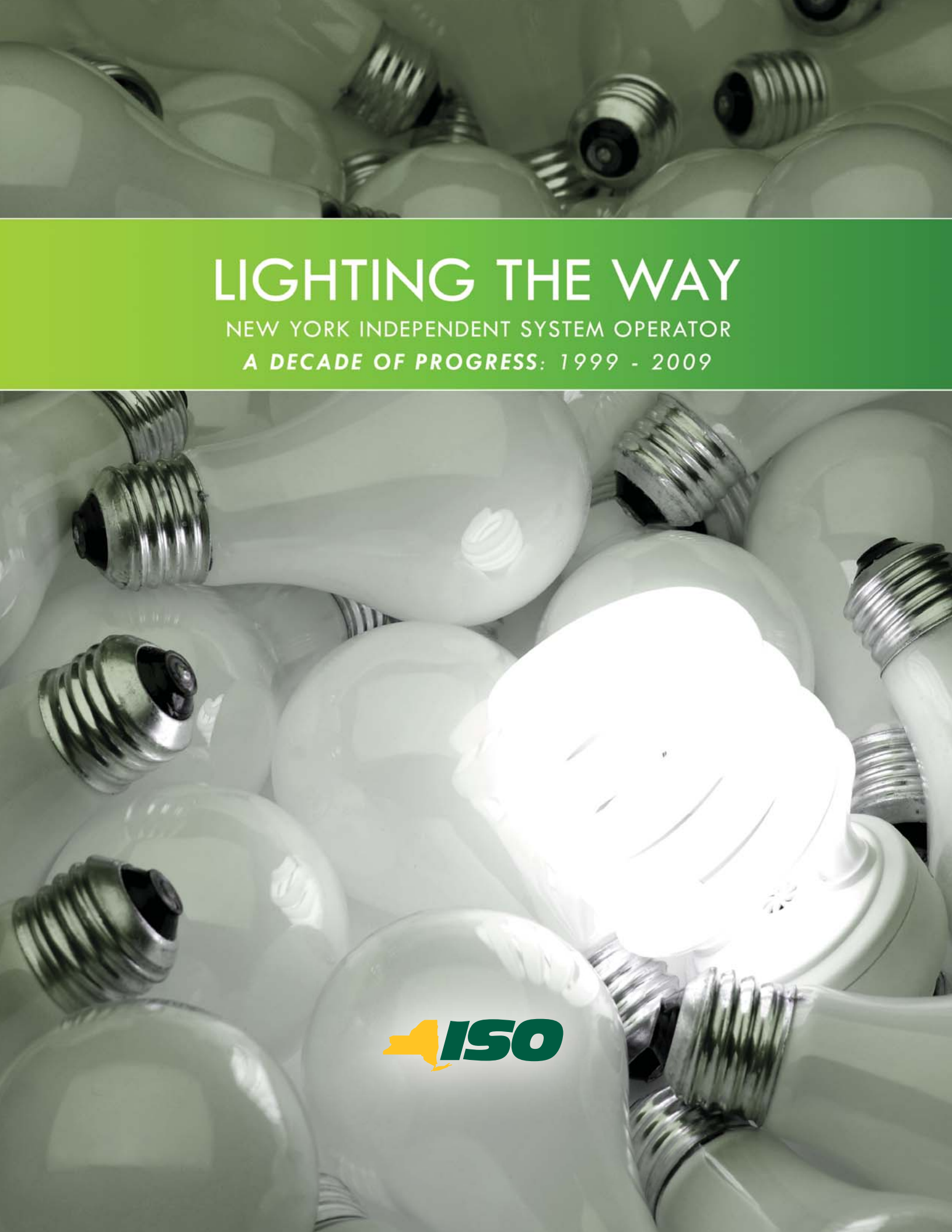


LIGHTING THE WAY

NEW YORK INDEPENDENT SYSTEM OPERATOR

A DECADE OF PROGRESS: 1999 - 2009

ISO

The NYISO is **committed** to making the grid **smarter, greener**, and more **efficient**.

Over the past decade...

