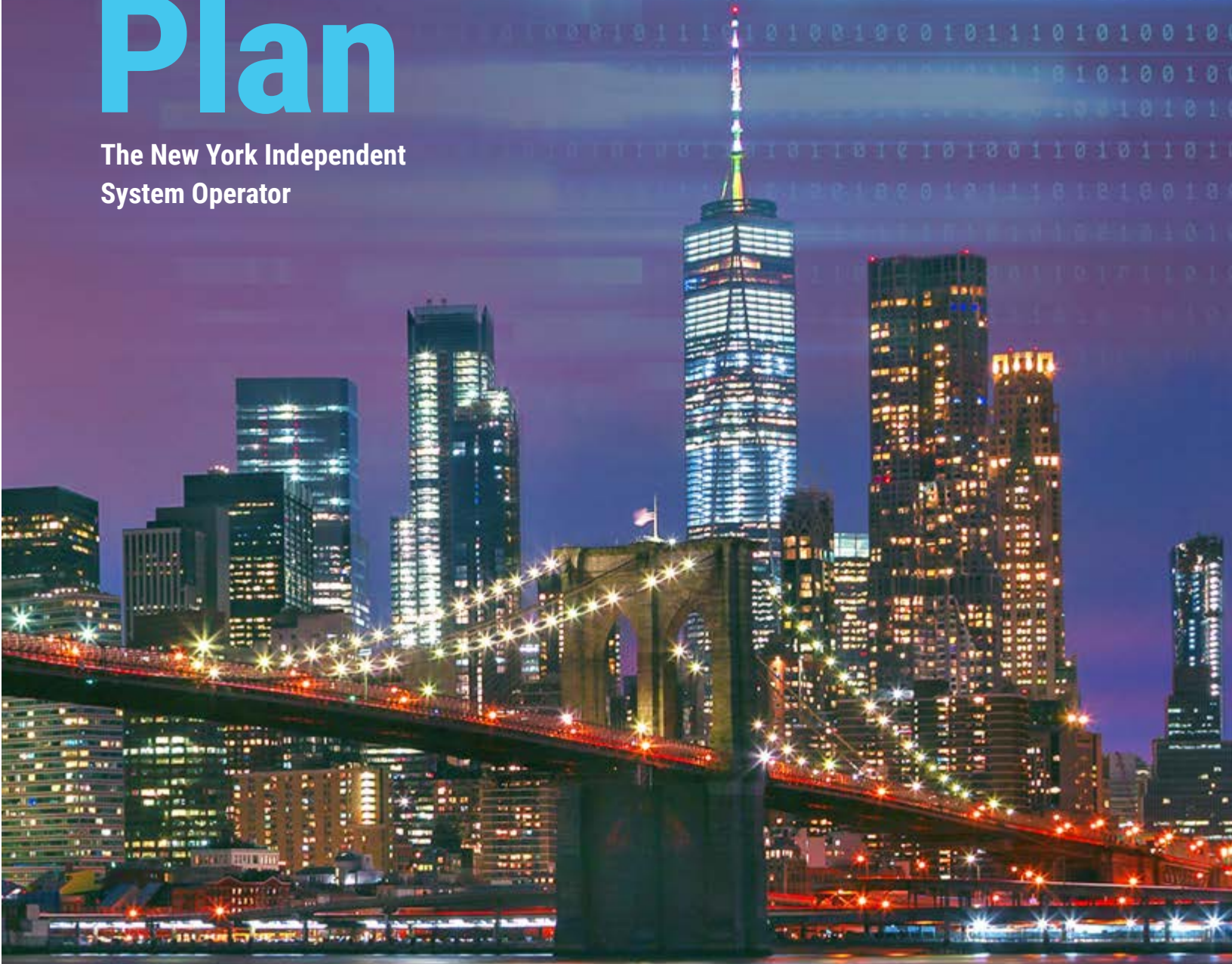


2019-2023

# Strategic Plan

The New York Independent  
System Operator



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## Message from the Interim President and Chief Executive Officer

The New York Independent System Operator (NYISO) continues to be a leader in managing electric system reliability and wholesale electricity markets in New York State. Today, as we witness the continued evolution of the electric grid, we see a power system and market structure in transition – one that is attracting greater efficiencies, new technologies such as energy storage and distributed energy resources (DER), and a comprehensive commitment on the NYISO's part to integrate these technologies into our markets and operations.



