

# 2016 – 2020 Strategic Plan

New York Independent System Operator



## Since the inception of New York's competitive market...

**NYISO** has achieved



**\$6.4 billion** in reduced fuel costs due to system efficiency improvements that exceeded national efficiency gains by **300%**



**\$540 million** in savings from reduced reserve requirements



**25 million tons** of carbon emissions avoided in 2013 versus 1999 due to improved power plant efficiency and a cleaner supply mix



Integrated enough wind generation to power **490,000** homes each year

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## Message from the President & Chief Executive Officer



This past year, the NYISO marked its 15th year of reliably operating the bulk power system and efficiently administering competitive wholesale electricity markets. We take pride in the benefits we've delivered to customers through increased system efficiency, reduced fuel and reserve costs, lower environmental emissions and clean energy production. Our efficient operations have delivered

\$6.4 billion in fuel savings and 40 percent reduction in carbon emissions. While we're proud of what we've accomplished, we now look to the future and the opportunity to deliver even more value and innovation for customers.

The next 15 years promise to bring more exciting and challenging changes to the industry. Costs continue to decline for distributed energy resources and renewables. Information technology now gives customers the ability to make individual energy choices to meet their own energy needs. And, federal and state policymakers continue to push for stricter emissions standards from the power sector, as well as higher levels of renewable generation across the State. Additionally, historically low natural gas prices and high availability of that fuel is driving the electric industry to a high dependence on the natural gas infrastructure, putting stress on the high level of fuel diversity that our system has leveraged for reliability for decades.



New York’s energy future will involve careful refinements to the NYISO’s planning processes, operational practices, and market designs. Our markets must continue to lead by incorporating technological innovation and providing effective price signals to promote fuel assurance as we rely even more on natural gas generation. Our planning processes must account for the growth of distributed energy resources and intermittent renewable resources at the bulk level. Transmission investments will be necessary to optimize the flow of electricity from clean energy resources, which are predominantly located far from downstate New York load centers where they’re needed most.

The first 15 years of NYISO’s history have proven that competitive markets drive reliability and play a central role in promoting innovation, efficiency, and consumer benefit. The NYISO’s 2016-2020 Strategic Plan prioritizes the areas we will focus on to address the industry and policy trends leading this change and shaping our future. I am confident, based on the initiatives outlined in this document, that the NYISO’s competitive markets will lead the way to a reliable future and will provide a framework for continuous improvement and expanded consumer benefit in the years to come. As CEO, I am committed to advancing our markets, processes, and practices in a transparent manner to ensure the NYISO continues to drive change while continuing our commitment to reliability.

Sincerely,

Bradley C. Jones  
President & CEO





## PURPOSE

The purpose of the Strategic Plan is to establish the strategic direction for the organization and create a foundational strategy that balances long-term objectives, operational priorities, and financial discipline. The plan reflects the perspectives of the NYISO's Board of Directors, NYISO's senior management, customers, and other stakeholders. It serves as a communications tool for the NYISO Board of Directors, employees, and stakeholders.

The plan outlines the Mission, Guiding Principles, and Core Values under which the NYISO will operate over the next five years, and defines the company's strategic objectives and initiatives for that time period.



## MISSION

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:

