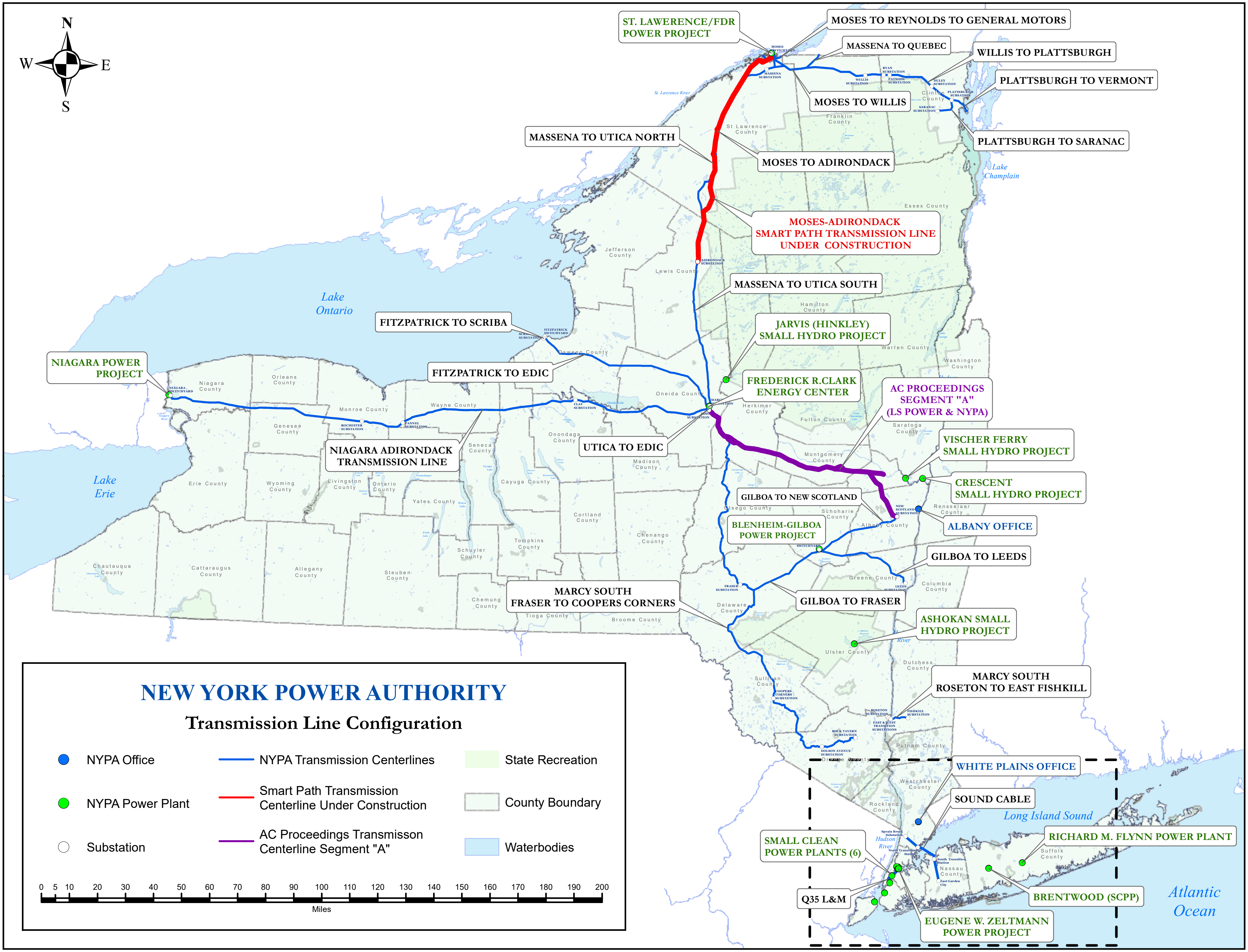
Appendix 1

NYPA asset maps


NEW YORK POWER AUTHORITY
Transmission Line Configuration
NYPA Office
NYPA Power Plant
Substation
NYPA Transmission Centerlines
Smart Path Transmission Centerline Under Construction
AC Proceedings Transmisson Centerline Segment "A"
State Recreation
County Boundary
Waterbodies
0 5 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
Miles
N
S
E
W
ST. LAWERENCE/FDR POWER PROJECT
MOSES TO REYNOLDS TO GENERAL MOTORS
MASSENA TO QUEBEC
WILLIS TO PLATTSBURGH
PLATTSBURGH TO VERMONT
MOSES TO WILLIS
PLATTSBURGH TO SARANAC
MASSENA TO UTICA NORTH
MOSES TO ADIRONDACK
MOSES-ADIRONDACK SMART PATH TRANSMISSION LINE UNDER CONSTRUCTION
MASSENA TO UTICA SOUTH
JARVIS (HINKLEY) SMALL HYDRO PROJECT
FITZPATRICK TO SCRIBA
FITZPATRICK TO EDIC
NIAGARA POWER PROJECT
FREDERICK R.CLARK ENERGY CENTER
AC PROCEEDINGS SEGMENT "A" (LS POWER & NYPA)
NIAGARA ADIRONDACK TRANSMISSION LINE
UTICA TO EDIC
VISCHER FERRY SMALL HYDRO PROJECT
CRESCENT SMALL HYDRO PROJECT
GILBOA TO NEW SCOTLAND
BLENHEIM-GILBOA POWER PROJECT
ALBANY OFFICE
GILBOA TO LEEDS
MARCY SOUTH FRASER TO COOPERS CORNERS
GILBOA TO FRASER
ASHOKAN SMALL HYDRO PROJECT
MARCY SOUTH ROSETON TO EAST FISHKILL
WHITE PLAINS OFFICE
SOUND CABLE
RICHARD M. FLYNN POWER PLANT
SMALL CLEAN POWER PLANTS (6)
BRENTWOOD (SCPP)
Q35 L&M
EUGENE W. ZELTMANN POWER PROJECT
Lake Ontario
Lake Erie
Lake Champlain
Long Island Sound
Atlantic Ocean
St. Lawrence River
Hudson River
St Lawrence County
Franklin County
Clinton County
Essex County
Jefferson County
Lewis County
Hamilton County
Warren County
Washington County
Oswego County
Oneida County
Herkimer County
Fulton County
Saratoga County
Niagara County
Orleans County
Monroe County
Wayne County
Genesee County
Onondaga County
Madison County
Montgomery County
Seneca County
Erie County
Wyoming County
Livingston County
Ontario County
Yates County
Cayuga County
Cortland County
Chenango County
Otsego County
Schoharie County
Albany County
Rensselaer County
Tompkins County
Schuyler County
Chautauqua County
Cattaraugus County
Allegany County
Steuben County
Chemung County
Tioga County
Broome County
Delaware County
Greene County
Columbia County
Ulster County
Dutchess County
Sullivan County
Putnam County
Westchester County
Rockland County
Nassau County
Suffolk County
Orange County


NEW YORK POWER AUTHORITY
Transmission Line Configuration
NYPA Office
NYPA Power Plant
Substation
NYPA Transmission Centerlines
Smart Path Transmission Centerline Under Construction
AC Proceedings Transmisson Centerline Segment "A"
State Recreation
County Boundary
Waterbodies
0
5
10
20
30
40
50
Miles
N
S
W
E
Long Island Sound
Atlantic Ocean
Hudson River
WHITE PLAINS OFFICE
SOUND CABLE
Sprain Brook Substation
North Transition Station
South Transition Station
East Garden City
HARLEM RIVER YARDS
HELL GATE
VERNON BLVD.
KENT
SEYMOUR
POUCH
Q35 L&M
EUGENE W. ZELTMANN POWER PROJECT
BRENTWOOD
RICHARD M. FLYNN POWER PLANT
Warwick
Orange County
Greenwood Lake
Tuxedo
Stony Point
Peekskill
Yorktown
Lewisboro
Cortlandt
Bedford
Pound Ridge
Haverstraw
Rockland County
Mt. Kisco
New Castle
Westchester County
Ossining
Deforest Lake
Ramapo
Clarkstown
North Castle
Mount Pleasant
Orangetown
Greenburgh
Harrison
White Plains
Rye
Scarsdale
Yonkers
Eastchester
New Rochelle
Mamaroneck
Mt. Vernon
Pelham
Bronx County
Bronx
Manhattan
New York County
Queens County
Queens
Kings County
Richmond County
Staten Island
Glen Cove
Oyster Bay
North Hempstead
Nassau County
Long Beach
Huntington
Smithtown
Babylon
Suffolk County
Riverhead
Southampton

Appendix 2

Key personnel resumes

Resumes

Table of contents

Presented in alphabetical order

Project role
Development and construction

Firm
New York Power Authority

Education
MBA, Business Administration and Management - General, University of Rochester Simon Business School

MSEE, Electrical Engineering, Worcester Polytechnic Institute

Civil Engineering, The Ohio State University

Bachelor of Engineering, Civil Engineering, The Maharaja Sayajirao University of Baroda

Girish Behal

Girish Behal has more than 16 years' experience in the utility sector. In his role at the New York Power Authority, he leads the project development team developing and advancing energy storage, renewable, and transmission projects.

Before joining the Power Authority, he supported offshore and onshore wind developers in the Northeast and California with grid connection analysis and strategy.

At SNC-Lavalin he worked on a variety of transmission projects, including several FERC 1000 proposals.

At Eversource (previously Northeast Utilities) he worked on large transmission projects like the Bethel-Norwalk 345-kV Transmission project, which consisted of overhead transmission, underground transmission, and greenfield/brownfield substation upgrades. He later led several high-voltage substation and transmission projects at the organization, as well as CIP implementation and an IEC 61850 technology and change management initiative.

Project role
Clean Path New York Steering Committee

Firm
energyRe

Education
MBA, Wharton School of the University of Pennsylvania

BBA, University of Michigan

Jeff Blau

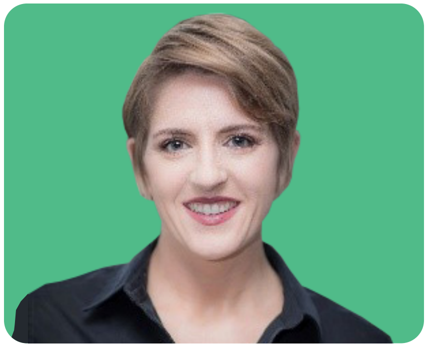
Jeff T. Blau is a founding partner of Forward Power and energyRe, and Chief Executive Officer and a partner of Related Companies. At Related, he has been responsible for directing and overseeing new developments worth over $60 billion in virtually every sector of the real estate industry, with a strong emphasis on sustainability and environmentally responsible development.

As CEO of Related, he is responsible for the strategic direction of the company, overall management of the firm, the pursuit of new development opportunities, corporate acquisitions, and financing activities across all business platforms. Under his leadership, Related continuously advances the sustainable design, construction, and management of its projects.

Related is the largest private owner and preservationist of affordable housing in the country. Under Jeff's leadership, all affordable housing preservation acquisitions nationally are assessed for potential energy savings, water savings, and occupant health improvements prior to purchase. All of Related's affordable housing renovation programs target a minimum of 15% energy efficiency improvements and 15% water usage reductions.

In addition to his work at energyRe and Related, Jeff serves on the Board of Directors of Equinox Holdings, Inc., the Central Park Conservancy, the New York City Partnership Fund, Robin Hood, the Urban Land Institute, the Association for a Better New York, the Union Square Partnership, the Real Estate Roundtable, Wharton Graduate School, University of Michigan, Trinity School, and Mount Sinai Medical Center. He was named to Crain's New York's New Influentials list of 25 leaders reshaping New York.

Jeff Blau completed his undergraduate studies at the University of Michigan and received a master's degree in business administration from the Wharton School of the University of Pennsylvania.



Project role
Government affairs and communications

Firm
Invenergy

Education
MPA, Drake University

BA, Sociology, Drake University

Beth Conley

Beth Conley currently heads Invenergy's Communications team as Vice President. She leads both internal communication efforts across the company and external efforts, such as content management and media engagement, that support Invenergy's large portfolio of clean energy projects.

Beth joined Invenergy in 2018. Prior to serving as Vice President, she held multiple positions as Senior Manager, Strategic Communications and Director, Communications.

Beth has been working in renewable development in the Midwest for nearly a decade. In 2019, she was honored as one of Midwest Energy News' 40 under 40. This award recognizes 40 emerging leaders in the region for their work in America's transition to a clean energy economy.

Before joining Invenergy, Beth held positions on Clean Line Energy Partners' Public and Government Affairs team and at the Iowa Economic Development Authority, where she gained experience in project management, recruiting wind component manufactures and suppliers to the state of Iowa, and in government affairs and project development on interstate transmission projects.

After earning a bachelor of arts degree in sociology, Beth served as an education volunteer in the Peace Corps in Guinea, West Africa. Beth also holds a master's degree in public administration from Drake University.

Project role
Government affairs and communications

Firm
New York Power Authority

Education
JD, New York Law School

BA, International Relations and Public Affairs, American University

Justin Driscoll

Justin Driscoll advises and represents the New York Power Authority in all legal matters. He provides strategic counsel to the CEO, Board of Trustees, senior executives, and the Governor's Office regarding the company's industry-leading role in renewable energy project development, land-based and offshore transmission, electric vehicle charging infrastructure, and energy storage. He leads the company's wholesale power market and regulatory efforts and its FERC hydropower licensing, legislative, and government relations activity.

A member of the company's Executive Committee, Justin provides legal and policy advice to the Chairman, Trustees, President, and senior management. He also supervises the activities of the Hydropower Licensing Group, the Regulatory/Energy Markets functions, Legislative and Community Affairs Group, the Corporate Secretary, and the Chief Ethics and Compliance Officer. He serves on the Enterprise Risk Management Committee and is management's liaison to the Cyber and Physical Security Committee of the Board of Trustees.

Before joining the Power Authority, Justin represented clients including Fortune 500 companies, governmental entities, and energy companies in complex commercial litigation and regulatory matters.

Justin serves on the Board of Directors of New York City's Urban Green Council and is a member of the World Resources Institute's Global Energy Advisory Board in Washington, DC.

Project role
Development

Firm
energyRe

Education
MUP, Urban Planning, New York University

BA, English, Colorado College

Luke Falk

Luke Falk serves as Vice President of energyRe, overseeing the company's new development projects including renewable generation, transmission, and energy management services.

Luke is also Vice President at Related Companies, where he is responsible for energy and overall sustainability performance for all of Related's development projects, including large-scale, mixed-use developments like Hudson Yards (11 million square feet), Santa Clara (5 million square feet), and Brent Cross South London (10 million square feet). In this capacity he led the development of clean energy generation projects including cogeneration plants, building-mounted and large-scale PV, and the largest energy storage system in New York City at Gateway Center Mall in Brooklyn. He led the energy and sustainability program for over a dozen LEED-certified buildings representing more than $10 billion in capital investment. These included the House at Cornell Tech on Roosevelt Island, the largest Passive House-certified building in the world.

From 2010 to 2019, Luke was an adjunct member of the faculty of Columbia University's graduate-level Sustainability Management program, a joint venture between the Earth Institute and its School of Continuing Education. He previously taught at Cooper Union's School of Continuing Education.

Prior to joining Related, Luke was a Senior Project Manager for the New York State Energy Research and Development Authority (NYSERDA), where he managed programs with a combined budget of $250 million aimed at promoting the adoption of clean energy in multifamily housing. While at NYSERDA he was part of the national working group that led the development of US EPA's Energy Star label for high-rise multifamily buildings. He also provided data and insights that informed the development of New York City's energy disclosure policy and other city efforts to deliver more efficient buildings.

He holds a master's degree in urban planning from New York University and a bachelor's degree in English from Colorado College.

Project role
Program management and financing structuring

Firm
energyRe

Education
JD, St. John's University School of Law

BA, Brandeis University

Glenn Goldstein

Glenn A. Goldstein is Executive Vice President of Development at energyRe and President of Related Retail. As President of Related Retail, and in conjunction with other Related principals, Glenn was instrumental in the development of the 720,000-leasable-square-foot Shops & Restaurants at Hudson Yards. One of New York City's premier locations for fashion and dining, Hudson Yards is Manhattan's first LEED Gold Neighborhood Development and one of the most sustainable, connected, and forward-thinking urban neighborhoods in the country.

Prior to his work at Hudson Yards, Glenn led the development of several large-scale retail destinations. These included Gateway Center phases I and II, with over 1.2 million square feet of retail and a 4.8 MW/16.4 MWh battery, in partnership with Enel X, that supports the local grid with its energy reserve, improving network reliability and contributing to New York's plans to deploy 3 GW of energy storage by 2030 in East New York. Glenn has also led the development of the Bronx Terminal Market, offering one million square feet of retail directly adjacent to the Major Deegan Highway and minutes from Yankee Stadium in the Bronx; College Point Retail Center, a 330,000-square-foot shopping center in College Point, Queens; Clifton Commons, a 450,000-square-foot retail and entertainment complex in Clifton, NJ; and the Hub Office and Retail Complex in the Bronx, a 172,000-square-foot office and retail development.

With over 25 years of experience in development and complex legal matters, Glenn and the Related Retail division bring expertise to every element of the development process, including site acquisition and planning approvals, financing, construction, sustainable design, leasing, and property management.

Glenn Goldstein joined Related in 1994 as Assistant General Counsel, after having served as an associate in the real estate practice group of the law firm Shearman & Sterling. He received a BA degree from Brandeis University and a JD from St. John's University School of Law. He is currently serving on the Advisory Board of the James A. Graaskamp Center for Real Estate.

Project role
Design and construction

Firm
energyRe

Education
Bachelor's degree, Architecture and Engineering, Ain Shams University (Cairo, Egypt)

Emad Lotfalla

Emad Lotfalla is Executive Vice President of Design and Construction for Related Companies. He is responsible for leading all design and construction efforts for the Hudson Yards development, Manhattan's first LEED Gold Neighborhood Development, and providing strategic advice to the senior executive team across Related's global development portfolio. Focused on advancing the design and construction of properties to reduce their environmental impact, Emad continues Related's commitment to exclusively develop sustainable projects to meet or exceed LEED Silver certification.

Emad brings over 35 years of experience in design and construction, having successfully managed the construction of over 12 million square feet in all asset classes, including high-rise commercial office and residential buildings, hospitals, academic facilities, aviation and infrastructure, and high-profile cultural facilities. Prior to joining Related Companies in 2013, Emad served as construction executive and principal in charge for several major construction projects throughout New York City, which included the World Trade Center Transportation Hub, the Whitney Museum, JetBlue's Terminal 5 at JFK, Delta Airlines expansion of Terminal 4 at JFK, the Silberman School of Social Work at Hunter College, and the King's County Family Court.

Emad is a registered architect in the State of New York and holds bachelor's degrees in Architecture and Engineering from Ain Shams University in Cairo, Egypt.

Project role
Government affairs and communications

Firm
energyRe

Education
JD, Columbia University

Masters in Divinity, Theology, Weston Jesuit School

BA, History, Columbia College

Charles O'Byrne

Charles John O'Byrne is Executive Vice President of Policy at energyRe and Executive Vice President for Policy at Related Companies. He serves in a leadership role on a wide range of assignments involving government affairs on the federal, state and local levels; labor issues; litigation matters; and questions of strategy on projects within the Related portfolio, including environmentally conscious real estate developments and pioneering urban energy solutions that address increasing demands on cities.

Charles was trained as an attorney, and his career prior to joining Related involved government, religion, academia, and business. A former Jesuit, he worked at Columbia and Harvard universities as a chaplain and teaching fellow. He also served as Associate General Counsel for the Archdiocese of New York.

Charles spent more than five years in state service acting as Chief of Staff to the Senate Minority Leader, Chief of Staff to the Lieutenant Governor, and Secretary to former Governor David A. Paterson: the highest appointed office in the state's executive branch. He has long been active in charitable and philanthropic works.

In 2016, he was named one of the 50 most powerful and influential New Yorkers in politics and business by City & State in its "50 Over 50" list.

Charles earned a BA summa cum laude from Columbia College, where he majored in history and studied Chinese philosophy. He received a JD degree from the Columbia University School of Law, where he was named to the International Fellows Program. He holds a master's degree in divinity with distinction, and an STL degree in theology from the Weston Jesuit School.

Project role
Clean Path New York
Steering Committee

Firm
Invenergy

Education
MBA, University of Chicago

MS, Mechanical Engineering, Kiev Polytechnic Institute

Michael Polsky

With more than 40 years' experience in the energy industry, Michael Polsky is widely recognized as a pioneer and industry leader in the cogeneration and independent power industry in North America. The founder of three successful privately held companies, Michael is founder and CEO of Invenergy and co-CEO of Forward Power.

Michael founded Invenergy, a leading clean energy company, in 2001. Under his leadership, Invenergy has grown to be the largest privately held renewable energy developer and operator in the world. Invenergy has successfully developed over 27 gigawatts of wind, solar, and natural gas power generation and energy storage projects across the Americas, Europe, and Asia, and has completed more than $42 billion in transactions.

In 1991, Michael founded SkyGen Energy — a developer, owner, and operator of natural gas-fueled generating plants — which was purchased by Calpine Corporation in 2001. In connection with the sale, he was appointed to Calpine's Board of Directors and became a senior executive at Calpine in addition to continuing in his role as CEO of SkyGen.

Prior to forming SkyGen, Michael cofounded and was President of Indeck Energy Services Inc., where he led the development and financing of one of the first portfolios of independent power generating assets. Before this, he held various positions at Fluor Engineers, Brown Boveri Turbomachinery, and Bechtel Power Corporation.

Michael currently serves as a member of the Board of Directors at the University of Chicago, a member of the Board of Directors at the World Resources Institute, and a Chair of the Investment Committee at Energize Ventures. In 2002, he endowed the Center for Entrepreneurship at the University of Chicago Graduate School of Business. In 2016, he was appointed by President Barack Obama as a member of the United States Holocaust Memorial Council.

Project role
Clean Path New York Steering Committee

Firm
New York Power Authority

Education
Corporate Director Certificate, Harvard Business School Executive Education

CEO Academy, The Wharton School

Executive Education Program, Business Administration and Management, General, Columbia Business School

Engineering/Industrial Management Graduate Coursework, Stevens Institute of Technology

BS, Mechanical Engineering, De La Salle University

Gil Quiniones

Gil Quiniones is responsible for developing and implementing the New York Power Authority's strategic vision and mission and for supervising its operations, legal, and financial matters and relationships with external stakeholders.

Under his leadership, the Power Authority is playing a key role in the governor's Reforming the Energy Vision initiative to use market forces and new technology to empower customers and encourage the growth of clean renewable energy and energy efficiency.

Gil coordinated a successful effort by the Power Authority and other utilities to restore electric service to Puerto Rico after the devastating effects of Hurricane Maria in 2017. He has since led multifaceted initiatives to lay the groundwork for strengthening and modernizing the power grids in Puerto Rico and the US Virgin Island. He is well versed in the complexities and needs of the two Caribbean territories' power systems and has directed the Power Authority's work with their government-owned utilities to obtain federal approval and funding for a wide range of proposed system improvements.

In another major initiative, as a member of the New York Governor's Cabinet, Gil directed the integration of the New York State Canal Corporation into the Power Authority as a subsidiary, and assumed responsibility for oversight of the 524-mile canal system, including the iconic Erie Canal.

Before joining the Power Authority, Gil was Senior Vice President of the New York City Economic Development Corporation and the principal energy advisor to Mayor Michael R. Bloomberg. He previously worked for 13 years at the Consolidated Edison Company of New York and ConEdison Solutions, the utility's unregulated energy services subsidiary, where he led profitable revenue growth from $25 million to more than $600 million in four years.

Gil has held senior positions at GridWise Alliance, the Electric Power Research Institute, the Alliance to Save Energy, the Smart Electric Power Alliance, the New York Energy Research and Development Authority, and the Large Public Power Council.

Project role
Program management and financing structuring

Firm
Invenergy

Education
MBA, Northwestern University

BS, Finance and International Business, New York University

Shashank Sane

Shashank Sane heads Invenergy's transmission business as Senior Vice President, leading the company's pursuit of high-voltage, long-distance transmission projects from inception to completion.

Invenergy's transmission team is focused on the multi-faceted execution of these complex projects, analyzing the market for new development opportunities and working with customers to commercialize the projects.

Shashank has held multiple roles at Invenergy since he joined in 2013. He led Invenergy's Edge business, which helped facility and fleet owners to lower costs, enhance sustainability, and increase resiliency through on-site and market-integrated turnkey solutions. Previously, he led Invenergy's Corporate Development team, where he executed on value-accretive M&A transactions and identified new business opportunities for the company. Earlier in his time at Invenergy, Shashank held various finance-oriented roles, successfully completing over $5 billion in financings and divestitures.

Prior to joining Invenergy, Shashank spent time advising energy companies at Oliver Wyman, after beginning his career in investment banking at Lehman Brothers.

He earned a BS in Finance and International Business from the New York University's Stern School of Business, and an MBA from the Kellogg School of Management at Northwestern University.

Project role
Program management and financing structuring

Firm
New York Power Authority

Education
MBA, Business, LeMoyne College

BS, Electrical Engineering, Clarkson University

Phil Toia

Phil Toia has nearly 30 years' experience in engineering, system planning, project management, and field work for the electric utility industry. He leads NYPA Development, which is tasked with helping the New York Power Authority achieve the goals of its VISION2030 strategic plan by becoming a leading developer of transmission projects in New York State and working on large-scale renewables and utility-scale storage projects.

Prior to his current role, he served as the Senior Vice President of Power Supply, overseeing the operations and maintenance of the Power Authority's generation and transmission assets.

Before joining the Power Authority, Phil worked in engineering, project management, and system planning roles in the power generation and investor-owned utility businesses and at several consulting firms.

Phil holds a bachelor of science degree in electrical engineering from Clarkson University and a master of business administration degree from Le Moyne College. He is a licensed Professional Engineer in New York State, a senior member of the Institute of Electrical and Electronics Engineers, and a board member of the Clarkson University Center for Electric Power Systems Research.

Appendix 3

Resource control status summary

REDACTED

Appendix 4

Third Party Developer support letters

NORTHLAND POWER

May 12th, 2021

Ms. Doreen Harris
President and Chief Executive Officer
New York State Energy Research and Development Authority
17 Columbia Circle
Albany, New York 12203-6399

Re: Clean Path New York

Dear Ms. Harris:

Northland Power U.S. Projects Inc. ("Northland Power") is pleased to submit this letter in support of Clean Path New York and its response to the New York State Energy Research and Development Authority's Request for Proposals to procure Tier 4 Renewable Energy Certificates.

Northland Power's parent company Northland Power Inc. is a is a global developer, owner, and operator of clean energy infrastructure. Since 1987, Northland Power Inc. has built a global portfolio of over 2500 MW of operating generating capacity in North America, Asia, Europe, and Latin America. Our facilities produce electricity from clean-burning natural gas and renewable resources such as wind, solar and efficient natural gas.

Northland Power and Clean Path New York have executed an indicative term sheet to outline the participation of the Ball Hill, Bluestone, and High Bridge wind projects as three of Clean Path New York's Tier 4 project resources. The Ball Hill Wind Project is a proposed wind farm located in the Towns of Hanover and Villenova within Chautauqua County, NY. The Bluestone Wind Project is a proposed wind farm located in the Towns of Sanford and Windsor within Broome County, NY. The High Bridge Wind Project is a proposed wind farm located in the Town of Guilford within Chenango County, NY. Together, the three projects may generate up to 322 MW of energy. Northland Power's projects participation in Clean Path New York's proposal is mutually exclusive of other proposals which may include the same projects.

Northland Power stands ready to support the efforts undertaken by NYSERDA and the New York State Public Service Commission to achieve the aggressive carbon reduction targets laid out in the Climate Leadership and Community Protection Act.

Regards,

DocuSigned by:
Michelle Chislett
32D59B22A3C4410...

Michelle Chislett
Managing Director, US & Canada Development
Northland Power Inc.

May 12, 2021

Ms. Doreen Harris
President and Chief Executive Officer
New York State Energy Research and Development Authority
17 Columbia Circle
Albany, New York 12203-6399

Re: Clean Path New York

Dear Ms. Harris:

Apex Clean Energy (Apex) is pleased to submit this letter in support of Clean Path New York and their response to the New York State Energy Research and Development Authority's Request for Proposals to procure Tier 4 Renewable Energy Certificates.

Apex is recognized as one of the premier clean energy companies in the United States, with a development portfolio of 18+ GW across 200+ utility-scale wind and solar projects and over 6.6 GW of projects commercialized to date. Apex has a best-in-class team of more than 250 experts across all scopes of development work, including environmental review, site control, resource analysis, and interconnection and transmission evaluation.

Apex, through its subsidiary Heritage Wind, LLC, and Clean Path New York have executed an indicative term sheet to outline the participation of the Heritage Wind project as one of Clean Path New York's Tier 4 project resources. The Heritage Wind project is a proposed wind farm located in the Town of Barre within Orleans County, New York. The project will generate up to 198 MW of energy.

Apex stands ready to support the efforts undertaken by NYSERDA and the New York State Public Service Commission to achieve the aggressive carbon reduction targets laid out in the Climate Leadership and Community Protection Act.

Regards,

M Goodwin

Apex Clean Energy Holdings, LLC
Mark Goodwin
President & CEO

May 12th, 2021

Ms. Doreen Harris
President and Chief Executive Officer
New York State Energy Research and Development Authority
17 Columbia Circle
Albany, New York 12203-6399

Re: Clean Path New York

Dear Ms. Harris:

Boralex is pleased to submit this letter in support of Clean Path New York and their response to the New York State Energy Research and Development Authority's Request for Proposals to procure Tier 4 Renewable Energy Certificates.

Boralex is an independent power producer that develops, builds, and operates renewable energy power and energy storage facilities in Canada, France, the United Kingdom and the United States. With an installed capacity of 2,455 MW, Boralex is a leader in the Canadian market and France's largest independent producer of onshore wind power. Boralex is recognized for its solid experience in optimizing its asset base in four power generation types — wind, hydroelectric, thermal, and solar. At Boralex, we believe our social responsibility is a vector for accelerating progress toward the decarbonization of energy production.

Boralex agrees with the conclusion outlined in NYSERDA & New York State Department of Public Service White Paper (Case 15-E-0302) that increasing the penetration of renewable energy into Zone J will displace current fossil fuel generation resulting is substantive public health benefits.

To that end, Boralex and Clean Path New York have executed an indicative term sheet to outline the participation of (5) of Boralex's solar projects as part of Clean Path New York's Tier 4 project resources:

- **Greens Corners**: 120 MW photovoltaic solar energy generation facility located in the Town of Watertown and in the Town of Hounsfield, Jefferson County, New York
- **Sky High**: 20 MW photovoltaic solar energy generation facility located in the Town of Tully, Onondaga County, New York
- **West River**: 20 MW photovoltaic solar energy generation facility located in the Town of Moreau, Saratoga County, New York
- **Sandy Creek**: 19.99 MW photovoltaic solar energy generation facility located in the Town of Adams and the Town of Ellisburg, Jefferson County, New York
- **Bald Mountain**: 20 MW photovoltaic solar energy generation facility located in the Town of Greenwich, Washington County, New York

Boralex stands ready to support the efforts undertaken by NYSERDA and the New York State Public Service Commission to achieve the aggressive carbon reduction targets laid out in the Climate Leadership and Community Protection Act.

Regards,

Hugues Girardin
Vice President Development
Boralex Inc.

TERRA-GEN

May 12th, 2021

Ms. Doreen Harris
President and Chief Executive Officer
New York State Energy Research and Development Authority
17 Columbia Circle
Albany, New York 12203-6399

Re: Clean Path New York

Dear Ms. Harris:

Terra-Gen is pleased to submit this letter in support of Clean Path New York and their response to the New York State Energy Research and Development Authority's Request for Proposals to procure Tier 4 Renewable Energy Certificates.

As a leading renewable energy developer that operates over 1.3 GW of wind, solar, and geothermal facilities, Terra-Gen specializes in development, construction, and operation of utility-scale wind, solar, and energy storage facilities. Terra-Gen agrees with the conclusion outlined in NYSERDA & New York State Department of Public Service White Paper (Case 15-E-0302) that downstate needs more clean energy delivered into Zone J in order to displace the fossil fuel generation that currently provides most of the electricity to New York City.

To that end, Terra-Gen and Clean Path New York have executed an indicative term sheet to outline the participation of Terra-Gen's Prattsburgh Wind project as one of Clean Path New York's Tier 4 project resources. The Prattsburgh Wind Project is a proposed wind farm located in the Towns of Prattsburgh, Wheeler, Avoca, Howard and Cohocton within Steuben County, NY. Prattsburgh Wind will consist of 35 to 40 wind turbines and will generate up to 147 MW of energy.

Terra-Gen stands ready to support the efforts undertaken by NYSERDA and the New York State Public Service Commission to achieve the aggressive carbon reduction targets laid out in the Climate Leadership and Community Protection Act.

Regards,

DocuSigned by:
EA7CCA7A8F884BC...

Kevin Sheen
Vice President of Business Development
Terra-Gen

11455 El Camino Real Suite 160 San Diego, California 92130
tel 858 764 3720 fax 858 764 3721 www.terra-gen.com

May 12th, 2021

Ms. Doreen Harris
President and Chief Executive Officer
New York State Energy Research and Development Authority
17 Columbia Circle
Albany, New York 12203-6399

Re: Clean Path New York

Dear Ms. Harris:

Baron Winds, LLC (Baron Winds), a subsidiary of RWE Renewables Americas, is pleased to submit this letter in support of Clean Path New York and their response to the New York State Energy Research and Development Authority's Request for Proposals to procure Tier 4 Renewable Energy Certificates.

RWE is one of the leading international providers of renewable energy and RWE Renewables Americas ranks among the top 10 onshore wind-powered generation companies in the United States. We agree with the conclusion outlined in NYSERDA & New York State Department of Public Service White Paper (Case 15-E-0302) that downstate needs more clean energy delivered into Zone J in order to displace the fossil fuel generation that currently provides most of the electricity to New York City.

To that end, Baron Winds and Clean Path New York have executed a non-binding, indicative term sheet to outline the proposed participation of RWE's Baron Winds project as one of Clean Path New York's Tier 4 project resources, in the event Clean Path New York is awarded the Tier 4 RFP. The Baron Winds project is a proposed wind farm to be located in the Towns of Cohocton, Dansville, Fremont, and Wayland within Steuben County, New York. Baron Winds project's Phase I is expected to consist of up to 32 wind turbines and may generate up to 121.8 MW of energy.

Baron Winds stands ready to support the efforts undertaken by NYSERDA and the New York State Public Service Commission to achieve the aggressive carbon reduction targets laid out in the Climate Leadership and Community Protection Act.

Regards,

DocuSigned by:
Dean Tuel
92562BFCBA8B448...
Vice President

Baron Winds, LLC

Nothing in this letter is intended to create any legally binding obligation on the part of Baron Winds LLC with respect to any transaction(s) described herein or otherwise.