The competitive marketplace for electricity has provided New York State with a more reliable and responsive electric grid.

It has cultivated environmental benefits from the integration of renewable resources and demand-side innovations, while delivering sustained and enhanced economic value to the consumer.

Karen Antion, NYISO Board Chair

Message From The President & Chief Executive Officer

As the NYISO marks its first decade of operation, we take great pride in how well we have accomplished our core responsibilities:

- *meeting New York's power needs reliably and safely by managing its bulk electricity system,*
- *running fair, open and competitive wholesale electricity markets*
- *planning for New York's future power needs, and*
- *leading the way in the technology of tomorrow's smarter grid.*

The most recent annual *State of the Markets* report by the Independent Market Advisor to the NYISO states, "The NYISO markets are at the forefront of market design, and have been a model for market development in other areas." In fact, more than 1,000 representatives from over 50 nations have visited the NYISO to learn about our markets and how we operate New York's complex electricity grid.

As needs change and technologies evolve, we will continue to "light the way." Our strategic objectives include the deployment of Smart Grid technologies and protocols to help consumers make more informed decisions about their energy use, the development of broader regional market cooperation to extend and expand the benefits of competition, the enhancement of interregional planning to provide a wider horizon for improvements in reliability, and the continued cultivation of "green power" resources.

We look forward to even greater success over the next decade as we build on our solid foundation of progress.

Stephen G. Whitley, NYISO President and CEO

origins

Prior to restructuring of the electric industry in the 1990s, New York's private utilities and public power authorities owned and operated all aspects of New York's electric system. This included the generation and transmission of electricity, as well as the delivery of electricity to customers. This system was financed by consumers at rates approved by state regulators. Operation of the electric grid was coordinated by a voluntary collaboration of the utilities and power authorities – the New York Power Pool (NYPP) – set up after the 1965 Northeast Blackout.

In the 1990s a nationwide movement to restructure the electricity industry was underway, driven by the desire to address high electricity prices and stimulate competition in what had been a market dominated by regulated monopolies.

State and federal regulators initiated an array of changes in the industry. In 1996, the U.S. Federal Energy Regulatory Commission (FERC) issued orders that opened access to the nation's transmission grid and encouraged the creation of "independent" entities to administer wholesale electricity markets. In 1997, the New York State Public Service Commission (PSC) ordered the "unbundling" of electric supply and delivery, strongly encouraging utilities to divest their generation and open access to transmission to all qualified parties. This shifted the financial risk of capital investment in the grid from ratepayers to private developers.

The creation of the NYISO as the "independent entity" in New York was authorized by 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 Power Pool's responsibilities to the NYISO took place on December 1, 1999.

The NYISO is one of ten

Independent System Operators (ISOs) and Regional Transmission Organizations (RTOs) in North America. Together, they serve two-thirds of electricity consumers in the United States and more than half of Canada's population.

Committment to Collaboration

Shared governance, featuring an independent Board of Directors and stakeholder committees, has been key to the successful evolution of the 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.

In 2008, the shared governance process included 245 meetings, involving monthly meetings of the major committees and frequent sessions of sub-committees, task forces, and working groups.

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.

"By all accounts, the NYISO shared governance model has been a resounding success. It has created an environment that ensures all issues are fully vetted and all points of views have an equal opportunity to be heard. While we don't always agree on the outcome, the shared governance model creates an environment where the best possible design changes are implemented," said William Palazzo of the New York Power Authority and 2009 Chair of the NYISO Management Committee.

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 …"

evolution

At the outset, the NYISO's core mission focused on operation of the bulk electricity grid and the management of the new wholesale electricity markets.

Reliable management of New York's bulk electricity grid, consisting of hundreds of generating units and thousands of miles of high-voltage transmission lines, requires constant balancing of electricity supply to meet consumer needs, on a moment-to-moment basis, twenty-four hours a day, every day of the year.

Designing, administering, and monitoring New York's marketplace for wholesale electricity includes ongoing auctions that bring together buyers and sellers of energy and related products and services.