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

## NYISO Mission

**The mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:**

Maintaining  
and  
enhancing  
regional  
reliability

Operating  
open, fair and  
competitive  
wholesale  
electricity  
markets

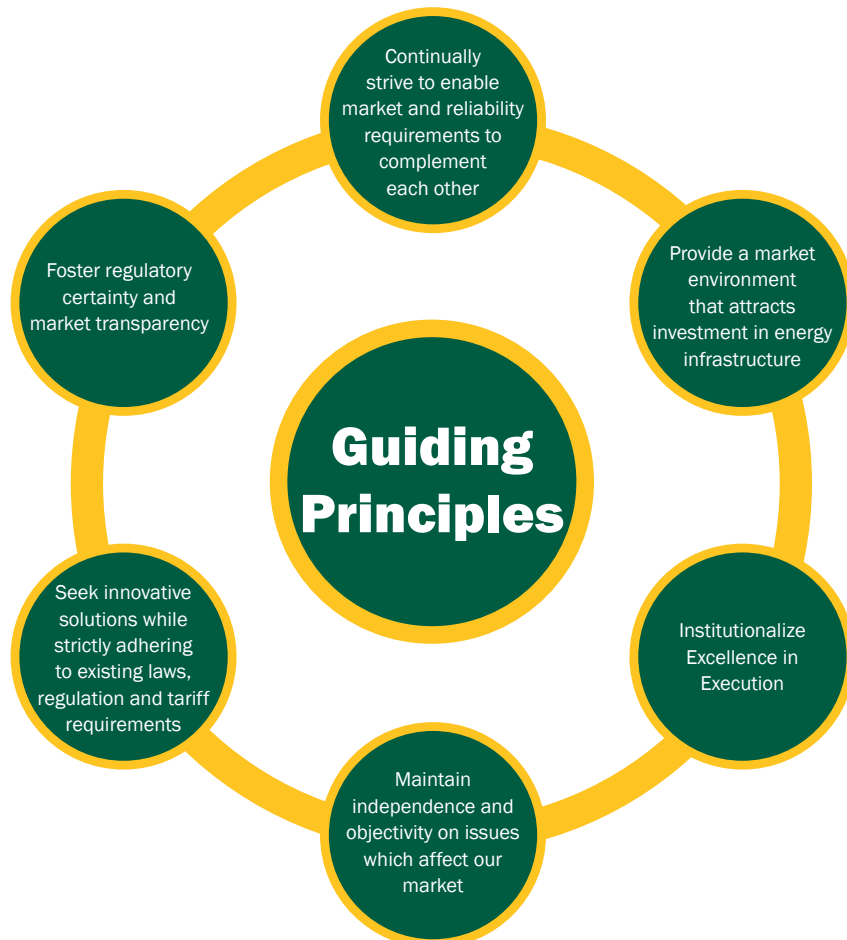
Planning  
the power  
system  
for the  
future

Providing factual  
information to  
policymakers,  
stakeholders  
and investors  
in the power  
system



## GUIDING PRINCIPLES

- Continually strive to enable market and reliability requirements to complement each other
- Provide a market environment that attracts investment in energy infrastructure
- Institutionalize Excellence in Execution
- Maintain independence and objectivity on issues which affect our market
- Seek innovative solutions while strictly adhering to existing laws, regulation and tariff requirements



## CORE VALUES

The Core Values of the NYISO establish the foundation from which all our responsibilities and accountabilities are delivered:

- *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 and ethical actions*
- *Team Work – Working together, succeeding together, respecting each other*
- *Customer Focus – Listening, caring, delivering*
- *Innovation – Pursuing creative and sound solutions*
- *Enthusiasm – Having a passion for our work and our interaction with our customers, stakeholders and policy makers*

## Core Values

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<b>Customer Focus</b>	<i>Listening, caring, delivering</i>
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<b>Enthusiasm</b>	<i>Having a passion for our work and our interaction with our customers, stakeholders and policy makers</i>

## **STRATEGIC OBJECTIVES**

### **A Leader in Reliability**

Promote resource adequacy and transmission security now and in the future.

Sustain and enhance reliable operation of the bulk electricity grid and the wholesale electricity markets.

### **A Leader in Market Design**

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 attracts and retains resources needed in the state.

### **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.

### **Sustain and Enhance Robust Planning Processes**

Strengthen planning capabilities to effectively implement the Comprehensive System Planning Process (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 level policy goals, including environmental, fuel diversity, energy efficiency and renewable integration.

### **A Leader in Technology Innovation**

Work with Regulators and other Stakeholders to coordinate Smart Grid standards and protocols and implementation.

Develop innovative market products and information architecture for integrating renewable resources and other new technologies needed for reliable grid operations.

### **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.

## STRATEGIC INITIATIVES OVERVIEW

**Reliability through Markets** - The NYISO will enhance its energy and capacity markets as necessary to maintain system reliability and operate efficient wholesale power markets. Market signals must align with system reliability needs in order to have effective resource response in the short-term and to encourage investment when and where it is needed over the long-term. The goal of this effort is to protect reliability and to improve the effectiveness of the markets.

- *The economics of natural gas are creating a growing regional reliance on the fuel for power generation and competing coincident demands for natural gas during the winter trigger price volatility in electricity markets.*
- *The reliability of the bulk power system is increasingly linked to the performance of the natural gas pipeline infrastructure, raising reliability concerns related to fuel delivery during periods of peak demand.*
- *The NYISO is committed to enhanced coordination with the gas industry, market designs that promote fuel assurance among generators, and price signals that promote the appropriate economic investment.*

**Integration of Distributed Energy Resources** - The NYISO will develop the tools needed to plan and operate the bulk power system in an environment that includes greater levels of distributed energy resources. The NYISO market design will drive changes that support the integration of new resource types. The goal of this effort is to ensure bulk power system reliability and competitive markets throughout the changing resource landscape.

