

2021

Strategic Plan



The New York Independent
System Operator

About the NYISO

The NYISO is an independent, 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 NYISO's role in providing grid reliability and competitive markets brings economic and environmental benefits to all New Yorkers. **For more than 20 years, the NYISO's markets have worked to improve system efficiency, supporting a shift toward cleaner sources of generation while upholding the nation's most stringent reliability rules.**



The state-of-the-art, 64,000 square foot, NYISO Control Center.

For more information, visit:

www.nyiso.com/blog

www.nyiso.com/podcast

twitter.com/NewYorkISO

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Message from the Board Chair and President & Chief Executive Officer

Over the past year, the New York ISO (NYISO) has faced challenges unprecedented in our history. First, by a global pandemic but also by extreme weather events that challenged the industry to keep the power flowing to 20 million New Yorkers. The NYISO takes seriously our role to maintain the reliable delivery of power that is so vital to our society and economy.

While we reflect on recent challenges and look forward to the work ahead of us, the NYISO is grounded in that preeminent goal of maintaining reliability of the electric system. This common mission guides and connects our workforce, especially amidst such monumental change in the electric industry.

In 2019, New York adopted the Climate Leadership and Community Protection Act (CLCPA) to address climate change and put in place a plan to reach a decarbonized electric system by 2040. Our work at the NYISO to meet the requirements of the CLCPA while maintaining electric system reliability is well underway. Competitive electricity markets are fundamental to providing consumers reliable, lowest cost power and an essential platform for achieving public policy objectives. This focus grounds us as we plan and continue working to achieve the grid of the future.

There is no question that progress toward our state's climate imperatives is accelerating. This NYISO strategic plan endeavors to instill confidence that the company is actively planning over a ten-year time horizon for the technological, public policy and environmental changes that promise to reshape our economy and our power system.



From shifts in the global climate to evolving economic and demographic trends within our state's communities, we also are focused on the common goals and values that connect our talented and dedicated workforce. In this year's strategic plan, we include important changes to our Core Values and Mission Statement. The NYISO's new Core Values function as a set of guiding principles and fundamental beliefs connecting our workforce to common business goals. The refined Mission Statement and newly established Vision Statement communicates to stakeholders our purpose-driven commitments in a time of great change.

Building on our more than 20-year legacy of service, we remain committed to meeting consumer needs and expectations while being mindful of the broader economic, social, and environmental impacts of our business – critical factors that work together to ensure our shared success.

The integration of renewable and storage technologies, reduced dependence on fossil fuels, and the build-out of transmission infrastructure needed to deliver clean energy to consumers are important undertakings that will pave the way for future generations.

As you read our *Strategic Plan*, you'll learn much more about our organization and our efforts to have a positive impact in all we do. Thank you for your interest in the NYISO.


Sincerely,

Daniel C. Hill

Daniel C. Hill, Chair
NYISO Board of Directors

Richard J. Dewey

Richard J. Dewey,
President & CEO



Mission & Vision

The mission of the NYISO establishes the foundation from which all our responsibilities are delivered and the vision describes a future that we strive to achieve. Together, they provide the basis for the NYISO's Strategic Objectives and Strategic Initiatives, as well as a reference to guide decision making and action at all levels of the organization.



Mission

Ensure power system reliability and competitive markets for New York in a clean energy future.



Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation.



Core Values

The core values of the NYISO form the foundation on which we conduct ourselves. The core values provide the guiding principles for our organization as we work together to fulfill our mission and vision.

