated the regulation requirements to reflect findings of the 2010 Wind Study, which analyzed the net variability of load, and wind. Regulation is co-optimized along with energy and reserves within the NYISO's Day-Ahead and Real-Time markets, allowing the most efficient resources to provide the regulation needed to maintain Control Performance. The NYISO's current regulation requirements can be found at the following location:

http://www.nyiso.com/public/webdocs/market_data/reports_info/nyiso_regulation_req.pdf.



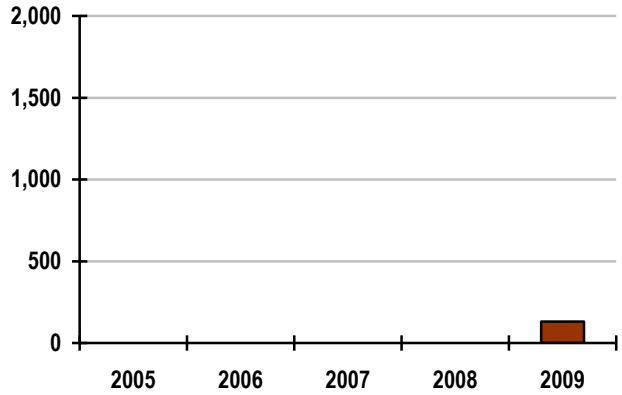
Compliance with CPS-1 requires at least 100% throughout a 12-month period. The NYISO was in compliance with CPS-1 for each of the calendar years from 2005 through 2009.

NYISO CPS-2 Compliance 2005-2009



Compliance with CPS-2 requires 90% for each month in a 12-month period. The NYISO was in compliance with CPS-2 from 2005 through 2009.

NYISO Transmission Load Relief or Unscheduled Flow Relief Events 2005-2009

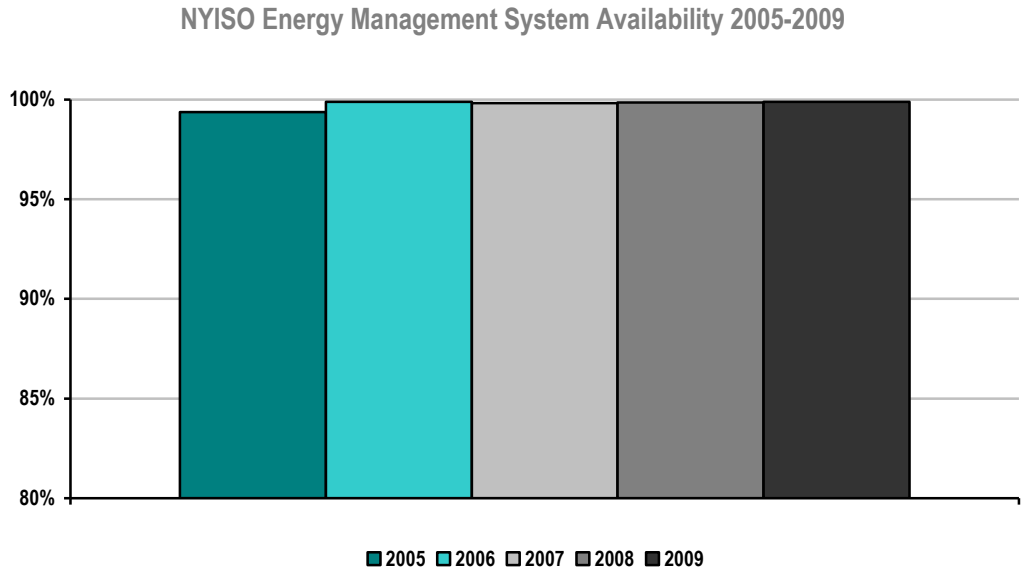


*NYISO did not initiate TLR requests prior to 2009

Prior to March 2009, NYISO did not request Transmission Load Relief (TLR) curtailments and addressed all New York transmission constraints through internal New York generation redispatch, regardless of whether the transmission constraints were aggravated by unscheduled loop flows. Since March 2009, in order to address the high levels of clockwise Lake Erie loop flows that significantly impacted New York transmission reliability constraints, the NYISO began to request TLR curtailments. All TLR curtailments requested by NYISO, as reported in the graph above, were Level 3 TLR curtailments.

Future NYISO Enhancements:

The NYISO would prefer to use market mechanisms rather than requesting TLR curtailments to address the impact of unscheduled loop flows on New York transmission constraints. In order to improve coordination of interregional power transactions, the NYISO, in conjunction with grid operators serving the Mid-Atlantic, Midwest, and New England regions of the United States and the Canadian province of Ontario, proposed a Broader Regional Markets plan, which is discussed in the "Unscheduled Flows" section of this report. In particular, the initiatives on buy-through of congestion and market-to-market coordination are aimed at reducing the need for requesting TLR curtailments.



Availability of the Energy Management System ("EMS") is an important factor that enables reliable monitoring of the electric transmission system in the NYCA. Given that a State Estimator solution is required for the EMS applications, the NYISO availability statistics are based on the number of solved State Estimator ("SE") cases as compared to the total number of SE runs. For the past five years, NYISO's EMS has shown excellent performance and has been available more than 99% of all hours in each year. Tracking of availability data in 2005 began on July 1st of that year and the data provided represents the performance from July 1st through the end of the year.

Load Forecast Accuracy

The NYISO's load forecasting model is a unified system that uses a series of equations, drivers, and historical information specific to each of the eleven LBMP zones in New York. It uses a combination of Advanced Neural Network ("ANN") and regression models to generate its forecasts. The ANN analysis takes a non-linear approach to the estimation of the model's parameters. The regression models are linear models estimated using ordinary least squares.

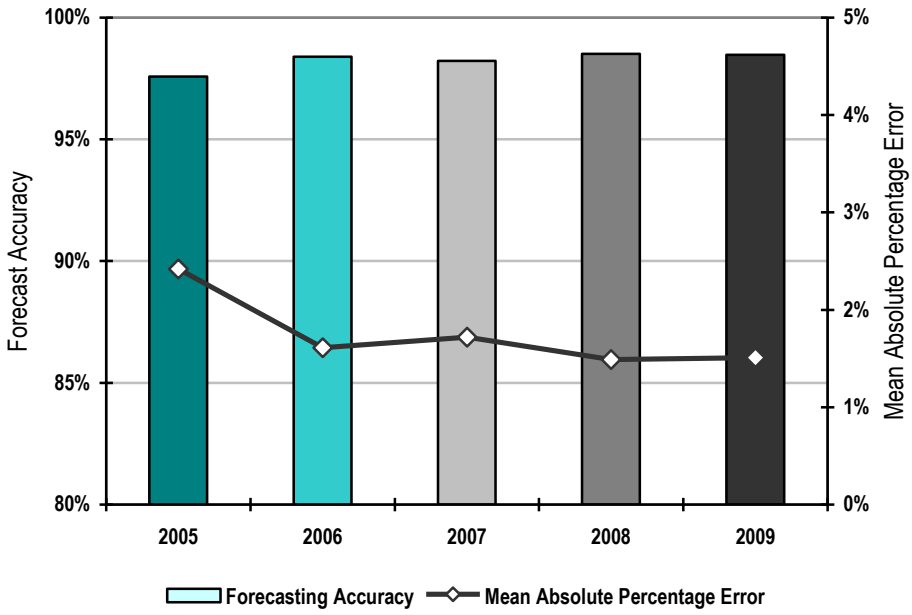
The load forecasting model uses historical load and weather data information for each of the NYISO's eleven zones to develop zonal load forecast models. These models are then used together with zonal weather forecasts to develop an independent load forecast for each zone. The zonal forecasts are summed to produce a forecast for the NYCA as a whole. The model develops the hourly load forecasts for the current day and the next six days, a total of up to 168 hours. The NYISO reviews and re-estimates its day-ahead forecasting models prior to June of each year to keep them up to date.

The load forecasting model uses proprietary weather data and forecasts from the NYISO's weather information vendor. The hourly weather data provided by the vendor include dry bulb temperature, wind speed, cloud cover, dew point, and wet bulb temperature. The data from the stations is aggregated in a manner that best represents each zone.

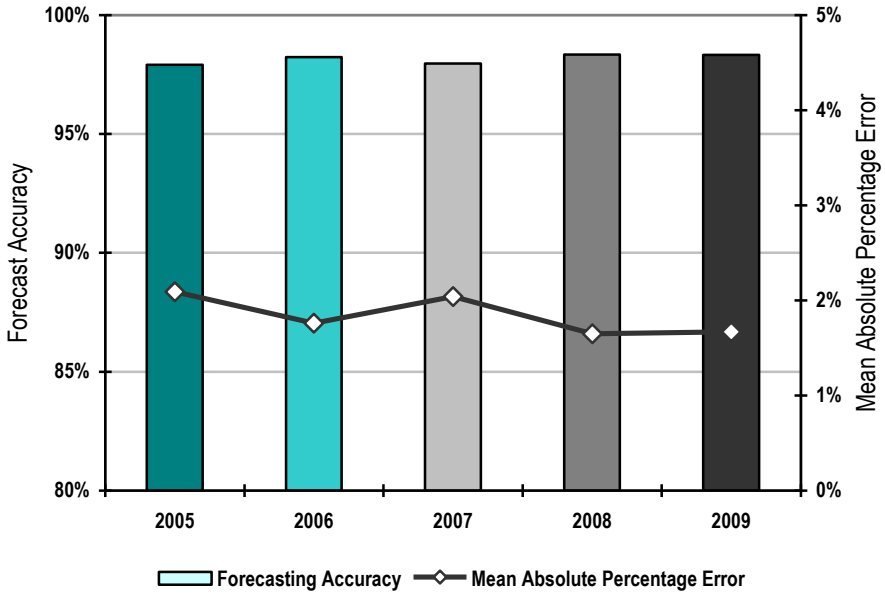
The day-ahead load-forecasting model does not currently incorporate economic assumptions or economic forecast data since these variables are virtually constant from one day to the next.

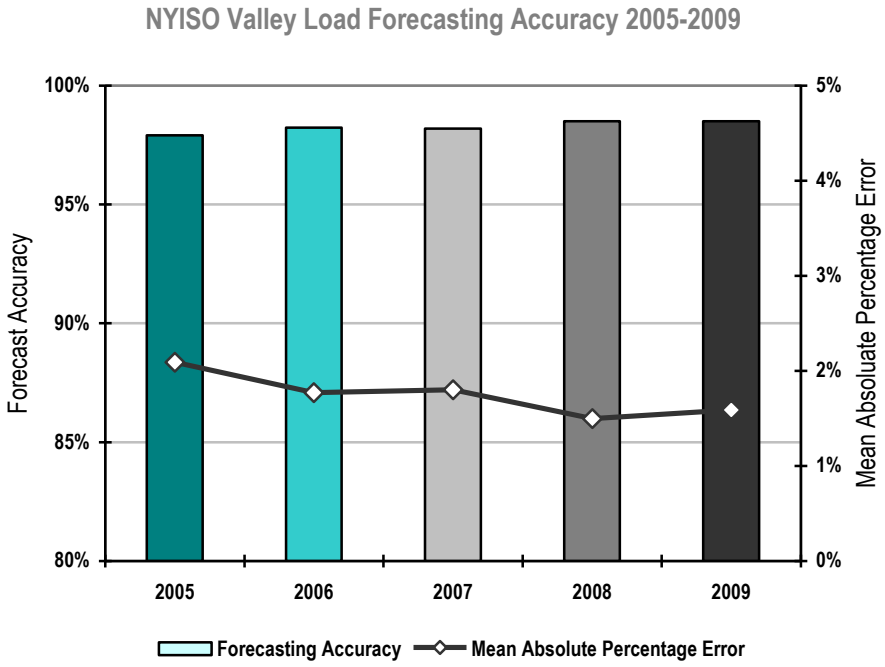
ISO/RTO	Load Forecasting Accuracy Reference Point
NYISO	5:00 a.m. prior day

NYISO Average Load Forecasting Accuracy 2005-2009



NYISO Peak Load Forecasting Accuracy 2005-2009

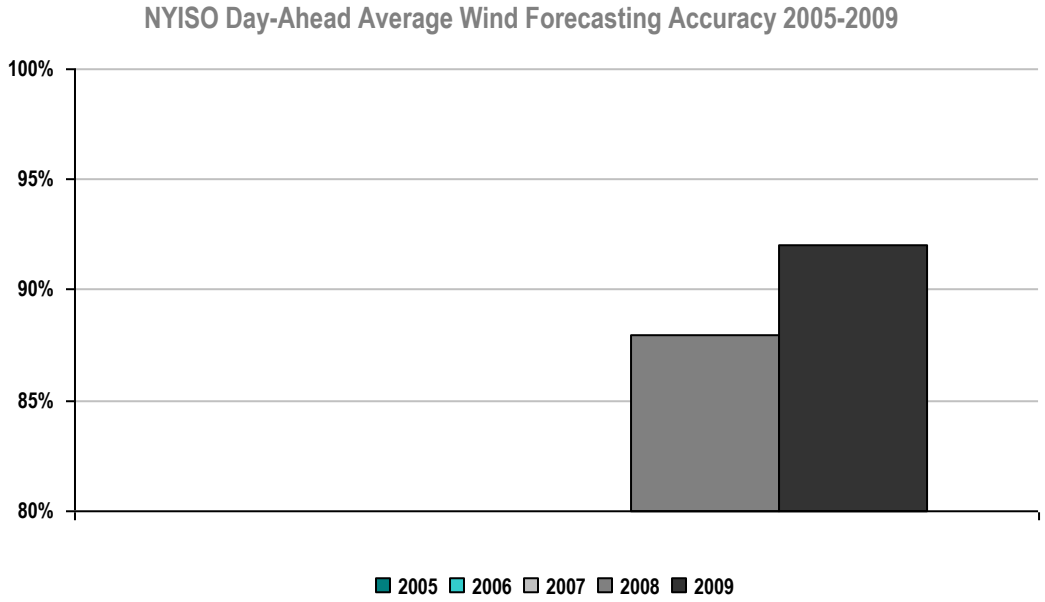




The three charts above show the percent accuracy and the Mean Absolute Percentage Error ("MAPE") of NYISO load forecasting for average daily load, peak load, and valley load from 2005 to 2009. The decrease in the MAPE indicates an increase in accuracy, since the error has been reduced. The NYISO's unified load forecasting approach is applied to each of the LBMP zones in the New York Control Area. Continuous forecasting system process improvements have increased forecasting accuracy and a commensurate decrease in the MAPE. The high level of accuracy contributes to efficient operation of the bulk power system and wholesale electricity markets, which provides economic benefit to consumers.

The FERC has requested that Day-Ahead forecast accuracy reflect the impact of demand response. Going forward, the NYISO can provide metrics that specifically account for such factors. During the 2005-2009 period, the NYISO activated its demand response program on only a small number of days to address peak demand. As a result, the exclusion of the impact of the programs on the metric is negligible.

Wind Forecasting Accuracy

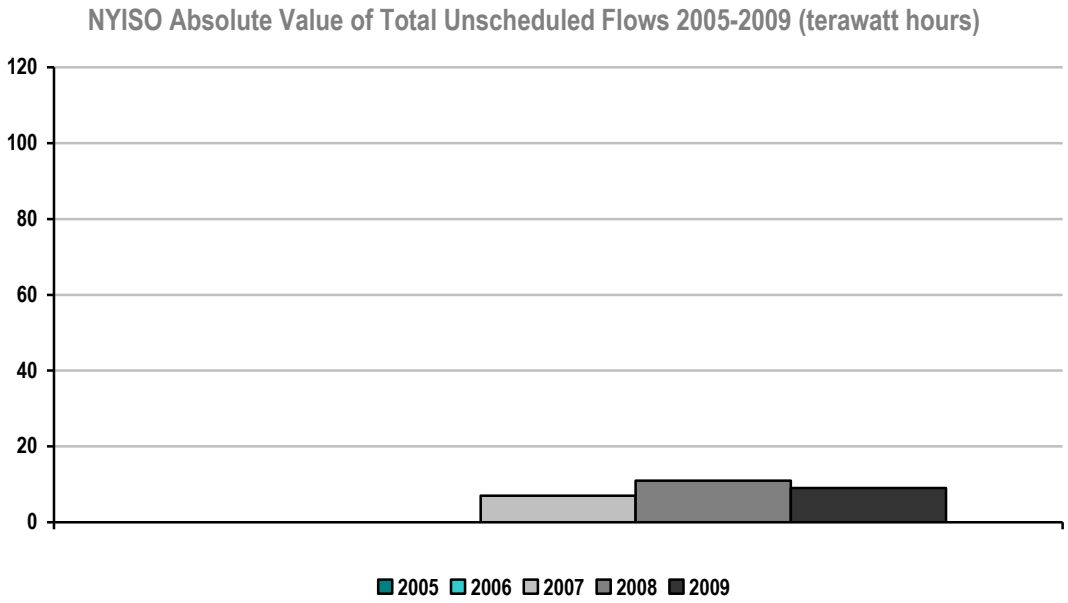


In mid-2008, the NYISO instituted one of the first state-of-the-art wind forecasting systems in the United States incorporating wind power forecasts into Day-Ahead and Real-Time Market tools to improve commitment and scheduling of resources. The centralized system enables the NYISO to better utilize and accommodate wind energy by forecasting the availability and timing of wind-powered generation. The real-time forecasts are updated every 15-minutes and integrated into the NYISO's real-time Security Constrained Dispatch. Day-Ahead forecasts are updated twice daily and are integrated into the Day-Ahead market during the reliability evaluation. In 2009, the NYISO became the first grid operator to dispatch wind power fully balancing the reliability requirements of the power system with the use of the least costly power available via an economic dispatch.

The Mean Absolute Error (MAE) on a Day-Ahead basis was approximately 12% for the second half of 2008 and improved to 8% in 2009 (the values presented in the graph above are 1-MAE, which represents the statistic in terms of accuracy rather than error). The improvement in accuracy from 2008 to 2009 is associated with having a more robust data set available to train and improve the forecast models. The Day-Ahead wind forecast statistics are based on the forecast updated at 4AM the day prior to the operating day and used in the Day-Ahead Market evaluation. The MAE in real-time on an hour-ahead basis was approximately 5% in 2008 and 4% in 2009.

The NYISO develops forecasts for variable energy resources when there is an operational need for the information. Due to the limited amount of non-wind variable energy resources, the NYISO does not currently require forecast data for these resources.

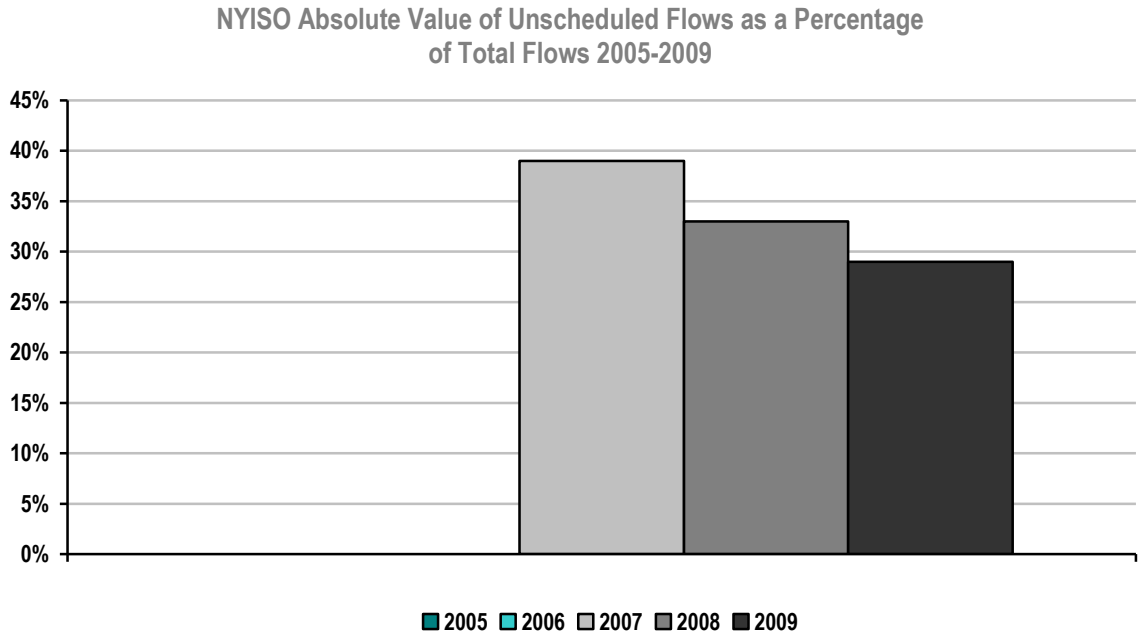
Unscheduled Flows



*Data not available prior to 2007

For context, the table below notes the number of NYISO's external interfaces. The NYISO has free flowing interfaces with PJM, Ontario, and ISO-NE and the other six interfaces are controllable line interfaces. Unscheduled flows vary in both magnitude and direction and occur primarily on the Ontario and PJM interfaces. These two interfaces reflect the same flows (the numerical conventions are such that a negative flow on the PJM interface corresponds to a positive flow on the Ontario flow).

ISO/RTO	Number of External Interfaces
NYISO	9



*Data not available prior to 2007

(in terawatt hours)

NYISO Unscheduled Flows by Interface	2005	2006	2007	2008	2009
Ontario Independent Electricity System Operator (1)	--	--	3.3	4.7	3.8
PJM (1)	--	--	3.2	4.8	3.9
ISO-NE (1)	--	--	0	0	0

(1) Data unavailable prior to 2007

The NYISO experiences a larger percentage of unscheduled flows than some of its neighboring market areas due to both the direct impact from Lake Erie loop flows, as well as the lower volume of total scheduled flows and limited number of interfaces. Lake Erie loop flow is currently an uncontrolled, unscheduled quantity that directly impacts two of the NYISO interfaces, with flows impacts observed on both the IESO and PJM interfaces. Due to the limited number of other interfaces and the smaller volume of power trading that can be managed on these interfaces, the impact from these unscheduled flows represents a significant portion of the total flows scheduled. The chart above shows that, at times, unscheduled flows account for a large proportion of flows over the collective interfaces. As discussed below, the NYISO is pursuing with all of its neighboring market areas the Broader Regional Markets initiatives, in part to address the impact produced by the Lake Erie Loop Flow unscheduled impacts and to remove barriers to more efficient interregional trading to improve the volume of trading.