As the NYISO increased its capabilities and broadened its expertise, and the need to anticipate emerging energy needs became more apparent, the NYISO's responsibilities grew to include long-term system reliability planning and serving as an authoritative source of information on key energy issues for policy makers, regulators, and other inrerested parites.

While technology has been an integral element of the NYISO's creation and progress from day one, the focus on developing and implementing smart solutions with advanced technical innovations has grown over the decade.

reliability

meeting the challenge

"Keeping the lights on" is at the center of the NYISO's responsibilities. Reliable operation of the grid requires constant vigilance; balancing the supply of power with consumer demand for electricity on a moment-to-moment basis.

NYISO operation of the grid is overseen by government regulators – the FERC and the PSC – as well as electric system reliability regulators, including the North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council (NPCC), and the New York State Reliability Council (NYSRC).

Reliable electricity is a critical predicate for economic growth in the Empire State. Dependable power supplies -- and increasingly rigorous power quality requirements -- are key considerations for businesses seeking to create and keep jobs in New York.

The resources available to meet summer peak demand reliably increased from a deficit of nearly 1,200 megawatts in 2000 to a **surplus of over 900 megawatts** in 2009.

NYISO programs providing **incentives for consumers to reduce their power use** during times of peak demand grew to more than 2,000 megawatts – an amount equal to four medium-sized power plants.

New York's electricity grid serves 19.3 million people and thousands of public facilities, institutions, and businesses.

The NYISO is responsible for dispatching power from more than **500 generating units** over some **11,000 circuit miles of high voltage transmission lines** across the state.

More than 7,600 megawatts of new generation have been built by public and private suppliers --with 80% sited where demand is greatest (New York City, Long Island, and the Hudson Valley.)

Over 1,000 megawatts of transmission have been added to bring more power to the downstate region from out of state.