- *The improving economics of distributed energy resources -- combined with favorable public policies to promote the deployment of these resources -- will influence the design of the grid.*
- *The NYISO will work to integrate such resources into its markets in a manner that enhances system efficiencies through increased demand elasticity while deploying new planning and operational tools to ensure visibility into system conditions and future needs as distributed energy resources proliferate.*

**Technology and Infrastructure Investment** - The NYISO will position itself to manage the increasingly complex, costly, but necessary systems required to run New York's bulk power system and wholesale markets. The upgrade of the Energy Management and Business Management Systems (EMS/BMS) is a substantial effort requiring the commitment of resources across the organization. The EMS/BMS upgrade is critical for the NYISO to meet its core reliability and market objectives going forward. The purpose of this goal is to ensure that NYISO's mission critical systems are robust, secure and evolving with industry best practices.

- *IT infrastructure is the backbone of reliable grid operations and efficient markets.*
- *Prioritizing and pursuing investments in IT infrastructure is essential to fulfilling the NYISO's mission to its stakeholders and the public while preparing for increasingly dynamic grid conditions.*



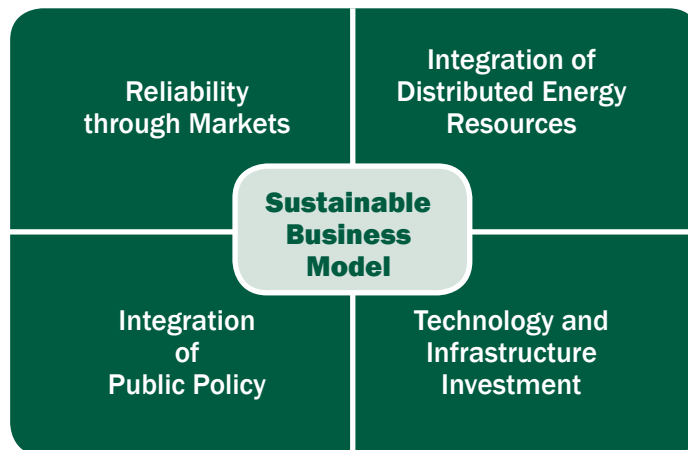
**Integration of Public Policy** - The NYISO will assume a pivotal role in the integration of Public Policy objectives while taking appropriate steps to ensure that such efforts complement open, fair and competitive markets. The goal of this effort is to effectively manage long-term policy objectives while protecting and promoting the reliability of the power system and the benefits of competitive markets.

- *The federal Clean Power Plan and New York State Energy Plan promote public policy goals that will require enhancements to the NYISO’s markets and planning functions.*
- *The NYISO will work to inform policymakers as to the system needs triggered by public policy and integrate public policy goals into its wholesale markets in a manner that sustains competition and supports system reliability.*

**Sustainable Business Model** - The NYISO will position itself to operate increasingly complex systems in an environment of increased cost pressure. The NYISO will address the costs associated with meeting these challenges by identifying cost drivers and taking steps to reduce those that can be managed. The goal of this effort is to ensure that the NYISO is equipped to manage increasing costs in an environment of decreasing MWh throughput.

- *Energy efficiency gains and the growing deployment of distributed energy resources are combining to flatten load growth on the bulk power system.*
- *The growing role of renewables and distributed energy resources are adding complexity to market designs, system operations, and planning processes.*

## Strategic Initiatives



# STRATEGIC INITIATIVES: DETAILS FOR 2016-2020

In order to achieve our strategic objectives, NYISO key initiatives between 2016 and 2020 include:

## Reliability through Markets

- Fuel Assurance & Gas/Electric Coordination
  - ♦ *Capacity Market Solutions: Road Map*
  - ♦ *Constrained Fuel Supply Offers*
  - ♦ *Regional Gas Market Improvements*
    - Serve as authoritative source for industry
    - Enhance situational awareness
    - Operational enhancements
- Capacity Market Enhancements
  - ♦ *Demand Curve Reset*
    - Extend demand curve reset process
    - Enhanced energy/ancillary service forecasts
  - ♦ *Locational Minimum Installed Capacity Requirement*
  - ♦ *Buyer-Side Mitigation*
    - Enhanced forecasts
    - Renewables exemption
- Energy Markets & Price Formation
  - ♦ *BRM Evolution*
    - IESO 15-Minute Scheduling
    - Interface pricing regional coordination
    - Coordinated Transaction Scheduling (CTS) performance
  - ♦ *LBMP Pricing Enhancements*
    - FERC price formation order
    - LBMP hybrid pricing enhancements
    - RTC-RTD coordination
    - Comprehensive scarcity pricing