Future NYISO Enhancements:

Collaborating extensively with IESO, Midwest ISO, PJM, and ISO-NE, the NYISO proposed the Broader Regional Markets plan to the FERC in January 2010. In a July 15, 2010 Order, the FERC conditionally approved the proposal, saying, "…these planned regional initiatives will be designed to reduce uplift costs and lower total system operating costs…" A preliminary analysis of the benefits of various components of the Broader Regional Markets plan conducted by Potomac Economics estimates regional annual savings of at least $368 million. The coordination of flows around Lake Erie was estimated to result in $51 million in annual savings to the region.

The Broader Regional Market proposals include both market based and physical solutions. The market solutions include:

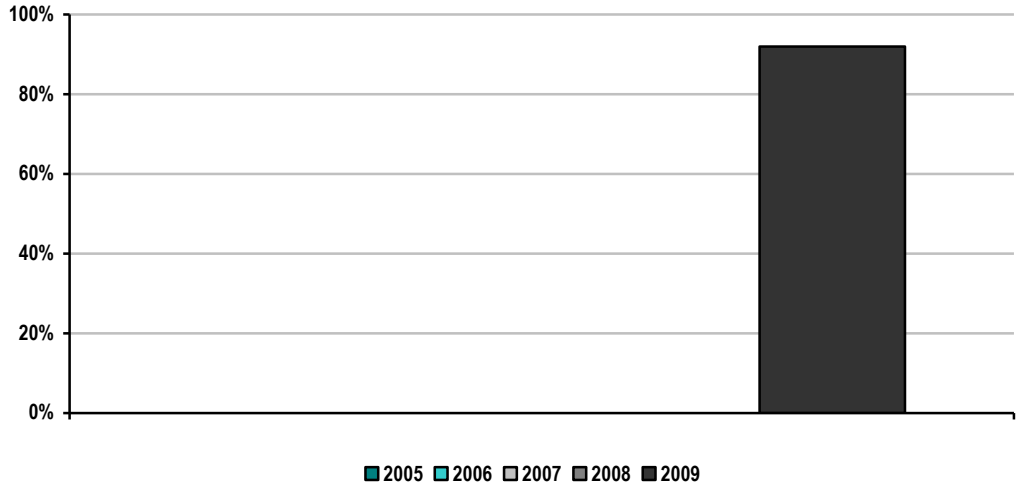
- *Buy-through of congestion, which would require that the congestion cost of a transaction be charged based on the physical flow of power, unlike the current settlement determination that is based only on the contract path.*
- *Market-to-market coordination, which would increase the level of collaboration in congestion management between system operators in the region.*
- *Interface pricing revisions, which would improve the pricing at the points at which energy moves between individual grid operators to allow for more efficient regional power transfers.*
- *Inter-regional transaction coordination, which would lower total system operating costs as transaction schedules more quickly adjust to market-to-market pricing patterns.*

In addition, the proposal includes the development of a parallel flow visualization tool designed to enhance the exchange of transmission system information and to assemble the necessary real-time data to perform the generation-to-load calculations, facilitate the calculation of impacts, and make available common and consistent information regarding the sources of power flows and their impacts to all regions. It is expected that the reactivation of a set of Phase Angle Regulators (PARs) on the Michigan-Ontario border will help to align the actual power flows around Lake Erie with the corresponding level of scheduled transactions.

Transmission Outage Coordination

The NYISO coordinates all requests for transmission outages based on their potential impact on system reliability and is not aware of any unexpected generator availability impacts or declared emergencies associated with uncoordinated transmission outages.

NYISO Percentage of > 200kV planned outages of 5 days or more that are submitted to ISO/RTO at least 1 month prior to the outage commencement date 2009

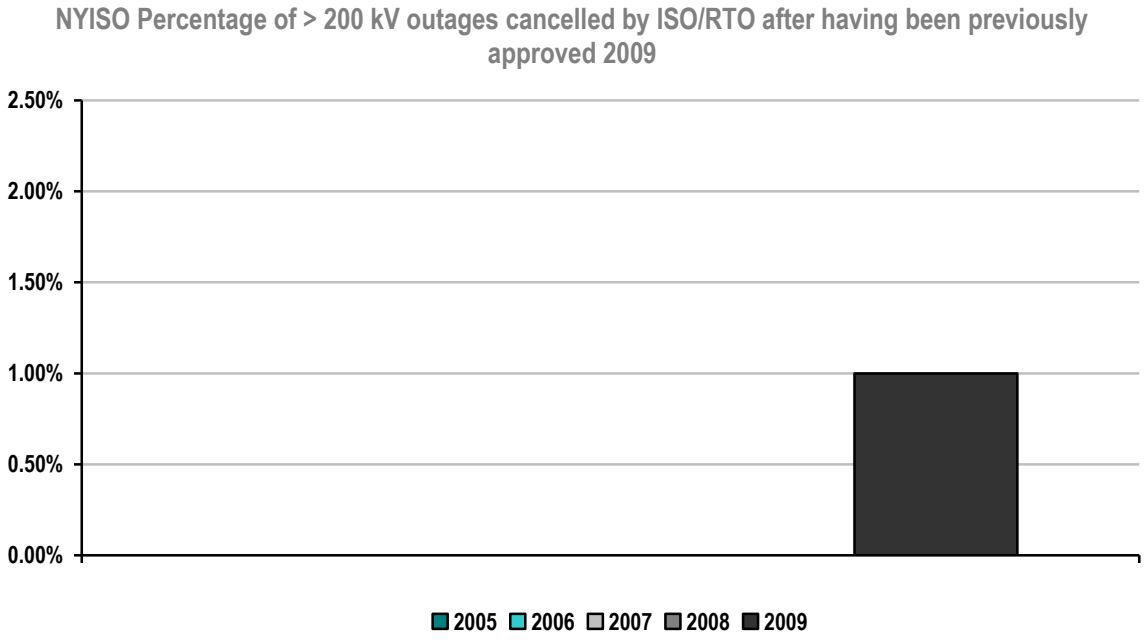


*Data unavailable prior to 2009

NYISO data for the metric, “Percentage of > 200 kV planned outages of 5 days or more that are submitted to ISO/RTO at least 1 month prior to the outage commencement date,” are based on outage data that includes inter-control area tie lines and internal NYCA lines and transformers greater than 200 kV.

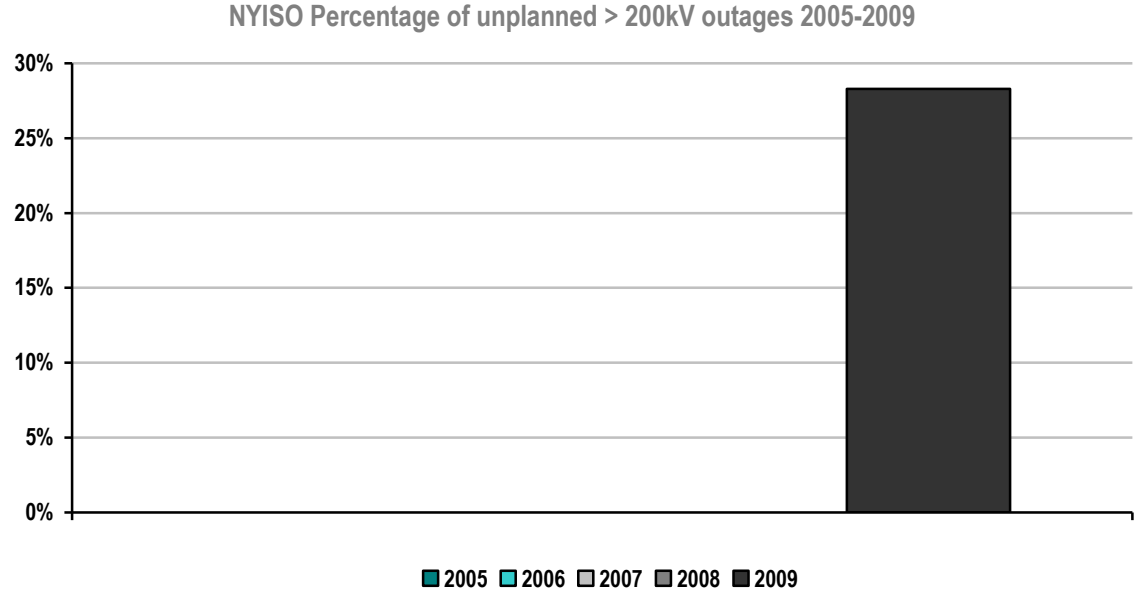
The NYISO requires that Transmission Owners submit outage requests for facilities expected to impact system transfer capability of the NYISO secured system "no later than 30 days prior to first of the operative TCC month," with a few exceptions allowed to address reliability needs or outages with limited impact. This requirement results in advanced notification of at least 1 month prior to outage commencement for 92% of transmission outages in 2009. Data are not available prior to 2009 due to the format of historic records. In 2009, the NYISO integrated a new outage scheduler application that will enable more efficient reporting of outage statistics on a going-forward basis.

The metric, “Percentage of planned outages studied in the respective ISO/RTO Tariff/Manual established timeframes,” is not applicable to NYISO. The NYISO does not have established timeframes to study planned outages in its Services Tariff. All outages are included as part of the Day-Ahead Market evaluation for consideration prior to the operating day.



*Data unavailable prior to 2009

NYISO data for the metric, "Percentage of > 200 kV outages cancelled by ISO/RTO after having been previously approved," demonstrates that only one percent of outages were cancelled in 2009. Data are not available prior to 2009 due to the format of historic records. In 2009, the NYISO integrated a new outage scheduler application that will enable more efficient reporting of outage statistics on a going-forward basis.



*Data unavailable prior to 2009

It is necessary to have outages submitted and verified in advance of the Day-Ahead market evaluation in order to be considered planned by the NYISO. The NYISO classifies outages with less than two days notice unplanned. As a

result, the NYISO statistics for "Percentage of unplanned > 200kV outages" may appear higher as compared to other areas. The NYISO data are also based on the following criteria: unplanned outages of at least 1 hour duration including inter-control area tie lines, internal New York Control Area lines, and transformers > 200kV. NYISO data for the metric, “Percentage of unplanned > 200kV outages,” are not available prior to 2009. In 2009, the NYISO integrated a new outage scheduler application that will enable more efficient reporting of outage statistics on a going-forward basis

Transmission Planning

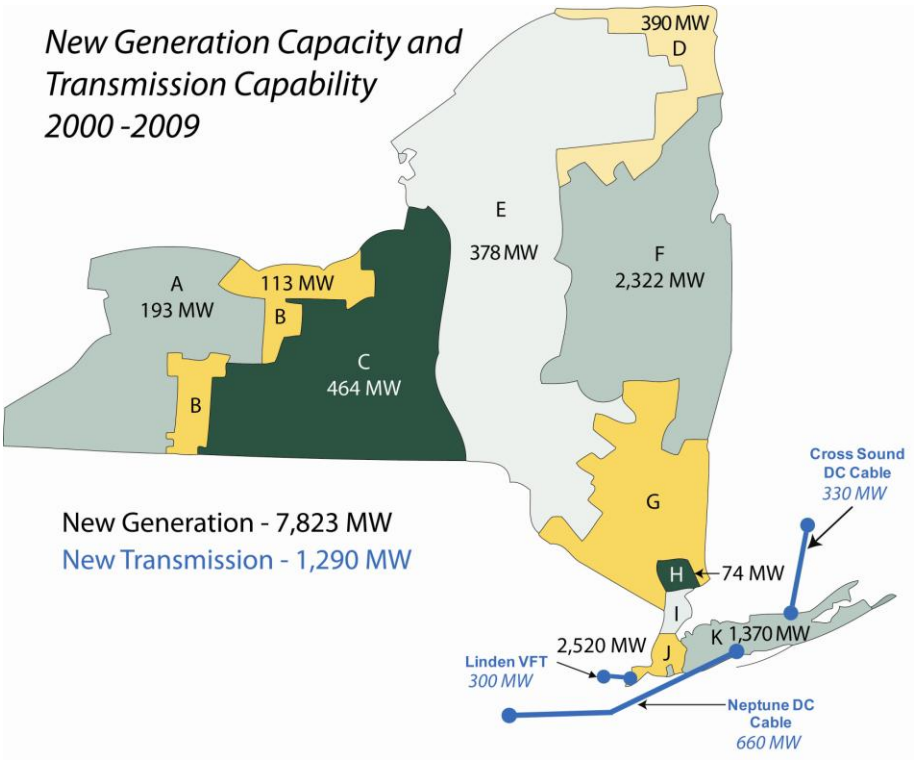
Markets and Investment Enhance Reliability

The NYISO's market-based approach to the transmission planning process is significantly different from any other regions' transmission planning processes. Consistent with the NYISO's Transmission Owner ("TO") Agreement and Open Access Transmission Tariff ("OATT"), the NYISO does not "approve" or "require" facilities to be constructed for reliability purposes. The NYISO's role is to evaluate and monitor the reliability of the system, assess reliability needs, and solicit market solutions. The market and TOs provide solutions to meet identified reliability needs, and determine which resources are financed, built, and operated.

Through this market-based approach, New York has attracted significant private and public investment in transmission and generation. This approach serves to protect consumers when investors – rather than rate-paying consumers – assume the financial risk for merchant projects.

Since 2000, over 7,800 MW of new generation has been built by public power authorities and private developers, with 80 percent of that capacity sited in the southeastern region of the state where electricity demand is greatest. This pattern of development has mitigated the need for transmission solutions to the reliability needs of the New York electric system.

Nearly 1,300 MW of new interstate transmission capability has been added to meet the needs of the metropolitan New York region. These additions are the Cross Sound Cable, an HVDC line from Long Island to Connecticut (2005), the Neptune Cable between Long Island and New Jersey (2007), and the Linden Variable Frequency Transformer project connecting PJM and New York City (2009). Several other transmission projects are in the construction phase, including a new 345-kilovolt (kV) cable from Westchester to the Manhattan. These additions have enhanced the reliability of New York's bulk power system and mitigated reliability needs.



NYISO Comprehensive System Planning Process

The NYISO's Comprehensive System Planning Process (CSPP) is an ongoing market-based process that evaluates resource adequacy and transmission system security of the state's bulk electricity grid over a 10-year period and evaluates solutions to meet reliability and congestion relief needs. The CSPP contains three major components - local transmission planning, reliability planning, and economic planning. Each two-year planning cycle begins with the local transmission plans of the New York transmission owners, followed by NYISO's Reliability Needs Assessment (RNA) and Comprehensive Reliability Plan (CRP). Finally, economic planning is conducted through the Congestion Analysis and Resource Integration Study (CARIS).

Reliability Studies

Consistent with Order 890, the NYISO's Comprehensive System Planning Process (CSPP) begins with the Transmission Owner's Local Transmission Plans (LTP). Upon review and discussion of these plans through the NYISO stakeholder process the LTP's are included in the base case of the Reliability Needs Assessment (RNA). The RNA evaluates the future reliability of the New York bulk power system through a ten-year planning horizon. In this step, the NYISO, in conjunction with Market Participants, evaluates the adequacy (Loss of Load Expectation (LOLE) and security (unanticipated loss of system elements or contingencies) throughout the entire bulk power system against mandatory national standards, regional reliability standards, and additional standards specific to New York State to identify any reliability needs, or potential reliability needs, over the planning period and issues its findings in a report that is approved by the NYISO Board of Directors.

This assessment serves many purposes, including but not limited to:

- Supporting the efficient and reliable operation of the New York bulk power system.
- Evaluating the reliability needs of the local and system-wide resource adequacy , and transmission security and transfer capability
- Identifying the location and nature of any potential factors and/or issues that could adversely impact system reliability throughout the ten year planning horizons.

The second step is the creation of the CRP that consists of proposed solutions to address the needs identified in the RNA, if any. Generation, transmission, and demand side programs are considered on a comparable basis as potential reliability solutions. A request for solutions to identified reliability needs is issued with the expectation that Market-Based Solutions will come forward to meet the identified needs. In the event that Market-Based Solutions are not sufficient, the process provides for the identification of Regulated Backstop Solutions proposed by designated transmission owners, and Alternative Regulated Solutions proposed by any market participant. The NYISO then evaluates all proposed solutions to determine whether they will meet the identified reliability needs. From this evaluation the CRP is developed, setting forth the plans and schedules that are expected to be implemented to meet the reliability needs.

The objective of this comprehensive approach is to:

- Provide a process whereby solutions to identified needs are proposed, evaluated, and enacted in a timely manner to maintain the reliability of the system.
- Provide for the development of market-based solutions, regulated backstop solutions, and alternative regulated solutions the opportunity to respond to NYISO's reliability needs signals.
- Coordinate the NYISO's reliability assessments with neighboring ISO/RTOs.

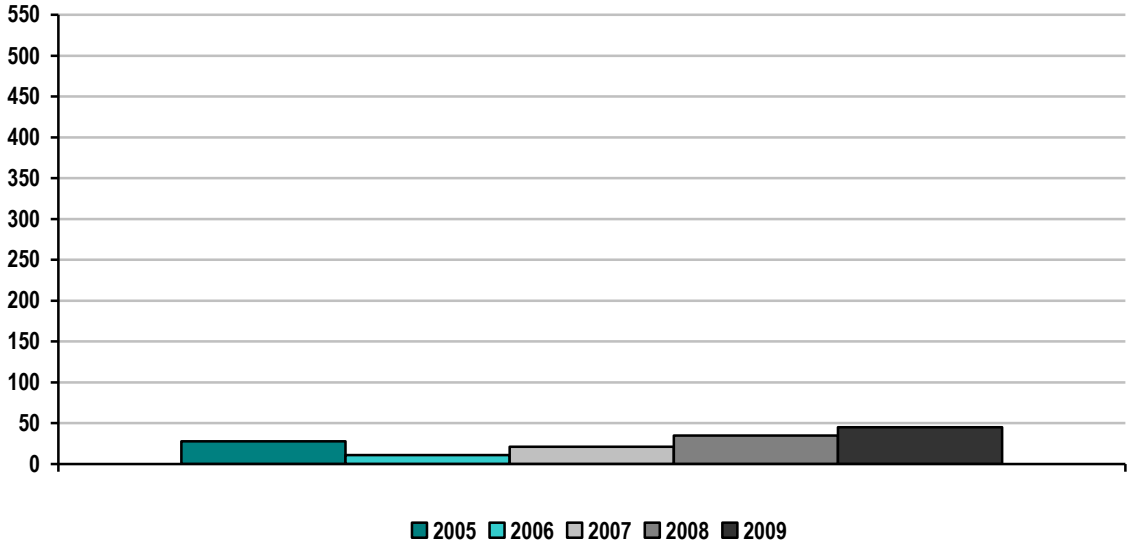
NYISO Economic Studies

For the first time, the 2009 CRP was the starting point for the new economic planning process called the Congestion Assessment and Resource Integration Study (CARIS). The CARIS evaluates transmission constraints and potential economic solutions to the congestion identified. Generation, transmission, and demand side programs are considered on a comparable basis as potential economic solutions for alleviating the identified congestion. The CARIS is also a two-step process, (1) the study phase; and (2) the project phase. The first CARIS study phase was concluded in early 2010. Currently, one developer has responded with a request for the NYISO to evaluate its proposed congestion relief project.

NYISO Integration of Innovative Technologies

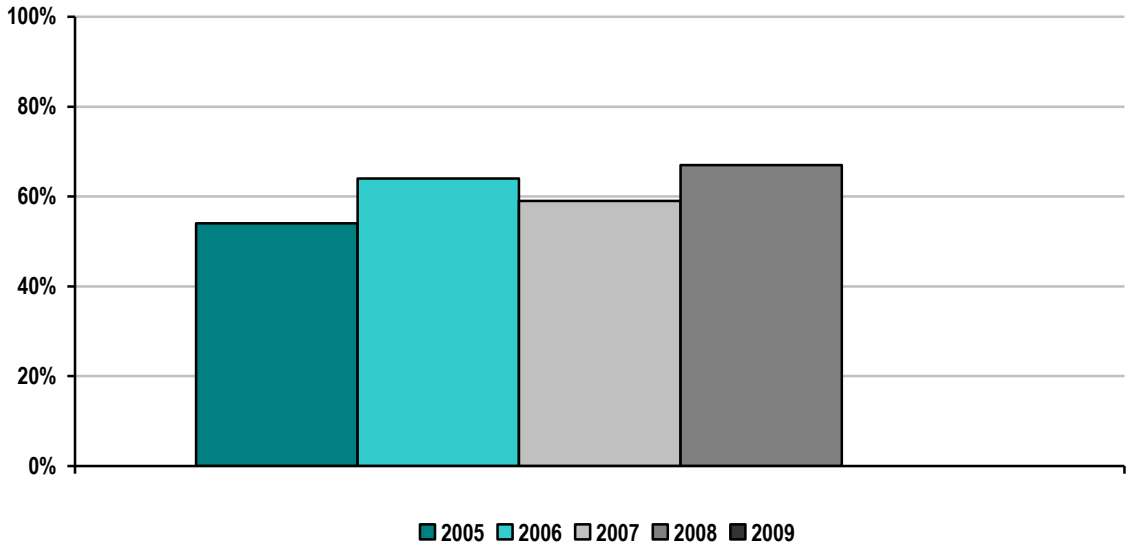
The NYISO has moved to take advantage of advanced grid-scale energy storage facilities with new market rules and associated software and control systems. In May 2009, the FERC approved tariff revisions making the NYISO the first grid operator in the nation to establish provisions for limited energy storage resources (LESRs) to provide regulation services in the NYISO market. LESRs include technologies such as flywheels and advanced battery systems that store electricity, but are limited in the amount of time they can sustain electric output. A 20 MW flywheel system is expected to become operational in 2010. Another 20 MW flywheel project is in the NYISO interconnection queue, along with three battery projects totaling 60 MW.