The 2019-2023 NYISO Strategic Plan reflects these changes – and corresponding challenges. For example, public policy initiatives are taking an increasingly prominent role in reshaping the grid. The NYISO continues to pursue a comprehensive policy that positions the wholesale market design to complement state policy goals. The NYISO expects regulatory policy initiatives to continue driving the shift in supply resources, as evolving environmental regulations and renewable energy goals accelerate the transition from higher-emitting generation to lower-emitting resources.

We acknowledge the increasing role of DER, energy storage and renewable resources to improve grid resilience and reduce greenhouse gas emissions, and will continue to ensure that long-term reliability will be maintained through the use of innovative solutions.

The NYISO views its markets as an essential, effective platform for harmonizing public policy and technological influences in an economically efficient manner to reliably meet consumers' energy needs. This Strategic Plan demonstrates our value proposition and seeks to capitalize on the opportunities we have to adapt our market structure and prepare for a future electric grid that is less centralized, more resilient and cleaner.

Our changing resource portfolio requires a comprehensive review of the NYISO's wholesale market products and practices. We need to encourage resource flexibility, including the ability to respond to dynamic system conditions, with the growth of intermittent renewable resources. Technology that can respond rapidly will be key to grid reliability, and our future market enhancements will focus on attracting this capability through the continued formation of proper price signals consistent with the value of products and services required to meet system needs.

Additionally, cybersecurity continues to represent a serious and significant threat facing the electric industry. In response to this threat, the NYISO is expanding its already-robust Cybersecurity Operations Center to continuously manage ongoing and evolving risk scenarios. The NYISO will also continue to build cybersecurity relationships around the state, expand recruiting in the field, continue to train staff on cybersecurity matters and require strong security measures from our vendors.

We embrace the challenges and opportunities presented by the ongoing transformation of the grid. The NYISO also remains confident in the ability to work collaboratively with our stakeholders, market participants, policymakers and regulators to succeed over the coming years by developing and implementing the market, operational, planning and other enhancements necessary to continue to efficiently and reliably serve New York's energy needs.

Thank you for your continued confidence in all that we do.

Sincerely,  
**Robert E. Fernandez**  
Interim President and CEO

## Key Accomplishments

The past year was distinguished by several important accomplishments. In addition to maintaining expected system reliability, the NYISO added new critical infrastructure and continued to support New York State policies regarding the development and reliable integration of new renewable resources and distributed energy resources (DER). Accomplishments include:

- Published a five-year **Master Plan** providing a cohesive strategic vision for future market design efforts
- Continued implementation of the **DER Roadmap**
  - Developed market rules to accommodate DER integration into the wholesale markets
  - Launched a Pilot Program and selected three DER Pilot Projects to demonstrate DER capabilities and options for wholesale market integration
- Released **The State of Storage** plan for developing a market participation model designed to maximize economic and societal benefits of Energy Storage Resources
  - Developed market rules to accommodate storage integration into the wholesale markets
- Published the **Power Trends** report highlighting how technology, economic forces and public policy are shaping a more dynamic power grid, and the implications for the state's wholesale markets
- Participated in the **FERC resilience** proceeding, which detailed NYISO efforts to assess and maintain grid resilience and how the wholesale markets already recognize and compensate for resilience-related attributes and services
- Selection of transmission upgrades through the **Public Policy Transmission Planning Process** to address needs for new transmission in Western New York and continued work toward finalizing the selection of projects in response to the identified AC transmission needs for incremental transfer capability across the Central East and Upstate New York/Southeast New York (UPNY-SENY) interfaces
- Development of a proposal for implementation of **Carbon Pricing** in the NYISO wholesale markets
- Implemented the **Salesforce Customer Relationship Management** tool providing advanced features for improved customer experience and enhanced communication functionality
- As part of the **Solar Forecasting** initiative, developed behind-the-meter and grid-scale forecasting capability to produce PV forecasts for use in the day-ahead and real-time markets

