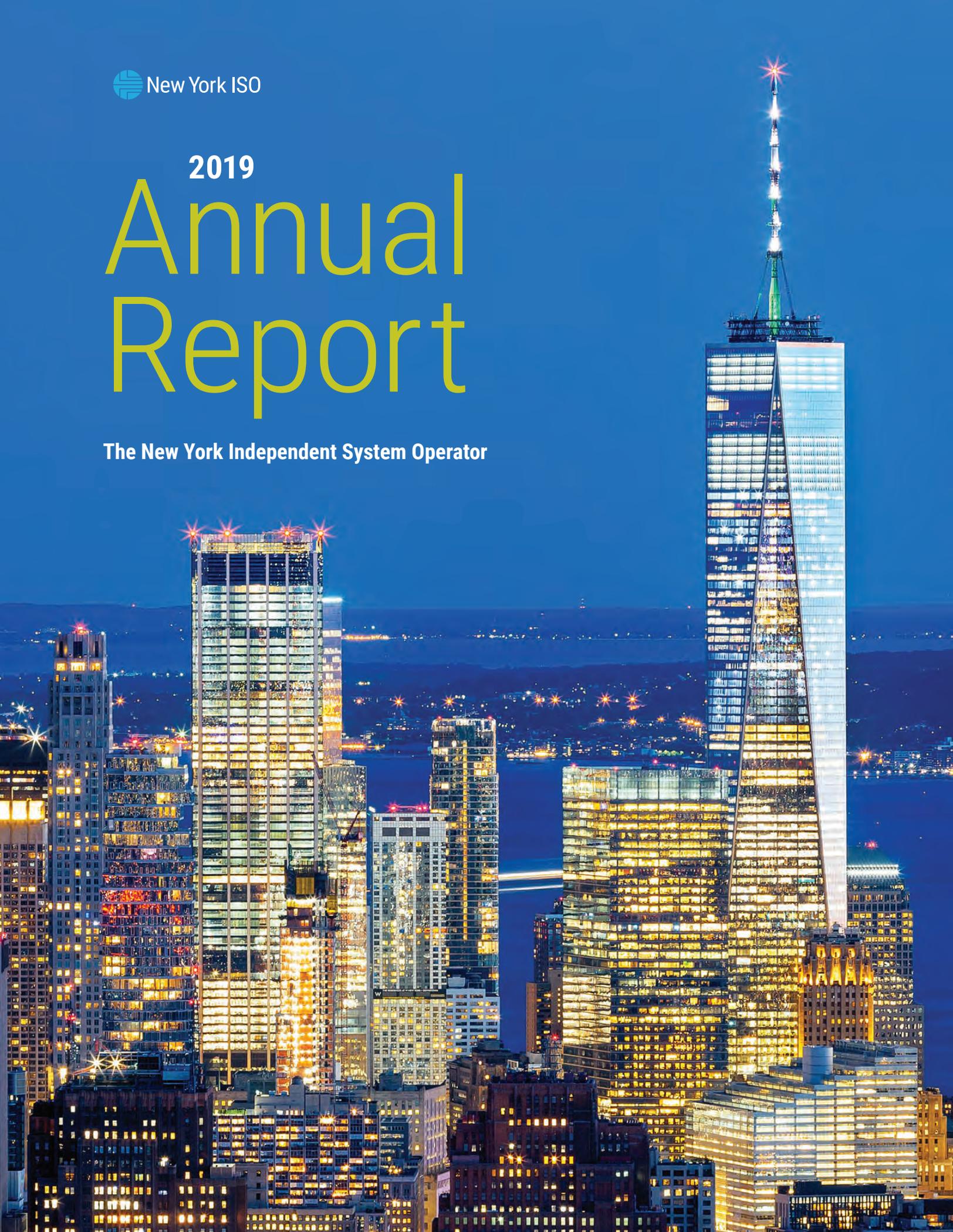


2019

# Annual Report

The New York Independent System Operator



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## Message from Board Chair and President & CEO



**NYISO Board Chair,  
Daniel Hill**



**NYISO President & CEO,  
Richard J. Dewey**

While 2020 has presented us with unanticipated challenges, the New York Independent System Operator, Inc. (NYISO) remains committed to building on our legacy of reliably delivering critical electricity supplies to New Yorkers through efficient markets. The initiatives we've pursued with our stakeholders in recent years are positioning the NYISO's markets to play a central role in the state's efforts to achieve aggressive clean energy goals.

As the state continues to pursue the clean energy goals outlined in the Climate Leadership and Community Protection Act, it must balance the challenges of constrained budgets with the need for action to address the wide-ranging concerns of climate change and environmental justice. The NYISO and its markets can provide a central role in solving this puzzle.

Aligning our competitive, wholesale electricity markets with state policy goals is necessary to drive investment in the types of innovative technologies needed to reach these mandates, while still maintaining a reliable grid. In this sense, we view our markets as an essential platform for achieving public policy in ways that reduce the need for state subsidies, a particularly poignant benefit as the state grapples with strained financial conditions stemming from the COVID-19 pandemic.

We didn't foresee the global pandemic in 2019, but our efforts last year are positioning us well to manage the challenges associated with it. In this annual report, you will find more details and additional discussion of important efforts the NYISO undertook to position its markets and planning processes for the challenges of the future. Now more than ever, we face both great challenges and great opportunities. We look forward to the collaboration necessary to develop the grid and markets of the future.

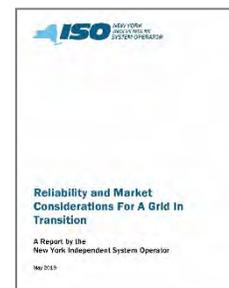
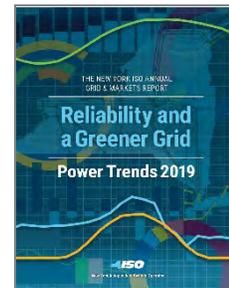
Sincerely,

**Richard J. Dewey**  
President and CEO

## Key Accomplishments

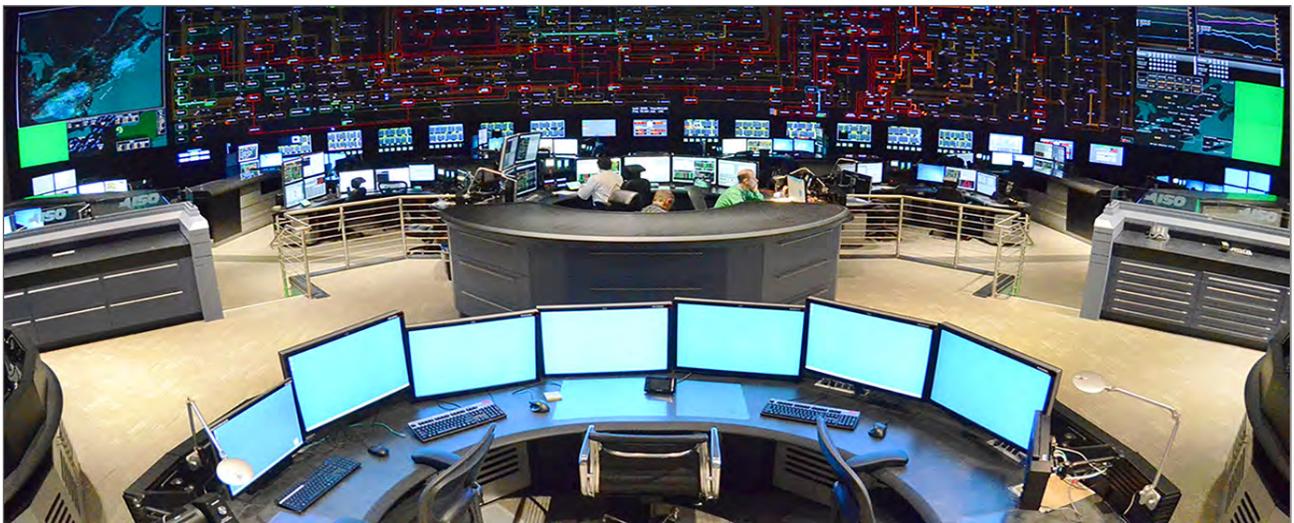
2019 was distinguished by several important accomplishments. In addition to maintaining system reliability — which is the core of our mission — the NYISO added new critical infrastructure and continued to support New York State policies regarding the development and reliable integration of new renewable resources and distributed energy resources. Accomplishments include:

- Using the **Public Policy Transmission Planning Process**, the NYISO Board of Directors selected proposals to develop transmission upgrades in several regions of the state, critically needed to increase delivery of cleaner energy, relieve congestion and bolster system efficiency;
- Implemented a new **Operating Reserve Region (J)** for New York City to provide more efficient resource scheduling and procurement, location-specific price signals and investment incentives;
- Completed an innovative market design and initiated software development for **Energy Storage Resources (ESRs)**; Completed pioneering market design development for **Distributed Energy Resources (DER)**;
- Completed the development of a first-in-the-nation **Carbon Pricing Design** with stakeholders;
- Issued the **Reliability and Market Considerations for a Grid in Transition** whitepaper describing emerging reliability and economic challenges, identifying gaps and proposing next steps;
- Released the annual **Report of the Consumer Interest Liaison** analyzing the effects of changes to the wholesale electricity market on consumer costs, system reliability, the environment, and transparency of NYISO operations;
- Published the **2019 Master Plan** providing a cohesive strategic vision for market design efforts over the next five years;
- Published the **2019 Power Trends**, highlighting the challenge of integrating energy storage and DER into wholesale electricity markets, and of the development of a novel carbon pricing program. Widely circulated to influential policymakers, regulators, business leaders and stakeholders, the report received tremendously positive feedback;
- Issued the **2019-2028 Comprehensive Reliability Plan** including a scenario developed in close coordination with transmission owners to proactively assess potential impacts to electric system reliability related to implementation of the Department of Environmental Conservation’s proposed “peaker” rule;
- Conducted a **Fuel and Energy Security Study** assessing winter fuel/energy security for the New York Control Area under various assumptions and potential future scenarios;
- Utilized **Alternative Locational Minimum Installed Capacity (LCR) methodology** to produce greater stability in the LCR and reduce procurement costs;



- Continued the **IT Strategy** evolution to position the NYISO with the flexibility and agility to comprehensively respond to emerging industry trends through a modern software delivery methodology and expanded automated testing capability; increased IT Infrastructure automation; continued adoption of cloud computing infrastructure for targeted solutions;
- Continued the **Cybersecurity Strategy** implementation of a fully functional Cybersecurity Operations Center (CSOC) providing a comprehensive 7 x 24 security operations capability.

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



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

# 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 is responsible for operating New York’s bulk electric system, administering wholesale electricity markets, and conducting system planning. The creation of the NYISO resulted in reliability and economic benefits for New Yorkers while contributing to unprecedented environmental gains. For the past 20 years, the NYISO’s markets have worked to improve system efficiency, supporting a gradual shift toward cleaner sources of generation while upholding the nation’s most stringent reliability rules.

## Core Values and Mission

The Core Values and Mission of the NYISO establish the foundation for all of our responsibilities. 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

**The core values of the NYISO form the foundation on which we conduct ourselves. The core values are the basic elements of how we go about our work every day in everything we do.**

#### Integrity

Commitment to honest, ethical, and transparent actions

#### Innovation

Pursuing creative and sound solutions

#### Enthusiasm

Having a passion for our work and our interaction with our customers, stakeholders and policymakers



#### Customer Focus

Understanding the customer perspective

#### Operational Excellence

Commitment to excellence in all our processes, systems and products

#### Teamwork

Working together, succeeding together, respecting each other

#### Accountability

Taking responsibility to do what needs to be done

## **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

## **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.

The NYISO's primary power control center, opened in 2014, is among the most technologically sophisticated facilities of its kind in the world. The control center enables improved operator visibility of wide-area and local grid conditions, enhanced 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 electric 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 tariffs, 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 market power, 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 New York Control Area (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 electric system, reduce system congestion, and respond to identified transmission needs driven by public policy.

**Governance**

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 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 economic 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 power grid through advanced market design and open, transparent system planning in order to reliably and efficiently respond to the energy needs of all New Yorkers.

## Reliability New Yorkers Can Count On

The NYISO manages the flow of electricity across New York in exactly the right amount, at exactly the right time. The NYISO conducts and monitors auctions of wholesale electricity every five minutes, every day of the year, to provide the lowest-cost power available and to encourage competition that drives innovation and efficiency to meet consumers' needs.

The NYISO performs comprehensive planning studies for New York's energy future, and provides independent, authoritative information to public policymakers and private investors with the common goal of meeting future electricity needs while sustaining the reliable supply of electricity for years to come.

## 2019 Accomplishments

### System Planning for a Grid in Transition

#### Public Policy Planning

In 2018 and 2019, the NYISO pursued enhancements to its Public Policy Transmission Planning process. The NYISO adopted new provisions that expedite the process of NYISO evaluation and selection from among competing transmission projects. FERC approved tariff amendments that allow transmission developers to propose, and the NYISO to consider, cost containment commitments for transmission projects. These provisions enable the NYISO to better identify the more efficient or cost-effective transmission solutions to meet public policy transmission needs and protect ratepayers from project cost overruns.