NYISO Number of Transmission Projects Approved to be Constructed for Reliability Purposes 2005-2009



The transmission projects in this chart include projects developed by New York Transmission Owners through their local transmission planning processes, these projects have been included in NYISO's reliability planning base cases. The NYISO reliability planning process, discussed above, did not evaluate any transmission projects as no transmission project was submitted to meet reliability needs identified in the 2005 Reliability Needs Assessment (RNA). In 2007, 3 transmission projects were identified as viable to meet an identified reliability need, and another project was also identified in 2008. In 2009, there were no reliability needs identified due to an increase in available resources and the expansion of energy efficiency programs in the state.

NYISO Percentage of Approved Construction Projects Completed by December 31, 2009



**Data for completed construction projects approved in 2009 is not yet available.

For the period 2005-2009, a significant number of transmission projects that were approved have been constructed. The majority of them have been built in response to economic opportunities identified through market signals, and serve to essentially negate the need for "reliability" transmission projects. One transmission project built in 2009 had previously been identified as a viable reliability solution by the NYISO CSPP. This was the 300 MW Linden Variable Frequency Transformer project, identified in the 2007 Comprehensive Reliability Plan (CRP).

Future NYISO Enhancements:

Maintaining the integrity of New York's high-voltage transmission network is a primary focus of efforts to sustain and enhance overall power grid reliability. New and upgraded high-voltage transmission facilities are expected to be needed to strengthen the state's bulk power grid and facilitate the integration of more renewable resources. Future enhancements are focused on easing transmission system bottlenecks, permitting wider access to lower-cost wholesale electricity while reducing the overall cost of power.

The New York TOs have initiated a State Transmission Assessment and Reliability Study ("STARS") project that is designed to assess the condition of the state's electric transmission infrastructure and identify needed improvements to sustain a robust and reliable electric supply system for the future. Initial study findings are expected to be developed in 2010.

It is important to note that several previously proposed transmission projects have met with strong opposition based on environmental, health, aesthetic, and community concerns. The NYISO is actively participating in collaborative planning efforts among New York stakeholders to explore innovative solutions, such as replacing older, low capacity transmission lines with new higher capacity lines within existing rights-of-way.

Generation Interconnection

Overview

Since 2000, over 7,800 megawatts (MW) of new generation have been built by public and private suppliers, with 80 percent sited in New York City, on Long Island and in the Hudson Valley, the regions where demand is greatest. In addition, 1,290 MW of transmission capability have been added to bring power to the downstate region from out of state. These developments occured despite the expiration of New York State's power plant siting law in 2002.

The NYISO's role in the interrconnection process is that of process administrator, project and system evaluator, and arbiter to ensure that the Project Developer and Transmission Owner collaborate in good faith to keep the project moving forward in an indiscriminate manner. The process includes the identification and cost allocation of system upgrades necessary for the safe and reliable interconnection to the bulk power system. This thorough and comprehensive process includes:

- Interconnection Request submission, review, validation and approval;
- Scoping of project, including NYISO receipt of necessary technical data for each;
- Scoping of Feasibility Study(ies), including execution of study agreement and NYISO receipt of necessary technical data;
- Conduct Feasibility Study(ies) with final report meeting with Developer and TO;
- Scoping of System Reliability Impact Study(ies), including execution of study agreement and NYISO receipt of necessary technical data;
- Conduct System Reliability Impact Study(ies) with final report meeting with Developer and TO;
- Scoping of Facilities Study(ies), including execution of study agreement and NYISO receipt of necessary technical data;
- Conduct Class Year Facilities Study(ies) with system facilities upgrades and capacity deliverability cost allocation, with final report meeting with Developer and TO;
- Submission and approval of Class Year Facilities Study(ies) to NYISO Market Participant governance working groups, sub-committees and Operating Committee.
- Decisions of Project Developers to accept or not accept their Project Cost Allocatios for system upgrades
- Interconnection Agreements provided to Developer, including proof of continued site control and the achievement of development milestones, to be filed with FERC

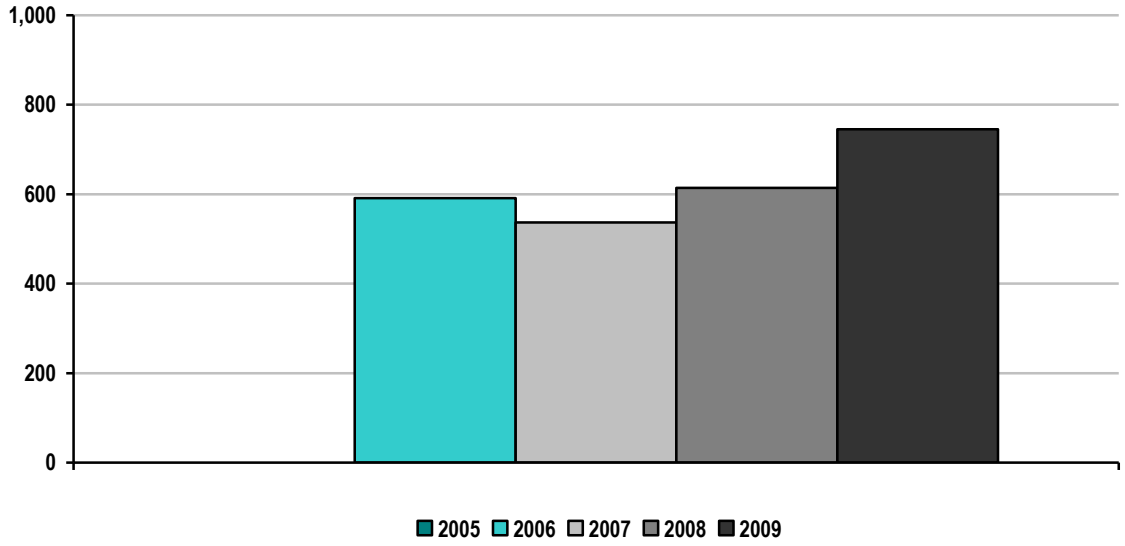
Interconnection Process Evolution and Responsiveness

The NYISO interconnection process has evolved and adapted to meet the expansion of new entrants in New York's wholesale electricity markets. The combination of open access, market opportunities, and public policy initiatives has significantly expanded the scope and array of projects submitted to the NYISO Interconnection Queue.

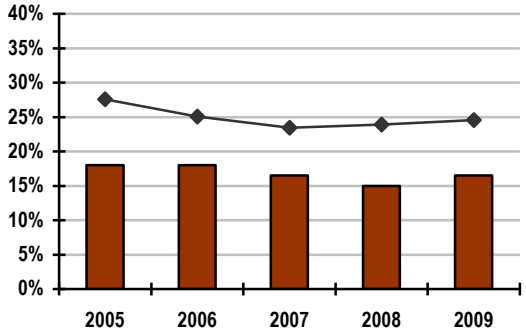
In 2004, the adoption of the "Standard Large Facility Study Procedures ("LFIP")resulted in the initiation of many new studies, but few were completed during that year. In 2005, there was a significant influx of wind projects, creating a backlog of studies that carried over to 2006. During 2006, the NYISO implemented a number of changes in the study process to address the expanding number of projects and studies. The impact of the 2006 process changes resulted in the completion of current projects. However, hundreds of additional projects, particularly wind projects, were be submitted for study. As a result of continued enhancement of the process and the similarity of the project types (wind) completion times for studies improved. As the diversity of project types submitted in 2008 expanded, including new energy storage projects, the study times also expanded to reflect the uniqueness of each project. Also in 2008, the NYISO began implementation of the FERC required capacity deliverability studies, which significantly increased the Interconnection Request Processing Time for years 2008 and 2009 (see chart below). In late 2008 and throughout 2009, economic conditions caused developers to slow the pace of proposed projects, and several projects were withdrawn, resulting in lengthened study times. The NYISO has worked with developers desiring to keep their queue position , but moderate the pace of studies until economic conditions improve. This accommodation to developers appears to have increased interconnection study times, and slowed completion of studies in 2008 and 2009.

The integration of new technologies into the grid presents unique challenges in performing interconnection and system planning studies. In many cases, models for these new technologies submitted to the NYISO Interconnection Queue are not readily available and are under various stages of development. This means that project developers often do not have adequate and documented models from the equipment manufacturers or engineering consultants to validate the operation of the proposed equipment. In some cases, model developers claim confidentiality of their models and don't provide adequate documentation for the study analysts to verify that the models provided reasonably represent the actual characteristics of the proposed equipment. As for integrating new technologies into system planning studies, standard assumptions used to study conventional facilities do not necessarily apply. For example, energy storage and regulation facilities are not proposed for the purpose of providing peak load capacity, but rather to provide short-term power to shave peaks and fill valleys during the day.

NYISO Average Generation Interconnection Request Processing Time 2005-2009
(calendar days)



NYISO Planned and Actual Reserve Margins 2005 – 2009



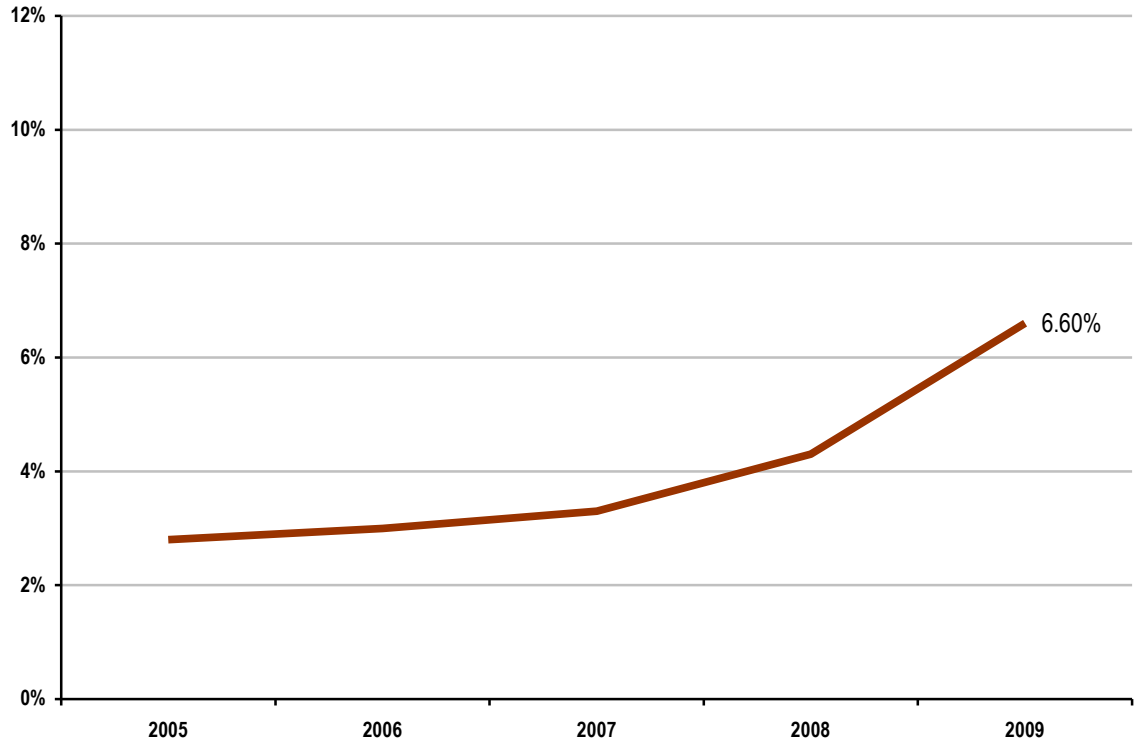
Bars Represent Planned Reserve Margins	Lines Represent Actual Reserves Procured

The Installed Reserve Margin ("IRM"), is determined annually by the New York State Reliability Council ("NYSRC"), and is subject to final regulatory approval by the Federal Energy Regulatory Commission and the New York State Public Service Commission. The statewide IRM for the 2010/2011 capability year is 18 percent. Based on the IRM, the NYISO has determined the installed capacity requirements total 38,970 MW. The total capacity available to the state is expected to be roughly 43,000 MW, which includes 37,416 MW of in-state resources, an additional 2,251MW Special Case Resources (a NYISO Demand Response program) and 2,645 MW of import capability that could be used to supply capacity from neighboring regions to New York.

Increased generator performance and improved availability of the NYCA power plants contributed to a downward trend in the reserve margin. Reserve margins are beginning to trend upwards, reflecting the ability of the markets to incent the active participation of all generation and demand-side resources. The efficient operation of the NYCA bulk electric system and wholesale electricity markets has sustained and enhanced system reliability and successfully focused resource development in regions where demand is greatest.

The NYISO's record of accuracy of load forecasting, and updating that forecast for the following summer after the current summer season, the fact that the IRM is a one-year ahead projection, which utilizes the most accurate measures of plant maintenance schedules and forced outage rates, has right-sized the IRM in such a manner that effectively addresses all reliability compliance requirements and maximizes the advantage to consumers in setting purchased capacity requirements.

NYISO Demand Response Capacity as Percentage of Total Installed Capacity 2005-2009



Regarding the metric, Demand Response Capacity as Percentage of Total Installed Capacity, the graph includes the sum of the following: ICAP Special Case Resources, Emergency Demand Response Program, and Day-Ahead Demand Response MWs. Load relief expected from demand response resources is not necessarily the sum of all the programs, due to rules that allow participation in multiple programs.

In August 2009, two of the NYISO's major demand response programs, the Emergency Demand Response Program and the ICAP Special Case Resources program, had a total of 4,067 end-use locations enrolled providing over 2,380 MW of demand response capability, a 13 percent increase over the 2008 enrollment level. The demand response resources in NYISO reliability programs represent 7.7 percent of the 2009 Summer Capability Period peak demand of 30,844 MW, an increase of 1.2 percent from 2008.

When New York experienced its record peak load in August 2006, NYISO demand response programs shaved the peak by an average of 865 MW, providing estimated **savings of $91 Million**. (The savings produced by the peak shaving can be quantified as the cost of providing a similar amount of capacity from peaking units. Assuming that the peaking unit is a nominal 195 MW Frame 7FA located in the Capital Zone, the estimate installed cost of such a facility (based upon the current S&L calculations for the demand curve reset) is $840/kW, with a combined fixed O&M plus insurance costs of 0.84%. Using annual fixed charge rate of 13% (assumed 20-yr amortization period), one unit would cost approximately $23M/year; four would be $91M/year.)

NYISO Percentage of Generation Outages Cancelled by ISO/RTO 2005-2009

The NYISO does have the authority to approve planned generation outages with approval also required from the Transmission Owners. The NYISO provides the approved generator outage schedules for the upcoming calendar year by October 1 of the prior year. Provisions allow outage scheduling on a shorter timeframe only if it is mutually acceptable to all involved parties. The NYISO rarely cancels approved planned outages. In fact, none of the planned outages were cancelled by the NYISO in 2009. NYISO data for the metric, "NYISO Percentage of Generation Outages Cancelled by the ISO/RTO," are not available prior to 2009 due to the format of historic records. In 2009, the NYISO integrated a new outage scheduler application that will enable more efficient reporting of outage statistics on a going-forward basis.

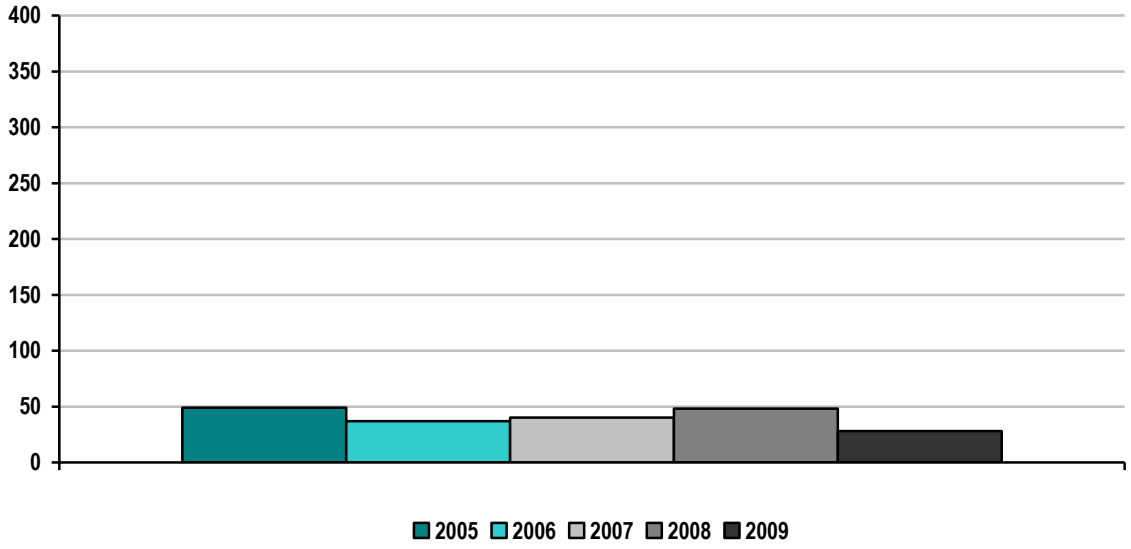
NYISO Generation Reliability Must Run Contracts 2005-2009

The NYISO did not have any generating units under Reliability Must Run ("RMR") contracts from 2005 through 2009. However, out of merit generation was dispatched in order to comply with reliability criteria.

Interconnection / Transmission Service Requests

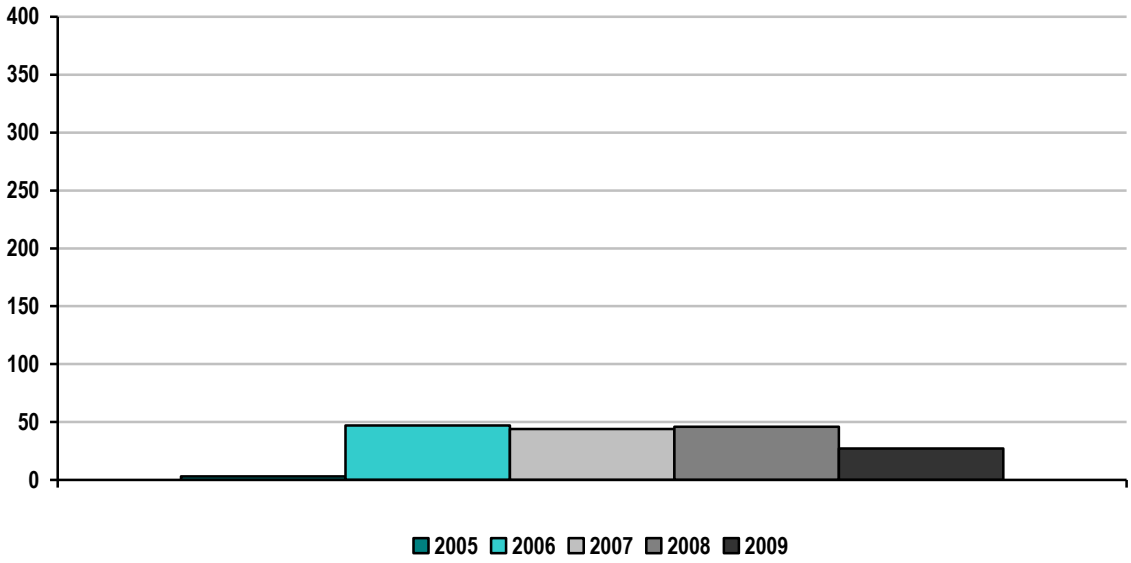
All data represented in this section include all generation, transmission, and transmission-connected load received in each designated year.

NYISO Number of Study Requests 2005-2009

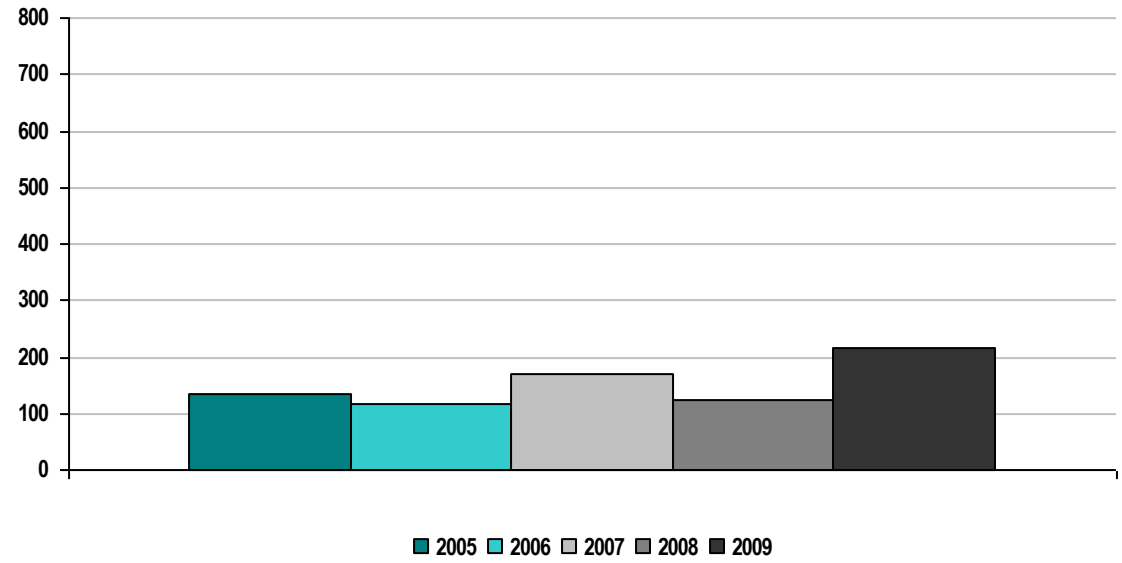


* The NYISO does not use Transmission Service Requests to determine whether or not the existing transmission system can accommodate a new project, as do most other ISO/RTO areas. As a result, a very limited number of such requests are reported in the data presented above. The NYISO Interconnection process assumes that proposed projects can be accommodated on the NYCA bulk power system. NYISO interconnection studies focus on the potential need for upgrades to allow for the safe and reliable interconnection of a proposed project and the cost allocation of any necessary facilities upgrades.