Appendix 5

Tier 4 Renewable Energy Certificate Standard Form Purchase and Sale Agreement memorandum

NYSERDA TIER 4 RFP

Comments on proposed Purchase and Sale Agreement

*In accordance with Section 7.2 of the **Purchase of New York Tier 4 Eligible Renewable Energy Certificates Request for Proposals No. T4RFP21-1** ("RFP"), the chart below identifies terms of the proposed Purchase and Sale Agreement with which Clean Path New York LLC has substantive concerns and would want to discuss with NYSERDA. The issues are presented in a descending order of importance. Clean Path New York reserves the right to supplement this list based on discussions between it and NYSERDA regarding the issues identified herein and modifications to its Step Two Proposal resulting from the negotiation process described in Section 5 of the RFP. Additionally, Clean Path New York may seek to discuss some minor clarification-type changes to other terms with NYSERDA.*

Section	Nature of Issue to be Discussed	Explanation of Concern
Section 2.01 and Sections 4.01 – 4.03	Adjustments to the sale and delivery obligations and associated Tier 4 REC prices and payments	The NYISO will dispatch the power that will flow over the CPNY transmission facilities, so Seller will not have control over power flows across these transmission facilities into Zone J. Therefore, Seller would like to discuss a formulation of the Monthly Tier 4 REC Price which allows Seller to be paid based on hourly matching of Resource production to the availability of transfer capacity on the CPNY transmission facilities. Alternatively, an indexing mechanism to adjust the Index Tier 4 REC Strike Price could achieve the same result.
Section 14.02	Specific Performance	Seller cannot agree to specific performance or any delivery or performance obligations following termination of the Agreement, even if due to an Event of Default.
Section 15.02	Commercial Operation Milestones and Contract Security	(i) Given the size and complexity of the Project, it is possible that delays could occur that are outside of Seller's control. Therefore, Seller would like to include a mechanism pursuant to which the Parties would meet to discuss additional extensions of the Commercial Operation Milestone Date (beyond the Sixth

		Extension) and the associated Contract Security that would be required. (ii) Seller reserves the right to delay the Commercial Operation date for up to 365 days without the posting of additional security if there is a Force Majeure event.
Section 4.09	Adjustments to the Minimum Delivery Requirements	Reliability curtailments, NYISO dispatch (or lack thereof), Force Majeure, emergency events, planned and unplanned outages, and negative pricing periods should be excused from the Minimum Delivery Requirement calculations.
Section 13.01	Scope of Events of Default	(i) Seller cannot agree to a project-specific milestone schedule as an Event of Default. (ii) The failure to achieve the Minimum Delivery Requirement should not be an Event of Default until at least 365 days have elapsed after the Commercial Operation Milestone Date, as such date may be extended.
Section 16.01	Scope of Force Majeure	(i) The unavailability of NYGATS should not be a Force Majeure event as there are other ways to meter and measure performance of the CPNY renewable generation resources. The Agreement should require the Parties to meet and develop an alternative mechanism in the event NYGATS becomes unavailable. (ii) Given the events of the past year, an argument can be made that another pandemic, or recurrence of COVID-19, could be reasonably anticipated. Regardless, pandemics generally should be considered Force Majeure events.
Section 4.01	Determination of Applicable Tier 4 REC Price	In the event that Seller is able to recover a portion of its project costs associated with the CPNY transmission facilities under the NYISO Tariff pursuant to Note (1) below, Buyer would need a mechanism through which to reduce the Tier 4 REC Price or include such recovery in calculation of the Tier 4 Index REC Price as detailed in Section 4.03(b).

Section 12.01	Economic Benefits	Discussion is needed as to the specific Economic Benefit requirements, including the applicability of these requirements to individual renewable generation projects, and application of the claims and verification process in Exhibit F.
Section 2.06	PSC Approval	(i) Because of the tight schedule for commencing commercial operations, it is important that there are no delays in seeking or receiving PSC approval. Seller therefore proposes deadlines and associated termination rights for both actions. (ii) The phrasing of Section 2.06(b) is problematic because “PSC Approval” is a narrowly defined term, and the provision should be expanded to allow Seller to terminate for conditions that may not violate Applicable Law but which materially alter Seller’s pricing, revenues, requirements, or obligations.
Definitions and Section 4.09	Cover Damages	The potential exists that NYSERDA would not be able to purchase replacement Tier 4 RECs, so an alternate formulation of Cover Damages (*e.g.*, a specified rate per MWh) should be discussed.
Definitions and Section 4.03	NYISO Ancillary Services Market	Clarity is needed regarding ancillary services revenues (similar to energy and capacity market revenues) as they could have increasing importance and possibly exceed energy market revenues over time. We propose that the references to energy revenues be modified to include energy and ancillary service revenues.
Section 2.01 and Section 4.09	Supplier GHG Baseline Limits	Seller proposes to remove in its entirety the Supplier GHG Baseline limit concepts because Seller has no hydropower in its portfolio.
Section 11.04	Insurance requirements	Discussion is needed as to the specific insurance requirements NYSERDA will require.

Notes

(1) Clean Path New York is exploring opportunities to recover a portion of its project costs associated with the CPNY transmission facilities under the NYISO Tariff, which would enable Clean Path New York to dramatically reduce its Tier 4 strike price. Because these transmission facilities would significantly expand transfer capability across the UPNY/SENY interface and into Zone J, they would provide significant benefits to the NYISO system in the form of congestion reduction and production cost savings that justify cost recovery under the NYISO Tariff. To this end, Clean Path has begun a dialogue with NYISO on one possible mechanism for NYISO cost recovery - the process to receive economic cost recovery for the significant production cost savings provided by the CPNY transmission facilities to the NYISO system under the NYISO's Economic Planning Process in Attachment Y of the Tariff. Specifically, the Economic Planning Process of Attachment Y provides a process for eligible transmission projects that meet a benefit/cost threshold to receive cost recovery from the project's beneficiaries. Alternate NYISO tariff cost recovery mechanisms could also be explored.

When built, the CPNY transmission facilities will not only deliver Tier 4 RECs to Zone J from upstate, but will also provide tremendous benefits to the NYISO system. Modeled projections show these transmission facilities operating at close to 100% capacity at all times, with only 66% of the power flows over these facilities projected to be Tier 4 power. As demonstrated by the PowerGEM analysis, the CPNY transmission facilities should result in production cost savings projected at more than $450 million dollars per year, or almost $12 billion over the Tier 4 contract life. While the CPNY transmission facilities are expected to earn a small amount of revenue from holding Transmission Congestion Contracts, this would ironically be based on the congestion remaining on the NYISO system, and would not reflect the significant NYISO system benefits relating to the reduction in congestion and associated congestion costs that the CPNY transmission facilities would provide. Although there is not a NYISO market product or other source of NYISO market revenue available to compensate CPNY for these NYISO system benefits, recovery of and on a significant portion of the cost of the CPNY transmission facilities on a cost-of-service basis under the NYISO OATT would be entirely appropriate given the independent benefits provided by these transmission facilities to the NYISO system.

Cost recovery via Attachment Y to the NYISO OATT would be one such mechanism. As detailed in Attachment Y, the newly named "System & Resource Outlook" process (formerly known as CARIS) is performed biennially as a part of the NYISO system planning process. As a part of this study process, Attachment Y provides an avenue for developers to bring forward specific transmission projects for consideration by NYISO.

To be eligible for cost allocation and recovery under Attachment Y: (1) the total capital cost of the transmission project must be at least $25 million, (2) the benefits of the transmission project must outweigh its costs over the first ten years of operation, and (3) the transmission project must be approved by 80 percent or more of the project beneficiaries. Notably, Attachment Y provides that the only benefits that may be considered for purposes of Attachment Y are NYISO system benefits that relate to addressing the congestion identified in the Attachment Y economic planning process. Thus, NYISO's analysis under Attachment Y would not consider any of the Tier 4 REC benefits provided by the CPNY transmission facilities, such as the environmental benefits of renewable generation delivered into Zone J and the economic development benefits of developing new renewable generation resources in upstate New York. CPNY is contemplating cost recovery under Attachment Y for only a portion of the capital costs of the CPNY transmission facilities to compensate for NYISO system production cost benefits that would not otherwise be recognized or compensated by the NYISO markets for energy, capacity and ancillary services or the Tier 4 REC contract. Based on our estimates of production cost savings, we believe it is reasonable to assume that the Attachment Y eligibility requirements will be met and that an affirmative vote of the beneficiaries can be achieved.

Compensation received under Attachment Y would complement revenues received from the Tier 4 REC award, and the required Tier 4 REC strike price could be reduced accordingly.

Appendix 6

Proposed route mapbook

REDACTED

Appendix 7

PowerGEM report

REDACTED

Appendix 8

Class Year 2017 Facilities Study

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Appendix 9

Class Year 2019 Facilities Study

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Appendix 10

Verona Solar feasibility studies

REDACTED

Appendix 11

12x24 tables

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Appendix 12

NYPA audited financial statements and annual reports

NEW YORK POWER AUTHORITY

Financial Report

December 31, 2018 and 2017

NEW YORK POWER AUTHORITY
Financial Report
December 31, 2018 and 2017

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Management Report

Management is responsible for the preparation, integrity and objectivity of the consolidated financial statements of the Authority, as well as all other information contained in the Annual Report. The consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles (U.S.GAAP) and, in some cases, reflect amounts based on the best estimates and judgments of management, giving due consideration to materiality. Financial information contained in the Annual Report is consistent with the financial statements.

The Authority maintains a system of internal controls to provide reasonable assurance that transactions are executed in accordance with management's authorization, that financial statements are prepared in accordance with U.S. generally accepted accounting principles and that the assets of the Authority are properly safeguarded. The system of internal controls is documented, evaluated and tested on a continuing basis. No internal control system can provide absolute assurance that errors and irregularities will not occur due to the inherent limitations of the effectiveness of internal controls; however, management strives to maintain a balance, recognizing that the cost of such system should not exceed the benefits derived.

The Authority maintains an internal auditing program to independently assess the effectiveness of internal controls and to report findings and recommend possible improvements to management. This program includes a comprehensive assessment of internal controls to ensure that the system is functioning as intended. Additionally, as part of its audit of the Authority's consolidated financial statements, KPMG LLP, the Authority's independent auditors, considers internal controls over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal controls over financial reporting. Management has considered the recommendations of its internal auditors, the Office of the State Comptroller (OSC), and the independent auditors concerning the system of internal controls and has taken actions that it believed to be cost-effective in the circumstances to respond appropriately to these recommendations. Based on its structure and related processes, management believes that, as of December 31, 2018, the Authority's system of internal controls provides reasonable assurance as to the integrity and reliability of the financial statements, the protection of assets from unauthorized use or disposition and the prevention and detection of fraudulent financial reporting.

The members of the Authority's Board of Trustees (the Authority's Trustees), appointed by the Governor, by and with the advice and consent of the Senate, are not employees of the Authority. The Authority's Trustees' Audit Committee meets with the Authority's management, its Sr. Vice President of Internal Audit and its independent auditors periodically, throughout the year, to discuss internal controls and accounting matters, the Authority's financial statements, the scope and results of the audit by the independent auditors and the periodic audits by the OSC, and the audit programs of the Authority's internal auditing department. The independent auditors, the Sr. Vice President of Internal Audit and the Vice President & Chief Ethics and Compliance Officer have direct access to the Audit Committee.

Robert F. Lurie
Executive Vice President and Chief Financial Officer

March 26, 2019

Overview of the Consolidated Financial Statements

The New York Power Authority (the "Power Authority") is considered a special-purpose government entity engaged in business-type activities and follows financial reporting for enterprise funds. Effective January 1, 2017, the New York State Canal Corporation (the "Canal Corporation") became a subsidiary of the Power Authority, and the Power Authority assumed certain powers and duties relating to the Canal System (as defined below) to be exercised through the Canal Corporation. The Canal Corporation is responsible for a 524-mile canal system consisting of the Erie, Champlain, Oswego, and Cayuga-Seneca canals (the "Canal System"). The Power Authority and its subsidiary (collectively "the Authority") follow financial reporting for enterprise funds. The consolidated financial statements of the Authority are prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) as prescribed by the Governmental Accounting Standards Board (GASB). Under the criteria set forth in GASB Statement No. 14, *The Financial Reporting Entity*, as amended by Governmental Accounting Standard (GAS) No. 39, *Determining Whether Certain Organizations Are Component Units* and GAS No. 61, *The Financial Reporting Entity: Omnibus--an amendment of GASB Statements No. 14 and No. 34*, the Authority considers its relationship to the State to be that of a related organization. The Power Authority and its subsidiary the Canal Corporation are referred to collectively as the "Authority" in the consolidated financial statements, except where noted.

This consolidated report consists of three parts: management's discussion and analysis, the basic consolidated financial statements, and the notes to the consolidated financial statements.

The consolidated financial statements provide summary information about the Authority's overall financial condition. The notes provide explanation and more details about the contents of the consolidated financial statements.

Forward Looking Statements

The statements in this management's discussion and analysis (MD&A) that are not purely historical facts are forward-looking statements based on current expectations of future events. Such forward-looking statements are necessarily based on various assumptions and estimates and are inherently subject to various risks and uncertainties, including, but not limited to, risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes to or development in various important factors. Accordingly, actual results may vary from those we presently expect and such variations may be material. We therefore caution against placing undue reliance on the forward-looking statements contained in this MD&A. All forward-looking statements included in this MD&A are made only as of the date of this MD&A and we assume no obligation to update any such forward-looking statements as a result of new information, future events or other factors.

Summary of Revenues, Expenses and Changes in Net Position

The following is a summary of the Authority's financial information for 2018, 2017, and 2016:

		2018		2017		2016	2018 vs. 2017 favorable (unfavorable)	2017 vs. 2016 favorable (unfavorable)
				(In millions, except percentages)				
Operating revenues	$	2,689	$	2,573	$	2,421	5%	6%
Operating expenses:								
Purchased power		710		557		514	(27)	(8)
Fuel oil & gas		189		165		152	(15)	(9)
Wheeling		654		618		609	(6)	(1)
Operations and maintenance		679		680		619	—	(10)
Depreciation		235		242		231	3	(5)
Impairment loss		—		73		—	100	(100)
Total operating expenses		2,467		2,335		2,125	(6)	(10)
Operating income		222		238		296	(7)	(20)
Nonoperating revenues		23		29		25	(21)	16
Nonoperating expenses		143		148		299	3	51
Net income and change in net position		102		119		22	(14)	441
Net position – beginning, as restated		4,632		4,620		4,059		
Net position – ending	$	4,734	$	4,739	$	4,081		

The following summarizes the Authority's consolidated financial performance for the years 2018 and 2017:

The Authority had net income of $102 million for the year ended December 31, 2018 compared to $119 million in 2017, a decrease of $17 million. The decrease in net income was primarily due to lower operating income of $16 million, lower non-operating revenues of $6 million, partially offset by lower non-operating expenses of $5 million. Operating expenses were higher in 2018, primarily due to higher purchased power costs. Operating income decreased by $16 million compared to last year primarily due to lower margin on sales of $97 million, partially offset by the absence of an impairment loss. The operations and maintenance expenses were flat compared to 2017.

The change in net position was attributable to the positive 2018 net income of $102 million and a ($107) million adjustment to the beginning net position as a result of the Authority's adoption of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions.* See Note 2 "Summary of Significant Accounting Policies – New Accounting Pronouncements" and Note 11 "Postemployment Benefits Other Than Pensions, Deferred Compensation and Savings" of the notes to the consolidated financial statements.

The Authority had net income of $119 million for the year ended December 31, 2017 compared to $22 million in 2016, an increase of $97 million. The increase in net income was primarily due to lower nonoperating expenses of $151 million and higher non-operating revenues of $4 million, partially offset by lower operating income of $58 million. Non-operating expenses were lower in 2017, primarily due to expenditures in 2016 for contributions to New York State and for payments of Canal Corporation related expenses under a reimbursement agreement with the New York State Thruway Authority prior to the transfer of the Canal Corporation to the Power Authority. Operating income decreased in 2017 by $58 million compared to 2016 primarily due to higher operating and maintenance expenses of $61 million, higher depreciation of $11 million and an impairment loss of $73 million, partially offset by a higher margin on sales of $86 million. The higher operations and maintenance expenses were primarily attributable to the inclusion of the Canal Corporation related expenses incurred in 2017. The 2017 impairment loss is related to the replacement of certain combustion turbine equipment with technically superior upgraded components.

The change in net position was attributable to the positive 2017 net income of $119 million. The Authority's 2017 beginning net position was adjusted by $539 million to reflect the transfer of the Canal Corporation to the Power Authority.

Operating Revenues

Operating revenues of $2,689 million in 2018 were $116 million, or 5%, higher than the $2,573 million in 2017, primarily due to higher market-based energy sales resulting from higher hydro production and the pass-through of higher purchased power costs to customers.

Purchased Power and Fuel

Purchased power costs increased by 27% in 2018 to $710 million from $557 million in 2017, primarily due to both higher prices and volume. Fuel costs were $24 million (15%) higher during 2018, primarily due to higher fuel prices ($28 million) offset by lower generation volume ($4 million).

Operations and Maintenance (O&M)

O&M expenses were relatively unchanged year over year as higher maintenance repairs and plant outage costs were offset by lower pension and OPEB expenses.

Nonoperating Revenues

For 2018, nonoperating revenues decreased by $6 million, or 21%, to $23 million from $29 million in 2017, primarily due to the absence of one-time payment of $8 million, received from Entergy in January 2017, related to the transfer of the nuclear decommissioning fund to Entergy, partially offset by favorable mark-to-market gain on the Authority's investment portfolio.

Nonoperating Expenses

For 2018, nonoperating expenses decreased by $5 million, or 3%, primarily attributable to capitalization of interest related to higher construction work in progress.

Cash Flows

Net cash flows provided by operating activities decreased by $149 million in 2018 compared to 2017, due to the timing of payments and receipts.

Net Generation

Net generation was 30.1 million megawatt-hours (MWh) in 2018 compared to 29.9 million MWh in 2017. Net generation from the Niagara and St. Lawrence hydroelectric plants in 2018 (24.1 million MWh) was 1% higher than 2017 (23.8 million MWh) due to continued higher water levels on Lakes Erie and Ontario resulting in higher water flow to the Niagara and St. Lawrence hydroelectric plants. For 2018, net hydro generation was approximately 119% of long-term average and above 2017, which was 118%. Combined net generation of the fossil fuel plants for 2018 was 6.0 million MWh, or 2% lower than 2017 (6.1 million MWh).

Summary of Consolidated Statements of Net Position

The following is a summary of the Authority's consolidated statements of net position for 2018, 2017, and 2016:

	2018	2017	2016	2018 vs. 2017	2017 vs. 2016
		(In millions, except percentages)			
Current assets	$ 1,434	$ 1,580	$ 3,082	(9) %	(49) %
Capital assets	5,519	5,442	4,825	1	13
Other noncurrent assets	1,798	1,638	1,529	10	7
Deferred outflows of resources	137	66	107	108	(38)
Total assets and deferred outflows	$ 8,888	$ 8,726	$ 9,543	2	(9)
Current liabilities	$ 1,051	$ 984	$ 2,439	7	(60)
Noncurrent liabilities	2,631	2,655	2,668	(1)	—
Total liabilities	3,682	3,639	5,107	1	(29)
Deferred inflows of resources	472	348	355	36	(2)
Net position	4,734	4,739	4,081	0	16
Total liabilities, deferred inflows and net position	$ 8,888	$ 8,726	$ 9,543	2	(9)

The following summarizes the Authority's consolidated statements of net position variances for the years 2018 and 2017:

In 2018, current assets decreased by $146 million (9%) to $1,434 million due to drawdown of investments for debt service and timing of payments and receipts. Capital assets increased by $77 million (1%) to $5,519 million, compared to last year, as a result of continuing investments in generating assets at existing facilities and transmission upgrades, necessary to maintain reliability. Other noncurrent assets, increased by $160 million (10%), primarily due to an increase in energy efficiency program work in progress costs. Deferred outflows increased by $71 million primarily due to the deferral of OPEB resources, as a result of the Authority adopting GASB Statement No.75, in 2018, and due to changes in deferral of pension resources. Current liabilities increased by $67 million (7%) to $1,051 million compared to last year. This increase is attributable to the increase in long-term debt due within one year resulting from scheduled maturities. Noncurrent liabilities, were lower by $24 million (1%), primarily due to the decrease in long-term debt resulting from the scheduled maturities, and payments on capital lease obligations, partially offset by the increase in the pension and OPEB liability. Deferred inflows increased by $124 million (36%) compared to last year, due to the changes in the deferral of OPEB resources, as a result of the Authority adopting GASB Statement No. 75, in 2018, and due to the in changes in the deferral of pension resources. The changes in net position for 2018 and 2017 are discussed in the summary of revenues, expenses and changes in net position in this Management's Discussion and Analysis.

In 2017, current assets and current liabilities decreased mainly due to the transfer of the Decommissioning Trust Fund to Entergy on January 30, 2017 (see note12(c) "Nuclear Plant Divestiture and Related Matters –Nuclear Plant Decommissioning" of notes to the consolidated financial statements). Excluding Decommissioning Trust Fund investment of $1,504 million in 2016, current assets were relatively flat year over year. Capital assets increased by $617 million (13%) to $5,442 million, compared to last year, primarily due to the transfer of Canal Corporation to the Power Authority effective January 1, 2017. Other noncurrent assets, increased by $109 million (7%). Deferred outflows decreased by $41 million due to changes in deferral of pension resources. Current liabilities, excluding the Decommissioning Trust Fund investment of $1,504 million in 2016, increased by $49 million (5%), to $984 million compared to last year. This increase is attributable to higher accrued liabilities. Noncurrent liabilities, were relatively flat year over year. Deferred inflows decreased by $7 million (2%) compared to last year due to changes in fair value and settlements of derivative instruments, $17 million increase in the costs of removal obligation and a decrease in the deferral of pension related resource. The changes in net position for 2017 and 2016 are discussed in the summary of revenues, expenses and changes in net position in this Management's Discussion and Analysis.

Capital Asset and Long-Term Debt Activity

The Authority currently estimates that it will expend approximately $2.5 billion for various capital improvements over the five-year period 2019-2023. The Authority anticipates that these expenditures will be funded using existing construction funds, internally generated funds and additional borrowings. Such additional borrowings are expected to be accomplished through the issuance of commercial paper notes and/or the issuance of long-term fixed rate debt.

Projected capital requirements during this period include (in millions):

Ma1 & Ma2 Transmission Line Upgrade	$	471
Transmission Life Extension & Modernization Projects		179
Strategic EV Charging Stations Installs		145
Life Extension & Modernization (RMNPP)		144
Lewiston Pump Gener. Plant Lem		141
Y-49 LEM Sound Cable		141
Replacement of Superstructure Bridges (RMNPP)		133
Transmission Leak detection system upgrade LEM		130
Communications Backbone		101
IT Initiatives		147
Sensor Deployment		82
Zone K Battery Storage Facility (Zone D&K)		61
Flynn Outage		24
Life Extension & Modernization LEM (WPO)		20
Garage - Centroplex Upgrade (WPO)		19
Fire Detection System (Nia)		15
R-22 Inlet Chiller System Replacement		15
Vistor Center - Utica (CEC)		15
Rotor Modification Stress Redistribution		14
Spare Rotor (St. Lawrence)		13
Asset Performance Management		11
Transmission Power Flow Control		10
Hatch Cover Deck Surface Upgrade		10
Canal Corporation		215
All Other (Projects Below $9.0 Million)		250
	$	2,506

In addition, the Authority's capital plan includes the provision of approximately $1.4 billion in financing for Energy Services and Technology projects to be undertaken by the Authority's governmental customers and other public entities in the State. It should also be noted that due to projects currently under review as well as energy initiatives announced in the Governor's State of the State address, there is a potential for significant increases in the capital expenditures indicated in the table above. Such additional capital expenditures would be subject to evaluation and Trustee approval.

The Authority is moving forward with its plans to replace a major section of the Moses Adirondack Line, one of the Authority's backbone transmission facilities. The replacement project covers 78 miles of 230 kV transmission line from Massena to the town of Croghan in Lewis County. In July 2017, the Authority received authorization under the New York Independent System Operator (NYISO) tariff to include the costs of this replacement project in its NYPA Transmission Adjustment Charge mechanism for cost recovery of the Authority's transmission system costs, which means that the costs will be allocated to all ratepayers in the State. The project includes the replacement of obsolete wood pole structures with higher, steel pole structures, as well as replacement of failing conductor with new conductor and insulation. The line will operate at its current 230 kV level, but the conductor and insulation design will accommodate future 345 kV operation. The Authority anticipates that the Moses Adirondack line will support the transmission of growing levels of renewable generation located in upstate New York and Canada, such as wind and hydroelectricity, and assist in meeting the State's renewable energy goals. The rebuilt line is also expected to enhance grid reliability by supporting the NYISO's black start plan. The Authority plans to file its application for Article VII approval with the New York Public Service Commission (NYPSC) in the first quarter of 2018. The Authority estimates a project cost of $484 million. Construction is expected to begin in 2019 and take three years.

In 2012, the Authority's Trustees approved a $726 million Transmission Life Extension and Modernization Program (Transmission LEM Program) on the Authority's Transmission system through 2025. As of December 31, 2018, the Authority has spent approximately $258 million. The Transmission LEM Program encompasses transmission assets in the Central, Northern and Western regions of New York and will include work to be done such as upgrades, refurbishments and replacements associated with switchyards and substations, transmission line structures or towers and associated hardware and replacement of the submarine cable on the PV-20 line. Reinvestment in this strategic component of the Authority's overall mission supports the repair, upgrade and/or expansion of the transmission infrastructure. The Authority intends to finance the Transmission LEM Program with internal funds and proceeds from debt obligations to be issued by the Authority. The work on the Transmission LEM Program is underway and is expected to continue through 2025.

The Authority's Trustees approved a $460 million Life Extension and Modernization Program at the Niagara project's Lewiston Pump-Generating Plant, (Lewiston LEM Program) of which $460 million of expenditures have been authorized and $295 million spent as of December 31, 2018. The work to be done includes a major overhaul of the plant's 12 pump turbine generator units. The Lewiston LEM Program will increase pump and turbine efficiency, operating efficiency, and the peaking capacity of the overall Niagara project. The Authority filed an application with the Federal Energy Regulatory Commission (FERC) for a non-capacity license amendment in connection with the program. The amendment was approved with a FERC order issued in 2012. The Authority intends to finance this LEM Program with internal funds and proceeds from debt obligations to be issued by the Authority. The unit work began in late 2012 and is on-going, with the final unit expected to be completed in 2022.

By order issued March 15, 2007, FERC issued the Authority a new 50-year license for the Niagara Project effective September 1, 2007. In doing so, FERC approved six relicensing settlement agreements entered into by the Authority with various public and private entities. In 2007, the Authority estimated that the capital cost associated with the relicensing of the Niagara project would be approximately $495 million. This estimate does not include the value of the power allocations and operation and maintenance expenses associated with several habitat and recreational elements of the settlement agreements. As of December 31, 2018 and 2017, the balance in the liability associated with the relicensing on the statement of net position is $267 million ($23 million in current and $244 million in other noncurrent liabilities) and $274 million ($24 million in current and $250 million in other noncurrent liabilities), respectively.

In 2003, FERC approved a Comprehensive Relicensing Settlement Agreement ("Relicensing Agreement") reached by the Authority and numerous parties and issued the Authority a new 50-year license for the St. Lawrence-FDR Project ("St. Lawrence-FDR License"). The Relicensing Agreement between the Authority and the Local Government Task Force ("LGTF") provided for a review of the Relicensing Agreement every ten years to address issues not contemplated at the time of relicensing in 2003. Following the review that began in 2013, the Authority and the LGTF entered into an agreement effective May 4, 2015 (the "LGTF Ten-Year Review Agreement") in which the Authority agreed to certain actions, including to: (1) fund an economic development strategic marketing study; (2) temporarily reduce electricity costs for certain farms and businesses; (3) initiate an energy efficiency and renewable energy program for the LGTF communities; and (4) enhance certain recreational facilities in the LGTF communities. On March 26, 2015, the Authority's Trustees authorized expenditures of up to $45.1 million for the purpose of implementing the commitments in the LGTF 10-Year Review Agreement and has spent approximately $27 million as of December 31, 2018.

More detailed information about the Authority's capital assets is presented in Note 2 "Summary of Significant Accounting Policies" and Note 5 "Capital Assets" of the notes to the consolidated financial statements.

Capital Structure

		2018		2017		2016
				(In millions)		
Long-term debt, net of current maturities:						
Senior:						
Revenue bonds	$	653	$	720	$	784
Subordinated:						
Subordinated Notes, Series 2017 and 2012 (1)		43		44		21
Commercial paper		5		5		5
Total long-term debt, net of current maturities		701		769		810
Net position		4,734		4,739		4,081
Total capitalization	$	5,435	$	5,508	$	4,891

(1) The Subordinated Notes, Series 2017 and 2012, which were issued in 2017 and 2012, respectively, are subordinate to the Series 2003 A Revenue Bonds, the Series 2007 A, B, and C Revenue Bonds, the Series 2011 A Revenue Bonds and the Series 2015 A Revenue Bonds.

During 2018, long-term debt, net of current maturities, decrease by $68 million, primarily due to scheduled maturities and cash funding of capital expenditures.

In November 2016, the Authority's Trustees authorized the issuance of Subordinated Notes, Series 2017 (Subordinated Notes Series 2017) in a principal amount not to exceed $30 million to accelerate additional funding for the State Parks Greenway Fund, which was established pursuant to the Niagara Relicensing Settlement entered into by the Authority and the New York State Office of Parks, Recreation & Historic Preservation in connection with the Niagara Project's relicensing. The Authority issued the subordinate notes on February 24, 2017 in the amount of $25.2 million.

Total debt to equity ratio as of December 31, 2018, was at .27-to-1 when compared to .28-to-1 as of December 31, 2017. Total debt as of December 31, 2018 is at its lowest level since December 31, 1974.

Debt Ratings

	Moody's	Standard & Poor's	Fitch
NYPA's underlying credit ratings:			
Senior debt:			
Long-term debt (a)	Aa1	AA	AA
Subordinate debt:			
Subordinate Notes, Series 2017	N/A	AA-	N/A
Subordinate Notes, Series 2012	N/A	N/A	AA
Commercial paper	P-1	A1+	F1+

(a) Long term debt includes certain bonds - Series 2007 A, B and C Revenue Bonds and Series 2003 A Revenue Bonds – the principal and interest when due is guaranteed under insurance policies issued by MBIA Insurance Corporation and Assured Guaranty Municipal Corporation, respectively. The credit ratings of MBIA

Insurance Corporation and Assured Guaranty Municipal Corporation are currently at or below the Authority's underlying credit ratings.

In January 2018, Standard & Poor's Ratings Service assigned a AA- rating to the Authority's Subordinated Notes, Series 2017, which they reaffirmed in January 2019. In January 2018, Standard & Poor's Ratings Service also affirmed the Authority's senior and subordinate debt ratings, which they affirmed in January 2019. In December 2018, Moody's Investors Service affirmed the Authority's commercial paper rating (they did not reconfirm their rating for the Authority's senior debt or review the Authority's Subordinated Notes, Series 2017 or Series 2012). In December 2018, Fitch Ratings affirmed the Authority's commercial paper rating, which they affirmed in January 2019 (they did not reaffirm their rating for the Authority's senior debt or Subordinated Notes, Series 2012 or review the Authority's Subordinated Notes, Series 2017).

The Authority has a line of credit under a 2019 revolving credit agreement (the 2019 RCA), with a syndicate of banks, to provide liquidity support for the Series 1-3 CP Notes, under which the Authority may borrow up to $600 million in aggregate principal amount outstanding at any time for certain purposes, including the repayment of the Series 1–3 CP Notes. The 2019 RCA expires January 22, 2022. The 2019 RCA succeeded the amended 2015 RCA, which expired by its terms on January 18, 2019 with no outstanding borrowings. There are no outstanding borrowings under the 2019 RCA.

Economic Conditions

Competitive Environment

The Authority's mission is to power the economic growth and competitiveness of New York State by providing customers with low-cost, clean, reliable power and the innovative energy infrastructure and services they value. The Authority's financial performance goals are to have the resources necessary to achieve its mission, to maximize opportunities to serve its customers better and to preserve its strong credit rating.

To maintain its position as a low cost provider of power in a changing environment, the Authority has undertaken and continues to carry out a multifaceted program, including: (a) the upgrade and relicensing of the Niagara, St. Lawrence-FDR, and Blenheim-Gilboa ("BG") projects (the relicensing of the BG project is expected to be completed in the 2nd quarter of 2019); (b) a newly renegotiated long-term supplemental electricity supply agreements with its governmental customers located in Southeastern New York (NYC Governmental Customers); (c) construction and operation of the 500 MW combined cycle electric generating plant located at the Authority's Poletti plant site; (d) a long-term electricity supply contract with Astoria Generating LLC for the purchase of the output of a 550-MW power plant in Astoria, Queens, ("AEII"); (e) a firm transmission capacity purchase agreement with Hudson Transmission Partners, LLC ("HTP") for a portion of the output of the 660 MW, seven mile, underground and underwater transmission line connecting into the transmission system operated by PJM Interconnection LLC (f) refinancing outstanding bonds to lower the overall cost of debt; and (g) implementation of an enterprise-wide energy/fuel risk management program. As a component of Authority's strategic plan, efforts to modernize the Authority's generation and transmission infrastructure are being developed and implemented to increase flexibility and resiliency, and to serve customers' needs in an increasingly dynamic energy marketplace.

To achieve its goal of promoting clean energy and efficiency, the Authority implements energy efficiency services for the benefit of its power supply customers and for various other public entities throughout the States. The Authority finances the installation of energy saving measures and equipment which are owned by the customers and public entities to focus on the reduction of the demand for electricity and the efficient use of energy.

The Authority operates in a competitive and sometimes volatile energy market environment. Through its participation in the NYISO and other commodity markets, the Authority is subject to electric energy price, fuel price and electric capacity price risks that impact the revenue and purchased power streams of its facilities and customer market areas. Such volatility can potentially have adverse effects on the Authority's financial condition. To mitigate downside effects, many of the Authority's customer contracts provide for the complete or partial pass-through of these costs.

To moderate cost impacts to the Authority and its customers, the Authority, at times, hedges market risks through the use of financial instruments and physical contracts. Hedges are transacted by the Authority to mitigate volatility in the cost of energy or related products needed to meet customer needs; to mitigate risk related to the price of energy and related products sold by the Authority; to mitigate risk related to margins (electric sales versus fuel use) where the Authority owns generation or other capacity; and to mitigate geographic cost differentials of energy procured or sold for transmission or transportation to an ultimate location. Commodities to be hedged include, but are not limited to, natural gas, natural gas basis, electric energy, capacity and congestion costs associated with the supply of electricity. Any such actions are taken pursuant to policies and procedures approved by the Authority's Trustees and under the oversight of an Executive Risk Management Committee.

The Authority can give no assurance that, even with these measures, it will retain its competitive status in the marketplace in the future as a result of the restructuring of the State's electric utility industry and the emergence of new competitors or increased competition from existing participants.

Rate Actions

Power and energy from the St. Lawrence-FDR and Niagara hydroelectric facilities are sold to municipal electric systems, rural electric cooperatives, industrial and other business customers, certain public bodies, investor-owned utilities, out-of-state customers, and into the wholesale market. The charges for firm and/or firm peaking power and associated energy sold by the Authority, as applicable, to the fifty-one municipal electric systems and rural electric cooperatives in New York State, two public transportation agencies, three investor-owned utilities for the benefit of rural and domestic customers, eight host communities and seven out-of-state public customers have been established on the basis of the hydroelectric project costs. In November 2011, the Authority's Trustees approved a 41-month rate plan providing for phased-in rate increases covering the period ending April 30, 2015. The current rates, established with the last increase in May 2014, in conjunction with the Rate Stabilization Reserve mechanism, continue to be sufficient to recover the estimated costs to run the facilities for 2018, and will therefore remain in effect at current levels until further notice.