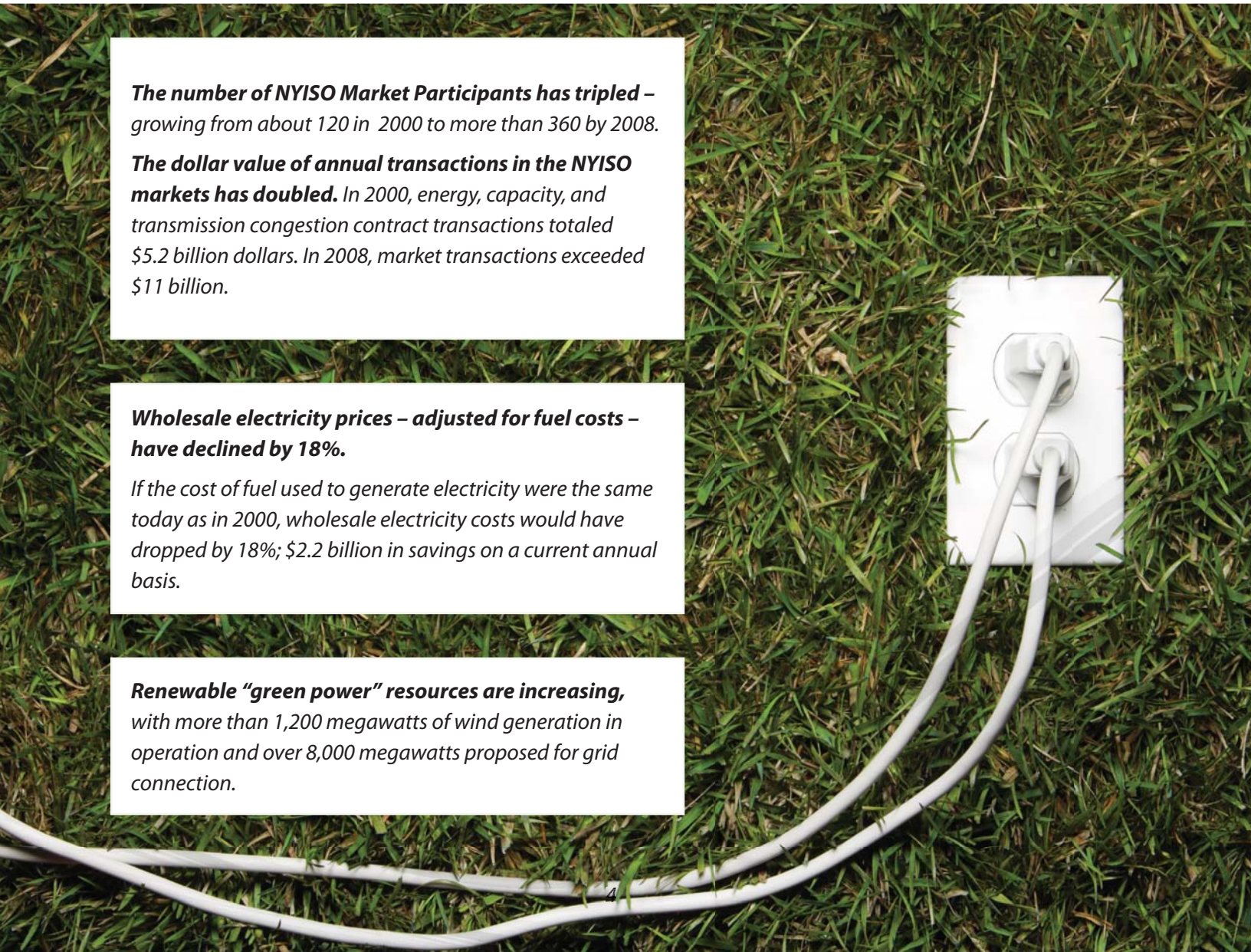
www.nyiso.com

markets
designed for progress

When the federal and state governments opened access to the grid and restructured the electric utility industry, the NYISO was assigned the task of designing, implementing, administering, and monitoring wholesale electricity markets. In collaboration with its array of stakeholders – those who produce, deliver, and consume electricity – the NYISO has continued to evolve market design to a level of sophistication few imagined possible a decade ago.

"Over the last ten years, the progress in the development of competitive markets has been extraordinary. Merchant companies have invested heavily in new facilities and upgrades to existing assets. Consumers have benefited significantly from these investments through lower prices, reduction of stranded costs, better environmental performance, and higher unit availability. The NYISO administered markets have facilitated all of the foregoing by continually improving the complex and dynamic systems necessary to encourage competition," said Liam Baker of US Power Generating Company and 2008 Chair of the NYISO Operating Committee.

Increased power plant efficiency is seen in the dramatic change in the system-wide heat rate of fossil-fueled generation, which improved 21%. Average plant availability has increased to 94.7%, adding 2,400 MW, the equivalent of four medium-sized power plants. In addition, power plant emission rates, measured in tons per year for sulfur dioxide, nitrogen oxides, and carbon dioxide dropped by double digits between 1999 and 2008.



The number of NYISO Market Participants has tripled – *growing from about 120 in 2000 to more than 360 by 2008.*

The dollar value of annual transactions in the NYISO markets has doubled. *In 2000, energy, capacity, and transmission congestion contract transactions totaled $5.2 billion dollars. In 2008, market transactions exceeded $11 billion.*

Wholesale electricity prices – adjusted for fuel costs – have declined by 18%.

If the cost of fuel used to generate electricity were the same today as in 2000, wholesale electricity costs would have dropped by 18%; $2.2 billion in savings on a current annual basis.

Renewable "green power" resources are increasing, *with more than 1,200 megawatts of wind generation in operation and over 8,000 megawatts proposed for grid connection.*

planning

illuminating the future

The supply of power and consumer demand for electricity is constantly changing. New power plants and transmission facilities are brought on line; older facilities retire; energy technology advances; consumption patterns ebb and flow. It is the NYISO's responsibility to anticipate and prepare for the impact of such changes on the reliable operation of the grid and the efficient operation of the markets.

The NYISO's unbiased, authoritative analyses, evaluations, and forecasts assist market participants, regulators, and policy makers, and others as they plan for the future.