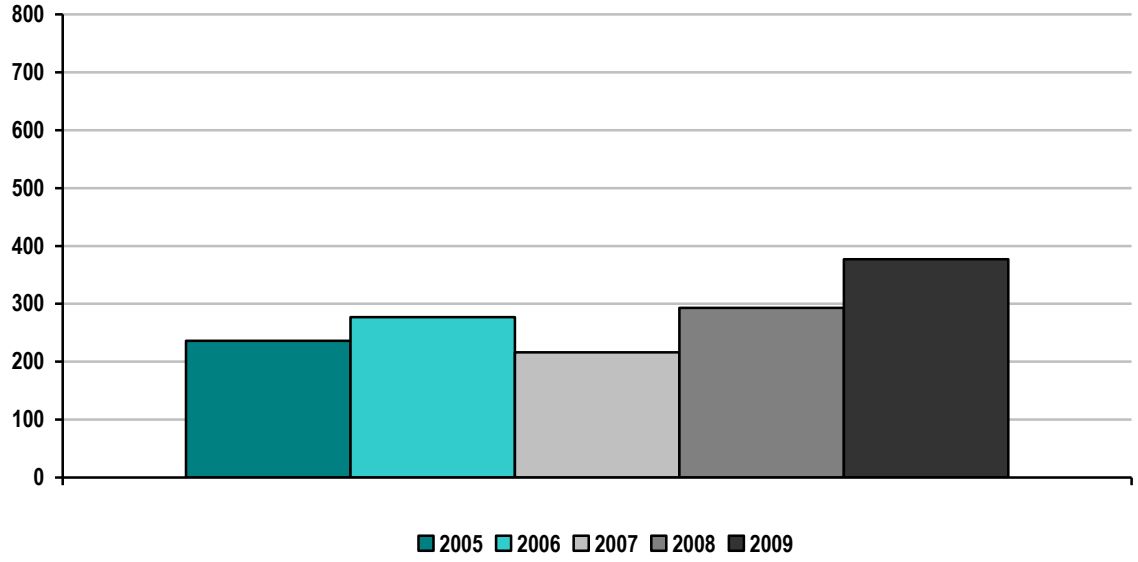
NYISO Number of Studies Completed 2005-2009



NYISO Average Aging of Incomplete Studies 2005-2009
(calendar days)



NYISO Average Time to Complete Studies 2005-2009
(calendar days)



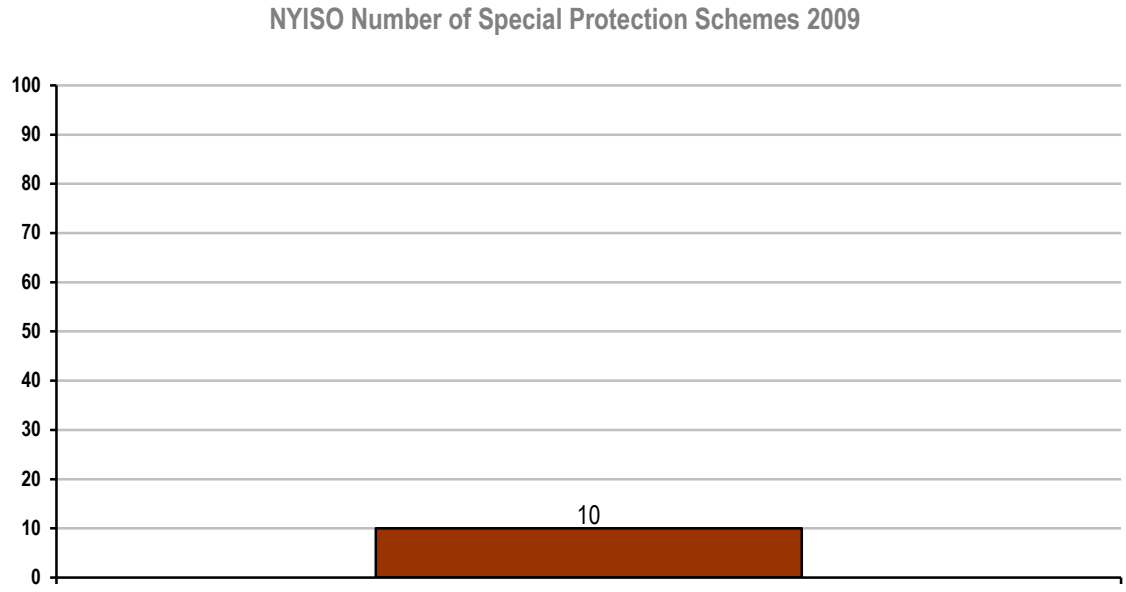
Average Cost of Each Type of Study Completed

	2005	2006	2007	2008	2009
Feasibility Study	Data Not Available	$45,805	$27,573	$24,217	$25,457
System Reliability Impact Study	Data Not Available	$54,213	$50,834	$38,990	$40,686
Facilities Study (Class Year)	Data Not Available	$113,090	$124,326	Final Data Not Yet Available	Data Not Yet Available

From 2005-2009, a total of 35 projects have gone in-service that had undergone the NYISO interconnection or transmission study process. Thirty (30) of those projects were generation projects, of which 27 were by independent generation developers, two were by a state authority (New York Power Authority), and one was by public utility (Consolidated Edison Company of NY). The other five projects were transmission projects, of which two were planned Transmission Owner projects, one involved upgrades of the Transmission Owners' systems sponsored by a generation owner, and two were merchant transmission projects developed by independent transmission developers.

During the period from 2005 through 2009, four formal complaints were filed at FERC related to the NYISO interconnection study process. No formal complaints related to the NYISO transmission study process were filed during that period. All four of the interconnection-related complaints have been resolved. One of the complaints was resolved by a FERC order directing NYISO to withdraw an Interconnection Request from its queue position. Another complaint was withdrawn by the complainant after the Commission accepted certain amendments to the NYISO's tariff that rendered the complaint moot. The other two complaints were denied by the Commission.

Special Protection Schemes



Of the ten Special Protection Schemes (SPS) in place within NYISO, there was only one SPS activation in 2009. The SPS activation response was as designed and there were no uninstructed SPS activations in the NYISO.

B. NYISO Coordinated Wholesale Power Markets

According to the *2009 State Energy Plan*, approved by the New York State Energy Planning Board and the Governor in December 2009, *"New York's competitive electricity market structure, established in 1999 and administered by the NYISO, provides an economic incentive to power plant operators to run as efficiently as possible…More efficient, i.e., lower heat rate, resources are attracted to competitive markets where they can profit by competing against less efficient producers, an incentive that does not exist in non-market regions…"*

For more information about the State Energy Plan's assessment of NYISO-administered markets, please see:

http://www.nysenergyplan.com/final/Electricity_Assessment_Resource_and_Markets.pdf

In April 2010, Potomac Economics, the NYISO's Independent Market Monitor, issued the *2009 State of the Markets Report: New York ISO*. That report concludes that the NYISO operates "a complete set of electricity markets," including:

- *Day-ahead and real-time markets jointly optimize energy, operating reserves, and regulation. These markets lead to:*
    - *Prices that reflect the value of energy at each location on the network;*
    - *The lowest cost resources being started each day to meet demand;*
    - *Delivery of the lowest cost energy to New York's consumers to the maximum extent allowed by the transmission network; and*
    - *Efficient prices when the system is in shortage.*
- *Capacity markets that ensure that the NYISO markets produce efficient long-term economic signals to govern decisions to:*
    - *Invest in new generation, transmission, and demand response; and*
    - *Maintain existing resources.*
- *The market for transmission rights allows participants to hedge the congestion costs associated with using the transmission network.*

In addition, the report says:

The performance of the New York markets is enhanced by a number of attributes that are unique to the NYISO:

- *A real-time dispatch system that is able to optimize over multiple periods (up to 1 hour), which allows the market to anticipate upcoming needs and move resources to efficiently satisfy the needs.*
- *An optimized real-time commitment system to start gas turbines and schedule external transactions economically – other RTOs rely on their operators to determine when to start gas turbines.*

- *A mechanism that allows gas turbines to set energy prices when they are economic – gas turbines frequently do not set prices in other areas because they are inflexible, which distorts prices.*
- *A mechanism that allows demand-response resources to set energy prices when they are needed – this is essential for ensuring that prices signals are efficient during shortages. DR in other RTOs has distorted real-time signals by undermining the shortage pricing.*

For more information, please see:

http://www.nyiso.com/public/webdocs/documents/market_advisor_reports/2009/2009_NYISO_SOM_Final_4-30-2010.pdf

NYISO Market Volumes Transacted in 2009

For context, the table below represents the split of the $6.17 billion billed by the NYISO in 2009 into the primary types of charges its market participants incurred for their transactions:

(dollars in millions)	2009 Dollars Billed	Percentage of 2009 Dollars Billed
Energy Markets	$ 3,056	49%
Installed Capacity	1,335	21%
Transmission Congestion	668	11%
Transmission Losses	341	6%
TCC - Billed Fiscal Year	249	4%
Market-wide charges	182	3%
Administrative Costs	134	2%
Transmission Service	102	2%
Ancillary Services	100	2%
Other *	3	0%
Total	**$ 6,170**	**100%**

* The "Other" category are contractual costs associated with operating two facilities and is based on agreements that predate the formation of the NYISO.

The 2009 data presented above reflect the impacts of the economic recession, which reduced electric load and decreased market volumes. In New York State, electricity usage dropped from an average load of 452 gigawatt-hours per day (GWh/day) in 2008 to 435 GWh/day in 2009. The reduced levels of power consumption, combined with sharply lower prices in natural gas, resulted in lower electricity prices. The average cost of electricity in New York was $48.63 per megawatt-hour (MWh), down nearly 50% from the 2008 average of $95.31 per MWh. It was the

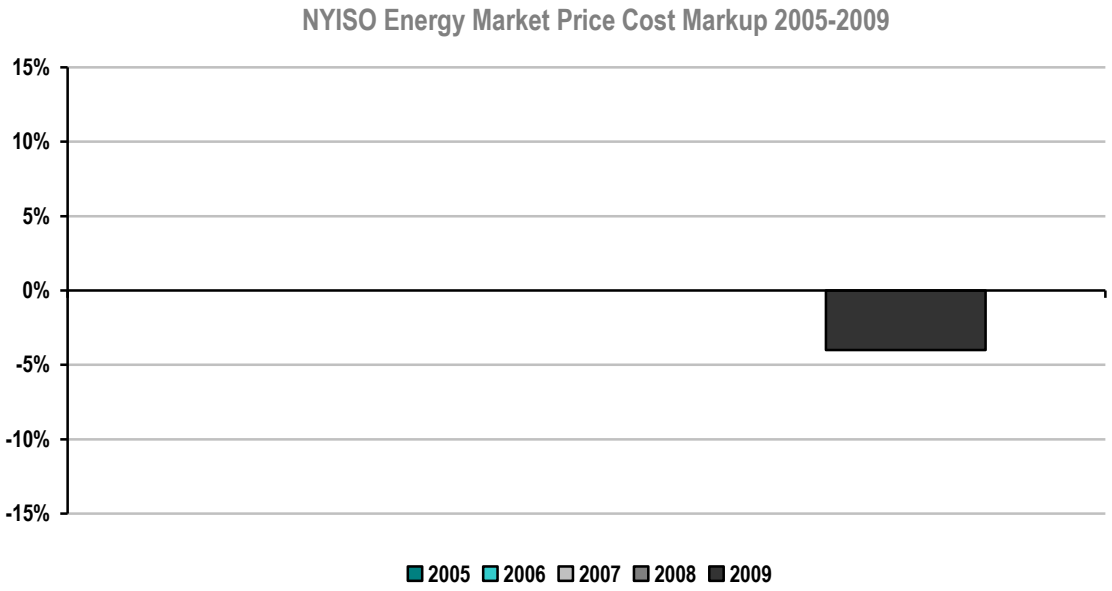
lowest in the NYISO's ten-year history, dropping below the $49.90 per MWh set in 2002. Reduced load and lower prices combined to produce a lower than average billing total.

Demand response programs, cultivated in the competitive market environment, have grown significantly in the New York wholesale electricity markets.

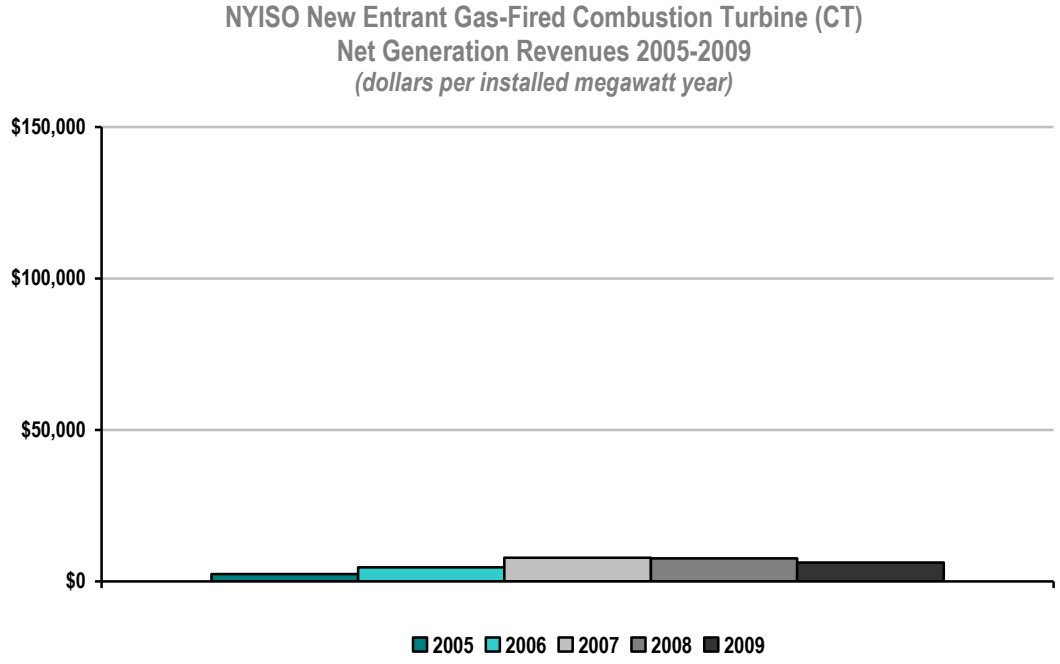
From 2005 to 2009, NYISO Day Ahead Demand Response program provided energy **savings averaging $8.9 Million** annually, for a total of **$44 Million**. (Data on the Location Based Marginal Price impact of demand response resources participating in the NYISO's Day-Ahead Demand Response Program can be found in the NYISO's annual compliance file to the FERC, Docket No. ER01-3001.)

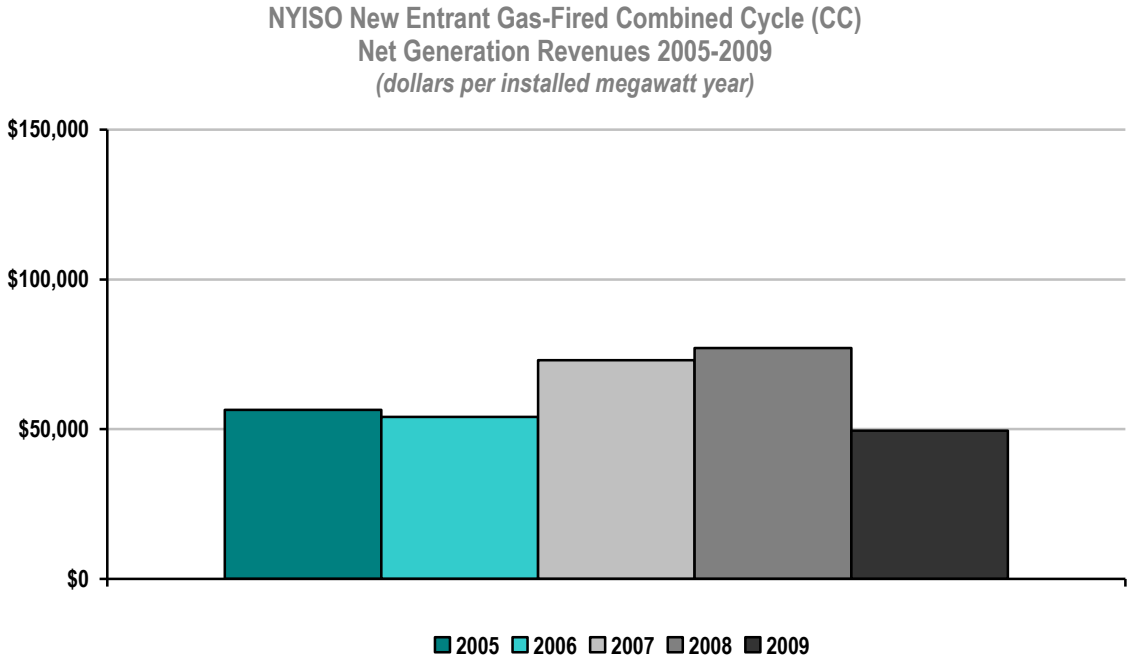
The NYISO Demand Side Ancillary Services Program (DSASP), introduced in June 2008, provides demand resources that meet telemetry and other qualification requirements an opportunity to bid their load curtailment capability into the Day-Ahead and Real-Time markets to provide Operating Reserves and Regulation Service. As of December 31, 2009, there are no resources qualified in the DSASP to include for the metric, Demand Response as a Percentage of Synchronized Reserve Market**.**

Market Competitiveness

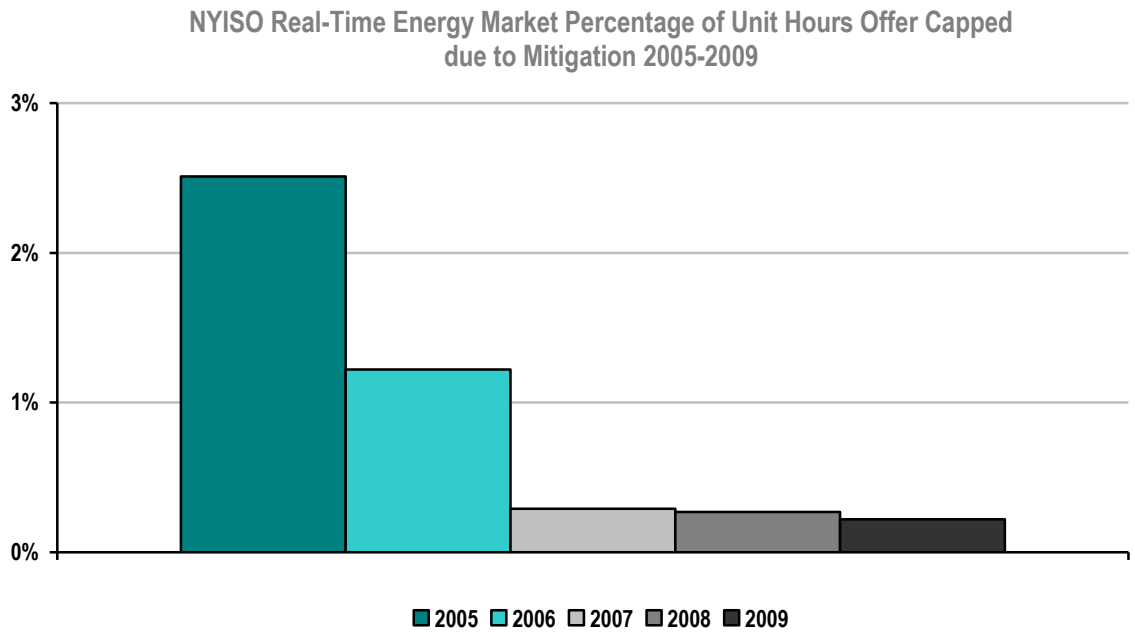


The Energy Market Price Cost Markup is useful in evaluating the competitive performance of the market. A competitive market should produce a small mark-up because suppliers should have incentives to offer at close to their marginal cost. The NYISO's Market Monitor estimates the average annual markup was -4 percent in 2009. Many factors can cause reference levels to vary slightly from suppliers' true marginal costs, so it is not expected to see a markup exactly equal to zero. Relatively low markups (-5 to 5 percent) indicate that the markets have performed competitively. The NYISO does not have data on the Price Cost Markup prior to 2009.





The above charts report the calculated net revenues for a unit located in New York's Capital Zone. However, over this time period, there is great variation throughout the state with New York City having the highest Net Generation Revenues (ranging from an average of $12,673 for a CT and $125,614 for a CC), and the West Zone having the lowest Net Generation Revenues (an average of $5,402 for a CT and $25,668 for a CC). (Note that CT revenue estimates use a 100MW unit downstate and a 165MW unit upstate). Over the 2006-2008 period, net revenue levels rose moderately in the Capital zones due to increased congestion across the Central East interface and increase in capacity prices due to increased exports to ISO-NE with the introduction of their new capacity market in 2006. In 2009, the net revenues decreased driven in part by lower loads due to the combined effects of the economic contraction and a cool summer.



The New York markets include market power mitigation measures that are intended to mitigate abuses of market power while minimizing interference with the market when the market is workably competitive. In certain constrained areas, most of which are in New York City, some suppliers have local market power because their resources are needed to manage congestion or satisfy local reliability requirements. In these cases, however, the market power mitigation measures effectively limit their ability to exercise market power or impact prices. (See the NYISO Market Monitor's *2009 State of the Market Report* for more information: http://www.nyiso.com/public/webdocs/documents/market_advisor_reports/2009/NYISO_2009_SOM_Final.pdf)

The Automated Mitigation Program (AMP) mitigation measure applies to the Day-Ahead and Real-Time energy, startup, and minimum generation in New York City zone. The preceding chart shows the Real-Time market mitigation. In most years, there was more mitigation in the Day-Ahead market than in real time. The decline in mitigation over time reflects a decline in congestion in New York City due to system changes such as, new units in New York City, and new transmission capacity from New Jersey to Long Island due to system changes such as new units in New York City, and new transmission capacity from New Jersey to Long Island.