Expansion and Replacement Power industrial customers supplied from the Niagara facility and Preservation Power industrial customers supplied from the St. Lawrence-FDR facility are allocated over 35% of the combined firm contracted demand of the plants. Their rates are subject to annual adjustment based on the average of three contractually agreed-upon economic indices reflecting changes in industrial energy prices. In addition, one of the customers served by the St. Lawrence-FDR facility has an energy rate partially tied to market prices of aluminum.

ReCharge New York ("RNY") is Governor Cuomo's statewide economic development electric power program, designed to retain and create jobs through the allocation of low-cost power. The RNY program allocates 455 MW of hydropower from the Authority's Niagara and St. Lawrence-FDR projects at Preservation Power rates, which are similar to the Expansion and Replacement power customer rates, with certain adjustments. An additional 455 MW of market power can also be procured for RNY customers upon request.

The Authority has supplied electric power to its governmental customers located within New York City and Westchester County since 1976. Effective January 2018, new long term agreements were executed with a number of these customers, incorporating recent shifts in the electricity business, New York State's clean energy goals, and continuing changes in the Authority's supply portfolio, all in an effort to continue to provide value for, and serve this customer group.

In an order issued January 27, 1999, FERC approved the use of a $165.4 million transmission system revenue requirement in developing rates for use of NYPA's transmission facilities in the NYISO market. FERC also approved, among other things, the imposition of a NYPA Transmission Adjustment Charge ("NTAC") and the NYPA Transmission Service Charges ("TSC") which are the tariff elements established to achieve full recovery of the Authority's annual transmission revenue requirement ("ATRR"). In July 2012, the Authority filed for its first requested increase in the revenue requirement with FERC since the implementation of the NYISO. This filing resulted in FERC's October 4, 2013 order accepting an uncontested settlement agreement establishing a new $175.5 million revenue requirement. In January 2016, the Authority filed to convert from a Stated Rate to a Formula Rate to ensure full recovery of its revenue requirement based upon operating and maintenance expenses as well as the capital spending necessary to maintain the reliability of its transmission system, such as the Life Extension and Modernization program. The Authority filed an unopposed Offer of Settlement on September 30, 2016 that fully resolved the issues raised by interested parties in settlement negotiations concerning the formula rate. The settlement was approved by FERC on January 19, 2017. Separately, the ATRR under the formula of $190 million initially made effective April 1, 2016 was updated on July 1, 2016 to $198.2 million pursuant to the formula rate annual update process. The ATRR effective July 1, 2018 is $226.5 million including the revenue requirement for the Marcy South Series Compensation Project.

Recharge New York Power Program

Chapter 60 (Part CC) of the Laws of 2011 (Chapter 60) established the "Recharge New York Power Program" (RNYPP), administered by the Authority, which has as its central benefit up to 910 MW of low cost power comprised of up to 455 MW of hydropower from the Niagara and St. Lawrence-FDR Projects and up to 455 MW of other power procured by the Authority from other sources. The 910 MW of power is available for allocation as provided by Chapter 60 to eligible new and existing businesses and not-for-profit corporations under contracts of up to seven years. RNYPP was effective beginning July 1, 2012.

The RNYPP replaced two other programs, the Power for Jobs (PFJ) and Energy Cost Savings Benefit (ECSB) Programs, which had extended benefits of low-cost power to certain businesses, small businesses and not-for-profit organizations. Those PFJ and ECSB Program customers who were in substantial compliance with contractual commitments under the PFJ and ECSB Programs and who applied but did not receive RNYPP allocations are eligible to apply for transitional electricity discounts, as provided for in Chapter 60. This transitional electricity discounts program provided for declining levels of discounts through June 30, 2016, when the program terminated, if payment of such discounts was deemed feasible and advisable by the Authority's Trustees. As of December 31, 2018, the Authority's Trustees have authorized transitional electricity discount payments of up to $20 million for the period from July 1, 2012 and June 30, 2016. As of December 31, 2018, approximately $12 million of such discounts have been paid.

The hydropower used for the RNYPP was power formerly used to provide low-cost electricity to domestic and rural customers of the three private utilities that serve upstate New York. To mitigate the impacts from the redeployment of this hydropower for the RNYPP, Chapter 60 created a "Residential Consumer Discount Program" (RCDP). The RCDP authorizes the Authority, as deemed feasible and advisable by its Trustees, to provide annual funding of $100 million for the first three years following withdrawal of the hydropower from the residential and farm customers, $70 million for the fourth year, $50 million for the fifth year, and $30 million each year thereafter, for the purpose of funding a residential consumer discount program for those customers that had formerly received the hydropower that is utilized in the RNYPP. Chapter 60 further authorizes the Authority, as deemed feasible and advisable by the Trustees, to use revenues from the sales of hydroelectric power, and such other funds of the Authority, as deemed feasible and advisable by the Trustees, to fund the RCDP. The Authority's Trustees have authorized the release of a total $534 million for the period from August 2011 to December 2018 in support of the RCDP. The Authority supplemented the market revenues through the use of internal funds, from the August 2011 start of the program through December 31, 2018, totaling cumulatively $76 million. Operations and maintenance expenses included $30 million of residential consumer discounts in each years ended December 31, 2018 and 2017.

Western New York Power Proceeds Allocation Act

Effective March 30, 2012, Chapter 58 (Part GG) of the Laws of 2012 (Chapter 58) created the Western New York Power Proceeds Act (WNYPPA). The WNYPPA authorizes the Authority, as deemed feasible and advisable by the Trustees, to deposit net earnings from the sale of unallocated Expansion Power and Replacement Power from the Authority's Niagara project into an account administered by the Authority known as the Western New York Economic Development Fund (WNYED Fund). Net earnings are defined as any excess revenues earned from such power sold into the wholesale market over the revenues that would have been received had the power been sold at the Expansion Power and Replacement Power rates. Proceeds from the Fund may be used to support eligible projects undertaken within a 30-mile radius of the Niagara power project that satisfy applicable criteria. Chapter 58 also establishes a five-member Western New York Power Allocations Board, which is appointed by the Governor. Chapter 58 also repealed Chapter 436 of the Laws of 2010 which had created a similar program that could not be effectively implemented.

The Authority's Trustees have approved the release of up to $63 million in net earnings, calculated for the period August 30, 2010 through December 31, 2018 as provided in the legislation, for deposit into the Fund. As of December 31, 2018, $42 million has been deposited into the Fund. As of December 31, 2018, the Authority has approved awards of Fund money totaling approximately $37 million to businesses that have proposed eligible projects and has made payments totaling $31 million to such businesses. Payment of these awards is contingent upon the execution of acceptable contracts between the Authority and individual awardees.

Northern New York Power Proceeds Allocation Act

Chapter 545 of the Laws of 2014 enacted the "Northern New York Power Proceeds Act" (NNYPPA). The NNYPPA authorizes the Authority, as deemed feasible and advisable by the Trustees, to deposit "net earnings" from the sale of unallocated St. Lawrence County Economic Development Power (SLCEDP) by the Authority in the wholesale energy market into an account the Authority would administer known as the Northern New York Economic Development Fund (NNYED Fund), and to make awards to eligible applicants that propose eligible projects that satisfy applicable criteria. The NNYPPA also establishes a five-member Northern New York Power Allocations Board appointed by the Governor to review applications seeking NNY Fund benefits and to make recommendations to the Authority concerning benefits awards.

SLCEDP consists of up to 20 MW of hydropower from the Authority's St. Lawrence-FDR Power Project which the Authority has made available for sale to the Town of Massena Electric Department ("MED") for MED to sub-allocate for economic development purposes in accordance with a contract between the parties entered into in 2012 (Authority-MED Contract). The NNYPPA defines "net earnings" as the aggregate excess of revenues received by the Authority from the sale of energy associated with SLCEDP by the Authority in the wholesale energy market over what revenues would have been received had such energy been sold to MED on a firm basis under the terms of the Authority-MED contract. For the first 5 years after enactment, the amount of SLCEDP the Authority could use to generate net earnings may not exceed the lesser of 20 MW or the amount of SLCEDP that has not been allocated by the Authority pursuant to the Authority-MED contract. Thereafter, the amount of SLCEDP that the Authority could use for such purpose may not exceed the lesser of 10 MW or the amount of SLCEDP that has not been allocated.

As of December 31, 2018, the Authority's Trustees approved the release of funds, of up to $12 million, into the NNYED Fund representing "net earnings" from the sale of unallocated SLCEDP into the wholesale energy market for the period December 29, 2014 through December 31, 2018. As of December 31, 2018, approximately $4 million has been deposited into the Fund. As of December 31, 2018, the Authority has approved awards of NNYED Fund money totaling approximately $2 million to businesses that have proposed eligible projects. Payment of approved awards of the NNYED Fund money is contingent upon the execution of acceptable contracts between the Authority and individual awardees.

Governmental Customers in the New York City Metropolitan Area

In 2005, the Authority and its eleven NYC Governmental Customers, including the Metropolitan Transportation Authority, the City of New York, the Port Authority of New York and New Jersey (Port Authority), the New York City Housing Authority, and the New York State Office of General Services, entered into long-term supplemental electricity supply agreements (2005 LTAs) with a term through December 31, 2017. Under the 2005 LTAs, the NYC Governmental Customers agreed to purchase their electricity from the Authority through December 31, 2017.

Under the 2005 LTAs, the Authority and the NYC Governmental Customers modified rates through an annual process based on cost of service principles.

In 2018 and 2019, the Authority executed new supplemental long-term electricity supply agreements (Supplemental LTAs) with its eleven NYC Governmental Customers. Under the Supplemental LTAs, the NYC Governmental Customers agreed to purchase their electricity from the Authority through December 31, 2027, with the NYC Governmental Customers having the right to (1) terminate at any time upon at least 12 months' notice or (2) terminate effective December 31, 2022 upon at least 6 months' notice. Under the Supplemental LTAs, fixed costs were set for each customer and are subject to renegotiation in 2022. Variable costs, including fuel, purchased power and NYISO related costs, will be passed through to each customer by an energy charge adjustment.

The Authority's other Southeastern New York (SENY) Governmental Customers are Westchester County and numerous municipalities, school districts, and other public agencies located in Westchester County (collectively, the "Westchester Governmental Customers"). The Authority has entered into a supplemental electricity supply agreement with all 103 Westchester Governmental Customers. Among other things, under the agreement, an energy charge adjustment mechanism is applicable, and customers are allowed to partially terminate service from the Authority on at least two months' notice prior to the start of the NYISO capability periods. Full termination is allowed on at least one year's notice, effective no sooner than January 1 following the one year notice.

HTP Transmission Line

In 2011, the Trustees authorized Authority staff to enter into an agreement with Hudson Transmission Partners, LLC (HTP) for the purchase of capacity to meet the long-term requirements of the Authority's NYC Governmental Customers and to improve the transmission infrastructure serving New York City through the transmission rights associated with HTP's transmission line (the Line) extending from Bergen County, New Jersey in the PJM Interconnection, LLC (PJM) transmission system, to Consolidated Edison Company of New York, Inc.'s (Con Edison) West 49th Street substation in the NYISO. Specifically, the Authority executed a Firm Transmission Capacity Purchase Agreement (FTCPA) with HTP under which the Authority gained the entitlement to 75% of the Line's 660 MW capacity, or 495 MW, for 20 years. The Authority's capacity payment obligations under the FTCPA began upon the Line's commencement of commercial operation, which occurred on June 3, 2013. Also upon commercial operation, the FTCPA obligates the Authority to reimburse HTP for the cost of interconnection and transmission upgrades in New York and New Jersey associated with the Line and to pay for all remaining upgrade costs as they are incurred. Such interconnection and transmission upgrades have been completed. As of December 31, 2018, the Authority paid approximately $334.9 million of such costs related to the interconnection and transmission upgrades. The Authority's obligations under the FTCPA also include payment of the Regional Transmission Enhancement Plan (RTEP) charges allocated to HTP in accordance with the PJM tariff. Such RTEP costs are significant and are discussed below.

It is estimated that the revenues derived from the Authority's rights under the FTCPA will not be sufficient to fully cover the Authority's costs under the FTCPA during the 20-year term of the FTCPA. In December 2018, the Authority estimated that its under-recovery of costs under the FTCPA could be in the range of approximately $89 million to $95 million per year over the period from 2019-2022. The under-recovery estimates were based on projections of the capacity payment obligations, the costs of interconnection and transmission upgrades, and energy revenues.

PJM's RTEP cost allocation methodology for certain upgrades, such as the Bergen-Linden Corridor (BLC) project built by Public Service Electric & Gas Company (PSE&G) in New Jersey, is being challenged at FERC in numerous proceedings by Con Edison, the Authority, HTP and other parties on the grounds that PJM has disproportionately allocated the costs of those projects to those parties. In a separate FERC proceeding, the Authority challenged the RTEP share of the BLC project costs allocated to HTP that were effective May 1, 2017 as a result of Con Edison's termination of its PJM firm transmission rights. The cost allocations shifted approximately $533 million in RTEP charges for the BLC project that had previously been allocated to Con Edison to HTP. Such costs are in addition to the $111 million in RTEP charges for the BLC project that had been previously allocated to HTP. RTEP costs relating to the BLC project would be paid over a number of years after construction commenced in 2017. Construction of the BLC project was completed in 2018.

From June 2013 through December 2018, the Authority has paid approximately $93 million in RTEP charges for the Line, including the BLC project and pre-2013 RTEP project allocations described below. In addition, the Authority expects to pay an additional approximately $3.8 million through July 2019 for the pre-2013 RTEP projects allocations described below. The pre-2013 RTEP project allocations arise from a contested settlement that FERC approved in May 2018 over the objections of the Authority and HTP.

In July 2017, the Authority, together with HTP, sought to relinquish the Firm Transmission Withdrawal Rights ("FTWRs") held by HTP on the Line. HTP's FTWRs formed the basis for the allocation of RTEP costs to HTP, which are the Authority's obligation under the FTCPA. In the resulting FERC order dated December 15, 2017, FERC determined that HTP may relinquish its firm rights effective immediately. Accordingly, when PJM's annual RTEP cost allocation update for 2018 was filed, the Authority's obligation to pay RTEP charges related to the BLC project was 100% eliminated for 2018 and beyond. FERC issued its March 5, 2018 order endorsing PJM's new cost allocation. Both the December 15, 2017 and the March 5, 2018 FERC orders are pending rehearing. On July 19, 2018, FERC established procedures to allow parties to resolve by settlement the continuing disputes in these and several other ongoing RTEP proceedings that relate to the allocation of BLC project costs. Settlement efforts commenced in August 2018 and those efforts are continuing. If no settlement is reached, FERC will need to issue orders deciding these proceedings.

On March 31, 2017, the Authority and HTP executed an amendment to the FTCPA. In exchange for the Authority extending the cure period for HTP to replace underwater cables that have been subject to failure and which have resulted in the Line being out of service, under the amended FTCPA the Authority received HTP's assurances to pursue certain remedies at FERC concerning the termination of the 320 MW of FTWRs in order to eliminate RTEP assessments and a guarantee that if PJM RTEP assessments cannot be eliminated despite HTP's efforts to terminate the FTWRs, that HTP will cancel its interconnection service agreement ("ISA") to physically disconnect the Line from the PJM transmission system, causing termination of all RTEP allocations. The FERC orders from December 15, 2017 and March 5, 2018 have fulfilled the goal of eliminating the RTEP assessments associated with the BLC project (though subject to further legal processes as described above). In addition, the Authority and HTP agreed to: (a) based upon RTEP costs already paid, increase, by $40 million, the size of the tracking account that is used to offset the cost to purchase the Line at the end of the FTCPA term, at the Authority's option, and (b) shared rights to direct power on the Line in the opposite direction of its current flow should market conditions present revenue opportunities for selling capacity and energy from New York to New Jersey. In November 2017, HTP completed the cable replacement and, pursuant to the March 31, 2017 amendments, the Authority increased the leased portion of the Line's capacity from 75% to 87.12%, bringing the total leased capacity from 495 MW to 575 MW at a monthly capacity charge rate that represents a decrease in the unit price (on a $/MW-month basis) paid to HTP in the original FTCPA. The Authority estimates that increasing the leased portion of the line to 87.12% will increase its capacity payments by approximately $6 million to $9 million per year over the term of the FTCPA.

Canal Corporation

The Canal Corporation operates at a loss and is expected to require substantial operating and maintenance support and capital investment. The Canal Corporation's expenses are expected to be funded by transfers of funds from the Authority. Any transfer of funds would be subject to approval by the Authority's Board of Trustees and compliance with the Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented. Certain expenses eligible for reimbursement are expected to be reimbursed to the Authority by moneys held in the Canal Development Fund maintained by the State Comptroller and the Commissioner of Taxation and Finance. For the year ended December 31, 2018, the Canal Corporation recognized $2 million in revenues, $101 million in operations and maintenance expenses and $23 million in depreciation expense. For the year ended December 31, 2017, the Canal Corporation recognized $2 million in revenues, $93 million in operations and maintenance expenses and $23 million in depreciation expense.

On December 11, 2018, the Canal Corporation's Board of Directors adopted a budget for 2019 that included expenditures of $86.2 million for operations and maintenance, $54.7 million for capital, and $2.5 million for Canal Development Fund expenses expected to be reimbursed from the Canal Development Fund.

Given the age of the Canal System, the Authority expects that significant maintenance and capital investments will be required to assure its continuing operation. The Authority's budget and financial plan for 2019-2022 includes the adopted Canals budget for 2019 and Canal-related operating expenditures of $85 million per year for 2020-2022, including expenses expected to be reimbursed from the Canal Development Fund. The Authority's 2019-2022 budget and financial plan includes Canal System related capital expenditures of $40 million per year over 2020-2022. The Authority will continue to evaluate the condition of the Canal System and expects to allocate additional funding if deemed necessary through its annual budgeting process.

New York State Budget

Budget

The Authority is requested, from time to time, to make financial contributions or transfers of funds to the State. Any such contribution or transfer of funds must (i) be authorized by law (typically, legislation enacted in connection with the State budget), and (ii) satisfy the requirements of the Bond Resolution. The Bond Resolution requirements to withdraw moneys "free and clear of the lien and pledge created by the (Bond) Resolution" are as follows: (1) such withdrawal must be for a "lawful corporate purpose as determined by the Authority," and (2) the Authority must determine "taking into account, among other considerations, anticipated future receipt of Revenues or other moneys constituting part of the Trust Estate, that the funds to be so withdrawn are not needed" for (a) payment of reasonable and necessary operating expenses, (b) an Operating Fund reserve for working capital, emergency repairs or replacements, major renewals, or for retirement from service, decommissioning or disposal of facilities, (c) payment of, or accumulation of a reserve for payment of, interest and principal on senior debt, or (d) payment of interest and principal on subordinate debt.

In May 2011, the Authority's Trustees adopted a policy statement (Policy Statement) which relates to, among other things, voluntary contributions, transfers, or other payments to the State by the Authority after that date. The Policy Statement provides, among other things, that in deciding whether to make such contributions, transfers, or payments, the Authority shall use as a reference point the maintenance of a debt service coverage ratio of at least 2.0 (this reference point should not be interpreted as a covenant to maintain any particular coverage ratio), in addition to making the other determinations required by the Bond Resolution. The Policy Statement may at any time be modified or eliminated at the discretion of the Authority's Trustees.

The 2018-2019 Enacted State Budget contains a provision authorizing the Authority as deemed "feasible and advisable by its trustees" to transfer to the State treasury to the credit of the general fund $20 million for the State fiscal year commencing April 1, 2018, the proceeds of which will be utilized to support energy-related State activities.

The 2019-2020 Executive Budget Proposal contains a provision authorizing the Authority as deemed "feasible and advisable by its trustees" to transfer to the State treasury to the credit of the general fund $20 million for the State fiscal year commencing April 1, 2019, the proceeds of which will be utilized to support energy-related State activities.

The Authority cannot predict what additional voluntary contributions or transfers to the State may be authorized by law in the future nor whether its Trustees will authorize such voluntary contributions or transfers.

Temporary Asset Transfers

In addition to the authorization for voluntary contributions, as a result of budget legislation enacted in February 2009, the Authority was requested to provide temporary asset transfers to the State of funds held in reserves. Pursuant to the terms of a Memorandum of Understanding dated February 2009 (MOU) between the State, acting by and through the State's Director of Budget, and the Authority, the Authority agreed to transfer approximately $215 million associated with its Spent Nuclear Fuel Reserves (Asset B) by March 27, 2009. The Spent Nuclear Fuel Reserves are funds that had been set aside for payment to the federal government sometime in the future when the federal government accepts the spent nuclear fuel for permanent storage (see Note 12 – "Nuclear Plant Divestiture and Related Matters"). The MOU provides for the return of these funds to the Authority, subject to appropriation by the State Legislature and the other conditions described below, at the earlier of the Authority's payment obligation related to the transfer and disposal of the spent nuclear fuel or September 30, 2017. Further, the MOU provides for the Authority to transfer within 180 days of the enactment of the 2009-2010 State budget $103 million of funds set aside for future construction projects (Asset A), which amounts would be returned to the Authority, subject to appropriation by the State Legislature and the other conditions described below, at the earlier of when required for operating, capital or debt service obligations of the Authority or September 30, 2014. The MOU provides that the obligation of the State to return all or a portion of an amount equal to the moneys transferred by the Authority to the State is subject to annual appropriation by the State Legislature. Further, the MOU provides that as a condition to any such appropriation for the return of the moneys earlier than September 30, 2017 for the Spent Nuclear Fuel Reserves and earlier than September 30, 2014 for the construction projects, the Authority must certify that the monies available to the Authority are not sufficient to satisfy the purposes for which the reserves, which are the source of the funds for the transfer, were established.

In February 2009, the Authority's Trustees authorized the execution of the MOU relating to the temporary transfers of Asset B ($215 million) and Asset A ($103 million) and such transfers were made in March 2009 and September 2009, respectively, following Trustee approval.

In lieu of interest payments, the State has waived certain future payments from the Authority to the State. The waived payments include the Authority's obligation to pay until September 30, 2017 the amounts to which the State is entitled under a governmental cost recovery process for the costs of central governmental services. These payments would have been approximately $5 million per year based on current estimates but the waiver is limited to a maximum of $45 million in the aggregate during the period. Further, the obligation to make payments in support of certain State park properties and for the upkeep of State lands adjacent to the Niagara and St. Lawrence power plants is waived from April 1, 2011 to March 31, 2017. These payments would have been approximately $8 million per year but the waiver would be limited to a maximum of $43 million for the period. The present value of the waivers approximates the present value of the forgone interest income. In the Second Amendment to the MOU discussed below, the Authority and the State agreed to enter into alternative cost recovery agreements for each of State Fiscal Year 2017-18 through State Fiscal Year 2022-23 that the asset transfers have not been fully returned to the Authority. The alternative cost recovery agreements would relieve the Authority of any obligation to make up to $5 million in cost recovery assessment payments to the State in each year. In the event that the cost recovery assessment for a given year exceeds $5 million, the assessment due from the Authority would be limited to the difference between the assessment and $5 million. The State and the Authority entered into the first such alternative cost recovery agreement, dated as of March 31, 2017, with respect to State Fiscal Year 2017-18. In accordance with such agreement, the Authority was not charged an assessment for such State Fiscal Year.

On April 24, 2014, the Authority and the State executed an Amendment to the MOU which provides that the State shall, subject to appropriation by the State Legislature, return the $103 million (Asset A) in five installments in the following amounts and by no later than September 30 of each of the following State fiscal years: (1) $18 million for State Fiscal Year 2014-2015; (2) $21 million for State Fiscal Year 2015-2016; (3) $21 million for State Fiscal Year 2016-2017; (4) $21 million for State Fiscal Year 2017-2018; and (5) $22 million for State Fiscal Year 2018-2019. By its terms, the Amendment to the MOU became effective when it was approved and ratified by the Authority's Board of Trustees on July 29, 2014. The Authority has received cumulative installment payments of $103 million as of December 31, 2018.

The Authority and the State executed a Second Amendment to the MOU, dated as of June 30, 2017, that provides for the return to the Authority of the $215 million (Asset B) in the following amounts and by no later than September 30 of each of the following State fiscal years: (1) $22 million for State Fiscal Year 2017-18, (2) $21 million for State Fiscal Year 2018-19, (3) $43 million for State Fiscal Year 2019-20, (4) $43 million for State Fiscal Year 2020-21, (5) $43 million for State Fiscal Year 2021-22, and (6) $43 million for State Fiscal Year 2022-23. The obligation of the State to return the moneys transferred by the Authority to the State is subject to annual appropriation by the State Legislature. The Authority has received cumulative installment payments of $43 million as of December 31, 2018. The asset transfers are reported in miscellaneous receivables and other ($43 million and $43 million as of December 31, 2018 and December 31, 2017, respectively) and in other noncurrent assets ($129 million and $172 million at December 31, 2018 and December 31, 2017, respectively) in the statements of net position.

Niagara Parkway Redevelopment

The State plans to replace an underutilized two-mile stretch of the Robert Moses Parkway North in Niagara Falls with open space, scenic overlooks and recreational trails. Construction commenced in 2018 and is expected to take approximately three years to complete with funding to be provided by the Authority. As of December 31, 2018, the Authority's Trustees have approved up to $42 million in funding by the Authority. As of December 31, 2018, the Authority has disbursed approximately $4.4 million.

AGILe

The Authority, in collaboration with the State utilities, New York State Energy Research Development Authority ("NYSERDA") and NYISO, has developed an advanced grid innovation lab for energy ("AGILe") to create new tools to better monitor, control, accommodate and respond to the evolving energy sector. Costs to the Authority are estimated at $20 million over the initial three year period and are not expected to exceed $50 million through final build-out of the facility. Upon completion, operating and maintenance costs are expected to be shared among AGILe participants. On July 25, 2017, the Authority's Trustees authorized capital expenditures in the amount of $20 million for the initial phase of AGILe, which has since commenced. As of December 31, approximately $3.7 million has been spent.

Moses Adirondack Line

The Authority is moving forward with its plans to replace a major section of the Moses Adirondack Line, one of the Authority's backbone transmission facilities. The replacement project covers 78 miles of 230 kV transmission line from Massena to the town of Croghan in Lewis County. In July 2017, the Authority received authorization under the NYISO tariff to include the costs of this replacement project in its NYPA Transmission Adjustment Charge mechanism for cost recovery of the Authority's transmission system costs, which means that the costs will be allocated to all ratepayers in the State. The project includes the replacement of obsolete wood pole structures with higher, steel pole structures, as well as replacement of failing conductor with new conductor and insulation. The line will operate at its current 230 kV level, but the conductor and insulation design will accommodate future 345 kV operation. The Authority anticipates that the Moses Adirondack line will support the transmission of growing levels of renewable generation located in upstate New York and Canada, such as wind and hydroelectricity, and assist in meeting the State's renewable energy goals. The rebuilt line is also expected to enhance grid reliability by supporting the NYISO's black start plan. On September 21, 2018, the Public Service Commission determined that the Authority's April 2018 Article VII application was complete. In 2018, the Authority estimated a project cost of $484 million. Construction is expected to take four years and begin in 2020.

New York Energy Highway

In January 2012, the Governor of New York announced the New York Energy Highway initiative, which is envisioned as a public-private partnership to upgrade and modernize the State's electric power system. The Governor formed a task force comprised of various State officials to oversee implementation of the initiative (Task Force) which is co-chaired by the Authority's President and Chief Executive Officer. In April 2012, the Task Force issued a request for information seeking ideas and proposals in furtherance of the initiative. Approximately 85 organizations responded to the Task Force's request for information and the responses included a large number of different generation and transmission project proposals. Based on the response of all these organizations, the Energy Highway Task Force issued an action plan in October 2012. The resulting Energy Highway Blueprint, calling for public and private investments in the State's energy system of about $5.7 billion over the next five to 10 years, proposed 13 specific actions, divided among four major categories: Expand and Strengthen the System, Accelerate Construction and Repair, Support Clean Energy and Technology Innovation.

In November 2012, the New York Public Service Commission (NYPSC) announced new proceedings addressing various actions described in the Blueprint including (i) the initiation of electric transmission upgrades to move excess power from upstate to downstate (AC Transmission), (ii) the creation of a contingency plan to prepare for a large generator retirement (Generation Retirement Contingency Plan) and (iii) the expansion of natural gas delivery to homeowners and businesses in New York State.

In response to the request for information and the Generation Retirement Contingency Plan and AC Transmission proceedings, the New York Transmission Owners (NYTOs), comprised of the State's largest private utilities, LIPA, and the Authority, indicated that they were exploring the creation of a new Statewide transmission entity (NY Transco) to pursue development, construction, operation, and ownership of new transmission projects. The NYTOs proposed to the Task Force and to the NYPSC several transmission projects that could be undertaken by a NY Transco entity. Participation of the Authority in the NY Transco would be contingent on the enactment of legislation by the State that enables the Authority to participate. As of the 2015 legislative session, which ended in June 2015, such enabling legislation has not been passed. On November 24, 2014, affiliates of the NYTOs formed a transmission entity (Four-Party Transco) that does not include LIPA or the Authority but would permit their participation should the necessary enabling legislation be passed.

In its November 4, 2013 Generation Retirement Contingency Plan Order, the NYPSC selected three transmission projects (TOTS projects) to be built by Consolidated Edison, New York State Electric and Gas (NYSEG) and the Authority. The NYPSC also requested that the NYTOs seek Federal Energy Regulatory Commission (FERC) approval for the three TOTS projects. On December 4, 2014, the NYTOs on behalf of themselves and the Four-Party Transco filed applications at FERC to permit the transfer of certain transmission assets to the Four-Party Transco. The Four-Party Transco also filed an application for cost allocation and recovery for five projects, including the three TOTS projects. A negotiated settlement of that cost allocation has been approved by FERC. The Authority co-developed one of the TOTS projects, the Marcy-South Series Compensation, with NYSEG and has also completed a negotiated settlement at FERC to recover the costs of its portion of that project.

Build Smart NY Initiative

On December 28, 2012, the Governor of New York issued Executive Order No. 88 (EO 88) directing state agencies collectively to reduce energy consumption in state-owned and managed buildings by 20 percent within seven years – an initiative designed to produce significant savings for New York taxpayers, generate jobs, and significantly reduce greenhouse gas emissions. To meet this initiative, the Governor launched Build Smart NY, a plan to strategically implement EO 88 by accelerating priority improvements in energy performance. The Authority has offered to provide $450 million in low-cost financing for this initiative for state owned buildings and an additional $350 million for towns and municipalities. Such low-cost financing would be funded by proceeds of the Authority's commercial paper or another form of debt. The Authority's costs of financing would be recovered from the energy efficiency customers in this program. In addition, as provided for in EO 88, the Authority has established a central management and implementation team which designed implementation guidelines milestones and data collection and analysis systems to support the program. The team conducts routine outreach and meetings with affected state agencies and has commenced the implementation phase of the Build Smart NY program. As of December 31, 2018, the Authority has in aggregate provided approximately $511.6 million in financing for energy efficiency projects at State agencies and authorities covered by EO 88.

Certain Solar and Energy Efficiency Initiatives

In March 2012, the Authority's Trustees authorized up to $30 million in funding over five years for a solar market acceleration program involving solar research, training, and demonstration projects. In January 2017, the Authority's Trustees extended the program through December 2018. As of December 31, 2018, the Authority has approved the award of contracts with cumulative value of up to approximately $6.7 million

In June 2012, the Authority's Trustees authorized up to $30 million in funding over five years for an energy efficiency market acceleration program involving energy efficiency research, demonstration projects, and market development. In January 2017, the Authority's Trustees extended the program through December 2018. As of December 31, 2018, the Authority has approved the award of contracts with a cumulative value of up to approximately $17 million.

In February 2015, the Authority's Trustees authorized up to $12 million in funding over two years for initial implementation of the Five Cities Energy Plans for the cities of Albany, Buffalo, Rochester, Syracuse and Yonkers. In January 2017, the Authority's Trustees extended the program through December 2018. As of December 31, 2018, the Authority has approved the award of contracts with a cumulative value of approximately $9.7 million.

Clean Energy Standard

On August 1, 2016, the NYPSC issued an order establishing a Clean Energy Standard (the "CES Order") to implement the clean energy goals of the State Energy Plan. Pursuant to the CES Order, load serving entities identified in the order are required to purchase "Zero Emission Credits" ("ZECs") from the New York State Energy Research Development Authority ("NYSERDA") to support the preservation of existing at-risk zero emissions nuclear generation. The Authority is not subject to NYPSC jurisdiction for purposes of the CES Order but has assumed an obligation to purchase ZECs consistent with the terms of the CES Order and intends to seek recovery of such costs from the Authority's customers. On January 31, 2017, the Authority's Trustees authorized (a) participation in the NYPSC's ZEC program and (b) execution of an agreement with NYSERDA to purchase ZECs associated with the Authority's applicable share of energy sales. The Authority and NYSERDA executed an agreement covering a two year period from April 1, 2017 to March 31, 2019 under which the Authority committed to purchase ZECs in a quantity based on its proportional load in the New York control area. As of December 2018, the Authority estimates that it will incur ZEC purchase costs associated with participation in the ZEC program of approximately $268.4 million in aggregate over the 2019-2022 period, of which approximately $14.8 million is not expected to be recovered under customer contracts that predate the adoption of the CES Order. As of December 31, 2018, the Authority has paid $83.6 million in ZEC purchase costs.

Electric Vehicle Acceleration Initiative

In May 2018, the Authority's Trustees approved an overall allocation of up to $250 million to be used through 2025 for an electric vehicle acceleration initiative and authorized $40 million for the first phase of the initiative.

Carbon Free Flexibility Initiative

In December 2018, the Authority's Trustees approved the development of a carbon free flexibility initiative through 2025 at a cost of up to $250 million and authorized up to $65 million for the first phase of the initiative.

Large-Scale Renewable Program

In support of the Clean Energy Standard goal for the State to achieve 50% renewable energy by 2030, the Authority issued a request for proposals in June 2017 to solicit renewable energy credits, energy and capacity from eligible large-scale renewable projects with a minimum size of 5MW, 10MW or 20MW, depending on the underlying technology. On January 30, 2019, the Authority's Trustees approved the award of a 20-year power purchase agreement to Canisteo Wind Energy LLC for energy, capacity and renewable energy credits to be generated from a to-be-constructed 290 MW wind project. The project is expected to be in-service by December 31, 2020. Costs associated with the agreement are expected to be recovered through sales of energy and capacity through the NYISO and sales of RECs to the Authority's customers.

Reforming the Energy Vision

In April 2014, the NYPSC commenced a proceeding to reform the State's energy industry and regulatory practices. According to the NYPSC, this initiative, called Reforming the Energy Vision ("REV"), will lead to regulatory changes that promote more efficient use of energy; deeper penetration of renewable energy resources such as wind and solar; and wider deployment of smaller power sources located closer to the customer load, including micro grids capable of meeting the regular demands of a community of consumers, on-site power supplies, and energy storage. REV also aims to promote greater use of advanced energy management products to enhance demand elasticity and efficiencies. The NYPSC order instituting the proceeding designated two tracks for the REV with track one focused on developing distributed resource markets and track two focused on reforming utility ratemaking practices.