- Developed market rules for an alternative methodology to determine **Locational Minimum Installed Capacity Requirements (LCRs)** that minimizes total New York Control Area (NYCA) capacity cost while maintaining minimum reliability criteria
- Continued evolution of the **NYISO IT Strategy**
  - Cloud Computing Infrastructure adopted for targeted solutions
  - Employed test automation and agile development methodology for software modifications
- Continued implementation of the **NYISO Cybersecurity and Enterprise Security** strategies
  - Cybersecurity Operations Center established to strengthen security operations for all enterprise information systems
  - Strengthened physical security through implementation of Receiving Transfer Facility

These key accomplishments build upon the organization's ongoing commitment to lower grid management charges, improve compliance with applicable reliability standards, facilitate industry compliance with and achievement of state policies and lower the cost of electricity to consumers across New York.

## The NYISO

### Introduction

The NYISO, which began operating in 1999, is a not-for-profit corporation primarily regulated by the Federal Energy Regulatory Commission (FERC). The governance, structure and mission of the NYISO comply with the guiding principles in the FERC's open access regulations – Order Nos. 888 and 2000. The NYISO is governed jointly by an independent Board of Directors and market participants (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.

**The NYISO serves the public interest and provides benefit to consumers by fulfilling an array of essential responsibilities, which include:**

- Reliable operation of New York's bulk power system
- Fair and open administration of competitive wholesale electricity markets
- Planning for the future of New York's power system
- Advancing the technological infrastructure of the electric system serving New York

### Reliable Operations

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. 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. To provide the lowest cost power available to reliably meet consumer needs, the NYISO conducts and monitors competitive auctions of wholesale electricity every five minutes, every day of the year.

In 2014, the NYISO opened a new primary power control center. The control center, among the most technologically sophisticated in the world, improves operator visibility of wide-area and local grid conditions, enhances integration of new technologies, and provides many of the situational awareness displays and other tools needed to meet strict requirements for the monitoring and control of the bulk power system.

### Efficient Markets

As market administrator, the NYISO conducts a continuous series of auctions, in which load serving entities bid to purchase electric energy offered for sale by suppliers. Similarly, the NYISO administers markets to purchase balancing requirements and various ancillary services needed to maintain system reliability. The NYISO also operates markets that allow market participants to

purchase the installed capacity needed to meet resource adequacy requirements established by the NYSRC. Energy service companies and end-use consumers can provide demand response 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 mitigation and analysis group continually surveil the markets for attempts at manipulation, identify potential market improvements, and report any violations of the tariffs to FERC.

### **Comprehensive Planning**

The NYISO's Comprehensive System Planning Process (CSPP) is a unique, "all source" planning process that evaluates transmission, generation and demand response on a comparable basis. It is the primary tool for the NYISO to inform transmission expansion and electric infrastructure investment decisions in the NYCA. Developed through its stakeholder governance process, 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 power system, reduce system congestion, and respond to identified transmission needs driven by public policy.

Pursuant to FERC Order No. 1000, the NYISO has adapted its CSPP to evaluate transmission needs driven by public policy requirements in addition to those driven by reliability and economic needs. This planning process enhancement will assist in identifying and evaluating proposals to achieve various public policy objectives.

The NYISO strives to achieve its strategic objectives with the guidance of government policy makers and regulators, and the direct involvement of market sector stakeholders. As it serves the greater interest of the state and the people of New York, the NYISO's efforts are most visible in the forum it provides to share ideas on how to resolve issues and solve problems. With more than 400 market participants, the NYISO engages a wide spectrum of interests, including representatives from public power and environmental parties, end-use consumers, transmission owners, generation owners, and other suppliers.