Market Pricing

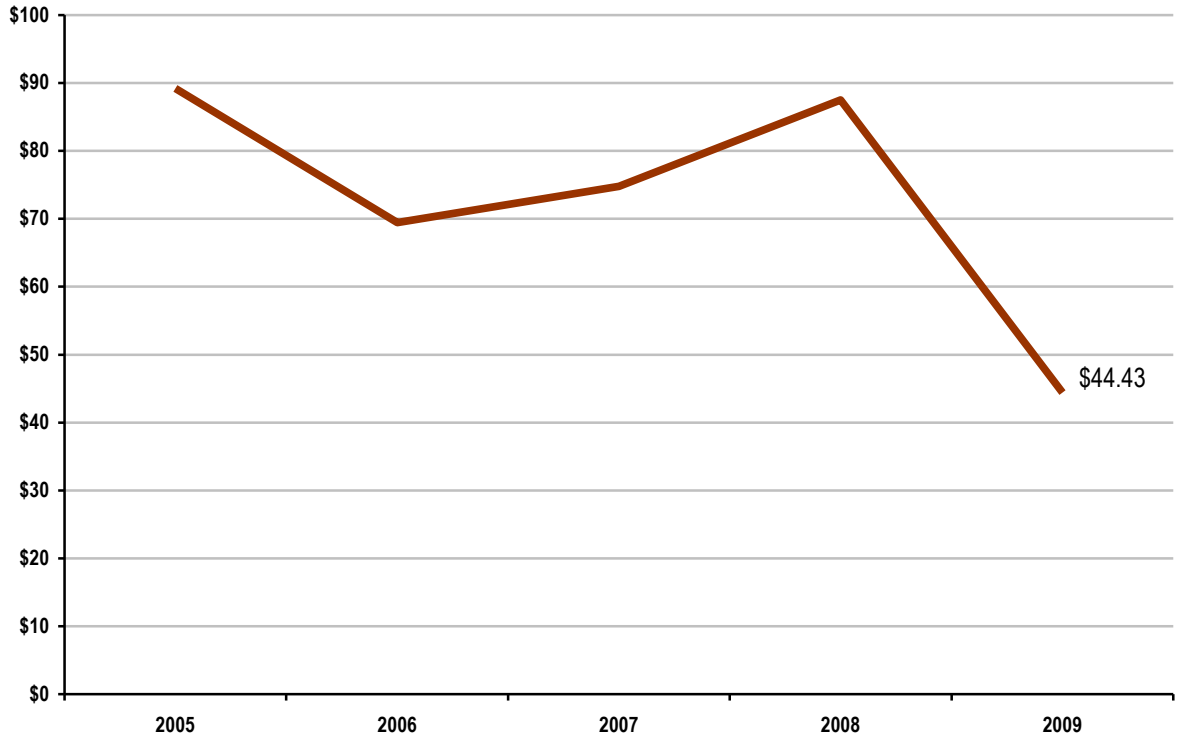
Similarly to the other ISOs/RTOs, the annual variability in the load-weighted wholesale energy prices is accounted for by the variability of natural gas and this can be seen throughout the next five charts. Adjusted for the variation in natural gas prices, the annual average real time wholesale energy prices have remained essentially flat over the past five years. This same variability can be seen in the breakdown of annual wholesale power costs. Since energy comprises the largest component of wholesale power costs, the effect of fuel variability can be seen in the wholesale cost decrease from 2008 to 2009. The final chart isolates the unconstrained energy portion of the system marginal cost also shows the same effects of fuel price volatility, unadjusted for fuel price volatility.

The New York Independent System Operator, Inc. ("NYISO") offers two demand response programs that support reliability: the Emergency Demand Response Program ("EDRP") and the Installed Capacity-Special Case Resource Program ("ICAP/SCR"). In addition, demand response resources may participate in the NYISO's energy market through the Day-Ahead Demand Response Program ("DADRP"), or the Ancillary Services market through the Demand-Side Ancillary Services Program ("DSASP").

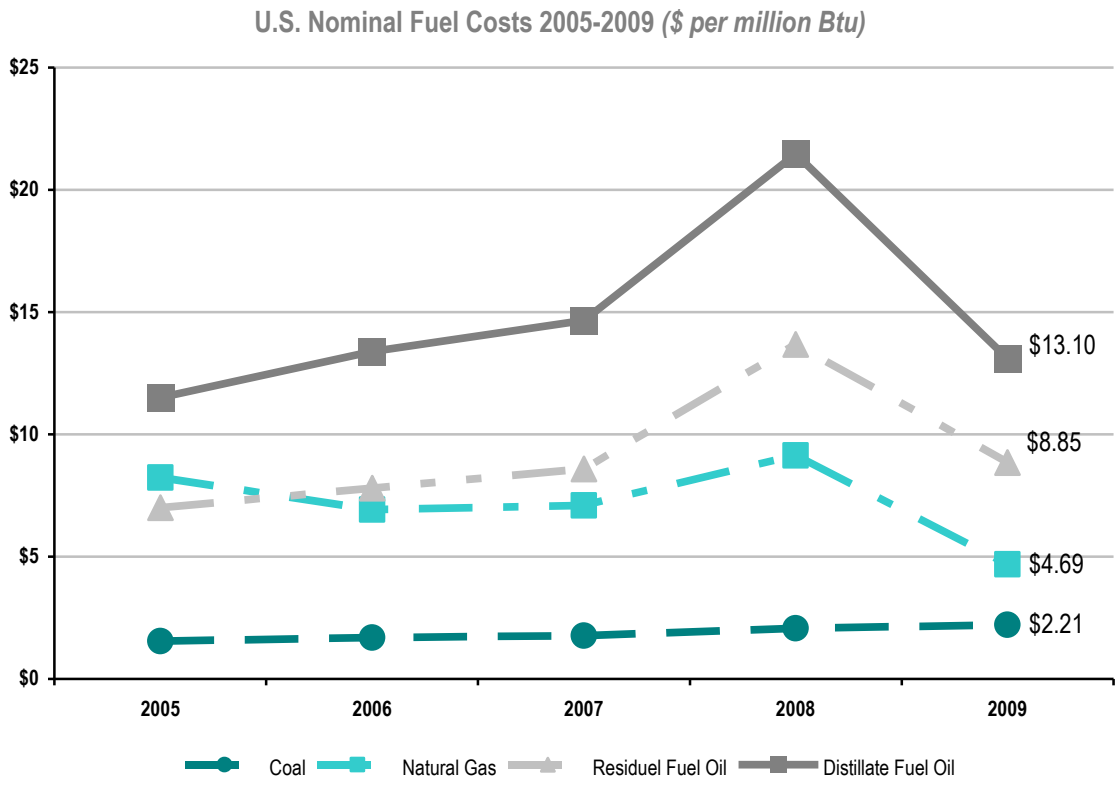
EDRP provides demand resources with the opportunity to earn the greater of $500/MWh or the prevailing locational-based marginal price ("LBMP") for energy consumption curtailments provided when the NYISO calls on the resource. There are no consequences for enrolled EDRP resources that fail to curtail. Resources participate in EDRP through Curtailment Service Providers ("CSPs"), which serve as the interface between the NYISO and resources.

The NYISO provides an annual informational report (Docket ER01-3001 and ER03-647) about Demand Response resources. The last report found that the overall average hourly wholesale LBMP reduction from scheduled DADRP load reductions was $0.27/MWh, On a monthly basis, the average hourly price reduction was most significant in the months of January 2009 ($0.93/MWh), November 2008 ($0.70/MWh) and September 2008 ($0.64/MWh). There were no price impacts for the summer months of May through August 2009, due to minimal load reduction offers and even fewer scheduled reductions.

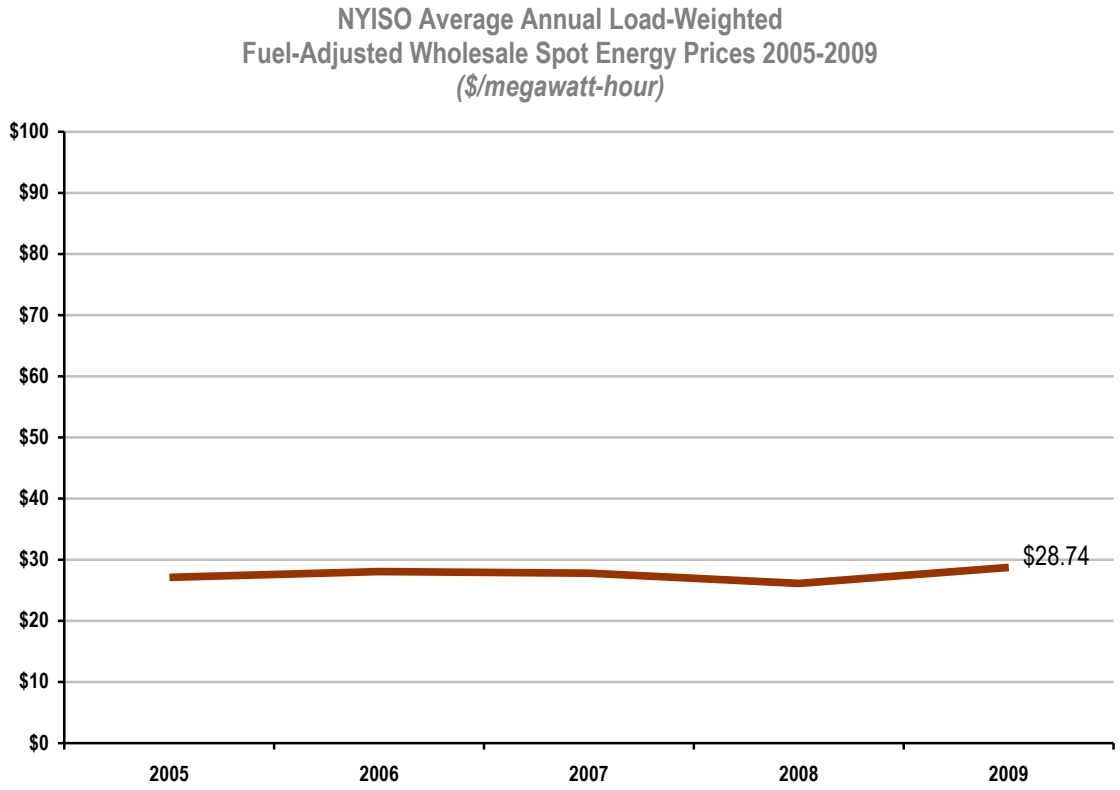
NYISO Average Annual Real Time Load-Weighted Wholesale Energy Prices 2005-2009
($/megawatt-hour)



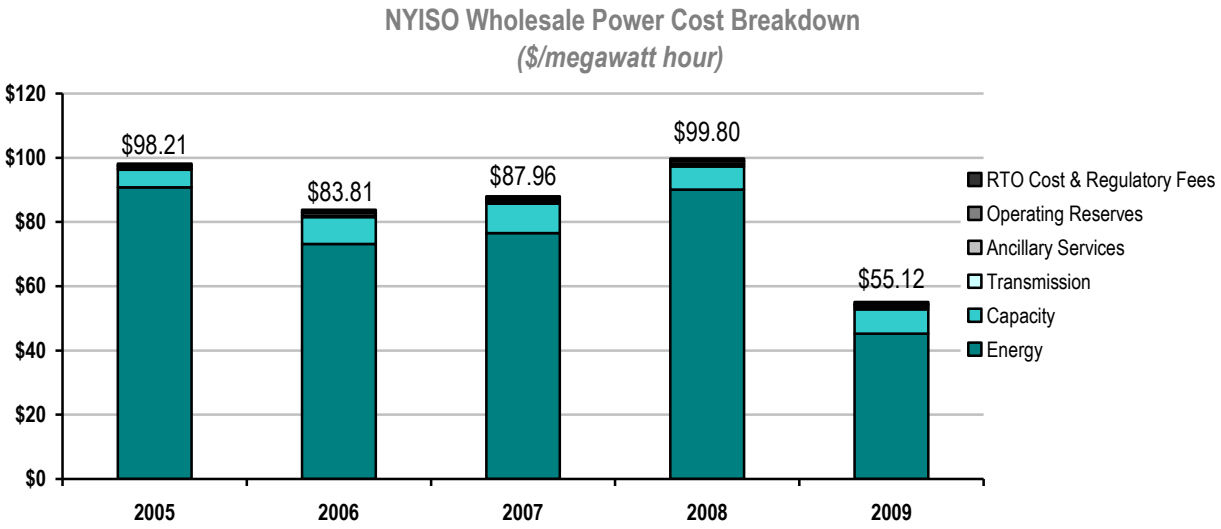
In 2009, real-time prices in 99.7% of total hours were accurately set based on the NYISO's tariffs, with price corrections required in only 27 out of 8,760 hours. NYISO's focus on price certainty has resulted in significant improvements since 2005. The primary driver for the improvements made and the high level of price accuracy achieved is due to the integration of Intelligent Source Selection ("ISS"). ISS allows for improved data integrity by identifying and removing metering errors that otherwise would have impacted the real-time markets. The percentage of hours in which there were no corrections in the real-time energy or ancillary services prices at any active nodal or zonal price location in the NYISO administered markets are as follows: 2005: 83.8%, 2006: 96.9%, 2007: 99.0%, 2008: 99.3%, and 2009: 99.7%.



Source: U.S. Energy Information Administration, Independent Statistics and Analysis

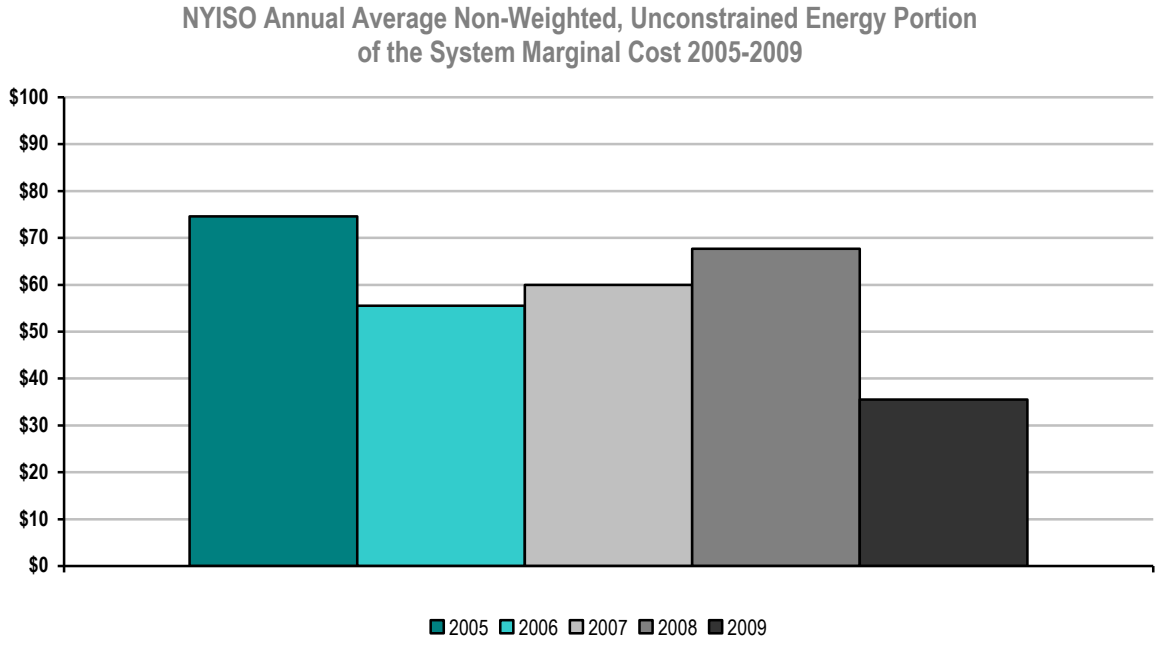


NYISO's base day for fuel-cost references is January 1, 2000.



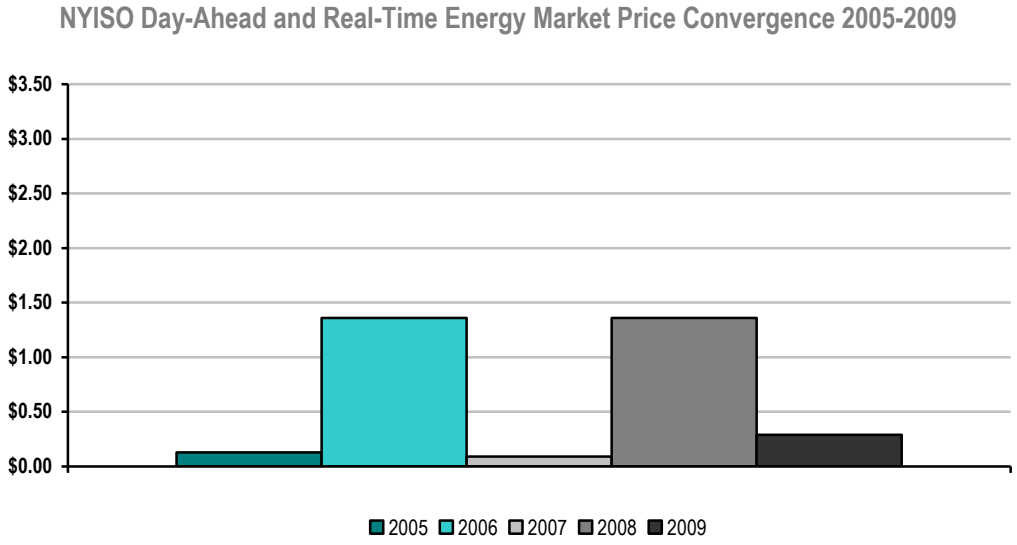
The "Transmission" charge in the above figure represents the NYPA Transmission Adjustment Charge ("NTAC"), which is a surcharge on all Energy Transactions assessed to all statewide load as well as Wheel Through and Export transactions. The NTAC recovers any residual NYPA transmission revenue requirements and is billed and collected by the NYISO. Additional transmission charges, not included in the above figure, are billed and collected by each transmission owner from both wholesale and retail customers.

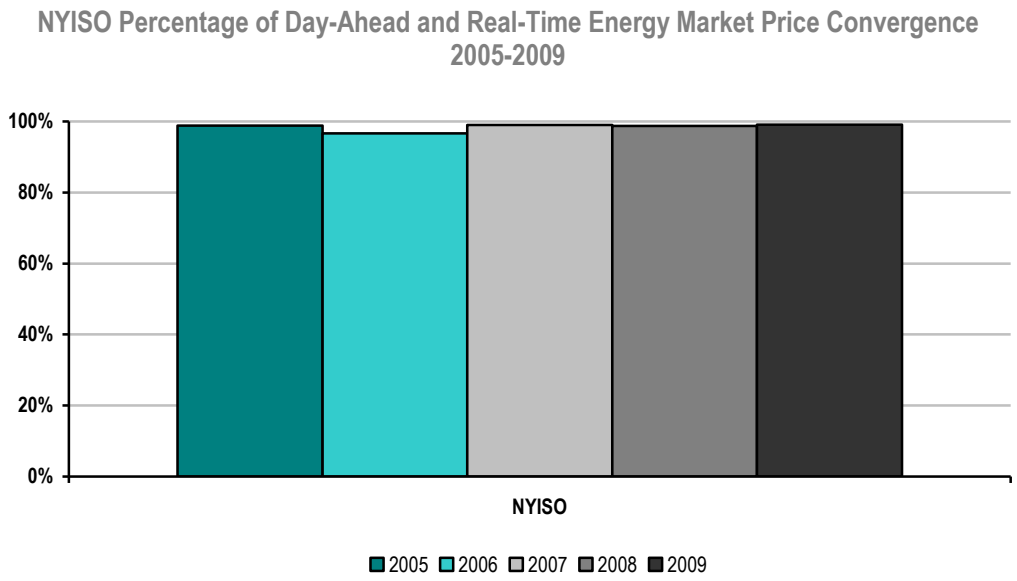
Unconstrained Energy Portion of System Marginal Cost



Similar to the other ISOs/RTOs, the annual variability in the load-weighted wholesale energy prices is accounted for by the variability of natural gas. Adjusted for the variation in natural gas prices, the annual average wholesale energy prices have remained essentially flat over the past five years. This same variability can be seen in the breakdown of annual wholesale power costs. Since energy comprises the largest component of wholesale power costs, the effect of fuel variability can be seen in the wholesale cost decrease from 2008 to 2009.