The NYPSC has identified six core policy objectives for REV relating to enhanced customer knowledge and tools to support effective management of total energy bills, market animation and leverage of customer contributions, system-wide efficiency, fuels and resource diversity, system reliability and resiliency, and reduction of carbon emissions. A NYPSC "Staff Report and Proposal" released in April 2014 set forth a vision for how to accomplish the NYPSC's objectives. This report and additional information on REV, including the Order Adopting Regulatory Policy Framework and Implementation Plan issued and effective February 26, 2015 (Track 1) and Order Adopting a Ratemaking and Utility Revenue Model Policy Framework issued and effective May 19, 2016 (Track 2), are available at http://www.dps.ny.gov/. No statement on that website is incorporated by reference herein. The NYPSC has several ongoing proceedings related to Track 1 and Track 2 of REV that the Authority is following.

While the NYPSC does not have jurisdiction over rates for power generated or transmitted by the Authority, the reforms and innovations contemplated in the REV initiative are expected by the NYPSC to be done in conjunction with certain independent but related actions of the Authority, and will impact electricity rates for energy efficiency project customers. As a result, the Authority monitors the REV initiative closely and expects to evaluate any regulatory reforms that are ultimately implemented and their impact on project implementation and suitability for adoption by the Authority and its customers.

Retirement of Generation Resources

The retirement of generation resources may impact the Authority's resources, both positively and negatively. The reduction in the amount of generation capacity available to the system that results from generator retirement will, all other things being equal, increase the unit price paid for capacity from the Authority's resources. Retirement of resources also can affect power flows and the ability to fully access the energy available from the Authority's assets. For example, the retirement of coal-fired generation stations in Western New York could limit the amount of energy that the transmission system in the vicinity of the Authority's Niagara Project can accommodate, thus preventing the full use of this asset.

Recognizing the potential for such retirements and the impact they could have on the operation of the Niagara Project and the ability to access renewable power from Ontario, Canada, on July 20, 2015 the NYPSC issued an order that granted requests from the Authority and National Grid to establish a Public Policy Requirement driving the need for transmission additions to, among other things, enable the Authority to fully operate 2700 MW of generation from the Authority's Niagara and Lewiston Pump-Generating Plant and ensure that, under emergency conditions, no less than 1000 MW of import capacity will be available from Ontario. This order initiated the NYISO's competitive solicitation process which resulted in the NYISO Board of Directors selection of the NextEra Energy Transmission New York, Inc Empire State Line transmission project on October 17, 2017. The project is expected to be completed in June 2022.

Contacting the Authority

This financial report is designed to provide our customers and other interested parties with a general overview of the Authority's finances. If you have any questions about this report or need additional financial information, contact the New York Power Authority, 123 Main Street, White Plains, New York 10601-3107. Email: info@nypa.gov

KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Auditors' Report

The Board of Trustees
Power Authority of the State of New York:

Report on the Financial Statements

We have audited the accompanying consolidated financial statements of the business-type activities and fiduciary funds of the Power Authority of the State of New York (the Authority) and its blended component unit, as of and for the years ended December 31, 2018 and 2017, and the related notes to the financial statements, which collectively comprise the Authority's consolidated financial statements as listed in the table of contents.

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 and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. 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 consolidated 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 consolidated financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities and fiduciary funds of the Authority and its blended component unit as of December 31, 2018 and 2017, and the respective changes in their financial position, and, where applicable their cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.

Emphasis of Matter

As discussed in Note 2(t) to the consolidated financial statements, in fiscal year 2018, the Authority adopted Governmental Accounting Standards Board (GASB) Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other than Pensions*, which provides new accounting guidance that addresses accounting and financial reporting by state and local governments for postemployment benefits other than pensions (other postemployment benefits or OPEB). Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the information in the Management's Discussion and Analysis on pages 2 through 22 and Required Supplementary Information on pages 83 through 87 be presented to supplement the consolidated financial statements. Such information, although not a part of the consolidated financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the consolidated financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the consolidated financial statements, and other knowledge we obtained during our audits of the consolidated financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated March 26, 2019 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.

KPMG LLP

New York, New York
March 26, 2019

NEW YORK POWER AUTHORITY

Consolidated Statements of Net Position

(In millions)

	December 31, 2018	December 31, 2017
Assets and Deferred Outflows		
Current Assets:		
Cash and cash equivalents	$ 7	$ 37
Investment in securities	940	1,065
Receivables - customers	180	171
Materials and supplies, at average cost:		
Plant and general	82	82
Fuel	33	27
Miscellaneous receivables and other	192	198
Total current assets	1,434	1,580
Noncurrent Assets:		
Restricted funds:		
Cash and cash equivalents	31	26
Investment in securities	30	33
Total restricted assets	61	59
Capital funds:		
Cash and cash equivalents	2	–
Investment in securities	23	25
Total capital funds	25	25
Capital Assets:		
Capital assets not being depreciated	896	758
Capital assets, net of accumulated depreciation	4,623	4,684
Total capital assets	5,519	5,442
Other Noncurrent Assets:		
Receivable - New York State	129	172
Other long-term assets	1,583	1,382
Total other noncurrent assets	1,712	1,554
Total noncurrent assets	7,317	7,080
Total assets	8,751	8,660
Deferred outflows of resources:		
Accumulated decrease in fair value of derivative hedging	1	–
Pensions	89	66
Postemployment benefits other than pensions (Note 11)	47	–
Total assets and deferred outflows of resources	$ 8,888	$ 8,726

(Continued)

NEW YORK POWER AUTHORITY

Consolidated Statements of Net Position

(In millions)

Liabilities, Deferred Inflows and Net Position	December 31, 2018	December 31, 2017
Current liabilities:		
Accounts payable and accrued liabilities	$ 424	$ 406
Short-term debt	526	485
Long-term debt due within one year	64	62
Capital lease obligation due within one year	37	31
Total current liabilities	1,051	984
Noncurrent liabilities:		
Long-term debt:		
Senior:		
Revenue bonds	653	720
Subordinated:		
Subordinated Notes	43	44
Commercial paper	5	5
Total long-term debt	701	769
Other noncurrent liabilities:		
Capital lease obligation	1,077	1,114
Disposal of spent nuclear fuel	223	219
Relicensing	244	250
Other long-term liabilities	386	303
Total other noncurrent liabilities	1,930	1,886
Total noncurrent liabilities	2,631	2,655
Total liabilities	3,682	3,639
Deferred inflows of resources:		
Cost of removal obligation	348	330
Accumulated increase in fair value of derivative hedging	7	8
Pensions	76	10
Postemployment benefits other than pensions (Note 11)	41	–
Net position:		
Net investment in capital assets	3,171	2,973
Restricted	42	32
Unrestricted	1,521	1,734
Total net position	4,734	4,739
Total liabilities, deferred inflows of resources and net position	$ 8,888	$ 8,726

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Consolidated Statements of Revenues, Expenses and Changes in Net Position

(In millions)

	Year Ended December 31,	
	2018	2017
Operating revenues:		
Power sales	$ 1,812	$ 1,745
Transmission charges	202	189
Wheeling charges	654	618
Other	21	21
Total operating revenues	2,689	2,573
Operating Expenses:		
Purchased power	710	557
Fuel oil and gas	189	165
Wheeling	654	618
Operations	534	547
Maintenance	145	133
Depreciation	235	242
Impairment loss	–	73
Total operating expenses	2,467	2,335
Operating income	222	238
Nonoperating revenues and expenses:		
Nonoperating revenues:		
Investment income	21	12
Other	2	17
Total nonoperating revenues	23	29
Nonoperating expenses		
Interest on long-term debt	47	47
Interest - other	117	117
Interest capitalized	(18)	(12)
Amortization of debt premium	(3)	(4)
Total nonoperating expenses	143	148
Net income and change in net position	102	119
Net position, January 1, as restated (Note 2)	4,632	4,620
Net position, December 31	$ 4,734	$ 4,739

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Consolidated Statements of Cash Flows

(In millions)

	Year Ended December 31, 2018	2017
Cash flows from operating activities:		
Received from customers for the sale of power, transmission and wheeling	$ 2,670	$ 2,504
Disbursements for:		
Purchased power	(712)	(556)
Fuel, oil and gas	(193)	(163)
Wheeling of power by other utilities	(647)	(626)
Operations and maintenance	(912)	(804)
Net cash provided by operating activities	206	355
Cash flows from capital and related financing activities:		
Gross additions to capital assets	(293)	(241)
Issuance of subordinated notes, series 2017	–	25
Repayment of bonds	(60)	(57)
Repayment of notes	(1)	(2)
Interest paid, net	(43)	(45)
Net cash used in capital and related financing activities	(397)	(320)
Cash flows from noncapital–related financing activities:		
Energy conservation program payments received from participants	107	154
Energy conservation program costs	(159)	(232)
Issuance of commercial paper	103	84
Repayment of commercial paper	(62)	(115)
Interest paid on commercial paper	(11)	(7)
Transmission line interconnection costs	–	26
Canal Reimbursement Agreement	–	(18)
Payment received from New York State	43	43
Margin deposits	4	(20)
NYISO collateral	(12)	(7)
Payments related to nuclear decommissioning fund transfer	–	8
Net cash provided by (used in) noncapital-related financing activities	13	(84)
Cash flows from investing activities:		
Earnings received on investments	19	17
Purchase of investment securities	(3,005)	(4,460)
Sale of investment securities	3,141	4,482
Net cash provided by investing activities	155	39
Net decrease in cash	(23)	(10)
Cash and cash equivalents, January 1	63	73
Cash and cash equivalents, December 31	$ 40	$ 63
Reconciliation to net cash provided by operating activities:		
Operating income	$ 222	$ 238
Adjustments to reconcile operating income to net cash provided by operating activities:		
Change in assets, deferred outflows, liabilities and deferred inflows:		
Provision for depreciation	235	242
Net increase in miscellaneous receivables and other	(151)	(53)
Net increase in receivables and materials and supplies	(36)	(61)
Net decrease in accounts payable/accrued liabilities and other	(64)	(11)
Net cash provided by operating activities	$ 206	$ 355

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Statements of Fiduciary Net Position

(In millions)

	December 31, 2018	December 31, 2017
Assets		
Assets:		
Cash and cash equivalents	$ 13	$ 16
Receivables:		
Due from broker for investments sold	1	–
Investment income	1	1
Total receivables	2	1
Investments at fair value:		
Domestic equity	297	319
International equity	84	96
Real Estate (REIT)	31	33
Fixed Income	145	146
Total investments	557	594
Total assets	572	611
Liabilities:		
Payables:		
Due to broker for investments purchased	7	8
Total liabilities	7	8
Net position available for postemployment benefits other than pensions	$ 565	$ 603

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Statements of Changes in Fiduciary Net Position

(In millions)

	Year Ended December 31, 2018	Year Ended December 31, 2017
Additions:		
Employer contributions	$ 25	$ 22
Investment income:		
Net increase / (decrease) in fair value of investments	(45)	79
Interest and dividend income	9	9
Less: investment expense	(2)	(2)
Net investment income / (loss)	(38)	86
Total additions	(13)	108
Deductions::		
Benefits payments	25	22
Total deductions	25	22
Changes in net position	(38)	86
Net position available for postemployment benefits other than pensions – beginning of year	603	517
Net position available for postemployment benefits other than pensions – end of year	$ 565	$ 603

See accompanying notes to the consolidated financial statements.

(1) General

The Power Authority of the State of New York (the Power Authority), doing business as The New York Power Authority, is a corporate municipal instrumentality and political subdivision of the State of New York (State) created in 1931 by Title 1 of Article 5 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State, as amended (Power Authority Act or Act).

The Power Authority's mission is to power the economic growth and competitiveness of the State by providing customers with low-cost, clean, reliable power and the innovative energy infrastructure and services they value. The Authority's financial performance goal is to have the resources necessary to achieve its mission, to maximize opportunities to serve its customers better and to preserve its strong credit rating.

The Power Authority is authorized by the Power Authority Act to help provide a continuous and adequate supply of dependable electricity to the people of the State. The Power Authority generates, transmits and sells electricity principally at wholesale. The Power Authority's primary customers are municipal and investor-owned utilities, rural electric cooperatives, high load factor industries and other businesses located throughout New York State, various public corporations located in Southeastern New York within the metropolitan area of New York City (SENY Governmental Customers), and certain out-of-state customers.

To provide electric service, the Power Authority owns and operates five major generating facilities, eleven small gas-fired electric generating facilities, and four small hydroelectric facilities in addition to a number of transmission lines, including major 765-kV and 345-kV transmission facilities. The Power Authority's five major generating facilities consist of two large hydroelectric facilities (Niagara and St. Lawrence-FDR), a large pumped-storage hydroelectric facility (Blenheim-Gilboa), the combined cycle electric generating plant located in Queens, New York (500-MW Plant) and the Richard M. Flynn combined cycle plant located on Long Island (Flynn). To provide additional electric generation capacity to the Authority's NYC Governmental Customers, the Authority entered into a long-term electricity supply agreement with Astoria Energy II LLC in 2008 for the purchase of the output of an Astoria, Queens based natural-gas fueled 550-MW generating plant, which entered service in the summer of 2011.

The Power Authority acts through a Board of Trustees. The Power Authority's Trustees are appointed by the Governor of the State of New York, with the advice and consent of the State Senate. The Power Authority is a fiscally independent public corporation that does not receive State funds or tax revenues or credits. It generally finances construction of new projects through a combination of internally generated funds and sales of bonds and notes to investors and pays related debt service with revenues from the generation and transmission of electricity. Accordingly, the financial condition of the Authority is not controlled by or dependent on the State or any political subdivision of the State. Under the criteria set forth in Governmental Accounting Standards Board (GASB) the Authority considers its relationship to the State to be that of a related organization.

Income of the Power Authority and properties acquired by it for its projects are exempt from taxation. However, the Authority is authorized by the Act to enter into agreements to make payments in lieu of taxes with respect to property acquired for any project where such payments are based solely on the value of the real property without regard to any improvement thereon by the Authority and where no bonds to pay any costs of such project were issued prior to January 1, 1972.

Article XV of the New York State Constitution provides, in part, that the barge canal, the divisions of which are the Erie canal, the Oswego canal, the Champlain canal, and the Cayuga-Seneca canal, and the terminals constructed as part of the barge canal system (collectively, the "Canal System") shall remain the property of the State and under its management and control forever. Legislation enacted in 1992 (the "1992 Legislation") transferred jurisdiction of the Canal System, among other assets and properties, from the New York State Commissioner of Transportation to the Thruway Authority, to be held by the New York Thruway Authority (the "Thruway Authority") in the name of the people of the State. Such canal system remained the property of the

State and under its management and control as exercised by and through the Thruway Authority, through its then newly created subsidiary, the New York State Canal Corporation (the “Canal Corporation”). The 1992 Legislation deemed the Canal Corporation to be the State for the purposes of such management and control of the canals but for no other purposes.

Legislation was enacted on April 4, 2016 (the “Canal Transfer Legislation”) which provided for (1) the transfer, effective January 1, 2017, of the New York State Canal Corporation (Canal Corporation) from the New York State Thruway Authority (Thruway Authority) to the Power Authority and (2) as of January 1, 2017, the Power Authority’s assumption from the Thruway Authority of powers and duties relating to the Canal System, and jurisdiction over the Canal System and state assets, equipment and property in connection with the planning, development, construction, reconstruction, maintenance and operation of the Canal System, which the Power Authority is authorized to exercise through the Canal Corporation. The Canal Corporation is responsible for a 524-mile Canal System consisting of the Erie, Champlain, Oswego and Cayuga-Seneca canals and the terminals constructed as part of the barge canal system (the “Canal System”).

(2) Summary of Significant Accounting Policies

Significant accounting policies include the following:

(a) *Basis of Reporting*

The operations of the Power Authority and its subsidiary, the Canal Corporation, are presented as an enterprise fund following the accrual basis of accounting in order to recognize the flow of economic resources. Accordingly, revenues are recognized in the period in which they are earned and expenses are recognized in the period in which they are incurred. The accounts and transactions of the Canal Corporation are included in the consolidated financial statements and notes to the consolidated financial statements. All significant transactions between the Power Authority and the Canal Corporation have been eliminated. The Power Authority and its blended component unit are referred to collectively as the “Authority” in the consolidated financial statements, except where noted.

The Authority complies with all applicable pronouncements of the Governmental Accounting Standards Board (GASB). In accordance with Governmental Accounting Standards (GAS) Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements,* (GAS No. 62) the Authority applies all authoritative pronouncements applicable to nongovernmental entities (i.e., Accounting Standards Codification (ASC) of the Financial Accounting Standards Board) that do not conflict with GASB pronouncements.

(b) *Regulatory Accounting*

The Power Authority’s Board of Trustees has broad rate setting authority for its power sales agreements with customers. The sale of transmission service over the Power Authority’s facilities is provided pursuant to New York Independent System Operator (NYISO) tariffs and under contracts that pre-dated existence of the NYISO. The Power Authority files its transmission system revenue requirement with the Federal Energy Regulatory Commission (FERC) for inclusion in the NYISO’s open access tariff.

The Authority accounts for its regulated operations under the provisions of GAS No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre November 30, 1989 FASB and AICPA Pronouncements*, paragraphs 476-500. These provisions recognize the economic ability of regulators, through the ratemaking process, to create future economic benefits and obligations affecting rate-regulated entities. Accordingly, the Authority records these future economic benefits and obligations as regulatory assets and regulatory liabilities, respectively. Regulatory assets represent probable future revenues associated with previously incurred costs that are expected to be recovered from customers. Regulatory liabilities represent amounts that are collected from customers through the ratemaking process associated with costs to be incurred in future periods. Based on the action of the Board of Trustees, the Authority believes the future collection of the costs held over through regulatory assets is probable. For regulatory assets see Note 2(l) “Summary of Accounting Polices – Other Long-Term Assets” of the notes to the consolidated financial statements.

(c) *Estimates*

The preparation of consolidated financial statements in conformity with 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 consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

(d) *Capital Assets*

Capital assets are recorded at original cost and consist of amounts expended for labor, materials, services and indirect costs to license, construct, acquire, complete and place in operation the projects of the Authority. Interest on amounts borrowed to finance construction of the Authority’s projects is charged to the project prior to completion. Borrowed funds for a specific construction project are deposited in a capital fund account. Earnings on fund investments are held in this fund to be used for construction. Earnings on unexpended funds are credited to the cost of the related project (construction work in progress) until completion of that project. Construction work in progress costs are reduced by revenues received for power produced (net of expenditures incurred in operating the projects) prior to the date of completion. The costs of current repairs are charged to operating expense, and renewals and betterments are capitalized. The cost of capital assets retired less salvage is charged to accumulated depreciation. Depreciation of capital assets is generally provided on a straight-line basis over the estimated lives of the various classes of capital assets.

The related depreciation provisions at December 31, 2018 and 2017 expressed as a percentage of average depreciable capital assets on an annual basis are:

	Average depreciation rate	
	2018	**2017**
Type of plant:		
Production:		
Hydro	2.0%	2.0%
Gas turbine/combined cycle	2.1	2.4
Transmission	1.9	2.0
General	3.2	3.2
Canal system	3.3	3.3
	2.5%	2.6%

(e) *Asset Retirement and Cost of Removal Obligations*

The Authority applies the applicable provisions of ASC Topic 410, *Asset Retirement and Environmental Obligations,* which requires an entity to record a liability at fair value to recognize legal obligations for asset retirements in the period incurred and to capitalize the cost by increasing the carrying amount of the related long-lived asset. The Authority determined that it had legal liabilities for the retirement of certain Small Clean Power Plants (SCPPs) in New York City and, accordingly, has recorded a liability for the retirement of these assets. In connection with these legal obligations, the Authority has also recognized a liability for the remediation of certain contaminated soils discovered during the construction process.

ASC Topic 410 does not apply to asset retirement obligations involving pollution remediation obligations that are within the scope of GAS No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*. The Authority applies GAS No. 49 which, upon the occurrence of any one of five specified obligating events, requires an entity to estimate the components of expected pollution remediation outlays and determine whether outlays for those components should be accrued as a liability or, if appropriate, capitalized when goods and services are acquired. The Authority had no liabilities recorded related to GAS No. 49 at December 31, 2018 or 2017.

In addition to asset retirement obligations, the Authority has other cost of removal obligations that are being collected from customers and accounted for under the provisions of GAS Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre November 30, 1989 FASB and AICPA Pronouncements*, paragraphs 476-500. These cost of removal obligations are reflected in deferred inflows of resources in the statements of net position.

Asset retirement obligations (ARO) amounts included in other noncurrent liabilities and cost of removal obligation amounts included in deferred inflows are as follows:

	ARO amounts	Cost of removal obligation
	(In millions)	
Balance – December 31, 2017	$ 53	$ 330
Depreciation Expense	–	14
Other expense	–	4
Balance – December 31, 2018	$ 53	$ 348

(f) *Long-Lived Assets*

The Authority applies GAS No. 42, *Accounting and Financial Reporting for Impairment of Capital Assets and for Insurance Recoveries*, which states that asset impairments are generally recognized only when the service utility of an asset is reduced or physically impaired.

GAS No. 42 states that asset impairment is a significant, unexpected decline in the service utility of a capital asset. The service utility of a capital asset is the usable capacity that at acquisition was expected to be used to provide service, as distinguished from the level of utilization which is the portion of the usable capacity currently being used. Decreases in utilization and existence of or increases in surplus capacity that are not associated with a decline in service utility are not considered to be impairments. In 2017, the Authority incurred an impairment loss of $73 million, which consisted of $62 million in capital assets and $11 million of equipment in materials and supplies, related to the planned replacement of certain combustion turbine equipment with technically superior upgraded components (see note 5 of notes to the consolidated financial statements).

(g) *Cash, Cash Equivalents and Investments*

Cash includes cash and cash equivalents and short-term investments with maturities, when purchased, of three months or less. The Authority accounts for investments at their fair value. Fair value is determined using quoted market prices. Investment income includes changes in the fair value of these investments. Realized and unrealized gains and losses on investments are recognized as investment income in accordance with GAS No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*.

(h) *Derivative Instruments*

The Authority uses financial derivative instruments to manage the impact of energy and capacity price, fuel cost changes and interest rate when applicable, on its earnings and cash flows. The Authority recognizes the fair value of all financial derivative instruments as either an asset or liability on its statements of net position with the offsetting gains or losses recognized in earnings or deferred charges. The Authority applies GAS No. 53, *Accounting and Financial Reporting for Derivative Instruments*, which establishes accounting and reporting requirements for derivative instruments (see Note 8 "Risk Management and Hedging Activities" of the notes to the consolidated financial statements).

(i) *Accounts Receivable*

Accounts receivable are classified as current assets and are reported net of an allowance for uncollectible amounts.

(j) *Materials and Supply Inventory*

Material and supplies are valued at weighted average cost and are charged to expense during the period in which the material or supplies are used.

(k) *Debt Refinancing Charges*

Debt refinancing charges, representing the difference between the reacquisition price and the net carrying value of the debt refinanced, are amortized using the interest method over the life of the new debt or the old debt, whichever is shorter, in accordance with GAS No. 23, *Accounting and Financial Reporting for Refundings of Debt Reported by Proprietary Activities.*

(l) *Other Long-Term Assets*

Other long-term assets at December 31, 2018 and 2017 consist of the following:

	December 31,	
	2018	**2017**
	(In millions)	
Other long-term assets:		
Regulatory assets (a):		
Recoverable electricity supply market costs	$ 338	$ 320
Other regulatory assets	15	21
Total regulatory assets	353	341
Energy efficiency program costs (b)	439	400
Other long-term receivables	367	291
Transmission line interconnection costs	256	274
Other postemployment employee benefits	43	–
Other	125	76
Total other long-term assets	$ 1,583	$ 1,382

(a) Regulatory assets reflect previously incurred costs that are expected to be recovered from customers through the ratemaking process.

(b) Energy efficiency program costs will be recovered from certain customers through the terms of contracts.

On October 24, 2017, a Memorandum of Understanding was entered between the Authority and ten investor owned utility companies to provide Hurricane Relief assistance in Puerto Rico. The Authority's deployment cost associated with the assistance efforts are subject to reimbursement by the Emergency Management Assistant Compact (EMAC) program. As of December 31, 2018, the related costs are included in other long-term assets in the consolidated statements of net position.

(m) *Compensated Absences*

The Authority accrues the cost of unused sick leave which is payable upon the retirement of its employees. The Authority has accrued $34 million and $32 million in other non-current liabilities at December 31, 2018 and 2017, respectively, and $6 million at December 31, 2018 and 2017, in current on the statements of net position. The current year's cost is accounted for as a current operating expense in the statements of revenues, expenses, and changes in net position.

(n) *Net Position*

Net Position represents the difference between assets plus deferred outflows and liabilities plus deferred inflows and is classified into three components:

a. Net investment in capital assets – This consists of capital assets, net of depreciation reduced by related outstanding debt and accounts. This indicates that these assets are not accessible for other purposes.

b. Restricted – This represents restricted assets reduced by related liabilities and deferred inflows of resources that are not accessible for general use because their use is subject to restrictions enforceable by third parties.

c. Unrestricted – This represents the net amount of assets, deferred outflows of resources, liabilities and deferred inflows of resources that are not included in the components noted above and that are available for general use.

(o) *New York Independent System Operator (NYISO)*

The Power Authority is a member and a customer of the New York Independent System Operator (NYISO). The NYISO schedules the use of the bulk transmission system in the State, which normally includes all the Power Authority's transmission facilities, and collects ancillary services, losses and congestion fees from customers. In addition, the Power Authority dispatches power from its generating facilities in conjunction with the NYISO. The NYISO coordinates the reliable dispatch of power and operates a market for the sale of electricity and ancillary services within the State.

Based upon the Power Authority's scheduled customer power needs and available electricity generated by the Power Authority's operating assets, the Authority buys and sells energy in an electricity market operated by the NYISO. A significant amount of the Power Authority's energy and capacity revenues result from sales of the Power Authority's generation into the NYISO market. A significant amount of the Power Authority's operating expenses consist of various NYISO purchased power charges in combination with generation related fuel expenses.

(p) *Operating Revenues*

The customers served by the Power Authority and the rates paid by such customers vary with the Power Authority facilities designated to serve such loads. These customers are served under contracts and tariffs approved by the Trustees.

The principal operating revenues are generated from the sale, transmission, and wheeling of power. Revenues are recorded when power is delivered or service is provided. Customers' meters are read, and bills are rendered, monthly. Wheeling charges are for costs the Authority incurred for the transmission and/or delivery of power and energy to customers over transmission lines owned by other utilities. Sales to the Authority's five largest customers operating in the State accounted for approximately 47% and 49% of the Authority's operating revenues in 2018 and 2017, respectively.

In addition to contractual sales to customers, the Power Authority also sells power into an electricity market operated by the NYISO. These sales are affected by market prices and are not subject to rate regulation by the Power Authority's Board of Trustees or other regulatory bodies. Accordingly, the Power Authority does not apply the provisions of GAS No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre November 30, 1989 FASB and AICPA Pronouncements*, paragraphs 476-500 to these transactions.

(q) *Operating Expenses*

The Authority's operating expenses include fuel, operations and maintenance, depreciation, purchased power costs, and other expenses related to the sale of power. Energy costs are charged to expense as incurred.

Purchased power costs include capacity, energy and ancillary service purchases made in the wholesale market on behalf of its customers (except for those made through previously approved purchased power agreements). Wheeling expenses are based on contractual and/or tariff rates of the service provider and are recovered through pass-through provisions in customer contracts.

(r) *Pension Plans*

The Authority is a cost-sharing employer that participates in the New York State and Local Employees' Retirement System (NYSLERS), which is a cost-sharing multiple-employer plan in which the participating government employers pool their assets and their obligations to provide defined benefit pensions. The plan assets of this type of plan can be used to pay the pensions of the retirees of any participating employer. The amounts reported by the Authority for its proportionate share of the net pension liability, pension expense and deferred outflows and deferred inflows have been provided by the New York State and Local Employees' Retirement System to employers participating in the NYSLERS in accordance with Statement No. 68, *Accounting and Financial Reporting for Pensions*, and have been determined on the same basis as reported by the NYSLERS. See Note 10 "Pension Plans" of the notes to the consolidated financial statements.

(s) *Postemployment Benefits Other Than Pensions (OPEB)*

The Power Authority provides certain health care and life insurance benefits for eligible retired employees and their dependents under a single employer noncontributory (except for certain optional life insurance coverage) health care plan (Power Authority OPEB Plan). The Power Authority has an established trust for its OPEB obligations (OPEB Trust) that is a separate entity from the Power Authority held by an independent custodian for the exclusive benefit of the OPEB Trust beneficiaries and not of the Power Authority. The ownership of the OPEB Trust assets are held by the independent custodian at all times and the OPEB Trust assets are not considered funds or assets of the Power Authority for any purpose. All of the OPEB Trust assets are irrevocably dedicated to, and are used for the exclusive purpose of, making payments of benefits to or for the benefit of the Power Authority OPEB Plan beneficiaries and for paying administrative expenses of the Power Authority OPEB Plan and the OPEB Trust and will not be available to any creditors of the Power Authority. The OPEB Trust does not issue a stand-alone financial report and its financial statements are reported as a fiduciary fund in the Authority's financial report.

The Power Authority's net OPEB liability was measured as of December 31, 2017, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of that date. For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expenses, information about the fiduciary net position of the OPEB Trust and additions to/deductions from OPEB Trust's fiduciary net position have been determined on the same basis as they are reported by the Power Authority OPEB Plan as of the same measurement date. For this purpose the Power Authority OPEB Plan recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value, except investments that have a maturity at the time of purchase of one year or less, which are reported at cost.

(t) *New Accounting Pronouncements*

In 2018, the Authority adopted the GASB issued GAS Statement No. 75 (GAS No. 75), *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, This statement requires governments that provide other postemployment benefits (OPEB) to their employees to recognize their unfunded accrued other postemployment benefits (OPEB) obligation in their financial statements. See Note 11 "Postemployment Benefits Other Than Pension Plans, Deferred Compensation and Savings" of the notes to the consolidated financial statements.

The following details the restatement to net position as a result of the adoption of GAS No. 75.

	Year Ended December 31, 2018	2017
	(In millions)	
Net position, January 1	$ 4,739	$ 4,620
Adoption of GAS No. 75	(107)	–
Net position, January 1, as restated	$ 4,632	$ 4,620

GASB issued GAS Statement No. 84 (GAS No. 84), *Fiduciary Activities*, which is effective for reporting periods beginning after December 15, 2018. GAS No. 84 addresses criteria for identifying activities of all state and local governments. The focus of the criteria is generally on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exits. Separate criteria are included to identify fiduciary component units and postemployment benefit arrangements that are fiduciary activities. Activities meeting this criteria should present a statement of fiduciary net position and a statement of changes in fiduciary net position. In 2018, the Authority applied the GAS No. 84 criteria as it relates to the fiduciary activities of its postemployment benefits other than pensions arrangements.

GASB issued GAS Statement No. 87 (GAS No. 87), *Leases*, which is effective for reporting periods beginning after December 15, 2019. GAS No. 87 requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows or outflows of resources based on payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right-to-use an underlying asset. Under GAS No. 87, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. The Authority is evaluating the impact of GAS No. 87 on its consolidated financial statements.

GASB issued GAS Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*, which is effective for reporting periods beginning after June 15, 2018. GAS Statement No. 88 addresses improvement of the information that is disclosed in notes to government financial statements related to debt, including direct borrowings and direct placements. GAS Statement No. 88 requires that additional essential information related to debt be disclosed in notes to financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses. The Authority is evaluating the impact of GAS No. 88 on its consolidated financial statements.

GASB issued GAS Statement No. 89 (GAS No. 89), *Accounting for Interest Cost Incurred Before the End of a Construction Period*, which is effective for reporting periods beginning after December 15, 2019 and will be applied prospectively. GAS No. 89 addresses (1) enhancement of the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and (2) simplifies accounting for interest cost incurred before the end of a construction period. GAS No. 89 requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements prepared using the economic resources measurement focus. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity or enterprise fund. The Authority is evaluating the impact of GAS No. 89 on its consolidated financial statements.

GASB issued GAS Statement No. 90 (GAS No. 90), *Majority Equity Interests—An Amendment of GASB Statements No. 14 and No. 61,* which is effective for reporting periods beginning after December 15, 2018. The requirements should be applied retroactively, except for the provisions related to (1) reporting a majority equity interest in a component unit and (2) reporting a component unit if the government acquires 100 percent equity interest which should be applied on a prospective basis. GAS No. 90 addresses (1) a majority equity interest and specifies that a majority interest in a legally separate organization should be reported as an investment, using the equity method, if a government's holding of the equity interest meets the definition of an investment, (2) special-purpose governments engaged only in fiduciary activities, a fiduciary fund or an endowment/permanent fund should measure the majority equity interest at fair instead of the equity method and (3) all other holdings of a majority interest in a legally separate organization, not meeting the definition of an investment, should report the legally separate organization as a component unit using the equity. The Authority is evaluating the impact of GAS No. 90 on its consolidated financial statements.

(3) Bond Resolution

On February 24, 1998, the Authority adopted its "General Resolution Authorizing Revenue Obligations" (as amended and supplemented up to the present time, the Bond Resolution). The Bond Resolution covers all of the Authority's projects, which it defines as any project, facility, system, equipment or material related to or necessary or desirable in connection with the generation, production, transportation, transmission, distribution, delivery, storage, conservation, purchase or use of energy or fuel, whether owned jointly or singly by the Authority, including any output in which the Authority has an interest authorized by the Act or by other applicable State statutory provisions, provided, however, that the term "Project" shall not include any Separately Financed Project as that term is defined in the Bond Resolution. The Authority has covenanted with bondholders under the Bond Resolution that at all times the Authority shall maintain rates, fees or charges, and any contracts entered into by the Authority for the sale, transmission, or distribution of power shall contain rates, fees or charges sufficient together with other monies available therefor (including the anticipated receipt of proceeds of sale of Obligations, as defined in the Bond Resolution, issued under the Bond Resolution or other bonds, notes or other obligations or evidences of indebtedness of the Authority that will be used to pay the principal of Obligations issued under the Bond Resolution in anticipation of such receipt, but not including any anticipated or actual proceeds from the sale of any Project), to meet the financial requirements of the Bond Resolution. Revenues of the Authority (after deductions for operating expenses and reserves, including reserves for working capital, operating expenses or compliance purposes) are applied first to the payment of, or accumulation as a reserve for payment of, interest on and the principal or redemption price of Obligations issued under the Bond Resolution and the payment of Parity Debt issued under the Bond Resolution.

The Bond Resolution also provides for withdrawal for any lawful corporate purpose as determined by the Authority, including but not limited to the retirement of Obligations issued under the Bond Resolution, from amounts in the Operating Fund in excess of the operating expenses, debt service on Obligations and Parity Debt issued under the Bond Resolution, and subordinated debt service requirements.

(4) Cash and Investments

Investment of the Authority's funds is administered in accordance with the applicable provisions of the Bond Resolution and with the Authority's investment guidelines. These guidelines comply with the New York State Comptroller's investment guidelines for public authorities and were adopted pursuant to Section 2925 of the New York Public Authorities Law.