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 committee process.

### **Responding to the Changing Grid**

Historically, electric power flowed from generators across a vast network of transmission and distribution lines before reaching consumers. Energy usage and peak demand grew incrementally, year by year, and growing demand for energy was met through physical expansion of the grid to increase its generating and delivery capacity.

While demand on the grid may no longer be growing at historical levels, planning and operating the grid has grown more complex. Technology, economic forces, and public policy are shaping a more dynamic grid. We are moving away from historical patterns of supply and demand, and towards emerging trends that reflect advances in how electricity is generated and consumed. Public policies are expediting this transformation.

This means historical, predictable demand patterns that characterized infrastructure planning over much of the last century are shifting. Consumers, increasingly empowered with intelligent digital technologies and advanced communications tools, are becoming active participants on the grid – adjusting their energy use patterns to reflect grid conditions, and tailoring their energy use to meet their own needs for reliability and clean power.

This dynamic introduces new variables that the NYISO is uniquely poised to meet through competitive wholesale electricity markets. In collaboration with policymakers, regulators and market participants, the NYISO will continue to leverage our expertise in operating New York’s bulk power system through advanced market design and open, transparent system planning in order to reliably and efficiently respond to the energy needs of all New Yorkers.

## Core Values and Mission

The Core Values and Mission of the NYISO establish the foundation from which all of our responsibilities are delivered. Together, they provide the basis for the NYISO’s Strategic Objectives, as well as a reference point to guide decision making and actions at all levels of the organization.

### Core Values

- **Accountability:** Taking responsibility to do what needs to be done
- **Operational Excellence:** Commitment to excellence in all our processes, systems and products
- **Integrity:** Commitment to honest, ethical, and transparent actions
- **Team Work:** Working together, succeeding together, respecting each other
- **Customer Focus:** Understanding the customer perspective
- **Innovation:** Pursuing creative and sound solutions
- **Enthusiasm:** Having a passion for our work and our interaction with our customers, stakeholders and policymakers

### Mission

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

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



# 2019-2023 Strategic Plan

## 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.

### 1. A Leader in Reliability

- Promote resource adequacy and transmission security now and in the future.
- Sustain and enhance reliable operation of the bulk power system and the wholesale electricity markets.
- Provide a secure environment to protect the NYISO cyber, physical, and personnel resources.

### 2. A Leader in Market Design and Performance

- Develop enhancements to the wholesale electricity markets that increase reliability and market efficiency and create value for consumers.
- Foster a market environment conducive to new investments in the wholesale electricity markets that attract and retain resources needed in the state.

### 3. Authoritative Source of Information on Key Issues

- Take a proactive leadership role in providing an independent, unbiased source of information on the operation of the bulk power system and wholesale market in New York, and identifying future needs by analyzing the reliability, environmental and cost attributes of policy and technology choices.
- Conduct stakeholder outreach activities in leadership forums, national and international conferences, as well as professional and standard setting groups.

### 4. Excellence in Execution

- Sustain a culture that promotes and strives for flawless performance in all that we do and engenders customer confidence in our operations, markets, and planning.

### 5. Sustain and Enhance Robust Planning Processes

- Strengthen planning capabilities to effectively implement the CSPP, which includes reliability, economic, and public policy planning studies and other planning initiatives in New York.
- Coordinate with market participants, state and regional planning agencies and other key stakeholders to complete studies and to analyze reliability, operations and market impacts of a broad range of energy-related federal and state policy goals, including environmental, fuel diversity, energy efficiency and renewable integration.