✓ **Our People**

Working, learning and growing together, respecting and embracing our differences

✓ **Customer Focus**

Valuing our stakeholders' perspective

✓ **Integrity**

Commitment to honest, ethical, and transparent actions

✓ **Innovation**

Creating sound solutions in an environment of constant change

✓ **Excellence**

Accountability for excellence in all that we do

The Roles of the NYISO

Reliable Operations

Maintaining bulk power system reliability is the cornerstone of the NYISO's mission, shaping how we operate, design markets, and conduct system planning. Through the efforts of a highly dedicated and skilled workforce, the NYISO manages the flow of electricity across more than 11,000 miles of high-voltage transmission lines serving New York on a minute-to-minute basis, balancing supply, and demand throughout the state in accordance with the federal policy of open and non-discriminatory access to the grid. **The NYISO operates one of the most technologically sophisticated control centers of its kind in the world; an essential tool to support reliability and the transition to a clean energy future.** The control center provides operator visibility of regional and local grid conditions, enhanced integration of new technologies, and many of the situational awareness displays and other tools needed to meet strict requirements for the monitoring and control of the bulk electric system.



Efficient Markets

As market administrator, the NYISO conducts a continuous series of auctions in which customers bid to purchase electric energy offered for sale by suppliers. **To provide the lowest cost power available to reliably meet consumer needs, the NYISO conducts and monitors competitive auctions of wholesale electricity including needed ancillary services every five minutes, every day of the year.** The NYISO also operates markets that allow market participants to purchase the installed capacity needed to meet resource adequacy requirements established by the New York State Reliability Council (NYSRC). Energy service companies and end-use consumers can provide demand-side resources and compete with other suppliers in several of these markets.

Pursuant to its tariff, the NYISO maintains credit requirements that seek to ensure that all market participants entering into transactions provide reasonable assurance to protect the market from the potential for payment defaults. The NYISO's independent market monitor and internal market mitigation and analysis group continually surveil the markets for attempts at manipulation, identify potential market improvements, and report any violations of the tariffs to the Federal Energy Regulatory Commission (FERC).

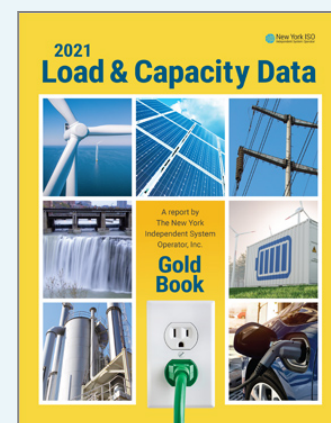
Comprehensive Planning

The NYISO’s Comprehensive System Planning Process (CSPP) is a unique, “all source” planning process that evaluates transmission, generation, and demand-side participation on a comparable basis. It is the primary tool for the NYISO to inform transmission expansion and electric infrastructure investment decisions in the New York Control Area. The CSPP establishes a process for identifying reliability and economic needs, as well as transmission needs driven by public policy requirements. This process also establishes the procedures whereby solutions are proposed, evaluated, and implemented in order to maintain the reliability of the bulk electric system, reduce system congestion, and respond to identified transmission needs driven by public policy. **An important step in supporting New York’s ambitious clean energy goals is to study the future grid to promote a better understanding of what will be needed, including emerging technologies, to meet reliability.**

Authoritative Source

A pillar of the NYISO’s focus is to serve as an independent source of fact-based information on the evolving electric system. As the state’s Climate Action Council works to develop a scoping plan to achieve decarbonization mandates under the Climate Leadership and Community Protection Act (CLCPA), the need for factual information from an independent source has never been more important. We continue to implement new strategies to disseminating critical information on the grid of the future.