(a) *Credit Risk*

The Authority's investments are restricted to (a) collateralized certificates of deposit, (b) direct obligations of or obligations guaranteed by the United States of America or the State of New York, (c) obligations issued or guaranteed by certain specified federal agencies and any agency controlled by or supervised by and acting as an instrumentality of the United States government, and (d) obligations of any state or any political subdivision thereof or any agency, instrumentality or local government unit of any such state or political subdivision which is rated in any of the three highest long-term rating categories, or the highest short-term rating category, by nationally recognized rating agencies. The Authority's investments in the debt securities of Federal National Mortgage Association (FNMA), Federal Home Loan Bank (FHLB), Federal Farm Credit Bank (FFCB) and Federal Home Loan Mortgage Corp. (FHLMC) were rated Aaa by Moody's Investors Services (Moody's), AAA by Fitch Ratings (Fitch) and AA+ by Standard & Poor's (S&P).

(b) *Interest Rate Risk*

Securities that are the subject of repurchase agreements must have a market value at least equal to the cost of the investment. The agreements are limited to a maximum fixed term of five business days and may not exceed the greater of 5% of the investment portfolio or $100 million. The Authority has no other policies limiting investment maturities.

(c) *Concentration of Credit Risk*

There is no limit on the amount that the Authority may invest in any one issuer; however, investments in authorized certificates of deposit shall not exceed 25% of the Authority's invested funds. At December 31, 2018, the Authority's total investment portfolio of $1,022 million included investments of $367 million (36%), $169 million (16%), $160 million (16%) $147 million (14%) and $16 million (2%), $134 (13%) in securities of FHLB, FNMA, FFCB, FHLMC, U.S. government and other various municipal debt securities, respectively.

At December 31, 2017, the Authority's total investment portfolio of $1,178 million included investments of $379 million (32%), $291 million (25%), $200 million (17%) and $148 million (13%) and $105 million (9%) in securities of FHLB, FNMA, FHLMC and FFCB and other various municipal debt securities, respectively.

(d) *Other*

All investments are held by designated custodians in the name of the Authority. The bank balances at December 31, 2018 and 2017 were $33 million and $58 million, respectively, of which $32 million and

$57 million, respectively, were uninsured, but were collateralized by assets held by the bank in the name of the Authority. As of December 31, 2018, the Authority had no investments in repurchase agreements.

Cash and Investments of the Authority at December 31, 2018 and 2017 are as follows:

			Restricted			
December 31, 2018	**Total**	**Total restricted**	**Canal Development Fund**	**WNYEDF, POCR, projects and other**	**Capital fund**	**Unrestricted**
			(In millions)			
Cash and investments:						
Cash and cash equivalents	$ 40	31	11	20	2	7
U.S. government:						
U.S. Treasury bills	10	—	—	—	10	—
U.S. Treasury notes	6	6	—	6	—	—
	16	6	—	6	10	—
Other debt securities:						
FNMA	169	—	—	—	—	169
FHLMC	147	4	—	4	6	137
FHLB	367	20	—	20	1	346
FFCB	160	—	—	—	2	158
All other	134	—	—	—	4	130
	977	24	—	24	13	940
Total investments	993	30	—	30	23	940
Total cash and investments	$ 1,033	61	11	50	25	947
Summary of maturities (years):						
0 – 1	$ 352	61	11	50	21	270
1 – 5	659	—	—	—	4	655
5 – 10	13	—	—	—	—	13
10+	9	—	—	—	—	9
	$ 1,033	61	11	50	25	947

Petroleum Overcharge Restitution (POCR) Funds – Legislation enacted into State law from 1995 to 2002, 2007 and 2008 authorized the Authority to utilize petroleum overcharge restitution (POCR) funds and other State funds (Other State Funds), to be made available to the Authority by the State pursuant to the legislation, for a variety of energy-related purposes, with certain funding limitations. The legislation also states that the Authority "shall transfer" equivalent amounts of money to the State prior to dates specified in the legislation. The use of POCR funds is subject to comprehensive Federal regulations and judicial orders, including restrictions on the type of projects that can be financed with POCR funds, the use of funds recovered from such projects and the use of interest and income generated by such funds and projects. Pursuant to the legislation, the Authority is utilizing POCR funds and the Other State Funds to implement various energy services programs that have received all necessary approvals.

The disbursements of the POCR funds and the Other State Funds to the Authority, and the Authority's transfers to the State totaling $60.9 million, took place from 1996 to 2009. The POCR funds are included in restricted funds in the statements of net position. The funds are held in a separate escrow account until they are utilized.

As of December 31, 2018, restricted funds include the POCR fund ($7 million), the Lower Manhattan Energy Independence Initiative fund ($6 million) and the Fish & Wildlife Habitat Enhancement fund related to the Niagara relicensing ($14 million), the Western New York Economic Development Fund ($11 million), the Northern New York Economic Development Fund ($4 million) (see Note 13(a) "Commitments and Contingencies – Power Programs"), Canal Development Fund ($11 million) and other ($8 million).

			Restricted			
December 31, 2017	**Total**	**Total restricted**	**Canal Development Fund**	**WNYEDF, POCR, projects and other**	**Capital fund**	**Unrestricted**
			(In millions)			
Cash and investments:						
Cash and cash equivalents	$ 63	26	8	18	—	37
Other debt securities:						
FNMA	291	2	—	2	—	289
FHLMC	200	30	—	30	11	159
FHLB	379	1	—	1	10	368
FFCB	148	—	—	—	—	148
All other	105	—	—	—	4	101
	1,123	33	—	33	25	1,065
Total investments	1,123	33	—	33	25	1,065
Total cash and investments	$ 1,186	59	8	51	25	1,102
Summary of maturities (years):						
0 – 1	$ 394	59	8	51	25	310
1 – 5	792	—	—	—	—	792
	$ 1,186	59	8	51	25	1,102

As of December 31, 2017, restricted funds include the POCR fund ($9 million), the Lower Manhattan Energy Independence Initiative fund ($6 million) and the Fish & Wildlife Habitat Enhancement fund related to the Niagara relicensing ($13 million), the Western New York Economic Development Fund ($13 million), the Northern New York Economic Development Fund ($3 million) (see Note 13(a) "Commitments and Contingencies – Power Programs") and other ($8 million).

(5) Capital Assets

The following schedule summarizes the capital assets activity of the Authority for the year ended December 31, 2018.

	Beginning balance	Additions	Retirements/ Transfers	Ending balance
	(In millions)			
Capital assets, not being depreciated:				
Land	$ 193	—	—	$ 193
Construction in progress	565	295	(157)	703
Total capital assets not being depreciated	758	295	(157)	896
Capital assets, being depreciated:				
Production – Hydro	2,101	18	(5)	2,114
Production – Gas turbine/combined cycle	2,378	8	—	2,386
Transmission	2,193	38	(3)	2,228
General	1,155	85	(42)	1,198
Canal System	712	13	(2)	723
Total capital assets being depreciated	8,539	162	(52)	8,649
Less accumulated depreciation for:				
Production – Hydro	832	35	(5)	862
Production – Gas turbine/combined cycle	1,172	88	—	1,260
Transmission	1,269	38	(3)	1,304
General	417	39	(43)	413
Canal System	165	24	(2)	187
Total accumulated depreciation	3,855	224	(53)	4,026
Net value of capital assets, being depreciated	4,684	(62)	1	4,623
Net value of all capital assets	$ 5,442	233	(156)	$ 5,519

The following schedule summarizes the capital assets activity of the Authority for the year ended December 31, 2017.

	Beginning balance	Additions	Retirements/ Transfers	Ending balance
		(In millions)		
Capital assets, not being depreciated:				
Land	$ 164	29	—	$ 193
Construction in progress	348	315	(98)	565
Total capital assets not being depreciated	512	344	(98)	758
Capital assets, being depreciated:				
Production – Hydro	2,067	34	—	2,101
Production – Gas turbine/combined cycle	2,440	—	(62) (a)	2,378
Transmission	2,163	30	—	2,193
General	1,333	26	(204)	1,155
Canal System	—	712	—	712
Total capital assets being depreciated	8,003	802	(266)	8,539
Less accumulated depreciation for:				
Production – Hydro	797	35	—	832
Production – Gas turbine/combined cycle	1,082	90	—	1,172
Transmission	1,229	40	—	1,269
General	582	40	(205)	417
Canal System	—	165	—	165
Total accumulated depreciation	3,690	370	(205)	3,855
Net value of capital assets, being depreciated	4,313	432	(61)	4,684
Net value of all capital assets	$ 4,825	776	(159)	$ 5,442

(a) In 2017, the Authority incurred an impairment loss of $73 million, which consisted of $62 million in capital assets and $11 million of equipment in materials and supplies, related to the replacement of certain combustion turbine equipment with technically superior upgraded components.

(6) Long-Term Debt

a. Components

	Amount 2018	Amount 2017	Interest rate	Maturity		Earliest redemption date prior to maturity
	(In millions)					
Senior debt:						
Revenue Bonds (Tax-Exempt):						
Series 2007 A Revenue Bonds:						
Term Bonds	$ 82	$ 82	4.5% to 5.0%	11/15/2047	**	Any date
Series 2007 C Revenue Bonds:						
Serial Bonds	110	144	4.0% to 5.0%	11/15/2019 to 2021		Any date
Series 2011 A Revenue Bonds:						
Serial Bonds	59	60	3.0% to 5.0%	11/15/2019 to 2031	*	11/15/2021
Term Bonds	39	39	4.0% to 5.0%	11/15/2038	**	11/15/2021
Series 2015 A Revenue Bonds:						
Serial Bonds	29	43	2.0% to 5.0%	11/15/2019 to 2020		N/A
Revenue Bonds (Taxable):						
Series 2003 A Revenue Bonds:						
Term Bonds	156	163	5.230% to 5.749%	11/15/2019 to 2033	**	Any date
Series 2007 B Revenue Bonds:						
Term Bonds	235	239	5.905% to 5.985%	11/15/2037 and 2043	**	Any date
	710	770				
Plus unamortized premium and discount	12	16				
Less deferred refinancing costs	6	6				
	716	780				
Less due in one year	63	60				
Long-term senior debt, net of due in one year	$ 653	$ 720				

* $26.4 million due 2022 is non-callable.
** Bonds are subject to sinking fund provisions.

	Amount 2018	Amount 2017	Interest rate	Maturity	Earliest redemption date prior to maturity
	(In millions)				
Subordinate debt:					
Subordinated Notes, Series 2017	$ 24	$ 25	2.61% to 4.27%	2022 to 2041	N/A
Subordinated Notes, Series 2012	20	21	1.70% to 4.05%	2019 to 2037	
Commercial Paper:					
EMCP (Series 1)	5	5	1.00%	2021	
	49	51			
Less due within one year	1	2			
	48	49			
Total Long-term debt	765	831			
Less due within one year	64	62			
Long-term debt, net of due in one year	$ 701	$ 769			

Interest on Series 2003 A and 2007 B Revenue Bonds and Subordinated Notes, Series 2012 and Subordinated Notes, Series 2017 is not excluded from gross income for bondholders' Federal income tax purposes.

Senior Debt

As indicated in Note 3 "Bond Resolution" of notes to the consolidated financial statements, the Authority has pledged future revenues to service the Obligations and Parity Debt (Senior Debt) issued under the Bond Resolution. The total principal and interest remaining to be paid on the Senior Debt is $1.2 billion as of December 31, 2018. Principal and interest paid for 2018 and operating income plus depreciation were $101 million and $457 million, respectively. Principal and interest paid for 2017 and operating income plus depreciation were $101 million and $480 million, respectively.

Senior revenue bonds are subject to redemption prior to maturity in whole or in part as provided in the supplemental resolutions authorizing the issuance of each series of bonds, beginning for each series on the date indicated in the table above, at principal amount or at various redemption prices according to the date of redemption, together with accrued interest to the redemption date.

At December 31, 2018 and 2017, the current market value of the senior debt was approximately $818 million and $880 million, respectively. Market values were obtained from a third party that utilized a matrix-pricing model.

Subordinate Debt:

Subordinate Notes – In November 2016, the Authority's Trustees authorized the issuance of Subordinated Notes, Series 2017 (Subordinated Notes, Series 2017) in a principal amount not to exceed $30 million to accelerate additional funding for the State Parks Greenway Fund, which was established pursuant to the Niagara Relicensing Settlement entered into by the Authority and the New York State Office of Parks, Recreation & Historic Preservation in connection with the Niagara Project's relicensing. The Authority issued the subordinate notes on February 24, 2017 in the amount of $25.2 million. These Subordinated Notes are subordinate to the Series 2003 A Revenue Bonds, the Series 2007 A, B, and C Revenue Bonds, the Series 2011 A Revenue Bonds, and the Series 2015 A Revenue Bonds.

In November 2012, the Authority's Trustees authorized the issuance of Subordinated Notes, Series 2012 (Subordinated Notes, Series 2012), in a principal amount not to exceed $30 million for the purpose of accelerating the funding for the State Parks Greenway Fund, which was established pursuant to the Niagara Relicensing Settlement entered into by the Authority and the New York State Office of Parks, Recreation & Historic Preservation. The Authority issued the Subordinated Notes on December 18, 2012 in the amount of $25 million. These Subordinated Notes are subordinate to the Series 2003 A Revenue Bonds, the Series 2007 A, B, and C Revenue Bonds, the Series 2011 A Revenue Bonds and the Series 2015 A Revenue Bonds.

Commercial Paper – Under the Extendible Municipal Commercial Paper (EMCP) Note Resolution, adopted December 17, 2002, and as subsequently amended and restated, the Authority may issue a series of notes, designated EMCP Notes, Series 1, maturing not more than 270 days from the date of issue, up to a maximum amount outstanding at any time of $200 million (EMCP Notes). It is the Authority's intent to remarket the EMCP Notes as they mature with their ultimate retirement in 2021. The Authority has the option to extend the maturity of the EMCP Notes and would exercise such right in the event there is a failed remarketing. This option serves as a substitute for a liquidity facility for the EMCP Notes.

Under the Commercial Paper Note Resolution adopted June 28, 1994, as subsequently amended and restated, the Authority may issue from time to time a separate series of notes maturing not more than 270 days from the date of issue, up to a maximum amount outstanding at any time of $400 million (Series 1 CP Notes), $450 million (Series 2 CP Notes), $350 million (Series 3 CP Notes) and $220 million (Series 4 CP Notes). See Note 7 of the notes to the financial statements for Series 1, and certain Series 2 and Series 3 CP Notes designated as short-term debt. There were no Series 4 CP Notes outstanding at December 31, 2017.

The proceeds of certain Series 2 Commercial Paper Notes (CP Notes) were used to refund General Purpose Bonds and the proceeds of the EMCP Notes were used to refund Series 2 and 3 CP Notes. CP Notes and EMCP Notes have been used, and may in the future be used, for other corporate purposes. It is the Authority's intention to renew the EMCP Notes as they mature.

The Authority has a line of credit under a 2019 revolving credit agreement (the 2019 RCA), with a syndicate of banks, to provide liquidity support for the Series 1-3 CP Notes, under which the Authority may borrow up to $600 million in aggregate principal amount outstanding at any time for certain purposes, including the repayment of the Series 1–3 CP Notes. The 2019 RCA expires January 22, 2022. The 2019 RCA succeeded the amended 2015 RCA, which expired by its terms on January 18, 2019 with no outstanding borrowings. There are no outstanding borrowings under the 2019 RCA.

CP Notes and EMCP Notes are subordinate to the Series 2003 A Revenue Bonds, the Series 2007 A, B, and C Revenue Bonds, the Series 2011 A Revenue Bonds and the Series 2015 A Revenue Bonds.

Interest on the CP (Series 3) is taxable to holders for Federal income tax purposes.

The interest rate used to calculate future interest expense on variable rate debt is the interest rate at December 31, 2018.

Maturities and Interest Expense:	**Long-Term Debt** (In millions)			**Capitalized Lease Obligations** (In millions)		
	Principal	**Interest**	**Total**	**Principal**	**Interest**	**Total**
Years ending December 31:						
2019	$ 64	$ 40	$ 104	$ 37	$ 88	$ 125
2020	68	36	104	43	85	128
2021	60	33	93	50	81	131
2022	41	31	72	58	77	135
2023	17	28	45	66	72	138
2024 – 2028	100	128	228	489	257	746
2029 – 2033	147	95	242	371	39	410
2034 – 2038	98	59	157	—	—	—
2039 – 2043	85	34	119	—	—	—
2044 – 2048	79	10	89	—	—	—
	759	494	1,253	1,114	699	1,813
Plus unamortized bond premium	12	—	12	—	—	—
Less deferred refinancing cost	6	—	6	—	—	—
Total	$ 765	$ 494	$ 1,259	$ 1,114	$ 699	$ 1,813

b. Terms by Which Interest Rates Change for Variable Rate Debt

CP Notes and EMCP Notes (Long-Term Portion)

The Authority determines the rate for each rate period which is the minimum rate necessary to remarket the notes at par in the Dealer’s opinion. If the Authority exercises its option to extend the maturity of the EMCP Notes, the reset rate will be the higher of (SIFMA + E) or F, where SIFMA is the Securities Industry and Financial Markets Association Municipal Swap Index, which is calculated weekly, and where “E” and “F” are fixed percentage rates expressed in basis points (each basis point being 1/100 of one percent) and yields, respectively, that are determined based on the Authority’s debt ratings subject to a cap rate of 12%. As of December 31, 2018 the reset rate would have been 7%.

c. *Changes in Noncurrent Liabilities*

Changes in the Authority's noncurrent liabilities for the year ended December 31, 2018 are comprised of the following:

	Beginning balance	Additions	Maturities/ refundings and other	Ending balance	Due within one year
			(In millions)		
Senior debt:					
Revenue bonds	$ 770	—	60	$ 710	$ 63
Subtotal	770	—	60	710	63
Subordinate debt:					
Subordinated Notes, Series 2017	25	—	1	24	1
Subordinated Notes, Series 2012	21	—	1	20	—
Commercial paper	5	—	—	5	—
Subtotal	51	—	2	49	1
Net unamortized discounts/ premiums and deferred losses	10	—	4	6	—
Total debt, net of unamortized discounts/ premiums/ deferred losses	$ 831	—	66	$ 765	$ 64
Other noncurrent liabilities:					
Capitalized lease obligation	$ 1,114	—	37	1,077	37
Disposal of nuclear fuel	219	4	—	223	—
Relicensing	250	16	22	244	—
Other	303	83	—	$ 386	$ —
Total other noncurrent liabilities	$ 1,886	103	59	$ 1,930	$ 37

Changes in the Authority's long-term liabilities for the year ended December 31, 2017 are comprised of the following:

	Beginning balance	Additions	Maturities/ refundings and other	Ending balance	Due within one year
			(In millions)		
Senior debt:					
Revenue bonds	$ 827	—	57	$ 770	$ 60
Subtotal	827	—	57	770	60
Subordinate debt:					
Subordinated Notes, Series 2017	—	25	—	25	1
Subordinated Notes, Series 2012	22	—	1	21	1
Commercial paper	5	—		5	—
Subtotal	27	25	1	51	2
Net unamortized discounts/ premiums and deferred losses	14	—	4	10	—
Total debt, net of unamortized discounts/ premiums/ deferred losses	$ 868	25	62	$ 831	$ 62
Other noncurrent liabilities:					
Capitalized lease obligation	$ 1,144	—	30	$ 1,114	$ 31
Disposal of nuclear fuel	217	2	—	219	—
Relicensing	270	18	38	250	—
Other	227	76	—	303	—
Total other noncurrent liabilities	$ 1,858	96	68	$ 1,886	$ 31

(7) Short-Term Debt

CP Notes (short-term portion) outstanding was as follows:

	December 31,			
	2018		2017	
	Availability	Outstanding	Availability	Outstanding
	(In millions)			
CP Notes (Series 1)	$ 194	$ 206	$ 225	$ 175
CP Notes (Series 2)	176	274	162	288
CP Notes (Series 3)	304	46	328	22

Under the Commercial Paper Note Resolution adopted June 28, 1994, as subsequently amended and restated, the Authority may issue from time to time a separate series of notes maturing not more than 270 days from the date of issue, up to a maximum amount outstanding at any time of $400 million (Series 1 CP Notes), $450 million (Series 2 CP Notes), $350 million (Series 3 CP Notes) and $220 million (Series 4 CP Notes). It had been and shall be the intent of the Authority to use the proceeds of the Series 1 CP Notes and certain Series 2 and Series 3 CP Notes to finance the Authority's current and future energy efficiency programs and for other corporate purposes.

The changes in short-term debt are as follows:

	Beginning balance	Increases	Decreases	Ending balance
	(In millions)			
Year:				
2018	$ 485	103	62	$ 526
2017	$ 516	83	114	$ 485

(8) Risk Management and Hedging Activities

Overview

The Authority purchases insurance coverage for its operations, and in certain instances, is self-insured. Property insurance protects the various real and personal property owned by the Authority and the property of others while in the care, custody and control of the Authority for which the Authority may be held liable. Liability insurance protects the Authority from third-party liability related to its operations, including general liability, automobile, aircraft, marine and its officers and directors. Cyber liability insurance protects the Authority against first and third party losses. Insured losses by the Authority did not exceed coverage for any of the four preceding fiscal years. The Authority self-insures a certain amount of its general liability coverage, the physical damage claims for its owned and leased vehicles and for portions of its medical, dental and workers' compensation insurance programs. The Authority pursues subrogation claims as appropriate against any entities that cause damage to its property.

Another aspect of the Authority's risk management program is to manage risk and related volatility on its earnings and cash flows associated with electric energy prices, fuel prices, electric capacity prices and interest rates. Through its participation in the NYISO and other commodity markets, the Authority is subject to electric energy price, fuel price and electric capacity price risks that impact the revenue and purchased power streams of its facilities and customer market areas. Such volatility can potentially have adverse effects on the Authority's financial condition. To mitigate potential adverse effects and to moderate cost impacts to its customers (many of the Authority's customer contracts provide for the complete or partial pass-through of these costs), the Authority hedges market risks through the use of financial derivative instruments and/or physical forward contracts. Hedges are transacted by the Authority to mitigate volatility in the cost of energy or related products needed to meet customer needs; to mitigate risk related to the price of energy and related products sold by the Authority; to mitigate risk related to margins (electric sales versus fuel use) where the Authority owns generation or other capacity; and to mitigate geographic cost differentials of energy procured or sold for transmission or transportation to an ultimate location. Commodities to be hedged include, but are not limited to, natural gas, natural gas basis, electric energy, electric capacity and congestion costs associated with the transmission of electricity.

To achieve the Authority's risk management program objectives, the Authority's Trustees have authorized the use of various interest rate, energy, and fuel derivative instruments for hedging purposes that are considered derivatives under GAS No. 53, *Accounting and Financial Reporting for Derivative Instruments* (GAS No. 53).

The fair values of all Authority derivative instruments, as defined by GAS No. 53, are reported in current and noncurrent assets or liabilities on the statements of net position as risk management activities. For designated hedging derivative instruments, changes in the fair values are deferred and classified as deferred outflows or deferred inflows on the statements of net position. The fair value for over-the-counter and exchange-traded energy, and capacity derivative instruments are determined by the latest end-of-trading-month forward prices over the lifetime of each outstanding energy derivative instrument using the prices published by Standard & Poor's Global Platt's ("Platts") or internal pricing models.

Derivative Instruments

The following table shows the fair value of outstanding derivative instruments for 2018 and 2017:

Derivative instrument description	Fair value balance December 31, 2017	Net change in fair value	Fair value balance December 31, 2018	Type of hedge or transaction	Financial statement classification for changes in fair value	Notional amount December 31, 2018	Unit of Measure
			($ in millions)				
Energy swaps	$ 2	$ (9)	$ (7)	Cash Flow	Deferred inflow	(1,496,000)	MWh
Energy capacity futures	6	(5)	1	Cash Flow	Deferred outflow	(2,505,000)	KWm
Totals	$ 8	$ (14)	$ (6)				

Energy swaps – The Authority has outstanding short-term energy swaps to manage the revenue stream of forecasted merchant hydro sales through 2020 and it had short-term energy swaps to manage the cost of forecasted purchased power requirements and transmission congestion for certain business customers. Net settlement payments were $27.3 million and receipts were $40.4 million in 2018 and 2017, respectively.

Energy capacity futures – The Authority has outstanding forward installed capacity futures intended to mitigate the volatility of market prices for transactions in the NYISO markets through 2020. Net settlement payments were $7.8 and receipts were $22.3 million in 2018 and 2017, respectively.

Other – The Authority from time to time enters into certain derivative instruments that may become ineffective due to changes in the hedged item. The change in fair value of such derivative instruments would be recognized as other nonoperating charges or credits in the statements of revenues, expenses and changes in net position. The fair value of these derivative instruments was insignificant to the Authority's 2018 and 2017 financial statements.

Counterparty Credit Risk

The Authority imposes thresholds, based upon agency-published credit ratings and/or analysis, for unsecured credit that can be extended to counterparties to the Authority's commodity derivative transactions. The thresholds are established in bilateral credit support agreements with counterparties and require collateralization of market values in excess of the thresholds. In addition, the Authority regularly monitors each counterparty's market-implied credit ratings and financial ratios and the Authority can restrict transactions with counterparties on the basis of that monitoring, even if the applicable unsecured credit threshold is not exceeded.

Based upon the fair values as of December 31, 2018, the Authority's individual or aggregate exposure to derivative instrument counterparty credit risk is not significant.

Other Considerations

The Authority from time to time may be exposed to any of the following risks:

Basis risk – The Authority is exposed to other basis risk in a portion of its electrical commodity-based swaps where the electrical commodity swap payments received are based upon a reference price in a NYISO Market Zone that differs from the Zone in which the hedged electric energy load is forecasted. If the correlation between these Zones' prices should fall, the Authority may be exposed to risk as a result of the hedging inability of the electrical commodity swap's to offset the delivery price of the related energy.

Rollover risk – Certain electrical commodity swaps are based upon projected future customer loads or facility operations. Beyond the terms of these swaps, the Authority is subject to the corresponding market volatilities.

Termination risk – The Authority or its counterparties may terminate a derivative instrument agreement if either party fails to perform under the terms of the agreement. The risk that such termination may occur at a time which may be disadvantageous to the Authority has been mitigated by including certain terms in these agreements by which the counterparty has the right to terminate only as a result of certain events, which includes a payment default by the Authority; other Authority defaults which remain uncured within a defined time-frame after notice; bankruptcy or insolvency of the Authority (or similar events); or a downgrade of the Authority's credit rating below investment grade. If at the time of termination the Authority has a liability position, related to its hedging derivative instruments, the Authority would be liable to the counterparty for a payment equal to the liability, subject to netting arrangements.

Market access risk – The Authority remarkets its CP Notes on a continuous basis. Should the market experience a disruption or dislocation, the Authority may be unable to remarket its Notes for a period of time. To mitigate this risk, the Authority has entered into liquidity facilities with highly rated banks to provide loans to support the CP Note programs. See Note 6 "Long-Term Debt" of the notes to the consolidated financial statements.

Dodd Frank Act

The Dodd-Frank Wall Street Reform and Consumer Protection Act (DF Act) addresses, among other things, interest rate and energy related commodity swap transactions of the type in which the Authority may engage. The requirements and processes are set forth in regulations promulgated by the Commodities Futures Trading Commission (CFTC). Pursuant to CFTC rules, the Authority, as a public entity and electric utility which uses swaps solely to manage its risk, is exempted from posting collateral beyond that of any existing credit support annexes in support of its open over-the-counter hedge positions. These CFTC rules are not anticipated to have significant impact on the Authority's liquidity and/or future risk mitigation activities. CFTC DF Act rules are still being promulgated, and the Authority will continue to monitor their potential impact on the Authority's liquidity and/or future risk mitigation activities.

(9) Fair Value Measurements

GAS No. 72 establishes a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Inputs are used in applying the various valuation techniques and take into account the assumptions that market participants use to make valuation decisions. Inputs may include price information, credit data, interest and yield curve data, and other factors specific to the financial instrument. Observable inputs reflect market data obtained from independent sources. In contrast, unobservable inputs reflect the entity's assumptions about how market participants would value the financial instrument.

The fair value hierarchy prioritizes the inputs used to measure fair value into three broad Levels (Levels 1, 2, and 3), moving from quoted prices in active markets in Level 1 to unobservable inputs in Level 3. A financial instrument's level within the fair value hierarchy (where Level 1 is the highest and Level 3 is the lowest) is based on the lowest level of any input that is significant to the fair value measurement. The categorization of a financial instrument within the hierarchy is based upon pricing transparency and is not necessarily an indication of the Authority's perceived risk of that instrument.

The following describes the hierarchy of inputs used to measure fair value and the primary valuation methodologies used for financial instruments measured at fair value on a recurring basis:

- Level 1 – quoted prices for identical assets or liabilities in active markets that a government can access at the measurement date.

- Level 2 - quoted prices other than quoted prices included within Level 1 and other inputs that are observable for an asset or liability, either directly or indirectly.

- Level 3 – pricing inputs are unobservable for the asset or liability and may rely on inputs using the best available data under the circumstances, including the government's own data.

The following describes the valuation methodologies used for assets and liabilities measured at fair value:

- U.S. government obligations – The fair value is based on institutional bond quotes and evaluations based on various market data/inputs.

- U.S. government agencies and instrumentalities – The fair value of government agencies and instrumentalities are based on institutional bond quotes and evaluations based on various market and industry inputs.
- Corporate obligations – The fair value is based on institutional bond quotes and evaluations on various market and industry inputs.

- Derivative instruments – The Authority hedges market risks through the use of derivative instruments. Derivative instruments are traded on both exchange-based and non-exchange based markets. A detail disclosure on derivatives is included in Note 8 "Risk Management and Hedging Activities" of notes to the consolidated financial statements.

    - The fair values for over-the-counter and exchange-traded energy, derivative instruments are determined by the latest end-of-trading-month forward prices over the lifetime of each outstanding derivative instrument using prices published by Platts.

    - The fair value for capacity derivative instruments is based on internal pricing models which develop a demand curve for the NYISO monthly spot market capacity auctions. Capacity reference points are observed from the NYISO filing with FERC. Peak load forecast are observed in the NYISO's Gold Book and NYPSC's publications.

The following tables summarize the Authority's assets and liabilities within the fair value hierarchy at December 31, 2018 and December 31, 2017:

	Fair Value Measurements (in millions)			
December 31, 2018	**Total**	**Level 1**	**Level 2**	**Level 3**
Assets				
Cash and cash equivalents	$ 40	$ 40	$ -	$ -
Treasury bills	10	10	-	-
Treasury notes	6	6		
Federal Agency securities:				
FNMA	169	-	169	-
FHLMC	147	-	147	-
FHLB	367	-	367	-
FFCB	160	-	160	-
Municipal Bonds	130	-	130	-
All other	4	4	-	-
Total cash and investments at fair value	1,033	60	973	-
Derivative instruments:(a)				
Energy capacity futures	1	-	1	-
Total derivative assets at fair value	1	-	1	-
Total assets at fair value	$ 1,034	$ 60	$ 974	$ -
Liabilities				
Derivative instruments:(a)				
Energy swaps	$ 7	$ -	$ 7	$ -
Total derivative liabilites at fair value	7	-	7	-
Total liabilities at fair value	$ 7	$ -	$ 7	$ -

	Fair Value Measurements (in millions)			
December 31, 2017	**Total**	**Level 1**	**Level 2**	**Level 3**
Assets				
Cash and cash equivalents	$ 63	$ 63	$ -	$ -
Federal Agency securities:				
FNMA	291	-	291	-
FHLMC	200	-	200	-
FHLB	379	-	379	-
FFCB	148	-	148	-
Municipal Bonds	102	-	102	-
All other	3	3	-	-
Total cash and investments at fair value	1,123	3	1,120	-
Total Assets at Fair Value	$ 1,186	$ 66	$ 1,120	$ -
Liabilities				
Derivative instruments:(a)				
Energy swaps	$ 2	$ -	$ 2	$ -
Energy capacity futures	6	-	-	6
Total derivative assets at fair value	8	-	2	6
Total Liabiliies at Fair Value	**$** 8	$ -	$ 2	$ 6

(a) The accounting rules for fair value measurements and disclosures require consideration of the impact of nonperformance risk (including credit risk) from a market participant perspective in the measurement of the fair value of assets and liabilities. At December 31, 2018 and 2017, the Authority determined that nonperformance risk would have no material impact on the financial position or results of operations.

(10) Pension Plans

General Information

The Authority and substantially all of the Authority's employees participate in the New York State and Local Employees' Retirement System (NYSLERS) and the Public Employees' Group Life Insurance Plan (the Plan). These are cost-sharing multiple-employer defined benefit retirement plans.

The NYSLERS uses a tier concept to distinguish membership classes (i.e. tiers 1 through 6) with tier membership based on the date an employee joins the System. The ERS is non-contributory for tiers 1 and 2 employees who joined the NYSLERS on or prior to July 27, 1976. Tiers 3 and 4 employees, who joined the NYSLERS between July 28, 1976 and December 31, 2009 and have less than ten years of service, contribute 3% of their salary. Tier

5 employees who joined the NYSLERS on or after January 1, 2010 contribute 3% of their salary during their entire length of service. Tier 6 employees who joined the NYSLERS on or after April 1, 2013 contribute 3% of their salary through March 31, 2013 and up to 6% thereafter, based on their annual salary, during their entire length of service. Members become vested in the plan after ten years of service and generally are eligible to receive benefits at age 55. The benefit is generally 1.67 percent of final average salary (FAS) times the number of years of service, for members who retire with less than 20 years of service, and 2 percent of FAS for members who retiree with 20 or more years of service. The NYSLERS provides an annual automatic cost of living adjustment to members or surviving spouses based on certain eligibility criteria.

The NYSLERS and the Plan provide retirement benefits as well as death and disability benefits. Obligations of employers and employees to contribute and benefits to employees are governed by the New York State Retirement and Social Security Law (NYSRSSL). As set forth in the NYSRSSL, the Comptroller of the State of New York (Comptroller) serves as sole trustee and administrative head of the NYSLERS and the Plan. The Comptroller adopts and may amend rules and regulations for the administration and transaction of the business of the NYSLERS and the Plan, and for the custody and control of their funds. Under the authority of the NYSRSSL, the Comptroller shall certify annually the rates expressed as proportions of payroll of members, which shall be used in computing the contributions required to be made by employers.

The Authority is required to contribute at an actuarially determined rate. The average contribution rate relative to payroll for the NYSLERS fiscal year ended March 31, 2018 was 15%. The average contribution rates relative to payroll for the NYSLERS fiscal years ending March 31, 2019 and 2020 have been set at approximately 15% for both years. The required contributions for 2018 and 2017 were $28 million and $28 million, respectively. The Authority's contributions to the NYSLERS were equal to 100% of the required contributions for each year.

The NYSLERS and the Plan issue a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained by writing to the New York State and Local Employees' Retirement System, 110 State Street, Albany, NY 12244 or may be found on the internet at www.osc.state.ny.us/retire/publications/index.php.

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At December 31, 2018, the Authority reported a liability of $23 million for its proportionate share of the net pension liability. The NYSLERS total pension liability, which was used to calculate the NYSLERS net pension liability, was determined by the NYSLERS actuarial valuation as of March 31, 2018 (measurement date). The Authority's proportion of the net pension liability was based on a projection of the Authority's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined. At March 31, 2018, the Authority's proportion percentage (0.639%) of the net pension liability changed slightly compared to its proportion measured as of March 31, 2017 (0.637%). The Canal Corporation's proportionate share was 0.08% at March 31, 2018 and March 31, 2017.