## 6. A Leader in Technology Innovation

- Work with regulators and other stakeholders to promote the advancement of DER and smart grid standards based on industry best practices and state-of-the-art technologies.
- Develop innovative market products, advanced reliability tools, and information architecture utilizing modern industry capabilities and applicable technology advances.
- Develop advanced technologies to maintain reliable, optimally performing and secure operation of existing systems.
- Reinforce and enhance cybersecurity protocols and best practices.

## Strategic Initiatives

To meet evolving regulatory requirements, and expected technical, financial and market challenges the NYISO has identified key strategic initiatives in addition to its core responsibilities and ongoing project plans. These initiatives provide guidance for projects and resource allocations in 2019 and in the future.

### Grid Reliability and Resilience

- Maintaining power system reliability is the NYISO's primary responsibility, and the role of wholesales markets is critical in carrying out this responsibility. The changing portfolio of resources serving the electric needs of New York will require a comprehensive review of the NYISO's existing market products and operational and planning practices to ensure the continued ability to efficiently and reliably serve New York's electricity requirements. Significant study work is needed to take a deeper dive into evolving focus areas.

### Efficient Markets for a Grid in Transition

- The addition of renewable resources, energy storage, and DER expected as a result of New York's Clean Energy Standard and other policy initiatives will create a more dynamic grid, where supply is increasingly comprised of weather-dependent renewable resources and flexible resources will be needed to balance intermittent generation. Incenting resource flexibility, which includes the ability to respond rapidly to dynamic system conditions, providing controllable ramp with fast response rates, and providing frequent startup/shutdown capability, will be key to future market enhancements at the NYISO.

### New Resource Integration

- Technological advancements and public policies, particularly Reforming the Energy Vision (REV) and the State's storage initiative, are encouraging greater adoption of DERs and energy storage to meet consumer energy needs. DER and energy storage offer the potential to make load and supply resources more dynamic and responsive to wholesale market price signals and system needs, potentially improving overall system efficiencies. The NYISO believes that opening its markets to DER and energy storage will improve the strength and efficiency of the electric grid.

**Integration of Public Policy**

- The New York Clean Energy Standard sets the stage for aggressive state action to reduce greenhouse gas emissions and promote expansion of renewable, distributed energy, and storage resources. The NYISO is taking steps to harmonize the wholesale market design with state public policy goals.

**Technology and Infrastructure Investment**

- The technology investments outlined in the NYISO's IT strategy and various projects will position the NYISO to comprehensively respond to emerging industry trends like the integration of energy storage, renewable and distributed resources, and at the same time, continue to maintain reliable operations of grid and market systems while being responsive to increased security risks and demand for new business capabilities.

**Efficient and Flexible Business Model**

- To continue delivering high value to its stakeholders, the NYISO will invest in an efficient and flexible business model through a number of initiatives. The NYISO will improve organizational effectiveness by analyzing its depth around key skills and abilities and execute a comprehensive training plan to address any identified deficiencies in bench strength. The NYISO will also evaluate and implement staffing plans in support of new market resource integration. In considering the growing cost pressures tied to Rate Schedule 1, alternative charging models for incremental costs will be considered in order to provide mechanisms for allocating costs more directly to stakeholders receiving the benefits. Finally, the NYISO will continue to develop its brand and invest in a campaign to educate both stakeholders and the broader community on its value proposition.