In terms of ongoing public policy transmission projects to address needs previously identified by the PSC, in April 2019 the NYISO's Board of Directors selected two proposals (Segments A and B) to reduce congestion on the system between central New York and the lower Hudson Valley. For Segment A, the Board selected a joint proposal by North American Transmission and the New York Power Authority (NYPA) to relieve congestion on the system from central New York to the Capital Region. For Segment B, from the Capital Region south to the lower Hudson Valley, the Board chose the joint proposal by National Grid and New York Transco. Both projects have applied to the PSC for siting approval under Article VII of the Public Service Law. When completed, these projects will add the largest amount of free-flowing transmission capacity to the New York bulk power system in more than 30 years. Both the Segment A and Segment B projects are planned to enter into service by December 2023.

#### Short-Term Assessments of Reliability

The NYISO worked with stakeholders in 2019 to develop a quarterly reliability planning process to address near-term reliability needs as they arise. The resulting proposed Short-Term Reliability Planning process addresses a broad range of issues, including load forecast adjustments, delays in completion of planned upgrades, long-duration facility outages, and generator deactivations.

The process is intended to give the NYISO greater flexibility in identifying and responding to reliability needs that may arise due to rapid changes in the supply mix. In this new process, known as Short-Term Assessments of Reliability (STAR), the NYISO is implementing quarterly analyses that will focus on reliability needs arising on a rolling basis within the coming 5 years. This process enables the NYISO to focus its resources on efficiently identifying and addressing system reliability issues that occur in the short term, while freeing the biennial RNA to be more strategically focused on long-term reliability needs (years 4 through 10).

#### **Generator Interconnection Queue Process Enhancements**

As the composition of the power grid changes and the pace of new technology development and investment accelerates, the NYISO interconnection process is evolving to facilitate new entry. To facilitate this increase in volume of supply resources seeking to interconnect to the grid, the NYISO worked with stakeholders in 2019 to develop a comprehensive redesign of the interconnection study process. One proposal entails offering a new, abbreviated Expedited Delivery Study through which projects can request a deliverability evaluation outside of the Class Year Process. This enhanced process will enable developers to obtain capacity rights without having to go through an entire Class Year Study.

Combined with additional reforms, this new interconnection process will provide developers with more frequent opportunities and flexibility to obtain certainty over their interconnection costs and obligations and subsequently accelerate the interconnection of renewables and other new resources onto the grid.

#### **Planning the System for Climate Change**

The NYISO is undertaking a multi-phase *Climate Change Impact & Resilience Study*, which initially attempts to assess the potential implications for load associated with climate change and the state's policies to promote beneficial electrification. The study projects load and demand forecasts beyond the normal 10-year planning horizon to evaluate the potential impacts rising temperatures and state policies might have on system loads through 2050. This study will help inform future market, planning and operations enhancements that might be necessary to meet system needs and conditions as demands on the grid change over time. The study is being conducted in three phases. Phase 1 of the study, which was completed in 2019, developed long-term forecasts for energy and demand, and evaluated statewide temperature and humidity trends. It also constructed long-term forecast scenarios that reflect the potential impacts of state policies to address climate change, including the CLCPA, accelerated adoption of energy efficiency, and beneficial electrification measures.

Phase 1 concluded that, on an annual basis, increasing temperatures have a modest impact on system energy requirements. In terms of peak demand, the study found that by 2050, increasing temperatures will potentially add between 1,600 and 3,800 MW to summer peak load requirements. The study also found that beneficial electrification programs encouraging consumer adoption of electric vehicles and conversion of building heating systems to electricity will likely shift peak demand on New York's bulk power system from summer to winter.

#### **NYISO's Comprehensive Reliability Plan**

The *2019-2028 Comprehensive Reliability Plan (CRP)* was a critical first step to effectively plan for the New York State Department of Environmental Conservation's (DEC) Peaker Rule. The 2019-2028 CRP

included an assessment of the impacts to system reliability from the potential deactivation of all generators impacted by the new rule. The scenario also reflected the deactivation of the Indian Point nuclear units, as well the deactivation of all remaining coal units in accordance with the DEC rule on carbon dioxide emissions from existing sources.

This scenario identified reliability needs associated with the potential loss of the affected peakers and the amount of resource capacity needed to maintain reliability. If all of the generators affected (approximately 3,300 MW) were to deactivate without replacement resources or system reinforcements, the transmission system would be unable to reliably serve the forecasted load within specific load pockets in New York City and Long Island, as well as across Southeast New York. Specifically, the 2019-2028 CRP assessment noted supply deficiencies in certain load pockets in New York City, starting in 2023 when the first implementation phase of the Peaker Rule occurs. By 2025, with the second implementation phase of the rule, the assessment noted that the New York system as a whole would see resource deficiencies that violate reliability criteria.

While findings from the 2019-2028 CRP were informative, the *2020 Reliability Needs Assessment* will evaluate reliability needs based on specific compliance plans filed with the DEC by each affected unit. The NYISO will update reliability needs identified in the 2020 RNA and its new Short-Term Reliability Process and, if necessary, solicit market-based and regulated solutions to satisfy the identified needs prior to the deactivation of needed resource capacity.

## **Designing Markets for a Grid in Transition**

### **Energy Storage Resources**

In 2019, FERC accepted a comprehensive set of rules that enables the expansion of wholesale market participation for Energy Storage Resources (ESRs). The NYISO's ESR participation model allows storage resources to self-manage their energy levels or use the NYISO's energy-level monitoring capabilities. The option of relying on the NYISO's capabilities optimizes storage-resource availability for periods when they can best support bulk power system reliability.

ESRs have unique capabilities that can help grid operators handle peak demand, manage the variability of intermittent resources, and potentially defer transmission upgrades in some instances. Their unique ability to withdraw from, and inject energy into the grid can provide resource flexibility and grid resilience. Additionally, energy storage can help improve the cost effectiveness of the system by charging during periods of low demand and low prices, and supplying energy to the grid during periods of high demand when prices typically rise.

Longer-term goals for the NYISO include exploring market rules to facilitate participation from *Hybrid Storage Resources*, or intermittent renewable resources that also integrate energy storage capabilities.

### **DER Integration**

Throughout 2018 the NYISO was engaged in a multi-year effort that, at its completion, will open New York's wholesale Energy, Ancillary Services, and Capacity Markets to DER technologies. In December 2017, the NYISO released its DER Market Design Concept Proposal, representing the second step in the overall market design process. The proposal builds on the ideas outlined in NYISO's February 2017 DER

Roadmap and subsequent stakeholder discussions. In 2018, the NYISO initiated a pilot project program to test innovative technology and assist with potential further refinement of the DER participation model. The pilot framework allows developers and the NYISO to gain knowledge about the technology's capabilities, and will support the PSC's REV demonstration efforts. In 2019, the NYISO completed its market design initiative for DERs.

### **Carbon Pricing**

In 2019, the NYISO completed the development of this first-in-the-nation carbon pricing design with stakeholders to align market signals with the state's policy of reducing carbon dioxide emissions from the power sector. Similar to how competitive markets created incentives for generators to improve efficiency, a carbon pricing in the energy market would create stronger incentives for those types of efficiency improvements, as well as stronger incentives for developing zero-emitting resources like wind and solar in locations where they will have the greatest effect on emissions. This carbon pricing proposal would further promote economic competition among suppliers in the NYISO's markets by directly incorporating the price of a key environmental attribute in the markets. The NYISO believes carbon pricing can help the state more efficiently attain its clean energy goals.

### **Fuel and Energy Security Study**

The confluence of technological advancements, environmental and economic considerations, and public policies are driving significant changes to the portfolio of supply resources in New York. These conditions highlight the potential for future challenges to arise in meeting electric system demands under certain stressed conditions such as prolonged cold weather events and/or natural gas supply or transportation availability constraints or disruptions.

In 2019, the NYISO completed its forward-looking Fuel & Energy Security Initiative to assess the ability of the electric system to meet system needs during stressed operating conditions, such as prolonged cold weather events. The assessment did not identify any short-term reliability risks that warrant the development of market rule enhancements at this time to address fuel and energy security issues. It did, however recommend continued and expanded monitoring of conditions such as availability of fuel for generating resources, changes in the portfolio of resources available, and peak winter demand conditions. The NYISO will continue to focus on maintaining awareness of relevant factors that will help inform our understanding of New York's evolving fuel security needs.

### **Cybersecurity**

A key element of the cybersecurity program is maintaining a high degree of situational awareness to reduce the time between the introduction of a potential threat to when that threat is identified and effectively mitigated. In October 2019, the NYISO opened a state-of-the-art Cyber Security Operations Center (CSOC), operating around-the-clock to monitor the NYISO's cyber posture and to continuously evaluate and respond to rapidly evolving cyber risks.

In 2019, the NYISO also participated in GridEx, a biennial sector-wide grid security exercise conducted by NERC. As NERC stated in testimony before the U.S. Senate Energy and Natural Resources Committee, "NERC's biennial GridEx exercise is the largest of its kind in the sector and helps industry and government exercise their emergency response plans, and drive new and innovative approaches to reduce security risk to the electric grid."

While national in scope, GridEx involves coordination with New York State agencies and market participants. GridEx is designed to enhance coordination of cyber and physical security resources and practices within the electric industry, improve communication and coordination between the industry and government partners, and support continuous improvement through lessons learned.

## Market Participants

3M Company	Brookfield Renewable Energy Marketing US LLC	Curio Analytics Inc.
Abest Power & Gas, LLC	Brookfield Renewable Trading and Marketing LP	CWP Energy Inc.
ABN Energy, LLC	Broome Energy Resources, LLC	Danskammer Energy, LLC
Accent Energy Midwest II LLC dba IGS Energy	Brown's Energy Services LLC	Darby Energy, LLLP
ACT Commodities Inc.	Bruce Power Inc.	DC Energy LLC
ADG Group Inc.	Buy Energy Direct, LLC	DC Energy New York, LLC
Aesir Power, LLC	Calpine Energy Services LP	Direct Energy Business Marketing, LLC
Aggressive Energy, LLC	Calpine Energy Solutions, LLC	Direct Energy Business, LLC
Agway Energy Services, LLC	Canandaigua Power Partners, LLC	Direct Energy Marketing Inc.
Albany Energy LLC	Canastota Windpower LLC	Direct Energy Services, LLC
All American Power and Gas, LLC	Carr Street Generating Station LP	DTE Energy Trading Inc
All Choice Energy, LLC	Castleton Commodities Merchant Trading L.P.	Dynamis ETF, LLC
Alpha Gas and Electric, LLC	Castleton Power, LLC	Dynasty Power Inc.
Alphataraxia Nickel LLC	CECONY-LSE	Dynegy Marketing and Trade, LLC (DMT)
Ambit New York, LLC	Censtar Energy Corp	Eagle Creek Hydro Power, LLC
American Power & Gas, LLC	Central Hudson Gas & Electric Corp	Eagle Power Authority, Inc.
AP Gas & Electric (NY), LLC dba APG&E	Centre Lane Trading Ltd.	Eagles Power, LLC
AP Gas & Electric (TX), LLC	Champion Energy Services, LLC	Eagle's View Partners Ltd.
Appian Way Energy Partners East, L	CHI Power Marketing, Inc	East Coast Power and Gas, LLC
Approved Energy II LLC	Chief Energy Power, LLC	East Coast Power, LLC
ARC Private Capital Inc.	Citigroup Energy Inc.	EDF Energy Services, LLC
Ardor Energy Limited Liability Company	Citizens Choice Energy, LLC dba AmeriChoice Energy	EDF Trading North America, LLC
Arkwright Summit Wind Farm LLC	City of Niagara Falls	EDP Renewables North America, LLC
ASC Energy Services Inc.	City Power & Gas, LLC	Effinex, LLC
Astoria Energy II, LLC	CleanChoice Energy, Inc. dba Ethic Electric	eKapital NY, LLC
Astoria Energy LLC	Clearview Electric, Inc.	Eligo Energy NY, LLC
Astoria Generating Company L.P.	COI Energy Services, Inc.	Eligo Energy, LLC
Astral Energy LLC	Columbia Utilities Power, LLC	Elyctra LLC
Atlantic Energy, LLC	Con Edison Solutions, Inc.	Emera Energy Services Subsidiary No. 1, LLC
Atlantic Power and Gas LLC	ConocoPhillips Company	Emera Energy Services Subsidiary No. 15, LLC
ATNV Energy, LP	Consolidated Edison Co. of New York, Inc.	Emera Energy Services Subsidiary No. 2, LLC
Avangrid Renewables, LLC	Consolidated Edison Energy, Inc.	Emera Energy Services Subsidiary No. 3, LLC
Axon Energy, LLC	Consolidated Hydro New York, Inc	Emera Energy Services, Inc
Axpo U.S. LLC	Consolidated Power Co., LLC	Emera Energy U.S. Subsidiary No. 1, Inc.
Barclays Services Corporation	Constellation NewEnergy, Inc.	Emera Energy U.S. Subsidiary No. 2, Inc.
Bayonne Energy Center, LLC	Convergent Energy and Power LP	EMP Power, LLC
Big Bend Trading, LLC	County of Erie NY	Empire Generating Co, LLC
BioUrja Power, LLC	County of Niagara NY	Empire Natural Gas Corp.
BJ Energy LLC	Covanta Niagara, LP	Enel Trading North America, LLC
Black River Hydroelectric, LLC	CPV Valley, LLC	Enel X North America, LLC
Blackout Power Trading Inc.	Credit Suisse (USA), Inc.	Energy Conservation and Supply, Inc.
Blueprint Power Technologies Inc.	Cricket Valley Energy Center, LLC	
Boralex Hydro Operations Inc	Cubit Power One Inc.	
Boston Energy Trading and Marketing LLC	Cummins Inc.	
BP Energy Company		
Brookfield Energy Marketing LP		