For the year ended December 31, 2018 and 2017, the Authority recognized pension expense of $28 million and $38 million, respectively. At December 31, 2018, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows	Deferred Inflows
	(In millions)	
Difference between expected and actual experience	$ 8	$ 7
Net difference between projected and actual earnings on investments	34	66
Change of assumptions	16	–
Net difference between employer contributions and proportionate share of contributions	2	3
Employer contributions subsequent to the measurement date	28	–
Total	$ 89	$ 76

The $28 million reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended December 31, 2019. The other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows (in millions):

Year ending December 31,	
2019	$ 5
2020	4
2021	(17)
2022	(7)
Total	$ (15)

Actuarial Assumptions

The NYSLERS total pension liability at March 31, 2018 was determined by using the NYSLERS actuarial valuation as of April 1, 2017 with updated procedures to roll forward the NYSLERS total pension liability to March 31, 2018. The following actuarial assumptions were used for the April 1, 2017 NYSLERS actuarial valuation:

Actuarial cost method:	Entry age normal
Inflation rate:	2.5%
Salary increases:	3.8% annually
Investment rate of return:	7.0% compounded annually, net of investment
Cost of living adjustments:	1.3 % annually

The NYSLERS Annuitant mortality rates are based on April 1, 2010 – March 31, 2015 NYSLERS experience with adjustments for mortality improvements based on the Society of Actuaries' Scale MP-2014. The actuarial assumptions used in the April 1, 2017 valuation are based on the results of an actuarial experience study for the period April 1, 2010 – March 31, 2015.

The NYSLERS long term expected rate of return on pension plan investments was determined using a building block method in which best estimate ranges of expected future real rates of return (expected returns net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of March 31, 2018 are summarized below.

Long-Term Expected Rate of Return

Asset Type	Target Allocation	Long-term Expected Real Rate
Domestic Equity	36%	4.55%
International Equity	14	6.35
Private Equity	10	7.50
Real Estate	10	5.55
Absolute Return	2	3.75
Opportunistic Portfolio	3	5.68
Real Asset	3	5.29
Bonds and Mortgages	17	1.31
Cash	1	(0.25)
Inflation Indexed Bonds	4	1.25
	100%	

Discount Rate

The NYSLERS discount rate used to calculate the total pension liability for the March 31, 2018 and 2017 measurement date was 7.0%. The projection of cash flows used to determine the discount rate assumes that contributions from plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially. Based upon the assumptions, the NYSLERS fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore the long term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of Proportionate Share of the Net Pension Liability to Changes in the Discount Rate

The following presents the Authority's proportionate share of the net pension liability calculated using the discount rate of 7.0 percent, as well as what the Authority's proportionate share of the net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.0 percent) or one percentage point higher (8.0 percent) than the current rate:

	1% Decrease	Current Assumption	1% Increase
Discount rate	6.0%	7.0%	8.0%
The Authority's proportionate share of the net pension liability (asset)	$ 176 million	$ 23 million	$(106) million

The NYSLERS actuary has not recommended any future changes to the actuarial assumptions used in the NYSLERS April 1, 2017 actuarial valuation.

(11) Postemployment Benefits Other Than Pensions, Deferred Compensation and Savings

Adoption of GASB Statement No. 75

The Authority, effective January 1, 2018, adopted Government Accounting Standard Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (GAS No. 75). GAS No. 75 refines reporting guidance established under GAS No. 45, Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions. GAS No. 75 requires governments that provide OPEB plans to their employees, to recognize their long term obligation for OPEB benefits as a liability and to more comprehensively and comparably measure the annual costs of OPEB benefits. GAS No. 75 concluded that OPEB's are a form of employee compensation and should be recognized in the same period in which the compensated service is provided by the employees. GAS No. 45 provided for an amortization for the unfunded actuarial accrued liabilities (or funding excess) of the plan over a period up to thirty years. GAS No. 75 eliminated this phase-in over a period of years. GAS No. 75 also enhances accountability and transparency through revised and new note disclosures and required supplemental information. As a result of the adoption of GAS No. 75, the Authority recorded a $(107) million adjustment to its January 1, 2018 net position reflected in its consolidated statements of revenues, expenses and changes in net position for the year ended December 31, 2018.

(a) *Power Authority*

The Power Authority provides certain health care and life insurance benefits for eligible retired employees and their dependents under a single employer noncontributory (except for certain optional life insurance coverage) health care plan (Power Authority OPEB Plan). Employees and/or their dependents become eligible for these benefits when the employee has at least 10 years of service and retires or dies while working at the Power Authority. Salaried employees hired after December 31, 2015 and IBEW employees hired after October 15, 2015, become eligible after 15 years of service. In addition, they will be required to contribute 50% of the active plan contribution.

The Power Authority has an established trust for OPEB obligations (OPEB Trust), with the trust to be held by an independent custodian. Plan members are not required to contribute to the OPEB Trust. The OPEB Trust is set-up to pay for the exclusive benefit of the OPEB Trust. The funding of the Power Authority's OPEB Trust is at the discretion of management as approved by the Board of Trustees. The Power Authority made contributions on a pay-as you go basis in 2018 and 2017 and did not contribute any amount beyond these contributions to the OPEB Trust.

As of the December 31, 2017 actuarial valuation, the following current and former employees were covered by the benefit terms, under the Plan. It is assumed that 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.

Active employees	1,710
Inactive employees and beneficiaries, receiving and or entitled to benefits	2,673
Total	4,383

OPEB Expense and Deferred Outflows of Resources and Deferred inflows of Resources Related to OPEB

For the year ended December 31, 2018, the Authority recognized OPEB expense of $2.5 million. At December 31, 2018, the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
	(In millions)	
Differences between expected and actual experience	$ –	$ –
Changes in assumptions	–	–
Differences between projected & actual investment earnings	–	41
Employer contributions subsequent to the measurement date	25	–
Total	$ 25	$ 41

The $25 million reported as deferred outflows of resources related to OPEB resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the total OPEB liability in the following year. The other amount reported as deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year ending December 31,	(In millions)
2019	$ 10
2020	10
2021	10
2022	11
	$ 41

Net OPEB Liability

The Authority's net OPEB liability (asset) was measured as of December 31, 2017, and the total OPEB liability used to calculate the net OPEB liability (asset) was determined by an actuarial valuation as of that date. The Authority's net OPEB asset of $25 million and $43 million is recorded in miscellaneous receivables and in other long-term assets, respectively, in the Authority's consolidated statements of net position.

The following table shows the components of the Authority's changes in its total OPEB liability, the OPEB fiduciary net position, and the net OPEB (asset) during the measurement period ending December 31, 2017.

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB (Asset)
	Increase (Decrease) (In millions)		
Balance – beginning of year	$ 509	$ 517	$ (8)
Service Cost	12	–	12
Interest	36	–	36
Differences between expected and actual experience	–	–	–
Contributions – employer	–	22	(22)
Net investment income	–	88	(88)
Benefit payments	(22)	(22)	–
Administrative expense	–	(2)	(2)
Net changes	26	86	(60)
Balance – end of year	$ 535	$ 603	$ (68)

The components of the net OPEB asset at December 31, 2018, were as follows (in millions):

Total OPEB liability	$ 560
Plan fiduciary net position	(565)
Net OPEB (Asset)	$ (5)
Plan fiduciary net position as a percentage of the total OPEB liability	101%

Actuarial Assumptions

The total OPEB liability in the December 31, 2017 actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Investment rate of return:	7.00%
Inflation:	2.50%
Healthcare Cost Trend Rates:	Pre-Medicare - 8.0 percent for 2018, decreasing 0.5 percent per year to an ultimate rate of 4.5 percent for 2025 and later years. Post-Medicare - 5.1 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025. Prescription drugs (Rx) – 9.0 999percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025.
Salary increases:	Varies by service, average of 4.5 percent for 1-5 years of service, 3.8 percent for 6-10 years of service, 3.3 percent for 11-15 years of service, and 3.0 percent for 20 years or more of service.
Mortality:	Gender distinct pre and post-commencement rates based on experience under the New York State Local Retirement System. Base rates reflect a 2014 base year, and the MP-2017 Projection Scale is applied to the base rates.

Long-Term Expected Rate of Return

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best estimate ranges of expected future real rates (expected returns net of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Type	Target Allocation	Long-term Expected Real Rate of Return
Domestic Equity	37 %	5.3 %
International Equity	24	7.9
Fixed Income	30	2.4
Real Estate	6	6.5
Cash	3	2.0
Total	100 %	

Rate of Return

For the year ended December 31, 2018, the annual money-weighted rate of return on investments, net of investment expense, was (6.30) percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Discount Rate

The discount rate used to calculate the total OPEB liability was 7.0%, the long-term rate of return on the OPEB Trust assets. The projection of cash flows used to determine the discount rate assumed that NYPA will contribute at a rate equal to the average of contributions made over the most recent five-year period (2013 through 2017), and that contributions apply first to service cost of current and future plan members and then to past service costs. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected OPEB payments for current active and inactive employees for the foreseeable future.

Sensitivity of the Net OPEB (Asset) to Changes in the Discount Rate

Changes in the discount rate affect the measurement of the total OPEB liability. The following table depicts the Authority's Net OPEB liability / (asset), as well as the sensitivity of using a discount rate that is 1 percentage point lower (6.0 percent) or 1 percentage point higher (8.0 percent) than the current discount rate:

	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Net OPEB Liability / (Asset)	$ 8 million	$ (68) million	$ (129) million

Sensitivity of the Net OPEB Liability / (Asset) to Changes in the Healthcare Cost Trend Rates

Changes in the healthcare cost trends affect the measurement of the total OPEB liability. The table below shows the sensitivity of the net OPEB liability / (asset) to the changes in the healthcare cost trends:

	1% Decrease	Current Healthcare Trend Rate	1% Increase
Net OPEB Liability / (Asset)	$ (137) million	$ (68) million	$ 26 million

(b) Canal Corporation

The Canal Corporation provides health care and death benefit for eligible retired employees. Substantially all employees may become eligible for these benefits if they reach normal retirement age while working for the Canal Corporation. The Canal Corporation participates, pursuant to the provision of Section 163(4) of the New York State Civil Service Law, in the New York State health Insurance Program (NYSHIP). NYSHIP does not issue a standalone financial report since there are no assets legally segregated for the sole purpose of paying benefits under the plan.

To be eligible an employee must (1) retiree as a member of Canal Corporation, or be at least 55 years old at time of termination; (2) be enrolled in the NYSHIP on date of retirement; and (3) complete at least 5 years of service for the retiree and dependent to have coverage while the employee is living. Ten years of service are needed for continued dependent coverage upon death of the employee. The Plan currently pays a portion of the medical premium cost for retired employees and covered dependents. Additionally, the Plan reimburses retirees and covered dependents for their Medicare Part B premiums.

As of the December 31, 2017 actuarial valuation, the following current and former employees were covered by the benefit terms, under the Plan. It is assumed that 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.

Active employees, including opt-out (actives not in medical plan)	448
Inactive employees and beneficiaries, receiving and or entitled to benefits	435
Total	883

OPEB Expense and Deferred Outflows of Resources and Deferred inflows of Resources Related to OPEB

The Authority's consolidated financial statements include the Canal Corporation's OPEB costs of $19.0 million, for the year ended December 31, 2018. In addition, the Authority's consolidated statements include the Canal Corporations deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
	(in millions)	
Differences between expected & actual experience	$ –	$ –
Changes in assumptions	16	–
Employer contributions subsequent to the measurement date	6	–
Total	$ 22	$ –

The $6 million reported as deferred outflows of resources related to OPEB resulting from the Canal Corporation's contributions subsequent to the measurement date will be recognized as a reduction of the total OPEB liability in the following year. The other amount reported as deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year ending December 31,	(in millions)
2019	$ 4
2020	4
2021	4
2022	4
	$ 16

Total OPEB Liability

The Canal Corporation's total OPEB liability was measured as of December 31, 2017, using an actuarial valuation as of that date. The Canal Corporation's total OPEB liability is recorded in the Authority's consolidated statements of net position in other long-term liabilities in the amount of $234 million.

The following table shows the components of the Canal Corporation's changes in its total OPEB liability during the measurement period ending December 31, 2017.

	Total OPEB Liability Increase (Decrease) (in millions)
Balance – beginning of year	$ 205
Changes for the year:	
Service cost	7
Interest	8
Changes of benefit terms	–
Differences between expected & actual experience	–
Changes of assumptions	20
Benefit payments	(6)
Net Changes in Total OPEB Liability	29
Balance – end of year	$ 234

Actuarial Assumptions

The total OPEB liability in the December 31, 2017 actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Inflation:	2.50%
Healthcare Cost Trend Rates:	Pre-Medicare - 5.75 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025 and later years. Post-Medicare - 5.1 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025. Prescription drugs (Rx) – 9.0 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025.
Salary increases:	Varies by service, average of 4.5 percent for 1-5 years of service, 3.8 percent for 6-10 years of service, 3.3 percent for 11-15 years of service, and 3.0 percent for 20 years or more of service.
Mortality:	Gender distinct pre and post-commencement rates based on experience under the New York State Local Retirement System. Base rates reflect a 2014 base year, and the MP-2017 Projection Scale is applied to the base rates.

Discount Rate

The discount rate at the measurement date used to calculate the total OPEB liability is 3.16%. The discount rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 29, 2017. Benefit payments are funded on a pay-as-you go basis. The discount rate at the previous measurement date is 3.71% based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 30, 2016.

Sensitivity of the Total OPEB Liability to Changes in the Discount Rate

Changes in the discount rate affect the measurement of the total OPEB liability. The following table depicts the Canal Corporation' Total OPEB liability, as well as the sensitivity of using a discount rate that is 1 percentage point lower (2.16 percent) or 1 percentage point higher (4.16 percent) than the current discount rate:

	1% Decrease (2.16%)	Current Discount Rate (3.16%)	1% Increase (4.16%)
Total OPEB Liability	$ 278 million	$ 234 million	$ 199 million

Sensitivity of the Total OPEB Liability to Changes in the Healthcare Cost Trend Rates

Changes in the healthcare cost trends affect the measurement of the total OPEB liability. The table below shows the sensitivity of the total OPEB liability to the changes in the healthcare cost trends:

	1% Decrease	Current Healthcare Trend Rate	1% Increase
Total OPEB Liability	$ 191 million	$ 234 million	$ 295 million

(c) Deferred Compensation and Savings Plans

The Power Authority offers union employees and salaried employees a deferred compensation plan created in accordance with Internal Revenue Code, Section 457. This plan permits participants to defer a portion of their salaries until future years. Amounts deferred under the plan are not available to employees or beneficiaries until termination, retirement, death or unforeseeable emergency.

The Power Authority also offers salaried employees a savings plan created in accordance with Internal Revenue Code, Section 401(k). This plan also permits participants to defer a portion of their salaries. The Power Authority matches contributions of employees up to limits specified in the plan. Matching annual contributions were approximately $3.7 million and $3.3 million for 2018 and 2017, respectively.

Both the deferred compensation plan and the savings plan have a loan feature.

Independent trustees are responsible for the administration of the 457 and 401(k) plan assets under the direction of a committee of union representatives and nonunion employees and a committee of nonunion employees, respectively. Various investment options are offered to employees in each plan. Employees are responsible for making the investment decisions relating to their savings plans.

(12) Nuclear Plant Divestiture and Related Matters

(a) *Nuclear Plant Divestiture*

On November 21, 2000, the Power Authority sold the James A. Fitzpatrick nuclear plant (JAF) and the Indian Point 3 nuclear plant (IP3) to two subsidiaries of Entergy Corporation (collectively, Entergy or the Entergy Subsidiaries). On March 31, 2017, Entergy transferred JAF to Exelon Generation Company, LLC (Exelon).

(b) *Nuclear Fuel Disposal*

In accordance with the Nuclear Waste Policy Act of 1982, in June 1983, the Power Authority entered into a contract with the U.S. Department of Energy (DOE) under which DOE, commencing not later than January 31, 1998, would accept and dispose of spent nuclear fuel. In conjunction with the sale of the nuclear plants, the Power Authority's contract with the DOE was assigned to Entergy. Entergy assigned the portion of the pre-1983 spent fuel obligation applicable to JAF to Exelon in connection with the sale of JAF to Exelon. The Power Authority remains liable for the pre-1983 spent fuel obligation to Exelon for JAF and to Entergy for IP3 (see Note 13(e) "Commitments and Contingencies – New York State Budget and Other Matters" relating to a temporary transfer of such funds to the State). As of December 31, 2018 and 2017, the pre-1983 spent fuel liability for JAF and IP3 totaled $223 million and $219 million, respectively.

(13) Commitments and Contingencies

(a) *Power Programs*

Recharge New York Power Program

Chapter 60 (Part CC) of the Laws of 2011 (Chapter 60) established the "Recharge New York Power Program" (RNYPP), administered by the Authority, which has as its central benefit up to 910 MW of low cost power comprised of up to 455 MW of hydropower from the Niagara and St. Lawrence-FDR Projects and up to 455 MW of other power procured by the Authority from other sources. The 910 MW of power is available for allocation as provided by Chapter 60 to eligible new and existing businesses and not-for-profit corporations under contracts of up to seven years. RNYPP was effective beginning July 1, 2012.

The RNYPP replaced two other programs, the Power for Jobs (PFJ) and Energy Cost Savings Benefit (ECSB) Programs, which had extended benefits of low-cost power to certain businesses, small businesses and not-for-profit organizations. Those PFJ and ECSB Program customers who were in substantial compliance with contractual commitments under the PFJ and ECSB Programs and who applied but did not receive RNYPP allocations are eligible to apply for transitional electricity discounts, as provided for in Chapter 60. This transitional electricity discounts program provided for declining levels of discounts through June 30, 2016, when the program terminated, if payment of such discounts was deemed feasible and advisable by the Authority's Trustees. As of December 31, 2018, the Authority's Trustees have authorized transitional electricity discount payments of up to $20 million for the period from July 1, 2012 and June 30, 2016. As of December 31, 2018, approximately $12 million of such discounts have been paid.

The hydropower used for the RNYPP was power formerly used to provide low-cost electricity to domestic and rural customers of the three private utilities that serve upstate New York. To mitigate the impacts from the redeployment of this hydropower for the RNYPP, Chapter 60 created a "Residential Consumer Discount Program" (RCDP). The RCDP authorizes the Authority, as deemed feasible and advisable by its Trustees, to provide annual funding of $100 million for the first three years following withdrawal of the hydropower from the residential and farm customers, $70 million for the fourth year, $50 million for the fifth year, and $30 million each year thereafter, for the purpose of funding a residential consumer discount program for those customers that had formerly received the hydropower that is utilized in the RNYPP. Chapter 60 further authorizes the Authority, as deemed feasible and advisable by the Trustees, to use revenues from the sales of hydroelectric power, and such other funds of the Authority, as deemed feasible and advisable by the Trustees, to fund the RCDP. The Authority's Trustees have authorized the release of a total $534 million for the period from August 2011 to December 2018 in support of the RCDP. The Authority supplemented the market revenues through the use of internal funds, from the August 2011 start of the program through December 31, 2018, totaling cumulatively $76 million. Operations and maintenance expenses included $30 million of residential consumer discounts in each years ended December 31, 2018 and 2017.

Western New York Power Proceeds Allocation Act

Effective March 30, 2012, Chapter 58 (Part GG) of the Laws of 2012 (Chapter 58) created the Western New York Power Proceeds Act (WNYPPA). The WNYPPA authorizes the Authority, as deemed feasible and advisable by the Trustees, to deposit net earnings from the sale of unallocated Expansion Power and Replacement Power from the Authority's Niagara project into an account administered by the Authority known as the Western New York Economic Development Fund (WNYED Fund). Net earnings are defined as any excess revenues earned from such power sold into the wholesale market over the revenues that would have been received had the power been sold at the Expansion Power and Replacement Power rates. Proceeds from the Fund may be used to support eligible projects undertaken within a 30-mile radius of the Niagara power project that satisfy applicable criteria. Chapter 58 also establishes a five-member Western New York Power Allocations Board, which is appointed by the Governor. Chapter 58 also repealed Chapter 436 of the Laws of 2010 which had created a similar program that could not be effectively implemented.

The Authority's Trustees have approved the release of up to $63 million in net earnings, calculated for the period August 30, 2010 through December 31, 2018 as provided in the legislation, for deposit into the Fund. As of December 31, 2018, $42 million has been deposited into the Fund. As of December 31, 2018, the Authority has approved awards of Fund money totaling approximately $37 million to businesses that have proposed eligible projects and has made payments totaling $31 million to such businesses. Payment of these awards is contingent upon the execution of acceptable contracts between the Authority and individual awardees.

Northern New York Power Proceeds Allocation Act

Chapter 545 of the Laws of 2014 enacted the "Northern New York Power Proceeds Act" (NNYPPA). The NNYPPA authorizes the Authority, as deemed feasible and advisable by the Trustees, to deposit "net earnings" from the sale of unallocated St. Lawrence County Economic Development Power (SLCEDP) by the Authority in the wholesale energy market into an account the Authority would administer known as the Northern New York Economic Development Fund (NNYED Fund), and to make awards to eligible applicants that propose eligible projects that satisfy applicable criteria. The NNYPPA also establishes a five-member Northern New York Power Allocations Board appointed by the Governor to review applications seeking NNY Fund benefits and to make recommendations to the Authority concerning benefits awards.

SLCEDP consists of up to 20 MW of hydropower from the Authority's St. Lawrence-FDR Power Project which the Authority has made available for sale to the Town of Massena Electric Department ("MED") for MED to sub-allocate for economic development purposes in accordance with a contract between the parties entered into in 2012 (Authority-MED Contract). The NNYPPA defines "net earnings" as the aggregate excess of revenues received by the Authority from the sale of energy associated with SLCEDP by the Authority in the wholesale energy market over what revenues would have been received had such energy been sold to MED on a firm basis under the terms of the Authority-MED contract. For the first 5 years after enactment, the amount of SLCEDP the Authority could use to generate net earnings may not exceed the lesser of 20 MW or the amount of SLCEDP that has not been allocated by the Authority pursuant to the Authority-MED contract. Thereafter, the amount of SLCEDP that the Authority could use for such purpose may not exceed the lesser of 10 MW or the amount of SLCEDP that has not been allocated.

As of December 31, 2018, the Authority's Trustees approved the release of funds, of up to $12 million, into the NNYED Fund representing "net earnings" from the sale of unallocated SLCEDP into the wholesale energy market for the period December 29, 2014 through December 31, 2018. As of December 31, 2018, approximately $4 million has been deposited into the Fund. As of December 31, 2018, the Authority has approved awards of NNYED Fund money totaling approximately $2 million to businesses that have proposed eligible projects. Payment of approved awards of the NNYED Fund money is contingent upon the execution of acceptable contracts between the Authority and individual awardees.

(b) *Governmental Customers in the New York City Metropolitan Area*

In 2005, the Authority and its eleven NYC Governmental Customers, including the Metropolitan Transportation Authority, the City of New York, the Port Authority of New York and New Jersey (Port Authority), the New York City Housing Authority, and the New York State Office of General Services, entered into long-term supplemental electricity supply agreements (2005 LTAs) with a term through December 31, 2017. Under the 2005 LTAs, the NYC Governmental Customers agreed to purchase their electricity from the Authority through December 31, 2017.

Under the 2005 LTAs, the Authority and the NYC Governmental Customers modified rates through an annual process based on cost of service principles.

In 2018 and 2019, the Authority executed new supplemental long-term electricity supply agreements (Supplemental LTAs) with its eleven NYC Governmental Customers. Under the Supplemental LTAs, the NYC Governmental Customers agreed to purchase their electricity from the Authority through December 31, 2027, with the NYC Governmental Customers having the right to (1) terminate at any time upon at least 12 months' notice or (2) terminate effective December 31, 2022 upon at least 6 months' notice. Under the Supplemental LTAs, fixed costs were set for each customer and are subject to renegotiation in 2022. Variable costs, including fuel, purchased power and NYISO related costs, will be passed through to each customer by an energy charge adjustment.

The Authority's other Southeastern New York (SENY) Governmental Customers are Westchester County and numerous municipalities, school districts, and other public agencies located in Westchester County (collectively, the "Westchester Governmental Customers"). The Authority has entered a supplemental electricity supply agreement with all 103 Westchester Governmental Customers. Among other things, under the agreement, an energy charge adjustment mechanism is applicable, and customers are allowed to partially terminate service from the Authority on at least two months' notice prior to the start of the NYISO capability periods. Full termination is allowed on at least one year's notice, effective no sooner than January 1 following the one year notice.

Astoria Energy II

In 2008, the Authority entered a long-term electricity supply contract with Astoria Energy II LLC for the purchase of the output of Astoria Energy II, a new 550-MW plant, which was constructed and entered into commercial operation on July 1, 2011 in Astoria, Queens. The delivery period under the contract is through 2031. The costs associated with the contract will be borne by the NYC Governmental Customers. The Authority is accounting for and reporting this lease transaction as a capital lease in the amount of $1.114 billion as of December 31, 2018, which reflects the present value of the monthly portion of lease payments allocated to real and personal property. The balance of the monthly lease payments represents the portion of the monthly lease payment allocated to operations and maintenance costs which are recorded monthly. Fuel for the plant is provided by the Authority and the costs thereof are being recovered from the NYC Governmental Customers.

HTP Transmission Line

In 2011, the Trustees authorized Authority staff to enter into an agreement with Hudson Transmission Partners, LLC (HTP) for the purchase of capacity to meet the long-term requirements of the Authority's NYC Governmental Customers and to improve the transmission infrastructure serving New York City through the transmission rights associated with HTP's transmission line (the Line) extending from Bergen

County, New Jersey in the PJM Interconnection, LLC (PJM) transmission system, to Consolidated Edison Company of New York, Inc.'s (Con Edison) West 49th Street substation in the NYISO. Specifically, the Authority executed a Firm Transmission Capacity Purchase Agreement (FTCPA) with HTP under which the Authority gained the entitlement to 75% of the Line's 660 MW capacity, or 495 MW, for 20 years. The Authority's capacity payment obligations under the FTCPA began upon the Line's commencement of commercial operation, which occurred on June 3, 2013. Also upon commercial operation, the FTCPA obligates the Authority to reimburse HTP for the cost of interconnection and transmission upgrades in New York and New Jersey associated with the Line and to pay for all remaining upgrade costs as they are incurred. Such interconnection and transmission upgrades have been completed. As of December 31, 2018, the Authority paid approximately $334.9 million of such costs related to the interconnection and transmission upgrades. The Authority's obligations under the FTCPA also include payment of the Regional Transmission Enhancement Plan (RTEP) charges allocated to HTP in accordance with the PJM tariff. Such RTEP costs are significant and are discussed below.

It is estimated that the revenues derived from the Authority's rights under the FTCPA will not be sufficient to fully cover the Authority's costs under the FTCPA during the 20-year term of the FTCPA. In December 2018, the Authority estimated that its under-recovery of costs under the FTCPA could be in the range of approximately $89 million to $95 million per year over the period from 2019-2022. The under-recovery estimates were based on projections of the capacity payment obligations, the costs of interconnection and transmission upgrades, and energy revenues.

PJM's RTEP cost allocation methodology for certain upgrades, such as the Bergen-Linden Corridor (BLC) project built by Public Service Electric & Gas Company (PSE&G) in New Jersey, is being challenged at FERC in numerous proceedings by Con Edison, the Authority, HTP and other parties on the grounds that PJM has disproportionately allocated the costs of those projects to those parties. In a separate FERC proceeding, the Authority challenged the RTEP share of the BLC project costs allocated to HTP that were effective May 1, 2017 as a result of Con Edison's termination of its PJM firm transmission rights. The cost allocations shifted approximately $533 million in RTEP charges for the BLC project that had previously been allocated to Con Edison to HTP. Such costs are in addition to the $111 million in RTEP charges for the BLC project that had been previously allocated to HTP. RTEP costs relating to the BLC project would be paid over a number of years after construction commenced in 2017. Construction of the BLC project was completed in 2018.

From June 2013 through December 2018, the Authority has paid approximately $93 million in RTEP charges for the Line, including the BLC project and pre-2013 RTEP project allocations described below. In addition, the Authority expects to pay an additional approximately $3.8 million through July 2019 for the pre-2013 RTEP projects allocations described below. The pre-2013 RTEP project allocations arise from a contested settlement that FERC approved in May 2018 over the objections of the Authority and HTP.

In July 2017, the Authority, together with HTP, sought to relinquish the Firm Transmission Withdrawal Rights ("FTWRs") held by HTP on the Line. HTP's FTWRs formed the basis for the allocation of RTEP costs to HTP, which are the Authority's obligation under the FTCPA. In the resulting FERC order dated December 15, 2017, FERC determined that HTP may relinquish its firm rights effective immediately. Accordingly, when PJM's annual RTEP cost allocation update for 2018 was filed, the Authority's obligation to pay RTEP charges related to the BLC project was 100% eliminated for 2018 and beyond. FERC issued its March 5, 2018 order endorsing PJM's new cost allocation. Both the December 15, 2017 and the March 5, 2018 FERC orders are pending rehearing. On July 19, 2018, FERC established procedures to allow parties to resolve by settlement the continuing disputes in these and several other ongoing RTEP proceedings that relate to the allocation of BLC project costs. Settlement efforts commenced in August 2018 and those efforts are continuing. If no settlement is reached, FERC will need to issue orders deciding these proceedings.

On March 31, 2017, the Authority and HTP executed an amendment to the FTCPA. In exchange for the Authority extending the cure period for HTP to replace underwater cables that have been subject to failure and which have resulted in the Line being out of service, under the amended FTCPA the Authority received HTP's assurances to pursue certain remedies at FERC concerning the termination of the 320 MW of FTWRs in order to eliminate RTEP assessments and a guarantee that if PJM RTEP assessments cannot be eliminated despite HTP's efforts to terminate the FTWRs, that HTP will cancel its interconnection service agreement ("ISA") to physically disconnect the Line from the PJM transmission system, causing termination of all RTEP allocations. The FERC orders from December 15, 2017 and March 5, 2018 have fulfilled the goal of eliminating the RTEP assessments associated with the BLC project (though subject to further legal processes as described above). In addition, the Authority and HTP agreed to: (a) based upon RTEP costs already paid, increase, by $40 million, the size of the tracking account that is used to offset the cost to purchase the Line at the end of the FTCPA term, at the Authority's option, and (b) shared rights to direct power on the Line in the opposite direction of its current flow should market conditions present revenue opportunities for selling capacity and energy from New York to New Jersey. In November 2017, HTP completed the cable replacement and, pursuant to the March 31, 2017 amendments, the Authority increased the leased portion of the Line's capacity from 75% to 87.12%, bringing the total leased capacity from 495 MW to 575 MW at a monthly capacity charge rate that represents a decrease in the unit price (on a $/MW-month basis) paid to HTP in the original FTCPA. The Authority estimates that increasing the leased portion of the line to 87.12% will increase its capacity payments by approximately $6 million to $9 million per year over the term of the FTCPA.

(c) *Small, Clean Power Plants*

To meet capacity deficiencies and ongoing load requirements in the New York City metropolitan area that could also adversely affect the statewide electric pool, the Authority has in operation, the Small, Clean Power Plants (SCPPs), consisting of eleven natural-gas-fueled combustion-turbine electric units, each having a nameplate rating of 47 MW at six sites in New York City and one site in the service region of LIPA.

As a result of the settlement of litigation relating to certain of the SCPPs, the Authority has agreed under the settlement agreement to cease operations at one of the SCPP sites, which houses two units, under certain conditions and if the Mayor of New York City directs such cessation. No such cessation has occurred.

(d) *Legal and Related Matters*

St. Regis Litigation

In 1982 and again in 1989, several groups of Mohawk Indians, including a Canadian Mohawk tribe, filed lawsuits (the St. Regis litigation) against the State, the Governor of the State, St. Lawrence and Franklin counties, the St. Lawrence Seaway Development Corporation, the Authority and others, claiming ownership to certain lands in St. Lawrence and Franklin counties and to Barnhart, Long Sault and Croil islands. These islands are within the boundary of the Authority's St. Lawrence-FDR Project and Barnhart Island is the location of significant Project facilities. Settlement discussions were held periodically between 1992 and 1998. In 1998, the Federal government intervened on behalf of all Mohawk plaintiffs.

The parties agreed to a land claim settlement, dated February 1, 2005, which if implemented would have included, among other things, the payment by the Authority of $2 million a year for 35 years to the tribal plaintiffs and the provision of up to 9 MW of low cost Authority power for use on the reservation. The legislation required to effectuate the settlement was never enacted and the litigation continued.

In 2013, all claims against the Authority were dismissed and the lawsuit against the Authority was concluded. On May 28, 2014, the State of New York, the St. Regis Mohawk Tribe, St. Lawrence County and the Authority executed a Memorandum of Understanding (St. Regis MOU) that outlined a framework for the possible settlement of all the St. Regis land claims. In the St. Regis MOU, the Authority endorses a negotiated settlement that, among other terms and conditions, would require the Authority to pay the Tribe $2 million a year for 35 years and provide up to 9 MW of its hydropower at preference power rates to serve the needs of the Tribe's Reservation. The St. Regis MOU would require an Act of Congress to forever extinguish all Mohawk land claims prior to such a settlement becoming effective.

Any settlement agreement, including the terms endorsed in the St. Regis MOU, would in the first instance need to be negotiated and agreed upon by all parties to the St. Regis litigation, including parties that did not execute the St. Regis MOU, such as the two other Mohawk groups, the federal government and Franklin County. In addition, before any settlement becomes effective and the Authority is obligated to make any payments contemplated by the St. Regis MOU, federal and state legislation must be enacted which approves the settlement and extinguishes all Mohawk land claims.

Auer. V. NYPA

The surviving plaintiff of a case known as Auer I, which resulted in a 1984 order issued by Judge Tenney of the New York State Supreme Court, Oswego County, brought an enforcement action seeking to enforce the 1984 order. The 1984 order related to the manner in which the Authority computes its rates for its preference power customers. By statute, those rates must be as low as possible, which essentially means the Authority must sell the power at its cost. The plaintiff contends that the Authority's rate-making methodology does not adhere to the statutory scheme nor spirit of the Auer I order and subsequent settlement. The plaintiff is seeking monetary damages of an unspecified amount. The plaintiff has also made a motion to add certain other residential customers of certain New York municipal electric systems to the action as additional plaintiffs.

The Authority successfully made a motion to transfer the venue from New York State Supreme Court in Oswego County to the same court in Albany County. The Authority has a motion pending in Albany County to dismiss the action on multiple grounds. Plaintiff has appealed the Oswego Judge's decision to transfer venue and is seeking a stay of the proceedings while the motion is pending.

The Authority disputes the plaintiff's rationale and will defend the claim on both substantive and procedural grounds.

Long Island Sound Cable Project

In January 2014, one of the Sound Cable Project underwater cables was severely impacted by an anchor and /or anchor chain dropped by one or more vessels, causing the entire electrical circuit to fail and the circuit to trip. As a result of the impact to the cable, dielectric fluid was released into Long Island Sound. The Authority incurred approximately $35 million in costs arising from this incident. At December 31, 2018 and December 31, 2017, the consolidated statements of net position includes approximately $18 million and $17 million, respectively, in other long-term assets, reflecting the cost of damages net of insurance recoveries. The Authority believes that it will be able to recover the full amount of its damages through legal proceedings, insurance coverage and contractual obligations.