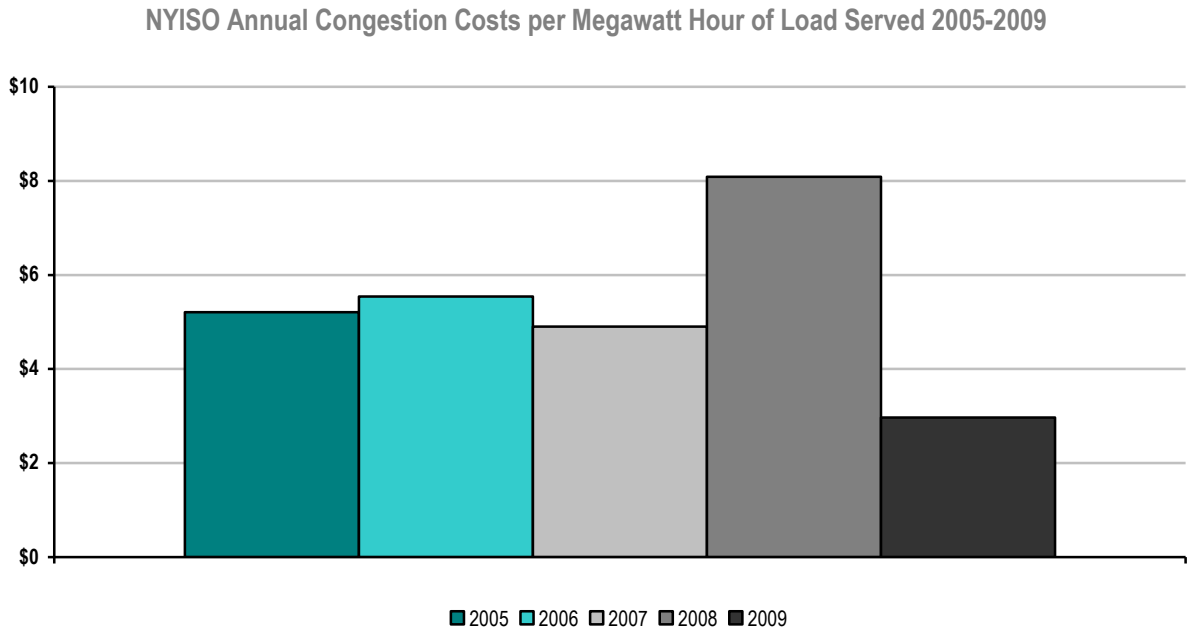
Energy Market Price Convergence

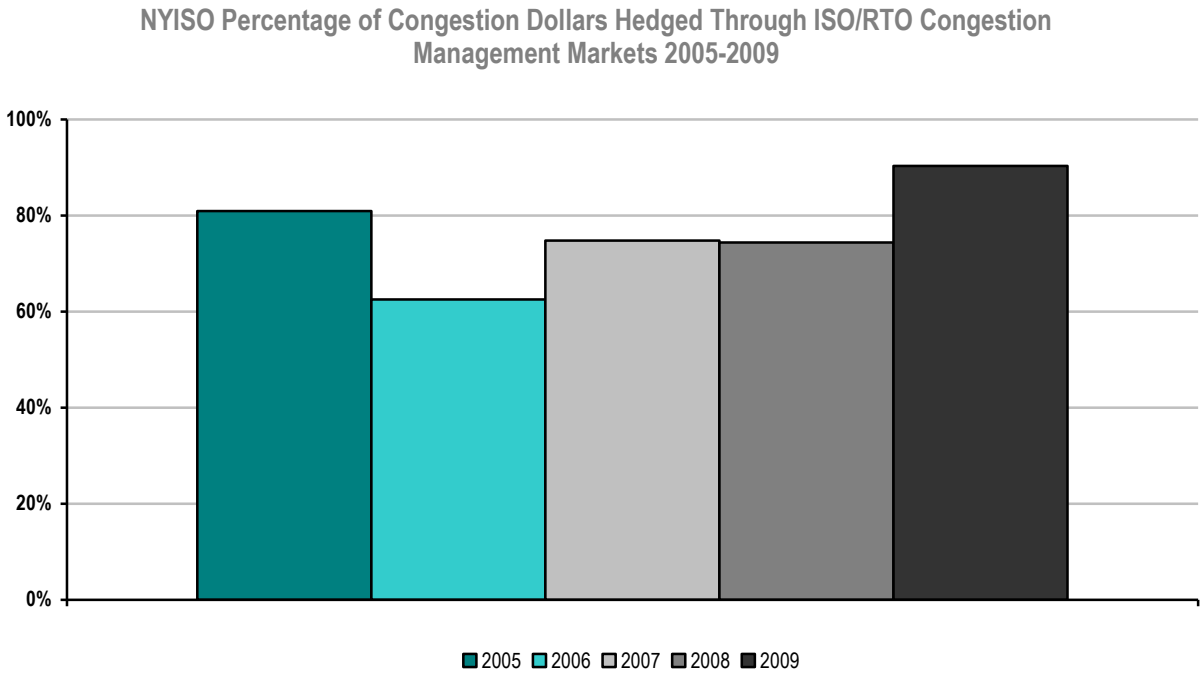




Convergence between day-ahead and real-time has varied between 96 to 99 percent while convergence measured in dollars has been more variable. This annual variation is driven by both real-time events and the cost of natural gas. The apparent discrepancy between the two charts in 2006 comes from Real Time price outliers in May/June/July 2006. The different impact on the percentage convergence of the same dollar difference in 2006 and 2008 is because 2008 natural gas prices were much greater than they were in 2006 (see the chart of "U.S. Nominal Fuel Costs 2005-2009"). The methodology used for this metric is the annual average of the hourly index where the index is load weighted RTD over load weighted DAM price. However, it was decided that the RTD price would be used as the denominator and once those values are calculated, the metric will be updated.

Congestion Management



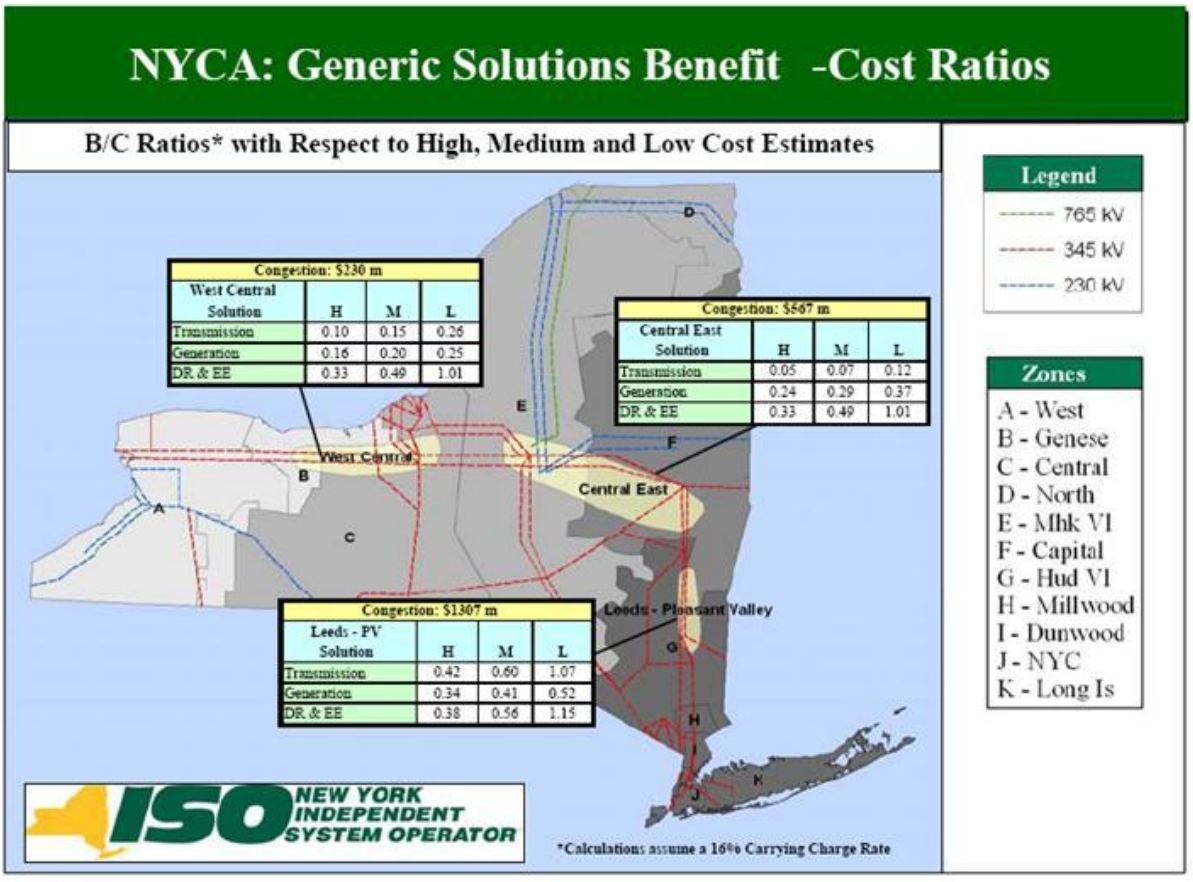


The annual congestion costs per MWh of load served vary with fuel costs. The increase in the annual congestion costs in 2008 is partially accounted for by the increase cost of fossil fuel that year. The percent of congestion dollars hedged through the NYISO markets has varied over time. Congestion hedges are generally used when loads,

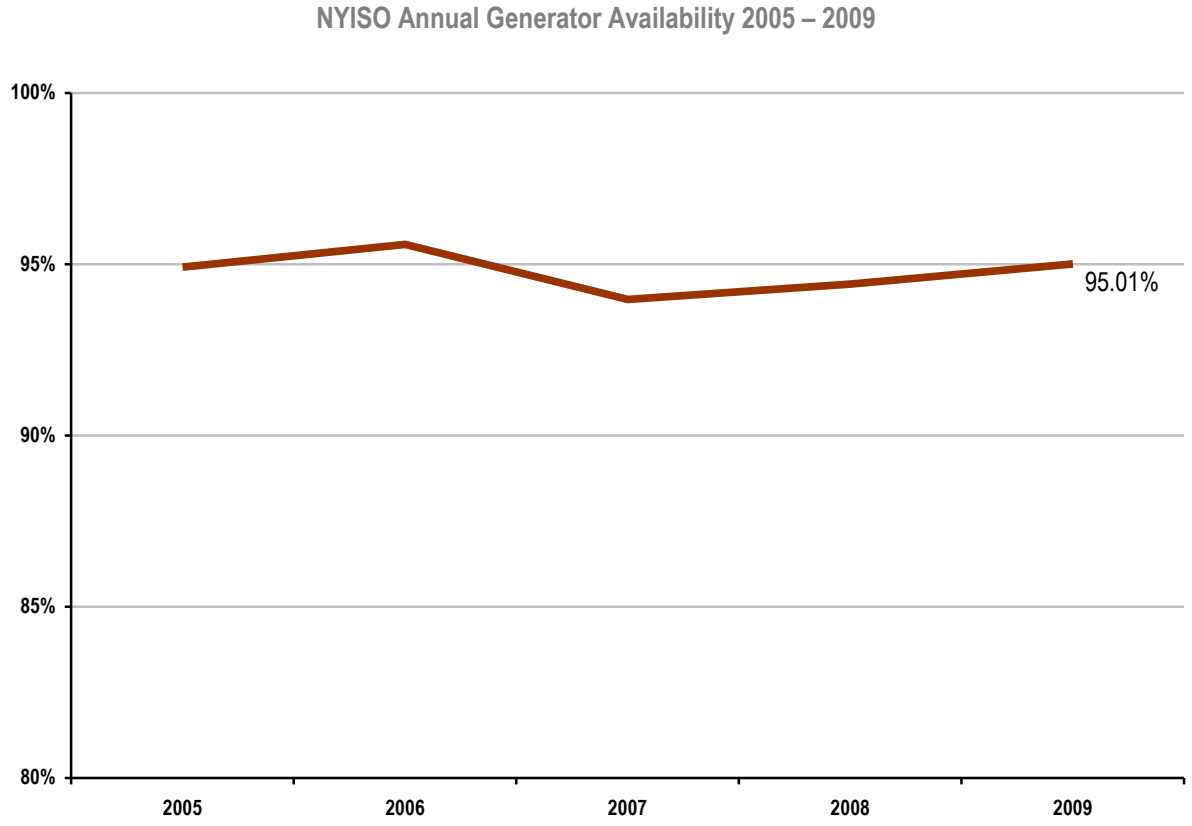
located in high congestion areas, are using generation located in less congested parts of the state to meet their loads. New York City and Long Island both have reliability based local generation installed capacity requirements (80% and 104.5% in New York City and Long Island respectively for the capability year starting in May 2010) and so may have less of a need for a congestion hedge. In addition, there is also an active market in over-the-counter contracts-for-differences, which provide a different instrument to hedge congestion.

The NYISO Congestion Assessment and Resource Integration Study (CARIS) issued January 12, 2010 provided an analysis of the types of projects (e.g. transmission, generation, or demand response) and costs of relieving constraints. The full report is available at the following link:
http://www.nyiso.com/public/markets_operations/services/planning/planning_studies/index.jsp

For each of the three most congested interfaces in New York, the report showed the costs and benefits of relieving congestion using high, medium, and low cost estimates for each type of project. Based on the generic project sizes and costs, a benefit/cost ratio was calculated and reported. The graphic below presents the benefit costs ratio for the three types of solutions studied for the three most congested interfaces in New York.



Resources



The decline in generator availability in 2007 can be attributed to a number of factors including two large units having long outages and a number of gas turbines undergoing maintenance. In subsequent years, the addition of generation in New York City combined with lower loads led to less use of gas turbines in 2008 and 2009 improved overall generator availability.

It is noteworthy that, with the creation of the NYISO's competitive wholesale electricity markets, the availability of generating units in New York increased as power projects reduced the length of planned and unplanned outages.

Average plant availability increased from 87.5 percent (1992–1999) to 94.27 percent (2001–2007), equivalent to adding 2,400 MW of available capacity to the system. The net effect of improved unit availability provided an equivalent of 2,400 MW of capacity in New York State. The **savings from improved unit availability is estimated at $ 300 million** annually. (This estimate is based on roughly 50% of generating capacity sold in the NYISO capacity market with the remainder in bilateral markets and assumes that the 2,400 MW would have been purchased at a price set by the demand curve.)

The NYISO has taken several steps to minimize the market inefficiencies and associated costs caused by out-of-merit dispatch.

Since 2005, the Day-Ahead and Real-Time markets have jointly optimized energy, operating reserves and regulation to efficiently select the most economic resources to meet reliability needs. In real-time, the dispatch is optimized for multiple periods that span an hour, setting resource schedules to meet current and anticipated system conditions. In addition, an optimized real-time commitment starts gas turbines and allows these resources to set energy prices when they are economic, providing more accurate energy prices that minimize the need for out-of-merit actions. External transactions are also scheduled economically, allowing the real-time scheduling systems to select the most efficient set of resources to meet real-time conditions.

More recently, in order to improve the efficiency of reliability commitments and minimize uplift charges, the NYISO made two significant enhancements to the day-ahead market in February of 2009 as follows:

- Transmission owners may commit units for a reliability need prior to the economic commitment of SCUC, allowing the commitment in the day-ahead market to better reflect the anticipated real-time commitment needs.
- Local reliability rule requirements for New York City are included in the economic commitment of SCUC to minimize the need for supplemental commitments.

The independent Market Monitor for the NYISO has found that these enhancements have led to a more efficient commitment overall, resulting in less uplift charges.

Since Fall 2008, a cross-functional group at the NYISO has been reviewing market outcomes on a daily basis to identify root-cause sources of uplift and other marketplace costs. As part of the root-cause analysis, a review of the prior day's operational actions, as well as the expected intent of the market settlement rules, is considered in order to maintain or improve the efficiency of market outcomes. In addition, enhanced reporting to stakeholders of daily and monthly trends in marketplace costs was implemented.

Actual Response Levels of Committed Demand Response from 2005 – 2009

Over the past decade, a new category of power resource - demand response programs - was developed to offer an alternative to traditional generation supplies. Demand response can serve as an important resource to meet system loads during extreme summer weather conditions. It is common for New York State's summer peak demand to spike nearly 40 percent above the average level of electricity use.

New York's demand response resources have grown more than ten-fold since the programs began in the early years of New York's wholesale marketplace for electricity. Their value was most notably demonstrated when New York State experienced its all-time record peak demand of 33,939 MW on August 2, 2006 when demand response programs provided an average of 865 MW of relief per hour for the six hours in which the program was activated.

During the period of 2005 through 2009, the NYISO deployed demand response resources for one event in 2005 and five events in 2006. On July 27, 2005, the NYISO deployed demand resources for four consecutive hours. Average hourly response for the July 27, 2005 was 345 MWh per hour. In 2006, demand resources were deployed on July 18, July 19, August 1, August 2, and August 3. Average hourly response of 485 MW was achieved for nine hours on July

18 and 327 MW for seven hours on July 19. In August, average hourly response of 314 MW was achieved for five hours on August 1, 865 MW for six hours on August 2, and 398 MW for five hours on August 3.

There were no NYISO deployments of demand response in 2007, 2008, or 2009.

Details on hours and zones included in each deployment are reported in the semi-annual demand response reports submitted by NYISO.

NYISO Demand Response Future Enhancements:

The NYISO, in collaboration with its stakeholders, is continuing to evolve and enhance the administration of its demand response programs and address regulatory directives to facilitate market participation.

The Demand Response Information System (DRIS) continues to be developed by NYISO to automate program processing and enhance event performance, management, and settlement.

Telemetry requirements for the NYISO's Demand Side Ancillary Services Program (DSASP) were the subject of a May 2010 workshop on improving communications between Transmission Owners and demand response resources. The workshop's proceedings will help to guide the development of standardized processes that could help to facilitate participation by demand response resources in the NYISO's Ancillary Services markets.

As direct communication for DSASP enhances the potential for aggregations of small demand resources to participate in NYISO's ancillary services markets, changes in market rules are also among the needs to be addressed by stakeholders.

The NYISO will continue with its proposed plan of action for accommodating demand response resource participation in the real-time energy market outlined in its February 2010 FERC Compliance Filing. The NYISO expects to incorporate any decisions from the FERC regarding compensation of demand response in energy markets as it develops its preliminary market design.

At the state level, the NYISO is participating in proceeding of the New York State Public Service Commission (PSC) on advanced metering infrastructure. Detailed information is available from the NYISO filings on:

- Advanced metering (http://www.nyiso.com/public/webdocs/documents/regulatory/nypsc_filings/2009/NYISO_Comments_Staff_BC_Framework_6_15_09.pdf)
- Dynamic pricing (http://www.nyiso.com/public/webdocs/newsroom/white_papers/Dynamic_Pricing_NYISO_White_Paper_102709.pdf)
- Smart grid (http://www.nyiso.com/public/webdocs/newsroom/white_papers/Envisioning_A_Smarter_Grid_NYISO_White_Paper_091710.pdf).

Fuel Diversity

Competitive markets have resulted in a more efficient, environmentally sound bulk electric power system for New York. The NYISO's ability to optimize all system resources, the addition of cleaner, more efficient power plants, aggressive energy efficiency programs, the development of renewable energy, and improved demand-side management have combined to "green the grid."

Since 2000, power plants with generating capacity totaling 2,069 MW have retired. Of that total, 2,060 MW were powered by fossil fuels, including 987 MW of coal-fired generation. The new power plants built since the inception of electricity markets in New York run primarily on cleaner-burning natural gas, which is helping to reduce emissions that contribute to global climate change. In addition, New York has seen an increase in output from nuclear plants, which are virtually emission-free. The production of cleaner power is an important component in the state's efforts to meet newly enacted environmental standards.

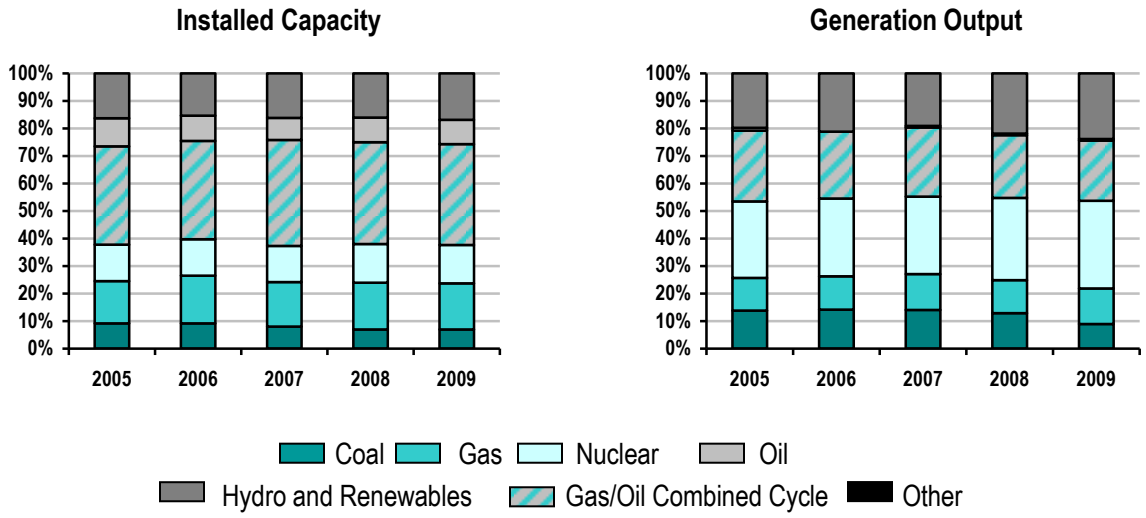
Based on data from the United States Environmental Protection Agency, the rate of power plant emissions of Sulfur Dioxide (SO2), Nitrogen Oxides (NOx), and Carbon Dioxide (CO2) sharply declined between 1999 and 2009 in New York State. The SO2 rates have seen the most dramatic decline by dropping 82% over the ten-year period, CO2 rates dropped by 31%, while NOx rates dropped by 62%. The emission rates of New York State's electricity generation rank among the lowest in the continental United States. New York's CO2 emissions rate ranks 9th, its NOx emission rate ranks 13th, and its SO2 emission rate ranks 12th lowest.

Open access to the state's electricity grid has also increased the number of existing and planned projects powered by renewable resources, which are more protective of the environment than are traditional fossil-fueled plants. Commercial power production from renewable resources, predominantly hydroelectric power projects, currently totals more than 5,600 MW of electricity. Nearly two dozen private sector energy service companies now offer customers the option to purchase green power. More than 1,200 MW of wind power has been added in recent years and over 7,000 MW of additional wind power projects are proposed for development in the state.

The NYISO has taken steps that, according to FERC, "will benefit, and encourage, wind and other intermittent generators." Those steps include a centralized wind-forecasting initiative, unique market rules for wind projects, and proposals to enhance the dispatch of wind power on New York's bulk electricity grid.

Recent New York State government policies are vigorously pursuing conservation and energy efficiency programs to control the growth in power consumption. These programs contribute to better power management, particularly during extreme weather conditions when electricity use is highest. They also help to lower consumer costs.

NYISO Fuel Diversity 2005-2009



The New York Control Area's electric generation has become increasingly dependent on natural gas and dual-fuel (seen above as "Gas/Oil Combined Cycle") generating units. High efficiency and low emissions make them especially attractive to being located in densely populated areas such as New York City and Long Island. The limited capacity of the natural gas distribution system in New York City has resulted in the adoption of a local reliability rule often requiring the use of oil as the fuel source, despite being less economic and creating higher emissions.

Renewable Resources

Open access to the grid and competitive wholesale electric markets have facilitated the increased development of renewable energy projects. New York has been a leader in the integration of renewables, pioneering key policies and programs that have encouraged a significant growth in renewable sources of energy helping to meet environmental goals, and diversifying the array of fuels used to generate electricity. In 2009, electricity produced by hydropower, wind power, and other renewable resources totaled 22 percent of New York's generation.