Energy Cooperative of America, Inc dba EnCoop of NY	Green Mountain Power Corporation	Manifold Energy Inc.
Energy Plus Holdings LLC	Greenlight Energy Inc.	Marathon Power LLC dba Marathon Energy
Energy Power Investment Company, LL	GRG Energy LLC	Marble River, LLC
Energy Services Providers, Inc dba NY Gas&Electric	Grid Power Direct, LLC	Marsh Hill Energy LLC
Energy Spectrum Inc.	Griffiss Utility Services Corporation Group628, LLC	Median Energy Corp.
Energy Technology Savings, Inc dba Logical Buildings	H.Q. Energy Services (U.S.) Inc.	Mercuria Energy America, Inc
Energyva VM Gestion de Energia S.L.U	Hardscrabble Wind Power LLC	Mercuria SJAK Trading, LLC
EnergyMark, LLC	Helix Ravenswood, LLC	Merrill Lynch Commodities, Inc.
Enerwise Global Technologies, Inc. dba CPower	HIKO Energy, LLC	Messer Energy Services, Inc.
Engelhart CTP (US) LLC	Homer City Generation, L.P.	Metering Authority – Central Hudson Gas and Electric
ENGIE Energy Marketing NA, Inc.	Horizon Energy of New York, LLC	Metering Authority – Consolidated Edison of NY
ENGIE Power & Gas LLC	Howard Wind LLC	Metering Authority – Long Island Power Authority
ENGIE Rsources, LLC	HQ Energy Services (US)	Metering Authority – New York Power Authority
ENGIE Retail, LLC	Hudson Energy Services, LLC	Metering Authority – New York State Electric & Gas
Entergy Nuclear IP-2 LLC	Icon Energy, LLC	Metering Authority – Niagara Mohawk
Entergy Nuclear IP3, LLC	IDT Energy, Inc	Metering Authority – Orange and Rockland Utilities
Entergy Nuclear Power Marketing LLC	Indeck Energy Svs of Silver Springs	Metering Authority – Rochester Gas and Electric
Entergy Solutions LLC	Indeck-Corinth LP	MidAmerican Energy Services, LLC
Entrust Energy East, Inc.	Indeck-Olean LP	Midwest Energy Trading East LLC
Erie Boulevard Hydropower LP	Indeck-Oswego LP	Mirabito Power & Gas, LLC
Erie Wind, LLC	Indeck-Yerkes LP	Model City Energy, LLC
ERY HYMCO LLC	Independence Energy Group LLC d Cirro Energy	Modern Innovative Energy, LLC
ETC Endure Energy L.L.C.	Indus Valley Strategies LLC	Monroe County NY
ETS Emerald LLC	Inertia Power V, LLC	Morgan Stanley Capital Group, Inc.
Every Kansas Central, Inc.	INGENCO Wholesale Power, L.L.C.	Morgan Stanley Services Group Inc.
Everyday Energy, LLC	Innovative Energy Systems, Inc.	MP2 Energy NE LLC
Exelon Generation Company LLC	Innoventive Power LLC	MPH Rockaway Peakers, Inc
Family Energy Inc	Inspire Energy Holdings, LLC	MPower Energy LLC
FC Energy Services Company, LLC	International Paper Company	Munnsville Wind Farm, LLC
First Choice Energy, Inc.	IPKeys Power Partners, LLC	Nalcor Energy Marketing Corporation
First Commodities International Inc.	Islip Resource Recovery Agency	National Gas & Electric, LLC
First Nest LLC	J. Aron & Company LLC	Nationwide Energy, LLC
FiTran Fund LP	Jamestown Board of Public Utilities	NDC Partners LLC
Flanders Energy LLC	Jericho Rise Wind Farm LLC	New Athens Generating Company LLC
Flat Rock Windpower II LLC	Josco Energy Corp.	New Wave Energy Corp
Flat Rock Windpower LLC	Just Energy New York Corp	New York Industrial Energy Buyers, LLC
Franklin Power LLC	Just Energy Solutions Inc.	New York Municipal Power Agency
Freepoint Commodities LLC	Kaleida Health	New York Power Authority
Freepoint Energy Solutions LLC	KFW Energy Trading, LLC	New York State Electric & Gas Corp.
Freeport Electric	Kingston CoGen Limited Partnershi	New York Transco LLC
Galaxy Energy, LLC	Kiwi Energy NY LLC	Next Utility Energy LLC
Galt Power Inc.	Liberty Power Holdings LLC	NextEra Energy Marketing, LLC
Gateway Energy Services Corporatic	Lockport Energy Assoc.	
GBE Power Inc.	Logistic Energy LLC	
Gen IV Investment Opportunities, LI	Long Island Power Authority	
GenOn Energy Management, LLC	Lyonsdale Biomass, LLC	
Gravity Renewables, Inc.	M&R Energy Resources Corp.	
Great American Gas & Electric, LLC	Macquarie Energy LLC	
Green Island Power Authority	Macquarie Energy Trading LLC	
Green Mountain Energy Company	Madison Windpower, LLC	
	MAG Energy Solutions Inc.	
	Major Energy Electric Services, LL	

NextEra Energy Services Massachusetts, LLC	R.E. Ginna Nuclear Power Plant, LI	State of New York - SUNY
NextEra Energy Services New York, L	Rainbow Energy Marketing Corp	State of New York – SUNY Buffalo
Nexus Energy Inc.	RED-Rochester, LLC	Stephentown Spindle, LLC
Niagara Frontier Transportation Authority	ReEnergy Black River LLC	Stony Creek Energy LLC
Niagara Mohawk Power Corp.	Reliant Energy Northeast, LLC dba NRG Retail Solut	Stream Energy New York, LLC
Niagara University	Renaissance Power & Gas, Inc.	SunSea Energy, LLC
Niagara Wind Power, LLC	Rensselaer Generating LLC	Sunwave Gas & Power New York Inc.
Nine Mile Point Nuclear Station, LLC	Residents Energy, LLC	Sustaining Power Solutions LLC
Nissequogue Cogen Partners	Rinar Power LLC	Synergy Biogas LLC
Noble Altona Windpark, LLC	Riverbay Corporation	Talen Energy Marketing, LLC
Noble Bliss Windpark, LLC	Robison Energy (Commercial) LLC dba OriginalEnergy	TEC Energy Inc.
Noble Chateaugay Windpark, LLC	Robison Energy, LLC	Tenaska Power Services Co.
Noble Clinton Windpark I, LLC	Rochester Gas & Electric Corp.	Texas Retail Energy, LLC
Noble Ellenburg Windpark, LLC	Roctop Investments Inc.	THG Energy Solutions, LLC
Noble Wethersfield Windpark LLC	Roseton Generating LLC	Thordin ApS
NOCO Electric LLC	Rubicon NYP Corp.	Tnergy LLC
Nordic Energy Services, LLC	S.J. Energy Partners, Inc.	TrailStone Power, LLC
North American Power and Gas LLC	Saracen Energy East LP	TransAlta Energy Marketing (U.S.) Inc.
North Country Data Center Corp	Saracen Energy West LP	Transgrid Midwest LLC
Northbrook Lyons Falls, LLC	Saracen Power LP	Triton Power Company
Northern States Power Company	Saranac Power Partners, L.P.	TrueLight Energy Fund, LP
Northland Power Energy Marketing (US) Inc.	SBF New York, L.L.C.	Twin Eagle Resource Management, LLC
Northstar NY Ltd.	SBR Energy, LLC	U.S. Energy Partners LLC
NRG Curtailment Solutions, Inc.	Schools & Municipal Energy Cooperative (SMEC)	UGI Energy Services, LLC
NRG Power Marketing LLC	Selkirk Cogen Partners, L.P.	Uncia Energy, LP - Series F
NuEnerGen, LLC	Seneca Energy II, LLC	Uniper Global Commodities North America LLC
Nyquist LLC	Seneca Power Partners, L.P.	University of Rochester
Oasis Power, LLC dba Oasis Energy	SESCO Enterprises LLC	Valcour Wind Energy LLC
Occidental Power Services Inc.	Sheldon Energy LLC	VECO Power Trading, LLC
OCP Resources, LLC	Shell Energy North America (US), L.P.	Velocity American Energy Master I, L.P.
Ontario Power Generation Energy Trading, Inc.	Siemens Industry, Inc	Verde Energy USA New York, LLC
Ontario Power Generation Inc.	Smart One Energy, LLC	Village of Rockville Centre
Open Book Energy, LLC	SmartEnergy Holdings, LLC	Viridian Energy NY, LLC
Orange & Rockland Utilities, Inc.	Sol Energy, LLC	Viridity Energy Solutions Inc.
ORU-LSE	Solios Power LLC	Vitol Inc.
Pacific Summit Energy LLC	South Bay Energy Corp.	Voltus, Inc.
Palmco Power NY, LLC	South Jersey Energy Company	Warner Media, LLC
Pay Less Energy, LLC	South Jersey Energy ISO10, LLC	Watchtower Bible and Tract Society of New York, In
Peninsula Power, LLC	South Jersey Energy ISO3, LLC	Western New York Wind Corp.
Perigee Energy, LLC	South Jersey Energy ISO4, LLC	Wheelabrator Hudson Falls, LLC
Phoenix Energy Group, LLC	South Jersey Energy ISO6, LLC	Wheelabrator Westchester, L.P.
Plant-E Corp.	South Jersey Energy ISO7, LLC	WM Renewable Energy, LLC
Precept Power LLC	South Jersey Energy ISO8, LLC	XO Energy NY, LP
Premier Empire Energy LLC	South Jersey Energy ISO9, LLC	XO Energy NY2, LP
PSEG Energy Resource & Trade, LLC	Southern Energy Solution Group, LLC	XOOM Energy New York, LLC
Public Power, LLC	Spark Energy, LLC	XOOM Energy, LLC
Pure Energy Inc.	Standard Normal Energy LLC	Ziarre Trading LLC
Pure Energy USA, LLC dba Pure Enerç	Starion Energy NY, Inc.	Zone One Energy, LLC
Quantum Power Corp.	StatArb Investment LLC	
	State of New York - OGS	
	State of New York - OGS Municipal	

## 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

**Daniel C. Hill, Board Vice Chair**

Former Senior Vice President and Chief Information Officer of Exelon Corporation

**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

**Robert A. Hiney**

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

**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

**James V. Mahoney**

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

**Teresa F. Marrinan**

Former Senior Vice President, US SBU Commercial for The AES Corporation, former officer for the Dayton Power and Light Company, and a former Founding Partner of Hanover Strategy Advisors LLC

**Thomas F. Ryan, Jr.**

Former President and Chief Operating Officer of the American Stock Exchange

**Richard J. Dewey**

President and CEO of the New York Independent System Operator

### Corporate Officer

**Richard J. Dewey**

President & CEO

**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**

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 Pike**

Vice President, Market Operations

**Zachary G. Smith**

Vice President, System & Resource Planning

**Wesley J. Yeomans**

Vice President, Operations

## 2019 Financial Statements

### Independent Auditors' Report

The Board of Directors  
New York Independent System Operator, Inc.:

We have audited the accompanying financial statements of New York Independent System Operator, Inc., which comprise the statements of financial position as of December 31, 2019 and 2018, the related statements of activities and cash flows for the years then ended, and the related notes to the financial statements.

#### *Management's Responsibility for the Financial Statements*

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

#### *Auditors' Responsibility*

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### *Opinion*

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of New York Independent System Operator, Inc. as of December 31, 2019 and 2018, and the changes in its net assets and its cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.

#### *Emphasis of Matters*

As discussed in note 1(q) to the financial statements, during the year ended December 31, 2019, New York Independent System Operator, Inc. adopted Financial Accounting Standards Board Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers (Topic 606)*, and ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*. Our opinion is not modified with respect to these matters.