## Timeline of Anticipated Projects Supporting Strategic Initiatives

Initiative	2019 Projects	2020 Projects	2021 Projects	2022-2023 Projects
<b>Grid Reliability and Resilience</b>	<ul style="list-style-type: none"> <li>■ Enhancing Fuel and Energy Security</li> <li>■ Climate Change Impact and Resilience Study</li> <li>■ Comprehensive System Planning Process Reform</li> <li>■ Reserve Procurement for Resilience</li> </ul>	<ul style="list-style-type: none"> <li>■ Enhancing Fuel and Energy Security</li> <li>■ Climate Change Impact and Resilience Study</li> <li>■ Comprehensive System Planning Process Reform</li> <li>■ Operational Situational Awareness</li> <li>■ Solar on Dispatch</li> <li>■ Reserve Procurement for Resilience</li> </ul>	<ul style="list-style-type: none"> <li>■ Enhancing Fuel and Energy Security</li> <li>■ Climate Change Impact and Resilience Study</li> <li>■ Comprehensive System Planning Process Reform</li> <li>■ Operational Situational Awareness</li> <li>■ Solar on Dispatch</li> <li>■ Reserve Procurement for Resilience</li> </ul>	<ul style="list-style-type: none"> <li>■ Climate Change Impact and Resilience Study</li> <li>■ Flexible Transaction Scheduling</li> <li>■ Solar on Dispatch</li> <li>■ Reserve Procurement for Resilience</li> </ul>
<b>Efficient Markets for a Grid in Transition</b>	<ul style="list-style-type: none"> <li>■ Enhanced Fast Start Pricing</li> <li>■ More Granular Operating Reserves</li> <li>■ Ancillary Services Shortage Pricing</li> <li>■ Tailored Availability Metric</li> <li>■ External Capacity Performance and Obligations</li> <li>■ Demand Curve Reset</li> <li>■ Constraint Specific Shortage Pricing</li> </ul>	<ul style="list-style-type: none"> <li>■ Enhanced Fast Start Pricing</li> <li>■ More Granular Operating Reserves</li> <li>■ Ancillary Services Shortage Pricing</li> <li>■ Tailored Availability Metric</li> <li>■ External Capacity Performance and Obligations</li> <li>■ Demand Curve Reset</li> <li>■ Comprehensive Mitigation Review</li> </ul>	<ul style="list-style-type: none"> <li>■ More Granular Operating Reserves</li> <li>■ Ancillary Services Shortage Pricing</li> <li>■ Tailored Availability Metric</li> <li>■ External Capacity Performance and Obligations</li> <li>■ Flexible Ramping Product</li> <li>■ Regulation Market Improvements</li> <li>■ Comprehensive Mitigation Review</li> </ul>	<ul style="list-style-type: none"> <li>■ More Granular Operating Reserves</li> <li>■ Ancillary Services Shortage Pricing</li> <li>■ Demand Curve Reset</li> <li>■ Flexible Ramping Product</li> <li>■ Regulation Market Improvements</li> <li>■ Constraint Specific Shortage Pricing</li> <li>■ Comprehensive Mitigation Review</li> </ul>

	<ul style="list-style-type: none"> <li>■ Comprehensive Mitigation Review</li> </ul>			
<b>New Resource Integration</b>	<ul style="list-style-type: none"> <li>■ DER Participation Model</li> <li>■ Dual Participation</li> <li>■ Meter Service Entity</li> <li>■ NYISO Pilot Framework</li> <li>■ Energy Storage Resource Participation Model</li> </ul>	<ul style="list-style-type: none"> <li>■ DER Participation Model</li> <li>■ Dual Participation</li> <li>■ Meter Service Entity</li> <li>■ NYISO Pilot Framework</li> <li>■ Energy Storage Resource Participation Model</li> <li>■ Storage and Renewables Aggregation Model</li> </ul>	<ul style="list-style-type: none"> <li>■ DER Participation Model</li> <li>■ Dual Participation</li> <li>■ Meter Service Entity</li> <li>■ Storage and Renewables Aggregation Model</li> </ul>	<ul style="list-style-type: none"> <li>■ Storage and Renewables Aggregation Model</li> </ul>
<b>Integration of Public Policy</b>	<ul style="list-style-type: none"> <li>■ Carbon Pricing</li> <li>■ Public Policy Transmission Expansion</li> <li>■ Planning for Environmental Impacts</li> <li>■ Interconnection Project Queue Automation</li> </ul>	<ul style="list-style-type: none"> <li>■ Carbon Pricing</li> <li>■ Public Policy Transmission Expansion</li> <li>■ Planning for Environmental Impacts</li> </ul>	<ul style="list-style-type: none"> <li>■ Carbon Pricing</li> <li>■ Public Policy Transmission Expansion</li> <li>■ Planning for Environmental Impacts</li> </ul>	<ul style="list-style-type: none"> <li>■ Public Policy Transmission Expansion</li> </ul>
<b>Technology and Infrastructure Investment</b>	<ul style="list-style-type: none"> <li>■ EMS/BMS: Implement</li> <li>■ MIP Upgrade</li> <li>■ Data Warehouse Replacement</li> <li>■ ICAP AMS Redesign</li> </ul>	<ul style="list-style-type: none"> <li>■ Data Warehouse Replacement</li> <li>■ ICAP AMS Redesign</li> <li>■ Application Testing Improvements</li> <li>■ Cloud Computing</li> </ul>	<ul style="list-style-type: none"> <li>■ MIP Upgrade</li> <li>■ ICAP AMS Redesign</li> <li>■ Application Testing Improvements</li> <li>■ Cloud Computing</li> </ul>	<ul style="list-style-type: none"> <li>■ Application Testing Improvements</li> <li>■ Cloud Computing</li> <li>■ Cybersecurity Protection Strategies</li> </ul>