"New York's power grid is meeting today's needs and we want to be sure that it can continue to supply the kinds of energy New Yorkers will need in the future. Our State Energy Planning process seeks to continue our state's ability to address the energy needs of its citizens in the most environmentally responsible and economically sensible means possible," said Thomas Congdon, Energy Secretary to the Governor and Chair of the New York State Energy Planning Board.

The New York State Consumer Protection Board (CPB) represents consumer interests before the NYISO. The CPB representative has chaired the NYISO's Electric System Planning Working Group, which plays a major role in the NYISO's planning processes.

NYISO planning examines the **future reliability** of the bulk electric system in New York over a 10-year horizon, and identifies potential risk scenarios that might adversely impact sustained reliability.

In 2009, NYISO planning studies reported that the **resources available to meet the electricity needs of New York State are expected to continue to exceed demand** through the next decade.

Providing **energy data and technical support** to New York State agencies, the NYISO supports vital policy initiatives to expand the use of renewable resources and improve energy efficiency.

www.nyiso.com

technology

innovations and smart solutions

While references to "Smart Grid" have recently grown commonplace, the NYISO has worked since its inception a decade ago to make the grid smarter. Staying ahead of the information technology curve continues to pay dividends for New York's electric system. NYISO information technology features architectures and platforms that rival the best in the nation, resulting in significant efficiencies for the competitive wholesale electricity markets and market participants.

The NYISO works with regulators and stakeholders to define Smart Grid standards and protocols that provide solutions to emerging energy issues. NYISO technology initiatives are closely tied to evolving market design. Software enhancements are regularly deployed to increase the timeliness, visibility, and accuracy of market data and grid information.

Smart Start for Brighter Future

"The NYISO assumed control of New York's grid on the verge of the Y2K transition. Our initial investments in advanced information technology provided a strong foundation for sustained progress," said NYISO Board Chair Karen Antion.

As Smart Grid is developed across North America, interoperability is vital. Developing standards and protocols is an area where ISOs and RTOs play a leadership role. "Cooperative efforts among grid operators and organized markets will promote uniform standards that provide fertile ground for deploying Smart Grid technology," the NYISO Board Chair explained.

Consumers will change their behavior, she emphasized, when they receive real-time price signals that provide the information they need to make informed decisions about their energy choices.

At the wholesale level, the NYISO has already developed market mechanisms, such as demand response programs, that give energy users incentives to reduce power consumption during periods of peak demand.

vision for tomorrow

The NYISO's vision for tomorrow's grid and markets includes continuing development of a Smart Grid, broader regional markets, expanded interregional planning, and the development and interconnection of more "green" technologies.

A Smarter Grid

The Smart Grid encompasses a comprehensive view of transmission, distribution and the "smart home," in which advanced metering and real-time price signals will empower consumers to better manage their energy expenses. Smart Grid will move the power system from electromechanical to digital; from manual to automated; from limited data to transparent pricing.

Both the electricity grid and the wholesale electricity marketplace will continue to become "smarter" by incorporating progressive generations of advancements. The use of digital information will enhance our ability to monitor and control the transmission grid, and Smart Grid features will help minimize transmission and transformer losses, and maintain and enhance regional reliability.

Broader Markets

The need for Smart Grid coordination on a regional and interregional basis is linked to the NYISO's efforts to develop broader regional markets and expanded interregional planning. The NYISO is leading efforts to expand regional markets with neighboring control areas to address limitations that currently exist where our markets and systems connect.

The success of our broader regional markets initiatives will expand opportunities for stakeholders, consumers, and businesses in New York State, the region, and beyond.

The U.S. Department of Energy (DOE) awarded the NYISO **$37.4 million in federal stimulus funds to support Smart Grid investments** in New York. The funds will support grid technology to enhance the reliability of the bulk electricity system.

In October 2009, **NYISO President & CEO Stephen G. Whitley was selected to chair the Executive Committee of the Eastern Interconnection Planning Collaborative**, a group of energy-planning authorities serving the eastern half of North America.