Albany, New York  
March 16, 2020

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Statements of Financial Position

December 31, 2019 and 2018

	<u>2019</u>	<u>2018</u>
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 45,800,594	47,252,645
Restricted cash	410,079,028	368,035,848
Marketable securities (note 8)	1,834,535	1,290,562
Accounts receivable – net (note 2)	52,391,595	8,359,716
Prepaid expenses	7,202,504	8,077,813
Regulatory assets – current portion (note 3)	3,436,333	—
Other current assets	484,242	—
Total current assets	<u>521,228,831</u>	<u>433,016,584</u>
Noncurrent assets:		
Regulatory assets (note 3)	20,764,137	18,825,201
Property and equipment – net (note 4)	115,171,171	110,925,435
Other noncurrent assets (note 7)	4,463,138	2,688,982
Total noncurrent assets	<u>140,398,446</u>	<u>132,439,618</u>
Total	<u>\$ 661,627,277</u>	<u>565,456,202</u>
<b>Liabilities</b>		
Current liabilities:		
Accounts payable and accrued expenses	\$ 170,945,107	111,069,517
Market participant security deposits	265,095,285	245,290,519
Market participant prepayments	11,746,706	10,368,954
Working capital reserve (note 11)	34,507,639	34,495,523
Long-term debt – current portion (note 6)	26,522,191	33,543,616
Regulatory liabilities – current portion (note 3)	6,413,009	12,171,929
Deferred revenue (note 12)	29,325,094	15,401,200
Other current liabilities (note 8)	1,823,727	2,527,302
Total current liabilities	<u>546,378,758</u>	<u>464,868,560</u>
Noncurrent liabilities:		
Accrued pension liability (note 8)	6,588,136	6,020,088
Accrued postretirement liability (note 8)	7,260,599	6,917,375
Regulatory liabilities (note 3)	6,751,859	5,724,195
Other noncurrent liabilities (notes 7 and 8)	26,329,285	5,999,588
Long-term debt (note 6)	68,318,640	75,926,396
Total noncurrent liabilities	<u>115,248,519</u>	<u>100,587,642</u>
Total liabilities	<u>661,627,277</u>	<u>565,456,202</u>
Net assets without donor restrictions	<u>—</u>	<u>—</u>
Total liabilities and net assets	<u>\$ 661,627,277</u>	<u>565,456,202</u>

See accompanying notes to financial statements.

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Statements of Activities

Years ended December 31, 2019 and 2018

	<u>2019</u>	<u>2018</u>
Revenues:		
Rate Schedule 1 tariff charge	\$ 157,502,066	156,810,368
Federal Energy Regulatory Commission fees recovery	13,132,000	12,556,391
Planning studies revenue	8,777,153	10,921,281
Interest income	1,450,669	1,301,929
Fees and services	<u>1,156,752</u>	<u>1,060,092</u>
Total revenues	<u>182,018,640</u>	<u>182,650,061</u>
Operating expenses:		
Compensation and related benefits (note 8)	88,149,476	87,570,057
Professional fees and consultants	24,635,563	26,719,660
Maintenance, software licenses and facility costs	21,687,275	21,301,499
Depreciation (note 4)	15,311,743	19,400,167
Federal Energy Regulatory Commission fees	13,132,000	12,556,391
Administrative and other expenses	4,846,261	4,332,879
Interest expense	3,521,816	4,035,631
Telecommunication expenses	3,202,298	3,030,847
Insurance expense	2,728,488	2,740,722
Change in fair value of interest rate swaps (note 7)	3,084,544	(1,254,712)
Training, travel, and meeting expenses	1,707,559	1,892,477
Northeast Power Coordinating Council fees	273,634	260,590
Change in fair value of marketable securities	<u>(262,017)</u>	<u>63,853</u>
Total operating expenses	<u>182,018,640</u>	<u>182,650,061</u>
Change in net assets without donor restrictions	—	—
Net assets without donor restrictions, beginning of year	<u>—</u>	<u>—</u>
Net assets without donor restrictions, end of year	\$ <u>—</u>	<u>—</u>

See accompanying notes to financial statements.

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Statements of Cash Flows

Years ended December 31, 2019 and 2018

	<u>2019</u>	<u>2018</u>
Cash flows from (used in) operating activities:		
Change in net assets without donor restrictions	\$ —	—
Adjustments to reconcile change in net assets without donor restrictions to net cash provided by (used in) operating activities:		
Depreciation	15,311,743	19,400,167
Amortization of debt issuances cost	8,561	72,730
Loss on disposition of assets	10,328	971
Change in fair value of interest rate swaps	3,084,544	(1,254,712)
Change in fair value of marketable securities	(262,017)	63,853
Change in operating assets and liabilities that provide (use) cash:		
Accounts receivable	(44,031,879)	(1,845,042)
Marketable securities	(281,956)	(256,764)
Regulatory assets	(5,199,087)	2,101,741
Prepaid expenses and other assets	(2,827,632)	1,221,436
Accounts payable and accrued expenses	60,221,855	11,022,085
Market participant prepayments	1,377,752	1,448,215
Market participant security deposits	19,804,766	(50,470,514)
Working capital reserve	12,116	967,604
Regulatory liabilities	(5,150,786)	6,052,804
Pension and postretirement liabilities	(243,348)	(4,249,329)
Deferred revenue and other liabilities	33,307,983	4,763,141
Net cash provided by (used in) operating activities	<u>75,142,943</u>	<u>(10,961,614)</u>
Cash flows from investing activities:		
Acquisition of property and equipment (including capitalized interest)	(19,915,272)	(20,719,467)
Proceeds on disposition of assets	1,200	—
Net cash used in investing activities	<u>(19,914,072)</u>	<u>(20,719,467)</u>
Cash flows from financing activities:		
Payment of debt issuance cost	—	(121,000)
Proceeds from revolving credit facility loan	8,600,000	12,800,000
Repayment of revolving credit facility loan	(8,600,000)	(12,800,000)
Proceeds from 2019 – 2023 budget facility loan	26,000,000	—
Proceeds from 2014 – 2018 budget facility loan	—	25,329,000
Repayment of 2014 – 2018 budget facility loan	(29,026,026)	(21,785,341)
Proceeds from 2016 – 2019 EMS/BMS facility loan	3,595,000	9,575,000
Repayment of 2016 – 2019 EMS/BMS facility loan	(11,197,521)	(5,610,000)
Repayment of 2012 Infrastructure Loan	(2,646,316)	(2,646,316)
Repayment of Mortgage and Renovations loans	(1,362,879)	(1,284,479)
Net cash (used in) provided by financing activities	<u>(14,637,742)</u>	<u>3,456,864</u>
Net increase (decrease) in cash, cash equivalents and restricted cash	40,591,129	(28,224,217)
Cash, cash equivalents and restricted cash – beginning of year	415,288,493	443,512,710
Cash, cash equivalents and restricted cash – end of year	\$ <u>455,879,622</u>	<u>415,288,493</u>
Supplemental disclosure of cash flow information – cash paid during the year for interest, net of capitalized interest	\$ 3,583,338	4,297,716
Noncash investing activities:		
Property and equipment additions which were accrued but not paid	\$ 1,078,293	1,424,558
Property and equipment additions previously accrued which were paid	1,424,558	2,760,443

See accompanying notes to financial statements.

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Notes to Financial Statements

December 31, 2019 and 2018

**(1) Summary of Significant Accounting Policies**

**(a) Business Description**

The New York Independent System Operator, Inc. (NYISO) was formed in April 1997 and commenced operations on December 1, 1999. NYISO is incorporated in the state of New York as a not-for-profit organization. NYISO assumed the responsibilities of its predecessor, the New York Power Pool (NYPP), which had coordinated the reliability of New York State's electric power grid for more than 30 years. Formed as a result of Federal Energy Regulatory Commission (FERC) policies, NYISO monitors a network of 11,000 circuit miles of high-voltage transmission lines and serves approximately 400 market participants.

NYISO's mission, 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, and providing factual information to policy makers, stakeholders and investors in the power system. The NYISO facilitates fair and open competition in the wholesale electricity markets in which electricity and related services are purchased and sold on the basis of competitive bidding. Billing invoices are issued by NYISO to each market participant to settle transactions occurring in the NYISO markets.

NYISO is governed by an independent board of directors, as well as a committee structure consisting of market participant representatives. In addition to FERC oversight, NYISO is also subject to regulation in certain aspects by the New York State Department of Public Service Commission.

**(b) Basis of Accounting and Presentation**

The accompanying financial statements have been prepared on an accrual basis of accounting in accordance with U.S. generally accepted accounting principles and Financial Accounting Standards Board Accounting Standards Codification (FASB ASC) Topic 980, *Regulated Operations*, and FASB ASC 958, *Not-for-Profit Entities*.

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant items subject to such estimates and assumptions include the useful lives of fixed assets, recoverability of regulatory assets, the valuation of derivative instruments, and assumptions utilized in the accounting for employee benefit obligations such as discount rates, return on assets, fair value of investments and other contingencies.

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Notes to Financial Statements

December 31, 2019 and 2018

**(c) Regulatory Accounting**

NYISO's financial statements are prepared in accordance with generally accepted accounting principles for rate-regulated entities. As such, regulators may permit specific incurred costs, typically treated as expenses by unregulated entities, to be deferred and expensed in future periods when it is probable that such costs will be recovered in customer rates. Incurred costs are deferred as regulatory assets when NYISO concludes that it is probable future revenues will be provided to permit recovery of the previously incurred cost. A regulatory liability is recorded when amounts that have been recorded by NYISO are likely to be refunded to customers through the rate-setting process.

**(d) Revenue Recognition**

Settlements of market participants' energy transactions are not reflected in NYISO's Statements of Activities since they do not represent revenues or expenses of NYISO, as NYISO merely acts as an intermediary in the settlement process. In this role, NYISO receives and disburses funds from and to market participants for each settlement period.

Effective July 1, 2012, NYISO's two FERC-approved tariffs, the Open Access Transmission Tariff (OATT) and the Market Administration and Control Area Services Tariff (Services Tariff), were amended to clarify NYISO's role as the single counterparty to market participant transactions in the NYISO markets. For all market participant transactions in the NYISO markets, flash title passes through NYISO immediately prior to passing to the ultimate buyer and seller of the product. This arrangement reinforces NYISO's authority to continue to net a market participant's offsetting financial positions in NYISO markets for credit and billing purposes; provides clarity in NYISO's legal standing to pursue collection from a bankrupt market participant; and, also complies with the FERC directives on credit policy requirements for competitive wholesale electricity markets.

NYISO's tariffs allow recovery of NYISO's capital requirements, operating expenses and debt service costs through a surcharge assessed to market participants. The revenue from this surcharge, Rate Schedule 1, is earned when energy is scheduled and dispatched. Market participants are then billed for such charges in the subsequent settlement period's invoice.

NYISO's Rate Schedule 1 includes a timing mechanism that effectively meets the requirements of an alternative revenue program set forth in FASB ASC Topic 980, *Regulated Operations*, Subtopic 602, Revenue Recognition. Accordingly, revenue is recognized for net financing obligations and capital costs incurred during the reporting period based on the revenue requirement formula in the tariffs. In connection with this rate-making mechanism, NYISO has recorded \$20,068,125 and \$1,183,447, respectively, as a component of Other Noncurrent Liabilities in the accompanying Statements of Financial Position at December 31, 2019 and 2018.

NYISO also recognizes revenue and an offsetting expense for the annual FERC Assessment Fee (the Assessment Fee). The FERC generally invoices transmission providers in June of each year and payment is due in August. NYISO bills the Assessment Fee based on an estimated rate per megawatt hour applied to each individual transmission customer's actual megawatt hours of transmission usage for the month. Once the FERC invoice is received, NYISO calculates a true up and recovers (or refunds) this true up amount over a six month period following receipt of the invoice. NYISO recognizes the revenue and an offsetting expense each month as the Assessment Fee is billed.

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Notes to Financial Statements

December 31, 2019 and 2018

Revenues recorded as planning studies revenues arise from billing and collection services in the study service agreement process performed by NYISO. These revenues are offset by the corresponding study expenses, recorded in operating expenses, which were incurred in performing such studies. A portion of the deposits related to planning studies are nonrefundable and recorded as revenue when received.

**(e) Cash and Cash Equivalents**

NYISO considers short-term marketable securities with original maturities of three months or less to be cash equivalents. The cash equivalents at December 31, 2019 and 2018 were held in money market accounts invested primarily in short-term U.S. government obligations. NYISO's cash and cash equivalents consist primarily of funds accumulated for the working capital reserve, for general operating purposes, and amounts for funding certain employee benefit plans.

**(f) Restricted Cash**

Restricted cash consists primarily of market participant security deposits held in escrow accounts, amounts prepaid by market participants in advance of settlement billing dates, amounts collected on settlement invoices, amounts collected for Transmission Congestion Contract (TCC) auctions, amounts deposited for planning studies, amounts collected for the estimated annual FERC fee and amounts collected for voltage support services. Market participant security deposits are invested at the market participant's choice in taxable money market funds.

The following table details the Cash, Cash Equivalents and Restricted Cash amounts as reported on the Statements of Cash Flows:

	2019	2018
Cash and cash equivalents	\$ 45,800,594	47,252,645
Restricted cash	410,079,028	368,035,848
	\$ 455,879,622	415,288,493

**(g) Property and Equipment**

Property and equipment are recorded at cost. NYISO capitalizes property and equipment additions in excess of \$5,000 with a useful life greater than one year. Depreciation is computed on the straight-line method over the assets' estimated useful lives of three to five years, except for building and building improvements, which are depreciated on a straight-line basis over 20 years. When assets are retired or otherwise disposed of, the cost and related depreciation are removed, and any resulting gain or loss is reflected in expense for the period. Repairs and maintenance costs are charged to expense when incurred.

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Notes to Financial Statements

December 31, 2019 and 2018

Labor, overhead, interest, consulting, and related costs incurred to acquire and develop computer software for internal use are capitalized and amortized using the straight-line method over three years. These costs are reported as work in process until the deployment of the developed software. Costs incurred prior to the determination of feasibility of developed software and following the in-service date of developed software are expensed.

NYISO capitalizes the interest cost as part of the historical cost of developing certain assets.

Long-lived assets are recorded at cost, and are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amounts of the assets may not be recoverable. Management is not aware of any events or changes in circumstances that would necessitate a review of any long-lived assets as of the years ended December 31, 2019 and 2018.