	<ul style="list-style-type: none"> <li>■ Application Testing Improvements</li> <li>■ Cloud Computing</li> <li>■ Cybersecurity Protection Strategies</li> <li>■ Cybersecurity Operations Center</li> </ul>	<ul style="list-style-type: none"> <li>■ Cybersecurity Protection Strategies</li> <li>■ Cybersecurity Operations Center</li> </ul>	<ul style="list-style-type: none"> <li>■ Cybersecurity Protection Strategies</li> <li>■ Cybersecurity Operations Center</li> </ul>	<ul style="list-style-type: none"> <li>■ Cybersecurity Operations Center</li> </ul>
<p><b>Efficient and Flexible Business Model</b></p>	<ul style="list-style-type: none"> <li>■ Campaign to Promote Value of Markets</li> <li>■ Vendor Management Tool</li> <li>■ Oracle Financials Upgrade</li> <li>■ Financial Systems Strategic Vision Planning</li> <li>■ Position Control System</li> <li>■ Financial Risk Assessment and Scoring Enhancements</li> </ul>	<ul style="list-style-type: none"> <li>■ Campaign to Promote Value of Markets</li> <li>■ Vendor Management Tool</li> <li>■ Oracle Financials Upgrade</li> <li>■ Financial Systems Strategic Redesign and Integration</li> <li>■ Position Control System</li> <li>■ Financial Risk Assessment and Scoring Enhancements</li> </ul>	<ul style="list-style-type: none"> <li>■ Campaign to Promote Value of Markets</li> <li>■ Financial Systems Strategic Redesign and Integration</li> <li>■ Financial Risk Assessment and Scoring Enhancements</li> </ul>	<ul style="list-style-type: none"> <li>■ Campaign to Promote Value of Markets</li> <li>■ Financial Systems Strategic Redesign and Integration</li> <li>■ Financial Risk Assessment and Scoring Enhancements</li> </ul>

## Trends and Technology

New York State's public policy goals are increasingly emphasizing reliance on renewable energy, DER and energy storage to achieve greenhouse gas reduction goals and other environmental objectives. As a result, the grid of the future will not only deliver energy from central power stations but increasingly from renewable resources and distributed resources.

DER and energy storage are poised to transform New York's wholesale electric system. They can help grid operators by improving system resiliency, energy security, and fuel diversity. These resources can also lower consumer prices, improve market efficiency, and allow consumers to take greater control of their electricity use and costs through a variety of new technologies.

These emerging trends will require the NYISO to evolve its market and grid software platforms and acquire and retain talented employees to operate and plan the grid and markets of the future.

True to its mission, the NYISO regularly assesses its employees' skills, capabilities and resource levels to ensure they are closely aligned with our strategic focus. NYISO is conducting a review of the organizational impacts of various scenarios of renewable and DER penetration, which encompasses staffing levels, skill sets, and the potential for automation in the five- and ten-year time horizons.