Expanded Planning

Expanded interregional planning means sharing information about emerging energy needs and working together to more efficiently develop solutions. The NYISO is already involved in coordinated inter-regional planning within regional reliability organizations. We are actively developing broader coordination and collaboration to serve the common interest of grid operators and electricity planning authorities.

In 2009, a group of electric planning authorities, including the NYISO, created the Eastern Interconnection Planning Collaborative (EIPC). The Eastern Interconnection ranges from the Rocky Mountains to the Atlantic Ocean and from the Canadian Northeast to the Gulf of Mexico. The EIPC will benefit power system stakeholders by providing modeling and analysis concerning the entire Eastern Interconnection, identifying potential opportunities for efficiencies between regional transmission plans, providing coordinated analysis of scenarios of interest to policymakers and stakeholders, and developing potential transmission expansion options and cost estimates to inform their decisions.

Cleaner, Greener Power

The continued growth of economical, emission-free, renewable power resources is essential to meeting New York's energy challenges, and the NYISO is playing a vital role in that effort. Wind energy is a rapidly growing segment of New York's power supply and an essential element of the state's portfolio of renewable resources. The amount of wind power in New York State grew by 300% in the past year alone. By the end of March 2009, New York's installed wind capacity exceeded 1,200 megawatts, up from 424 megawatts the previous March. Developers have submitted more than 7,500 megawatts of wind power project proposals to be studied by the NYISO for interconnection to the grid.

The NYISO has contributed to New York's leadership in wind development through advancements in market design and the deployment of sophisticated forecasting systems. In 2008, the NYISO developed procedures and software to collect forecasts and real-time meteorological data from generating sites to predict the output of each facility. Wind power forecasts are fed directly into the NYISO's operational systems that determine the balance of electricity supply and demand.

The NYISO is the **first grid operator to integrate wind** into the system balancing reliability and economics in dispatching power.

The NYISO is the first grid operator to integrate wind into its economic dispatch function. This enables wind resources to indicate their economic willingness to generate, allowing for the identification and use of the most efficient resources to address reliability limitations. Wind plant dispatch instructions are incorporated into the energy market-clearing price while minimizing the need for less efficient, out-of-market actions to maintain reliable system operation.

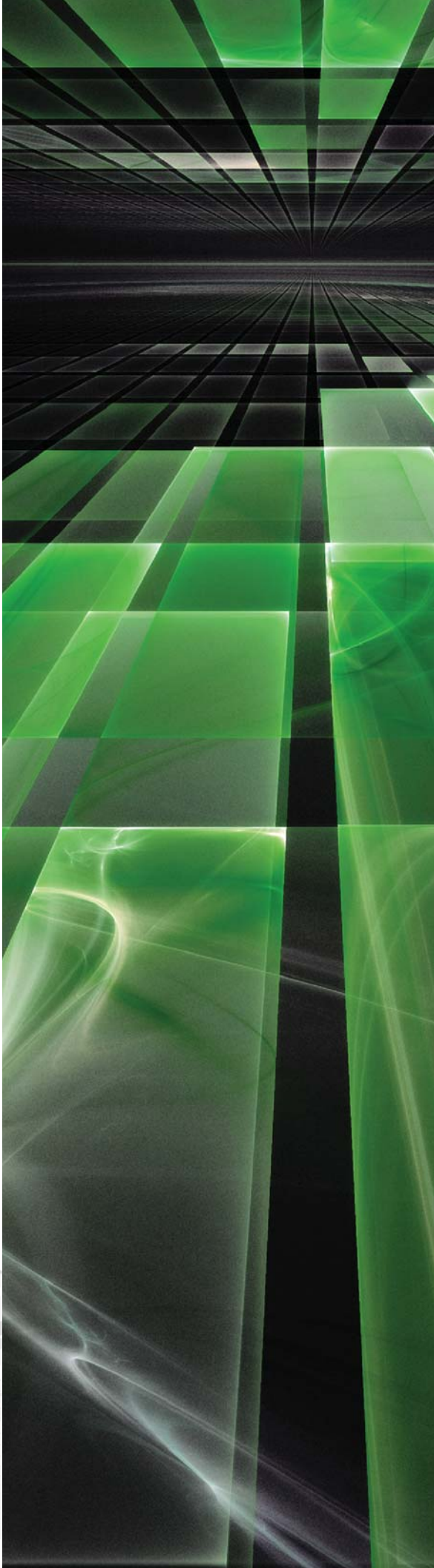
New York's wholesale electricity markets attract investment in wind power thanks to open access to the grid and market features such as the "uniform clearing price." Wind projects are relatively capital-intensive power sources with very low operating costs. When selected by the market to provide power, wind projects are paid the clearing price, which is higher than their operating costs and supports repayment of construction-cost debt, other investment costs, personnel, and a return on investment.