**(h) Working Capital Reserve**

In order to maintain the liquidity and stability of NYISO's markets, NYISO has accumulated a working capital reserve through amounts charged to market participants under the Rate Schedule 1. Any change to NYISO's working capital needs would be billed to market participants in future Rate Schedule 1 charges. Market participants are entitled to interest on their principal contributions to the working capital reserve. Each market participant is allocated interest based on the respective ratio share of each market participant's principal contributions to the total working capital reserve. Accumulated interest on the working capital reserve is distributed annually to market participants.

**(i) Market Participant Prepayments**

To reduce certain energy and ancillary services credit requirements, Market Participants may choose to prepay to the NYISO, in advance of settlement billing dates, their energy and ancillary services financial obligations. Moreover, certain market participants choose to make advance payments to the NYISO to be applied to future settlement invoices.

**(j) Deferred Revenue**

Advance payments from developers for planning studies and governance participation fees are reflected as deferred revenue.

Planning study revenue is recognized as earned when costs are incurred and billed to developers to complete such studies. Fees for participation in NYISO's governance process are billed to market participants in advance of the year for which they apply and are amortized over the related governance period. All such unamortized amounts are included in Deferred Revenue.

**(k) Income Taxes**

NYISO has been recognized by the Internal Revenue Service as an organization described in Internal Revenue Code (The Code) Section 501(c)(3) and is generally exempt from income taxes under Section 501(a) of the Code. During the calendar years 2019 and 2018, no material unrelated business taxable income was generated by NYISO, and therefore no disclosure is made for federal or state income taxes.

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Notes to Financial Statements

December 31, 2019 and 2018

The NYISO has determined prior to recording any benefit in the financial statements that it is more likely than not that the tax position will be sustained upon examination by the appropriate taxing authorities, as required by the Accounting for Uncertainty in Income Taxes Topic of the FASB ASC 740. A tax position is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon settlement.

**(l) Fair Value**

NYISO utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible. Fair value is determined based on assumptions that market participants would use in pricing an asset or liability in the principal or most advantageous market. When considering market participant assumptions in fair value measurements, the following fair value hierarchy distinguishes between the observable and unobservable inputs, which are categorized in one of the following levels:

Level 1 inputs: Unadjusted quoted prices in active markets for identical assets or liabilities that NYISO has the ability to access at the measurement date

Level 2 inputs: Other than quoted prices included within Level 1 inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the asset or liability

Level 3 inputs: Unobservable inputs for the asset or liability used to measure fair value to the extent that observable inputs are not available, thereby allowing for a situation in which there is little, if any, market activity for the asset or liability at the measurement date

The level in the fair value hierarchy within which a fair value measurement in its entirety falls is based on the lowest-level input that is available for that particular financial instrument.

NYISO's financial instruments consist primarily of cash and cash equivalents, restricted cash, marketable securities, accounts receivable, prepaid expenses, accounts payable and accrued expenses, short-term and long-term debt, and benefit plan assets such that carrying value approximates fair value. The fair value of derivative instruments and benefit plan assets is discussed in notes 7 and 8, respectively.

**(m) Pension and Other Postretirement Benefit Plans**

NYISO has a defined benefit pension plan covering certain employees upon their retirement. The benefits are based on years of service and employee's compensation during the five years before retirement. NYISO also sponsors a defined postretirement benefit medical plan for retired employees and their dependents. NYISO records annual amounts relating to its pension and postretirement plans based on calculations that incorporate various actuarial and related assumptions, including discount rates, mortality, assumed rates of return, compensation increases, turnover rates, and healthcare costs and trend rates. These actuarial and related assumptions are reviewed on an annual basis and modifications are made to the assumptions based on current rates and trends. The effect of modifications made to those assumptions are reasonable based on actual experience and market conditions.

**NEW YORK INDEPENDENT  
SYSTEM OPERATOR, INC.**

Notes to Financial Statements

December 31, 2019 and 2018

The net periodic costs are recognized as employees render the services necessary to earn the pension and postretirement benefits. Unamortized amounts that are expected to be recovered in rates in future years are recorded as a regulatory asset or liability. See note 8 for additional information.

**(n) Concentration of Credit Risk**

Financial instruments that subject NYISO to credit risk consist primarily of market settlement invoices and Rate Schedule 1 revenue due from market participants. As provided in the OATT and Services Tariff, NYISO reviews the creditworthiness of market participants, who are required to either maintain certain financial statement criteria and/or approved credit ratings, to post with NYISO, specified financial security in an amount sufficient to cover their outstanding liability to NYISO, or to prepay their obligations in advance of settlement billing dates.

NYISO's tariffs establish specific periods for the adjustment of settlement invoices and for market participant challenges to amounts billed for a particular service period. Settlement invoices can be adjusted for up to four months after the date of the monthly invoice issuance, and these invoices can be challenged for an additional one month after the issuance of all settlement adjustment invoices. Subsequent invoices issued during the settlement adjustment period "true up" amounts previously billed. After all true-up invoices are issued during the settlement adjustment period, market participants may challenge the amounts billed for a particular service period. If NYISO agrees with the provisions of the challenge, or there are no invoice challenges, a final invoice is issued for that service period.

As a result, NYISO is exposed to credit risk until all settlement adjustments and final invoices for each service period are finalized and liquidated. As of December 31, 2019, the adjustments and true-ups of all settlement invoices through March 2019 were completed. However, in the event of a market participant default and bad debt loss, Rate Schedule 1 of the OATT allows NYISO to recover bad debt losses from all remaining market participants on future invoices.

**(o) Derivative Instruments**

NYISO recognizes all derivative instruments as either assets or liabilities in the Statement of Financial Position at their respective fair value. The fair values of NYISO's derivative instruments are quoted by external sources. The changes in the fair value of these derivatives are recorded as a change in fair value of interest rate swaps in the Statement of Activities. Due to NYISO's regulated rates, any changes in fair value of these derivative instruments are recorded as either Other Current or Noncurrent Assets or Other Current or Noncurrent Liabilities, as appropriate, and ultimately deferred for recognition due to regulatory recovery of interest costs. Payments on these derivative instruments are recorded and classified as interest expense.

NYISO uses derivative instruments to hedge the effects of fluctuations in interest rates. NYISO is exposed to credit loss in the event of nonperformance by the commercial banks under the interest rate swap agreements. The credit risk related to hedge agreements is limited to the cost to NYISO to replace the aforementioned hedge arrangements with like instruments. NYISO monitors the credit standing of the counterparties and anticipates that the counterparties will be able to fully satisfy their obligations under the hedge arrangements. See note 7 for additional information.

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**(p) Debt Issuance Costs**

Debt issuance costs are included as a direct deduction to the corresponding debt liability and have been deferred. Debt issuance costs are amortized using the effective interest method over the life of the associated debt issuance.

**(q) Accounting Pronouncements Recently Adopted**

*(i) Prior Year Disclosures*

The accompanying financial statements and related notes have been revised to incorporate certain items related to the disclosures specific to the adoption of ASU 2016-14, *Not-for-Profit Entities (Topic 958): Presentation of Financial Statements of Not-for-Profit Entities* as of and for the year ended December 31, 2018. The primary changes include simplifying and enhancing the presentation of net assets, requiring operating expenses to be reported by both natural and functional classifications in a single location, and expanding disclosures regarding liquidity and availability of resources. As a result, unrestricted net assets are now referred to as net assets without donor restrictions in the accompanying financial statements, and disclosures were enhanced with respect to additional discussion related to the NYISO's liquidity and availability of resources in note 11, and operating expenses have been reported by both natural and functional classifications in note 12. These disclosure omissions did not result in any changes to the amounts presented in the accompanying Statements of Financial Position, Activities or Cash Flows for the year ended December 31, 2018. Management has concluded that these disclosure omissions were not material.

*(ii) Current Year Disclosures*

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers* (ASU 2014-09), as well as subsequent series of amendments to ASU 2014-09 that have the same effective date and transition provisions (collectively referred to as Topic 606). Topic 606 requires a company to recognize revenue when the company transfers control of promised goods and services to the customer. Revenue is recognized in an amount that reflects the consideration a company expects to receive in exchange for those goods or services.

NYISO adopted Topic 606 using the cumulative effect method for all contracts not completed as of January 1, 2019. As a result, NYISO determined there was no cumulative effect of applying the new revenue standard to record as an adjustment to the opening balance of net assets without donor restrictions as of January 1, 2019. NYISO's adoption did not change the timing or amount of revenue recognized by NYISO. Prior period amounts are not adjusted and continue to be reported in accordance with NYISO's historical accounting under ASC 605, *Revenue Recognition (Topic 605)*.

In August 2016, FASB issued ASU 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments*. The new standard is intended to reduce diversity in how certain transactions are classified in the Statement of Cash Flows. The NYISO adopted FASB ASU 2016-15 in 2019 and management has concluded these disclosures have no impact to the classification of the Company's cash receipts and cash payments.

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In November 2016, FASB issued ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*. The new standard requires that the Statement of Cash Flows explain the change during the period for the total of cash, cash equivalents and amounts generally described as restricted cash or restricted cash equivalents. The NYISO is required to reconcile such total to amounts on the Statement of Financial Position and disclose the nature of the restrictions. The NYISO adopted FASB ASU 2016-18 in 2019 and has included a reconciliation of cash, cash equivalents and restricted cash in note 1(f).

In March 2017, FASB issued ASU 2017-07, *Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*. The new standard requires that the service cost component is broken out from other components of the net benefit cost. The NYISO adopted ASU 2017-07 in 2019 and has concluded that its effect has have no material impact to amounts disclosed.

**(2) Accounts Receivable**

NYISO's accounts receivable at December 31, 2019 and 2018 consisted of the following:

	<u>2019</u>	<u>2018</u>
Billed:		
Current-due settlement invoices	\$ 48,222,441	—
Past-due settlement invoices	726,276	2,402,727
Miscellaneous billed receivables	124,986	698,610
	<u>49,073,703</u>	<u>3,101,337</u>
Unbilled:		
Rate Schedule 1 revenue for December	1,792,774	4,322,761
Miscellaneous unbilled receivables	1,525,118	935,618
	<u>3,317,892</u>	<u>5,258,379</u>
Total	<u>\$ 52,391,595</u>	<u>8,359,716</u>

NYISO invoices market participants weekly for settlement charges and Rate Schedule 1 revenue. As of December 31, 2019, current-due settlement invoices represented amounts invoiced on December 31, 2019 and were collected on January 3, 2020.

Past due settlement invoices as of December 31, 2019 are expected to be recovered in 2020. Rate Schedule 1 of the OATT allows NYISO to recover bad debt losses from market participants and provides guidance on the provisions of such recoveries.

Miscellaneous billed and unbilled receivables are for planning study services provided by the NYISO in accordance with the NYISO (OATT). These revenues are offset by the corresponding planning study expenses, which were incurred in performing such studies.

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NYISO recovers its Rate Schedule 1 revenue in the invoice following the period of service. Therefore, a portion of unbilled Rate Schedule 1 revenues for December are billed and recovered in January of the subsequent year.

**(3) Regulatory Assets and Liabilities**

At December 31, 2019 and 2018, regulatory assets and liabilities consisted of the following:

	2019	2018
Regulatory assets:		
Funding for pension benefits	\$ 11,600,111	10,423,929
Funding for postretirement deferred charges	9,164,026	8,401,272
Voltage support service (reactive power) market	3,436,333	—
Total regulatory assets	24,200,470	18,825,201
Less current portion	(3,436,333)	—
Noncurrent regulatory assets	\$ 20,764,137	18,825,201
Regulatory liabilities:		
Rate Schedule 1 underspending	\$ 5,715,702	5,819,493
Rate Schedule 1 transactional volume overcollections	697,307	4,800,027
Funding for pension deferred charges	4,849,305	4,241,171
Voltage support service (reactive power) market	—	1,552,409
Funding for postretirement benefits	1,902,554	1,483,024
Total regulatory liabilities	13,164,868	17,896,124
Less current portion	(6,413,009)	(12,171,929)
Noncurrent regulatory liabilities	\$ 6,751,859	5,724,195

**(a) Funding for Pension and Postretirement Benefits**

The pension and postretirement funding regulatory assets and liabilities reflect the unrecognized pension and postretirement benefit costs that under GAAP for rate-regulated entities are recorded as deferred noncurrent regulatory assets or liabilities. These amounts are expected to be included in future rates.

**(b) Funding for Deferred Charges**

The NYISO recovers its annual employer cash contributions for both the pension and postretirement benefit plans via Rate Schedule 1. The amounts in funding for deferred charges represents the pension and postretirement benefit costs net of cash contributions.

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**(c) Rate Schedule 1 Underspending**

To the extent that NYISO's spending does not exceed the annual Rate Schedule 1 revenue requirement, a regulatory liability is established for the underspending amount.

**(d) Rate Schedule 1 Transactional Volume Collections**

NYISO recovers its costs through a surcharge assessed to market participants via Rate Schedule 1 of the OATT and Services Tariff. To the extent that transactional volumes billed under Rate Schedule 1 fall short of the amount expected when the Rate Schedule 1 surcharge is established, NYISO reflects a regulatory asset for the undercollection amounts. To the extent that transactional volumes billed under Rate Schedule 1 exceed the amount expected when the Rate Schedule 1 surcharge is established, NYISO reflects a regulatory liability for the overcollection amounts.