In 2008, the NYISO instituted one of the first state-of-the-art wind forecasting systems in the United States. The centralized system enables the NYISO to better utilize and accommodate wind energy by forecasting the availability and timing of wind-powered generation. In 2009, the NYISO became the first grid operator to dispatch wind power fully balancing the reliability requirements of the power system with the use of the least costly power available. Including wind power in the economic dispatch allows more efficient management of the resources and minimizes the duration of wind-power curtailments. More than 1,200 MW of wind power was in operation in New York State by the end of 2009, with monthly capacity factors that ranged from a low of 10.2% in June 2009 to a high of 35.7% in February 2009. Some 7,000 MW of additional wind power have been proposed for interconnection with the New York electric grid. Generating facilities using renewable resources, such as wind, tend to be sited in locations distant from population centers. As a consequence, transmission upgrades or expansion may be required to effectively supply the power demands of New York State with this renewable power. A 2004 study of wind power in New York State determined that New York could reliably manage 3,300 MW of interconnected wind generation. In the intervening years, it became apparent that more than 3,300 MW of wind might be interconnecting to New York bulk electricity system in the near future and the impacts of this increased amount of wind generation required evaluation. In order to more thoroughly assess the impacts of wind power integration, the NYISO has completed an extensive study of the impact of up to 8,000 MW of wind resource integration on system variability and operations, installed capacity requirements, transmission infrastructure, production costs, and emissions.

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The findings of the NYISO wind study conclude that wind generation can supply clean energy at a very low cost of production. This energy can result in significant savings in overall system production costs, yield reductions in "greenhouse" gases and other emissions, as well as result in an overall reduction in wholesale electricity prices. However, wind plants as variable resources present challenges to power system operation. The wind study finds that NYISO systems and procedures (which include economic dispatch and the other operational practices available to accommodate wind resources) should allow for the integration of as much as 8,000 MW of wind generation without adverse reliability impacts.

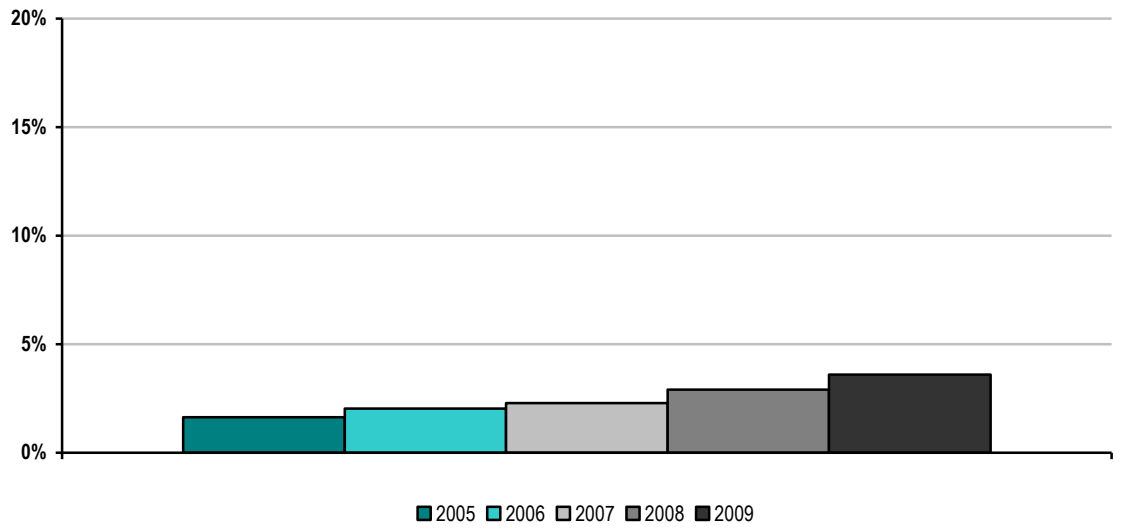
The study determined that almost 9% of the potential upstate wind energy production would be "bottled" or not deliverable because of local transmission limitations. The study identified feasible sets of transmission facility upgrades to eliminate the transmission limitations. These upgrades were evaluated to determine how much of the wind energy that was undeliverable would be deliverable if the transmission limitations were removed. Additional

alternatives were suggested and evaluated to address the significant levels of resource bottling that occurs in the Watertown vicinity. The suggested transmission upgrades and alternatives require detailed physical review and economic evaluation before a final set of recommendations can be determined. The full study is available at: http://www.nyiso.com/public/webdocs/newsroom/press_releases/2010/GROWING_WIND_-_Final_Report_of_the_NYISO_2010_Wind_Generation_Study.pdf.

New York State Renewable Portfolio Standard

The New York State Public Service Commission (PSC), in September 2004, issued its "Order Approving Renewable Portfolio Standard Policy" that calls for an increase in renewable energy used in New York State from the then current level of approximately 19 percent to 25 percent by the year 2013. In December 2009, the NYS PSC increased the RPS goal to 30 percent and extended the target date to 2015. The definition of "renewable" included existing large-scale hydropower, but limited the inclusion of hydroelectric power going forward to new run of river (non-storage) hydroelectric facilities of 30MW or less. The information presented here is consistent with New York's RPS definition.

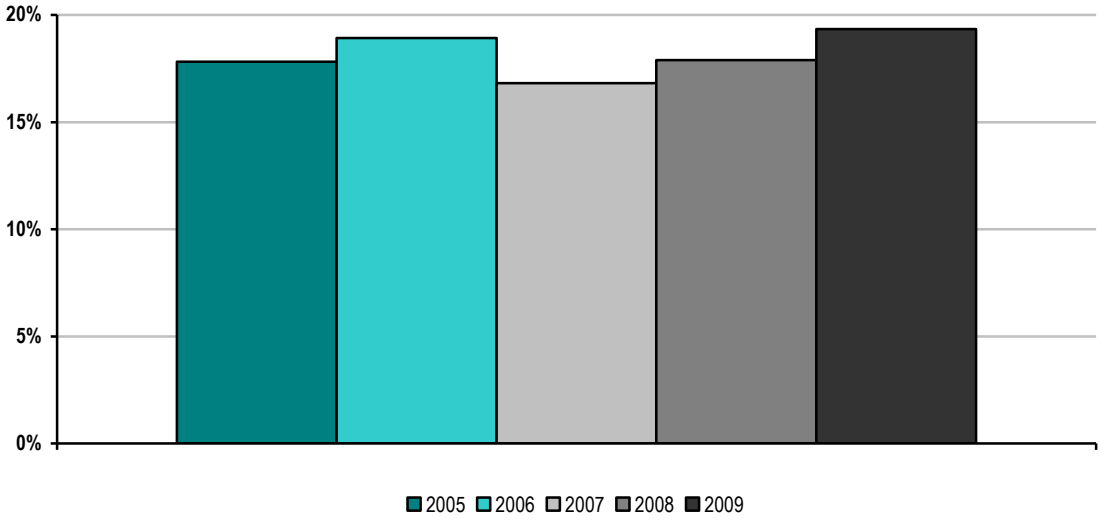
NYISO Non-Hydroelectric Renewable Megawatt Hours as a Percentage of Total Energy 2005-2009



Energy from non-hydroelectric renewables has more than doubled since 2005. This may be attributable to the combined impact of NYISO markets providing economic incentives and public policy encouraging the development of renewable generation in New York State.

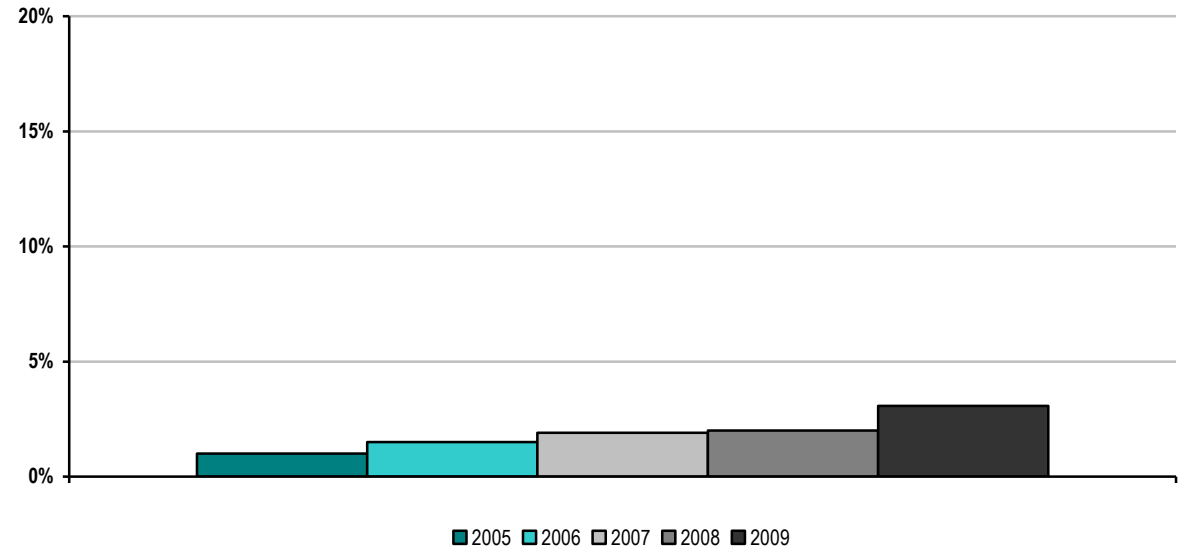
Under the definition of the NYS RPS the calculated Total Energy (all renewable resources, including qualified hydropower) for this report period is: 2005 – 19.63%; 2006 – 21.18%; 2007 – 19.27%; 2008 – 21.98%; and for 2009 – 24.13%.

NYISO Hydroelectric Renewables Megawatt Hours as a Percentage of Total Energy 2005-2009



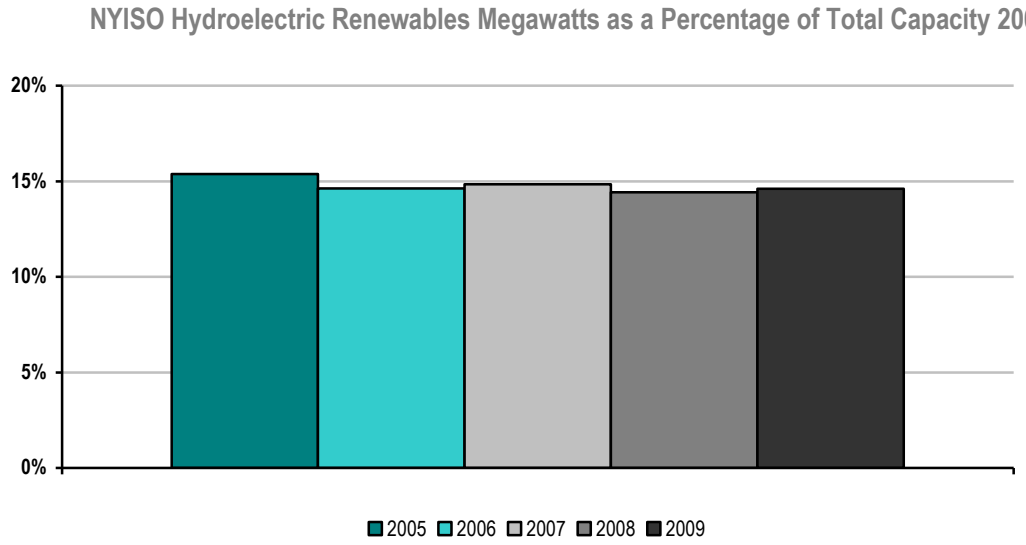
Currently, hydropower is the largest renewable resource (as defined by the NYS Renewable Portfolio Standard) in the state's energy mix.

NYISO Non-Hydroelectric Renewable Megawatts as a Percentage of Total Capacity 2005-2009



Capacity of wind resources rose from 245 MW in 2005 to 770 MW in 2009, an increase of more than 200%.

Under the definition of the NYS RPS the calculated Total Capacity (all renewable resources, including qualified hydropower) for this report period is: 2005 – 16.42%; 2006 – 16.14%; 2007 – 16.72%; 2008 – 16.41%; and for 2009 – 17.70%.

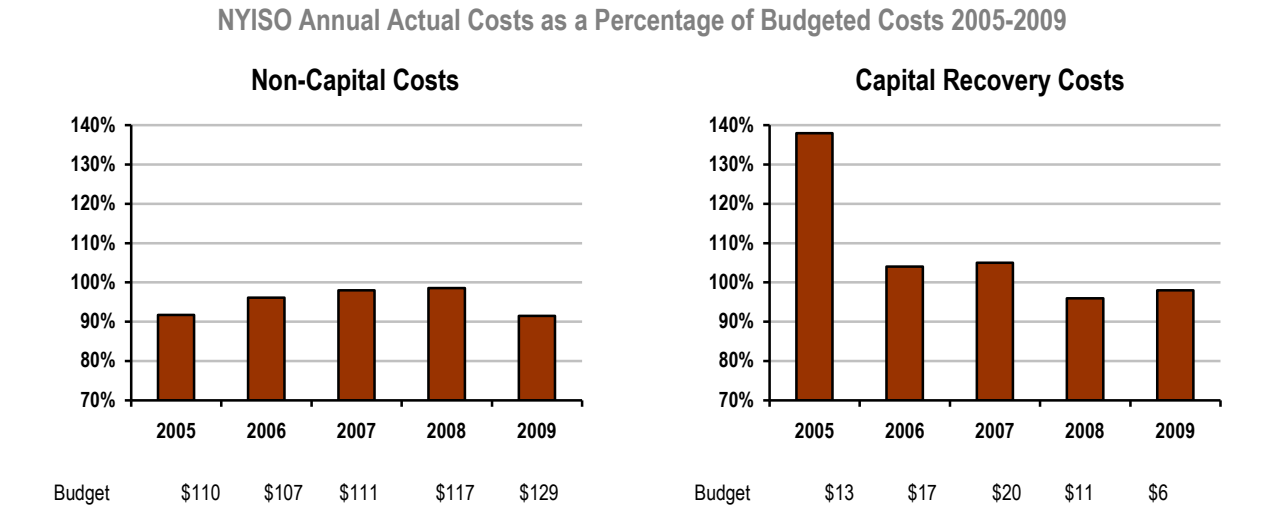


Future NYISO Enhancements:

Moving the electricity produce by wind generation to areas of high consumer demand will require substantial investment in the state's transmission infrastructure. Decisions on location and how to finance new transmission facilities will be crucial to New York State's ability to meet renewable power policy goals. The NYISO is working to support the integration of renewable resources and complementary energy storage with innovative grid operation, market design, planning initiatives and technological advances.

C. NYISO Organizational Effectiveness

Administrative Costs



Bars Represent % of Actual Costs to Approved Budgets; Dollar Amounts Represent Approved Budgets (in millions)

*NYISO's budget includes the annual assessment of fees from the Federal Energy Regulatory Commission (FERC). In contrast, other ISOs and RTOs invoice such FERC fees within their market settlement charges and do not include FERC fees within their approved budgets. In order to ensure comparability of NYISO's budget with other ISOs and RTOs, the charts reflecting "NYISO Annual Actual Costs as a Percentage of Budgeted Costs" and "NYISO Annual Administrative Charges per Megawatt Hour of Load Served" exclude FERC Fees.

The NYISO develops its annual budget through its shared governance process in consultation with the Budget and Priorities Working Group, which is open to participation by all NYISO Market Participants. The Budget and Priorities Working Group is responsible for developing and monitoring NYISO's budgetary spending and providing guidance regarding prioritization and funding of strategic initiatives. Annually, the Budget & Priorities Working Group presents a recommended budget to the NYISO Management Committee, consisting of Market Participant membership from transmission owner, generation owner, other suppliers, end-use consumers, and public power/environmental sectors. The Management Committee votes on whether to recommend the proposed budget to the NYISO Board of Directors for approval. During the period 2005-2009, the NYISO's proposed budgets were consistently supported by the Management Committee and approved by the NYISO Board of Directors.

In addition to the review and recommendations for NYISO's annual budget, the Budget & Priorities Working Group meets approximately 10 times per year to review budget vs. actual results for all NYISO line items and to monitor progress on projects' scope, cost and schedules.

NYISO's budget consists of Capital investments, Operating Expenses (excluding depreciation expense), FERC fees, Debt Service Costs (net of current year debt proceeds), offset by miscellaneous sources of income. NYISO's budget is approved and spending is managed based on the totality of that respective year's budget. In a given year, NYISO

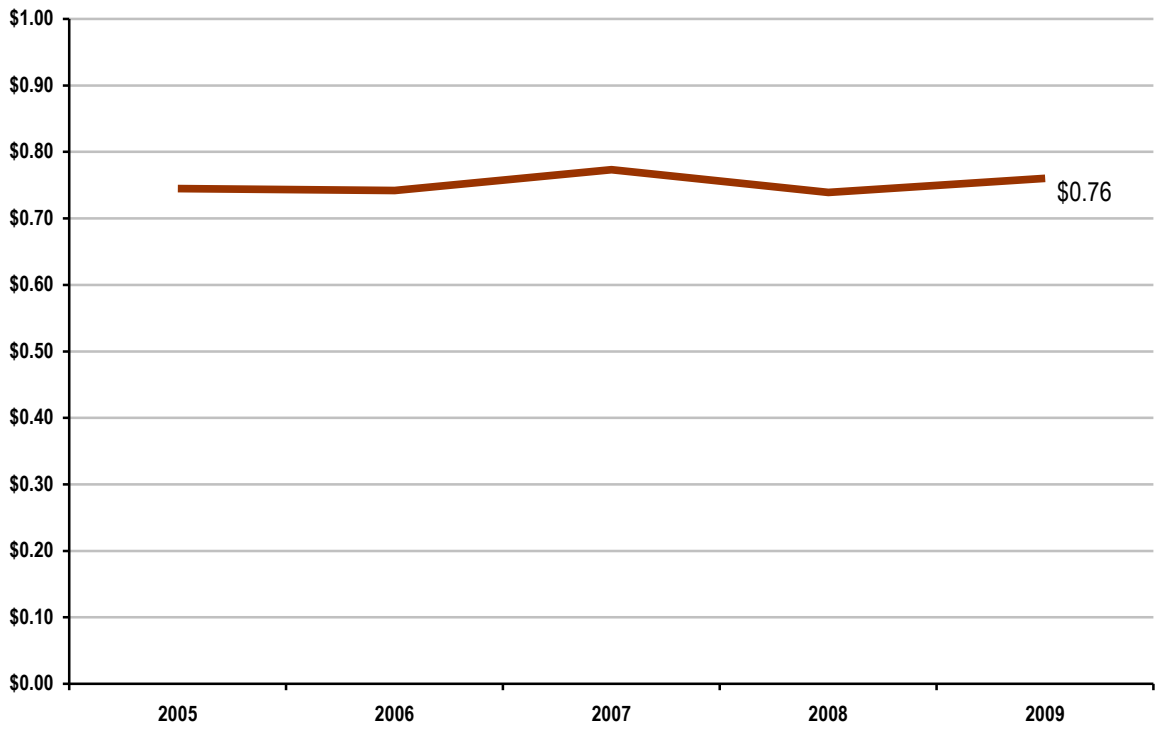
could overspend Capital while underspending Non-Capital (or underspend Capital while overspending Non-Capital), budget total spend is ultimately managed within the total overall NYISO budget. An example of this occurred during 2005 when NYISO's Capital costs exceeded budget due to the timing of actual costs/debt service for a new facility renovation, while Non-Capital costs were significantly below budget. The noncapital costs metric identifies NYISO's administrative and operational budget performance against the planned resource allocations to meet the NYISO's objectives as discussed and vetted during the stakeholder process described above. The main categories of costs included in the noncapital costs metric include salaries & benefits, external professional fees, and computer services (hardware/software maintenance and licenses to support the NYISO operations and markets). Collectively, these largest components of the noncapital costs metric approximate over 80% of the total NYISO annual cash budget.

During 2005 -2009, NYISO's actual spending was less than the approved budget in each respective year with minor variances from budget generally noted (budget underruns of 4% in 2005, 3% in 2006, 1% in 2007, and 2% in 2008).

NYISO's most significant variance from budget occurred during 2009, as New York and the nation endured an historic economic downturn, the NYISO worked to achieve its essential responsibilities with efficiency and financial prudence. NYISO reduced planned spending by $12 million to account for reductions in revenues from declining power demands. NYISO cost-cutting measures included cutting Capital expenditures, renegotiating vendor contracts, and constraining compensation costs.

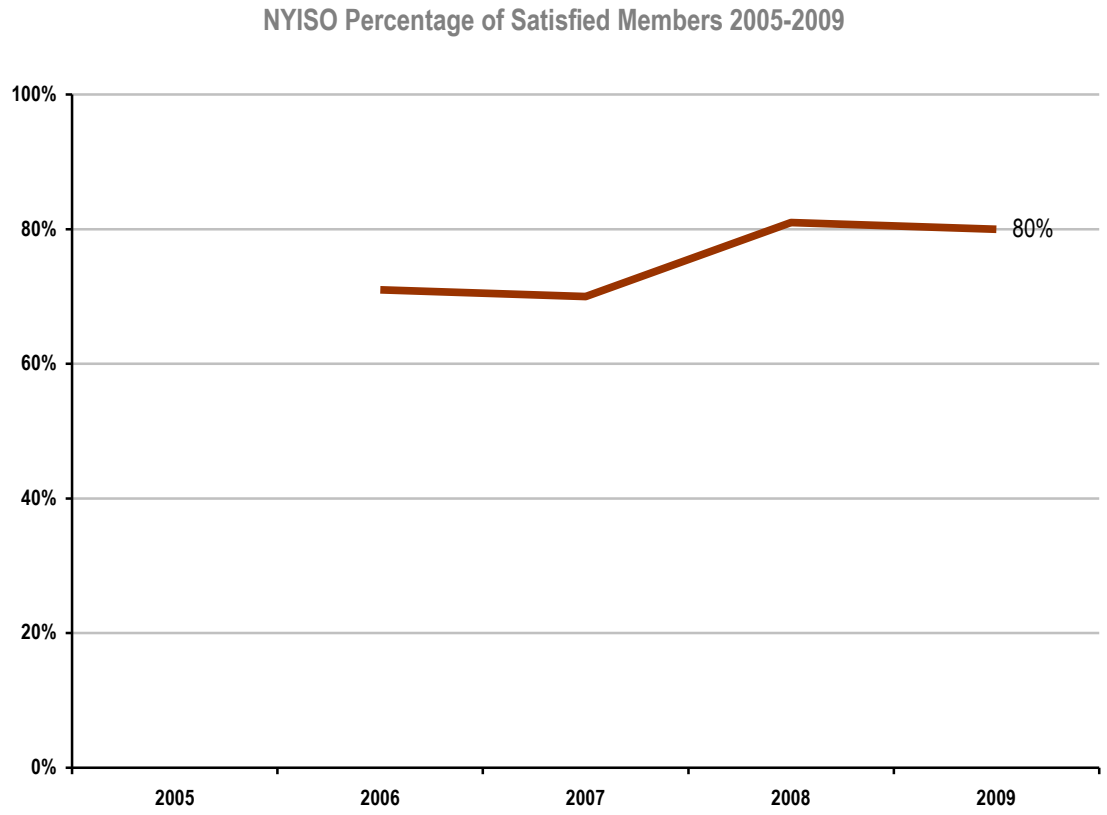
From 2005 to 2009, NYISO's annual administrative charges per megawatt hour increased a total of 2% over this five-year time horizon. In order to minimize rate increases to NYISO market participants and NY consumers, NYISO implemented a virtualization initiative to not only serve the evolution of grid operation and market design, but to also produce efficiencies in the operation of the NYISO. NYISO's data center "virtualization" project, which reduced the number of servers by half, realized savings of $18.7 million through the end of 2009.