Other "green" resources on the NYISO grid, or being studied for interconnection, include hydroelectric energy, landfill gas/methane generation, and storage technologies like batteries and flywheels. Such storage technologies are complementary to the integration of renewable resources such as wind power. Flywheels, for example, have the capability to inject electricity into the bulk power system to help compensate for drops in generation when the wind slows.

Looking Ahead

As the NYISO enters its second decade of service, it is striving to build on past achievements to meet future energy challenges. The economic conditions facing New York, the Northeast and the Nation present challenges that are best overcome by united, collaborative efforts.

The NYISO's shared governance system has been a core of the NYISO's success over the past decade. Working together, we will maintain and enhance our commitment to reliability, market efficiency, and sound planning as we continue to deliver energy, environmental and economic benefits to the people of the Empire State.



chronology

1999

On November 18, the NYISO assumes operating control of New York State's bulk power grid and initiates the new markets for wholesale electricity.

On December 1, the NYISO formally takes over the responsibilities of New York's bulk power system from the New York Power Pool.

2000

The NYISO achieves a successful transition to Year 2000 (Y2K), after hundreds of hours of planning, preparation, and technological upgrades.

The NYISO's Independent Market Advisor reports, "The transition to competitive electric markets has been remarkably smooth given the unprecedented scope of this effort."

The NYISO signs up more than 100 Market Participants and its market transactions total $5.2 billion – more than double the combined total of the other electricity markets in the Northeast.

2001

NYISO operators sustain system stability in the aftermath of the terror attacks on the World Trade Center and the resulting loss of major substations in lower Manhattan.

NYISO issues its first Power Alert (now called Power Trends) analyzing future power needs and the resources required to meet them. The report calls for urgent attention to increasing capacity in downstate New York.

The NYISO implements its Emergency Demand Response Program, with 23 participants providing combined load reduction of 611 MW. The program successfully reduced demand by 400 MW during days of summer peak demand.

Virtual bidding begins, offers increased hedging opportunities, and enabling expanded competition in the wholesale electricity markets.

2002

Capacity of demand response programs increased approximately 700% while active customer participation increased more than five-fold. The NYISO, jointly with the New York State Energy Research and Development Authority (NYSERDA) and the PSC, received the 2002 award for the best demand response programs in the nation from the Peak Load Management Alliance.

2003

In August, a blackout, originating in Ohio, affects 50 million people in the U.S. and Canada. While New York's electric system was operating normally with appropriate reserves, operators had less than 10 seconds to respond to a sudden and severe power surge, leaving no time for human intervention. Protective systems functioned properly to prevent damage to generation and transmission equipment. The NYISO and others acted to restore electric service expeditiously, with some parts of the state experiencing only momentary losses and restoration completed statewide in less than 30 hours.

The NYISO launches the Market Data Exchange (MDEX), which lends a fresh look to accompany the NYISO's technology-driven, state-of-the-art energy markets. MDEX includes an enhanced live data map displaying real-time, day-ahead, and hour-ahead pricing, individual user customization capability and a secure information area for Market Participants.

The NYISO passes its first SAS-70 Type 2 audit, the first ISO in the nation to win an unqualified opinion on its first attempt. This voluntary audit is intended to provide regulators and stakeholders with assurance of the completeness and accuracy of NYISO controls.

2004

FERC approves the NYISO's Comprehensive Reliability Planning Process, which analyzes New York's electricity needs over a 10-year time horizon and evaluates the resources available to meet them.