**(e) Voltage Support Service**

In order to maintain acceptable transmission voltages on the New York State transmission system, certain market participants within the New York Control Area produce or absorb voltage support service (reactive power). Payments to market participants supplying voltage support service and recoveries from other market participants are assessed via Rate Schedule 2 of the OATT and Services Tariff. Differences between the timing of recoveries and payments for voltage support service that result in undercollections or overcollections are reflected as regulatory assets or liabilities.

**(4) Property and Equipment**

As of December 31, 2019 and 2018, property and equipment consisted of the following:

	<u>2019</u>	<u>2018</u>
Software developed for internal use	\$ 179,495,227	178,564,482
Building, building improvements, and leasehold improvements	106,356,051	105,949,020
Computer hardware and software	70,145,403	68,613,646
Work in progress	38,616,949	25,948,862
Machinery and equipment	7,348,972	7,495,214
Land and land improvements	3,361,818	3,361,818
Furniture and fixtures	3,206,443	3,252,793
	<u>408,530,863</u>	<u>393,185,835</u>
Accumulated depreciation	<u>(293,359,692)</u>	<u>(282,260,400)</u>
Property and equipment – net	<u>\$ 115,171,171</u>	<u>110,925,435</u>

Property and equipment includes interest of \$429,528 and \$381,899, capitalized during 2019 and 2018, respectively. Depreciation expense for the years ended December 31, 2019 and 2018 was \$15,311,743 and \$19,400,167, respectively.

Total capitalized labor for the years ended December 31, 2019 and 2018 was \$6,627,654 and \$6,212,658, respectively.

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Costs represented in Work in Progress primarily include the Energy Management System/Business Management System (EMS/BMS) upgrade, the Energy Storage Resources project and the Electronic Information Management system upgrade.

**(5) Revolving Credit Facility**

On October 22, 2013, NYISO entered into a \$50.0 million Revolving Credit Facility with an effective date of January 1, 2014 through December 31, 2017. On March 18, 2016, this agreement was amended to extend the effective date through December 31, 2018. The proceeds from this Revolving Credit Facility are to be used for working capital purposes. Interest on borrowings under the Revolving Credit Facility is based on NYISO's option of varying rates of interest tied to either the prime rate or the London Interbank Offered Rate (LIBOR). At December 31, 2018, there were no amounts outstanding on the Revolving Credit Facility. During 2018, \$12.8 million in borrowings were made under this credit agreement, at an average interest rate of 2.921%.

On December 14, 2018 NYISO entered into a \$30.0 million Revolving Credit Facility with an effective date of January 1, 2019 through December 31, 2023. The proceeds from this Revolving Credit Facility are to be used for working capital purposes. Interest on borrowings under this Revolving Credit Facility is based on NYISO's option of varying rates of interest tied to either the prime rate or LIBOR. At December 31, 2019 there were no amounts outstanding on the Revolving Credit Facility. During 2019, \$8.6 million in borrowings were made under this credit agreement, at an average interest rate of 2.599%.

**(6) Long-Term Debt**

At December 31, 2019, the following amounts were outstanding on NYISO's long-term debt:

	2014–2018 Budget facility loan (i)	2019–2023 Budget facility loan (ii)	2016–2019 EMS/BMS facility loan (iii)	Mortgage (iv)	Renovations (iv)	2012 Infrastructure loan (v)	Total
Total outstanding:							
Maturities	\$ 16,886,000	26,000,000	10,949,146	5,656,525	4,959,421	30,653,164	95,104,256
Unamortized debt issuance costs	(7,914)	(93,188)	(15,827)	(8,187)	(4,125)	(136,184)	(263,425)
Total debt, net	\$ <u>16,878,086</u>	<u>25,906,812</u>	<u>10,933,319</u>	<u>5,650,338</u>	<u>4,955,296</u>	<u>30,516,980</u>	<u>94,840,831</u>
Current portion:							
Maturities	\$ 8,443,000	8,666,667	5,360,813	866,134	578,162	2,646,316	26,561,092
Less unamortized debt issuance costs	(3,957)	(13,313)	(7,914)	(1,125)	(750)	(11,842)	(38,901)
Total current portion	\$ <u>8,439,043</u>	<u>8,653,354</u>	<u>5,352,899</u>	<u>865,009</u>	<u>577,412</u>	<u>2,634,474</u>	<u>26,522,191</u>
Long term portion:							
Maturities	\$ 8,443,000	17,333,333	5,588,333	4,790,391	4,381,259	28,006,848	68,543,164
Less unamortized debt issuance costs	(3,957)	(79,875)	(7,913)	(5,062)	(3,375)	(124,342)	(224,524)
Total long term portion	\$ <u>8,439,043</u>	<u>17,253,458</u>	<u>5,580,420</u>	<u>4,785,329</u>	<u>4,377,884</u>	<u>27,882,506</u>	<u>68,318,640</u>

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At December 31, 2018, the following amounts were outstanding on NYISO's long-term debt:

	2014–2018 Budget facility loan (i)	2016–2018 EMS/BMS facility loan (iii)	Mortgage (iv)	Renovations (iv)	2012 Infrastructure loan (v)	Total
Total outstanding:						
Maturities	\$ 45,912,027	9,575,000	6,474,268	5,504,557	33,299,480	100,765,332
Unamortized debt issuance costs	<u>(79,126)</u>	<u>(10,882)</u>	<u>(7,313)</u>	<u>(4,875)</u>	<u>(150,026)</u>	<u>(252,222)</u>
Total debt, net	\$ <u>45,832,901</u>	<u>9,564,118</u>	<u>6,466,955</u>	<u>5,499,682</u>	<u>33,149,454</u>	<u>100,513,110</u>
Current portion:						
Maturities	\$ 20,802,360	3,191,667	817,743	545,136	2,646,316	28,003,222
Less unamortized debt issuance costs	<u>(41,048)</u>	<u>(4,947)</u>	<u>(1,125)</u>	<u>(750)</u>	<u>(11,842)</u>	<u>(59,712)</u>
Total current portion	\$ <u>20,761,312</u>	<u>3,186,720</u>	<u>816,618</u>	<u>544,386</u>	<u>2,634,474</u>	<u>27,943,510</u>
Long term portion:						
Maturities	\$ 25,109,667	6,383,333	5,656,525	4,959,421	30,653,164	72,762,110
Less unamortized debt issuance costs	<u>(38,078)</u>	<u>(5,935)</u>	<u>(6,188)</u>	<u>(4,125)</u>	<u>(138,184)</u>	<u>(192,510)</u>
Total long term portion	\$ <u>25,071,589</u>	<u>6,377,398</u>	<u>5,650,337</u>	<u>4,955,296</u>	<u>30,514,980</u>	<u>72,569,600</u>

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- (i) On October 22, 2013, NYISO entered into an unsecured \$100.0 million line of credit facility (2014–2017 Budget Facility), the proceeds of which could be drawn between January 1, 2014 through December 31, 2017 to fund capital purchases and the development of significant projects during 2014–2017. Interest on borrowings under this facility is based on NYISO’s option of varying rates of interest tied to LIBOR plus 95 basis points for borrowings, or the prime rate. Interest payments on borrowings are due monthly. On March 18, 2016, NYISO amended and restated its unsecured \$100.0 million line of credit facility to increase the unsecured amount to \$125.0 million and allow the proceeds to be drawn through December 31, 2018 (2014–2018 Budget Facility). NYISO must convert each year’s annual borrowings to term loans, with principal and interest payments payable over three years.

As of December 31, 2019 and 2018, the loan details on the 2014–2018 Budget Facility consisted of the following:

Draw year	2016	2017	2018
Draw amount	\$ 25,000,000	24,671,000	25,329,000
Converted to term loan	January 2017	January 2018	January 2019
Term period	36 months	36 months	36 months
Maturity date	12/1/2019	12/1/2020	12/1/2021
As of December 31, 2019:			
Outstanding balance at fixed interest rate	—	—	13,333,333
Fixed interest rate	N/A	N/A	2.233 %
Outstanding balance at variable interest rate	—	—	3,552,667
Variable interest rate	N/A	N/A	2.641 %
As of December 31, 2018:			
Outstanding balance at fixed interest rate	3,864,111	13,333,333	20,000,000
Fixed interest rate	3.370 %	4.076 %	2.250 %
Outstanding balance at variable interest rate	271,582	3,114,000	5,329,000
Variable interest rate	3.299 %	3.299 %	3.299 %

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- (ii) On December 14, 2018, NYISO entered into a \$90.0 million Revolving Term Loan Credit Facility (2019–2023 Budget Facility) with an effective date of January 1, 2019 through December 31, 2023. The proceeds from this Term Loan Credit Facility are to be used for capital purchases and significant projects during 2019–2023. Interest on borrowings under this Term Loan Credit Facility is based on NYISO’s option of varying rates of interest tied to either the prime rate or LIBOR plus 67.5 basis points.

The 2019-2023 Budget Facility allows for a maximum of \$140.0 million to be drawn over the five year period, with no more than \$90.0 million outstanding at any time. Under the revolving structure, loan amortization in proceeding years restores funds availability sufficient to cover draws totaling \$140.0 million through 2023. NYISO must convert each year’s annual borrowings to term loans, with the principal and interest payments payable over three years.

As of December 31, 2019 and 2018, the loan details on the 2019-2023 Budget Facility consisted of the following:

Draw year	2019
Draw amount	\$ 26,000,000
Converted to term loan	January 2020
Term period	36 months
Maturity date	12/1/2022
As of December 31, 2019:	
Outstanding balance at fixed interest rate	23,000,000
Fixed interest rate	2.920 %
Outstanding balance at variable interest rate	3,000,000
Variable interest rate	2.400 %
As of December 31, 2018:	
Outstanding balance at fixed interest rate	—
Fixed interest rate	N/A
Outstanding balance at variable interest rate	—
Variable interest rate	N/A

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- (iii) On March 18, 2016, NYISO entered into a new unsecured \$30.0 million delayed-draw term loan (EMS/BMS Facility Loan) to fund the replacement of NYISO's Energy Management and Business Management Systems (EMS/BMS). In accordance with the loan agreement, the proceeds can be drawn beginning March 18, 2016 through December 31, 2018. NYISO must convert each year's annual borrowings to term loans, with principal and interest payments payable over three years. Interest on borrowings under this facility is based on NYISO's option of varying rates of interest tied to LIBOR plus 95 basis points for borrowings, or the prime rate. Interest payments on borrowings are due monthly.

On December 12, 2018, NYISO amended its EMS/BMS Facility Loan to allow proceeds to be drawn through December 31, 2019.

As of December 31, 2019 and 2018, the loan details on the EMS/BMS Facility Loan consisted of the following:

Draw year	2016	2017	2018	2019
Draw amount	\$ 6,730,000	10,100,000	9,575,000	3,595,000
Converted to term loan	January 2017	January 2018	January 2019	January 2020
Term period	36 months	36 months	36 months	36 months
Maturity date	12/1/2019	12/1/2020	12/1/2021	12/1/2022
As of December 31, 2019:				
Outstanding balance				
at fixed interest rate	—	761,251	5,005,415	—
Fixed interest rate	N/A	2.053 %	2.053 %	N/A
Outstanding balance at				
variable interest rate	—	209,561	1,377,918	3,595,000
Variable interest rate	N/A	2.641 %	2.641 %	—
As of December 31, 2018:				
Outstanding balance at				
fixed interest rate	1,301,944	3,907,765	5,556,958	—
Fixed interest rate	2.070 %	2.070 %	2.070 %	N/A
Outstanding balance at				
variable interest rate	941,389	2,825,568	4,018,042	—
Variable interest rate	3.299 %	3.299 %	3.299 %	N/A

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- (iv) On July 8, 2005, NYISO entered into two financing agreements to purchase and renovate a 140,000-square foot office building in Rensselaer, NY. The first agreement is a \$14.7 million mortgage that was used to finance the building purchase (Mortgage), and the second agreement represented a \$10.0 million line of credit for renovations (Renovations Loan). Both agreements are secured by liens on the building and subsequent capitalized renovations. Interest on borrowings under both facilities is due monthly and is based on varying rates of interest tied to LIBOR plus 100 basis points.

As of December 31, 2019 and 2018, the loan details on the Mortgage and Renovation Loans consisted of the following:

	<u>Mortgage</u>	<u>Renovation</u>
Loan:		
Draw amount	\$ 14,708,750	10,000,000
Converted to term loan	September 2005	January 2007
Term period	20 years	20 years
Maturity date	7/1/2025	12/1/2026
As of December 31, 2019:		
Outstanding balance at fixed interest rate	5,656,525	4,959,421
Fixed interest rate	5.790 %	5.960 %
As of December 31, 2018:		
Outstanding balance at fixed interest rate	6,474,268	5,504,557
Fixed interest rate	5.790 %	5.960 %

- (v) On July 18, 2012, NYISO entered into the 2012 Infrastructure Loan to renovate its facilities in Guilderland, NY and to perform construction at its facility in Rensselaer, NY. The agreement permitted borrowings of up to \$45.0 million through July 18, 2014, at which point the full \$45.0 million was converted to a term loan. The NYISO is required to make interest only payments for up to 24 months, followed by 17 years of principal and interest payments. Interest on borrowings under the 2012 Infrastructure Loan is due monthly and is based on varying rates of interest tied to LIBOR plus 225 basis points.