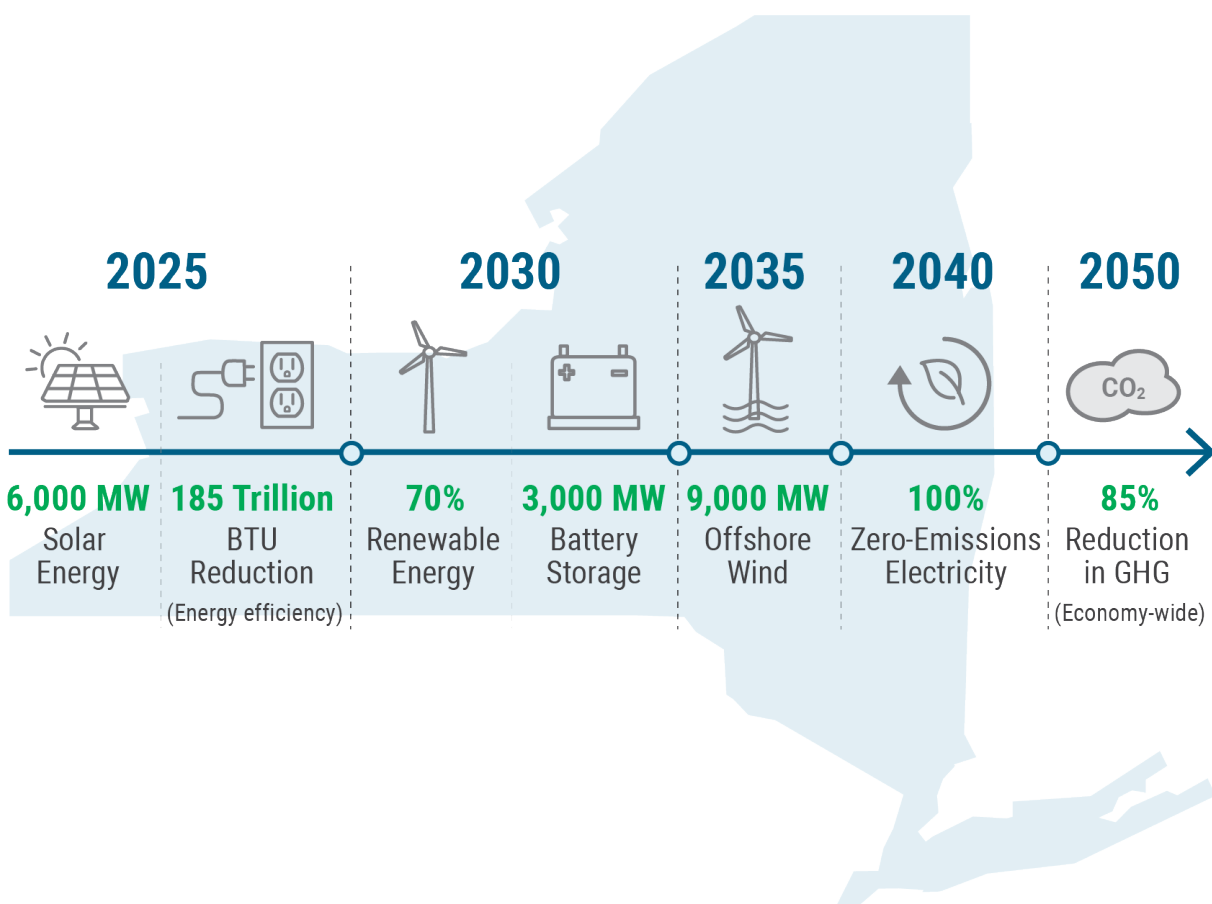
Our commitment to provide comprehensive analysis and information that can be relied upon is demonstrated through focused communication channels. Through reports such as our annual *Gold Book* and (award-winning) *Power Trends* reports we provide trusted references for elected officials, opinion leaders, industry experts and the media. Through NYISO podcasts that feature in-depth yet accessible discussions with industry experts and through our social media presence, we seek to reach an even greater audience. Our objective is to share NYISO’s unique and deep expertise to the ever-evolving debate concerning the grid in transition. **We also are mindful that the human side of our business matters, and we feature stories that demonstrate the dedication of our workforce in serving all New Yorkers and giving back to the communities in which we live.**



Key Areas of Strategic Focus

Evolving State and Federal Policy Drivers

Increased adoption of renewable energy sources is a key strategy to mitigate climate change, improve air quality, increase energy security and resilience, and provide other benefits. In New York State, a rapid transition is underway from a power grid with substantial generation from centralized fossil fuel stations to a grid with greatly increased renewable resources and distributed generation. The pace of this transition is driven primarily by state policy, notably New York State’s CLCPA, requiring 70% of our electricity to be generated from renewables by 2030 and 100% to be zero-emission by 2040.