The NYISO creates an Environmental Advisory Council to enhance and sustain awareness of the environmental issues relating to the electricity system.

Two major transmission projects are underway in areas of the state where they are most needed; creating the capacity to bring in nearly 1,000 MW of power from out of state. The Cross Sound Cable, operational in 2004, connects the New England grid with the New York grid on Long Island. The Neptune Project, connecting the PJM grid in New Jersey with the New York grid on Long Island has been licensed and is awaiting final development.

2005

The NYISO launches its Standard Market Design (SMD2), which integrates New York's Real-Time and Day-Ahead energy markets on a common computing platform through new software. SMD2 improves efficiency in committing and dispatching generation in real time; computes pricing that accurately reflects current system conditions; and reduces barriers to energy trading across Northeast markets.

The summer of 2005, setting new all-time peak loads, was a test of the NYISO's personnel, equipment and wholesale markets, as well as its relationships with neighboring control areas. The people and systems came through, and New York's lights and air-conditioners stayed on without interruption. Peak loads were set on July 19, and then exceeded on July 26 when demand climbed to 32,075 MW. The previous peak load had been set in 2001 at 30,982 MW. The summer of 2005 saw 15 days when peak demand climbed over 15,000 MW.

The NYISO reaches a major milestone in its Comprehensive Reliability Planning Process (CRPP), with the release of New York's first Reliability Needs Assessment (RNA) – a detailed analysis of the state's capacity to reliably generate and transmit electricity over a ten-year horizon.

2006

Summer heat waves set state records for peak load with a new record set on August 2 -- 33,939 MW – an increase of more than 1,800 MW over the previous year's record peak. NYISO demand response programs served to shave the peak by nearly 1,000 MW.

The NYISO, working with stakeholders and government agencies, completes and issues the first annual Comprehensive Reliability Plan.

2007

An independent report prepared by the Analysis Group finds that savings from NYISO-administered markets since their inception were in the "hundreds of millions of dollars," and estimated consumer benefits in the range of $100-$200 million a year.

An audit of the NYISO's compliance with reliability standards implemented by NERC concluded that the "NYISO is doing an outstanding job."

2008

Completing a multi-year "virtualization" Information Technology infrastructure project, the NYISO reduced the number of computer servers from more than 1,000 to fewer than 500, saving an estimated $16.3 million over the life of the program.

The record of reliable operations continued in 2008 as the system met the challenge of a new peak load for the month of June. The afternoon of Monday, June 9, saw unseasonably warm temperatures drive the hourly average load to a peak of 32,432 megawatts — the highest peak load ever for the month of June and the second highest yearly peak load on record.

The NPCC concludes an audit of the NYISO's operation of the bulk electricity system, finding that NYISO processes and procedures are fully compliant with new federal reliability standards.

The FERC approves important new NYISO economic analysis procedures to expand its system-wide planning process.

The NYISO addresses the developing credit crisis afflicting the national economy through a number of measures that avoid bad debt losses.

2009

Wholesale power prices drop to their lowest level since 2003, spurred by reduced fuel prices, lower demand, and competition.

A wind power generation milestone is set in February, as the combined total output of all wind plants in New York exceeded 1,000 MW.

The evolution of the NYISO markets continues as new energy storage technologies – including flywheel and battery technologies – gear up to connect to the grid, to provide the "regulation" service needed to balance electrical supply and demand.

The U.S. Department of Energy (DOE) awards the NYISO $37.4 million in federal stimulus funds to support Smart Grid investments in New York.

An array of 23 regional planning authorities, including the NYISO, called the Eastern Interconnection Planning Collaborative, created to facilitate interconnection-wide transmission analyses. NYISO President & CEO Stephen Whitley selected to chair the collaborative's executive committee.

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The New York Independent System Operator (NYISO) – is a not-for-profit corporation that began operations in 1999. The NYISO operates New York's bulk electricity grid, administers the state's wholesale electricity markets, and conducts reliability and resource planning for the state's bulk electricity system.

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