As of December 31, 2019 and 2018, the loan details on the 2012 Infrastructure Loan consisted of the following:

	<u>December 31</u>	
	<u>2019</u>	<u>2018</u>
Outstanding balance at fixed interest rate	\$ 27,254,902	29,607,843
Fixed interest rate	4.149 %	4.149 %
Outstanding balance at variable interest rate	\$ 3,398,262	3,691,637
Variable interest rate	3.941 %	4.599 %

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At December 31, 2019, scheduled maturities of NYISO's long-term debt was as follows:

	2014–2018 Budget facility loan	2019–2023 Budget facility loan	2016–2019 EMS/BMS facility loan	Mortgage	Renovations	2012 Infrastructure loan	Total
2020	\$ 8,443,000	8,666,667	5,360,813	866,134	578,162	2,646,316	26,561,092
2021	8,443,000	8,666,667	4,390,000	919,297	614,926	2,646,316	25,680,206
2022	—	8,666,666	1,198,333	974,739	653,131	2,646,316	14,139,185
2023	—	—	—	1,033,525	693,710	2,646,317	4,373,552
2024	—	—	—	1,095,574	736,412	2,646,317	4,478,303
Thereafter	—	—	—	767,256	1,683,080	17,421,582	19,871,918
<b>Total</b>	<b>\$ 16,886,000</b>	<b>26,000,000</b>	<b>10,949,146</b>	<b>5,656,525</b>	<b>4,959,421</b>	<b>30,653,164</b>	<b>95,104,256</b>

**(7) Derivatives and Hedging Activities**

NYISO's derivative instruments are economic hedges used to manage its exposure related to changes in interest rates related to long-term debt. The NYISO does not enter into derivative instruments for any purposes other than cash flow hedging. By using derivative instruments to hedge exposure to changes in interest rates, NYISO is exposed to credit and market risk. Credit risk is the failure of the counterparty to perform under the terms of the derivative contract. When the fair value of a derivative contract is positive, the counterparty owes the NYISO, which creates credit risk. When the fair value is negative, the NYISO owes the counterparty and, therefore, the NYISO is not exposed to the counterparty's credit risk in those circumstances. NYISO minimizes counterparty credit risk in derivative instruments by entering into transactions with high-quality counterparties. Market risk is the adverse effect on the value of a derivative instrument that results from a change in interest rates.

A summary of the derivative instruments notional amount, fair value, and gain (loss) are represented in the following table:

	Swap notional amount at inception	Swap notional amount at December 31, 2019	Swap fair value at December 31, 2018	Swap fair value at December 31, 2019	2019 Gain (loss) on fair value
Loan:					
Mortgage (i)	\$ 14,708,750	5,656,525	(511,248)	(530,329)	(19,081)
Renovations (i)	10,000,000	4,959,421	(564,461)	(613,394)	(48,933)
2012 Infrastructure Loan (ii)	40,000,000	27,254,902	1,070,999	(319,067)	(1,390,066)
2016-2018 Budget Facility (iii)	100,000,000	13,333,333	275,905	45,419	(230,486)
EMS/BMS Facility Loan (iv)	15,000,000	5,766,667	170,001	26,942	(143,059)
2019–2023 Budget Facility (v)	115,000,000	23,000,000	—	(1,252,919)	(1,252,919)
<b>Total</b>					<b>\$ (3,084,544)</b>

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- (i) In February 2005, NYISO entered into two interest rate swap agreements with a commercial bank to fix interest rate payments on the financing of a new office building purchase. The notional amount of debt on the swap agreement for the Mortgage was \$14,708,750. NYISO pays a fixed interest rate of 5.79% on the outstanding principal amount of this financing on payments from August 2005 through August 2025.

The notional amount of debt on the swap agreement for the Renovations Loan was \$10.0 million, and NYISO pays a fixed interest rate of 5.96% on payments from January 2007 through January 2027. As of December 31, 2019 and 2018, the fair value of these interest rate swap agreements was \$(530,329) and \$(511,248), respectively, for the Mortgage and \$(613,394) and \$(564,461), respectively, for the Renovations Loan, recorded in Other Noncurrent Liabilities. For the years ended December 31, 2019 and 2018, NYISO recorded a fair value loss of \$68,014 and gain of \$476,788, respectively, related to these two swap agreements.

- (ii) In July 2012, NYISO entered into an interest rate swap agreement with a commercial bank to fix interest rate payments on the 2012 Infrastructure Loan. The notional amount of debt on the swap agreement was \$40.0 million. NYISO pays a fixed interest rate of 4.149% through July 2031. As of December 31, 2019 and 2018, the fair value of this interest rate swap agreement was \$(319,067) and \$1,070,999, respectively, recorded in Other Noncurrent Liabilities and Other Noncurrent Assets, respectively. For the years ended December 31, 2019 and 2018, NYISO recorded a fair value loss of \$1,390,066 and gain of \$388,997, respectively, related to this swap agreement.
- (iii) In October 2013, NYISO entered into four interest rate swap agreements with a commercial bank to fix interest rate payments on the 2014–2017 Budget Facility. The notional amount of the debt on the swap agreements was \$80.0 million. In May 2016, NYISO entered into a fifth interest rate swap agreement with a commercial bank to fix interest rate payments on the 2014–2018 Budget Facility. The notional amount of the debt on the swap agreement was \$20.0 million. NYISO pays fixed interest rates ranging from 1.780% to 4.076% through December 2021 on the swap agreements. As of December 31, 2019 and 2018, the fair value of these interest rate swap agreements was \$45,419 and \$275,905, respectively, recorded in Other Noncurrent Assets. For the years ended December 31, 2019 and 2018, NYISO recorded a fair value loss of \$230,486 and gain of \$404,612, respectively, related to these swap agreements.
- (iv) In October 2016, NYISO entered into an interest rate swap agreement with a commercial bank to fix interest rate payments on the EMS/BMS Facility loan. The notional amount of the debt on the swap agreement was \$15.0 million. NYISO pays a fixed interest rate of 2.07% through December 2021. As of December 31, 2019 and 2018, the fair value of this interest rate swap agreement was \$26,942 and \$170,001, respectively, recorded in Other Noncurrent Assets. For the years ended December 31, 2019 and 2018, NYISO recorded a fair value loss of \$143,059 and \$15,686, respectively, related to this swap agreement.
- (v) In April 2019, NYISO entered into an interest rate swap agreement with a commercial bank to fix interest rate payments on 2019–2023 Budget Facility loan. The notional amount of the debt on the swap agreement was \$115.0 million. NYISO pays a fixed interest rates of 2.90% through December 2026. As of December 31, 2019, the fair value of this interest rate swap agreement was

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(\$1,252,919), recorded in Other Noncurrent Liabilities. For the year ended December 31, 2019 NYISO recorded a fair value loss of \$1,252,919 related to this swap agreement.

The fair value of NYISO's interest rate swaps are determined using pricing models developed based on the LIBOR swap rate and other observable market data (Level 2 inputs).

The fair value of interest rate swaps is included in Other Noncurrent Assets and Other Noncurrent Liabilities on the accompanying Statements of Financial Position. The following table presents the carrying amounts and estimated fair values of NYISO's interest rate swaps at December 31, 2019 and 2018:

	2019		2018	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets:				
Interest rate swaps	\$ 72,361	72,361	1,524,878	1,524,878
Financial liabilities:				
Interest rate swaps	\$ 2,715,709	2,715,709	1,075,708	1,075,708

**(8) Employee Benefit Plans**

**(a) Defined Benefit Pension and Postretirement Plans**

NYISO has a defined benefit pension plan covering certain employees upon their retirement. Plan benefits are based on employee compensation levels and years of service, including service for certain employees previously employed by NYPP member companies. There were \$1,000,000 and \$800,000 in NYISO cash contributions made during 2019 and 2018, respectively, to the defined benefit pension plan. Effective December 1, 2009, NYISO adopted changes to its pension plan to end the accrual of future benefits for most employees. NYISO replaced the defined benefit accruals with equivalent contributions to employee 401(k) plan accounts after December 1, 2009.

NYISO sponsors a defined benefit postretirement plan to provide medical benefits for eligible retirees and their dependents. NYISO employees who retire on or after age 55 become eligible for these benefits provided they have been credited with at least ten years of NYISO service (5 years of NYISO service for those employees hired before January 1, 2005). The benefits are contributory based upon years of service, with NYISO paying up to 50% of costs for retired employees and up to 25% for their dependents (subject to specified dollar limits). Medical coverage becomes secondary upon Medicare eligibility.

Pursuant to resolutions adopted by NYISO's Board of Directors, NYISO's Retirement Board is responsible for administration of NYISO's pension and postretirement plans, including recommending investment policy to the Board of Directors, and monitoring investment performance. The Retirement Board reports to NYISO's Board of Directors and currently consists of NYISO's Chief Financial Officer, Director of Human Resources, General Counsel, Controller and Assistant Treasurer and one Nonexecutive employee. The Retirement Board provides reports to the Commerce and Compensation Committee of the Board of Directors on at least an annual basis.

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NYISO records the overfunded or underfunded position of a defined benefit pension and postretirement plan as an asset or liability, with any unrecognized prior service costs, transition obligations, or gains/losses reported as recoverable under FASB ASC Topic 980 and recorded as a regulatory asset or liability.

For payment of benefits under the postretirement plan, as noted above, the NYISO established a Voluntary Employee Benefit Association (VEBA) trust in January 2010. The assets held in the VEBA trust reduce the accumulated postretirement benefit obligation as reported on the NYISO's Statements of Financial Position. The VEBA trust held assets of \$5,868,289 and \$5,037,480 as of December 31, 2019 and 2018, respectively. As noted in the following table, current obligations are assumed to be paid out of the trust assets, with the remaining unfunded obligation to be reflected as a noncurrent liability.

The schedules that follow show the benefit obligations, the plan assets, and the funded status as of December 31, 2019 and 2018, and the change in benefit obligations for NYISO's pension and postretirement plans for the years ended December 31, 2019 and 2018.

	Pension plan		Postretirement plan	
	2019	2018	2019	2018
Change in benefit obligation:				
Benefit obligation –				
beginning of year	\$ 30,096,246	31,583,799	11,954,855	15,243,219
Service cost	—	7,409	727,256	981,049
Interest cost	1,153,818	1,022,876	453,130	497,494
Actuarial (gain)/loss	3,055,946	(1,475,231)	284,346	(4,440,567)
Participant contributions	—	—	121,382	172,857
Benefits paid	(1,883,554)	(1,042,607)	(412,081)	(499,197)
Benefit obligation – end of year	32,422,456	30,096,246	13,128,888	11,954,855
Change in plan assets:				
Fair value of plan assets				
beginning of year	24,076,158	25,094,709	5,037,480	5,720,041
Actual return on plan assets	2,795,635	(622,936)	1,153,780	(312,417)
Employer contributions	1,000,000	800,000	—	—
Participant contributions	—	—	121,282	172,857
Benefits paid	(1,883,554)	(1,042,607)	(412,081)	(499,197)
Expenses paid	(153,919)	(153,008)	(32,272)	(43,804)
Fair value of plan assets –				
end of year	25,834,320	24,076,158	5,868,189	5,037,480
Funded status	\$ (6,588,136)	(6,020,088)	(7,260,699)	(6,917,375)

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The NYISO has determined that the pension and post retirement funding liabilities are probable of recovery through the Tariff and has recorded a regulatory asset as of December 31, 2019 and 2018 in the accompanying Statements of Financial Position.

Amounts recognized in the 2019 and 2018 Statements of Financial Position consist of the following:

	Pension plan		Postretirement plan	
	2019	2018	2019	2018
Net actuarial (gain)/loss recognized in regulatory assets (liabilities)	\$ 11,600,111	10,423,929	(1,902,554)	(1,483,024)
Projected benefit obligation	(32,422,456)	(30,096,246)	(13,128,888)	(11,954,855)
Fair value of assets	25,834,320	24,076,158	5,868,289	5,037,480
Unfunded projected benefit obligation	\$ (6,588,136)	(6,020,088)	(7,260,599)	(6,917,375)

Net periodic pension expense and postretirement benefit costs include the following components:

	Pension plan		Postretirement plan	
	2019	2018	2019	2018
Service cost	\$ —	7,409	727,256	981,049
Interest cost	1,153,818	1,022,876	453,130	497,494
Expected return on plan asset	(952,263)	(1,179,239)	(284,319)	(359,432)
Amortization of unrecognized (gain)/loss	188,963	203,019	(133,313)	—
Amortization of unrecognized prior service cost	1,348	1,348	—	—
Total	\$ 391,866	55,413	762,754	1,119,111

NYISO uses a December 31 measurement date for its pension and postretirement benefit plans. NYISO's accumulated benefit obligation for the defined benefit pension plan is \$32,422,456 and \$30,096,246 at December 31, 2019 and 2018, respectively.