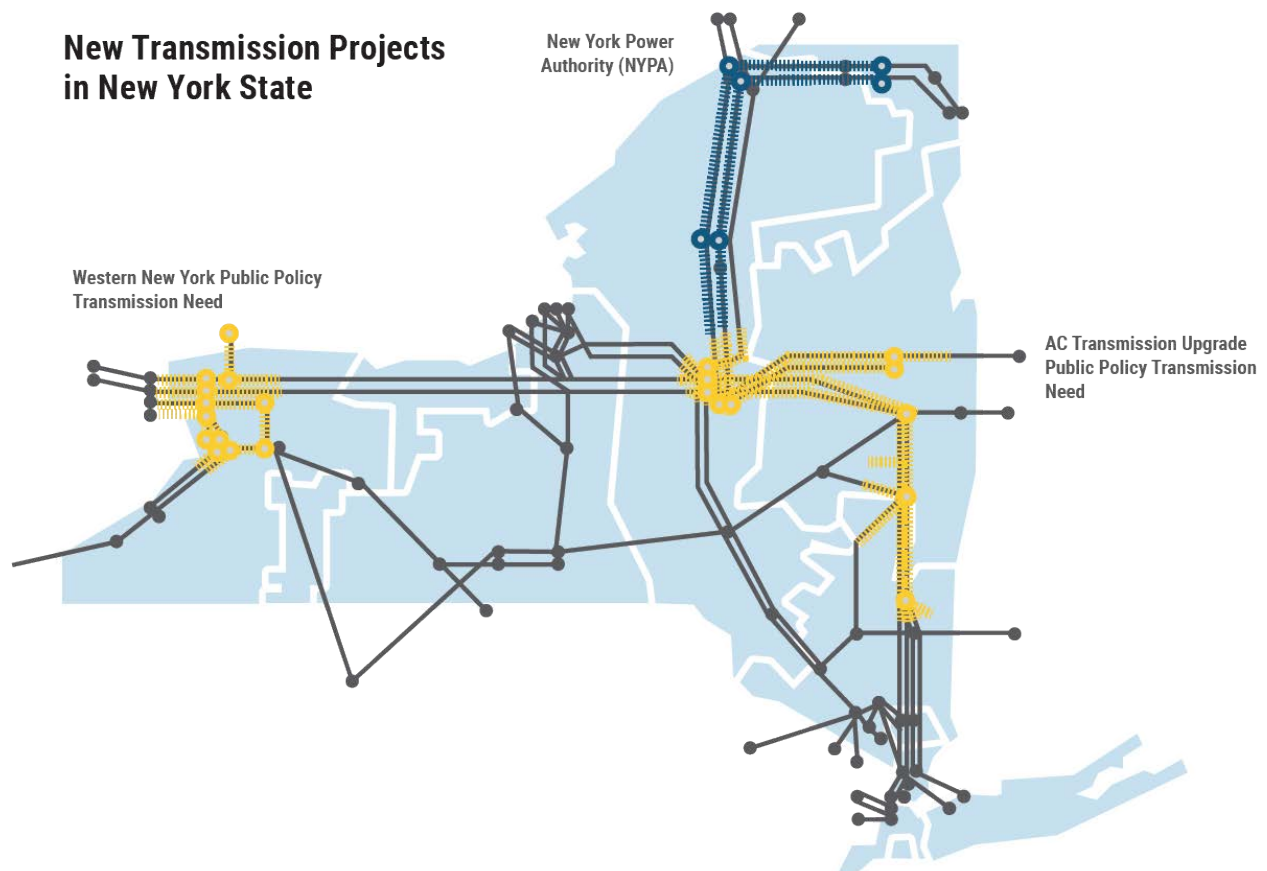
The CLCPA requires the deployment of 9,000 MW of offshore wind, 6,000 MW of distributed solar, and 3,000 MW of energy storage. In addition, the economy-wide greenhouse gas emission reductions included in the CLCPA will require greater electrification of other sectors such as transportation and buildings.