NYISO Annual Administrative Charges per Megawatt Hour of Load Served 2005-2009
($/megawatt-hour)



ISO/RTO	2009 Annual Load Served *(in terawatt hours)*
NYISO	163

Customer Satisfaction



The NYISO is committed to transparency in how it carries out its duties, in the information it provides, and in its roles as the impartial administrator of the state's wholesale electricity markets, operator of the high-voltage transmission system, and provider of comprehensive electric system planning. The NYISO actively involves stakeholders, regulators, public officials, consumer representatives, environmentalists, and energy experts who provide vital input from a variety of viewpoints. The NYISO's shared governance process actively builds consensus for changes in market rules and operating procedures. Since the inception of the NYISO, 95% of its tariff revisions have been developed through consensus among NYISO stakeholders. The value of shared governance was noted by the FERC in a January 2008 order that stated: "The Commission commends NYISO & the stakeholders for working together to resolve many issues …"

As part of these efforts, the NYISO conducts an annual survey that solicits stakeholder feedback to further enhance its shared governance process. In response to past surveys, the NYISO has implemented transparency measures including a redesign of its website for greater ease in obtaining market and operational data. Market training resources were expanded, with instructional hours doubled and web-based training options added. The NYISO restructured its Customer Relations department to better serve stakeholders and reduce the time required to resolve customer inquiries. In the first three quarters of 2010, 91% of general inquiries were resolved within 24 hours, which bettered the 89% level achieved in 2009. Overall, the average number of working days required to address all customer inquiries dropped from 5.5 days in 2009 to 3.2 days in the first three quarters of 2010.

NYISO's annual survey of stakeholders measures satisfaction using a seven-point scale. NYISO considers responses within the top three categories of this scale to be "satisfied" stakeholders. As such, stakeholders who provide a neutral response are not considered "satisfied". The data shown above under Percentage of Satisfied Members reflects only those responses in the top three categories of satisfaction. For comparative purposes, the trends of NYISO's Percentage of Satisfied Members, shown with and without incorporating "neutral" responses is as follows:

	% of Satisfied Members Including Neutral Responses (as shown above)	% of Satisfied Members Excluding Neutral Responses
2006	87%	71%
2007	87%	70%
2008	92%	81%
2009	91%	80%

Billing Controls

ISO/RTO	2005	2006	2007	2008	2009
NYISO	Unqualified SAS 70 Type 2 Audit Opinion	Unqualified SAS 70 Type 2 Audit Opinion	Unqualified SAS 70 Type 2 Audit Opinion	Unqualified SAS 70 Type 2 Audit Opinion	Unqualified SAS 70 Type 2 Audit Opinion

In 2009, the NYISO received an unqualified SAS (Statement on Auditing Standards) 70 Type II audit opinion for the eighth consecutive year. The SAS 70 Type II audit, conducted by an external audit firm, scrutinizes the controls related to the NYISO's processes and systems for bidding, accounting, billing, and settlements of energy, regulation, capacity, transmission, reserves, and related market transactions. The external audit firm reviews the NYISO's description of controls, and verifies that those controls are designed appropriately and operating effectively over a 12-month period. The SAS 70 report is designed for use by management of the NYISO, NYISO Market Participants, and Independent Auditors of the NYISO Market Participants.

Pricing Accuracy

The Pricing Accuracy performance metric identifies NYISO's level of real-time pricing accuracy. NYISO follows a rigorous price validation process for ensuring timeliness and accuracy in pricing outcomes. The results from 288 five-minute real-time dispatch cases with approximately 500 pricing points are posted in real-time through an automated system. Each day the prices are reviewed for accuracy and corrected, if necessary, within three calendar days as per tariff.

In 2009, real-time prices in 99.7% of total hours were accurately set based on the NYISO's tariffs, with price corrections required in only 27 out of 8,760 hours. NYISO's focus on price certainty has resulted in significant improvements since 2005. The primary driver for the improvements made and the high level of price accuracy achieved is due to the integration of Intelligent Source Selection ("ISS"). ISS allows for improved data integrity by identifying and removing metering errors that otherwise would have impacted the real-time markets. The following table shows the percentage of hours in which there were no corrections in the real-time energy or ancillary services prices at any active nodal or zonal price location in the NYISO administered markets.

NYISO	Error-Free Hours
2005	83.8%
2006	96.9%
2007	99.0%
2008	99.3%
2009	99.7%

Billing Accuracy

Market Settlement Billing Accuracy: This metric includes all settlements on NYISO Invoices from the Initial Bill through Final Bill Closeout (FBC). The values represent the percentage of the total Final Bill Settlement that was invoiced, on average, at the various invoice intervals until the requisite billing month was closed out. The primary driver of differences between the initial bill and 4 Month True-up is metering updates that occur throughout the true-up process in accordance with the NYISO tariff.

Billing Accuracy % of dollars settled during billing cycles 2005-2009			
Year	**Invoice**	**4 Month Rebill**	**True-ups & Close Out**
2005	95.33%	3.90%	0.77%
2006	95.71%	3.33%	0.96%
2007	95.57%	3.69%	0.74%
2008	95.87%	3.76%	0.36%
2009	95.62%	3.95%	0.44%
Five-Year Average	95.62%	3.73%	0.65%

NYISO Market Participants are engaged in the Billing Issues process on a regular basis through the Billing and Accounting Working Group (BAWG). The working group meetings include standing agenda items that cover highlights of the most recently issued invoices, as well as information on any open billing issue and the planned resolution strategy and timeline. In addition to this information, the Billing Issues Report includes information on upcoming code deployments, bill challenges, and pertinent FERC filings that may impact the invoice process or individual invoices in the future.

D. New York ISO Specific Initiatives

A decade ago, when the NYISO was first established, New York State faced a widening generation gap, with projections that available generation would be incapable of reliably serving increasing levels of electricity use, particularly in the downstate Metropolitan New York region. By 2009, the NYISO's assessment of the electric system's reliability needs had concluded that New York has sufficient installed generation to reliably serve load through the next ten years.

Since the inception of New York's wholesale electricity markets, new generation and interstate transmission have been built where most needed. More than 7,800 MW of new generation was built in New York, with 80% sited where demand for power is greatest (New York City, Long Island, and the Hudson Valley) and nearly 1,300 MW of transmission capability has been added to bring more power to the downstate region from out of state.

In the market environment, power producers have invested heavily in new generation and upgrades to existing facilities. Consumers have benefited through prices that are lower than they might have been otherwise. Environmental quality has been enhanced by the addition of more emission-free, renewable power resources and enhanced power plant efficiencies that have contributed to reduced emission rates.

NYISO Market Benefits – Wholesale Electricity Prices

In New York State, wholesale electricity energy prices reached historic lows in 2009 – 50 percent lower than in 2008 -- driven by lower electricity use and drops in the prices of natural gas (one of New York's primary generating fuels). Discounting fluctuations in the cost of fuel used to generate electricity, the NYISO estimates cost reductions of 10% in the energy and ancillary services markets between 2000 and 2008. Those reductions are valued at an annual savings of **$1.2 billion**. When capacity cost reductions are taken into account, overall savings are estimated at 18%, with total annual savings of **$2.2 billion**.

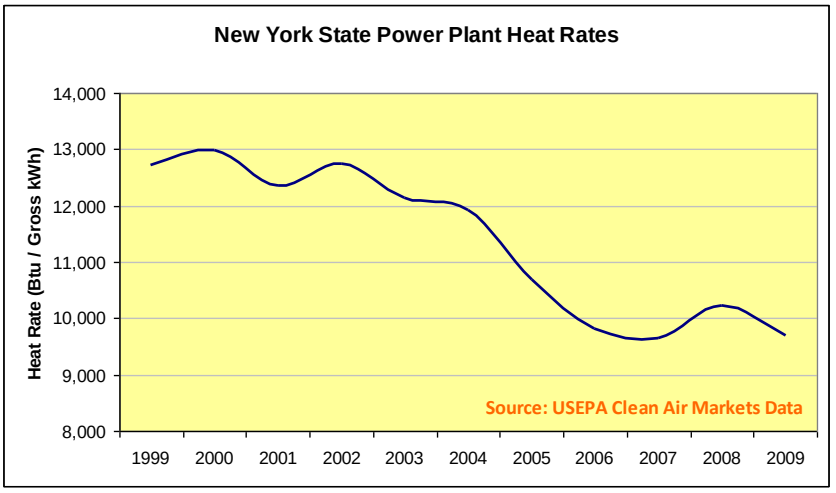
These cost reductions have developed as the system heat rate has improved and unit availability has increased (see sections below), as well as the addition of lower-cost, reduced emission generation and demand-response resources located near load centers and the expansion of renewable resources.

NYISO Market Benefits – Improved Unit Availability

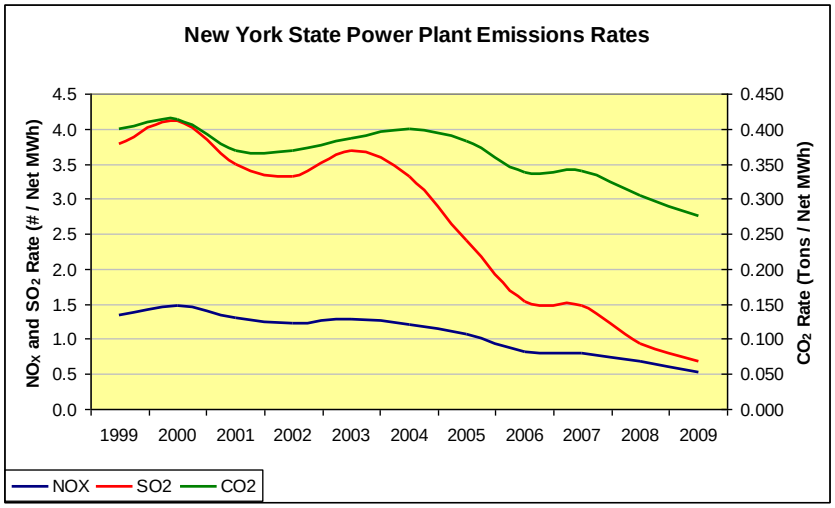
In the competitive market environment, generating units in New York improved their operations with increased availability as they reduced the length of planned and unplanned outages. Average plant availability increased from 87.5 percent (1992–1999) to 94.27 percent (20001–20097), equivalent to adding 2,400 MW of available capacity to the system. The net effect of improved unit availability provided an equivalent of 2,400 MW of capacity in New York State. The **savings from improved unit availability is estimate at $ 300 million** annually. (This estimate is based on roughly 50% of generating capacity sold in the NYISO capacity market with the remainder in bilateral markets and assumes that the 2,400 MW would have been purchased at a price set by the demand curve.)

NYISO Market Benefits - Heat Rate Improvements

In New York's competitive market environment, power plant owners have invested in generating units with better heat rates, which are able to compete and produce infra-marginal revenue. The uniform clearing price drives the selection of units with the lowest marginal cost. Units that are not selected to run do not earn energy market revenues. This dynamic has resulted in **a 25% overall improvement in heat rates** in the New York generating fleet since 2000. The heat rate improvements contribute to the bulk of the energy related savings by driving efficiency improvements in existing units and attracting new units with superior heat rates. Demand-side resources also contribute to the overall improvements in fleet heat rate as units with inferior heat rates are no longer dispatched when the load levels are curtailed through demand response programs.



Power plant emissions of carbon dioxide, as well as sulfur oxide and nitrogen oxide, declined by double-digits over the past decade as the effects of environmental regulations and air quality mandates combined with improvements in power plant efficiency resulting from improved heat rates and the addition of cleaner generation.



NYISO Market Benefits - Demand Response

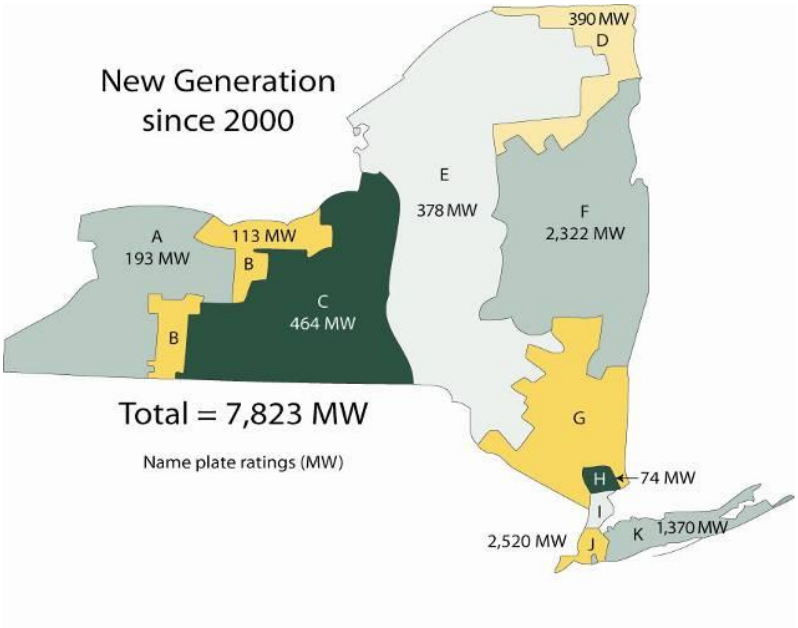
Demand response programs, cultivated in the competitive market environment, have grown significantly in the New York wholesale electricity markets, with resources total nearly 2,400 MW in 2009. From 2005 to 2009, NYISO Day Ahead Demand Response program provided energy **savings averaging $8.9 million** annually, for a total of **$44 million**. (Data on the Location Based Marginal Price impact of demand response resources participating in the NYISO's Day-Ahead Demand Response Program can be found in the NYISO's annual compliance file to the FERC, Docket No. ER01-3001.)

When New York experienced its record peak load in August 2006, NYISO demand response programs shaved the peak by an average of 865 MW, providing estimated **savings of $91 million**. (The savings produced by the peak shaving can be quantified as the cost of providing a similar amount of capacity from peaking units. Assuming that the

peaking unit is a nominal 195 MW Frame 7FA located in the Capital Zone, the estimate installed cost of such a facility (based upon the current S&L calculations for the demand curve reset) is $840/kW, with a combined fixed O&M plus insurance costs of 0.84%. Using annual fixed charge rate of 13% (assumed 20-yr amortization period), one unit would cost approximately $23M/year; four would be $91M/year.)

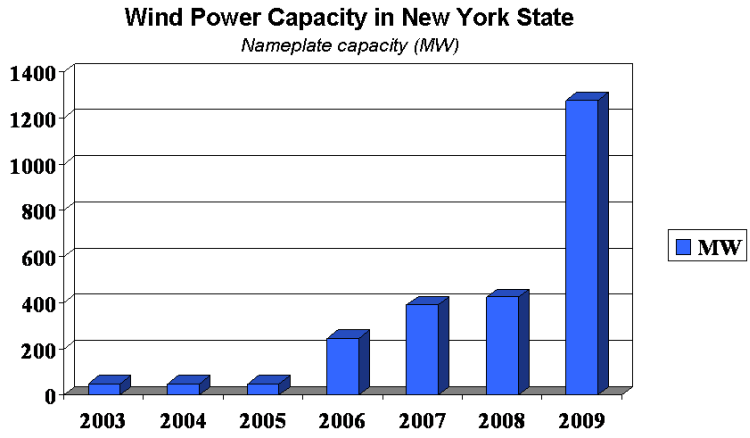
NYISO Market Benefits - Locational Price Signals

Locational price signals in the NYISO energy and capacity markets have driven investments in areas where the demand for electricity and, consequently, the prices are the highest. Investments in generation and demand side resources followed the price signals, resulting in the development of cleaner, more efficient resources in the downstate New York City area. These investments have enabled New York to reliably serve its demand within a competitive market with limited investment in transmission. The **savings associated with location of generation and demand-response resources are estimated at $500 million annually**. This estimate is based on the transmission congestion costs that would have been incurred to transport power from other regions and the costs that would have been incurred to add new transmission capacity.



NYISO Market Benefits – Renewable Resources

Open, non-discriminatory access to the grid and wholesale electricity market incentives have helped to cultivate the development of renewable sources of electricity in New York. The Empire State's first wind farm, with a generating capacity of 300 MW, went into operation during 2006. There are now over 1,200 MW of wind generation in operation with an additional 7,000 MW proposed for grid connection.



The NYISO continues to evolve its market design and grid operations, especially with regard to renewable resources. With the approval of the Federal Energy Regulatory Commission (FERC), the NYISO successfully implemented a state-of-the-art centralized wind forecasting system and became the first ISO/RTO to integrate wind into its economic dispatch system to effectively manage wind generation while maximizing transmission capability and maintaining reliability. FERC also approved another market first, authorizing the NYISO to create a pioneering regulation-only energy storage product, an innovation that will enhance system reliability and strengthen regulation market competition.

NYISO Market Benefits - Credit Management

During the period 2005-2009, the NYISO's proactive approach toward credit management prevented significant Market Participant defaults. In this time period, the NYISO allocated $0.6 million in bad debt losses to its Market Participants, 0.001% of the $46 billion total value of market transactions clearing through the NYISO markets.

The NYISO's credit management efforts include proactively removing the unsecured credit privileges of Lehman Brothers prior to that entity's bankruptcy filing, thereby **avoiding a potential bad debt loss of at least $4 million**; implementing a series of credit policy enhancements in 2008 to minimize the risk of potential socialized bad debt losses; developing an automated Credit Management System to permit flexibility to update credit requirements to match evolving market design and revising existing credit requirements for each NYISO market to more appropriately match credit requirements to market risk.

NYISO Market Benefits – Technology

The NYISO assumed control of New York's grid on the verge of the Y2K transition. Its initial investments in advanced information technology immediately advanced the technological infrastructure of grid operations and provided a foundation for sustained progress. NYISO technology continues to advance with the evolution of market design. In 2005, the NYISO performed a comprehensive system overhaul with the implementation of its Standard Market Design 2 ("SMD2"), which has served as a model for other markets. The NYISO has continued to advance its technology with deployments relating to innovative demand response programs and pioneering wind power integration.

NYISO information technology initiatives not only serve the evolution of grid operation and market design; they also produce efficiencies in the operation of the NYISO. A data center "virtualization" project partitioned hardware into virtual systems to provide a more robust, responsive, and reconfigurable system. It reduced the number of servers required, cut energy use, and reduced licensing and maintenance costs, producing a **savings of almost $20 million** over the four-year time frame of the project.

NYISO Market Benefits – Smart Grid

Consistent with its commitment to advance the technological infrastructure serving the electricity system, the NYISO worked with the owners of New York's high-voltage transmission facilities to earn **a $38 million Federal Stimulus Smart Grid Investment Grant** to install Phasor Measurement Units (PMUs) and shunt capacitors across New York State. PMUs transmit power system data 60 times each second, enabling faster responses to grid events and facilitating more effective mitigation of potential outages. Current monitoring systems sample conditions every two to six seconds. The NYISO estimates that the capacitor project will reduce line losses by 48.7 gigawatt-hours of electricity annually, with a **yearly savings of $9.7 million**.

NYISO Market Benefits – Addressing Market Issues

The transparency of the NYISO wholesale electricity markets facilitates effective monitoring and identification complex transactions. Loop flows, for example, occur in every power system due to the laws of physics that govern the actual flow of electricity. When loop flows are exacerbated by certain transactions, however, their impact becomes apparent in the marketplace. Market transparency enables grid operators to effectively identify and address such problems.

The NYISO, in addition to halting the transactions that exacerbated Lake Erie loop flow in the first part of 2008, established a monitoring and analysis group to provide enhanced daily scrutiny of the markets, developed a daily post-operations review that provides more detailed, transparent views of certain wholesale electricity costs. As a result, **"**uplift costs" were cut dramatically with **savings estimated at $48 million annually.**

NYISO Market Benefits – Broader Regional Markets

Pursuing market solutions to the Lake Erie loop flow issue, the NYISO coordinated the development of a "Broader Regional Markets" initiative, which proposes a comprehensive set of "Seams Reduction" projects developed with ISO-NE, PJM, IESO, HQ, and MISO. In a July 15, 2010 Order, the FERC conditionally approved the proposals, saying, "…these planned regional initiatives will be designed to reduce uplift costs and lower total system operating costs…" A preliminary analysis of the benefits of the Broader Regional Markets initiatives prepared by Potomac Economics estimates **regional annual savings of at least $368 million.**

NYISO Market Benefits – Expanded Interregional Planning

Working with the two dozen other Eastern Interconnection planning authorities, the NYISO helped to form and develop the Eastern Interconnection Planning Collaborative (EIPC). The EIPC focus is on a "bottom-up" approach to planning which starts with a roll-up of the existing grid expansion plans of electric system planning authorities such as ISOs, RTOs and utilities, in the Eastern Interconnection. Integral to the process will be the identification and analysis of a large number of resource expansion scenarios, as well as sensitivity analyses of options selected through a transparent stakeholder process that includes representatives from the entire interconnection. The results of the technical analyses will identify alternative transmission facilities that are needed to address policy scenarios such as the delivery of large new quantities of wind power and other renewable resources across the region as well as integration of enhanced demand-side strategies and programs. These studies will likely be used by federal and state regulators and other policy makers as they debate such important public policy issues. In 2009, **the U.S. Department of Energy awarded $16 million to the EIPC for the 3-year study**.