Helicopter Incident Near the Authority's Transmission Lines in Beekmantown, New York

The Authority contracted with Northline Utilities, LLC ("Northline") to install fiber optic ground wire along the Authority's transmission system. Thereafter, Northline entered into a contract with Catalyst Aviation, LLC ("Catalyst") for helicopter services. On October 30, 2018, a Catalyst helicopter was destroyed when it collided with a wooden utility pole and power lines near Beekmantown, New York. Members of the helicopter crew were injured, and two members of that crew died as a result of their injuries. To date, the Authority has received two notices of claim arising out of this incident. The Authority has demanded that

Northline and its insurer defend and indemnify the Authority against any litigation that may arise from the notices of claim or this incident.

Other Actions or Claims

In addition to the matters described above, other actions or claims against the Authority are pending for the taking of property in connection with its projects, for negligence, for personal injury (including asbestos-related injuries), in contract, and for environmental, employment and other matters. All of such other actions or claims will, in the opinion of the Authority, be disposed of within the amounts of the Authority's insurance coverage, where applicable, or the amount which the Authority has available therefore and without any material adverse effect on the business of the Authority. While the Authority cannot presently predict the outcome of the matters described above or any related litigation, the Authority believes that it has meritorious defenses and positions with respect thereto. However, adverse decisions of a certain type in the matters discussed above could adversely affect Authority operations and revenues.

(e) *New York State Budget and Other Matters*

Section 1011 of the Power Authority Act (Act) constitutes a pledge of the State to holders of Authority obligations not to limit or alter the rights vested in the Authority by the Act until such obligations together with the interest thereon are fully met and discharged or unless adequate provision is made by law for the protection of the holders thereof. Bills are periodically introduced into the State Legislature, which propose to limit or restrict the powers, rights and exemption from regulation that the Authority currently possesses under the Act and other applicable law or otherwise would affect the Authority's financial condition or its ability to conduct its business, activities, or operations, in the manner presently conducted or contemplated by the Authority. It is not possible to predict whether any such bills or other bills of a similar type which may be introduced in the future will be enacted.

In addition, from time to time, legislation is enacted into New York law that purports to impose financial and other obligations on the Authority, either individually or along with other public authorities or governmental entities. The applicability of such provisions to the Authority would depend upon, among other things, the nature of the obligations imposed and the applicability of the pledge of the State set forth in Section 1011 of the Act to such provisions. There can be no assurance that in the case of each such provision, the Authority will be immune from the financial obligations imposed by such provision. Examples of such legislation affecting only the Authority include legislation, discussed below and elsewhere herein, relating to the Authority's voluntary contributions to the State, the Authority's temporary transfer of funds to the State, and contributions and transfers to fund temporary and permanent programs administered by the Authority and other State entities.

Budget

The Authority is requested, from time to time, to make financial contributions or transfers of funds to the State. Any such contribution or transfer of funds must (i) be authorized by law (typically, legislation enacted in connection with the State budget), and (ii) satisfy the requirements of the Bond Resolution. The Bond Resolution requirements to withdraw moneys "free and clear of the lien and pledge created by the (Bond) Resolution" are as follows: (1) such withdrawal must be for a "lawful corporate purpose as determined by the Authority," and (2) the Authority must determine "taking into account, among other considerations, anticipated future receipt of Revenues or other moneys constituting part of the Trust Estate, that the funds to be so withdrawn are not needed" for (a) payment of reasonable and necessary operating expenses, (b) an Operating Fund reserve for working capital, emergency repairs or replacements, major renewals, or for retirement from service, decommissioning or disposal of facilities, (c) payment of, or accumulation of a reserve for payment of, interest and principal on senior debt, or (d) payment of interest and principal on subordinate debt.

In May 2011, the Authority's Trustees adopted a policy statement (Policy Statement) which relates to, among other things, voluntary contributions, transfers, or other payments to the State by the Authority after that date. The Policy Statement provides, among other things, that in deciding whether to make such contributions, transfers, or payments, the Authority shall use as a reference point the maintenance of a debt service coverage ratio of at least 2.0 (this reference point should not be interpreted as a covenant to maintain any particular coverage ratio), in addition to making the other determinations required by the Bond Resolution. The Policy Statement may at any time be modified or eliminated at the discretion of the Authority's Trustees.

The 2018-2019 Enacted State Budget contains a provision authorizing the Authority as deemed "feasible and advisable by its trustees" to transfer to the State treasury to the credit of the general fund $20 million for the State fiscal year commencing April 1, 2018, the proceeds of which will be utilized to support energy-related State activities.

The 2019-2020 Executive Budget Proposal contains a provision authorizing the Authority as deemed "feasible and advisable by its trustees" to transfer to the State treasury to the credit of the general fund $20 million for the State fiscal year commencing April 1, 2019, the proceeds of which will be utilized to support energy-related State activities.

The Authority cannot predict what additional voluntary contributions or transfers to the State may be authorized by law in the future nor whether its Trustees will authorize such voluntary contributions or transfers.

Temporary Asset Transfers

In addition to the authorization for voluntary contributions, as a result of budget legislation enacted in February 2009, the Authority was requested to provide temporary asset transfers to the State of funds held in reserves. Pursuant to the terms of a Memorandum of Understanding dated February 2009 (MOU) between the State, acting by and through the State's Director of Budget, and the Authority, the Authority agreed to transfer approximately $215 million associated with its Spent Nuclear Fuel Reserves (Asset B) by March 27, 2009. The Spent Nuclear Fuel Reserves are funds that had been set aside for payment to the federal government sometime in the future when the federal government accepts the spent nuclear fuel for permanent storage (see Note [J] – "Nuclear Plant Divestiture and Related Matters"). The MOU provides for the return of these funds to the Authority, subject to appropriation by the State Legislature and the other conditions described below, at the earlier of the Authority's payment obligation related to the transfer and disposal of the spent nuclear fuel or September 30, 2017. Further, the MOU provides for the Authority to transfer within 180 days of the enactment of the 2009-2010 State budget $103 million of funds set aside for future construction projects (Asset A), which amounts would be returned to the Authority, subject to appropriation by the State Legislature and the other conditions described below, at the earlier of when required for operating, capital or debt service obligations of the Authority or September 30, 2014. The MOU provides that the obligation of the State to return all or a portion of an amount equal to the moneys transferred by the Authority to the State is subject to annual appropriation by the State Legislature. Further, the MOU provides that as a condition to any such appropriation for the return of the moneys earlier than September 30, 2017 for the Spent Nuclear Fuel Reserves and earlier than September 30, 2014 for the construction projects, the Authority must certify that the monies available to the Authority are not sufficient to satisfy the purposes for which the reserves, which are the source of the funds for the transfer, were established.

In February 2009, the Authority's Trustees authorized the execution of the MOU relating to the temporary transfers of Asset B ($215 million) and Asset A ($103 million) and such transfers were made in March 2009 and September 2009, respectively, following Trustee approval.

In lieu of interest payments, the State has waived certain future payments from the Authority to the State. The waived payments include the Authority's obligation to pay until September 30, 2017 the amounts to which the State is entitled under a governmental cost recovery process for the costs of central governmental services. These payments would have been approximately $5 million per year based on current estimates but the waiver is limited to a maximum of $45 million in the aggregate during the period. Further, the obligation to make payments in support of certain State park properties and for the upkeep of State lands adjacent to the Niagara and St. Lawrence power plants is waived from April 1, 2011 to March 31, 2017. These payments would have been approximately $8 million per year but the waiver would be limited to a maximum of $43 million for the period. The present value of the waivers approximates the present value of the forgone interest income. In the Second Amendment to the MOU discussed below, the Authority and the State agreed to enter into alternative cost recovery agreements for each of State Fiscal Year 2017-18 through State Fiscal Year 2022-23 that the asset transfers have not been fully returned to the Authority. The alternative cost recovery agreements would relieve the Authority of any obligation to make up to $5 million in cost recovery assessment payments to the State in each year. In the event that the cost recovery assessment for a given year exceeds $5 million, the assessment due from the Authority would be limited to the difference between the assessment and $5 million. The State and the Authority entered into the first such alternative cost recovery agreement, dated as of March 31, 2017, with respect to State Fiscal Year 2017-18. In accordance with such agreement, the Authority was not charged an assessment for such State Fiscal Year.

On April 24, 2014, the Authority and the State executed an Amendment to the MOU which provides that the State shall, subject to appropriation by the State Legislature, return the $103 million (Asset A) in five installments in the following amounts and by no later than September 30 of each of the following State fiscal years: (1) $18 million for State Fiscal Year 2014-2015; (2) $21 million for State Fiscal Year 2015-2016; (3) $21 million for State Fiscal Year 2016-2017; (4) $21 million for State Fiscal Year 2017-2018; and (5) $22 million for State Fiscal Year 2018-2019. By its terms, the Amendment to the MOU became effective when it was approved and ratified by the Authority's Board of Trustees on July 29, 2014. The Authority has received cumulative installment payments of $103 million as of December 31, 2018.

The Authority and the State executed a Second Amendment to the MOU, dated as of June 30, 2017, that provides for the return to the Authority of the $215 million (Asset B) in the following amounts and by no later than September 30 of each of the following State fiscal years: (1) $22 million for State Fiscal Year 2017-18, (2) $21 million for State Fiscal Year 2018-19, (3) $43 million for State Fiscal Year 2019-20, (4) $43 million for State Fiscal Year 2020-21, (5) $43 million for State Fiscal Year 2021-22, and (6) $43 million for State Fiscal Year 2022-23. The obligation of the State to return the moneys transferred by the Authority to the State is subject to annual appropriation by the State Legislature. The Authority has received cumulative installment payments of $43 million as of December 31, 2018. The asset transfers are reported in miscellaneous receivables and other ($43 million and $43 million as of December 31, 2018 and December 31, 2017, respectively) and in other noncurrent assets ($129 million and $172 million at December 31, 2018 and December 31, 2017, respectively) in the statements of net position.

(f) *Relicensing of Niagara*

By order issued March 15, 2007, FERC issued the Authority a new 50-year license for the Niagara project effective September 1, 2007. In doing so, FERC approved six relicensing settlement agreements entered into by the Authority with various public and private entities. By decision dated March 13, 2009, the U.S. Court of Appeals for the District of Columbia Circuit denied a petition for review of FERC's order filed by certain entities, thereby concluding all litigation involving FERC's issuance of the new license. In 2007, the Authority estimated that the capital cost associated with the relicensing of the Niagara project would be approximately $495 million. This estimate does not include the value of the power allocations and operation and maintenance expenses associated with several habitat and recreational elements of the settlement agreements. As of December 31, 2018, the balance in the recorded liability associated with the relicensing on the statement of net position is $267 million ($23 million in current and $244 million in other noncurrent liabilities).

In addition to internally generated funds, the Authority issued additional debt obligations in October 2007 to fund, among other things, Niagara relicensing costs. The costs associated with the relicensing of the Niagara project, including the debt issued therefore, were incorporated into the cost-based rates of the project beginning in 2007.

New York State Office of Parks, Recreation and Historic Preservation

On July 18, 2005, the Authority executed the Relicensing Settlement Agreement Addressing New License Terms and Conditions ("Settlement Agreement") entered into by several parties to the relicensing of the Niagara Project, including The New York State Office of Parks, Recreation and Historic Preservation ("OPRHP"). The Settlement Agreement provides, among other things, for the establishment of a Relicensing Settlement Agreement State Parks Greenway Fund, which is to be funded by the Authority in the amount of $3 million per year to OPRHP for the term of the 50-year License. In 2012 and 2017, OPRHP requested that the Authority accelerate such payments by making two lump sum payments of approximately $25 million each to pay for authorized projects. In order to make the lump sum payments, the Authority issued (a) $25.2 million in subordinated notes in 2012 and (b) $25.2 million in subordinated notes in 2017. The proceeds of those subordinated note issuances were made available to OPRHP (see Note 6 "Long-Term Debt – Subordinate Debt" of notes to the financial statements).

(g) *St. Lawrence-FDR Relicensing – Local Task Force Agreement*

The St. Lawrence-FDR Power Project No. 2000 Relicensing Agreement ("LGTFSA") between the Authority and the Local Government Task Force ("LGTF") provides for a review of the LGTFSA every ten years to discuss issues not contemplated at the time of relicensing in 2003. The first such review commenced in December 2013. The Authority and the LGTF entered into an agreement effective May 4, 2015 in which the Authority agreed to commit up to $45.1 million over 10 years for certain actions, including to: (1) fund an economic development strategic marketing study (the "Marketing Study"); (2) temporarily reduce electricity costs for certain farms and businesses (the "Discount Program"); (3) initiate an energy efficiency and renewable energy program for the LGTF communities; and (4) enhance certain recreational facilities in the LGTF communities.

In July 2016, the Authority's Trustees approved a proposal to terminate the Discount Program early and repurpose funding to be used to support a collaborative marketing effort between the Authority and North Country communities through the St. Lawrence County Economic Development Study Advisory Board created in connection with the Marketing Study at the rate of $2 million/year for five years ($10 million total) commencing in 2017.

At their meeting on July 25, 2017, the Authority's Trustees approved: (1) a new temporary business incentive program consisting of a monetary discount or rebate that would be payable to eligible private business applicants who agree to establish new business operations in certain North Country counties ("Business Incentive Discount Program"); and (2) the repurposing of funds previously approved for the marketing effort to include funding for the Business Incentive Discount Program. Funding repurposed for the marketing effort, including the Business Incentive Discount Program, would not exceed a total of $10 million.

As of December 31, 2018, the Authority has spent approximately $27 million of the $45.1 million authorized by the Trustees.

(h) *Regional Greenhouse Gas Initiative, Clean Power Plant Rule, Proposed Affordable Clean Energy Rule and Air Pollution Rule*

The Regional Greenhouse Gas Initiative (the "RGGI") is a cooperative effort by Northeastern and Mid-Atlantic states, including New York, to reduce carbon dioxide emission levels. Participating states have established a regional carbon dioxide emissions cap from the power sector (fossil fuel-fired power plants 25MW or greater). The emissions cap reduces by 2.5% annually until 2020. Central to this initiative is the implementation of a multi-state cap-and-trade program with a market-based emissions trading system. The program requires electricity generators to hold carbon dioxide allowances in a compliance account in a quantity that matches their total emissions of carbon dioxide for the compliance period. The Authority's Flynn plant, the SCPPs, and 500-MW Plant are subject to the RGGI requirements as is the Astoria Energy II plant. The Authority has participated in program auctions to acquire carbon dioxide allowances, which the Authority requires to cover operation of its fossil-fueled power plants and the Astoria Energy II plant, and expects to recover RGGI costs through its power sales revenues. The number of allowances offered in the auction by RGGI cap and trade program was reduced from allowances covering 165 million tons of carbon dioxide emissions in 2013 to 60.3 million tons in 2018, and will decline by 2.5% each year through 2020. On December 19, 2017, the RGGI states released an updated Model Rule that includes an additional 30% regional cap reduction between 2020 and 2030. The Authority is monitoring federal legislation and proposed programs that would impact RGGI.

On August 3, 2015, the United States Environmental Protection Agency (“EPA”) released its final Clean Power Plan (“CPP”) Rule for existing power plants to reduce carbon dioxide emissions nationwide from electric utility generating units. The CPP Rule was stayed by the U.S. Supreme Court on February 9, 2016 pending disposition of petitions for review before the U.S. Court of Appeals for the District of Columbia Circuit. Thereafter, the D.C. Circuit Court granted EPA’s motion to suspend cases challenging the CPP Rule to give the current EPA administration time to review the rule. On August 21, 2018, the EPA proposed the Affordable Clean Energy (“ACE”) Rule to replace CPP. ACE establishes guidelines for states, including New York, to use when developing plans to limit carbon dioxide emissions from coal-fired power plants. The EPA is expected to issue the ACE Rule in the second quarter of 2019. The Authority continues to monitor developments in this area.

During 2011, the EPA issued a series of rulings to establish the Cross-State Air Pollution Rule ("CSAPR"), which was updated in 2016. The CSAPR establishes emission allowance budgets for sulfur dioxide and nitrogen oxides for eastern states, including New York, and requires power plants in those states to hold allowances to cover their emissions. Certain trading of allowances is authorized under the CSAPR. In July 2018, a proposed determination published by the EPA found that the 2016 CSAPR Update to the National Ambient Air Quality Standards (“NAAQS”) was sufficient to address the good neighbor provisions of the Clean Air Act, and that no further rulemaking is required to address out-of-state emissions as additional upwind reductions are not required to meet the 2008 ozone NAAQS. The Authority continues to operate its fossil-fueled plants within the allocated allowances and anticipates that operation of its fossil-fueled plants will not be impacted by CSAPR.

(i) *Certain Solar and Energy Efficiency Initiatives*

In March 2012, the Authority’s Trustees authorized up to $30 million in funding over five years for a solar market acceleration program involving solar research, training, and demonstration projects. In January 2017, the Authority’s Trustees extended the program through December 2018. As of December 31, 2018, the Authority has approved the award of contracts with cumulative value of up to approximately $6.7 million.

In June 2012, the Authority’s Trustees authorized up to $30 million in funding over five years for an energy efficiency market acceleration program involving energy efficiency research, demonstration projects, and market development. In January 2017, the Authority’s Trustees extended the program through December

2018. As of December 31, 2018, the Authority has approved the award of contracts with a cumulative value of up to approximately $17 million.

In February 2015, the Authority's Trustees authorized up to $12 million in funding over two years for initial implementation of the Five Cities Energy Plans for the cities of Albany, Buffalo, Rochester, Syracuse and Yonkers. In January 2017, the Authority's Trustees extended the program through December 2018. As of December 31, 2018, the Authority has approved the award of contracts with a cumulative value of approximately $9.7 million.

(j) *Construction Contracts and Net Operating Leases*

Estimated costs to be incurred on outstanding contracts in connection with the Authority's construction programs aggregated approximately $597 million at December 31, 2018.

Noncancelable operating leases primarily include leases on real property (office and warehousing facilities and land) utilized in the Authority's operations. Rental expense for years ended December 31, 2018 and 2017 was $3.2 million and $2.6 million, respectively. Commitments under noncancelable operating leases are as follows:

	Total	2019	2020	2021	2022	2023	Thereafter
				(In millions)			
Operating leases	$ 6.5	1.6	1.2	0.8	0.8	0.7	1.4

(k) *Other Developments*

New York Energy Highway

In January 2012, the Governor of New York announced the New York Energy Highway initiative, which is envisioned as a public-private partnership to upgrade and modernize the State's electric power system. The Governor formed a task force comprised of various State officials to oversee implementation of the initiative (Task Force) which was co-chaired by the Authority's President and Chief Executive Officer. In April 2012, the Task Force issued a request for information seeking ideas and proposals in furtherance of the initiative. Approximately 85 organizations responded to the Task Force's request for *information* and the responses included a large number of different generation and transmission project proposals. Based on the response of all these organizations, the Energy Highway Task Force issued an action plan in October 2012. The resulting Energy Highway Blueprint, calling for public and private investments in the State's energy system of about $5.7 billion over the next five to 10 years, proposed 13 specific actions, divided among four major categories: Expand and Strengthen the System, Accelerate Construction and Repair, Support Clean Energy and Technology Innovation.

In November 2012, the NYPSC announced new proceedings addressing various actions described in the Blueprint including (i) the initiation of electric transmission upgrades to move excess power from upstate to downstate (AC Transmission), (ii) the creation of a contingency plan to prepare for a large generator retirement (Generation Retirement Contingency Plan) and (iii) the expansion of natural gas delivery to homeowners and businesses in New York State.

In its November 4, 2013 Generation Retirement Contingency Plan Order, the NYPSC selected three transmission projects (TOTS projects) to be built by Consolidated Edison, New York State Electric and Gas (NYSEG) and the Authority. The NYPSC also requested that the New York Transmission Owners (NYTOs), comprised of the State's largest public utilities, LIPA, and the Authority, seek Federal Energy Regulatory

Commission (FERC) approval for the three TOTS projects. On December 4, 2014, the NYTOs on behalf of themselves and the transco (Four-Party Transco) formed by affiliates of the NYTOs that does not include LIPA or the Authority filed applications at FERC to permit the transfer of certain transmission assets to the Four-Party Transco. The Four-Party Transco also filed an application for cost allocation and recovery for five projects, including the three TOTS projects. The Authority co-developed one of the TOTS projects, the Marcy-South Series Compensation, with NYSEG and has also completed a negotiated settlement at FERC to recover the costs of its portion of that project.

Build Smart NY Initiative

On December 28, 2012, the Governor of New York issued Executive Order No. 88 (EO 88) directing state agencies collectively to reduce energy consumption in state-owned and managed buildings by 20 percent within seven years – an initiative designed to produce significant savings for New York taxpayers, generate jobs, and significantly reduce greenhouse gas emissions. To meet this initiative, the Governor launched Build Smart NY, a plan to strategically implement EO 88 by accelerating priority improvements in energy performance. The Authority has offered to provide $450 million in low-cost financing for this initiative for state owned buildings and an additional $350 million for towns and municipalities. Such low-cost financing would be funded by proceeds of the Authority's commercial paper or another form of debt. The Authority's costs of financing would be recovered from the energy efficiency customers in this program. In addition, as provided for in EO 88, the Authority has established a central management and implementation team which designed implementation guidelines milestones and data collection and analysis systems to support the program. The team conducts routine outreach and meetings with affected state agencies and has commenced the implementation phase of the Build Smart NY program. As of December 31, 2018, the Authority has in aggregate provided approximately $511.6 million in financing for energy efficiency projects at State agencies and authorities covered by EO 88.

Clean Energy Standard

On August 1, 2016, the NYPSC issued an order establishing a Clean Energy Standard (the "CES Order") to implement the clean energy goals of the State Energy Plan. Pursuant to the CES Order, load serving entities identified in the order are required to purchase "Zero Emission Credits" ("ZECs") from the New York State Energy Research Development Authority ("NYSERDA") to support the preservation of existing at-risk zero emissions nuclear generation. The Authority is not subject to NYPSC jurisdiction for purposes of the CES Order but has assumed an obligation to purchase ZECs consistent with the terms of the CES Order and intends to seek recovery of such costs from the Authority's customers. On January 31, 2017, the Authority's Trustees authorized (a) participation in the NYPSC's ZEC program and (b) execution of an agreement with NYSERDA to purchase ZECs associated with the Authority's applicable share of energy sales. The Authority and NYSERDA executed an agreement covering a two year period from April 1, 2017 to March 31, 2019 under which the Authority committed to purchase ZECs in a quantity based on its proportional load in the New York control area. As of December 2018, the Authority estimates that it will incur ZEC purchase costs associated with participation in the ZEC program of approximately $268.4 million in aggregate over the 2019-2022 period, of which approximately $14.8 million is not expected to be recovered under customer contracts that predate the adoption of the CES Order. As of December 31, 2018, the Authority has paid $83.6 million in ZEC purchase costs.

AGILe

The Authority, in collaboration with the State utilities, NYSERDA and NYISO, has developed an advanced grid innovation lab for energy ("AGILe") to create new tools to better monitor, control, accommodate and respond to the evolving energy sector. Costs to the Authority are estimated at $20 million over the initial three year period and are not expected to exceed $50 million through final build-out of the facility. Upon completion, operating and maintenance costs are expected to be shared among AGILe participants. On July 25, 2017, the Authority's Trustees authorized capital expenditures in the amount of $20 million for the initial phase of AGILe, which has since commenced. As of December 31, approximately $3.7 million has been spent.

Certain Projects with the Triborough Bridge and Tunnel Authority

The Authority commenced a project to finance and install multi-purpose energy efficiency and security projects on bridges and tunnels in the New York City metropolitan region in conjunction with the Triborough Bridge and Tunnel Authority. The Authority expects to be reimbursed for the cost of this project through State infrastructure and economic development funds.

Moses Adirondack Line

The Authority is moving forward with its plans to replace a major section of the Moses Adirondack Line, one of the Authority's backbone transmission facilities. The replacement project covers 78 miles of 230 kV transmission line from Massena to the town of Croghan in Lewis County. In July 2017, the Authority received authorization under the NYISO tariff to include the costs of this replacement project in its NYPA Transmission Adjustment Charge mechanism for cost recovery of the Authority's transmission system costs, which means that the costs will be allocated to all ratepayers in the State. The project includes the replacement of obsolete wood pole structures with higher, steel pole structures, as well as replacement of failing conductor with new conductor and insulation. The line will operate at its current 230 kV level, but the conductor and insulation design will accommodate future 345 kV operation. The Authority anticipates that the Moses Adirondack line will support the transmission of growing levels of renewable generation located in upstate New York and Canada, such as wind and hydroelectricity, and assist in meeting the State's renewable energy goals. The rebuilt line is also expected to enhance grid reliability by supporting the NYISO's black start plan. On September 21, 2018, the Public Service Commission determined that the Authority's April 2018 Article VII application was complete. In 2018, the Authority estimated a project cost of $484 million. Construction is expected to take four years and begin in 2020.

Niagara Parkway Redevelopment

The State plans to replace an underutilized two-mile stretch of the Robert Moses Parkway North in Niagara Falls with open space, scenic overlooks and recreational trails. Construction commenced in 2018 and is expected to take approximately three years to complete with funding to be provided by the Authority. As of December 31, 2018, the Authority's Trustees have approved up to $42 million in funding by the Authority. As of December 31, 2018, the Authority has disbursed approximately $4.4 million.

Electric Vehicle Acceleration Initiative

In May 2018, the Authority's Trustees approved an overall allocation of up to $250 million to be used through 2025 for an electric vehicle acceleration initiative and authorized $40 million for the first phase of the initiative.

Carbon Free Flexibility Initiative

In December 2018, the Authority's Trustees approved the development of a carbon free flexibility initiative through 2025 at a cost of up to $250 million and authorized up to $65 million for the first phase of the initiative.

Large-Scale Renewable Program

In support of the Clean Energy Standard goal for the State to achieve 50% renewable energy by 2030, the Authority issued a request for proposals in June 2017 to solicit renewable energy credits, energy and capacity from eligible large-scale renewable projects with a minimum size of 5MW, 10MW or 20MW, depending on the underlying technology. On January 30, 2019, the Authority's Trustees approved the award of a 20-year power purchase agreement to Canisteo Wind Energy LLC for energy, capacity and renewable energy credits to be generated from a to-be-constructed 290 MW wind project. The project is expected to be in-service by December 31, 2020. Costs associated with the agreement are expected to be recovered through sales of energy and capacity through the NYISO and sales of RECs to the Authority's customers.

(14) Canal Corporation

The Canal Transfer Legislation enacted April 4, 2016, authorized, but does not require, the Authority, to the extent that the Authority's Trustees deem it feasible and advisable as required by the Resolution, to transfer moneys, property and personnel to the Canal Corporation.

The Canal Corporation operates at a loss and is expected to require substantial operating and maintenance support and capital investment. The Canal Corporation's expenses are expected to be funded by transfers of funds from the Authority. Any transfer of funds would be subject to approval by the Authority's Board of Trustees and compliance with the Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented. Certain expenses eligible for reimbursement are expected to be reimbursed to the Authority by moneys held in the Canal Development Fund maintained by the State Comptroller and the Commissioner of Taxation and Finance. For the year ended December 31, 2018, the Canal Corporation recognized $2 million in revenues, $101 million in operations and maintenance expenses and $23 million in depreciation expense. For the year ended December 31, 2017, the Canal Corporation recognized $2 million in revenues, $93 million in operations and maintenance expenses and $23 million in depreciation expense.

REQUIRED SUPPLEMENTARY INFORMATION
(UNAUDITED)

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Changes in the New York Power Authority's Net OPEB Liability and Related Ratios

($ in millions, expect percentages)

	2018	2017
Total OPEB liability		
Service cost	$ 13	$ 12
Interest	37	36
Change of benefit terms	–	–
Differences between expected and actual experience	–	–
Change of assumptions	–	–
Benefit payments	(25)	(22)
Net change in total OPEB liability	25	26
Total OPEB liability - beginning	535	509
Total OPEB liability – ending	$ 560	$ 535
Plan fiduciary net position		
Contributions – employer	25	22
Net investment income	(36)	88
Benefit payments	(25)	(22)
Administrative expense	(2)	(2)
Net change in plan fiduciary net position	(38)	86
Plan fiduciary net position - beginning	603	517
Plan fiduciary net position - ending	$ 565	$ 603
Net OPEB liability / (asset) - ending	$ (5)	$ (68)
Plan fiduciary net position as a percentage of the total OPEB liability	101%	113%
Covered-employee payroll	$ 182	$ 177
Total OPEB liability as a percentage of covered-employee payroll	307%	302%
Net OPEB liability / (asset) as a percentage of covered-employee payroll	(3)%	(38)%

Notes to schedule:

The amounts presented for 2018 were determined based on a roll-forward of the Power Authority OPEB Plan's December 31, 2017 biennial actuarial valuation.

This schedule is intended to present 10 years of data. Additional years will be presented prospectively.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of the New York Power Authority's OPEB Contributions

($ in millions, expect percentages)

Year Ending December 31,	(a) Contractually / Actuarially determined contribution	(b) Contributions made	Contribution deficiency / (excess)	(c) Covered employee payroll	Contributions as a percent of covered employee payroll column (b ÷ c)
2018	$ 25	$ 25	$ -	$ 177	14%
2017	40	22	18	166	13%
2016	39	24	15	161	15%
2015	38	38	-	149	25%
2014	33	39	(1)	145	27%
2013	41	42	(1)	147	29%
2012	41	41	-	143	29%
2011	35	60	(25)	144	42%
2010	32	17	15	140	12%
2009	24	16	8	138	12%

Notes to schedule:

Contributions: The Power Authority made contributions on a pay as you go basis in 2018 and 2017 and did not contribute any amount beyond the contractually / actuarially required amounts.

Valuation date:	12/31/2017
Methods and assumptions used to determine contributions:	
Actuarial cost method:	Entry Age Normal, Level Percent of Salary
Amortization period:	Five-year period for differences between the expected earnings on plan investments and actual returns. Differences in assumptions and experience are recognized over the average remaining service lives of all employees that are provided with benefits through the plan.
Asset Valuation:	Market Value.
Per Capita Claims:	Developed using 2018 projected funding rates using NYPA claims experience from January 1, 2016 through July 1, 2017.
Salary increases:	Varies by service, average of 4.5 percent for 1-5 years of service, 3.8 percent for 6-10 years of service, 3.3 percent for 11-15 years of service, and 3.0 percent for 20 years or more of service.
General inflation:	Consumer Price Index 2.5%
Participation rates:	Assumed 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.
Discount rate:	7.0%
Mortality:	Gender distinct pre and post-commencement rates based on experience under the New York State Local Retirement System. Base rates reflect a 2014 base year, and the MP-2017 Projection Scale is applied to the base rates.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Investment Returns for the New York Power Authority OPEB Trust

Schedule of Investment Returns

Year Ending December 31,	Annual money-weighted rate of return, net of investment expense
2018	(6.30)%
2017	16.70%
2016	7.00%
2015	0.41%
2014	3.99%
2013	20.41%
2012	12.57%
2011	1.43%
2010	9.85%

Note:

This schedule is intended to present 10 years of data. Additional years will be presented when available.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Changes in the Canal Corporation's Total OPEB Liability and Related Ratios

($ in millions, expect percentages)

	2018
Total OPEB liability	
Service cost	$ 7
Interest	8
Change of benefit terms	–
Differences between expected and actual experience	–
Change of assumptions	20
Benefit payments	(6)
Net change in total OPEB liability	29
Total OPEB liability - beginning	205
Total OPEB liability – ending	$ 234
Total OPEB liability - ending	$ 234
Covered-employee payroll	$ 24
Total OPEB liability as a percentage of covered-employee payroll	975%

Notes to Schedule:

Changes of assumptions: Changes of assumptions reflect the effect of changes in the S&P Municipal Bond 20 Year High Grade Rate index. The discount rate, based on this index, changed from 3.71% at December 31, 2016 to 3.16% at December 31, 2017.

New York Power Authority

Required Supplementary Information
(Unaudited)

Schedules Relating to the Employees' Retirement System Pension Plan

($ in millions, expect percentages)

Schedule of Proportionate Share of the Net Pension Liability

As of March 31,	Proportion of the Net Pension Liability (Asset) Percentage	Proportionate Share of the Net Pension Liability (Asset)	Covered Employee Payroll	Proportionate Share of the Net Pension Liability (Asset) as a percentage of Covered Payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2018	0.72%	$ 23	$205	11.3%	98.2%
2017	0.72	67	193	35.0	94.7
2016	0.60	96	166	57.4	90.7
2015	0.59	20	150	13.3	97.9
2014	0.60	27	148	18.2	97.2

Schedule of Contributions

Year Ending December 31,	Actuarially Required Contribution	Actual Contribution	Contribution (Excess) Deficiency	Covered Employee Payroll	Contribution as a Percentage of Covered Payroll
2018	$ 28	$ 28	$ –	$ 205	14%
2017	28	28	–	193	14
2016	24	24	–	166	15
2015	25	25	–	150	17
2014	28	28	–	148	19
2013	29	29	–	146	20
2012	27	27	–	146	19
2011	21	21	–	141	15
2010	17	17	–	145	12
2009	10	10	–	139	7

KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

The Board of Trustees
Power Authority of the State of New York:

We have audited, in accordance with the auditing standards generally accepted in the United States of America; and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States the consolidated financial statements of the business-type activities and fiduciary funds of the Power Authority of the State of New York, (the Authority) and its blended component unit, as of and for the years ended December 31, 2018 and 2017, and the related notes to the consolidated financial statements, which collectively comprise the Authority's consolidated financial statements as listed in the table of contents, and have issued our report thereon dated March 26, 2019.

Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements, we considered the Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the consolidated financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's consolidated financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

New York, New York
March 26, 2019

NEW YORK POWER AUTHORITY

Financial Report

December 31, 2019 and 2018

NEW YORK POWER AUTHORITY
Financial Report
December 31, 2019 and 2018

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KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Auditors' Report

Board of Trustees
New York Power Authority:

Report on the Financial Statements

We have audited the accompanying consolidated financial statements of the business-type activities and fiduciary funds of the Power Authority of the State of New York (the Authority) and its blended component unit, as of and for the years ended December 31, 2019 and 2018, and the related notes to the consolidated financial statements, which collectively comprise the Authority's consolidated financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated 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 opinions on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements.

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

Opinions

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities and fiduciary funds of the Authority and its blended component unit as of December 31, 2019 and 2018, and the respective changes in financial position and, where applicable, their cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the Management's Discussion and Analysis on pages 4 through 16 and Required Supplementary Information on pages 74 through 78 be presented to supplement the consolidated financial statements. Such information, although not a part of the consolidated financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the consolidated financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the consolidated financial statements, and other knowledge we obtained during our audit of the consolidated financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated March 30, 2020 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.

KPMG LLP

New York, New York
March 30, 2020

Management Report

Management is responsible for the preparation, integrity and objectivity of the consolidated financial statements of the Authority, as well as all other information contained in the Annual Report. The consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles (U.S.GAAP) and, in some cases, reflect amounts based on the best estimates and judgments of management, giving due consideration to materiality. Financial information contained in the Annual Report is consistent with the financial statements.

The Authority maintains a system of internal controls to provide reasonable assurance that transactions are executed in accordance with management's authorization, that financial statements are prepared in accordance with U.S. generally accepted accounting principles and that the assets of the Authority are properly safeguarded. The system of internal controls is documented, evaluated and tested on a continuing basis. No internal control system can provide absolute assurance that errors and irregularities will not occur due to the inherent limitations of the effectiveness of internal controls; however, management strives to maintain a balance, recognizing that the cost of such system should not exceed the benefits derived.