The national energy policy has a renewed focus on addressing climate change demonstrated by the Biden Administration’s decision to rejoin the Paris Accord. In addition, clean energy, and infrastructure to facilitate the transition from fossil fuels to renewable energy resources is under consideration to achieve greenhouse gas emissions reductions and carbon neutrality goals. FERC has also pivoted towards supporting the growth of renewable energy and decarbonization efforts. Most recently, FERC has initiated several reforms including reforming energy market policies that restrict state-supported clean energy resources, expanding transmission capacity and expediting new grid interconnections, boosting interregional transmission, incorporating climate change impacts into the agency’s decision-making process, and establishing an office of public participation. Consideration of environmental justice and greater public participation are prominent aspects of both state and federal policy making.

The NYISO is committed to facilitating the transition to a more sustainable grid.

Reliability and Market Considerations for a Grid in Transition

The magnitude and pace of entry of renewable, Distributed Energy Resources (DER), and new transmission in New York is unprecedented as energy policy and technology advancement drive changes to New York’s grid.



The NYISO is uniquely positioned to frame the challenges associated with rapid transformation of the grid and to provide solutions to integrate new resources and facilitate the difficult transition away from fossil power generation. Through its Comprehensive System Planning Process, **the NYISO continually assesses the reliability, economic, and public policy aspects of the transition to a renewable and a more distributed power grid.** Additionally, the NYISO's Grid in Transition efforts are designed to enable the NYISO to make necessary market enhancements and implement operating protocols that support reliability through the most innovative wholesale market design at the lowest overall cost to consumers, while meeting ambitious environmental state and federal policy objectives. The Grid in Transition initiative, together with related studies, highlights the needed attributes for resources (such as dispatchability, flexibility, and duration) that contribute to preserving reliability. Understanding the potential ramifications of the changing resource mix helps to evolve the market design in order to maintain reliability and efficient market operations to best serve New Yorkers.



Evolving NYISO's Business Delivery

Energy policy, together with market drivers, are increasing the demands on the NYISO to manage greater complexity, requiring reevaluation of the approach to business delivery. The expansive growth of renewable energy sources such as wind, solar, DER, and energy storage will create additional, new work streams and necessitate changes in the NYISO's systems. NYISO market applications must provide

customers with flexibility and options to adjust their market participation models as their blend of resources change. **With the integration of renewable and distributed grid resources, the power system will become more dynamic, increasing the need for studies, monitoring, and controls as well as enhanced market signals.** Grid reliability applications will also need new capabilities that enable operation of an increasingly complex portfolio of energy resources. The increasing complexity of the grid will have ramifications throughout the NYISO and impact supporting functions organization wide.



The products and services offered by the NYISO must be continually enhanced to remain current with emerging technologies as well as to support longer term needs shaped by public policy. As it is difficult to predict new resource volume and timing of entry, an approach that allows the organization to manage these unknowns while using resources judiciously is critically important. In addition, a dedicated and skilled workforce is fundamental to the success of the organization. To continue serving New Yorkers at the highest standards, the NYISO must be able to sustain and grow its organization through prudent investment in employees and their development. In addition, the NYISO's technology platforms must scale with resource entry and adjust to changing transactional volumes. **The NYISO is also committed to work with stakeholders to examine and enhance its rate schedule structure, the method used to collect the NYISO operating costs, in recognition of the cost impacts driven by changing system needs.**

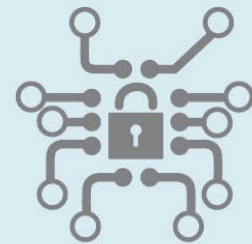
A Leader in the Application of Technology

As evolving public policy and technological advances continue to drive a rapid transition towards a grid with increased renewable resources and distributed generation, **the NYISO’s technology strategy will need to deliver capabilities that allow the NYISO to adapt to the dynamic operational and planning requirements of managing a more complex grid.** To achieve this, the NYISO will invest in technologies that provide a new level of flexibility and scalability, positioning the business to more rapidly adapt to the changing needs of a grid in transition. Integral to the execution of this strategy will be continuing to advance cyber security protections to stay ahead of the evolving cyber threat landscape.