## Integration of Distributed Energy Resources

- REV Market & System Integration
  - ♦ *Enabling Efforts*
    - Business model recommendations
    - Market price delivery (nodal prices for select nodes)
  - ♦ *Proof-of-Concept*
    - Demonstration project support
- DER Integration
  - ♦ *Development of the NYISO's Role:*
    - Meter data for DER integration
  - ♦ *Behind-the-Meter Net Generation*
  - ♦ *Nodal Price-Responsive Load*

## **Technology and Infrastructure Investment**

- EMS/BMS System Upgrade
  - ♦ *Commercial Terms*
  - ♦ *Software Requirements*
  - ♦ *Software Development*
  - ♦ *Testing & Implementation*
- Information Technology Strategy
  - ♦ *Enterprise Integration*
  - ♦ *LAM (access) Automation*
  - ♦ *Storage Migration*
  - ♦ *Test Automation*
- Smart Grid
  - ♦ *Enhanced Visualization*
  - ♦ *PMU Integration Evolution*
- Cyber & Physical Security
  - ♦ *Endpoint Security Enhancements Phase II*
  - ♦ *Advanced Perimeter Security*
  - ♦ *Network Segmentation & Analytics*
  - ♦ *Situational Awareness*
  - ♦ *Security Capability Assessment*
  - ♦ *Receiving Facility*

## **Integration of Public Policy**

- Expansion of Renewables & Clean Power
  - ♦ *Clean Power Plan*
    - Required market evolution
      - ✗ *Regional compliance evaluation*
      - ✗ *Market structures enhancements*
    - Solar Integration Study
    - Solar Forecasting
- Evolution of Transmission Planning
  - ♦ *Public Policy Transmission Expansion*
  - ♦ *RMR Implementation*
  - ♦ *Fuel Diversity*

## **Sustainable Business Model**

- Enterprise Cost Management
  - ♦ *Staffing Resource Plan*
  - ♦ *Enhance Cost Management Capabilities*
  - ♦ *Identify Potential RS1 Cost Recovery Changes*
  - ♦ *Budget Strategy*
  - ♦ *Continued Development and Evolution of NYISO Value Proposition Communication*

## **COMMITMENT TO COLLABORATION**

The NYISO strives to achieve its strategic objectives with the direct involvement of market stakeholders and the guidance of policy makers, regulators, and other 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 solve problems and resolve issues.

With hundreds of Market Participants, the NYISO engages voices from all sectors of the electric industry. The NYISO's achievement of its objectives is directly assisted by the involvement of participants in the shared governance committee process. By maintaining this open process, the various elements of the NYISO's mission are understood by all who participate. This interdependent system and commitment to collaboration is an invaluable asset as the NYISO moves forward to address the challenges to come.



## Commitment to Collaboration



## **NYISO BOARD OF DIRECTORS**

### **Michael B. Bemis, Board Chair**

Formerly, 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.

### **Ave M. Bie**

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

### **Daniel C. Hill**

Former Senior Vice President and Chief Information Officer of Exelon Corporation.

### **Robert A. Hiney**

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

### **Erland E. Kailbourne, Vice Chair**

Chairman of the Board of Albany International, Inc. Former Chairman and CEO of Fleet National Bank of New York.

### **James V. Mahoney**

President and CEO of Energy Market Solutions, Inc. and former President and CEO of DPL Inc., a regional energy and utility company.

### **Daniel B. More**

Former Managing Director at Morgan Stanley, leading the firm's global efforts in Utility Mergers and Acquisitions.

### **Vikki L. Pryor**

Principal and founder of Change Create Transform LLC, former President & CEO of SBLI USA Mutual Life, and former Board Member of Keyspan.

### **Thomas F. Ryan, Jr.**

Former President and COO of the American Stock Exchange

### **Bradley C. Jones**

President and CEO – New York Independent System Operator

## **NYISO CORPORATE OFFICERS**

**Bradley C. Jones**

President and CEO

**Richard Dewey**

Executive Vice President

**Rick Gonzales**

Senior Vice President and Chief Operating Officer

**Rana Mukerji**

Senior Vice President, Market Structures

**Henry Chao**

Vice President, System and Resource Planning

**Douglas Chapman**

Vice President, Chief Information Officer

**Open Position**

Vice President, Human Resources

**Diane L. Egan**

Board Secretary and Corporate Secretary

**Robert E. Fernandez**

General Counsel

**Cheryl Hussey**

Vice President and Chief Financial Officer

**Kevin Lanahan**

Vice President, External Affairs

**Emilie Nelson**

Vice President, Market Operations

**Wesley Yeomans**

Vice President, Operations

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

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