In addition, the NYISO will continue to develop its technology and infrastructure to ensure that its information systems are capable of meeting NYISO's business objectives and stay aligned with NYISO's strategic focus. NYISO's technology development is rooted in a collaborative effort in which multiple IT strategy components are formulated to guide the overall technology direction. One of the key components is strategic applications and as part of this, the 2019-2023 NYISO Strategic Plan will include significant investments in its EMS/BMS replacement, distributed energy resources, energy storage and other new grid and market capabilities. The plan also includes investments in components such as software solution delivery, cloud computing services, and enterprise security.

The solution delivery component's primary focus is to investigate the use of rapid development processes with modern techniques and tools to improve NYISO's flexibility to deliver software solutions. New solution delivery processes will incorporate new development pipelines with an agile methodology and built-in test automation to create more efficiency, improve quality, and increase flexibility and speed of deployments.

The cloud computing component has necessitated a new technology governance model to ensure a more consistent and detailed assessment of cloud computing services and providers used by the NYISO. This governance structure now allows for a comprehensive assessment of how any cloud computing service would integrate with NYISO's enterprise ecosystem. Furthermore, this governance structure enables the NYISO to provide more flexible solutions based on cloud services that operate in a secure and efficient manner.

The enterprise security component continues to be one of the focal points of the IT strategy given the increasingly complex security threat landscape. It will continue to focus on operational security excellence, compliance excellence, managing risk, and external partnerships to strengthen resilience, security operations, and overall perimeter defenses.

Two additional IT strategy components are technology lifecycle and IT service management, both of which focus on continued operational improvements. Together, all six IT strategy components are designed to work in tandem to focus on the following key themes derived from NYISO's strategic business objectives:

- Maintaining IT reliability through the reduction of operational risk, improvements in security and by increasing quality of solutions.
- Improving customer focus through increased flexibility in delivery of solutions and improvements in IT services provided to the business.
- Improving overall efficiencies through automation of IT processes and optimization of the technology portfolio.
- Supporting new business capabilities for improvements in grid and market operations, and enable advancements for the integration of DER and energy storage and wide area situational awareness improvements in smart grid applications.



## Corporate Governance

### Board of Directors

**Ave M. Bie, Board Chair**

Partner in the law firm of Quarles & Brady and former Chair of the Wisconsin Public Service Commission

**Robert A. Hiney, Board Vice Chair**

Former Executive Vice President for Power Generation of the New York Power Authority (NYPA)

**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

**Daniel C. Hill**

Former Senior Vice President and Chief Information Officer of Exelon Corporation

**Roger B. Kelley**

Former President and CEO of the New York Power Authority, former President and CEO of Peregrine Midstream Partners, LLC., 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

**James V. Mahoney**

President and CEO of Energy Market Solutions, former President and CEO of DPL, and former President and CEO of EarthFirst Technologies

**Thomas F. Ryan, Jr.**

Former President and Chief Operating Officer of the American Stock Exchange

**Robert E. Fernandez**

Interim President and CEO of the New York Independent System Operator

## Corporate Officers

**Robert E. Fernandez**  
Interim President and CEO

**Richard Dewey**  
Executive Vice President

**Rick Gonzales**  
Senior Vice President and Chief Operating Officer

**Rana Mukerji**  
Senior Vice President, Market Structures

**Douglas Chapman**  
Vice President and Chief Information Officer

**Diane L. Egan**  
Corporate Secretary and Secretary to the Board

**Karen Gach**  
Acting General Counsel

**Cheryl Hussey**  
Vice President and Chief Financial Officer

**Kevin Lanahan**  
Vice President, External Affairs

**Emilie Nelson**  
Vice President, Market Operations

**Zachary G. Smith**  
Vice President, System and Resource Planning

**Wesley Yeomans**  
Vice President, Operations



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