The NYISO’s technology strategy is designed to **provide a modern software architecture and delivery approach, coupled with the ability to leverage, and integrate cloud solutions** to address the evolving needs of the grid and electricity markets. This strategic initiative is focused on the need for flexibility and scalability in the delivery of IT applications, as well as improved cost efficiencies associated with the operation and integration of cloud solutions. In addition to developing these important capabilities for the future, the NYISO will continue to place a significant priority on its cyber security program. Cyber-attacks are becoming more prevalent, and attackers are adapting and evolving the methods they employ in innovative ways. Continuing the development of a comprehensive security program provides a heightened ability to protect grid and market operations against evolving and escalating cyber threats.

► Critical Infrastructure Protection (CIP):

A set of standards designed to secure the assets required for operating the bulk power system.

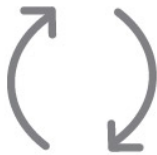


The NYISO implements the cyber and physical security standards as part of a layered, “defense-in-depth” posture that seeks to defend its critical infrastructure assets from incursions.

— NYISO’s stance on the CIP standards

Strategic Objectives

Six strategic objectives underlay the various initiatives of the NYISO and provide guidance for the allocation of human, financial, and technological resources. **These objectives instill discipline to the use of resources, helping to evaluate and prioritize NYISO investments toward those activities that best meet the goals articulated by each objective.** The NYISO will work in collaboration with stakeholders to achieve these strategic objectives.



Leader in Reliability

- » Sustain and enhance reliable operation of the changing New York electric grid.
- » Provide secure environment to protect the NYISO cyber, physical, and personnel resources.



Excellence in Execution

- » Sustain a culture that fosters quality in all that we do and engenders customer confidence in our operations, markets and planning.
- » Support and develop our workforce to ensure the organization has the professional talent and skills needed to fulfill the NYISO's mission.
- » Demonstrate fiscal responsibility and cost management in order to mindfully provide value to consumers.



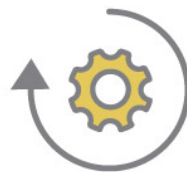
Leader in Application of Technology

- » Provide industry leading reliability management systems that evolve with the needs of the grid.
- » Enable industry leading market capabilities through the application of advanced technology platforms.
- » Build and evolve a technology ecosystem that provides new levels of flexibility and agility to meet the needs of the future grid.
- » Enhance cyber security capabilities to protect grid and market operations against evolving and escalating cyber threats.



Robust System Planning

- » Continuously enhance comprehensive system planning, including the reliability, economic, and public policy studies and other planning initiatives in New York.
- » Provide insight and guidance regarding the evolving power system.
- » Complete studies to analyze reliability, operations and market impacts to enable federal and state clean energy policy goals.



Leader in Market Design & Performance

- » Support and increase reliability, market efficiency and value for consumers through the development of enhancements to the wholesale electricity markets.
- » Foster fair, competitive and transparent wholesale electricity markets that attract new investments and retain needed resources.
- » Advance the transformation of the power grid with state-of-the-art technologies.



Authoritative Source of Information on Key Issues

- » Provide an independent, unbiased source of information on the reliable operation of New York's bulk electric system and wholesale electricity markets. Identify future needs by analyzing policy and technology developments.
- » Provide industry leadership through leadership forums, conferences, and professional and standard setting groups.

Strategic Initiatives

To meet evolving regulatory requirements, and expected technical, financial and market challenges, the NYISO has identified six key strategic initiatives in addition to its core responsibilities and ongoing project plans. **These initiatives provide guidance for projects and resource allocations into the future.** The NYISO will work in collaboration with stakeholders to achieve these strategic initiatives.