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The following table as of December 31, 2019 and 2018 shows the assumptions used to calculate the pension and postretirement benefit obligations and net periodic costs:

	Pension plan		Postretirement plan	
	2019	2018	2019	2018
Benefit obligations:				
Discount rate	2.95 %	4.05 %	3.35 %	4.30 %
Rate of compensation increases	N/A	N/A	N/A	N/A
Net cost or credit:				
Discount rate	4.05 %	3.40 %	4.30 %	3.75 %
Rate of compensation increases	N/A	3.00 %	N/A	N/A
Expected return on plan assets	4.05 %	5.00 %	5.75 %	6.40 %

NYISO's expected rate of return on plan assets reflects anticipated returns on the pension and postretirement plans' current and future assets. To determine this rate, NYISO considers historical returns for equity and debt securities, as well as current capital market conditions and projected future conditions. The long-term investment objective for NYISO's pension plan is to maximize the total return on plan assets while limiting risk, reflected in volatility of returns, to prudent levels. To that end, NYISO's Retirement Board has appointed and regularly meets with an investment advisor to review asset performance, compliance with target asset allocation guidelines, and appropriate levels of asset diversification. NYISO's investment advisor operates under written guidelines provided by NYISO, which cover such areas as investment objectives, performance measurement, permissible investments, investment restrictions, and communication and reporting requirements.

NYISO's pension plan rate of compensation increase is no longer applicable in the calculation of pension costs and obligations, beginning in 2019. The participants in the plan have reached the maximum compensation amounts that would be assumed in developing benefit and cost obligations.

NYISO's pension and postretirement plan investments are composed of common stocks, mutual funds and commingled trust funds that are redeemable at net asset value (NAV) on a daily basis. Redemption of such investments generally requires 1 to 2 days' notice prior to redemption.

NYISO measured benefit obligations using the Pri-2012 mortality tables and MP-2019 mortality improvement scale in selecting mortality assumptions as of December 31, 2019.

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The targeted allocation and actual investment mix of the pension plan's assets are as follows at December 31:

Asset category	2019		2018	
	Target	Actual	Target	Actual
Fixed income	70 %	66 %	70 %	71 %
International and emerging equities	15	17	15	15
Large cap equities	8	9	8	8
Mid cap equities	5	5	5	4
Small cap equities	2	3	2	2
	<u>100 %</u>	<u>100 %</u>	<u>100 %</u>	<u>100 %</u>

The targeted allocation and actual investment mix of the VEBA Trust (postretirement) plan's assets are as follows at December 31:

	2019		2018	
	Target	Actual	Target	Actual
Domestic equities	50 %	56 %	50 %	55 %
Fixed income	35	32	35	33
International and emerging equities	15	12	15	12
	<u>100 %</u>	<u>100 %</u>	<u>100 %</u>	<u>100 %</u>

The actual rate of return for the pension plan's assets as of December 31, 2019 and 2018 is as follows:

Asset category	Annual returns December 31	
	2019	2018
International and emerging equities	22.0 %	(13.9)%
Large cap equities	31.4	(4.2)
Mid cap equities	36.2	(7.3)
Small cap equities	24.9	(13.3)
Fixed income	4.9	0.9
Total portfolio weighted average	<u>11.4 %</u>	<u>(2.8)%</u>

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The actual rate of return for the VEBA Trust (postretirement) plan's assets as of December 31, 2019 and 2018 is as follows:

Asset category	Annual returns December 31	
	2019	2018
International and emerging equities	19.4 %	(15.6)%
Domestic equities	26.4	(7.9)
Fixed income	9.3	—
Total portfolio weighted average	19.7 %	(6.5)%

The fair values of the pension plan assets at December 31, 2019 and 2018 are presented below:

	2019 Fair value			
	Level 1	Level 2	Level 3	Total
Domestic investments:				
Equities:				
Small cap	\$ 635,661	—	—	635,661
Mid cap	1,359,117	—	—	1,359,117
Large cap	2,326,303	—	—	2,326,303
Total	4,321,081	—	—	4,321,081
Fixed income	4,353,279	12,743,273	—	17,096,552
Total	4,353,279	12,743,273	—	17,096,552
International and emerging equities	4,330,013	—	—	4,330,013
Total	4,330,013	—	—	4,330,013
Cash and cash equivalents	86,674	—	—	86,674
	\$ 13,091,047	12,743,273	—	25,834,320

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	2018 Fair value			
	Level 1	Level 2	Level 3	Total
Domestic investments:				
Equities:				
Small cap	\$ 510,536	—	—	510,536
Mid cap	999,980	—	—	999,980
Large cap	1,771,650	—	—	1,771,650
Total	3,282,166	—	—	3,282,166
Fixed income	4,863,395	12,325,857	—	17,189,252
Total	4,863,395	12,325,857	—	17,189,252
International and emerging equities	3,631,324	—	—	3,631,324
Total	3,631,324	—	—	3,631,324
Cash and cash equivalents	(26,584)	—	—	(26,584)
	<u>\$ 11,750,301</u>	<u>12,325,857</u>	<u>—</u>	<u>24,076,158</u>

The fair values of VEBA Trust (postretirement) plan's assets at December 31, 2019 and 2018 are presented below:

	2019 Fair value			
	Level 1	Level 2	Level 3	Total
Domestic equities	\$ 1,159,414	—	—	1,159,414
Fixed income	1,830,080	—	—	1,830,080
International and emerging equities	2,764,404	—	—	2,764,404
Total	5,753,898	—	—	5,753,898
Cash and cash equivalents	114,390	—	—	114,390
	<u>\$ 5,868,288</u>	<u>—</u>	<u>—</u>	<u>5,868,288</u>

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	2018 Fair value			
	Level 1	Level 2	Level 3	Total
Domestic equities	\$ 1,122,495	—	—	1,122,495
Fixed income	1,663,579	—	—	1,663,579
International and emerging equities	2,184,354	—	—	2,184,354
<b>Total</b>	<b>4,970,428</b>	<b>—</b>	<b>—</b>	<b>4,970,428</b>
Cash and cash equivalents	67,052	—	—	67,052
	<u>\$ 5,037,480</u>	<u>—</u>	<u>—</u>	<u>5,037,480</u>

In 2019, the assumed postretirement plan healthcare cost trend rates for participants pre-65 are 7.0% for 2020 to 2021, decreasing to 4.5% in 2030, and the participants post-65 are 4.75% for 2020 to 2021 decreasing to 4.5% in 2022. In 2018, the assumed postretirement plan healthcare cost trend rates for participants pre-65 were 7.5% for 2019 to 2020 decreasing to 4.5% in 2031, and the participants post-65 were 5.25% for 2019 to 2020 decreasing to 4.5% in 2022. A one-percentage point change in the assumed healthcare cost trend rate would change the 2019 postretirement benefit obligation as follows:

	1% Increase	1% Decrease
Effect on postretirement benefit obligation	\$ 1,704,900	(1,335,100)
Effect on total of service and interest cost components	211,300	(161,900)

The following benefit payments, which reflect expected future service, are expected to be paid:

	Pension plan	Postretirement plan
2020	\$ 2,834,530	278,669
2021	2,499,510	370,452
2022	2,387,642	445,909
2023	2,816,487	479,481
2024–2029	12,558,046	4,204,644

**b) 401(k) Plan**

NYISO has a 401(k) Retirement and Savings Plan open to all nontemporary employees. This plan provides for employee contributions up to specified limits. NYISO matches 100% of the first 3% of employee contributions, and 50% of the next 2% of employee contributions. Beginning December 1, 2009, NYISO also contributes funds to employee 401(k) plan accounts equivalent to defined benefit accruals formerly earned in the pension plan.

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Employees are immediately vested in NYISO's matching contributions and become vested in other employer contributions after three years of credited service. The total NYISO contributions to the 401(k) plan were \$6,594,198 and \$6,426,626 for 2019 and 2018, respectively.

**(c) Long-Term Incentive Plan**

NYISO's Long-Term Incentive Plan provides certain members of senior management with deferred compensation benefits. Benefits are based upon the achievement of three-year performance goals established by the Board of Directors, with participants becoming fully vested and distributions payable for these deferred amounts after the completion of the audited financial statements for the third year. Benefits are paid out in equal installments over three years following the end of the three-year cycle. Accrued Long-Term Incentive Plan benefits included in Other Noncurrent Liabilities at December 31, 2019 and 2018 were \$3,545,451 and \$3,214,475, respectively. The short-term portion of such liability, included in Other Current Liabilities, at December 31, 2019 and 2018, was \$1,649,619 and \$1,607,238, respectively.

**(d) 457(b) Plan – Eligible Deferred Compensation Plan**

NYISO's 457(b) Plan provides for certain members of senior management to defer a portion of their current compensation and have it credited under a supplemental unfunded savings program. This Plan is intended to satisfy the requirements of an eligible deferred compensation plan maintained by NYISO as a nongovernment tax-exempt entity under Code section 457(e)(1)(B). Plan participants have the ability to invest these funds in the same investments offered by the NYISO 401(k) plan at their discretion. The investment balance at December 31, 2019 and 2018 was \$1,834,535, and \$1,290,562, respectively, recorded as marketable securities. The corresponding deferred compensation liability is recorded in Accounts Payable and Accrued Expenses.

**(9) Other Commitments and Contingencies**

On July 8, 2005, NYISO purchased an office building to relocate NYISO's alternate control center and to consolidate employees located in leased facilities. In connection with the purchase, management entered into a Payment in Lieu of Taxes (PILOT) Agreement with the Rensselaer County Industrial Development Agency (RCIDA) to achieve certain benefits. Under the terms of this agreement, NYISO was required to make annual payments of approximately \$195,000 for the first 10 years. Effective January 1, 2016, this PILOT Agreement was amended to add three additional parcels of land purchased in 2014 and 2015, and to extend the term of the PILOT an additional 10 years. Per the amendment, NYISO is required to make annual payments of approximately \$304,000, over the next 6 years through 2025. The agreement is cancelable at the discretion of NYISO.

NYISO is routinely involved in regulatory actions. In the opinion of management, none of these matters will have a material adverse effect on the financial position, results of operations, or liquidity of NYISO.

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**(10) Deferred Revenue**

Deferred revenue at December 31, 2019 and 2018 consisted of the following:

	<u>2019</u>	<u>2018</u>
Advance payments received on planning studies	\$ 28,913,594	14,975,100
Governance participation fees	411,500	426,100
Total	<u>\$ 29,325,094</u>	<u>15,401,200</u>

**(11) Liquidity and Working Capital Reserve**

At December 31, 2019, financial assets and liquidity resources available within one year for general expenditures, including operating expenses, scheduled principal payments on borrowings, and capital expenditures not financed with debt, include the cash and cash equivalents, accounts receivable and a revolving line of credit.

NYISO's cash flows have variations during the year attributable to fluctuation in RS1 recoveries. To manage liquidity, NYISO operates with a balanced budget on a cash flow basis in accordance with policies approved by the Board of Directors. In addition to the liquidity resources stated above, NYISO also has a Working Capital Reserve available to offset temporary imbalances in cash flows and to ensure liquidity and stability of the markets administered by the NYISO.

At December 31, 2019 and 2018, the working capital reserve consisted of the following:

	<u>2019</u>	<u>2018</u>
Market participant contributions through Rate Schedule 1	\$ 33,000,000	33,000,000
Interest on market participant contributions	1,507,639	1,495,523
Total	<u>\$ 34,507,639</u>	<u>34,495,523</u>

**(12) Functional Classification of Expenses**

NYISO's primary mission is serve the public interest and provide benefits to consumers by maintaining and enhancing regional reliability; operating open, fair, and competitive wholesale electric markets; planning the power system for the future; and providing factual information to policy makers, stakeholders, and investors in the power system. NYISO's departments are specifically designed to support these functions. Those departmental costs are deemed directly identifiable to program services as summarized in the tables below. Other departments that are solely for supporting NYISO, such as administrative and support, are categorized as management and general as summarized in the tables below. For any department that is providing both program services and management and general services, an analysis was performed to allocate the costs based on estimates of the time spent supporting program services or management and general, and categorized accordingly.

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Operating expenses presented by both natural and functional classifications are as follows for the years ended December 31, 2019 and 2018:

	Year ending December 31, 2019		
	Program services	Management and general	Total
Compensation and related benefits	\$ 50,476,420	37,673,056	88,149,476
Professional fees and consultants	23,376,904	1,258,659	24,635,563
Maintenance, software licenses and facility costs	19,639,878	2,047,397	21,687,275
Depreciation	15,311,743	—	15,311,743
Energy Regulation Commission Fees	13,132,000	—	13,132,000
Administrative and other expenses	11,270,486	7,832,097	19,102,583
Total	<u>\$ 133,207,431</u>	<u>48,811,209</u>	<u>182,018,640</u>

	Year ending December 31, 2018		
	Program services	Management and general	Total
Compensation and related benefits	\$ 50,484,816	37,085,241	87,570,057
Professional fees and consultants	25,042,124	1,677,536	26,719,660
Maintenance, software licenses and facility costs	18,657,461	2,644,038	21,301,499
Depreciation	19,400,167	—	19,400,167
Energy Regulation Commission Fees	12,556,391	—	12,556,391
Administrative and other expenses	7,738,785	7,363,502	15,102,287
Total	<u>\$ 133,879,744</u>	<u>48,770,317</u>	<u>182,650,061</u>

**(13) Subsequent Events**

NYISO considers events and transactions that occur after the balance sheet date, but before the financial statements are issued, to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure. These financial statements were available to be issued on March 16, 2020 and subsequent events have been evaluated through that date.



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