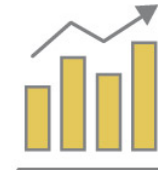
Grid Reliability & Resilience

Maintaining power system reliability is the NYISO's primary responsibility and the role of wholesale markets is critical in carrying this out. The changing portfolio of resources serving the state requires continuous enhancement of the NYISO's market products, operational, and planning practices to ensure the ability to efficiently and reliably serve New York's power system requirements.



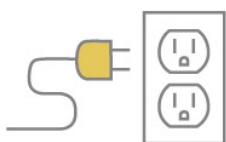
Technology Transformation

The NYISO IT Strategy and technology investments will position the NYISO with the flexibility and agility to comprehensively respond to emerging industry trends like the integration of new resources. At the same time, the organization will continue to maintain reliable operations of the grid and market systems while being responsive to increased cyber security risks.



Efficient Markets for a Grid in Transition

The addition of new resources will create a more dynamic grid in the future. Accurately valuing the contribution of resources toward meeting reliability is critical. The NYISO will implement market enhancements to incent the attributes needed on the bulk power system to reliably meet New York's energy needs.



Authoritative Source

The NYISO will continue to emphasize our brand value as a trusted, independent and expert source of information for the public, policymakers, and stakeholders.



Integration of Public Policy

The CLCPA requires aggressive state action to reduce greenhouse gas emissions and promote expansion of renewables, distributed energy, and storage resources. It is imperative that the NYISO's market design is harmonized with public policy goals. Continued study work is required to develop a deeper understanding of system needs to facilitate the grid in transition.



Efficient & Flexible Business Delivery

In the current rapidly changing environment, a skilled workforce, product and service refinement, continuous process improvement, and business delivery focus will help maximize the value the NYISO delivers. The NYISO will enhance organizational effectiveness, modernize systems for faster, more flexible response to market and regulatory changes, and continuously scrutinize cost of operations. The NYISO will support and develop our workforce to ensure the organization has the professional talent and skills needed to fulfill the NYISO's mission.

Governance

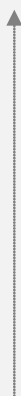
Working with transmission owners, the New York State Reliability Council (NYSRC), the Northeast Power Coordinating Council (NPCC), and the North American Electric Reliability Corporation (NERC), **the NYISO adheres to the nation’s strictest set of reliability standards, which include nearly 1,000 requirements designed to promote reliability for New York consumers.** Primarily regulated by the Federal Energy Regulatory Commission (FERC); the governance, structure, and mission of the NYISO comply with the guiding principles in FERC’s open access regulations — Order Nos. 888 and 2000. The NYISO is governed jointly by an independent Board of Directors and market participants comprised of transmission owners, generation owners, other electric power suppliers, end-use consumers, public power, and environmental sectors. In accordance with a rigorous code of conduct, NYISO Board members and staff are required to be independent from the interests of market participants.

Standing Committees

The governance structure includes three standing committees — the Management Committee, the Business Issues Committee, and the Operating Committee. Each committee oversees its own set of working groups, subcommittees, and task forces. **The NYISO’s achievement of its objectives depends on the active involvement of participants in the shared governance process.**

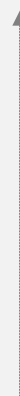
Management Committee

Recommends tariff changes to the Board of Directors, reviews the NYISO’s annual budget, recommends candidates to fill vacancies on the Board, and supervises the activity of all other committees.



Business Issues Committee

Establishes rules related to business issues and provides a forum for discussion of those rules and issues.



Operating Committee

Coordinates operations, develops procedures, evaluates proposed system expansions and acts as a liaison to the NYSRC.

Board of Directors

Daniel C. Hill, Board Chair
Former Senior Vice President and Chief Information Officer of Exelon Corporation

Ave M. Bie, Board Vice Chair
Partner in the law firm of Quarles & Brady and former Chair of the Wisconsin Public Service Commission

Gizman Abbas
Founder of Direct Investment Development and a founding Partner of Twenty First Century Utilities

Michael B. Bemis
Former President of Exelon Power and President of Energy Delivery for the Exelon Corporation, Chief Executive of London Electricity,

and Executive Vice President for Entergy Corporation

David R. Hill
Former Executive Vice President and General Counsel for NRG Energy and General Counsel for the U.S. Department of Energy. Currently, Fellow and Adjunct Senior Research Scholar at Columbia University's Center on Global Energy Policy

Roger B. Kelley
Former President and CEO of the New York Power Authority, and former President and CEO of Fortistar Renewables

Mark S. Lynch
Former President and CEO of New York State Electric and Gas Corporation and Rochester Gas and

Electric Corporation, and former President and CEO of the New York Independent System Operator

Teresa F. Marrinan
Former Senior Vice President, US SBU Commercial for The AES Corporation, former officer for the Dayton Power and Light Company, and founding Partner of Hanover Strategy Advisors LLC

Joseph P. Oates
Former Chairman of Con Edison Clean Energy Businesses, and a former Chairman, President and CEO of Con Edison Transmission

Richard J. Dewey
President and CEO of the New York Independent System Operator

Corporate Officers

Richard J. Dewey
President & Chief Executive Officer

Robert E. Fernandez
Executive Vice President, General Counsel & Chief Compliance Officer

Emilie Nelson
Executive Vice President

Rick Gonzales
Senior Vice President & Chief Operating Officer

Rana Mukerji
Senior Vice President, Market Structures

Douglas L. Chapman
Senior Vice President & Chief Information Officer

Diane L. Egan
Corporate Secretary & Board Secretary

Cheryl L. Hussey
Vice President & Chief Financial Officer

Kevin Lanahan
Vice President, External Affairs & Corporate Communications

Robb A. Pike
Vice President, Market Operations

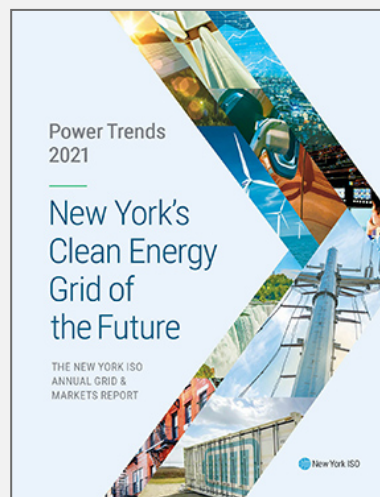
Zachary G. Smith
Vice President, System & Resource Planning

Wesley J. Yeomans
Vice President, Operations

Key Accomplishments

During the past year, the NYISO continued to maintain expected system reliability, added critical infrastructure, and worked to advance New York State policies requiring the development and reliable integration of new renewable resources and distributed energy resources. Notable accomplishments include:

- Implemented **Reserves for Resource Flexibility and Ancillary Services Shortage Pricing** to enhance the locations, pricing, and demand curves used to secure reserves in the market
- Integrated **Large Scale Solar on Dispatch** to provide economic basepoints if needed to support system reliability
- Furthered the **DER Participation Model** efforts through enabling technology to support telemetry as well as software development
- Implemented market design changes to improve capacity performance during critical periods through the **Tailored Availability Metric** project
- Implemented market changes to include **Expanding Capacity Eligibility** rules to allow participation of resources with duration limitations in the capacity market
- Fulfilling our role as an **authoritative source of information**, published **Power Trends 2021** focusing on the evolving grid, added videos, blogs, and eBooks to the NYISO website regarding key industry topics and trends
- Integrated additional **cloud technologies** into NYISO enterprise, providing higher levels of scalability and flexibility
- Implemented **advanced software development and design improvements**, accelerating the pace at which software can be deployed to meet the needs of NYISO stakeholders
- Received FERC approval on the initiation of a streamlined approach to NYISO's **Economic Planning Process** to provide a more expansive and informative 20-year study period
- Through the NYISO's **Public Policy Transmission Planning Process**, provided baseline Public Policy Need analysis and solicited proposals for transmission facilities for Long Island's offshore wind power development
- As part of **Comprehensive Reliability Plan**, integrated additional scenario-based analysis to inform stakeholders and policymakers of potential alternate outcomes and risks as the bulk electric grid transitions in accordance with the CLCPA





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