The Authority maintains an internal auditing program to independently assess the effectiveness of internal controls and to report findings and recommend possible improvements to management. This program includes a comprehensive assessment of internal controls to ensure that the system is functioning as intended. Additionally, as part of its audit of the Authority's consolidated financial statements, KPMG LLP, the Authority's independent auditors, considers internal controls over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal controls over financial reporting. Management has considered the recommendations of its internal auditors, the Office of the State Comptroller (OSC), and the independent auditors concerning the system of internal controls and has taken actions that it believed to be cost-effective in the circumstances to respond appropriately to these recommendations. Based on its structure and related processes, management believes that, as of December 31, 2019, the Authority's system of internal controls provides reasonable assurance related to material items, as to the integrity and reliability of the financial statements, the protection of assets from unauthorized use or disposition and the prevention and detection of fraudulent financial reporting.

The members of the Authority's Board of Trustees (the Authority's Trustees), appointed by the Governor, by and with the advice and consent of the Senate, are not employees of the Authority. The Authority's Trustees' Audit Committee meets with the Authority's management, its Sr. Vice President of Internal Audit and its independent auditors periodically, throughout the year, to discuss internal controls and accounting matters, the Authority's financial statements, the scope and results of the audit by the independent auditors and the periodic audits by the OSC, and the audit programs of the Authority's internal auditing department. The independent auditors, the Sr. Vice President of Internal Audit and the Vice President & Chief Ethics and Compliance Officer have direct access to the Audit Committee

Adam Barsky
Executive Vice President and Chief Financial Officer

March 27, 2020

Overview of the Consolidated Financial Statements

The New York Power Authority (the "Power Authority") is considered a special-purpose government entity engaged in business-type activities and follows financial reporting for enterprise funds. Effective January 1, 2017, the New York State Canal Corporation (the "Canal Corporation") became a subsidiary of the Power Authority, and the Power Authority assumed certain powers and duties relating to the Canal System (as defined below) to be exercised through the Canal Corporation. The Canal Corporation is responsible for a 524-mile canal system consisting of the Erie, Champlain, Oswego, and Cayuga-Seneca canals (the "Canal System"). The Power Authority and its subsidiary (collectively "the Authority") follow financial reporting for enterprise funds. The consolidated financial statements of the Authority are prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) as prescribed by the Governmental Accounting Standards Board (GASB). Under the criteria set forth in GASB Statement No. 14, *The Financial Reporting Entity*, as amended by Governmental Accounting Standard (GAS) No. 39, *Determining Whether Certain Organizations Are Component Units* and GAS No. 61, *The Financial Reporting Entity: Omnibus--an amendment of GASB Statements No. 14 and No. 34*, the Authority considers its relationship to the State to be that of a related organization. The Power Authority and its subsidiary the Canal Corporation are referred to collectively as the "Authority" in the consolidated financial statements, except where noted.

This consolidated report consists of three parts: management's discussion and analysis, the basic consolidated financial statements, and the notes to the consolidated financial statements.

The consolidated financial statements provide summary information about the Authority's overall financial condition. The notes provide explanation and more details about the contents of the consolidated financial statements.

Forward Looking Statements

The statements in this management's discussion and analysis (MD&A) that are not purely historical facts are forward-looking statements based on current expectations of future events. Such forward-looking statements are necessarily based on various assumptions and estimates and are inherently subject to various risks and uncertainties, including, but not limited to, risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes to or development in various important factors. Accordingly, actual results may vary from those we presently expect and such variations may be material. We therefore caution against placing undue reliance on the forward-looking statements contained in this MD&A. All forward-looking statements included in this MD&A are made only as of the date of this MD&A and we assume no obligation to update any such forward-looking statements as a result of new information, future events or other factors.

Summary of Consolidated Revenues, Expenses and Changes in Net Position

The following is a summary of the Authority's consolidated financial information for 2019, 2018, and 2017:

	2019	2018	2017	2019 vs. 2018 favorable (unfavorable)	2018 vs. 2017 favorable (unfavorable)
		($ In millions)		(In Percentages)	
Operating revenues	$ 2,370	$ 2,689	$ 2,573	(12)%	5%
Operating expenses:					
Purchased power	529	710	557	25	(27)
Fuel oil & gas	140	189	165	26	(15)
Wheeling	647	654	618	1	(6)
Operations and maintenance	692	679	680	(2)	—
Depreciation	250	235	242	(6)	3
Impairment loss	—	—	73	—	100
Total operating expenses	2,258	2,467	2,335	8	(6)
Operating income	112	222	238	(50)	(7)
Nonoperating revenues	46	23	29	100	(21)
Nonoperating expenses	135	143	148	6	3
Net income	23	102	119	(77)	(14)
Contributed capital	3	—	—		
Change in net position	26	102	119		
Net position – beginning, as restated	4,734	4,632	4,620		
Net position – ending	$ 4,760	$ 4,734	$ 4,739		

The following summarizes the Authority's consolidated financial performance for the years 2019 and 2018:

The Authority had net income of $23 million for the year ended December 31, 2019 compared to $102 million in 2018, a decrease of $79 million (77%). The decrease in net income was primarily due to lower operating income of $110 million (50%), partially offset by lower non-operating expenses of $8 million (6%) and higher non-operating revenues of $23 million. Operating income decreased by $110 million compared to 2018 primarily due to lower margins on sales of $82 million resulting from lower energy prices. Operating expenses were lower in 2019, primarily due to lower purchased power costs. The operations and maintenance expenses were $13 million (2%) higher compared to 2018 primarily due to higher postemployment benefits other than pensions (OPEB) and pension expenses.

The change in net position was attributable to the positive 2019 net income of $23 million and $3 million of contributed capital related to certain wind farm transmission assets (see note 5 "Capital Assets" of notes to the consolidated financial statements.

The Authority had net income of $102 million for the year ended December 31, 2018 compared to $119 million in 2017, a decrease of $17 million. The decrease in net income was primarily due to lower operating income of $16 million, lower non-operating revenues of $6 million, partially offset by lower non-operating expenses of $5 million. Operating expenses were higher in 2018, primarily due to higher purchased power costs. Operating income decreased by $16 million compared to last year primarily due to lower margin on sales of $97 million, partially offset by the absence of an impairment loss. The operations and maintenance expenses were flat compared to 2017.

The change in net position was attributable to the positive 2018 net income of $102 million and a ($107) million adjustment to the beginning net position as a result of the Authority's adoption of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions.* See Note 2 "Summary of Significant Accounting Policies – New Accounting Pronouncements" and Note 11 "Postemployment Benefits Other Than Pensions, Deferred Compensation and Savings" of the notes to the consolidated financial statements.

Operating Revenues

Operating revenues of $2,370 million in 2019 were $319 million, or 12%, lower than the $2,689 million in 2018, primarily due to lower market-based energy sales resulting from lower market prices and the pass through of lower power costs to customers, partially offset by higher hydro production.

Purchased Power and Fuel

Purchased power costs decreased by $181 million or 25% in 2019 to $529 million from $710 million in 2018, primarily due to both lower prices and volume. Fuel costs were $49 million (26%) lower during 2019, primarily due to lower fuel prices ($43 million) and lower generation volume ($6 million).

Operations and Maintenance (O&M)

O&M expenses increased by $13 million or 2% in 2019 compared to 2018 primarily due to higher OPEB and pension expenses.

Nonoperating Revenues

For 2019, nonoperating revenues increased by $23 million, to $46 million from $23 million in 2018, primarily due to higher market value on the Authority's investment portfolio.

Nonoperating Expenses

For 2019, nonoperating expenses decreased by $8 million, or 6%, primarily attributable to capitalization of interest related to higher construction work in progress and lower interest on debt.

Cash Flows

Net cash flows provided by operating activities decreased by $4 million in 2019 compared to 2018, due to the timing of payments and receipts.

Net Generation

Net generation was 30.1 million megawatt-hours (MWh) in 2019 and 2018. Net generation from the Niagara and St. Lawrence hydroelectric plants in 2019 (24.3 million MWh) was 1% higher than 2018 (24.1 million MWh) due to continued higher water levels on Lakes Erie and Ontario resulting in higher water flow to the Niagara and St. Lawrence hydroelectric plants. For 2019, net hydro generation was approximately 120% of long-term average and above 2018, which was 119%. Combined net generation of the fossil fuel plants for 2019 was 5.8 million MWh, or 3% lower than 2018 (6.0 million MWh).

Summary of Consolidated Statements of Net Position

The following is a summary of the Authority's consolidated statements of net position for 2019, 2018, and 2017:

	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
		($ In millions)		(In Percentage)	
Current assets	$ 1,303	$ 1,434	$ 1,580	(9) %	(9) %
Capital assets	5,800	5,519	5,442	5	1
Other noncurrent assets	1,670	1,798	1,638	(7)	10
Deferred outflows of resources	168	137	66	23	108
Total assets and deferred outflows	$ 8,941	$ 8,888	$ 8,726	1	2
Current liabilities	$ 1,293	$ 1,051	$ 984	23	7
Noncurrent liabilities	2,456	2,631	2,655	(7)	(1)
Total liabilities	3,749	3,682	3,639	2	1
Deferred inflows of resources	432	472	348	(8)	36
Net position	4,760	4,734	4,739	1	—
Total liabilities, deferred inflows and net position	$ 8,941	$ 8,888	$ 8,726	1	2

The following summarizes the Authority's consolidated statements of net position variances for the years 2019 and 2018:

In 2019, current assets decreased by $131 million (9%) to $1,303 million due to use of investments to fund capital projects. Capital assets increased by $281 million (5%) to $5,800 million, compared to last year, as a result of continuing investments in generating assets at existing facilities and transmission upgrades necessary to maintain reliability. Other noncurrent assets, decreased by $128 million (7%), primarily due to decreased energy efficiency program work in progress and OPEB assets. Deferred outflows increased by $31 million (23%) primarily due to changes in deferral of OPEB resources, partially offset by changes in deferral of pension resources. Current liabilities increased by $242 million (23%) to $1,293 million compared to last year. This increase is attributable primarily to the increase in short-term debt due to issuance of commercial paper to refund $156 million of the Authority's Series 2007 A and Series 2007 C Revenue Bonds and the timing of accounts payable payments. Noncurrent liabilities were lower by $175 million (7%), primarily due to the decrease in long-term debt resulting from refunding of $156 million of Series 2007 A and Series 2007 C Revenue Bonds and scheduled maturities. Deferred inflows decreased by $40 million (8%) compared to last year, primarily due to the changes in the deferral of pension resources. The changes in net position for 2019 and 2018 are discussed in the summary of revenues, expenses and changes in net position in this Management's Discussion and Analysis.

In 2018, current assets decreased by $146 million (9%) to $1,434 million due to use of investments to fund capital projects. Capital assets increased by $77 million (1%) to $5,519 million, compared to last year, as a result of continuing investments in generating assets at existing facilities and transmission upgrades necessary to maintain reliability. Other noncurrent assets, increased by $160 million (10%), primarily due to an increase in energy efficiency program work in progress costs. Deferred outflows increased by $71 million primarily due to the deferral of OPEB resources, as a result of the Authority adopting GASB Statement No.75, in 2018, and due to changes in deferral of pension resources. Current liabilities increased by $67 million (7%) to $1,051 million compared to last year. This increase is attributable to the increase in long-term debt due within one year resulting from scheduled maturities. Noncurrent liabilities, were lower by $24 million (1%), primarily due to the decrease in long-term debt resulting from the scheduled maturities, and payments on capital lease obligations, partially offset by the increase in the pension and OPEB liability. Deferred inflows increased by $124 million (36%) compared to last year, due to the changes in the deferral of OPEB resources, as a result of the Authority adopting GASB Statement No. 75, in 2018, and due to the changes in the deferral of pension resources. The changes in net position for 2018 and 2017 are discussed in the summary of revenues, expenses and changes in net position in this Management's Discussion and Analysis.

Capital Asset and Long-Term Debt Activity

The Authority currently estimates that it will expend approximately $4.5 billion ($2.9 billion for various capital improvements and $1.6 billion for energy services projects) over the five-year period 2020-2024. The Authority anticipates that these expenditures will be funded using existing construction funds, internally generated funds and additional borrowings. Such additional borrowings are expected to be accomplished through the issuance of commercial paper notes and/or the issuance of long-term fixed rate debt.

On January 29, 2020 the Authority's Trustees authorized an investment of $300 million over five years for the Reimagine the Canals Initiative ("Initiative") and approved $30 million to fund the Initiative in 2020. The Initiative encompasses three prongs: (1) $100 million of funding for projects in communities along the Canal system, (2) $65 million of funding for projects that will help prevent ice jams and related flooding, and (3) $135 million of funding for projects recommended by the Reimagine the Erie Canal Task Force and approved by the Authority for projects related to mitigation of drought impacts on agriculture, expansion of fishing opportunities, flood mitigation, invasive species prevention, and ecosystem restoration.

The Authority's capital plan includes the provision of approximately $1.6 billion, the amount of which will be reimbursed subsequently back to the Authority, in financing for Energy Services projects to be undertaken by the Authority's governmental customers and other public entities in the State. It should also be noted that due to projects currently under review as well as energy initiatives announced in the Governor's State of the State address, there is a potential for significant increases in the capital expenditures indicated in the table below. Such additional capital expenditures would be subject to evaluation and Trustee approval.

Projected capital requirements during this period include (in millions):

MA1 & MA2 Transmission Line Upgrade	$	429
Reimagine Canals		300
Marcy-Scott Yard Transmission Upgrade		275
Strategic EV Charging Stations Installs		205
RM Mechanical & Electrical LEM		124
Transmission LEM (NIA, STL, CEC)		117
Communications Backbone		92
Lewiston Pump Generating. Plant LEM		74
Repl. Of Superstructure Bridges- RMNPP		56
IT Initiatives		56
RM Controls LEM		50
Y-49 LEM		49
Transmission LEM: STL Remote Substations		37
Cyber Resiliency		33
NPP Fire Detection System		31
SCPP Energy Storage		27
RM Penstock LEM		24
Breaker & Relay Replacement (STL)		23
WPO-Life Extension Modification-LEM		19
Garage - Centroplex Upgrade (WPO)		18
Sensor Deployment (Transmission)		18
North Country Zone D Energy Storage		14
Transmission Power Flow Control		13
Transmission -Q 35 L/M LEM		12
SENY Physical Security Re-Evaluate		11
Hatch Cover Deck Surface Upgrade		10
Rotor Modification Stress Redistribution		9
Customer Digital Experience Software (WPO)		9
Digital Substation -Saranac		9
Canal Corporation		270
All Other (Projects Below $9.0 Million)		462
	$	2,876

The Authority is moving forward with its plans to update a major section of the Moses Adirondack Line, one of the Authority's backbone transmission facilities. The project covers 78 miles of 230 kV transmission line from Massena to the town of Croghan in Lewis County. In July 2017, the Authority received authorization under the New York Independent System Operator (NYISO) tariff to include the costs of this project in its NYPA Transmission Adjustment Charge mechanism for cost recovery of the Authority's transmission system costs, which means that the costs will be allocated to all ratepayers in the State. The project includes the update of obsolete wood pole structures with higher, steel pole structures, as well as update of failing conductor with new conductor and insulation. The line will operate at its current 230 kV level, but the conductor and insulation design will accommodate future 345 kV operation. The Authority anticipates that the Moses Adirondack line will support the transmission of growing levels of renewable generation located in upstate New York and Canada, such as wind and hydroelectricity, and assist in meeting the State's renewable energy goals. The rebuilt line is also expected to enhance grid reliability by supporting the NYISO's black start plan. On September 21, 2018, the Public Service Commission (PSC) determined that the Authority's April 2018 Article VII application was complete. The PSC granted the Certificate of Compatibility and Public Need for the project on November 14, 2019, approving the Joint Proposal. On February 6, 2020, the PSC issued an order approving Part One of the Environmental Management and Construction Plan. Additionally, the Authority has received its Nationwide Permit from the U.S. Army Corps of Engineers and the New York State Department of Public Service has issued a Notice to Proceed. It is anticipated that construction will begin in 2020. The Authority estimates a project cost of $484 million through project completion in 2023.

In 2012, the Authority's Trustees approved a $726 million Transmission Life Extension and Modernization Program (Transmission LEM Program) on the Authority's Transmission system through 2025. As of December 31, 2019, the Authority has spent approximately $350 million. The Transmission LEM Program encompasses transmission assets in the Central, Northern and Western regions of New York and will include work to be done such as upgrades, refurbishments and replacements associated with switchyards and substations, transmission line structures or towers and associated hardware and replacement of the submarine cable on the PV-20 line. Reinvestment in this strategic component of the Authority's overall mission supports the repair, upgrade and/or expansion of the transmission infrastructure. The Authority intends to finance the Transmission LEM Program with internal funds and proceeds from debt obligations to be issued by the Authority. The work on the Transmission LEM Program is underway and is expected to continue through 2025.

The Authority's Trustees approved a $460 million Life Extension and Modernization Program at the Niagara project's Lewiston Pump-Generating Plant, (Lewiston LEM Program) of which $460 million of expenditures have been authorized and $328 million spent as of December 31, 2019. The work to be done includes a major overhaul of the plant's 12 pump turbine generator units. The Lewiston LEM Program will increase pump and turbine efficiency, operating efficiency, and the peaking capacity of the overall Niagara project. The Authority filed an application with the Federal Energy Regulatory Commission (FERC) for a non-capacity license amendment in connection with the program. The amendment was approved with a FERC order issued in 2012. The Authority intends to finance this LEM Program with internal funds and proceeds from debt obligations to be issued by the Authority. The unit work began in late 2012 and is on-going, with the final unit expected to be completed in 2022.

By order issued March 15, 2007, FERC issued the Authority a new 50-year license for the Niagara Project effective September 1, 2007. In doing so, FERC approved six relicensing settlement agreements entered into by the Authority with various public and private entities. In 2007, the Authority estimated that the capital cost associated with the relicensing of the Niagara project would be approximately $495 million. This estimate does not include the value of the power allocations and operation and maintenance expenses associated with several habitat and recreational elements of the settlement agreements. As of December 31, 2019, the balance in the recorded liability associated with the Niagara relicensing on the statement of net position is $225 million ($18 million in current and $207 million in other noncurrent liabilities).

In 2003, FERC approved a Comprehensive Relicensing Settlement Agreement ("Relicensing Agreement") reached by the Authority and numerous parties and issued the Authority a new 50-year license for the St. Lawrence-FDR Project ("St. Lawrence-FDR License"). The Relicensing Agreement between the Authority and the Local Government Task Force ("LGTF") provided for a review of the Relicensing Agreement every ten years to address issues not contemplated at the time of relicensing in 2003. Following the review that began in 2013, the Authority and the LGTF entered into an agreement effective May 4, 2015 (the "LGTF Ten-Year Review Agreement") in which the Authority agreed to certain actions, including to: (1) fund an economic development strategic marketing study; (2) temporarily reduce electricity costs for certain farms and businesses; (3) initiate an energy efficiency and renewable energy program for the LGTF communities; and (4) enhance certain recreational facilities in the LGTF communities. On March 26, 2015, the Authority's Trustees authorized expenditures of up to $45.1 million for the purpose of implementing the commitments in the LGTF 10-Year Review Agreement and has spent approximately $27 million as of December 31, 2019.

More detailed information about the Authority's capital assets is presented in note 2 "Summary of Significant Accounting Policies" and note 5 "Capital Assets" of the notes to the consolidated financial statements.

Capital Structure

	2019	2018 (In millions)	2017
Long-term debt, net of current maturities:			
Senior:			
Revenue bonds	$ 465	$ 653	$ 720
Subordinated:			
Subordinated Notes, Series 2017 and 2012 (1)	42	43	44
Commercial paper	5	5	5
Total long-term debt, net of current maturities	512	701	769
Net position	4,760	4,734	4,739
Total capitalization	$ 5,272	$ 5,435	$ 5,508

(1) The Subordinated Notes, Series 2017 and 2012, which were issued in 2017 and 2012, respectively, are subordinate to the Series 2003 A Revenue Bonds, the Series 2007 B Revenue Bonds, the Series 2011 A Revenue Bonds and the Series 2015 A Revenue Bonds.

During 2019, long-term debt, net of current maturities, decreased by $189 million, primarily due to a debt refinance of the 2007 A and 2007 C Revenue Bonds and scheduled maturities.

In November 2016, the Authority's Trustees authorized the issuance of Subordinated Notes, Series 2017 (Subordinated Notes Series 2017) in a principal amount not to exceed $30 million to accelerate additional funding for the State Parks Greenway Fund, which was established pursuant to the Niagara Relicensing Settlement entered into by the Authority and the New York State Office of Parks, Recreation & Historic Preservation in connection with the Niagara Project's relicensing. The Authority issued the subordinate notes on February 24, 2017 in the amount of $25.2 million.

Total debt to equity ratio as of December 31, 2019, was at .26-to-1 when compared to .27-to-1 as of December 31, 2018.

Debt Ratings

	Moody's	Standard & Poor's	Fitch
NYPA's underlying credit ratings:			
Senior debt:			
Long-term debt (a)	Aa1	AA	AA
Subordinate debt:			
Subordinate Notes, Series 2017	N/A	AA-	N/A
Subordinate Notes, Series 2012	N/A	N/A	AA
Commercial paper	P-1	A-1+	F1+

(a) Long term debt includes certain bonds – Series 2007 B Revenue Bonds and Series 2003 A Revenue Bonds – the principal and interest when due is guaranteed under insurance policies issued by MBIA Insurance Corporation and Assured Guaranty Municipal Corporation, respectively. The credit ratings of MBIA

Insurance Corporation and Assured Guaranty Municipal Corporation are currently at or below the Authority's underlying credit ratings.

In November 2019, Standard & Poor's Ratings Service assigned a AA- rating to the Authority's Subordinated Notes, Series 2017, which they reaffirmed in November 2019. In November 2019, Standard & Poor's Ratings Service also affirmed the Authority's senior and subordinate debt ratings, which they affirmed in November 2019. In November 2019, Moody's Investors Service affirmed the Authority's commercial paper rating (they did not reconfirm their rating for the Authority's senior debt or review the Authority's Subordinated Notes, Series 2017 or Series 2012). In November 2019, Fitch Ratings affirmed the Authority's commercial paper rating, which they affirmed in January 2019 (they did not reaffirm their rating for the Authority's senior debt or Subordinated Notes, Series 2012 or review the Authority's Subordinated Notes, Series 2017).

The Authority has a line of credit under a 2019 revolving credit agreement (the 2019 RCA), with a syndicate of banks, to provide liquidity support for the Series 1-3 CP Notes, under which the Authority may borrow up to $700 million in aggregate principal amount outstanding at any time for certain purposes, including the repayment of the Series 1–3 CP Notes. The 2019 RCA expires January 22, 2022. There are no outstanding borrowings under the 2019 RCA.

Economic Conditions

Competitive Environment

The Authority's mission is to power the economic growth and competitiveness of New York State by providing customers with low-cost, clean, reliable power and the innovative energy infrastructure and services they value. The Authority's financial performance goals are to have the resources necessary to achieve its mission, to maximize opportunities to serve its customers better and to preserve its strong credit rating.

To maintain its position as a low cost provider of power in a changing environment, the Authority has undertaken and continues to carry out a multifaceted program, including: (a) the upgrade and relicensing of the Niagara, St. Lawrence-FDR, and Blenheim-Gilboa ("BG") projects; (b) long-term supplemental electricity supply agreements with NYPA's governmental customers located in Southeastern New York (NYC Governmental Customers); (c) construction and operation of the 500 MW combined cycle electric generating plant located at the Authority's Poletti plant site; (d) a long-term electricity supply contract with Astoria Energy II LLC for the purchase of the output of a 550-MW power plant in Astoria, Queens, ("AEII"), in which the Authority's net costs associated with the AEII power purchase agreement are recovered under a separate contract with the NYC Governmental Customers who are served by the output; (e) a firm transmission capacity purchase agreement with Hudson Transmission Partners, LLC ("HTP") for a portion of the output of the 660 MW, seven mile, underground and underwater transmission line connecting into the transmission system operated by PJM Interconnection LLC; (f) construction and maintenance of new transmission lines to relieve congestion and increase transfer capability from central to eastern New York addressing NYISO's AC Transmission Public Policy Need ("AC Proceeding"); (g) refinancing outstanding callable bonds to lower the overall cost of debt; and (h) implementation of an enterprise-wide energy risk management program. As a component of Authority's strategic plan, efforts to modernize the Authority's generation and transmission, infrastructure are being developed and implemented to increase flexibility and resiliency, and to serve customers' needs in an increasingly dynamic energy marketplace.

To achieve its goal of promoting clean energy and efficiency, the Authority implements energy efficiency services for the benefit of its power supply customers and for various other public entities throughout the States. The Authority finances the installation of energy saving greenhouse measures and equipment which are owned by the customers and public entities to focus on the reduction of the demand for electricity and the efficient use of energy.

The Authority operates in a competitive and sometimes volatile energy market environment. Through its participation in the NYISO and other commodity markets, the Authority is subject to electric energy prices, fuel prices and electric capacity price risks that impact the revenue and purchased power streams of its facilities and customer market areas. Such volatility can potentially have adverse effects on the Authority's financial condition. To mitigate downside effects, many of the Authority's customer contracts provide for the complete or partial pass-through of these costs.

To moderate cost impacts to the Authority and its customers, the Authority, at times, hedges market risks through the use of financial instruments and physical contracts. Hedges are transacted by the Authority to mitigate volatility in the cost of energy or related products needed to meet customer needs; to mitigate risk related to the price of energy and related products sold by the Authority; to mitigate risk related to margins (electric sales versus fuel use) where the Authority owns generation or other capacity; and to mitigate geographic cost differentials of energy procured or sold for transmission or transportation to an ultimate location. Commodities to be hedged include, but are not limited to, natural gas, natural gas basis, electric energy, capacity, congestion costs and aluminum associated with the supply of electricity. Any such actions are taken pursuant to policies approved by the Authority's Trustees and under the oversight of an Executive Risk Management Committee.

The Authority can give no assurance that, even with these measures, it will retain its competitive status in the marketplace in the future as a result of the restructuring of the State's electric utility industry and the emergence of new competitors or increased competition from existing participants.

Rate Actions

Power and energy from the St. Lawrence-FDR and Niagara hydroelectric facilities are sold to municipal electric systems, rural electric cooperatives, industrial and other business customers, certain public bodies, investor-owned utilities, out-of-state customers, and into the wholesale market. The charges for firm and/or firm peaking power and associated energy sold by the Authority, as applicable, to the fifty-one municipal electric systems and rural electric cooperatives in New York State, two public transportation agencies, three investor-owned utilities for the benefit of rural and domestic customers, eight host communities and seven out-of-state public customers have been established on the basis of the hydroelectric project costs. In November 2011, the Authority's Trustees approved a 41-month rate plan providing for phased-in rate increases covering the period ending April 30, 2015. The current rates, established with the last increase in May 2014, in conjunction with the Rate Stabilization Reserve mechanism, continue to be sufficient to recover the estimated costs to run the facilities for 2020, and will therefore remain in effect at current levels until further notice.

Expansion and Replacement Power commercial and industrial customers supplied from the Niagara facility and Preservation Power industrial customers supplied from the St. Lawrence-FDR facility are allocated over 35% of the combined firm contracted demand of the plants. Their rates are subject to annual adjustment based on the average of three contractually agreed-upon economic indices reflecting changes in industrial energy prices. In addition, one of the customers served by the St. Lawrence-FDR facility has an energy rate partially tied to market prices of aluminum.

ReCharge New York ("RNY") is Governor Cuomo's statewide economic development electric power program, designed to retain and create jobs through the allocation of low-cost power. The RNY program allocates 455 MW of hydropower from the Authority's Niagara and St. Lawrence-FDR projects at Preservation Power rates, which are similar to the Expansion and Replacement power customer rates, with certain adjustments. An additional 455 MW of market power can also be procured for RNY customers upon request.

The Authority has supplied electric power to its governmental customers located within New York City and Westchester County since 1976. New long term agreements have been executed with the New York City governmental customers, incorporating recent shifts in the electricity business, New York State's clean energy goals, and continuing changes in the Authority's supply portfolio, all in an effort to continue to provide value for, and serve this customer group.

In an order issued January 27, 1999, FERC approved the use of a $165.4 million transmission system revenue requirement in developing rates for use of NYPA's transmission facilities in the NYISO market. FERC also approved, among other things, the imposition of a NYPA Transmission Adjustment Charge ("NTAC") and the NYPA Transmission Service Charges ("TSC") which are the tariff elements established to achieve full recovery of the Authority's annual transmission revenue requirement ("ATRR"). In July 2012, the Authority filed for its first requested increase in the revenue requirement with FERC since the implementation of the NYISO. This filing resulted in FERC's October 4, 2013 order accepting an uncontested settlement agreement establishing a new $175.5 million revenue requirement. In January 2016, the Authority filed to convert from a Stated Rate to a Formula Rate to ensure full recovery of its revenue requirement based upon operating and maintenance expenses as well as the capital spending necessary to maintain the reliability of its transmission system, such as the Life Extension and Modernization program. The Authority filed an unopposed Offer of Settlement on September 30, 2016 that fully resolved the issues raised by interested parties in settlement negotiations concerning the formula rate. The settlement was approved by FERC on January 19, 2017. Separately, the ATRR under the formula of $190 million initially made effective April 1, 2016 was updated on July 1, 2016 to $198.2 million pursuant to the formula rate annual update process. The ATRR effective July 1, 2019 is $237.7 million including the revenue requirement for the Marcy South Series Compensation Project.

Commitments and contingencies

The Authority's commitments and contingencies are more fully detailed in note 13 "Commitments and Contingencies" of the notes to the consolidated financial statements.

Canal Corporation

The Canal Transfer Legislation enacted April 4, 2016, authorized, but does not require, the Authority, to the extent that the Authority's Trustees deem it feasible and advisable as required by the Resolution, to transfer moneys, property and personnel to the Canal Corporation.

The Canal Corporation operates at a loss and is expected to require substantial operating and maintenance support and capital investment. The Canal Corporation's expenses are expected to be funded by transfers of funds from the Authority. Any transfer of funds would be subject to approval by the Authority's Board of Trustees and compliance with the Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented. Certain expenses eligible for reimbursement are expected to be reimbursed to the Authority by moneys held in the Canal Development Fund maintained by the State Comptroller and the Commissioner of Taxation and Finance. For the year ended December 31, 2019, the Canal Corporation recognized $2 million in revenues, $86 million in operations and maintenance expenses and $25 million in depreciation expense. For the year ended December 31, 2018, the Canal Corporation recognized $2 million in revenues, $101 million in operations and maintenance expenses and $23 million in depreciation expense.

By resolution adopted December 11, 2019, the Canal Corporation's Board of Directors adopted a budget for 2020 that consisted of expenditures of $91 million for operations and maintenance expenses, $69.9 million for capital expenses and $2.6 million for Canal Development Fund expenses.

Given the age of the Canal System, the Authority expects that significant maintenance and capital investments will be required to assure the Canal System's continuing operation. The Authority's budget and financial plan for 2020-2023 includes the adopted Canal budget for 2020 and Canal-related operating expenditures of approximately $94 million per year for 2021-2023. The Authority's 2020-2023 budget and financial plan includes the adopted Canal budget for 2020 and Canal System related capital expenditures of approximately $53 million per year for

2021-2023. The Authority will continue to evaluate the condition of the Canal System and expects to allocate additional funding if deemed necessary through its annual budgeting process

Reforming the Energy Vision

In April 2014, the New York Public Service Commission ("NYPSC") commenced a proceeding to reform the State's energy industry and regulatory practices. According to the NYPSC, this initiative, called Reforming the Energy Vision ("REV"), will lead to regulatory changes that promote more efficient use of energy; deeper penetration of renewable energy resources such as wind and solar; and wider deployment of smaller power sources located closer to the customer load, including micro grids capable of meeting the regular demands of a community of consumers, on-site power supplies, and energy storage. REV also aims to promote greater use of advanced energy management products to enhance demand elasticity and efficiencies. The NYPSC order instituting the proceeding designated two tracks for the REV with track one focused on developing distributed resource markets and track two focused on reforming utility ratemaking practices.

The NYPSC has identified six core policy objectives for REV relating to enhanced customer knowledge and tools to support effective management of total energy bills, market animation and leverage of customer contributions, system-wide efficiency, fuels and resource diversity, system reliability and resiliency, and reduction of carbon emissions. A NYPSC "Staff Report and Proposal" released in April 2014 set forth a vision for how to accomplish the NYPSC's objectives. This report and additional information on REV, including the Order Adopting Regulatory Policy Framework and Implementation Plan issued and effective February 26, 2015 (Track 1) and Order Adopting a Ratemaking and Utility Revenue Model Policy Framework issued and effective May 19, 2016 (Track 2), are available at http://www.dps.ny.gov/. No statement on that website is incorporated by reference herein. The NYPSC has several ongoing proceedings related to Track 1 and Track 2 of REV that the Authority is following. In 2019, the PSC issued a number of orders addressing REV-related issues including compensation for distributed energy resources, community-scale clean energy initiatives, and electric vehicle incentives.

While the NYPSC does not have jurisdiction over rates for power generated or transmitted by the Authority, the reforms and innovations contemplated in the REV initiative are expected by the NYPSC to be done in conjunction with certain independent but related actions of the Authority, and will impact electricity rates for energy efficiency project customers as well as the economics of clean energy projects developed by the Authority's customers. As a result, the Authority monitors the REV initiative closely and expects to evaluate any regulatory reforms that are ultimately implemented and their impact on project implementation and suitability for adoption by the Authority and its customers.

Transmission Congestion and System Operation Issues

Infrastructure limitations in the vicinity of the Authority's Niagara Project contribute to transmission congestion that limits the amount of Niagara Project output that can be accommodated on the transmission system. Transmission congestion prevents the full and efficient use of this asset, as well as other generation assets located in Western New York. To begin alleviating this congestion, on July 20, 2015, the NYPSC issued an order that granted requests from the Authority and National Grid to establish a Public Policy Requirement driving the need for transmission additions to, among other things, enable the Authority to fully operate the Niagara Project and support the import of capacity from Ontario during emergency conditions. This order initiated the NYISO's competitive solicitation process which resulted in the NYISO Board of Directors selection of the NextEra Energy Transmission New York, Inc. (NextEra) Empire State Line transmission project on October 17, 2017. NextEra currently has requests pending before the PSC for two regulatory approvals that are necessary before it may begin developing the line. The project is a partial solution to the identified congestion issues and is expected to be completed in June 2022.

Certain New Legislation Affecting the Authority

Bills are periodically introduced or passed in the New York State Legislature which propose to limit or restrict the powers, rights and exemptions from regulation which the Authority currently possesses under the Power Authority Act and other laws, or could otherwise affect the Authority's financial condition or its ability to conduct its business, activities, or operations in the manner presently conducted or contemplated hereby. It is not possible to predict whether any such bills, or other bills of a similar type which may be introduced or passed in the future, will be enacted.

As more specifically described in the enactment, and subject to limitations described therein, the 2019-20 Enacted State Budget amended the Power Authority Act to authorize the Authority, subject to feasible and advisable determinations by the Authority's Trustees, to: (1) design, finance, develop, construct, install, lease, operate and maintain electric vehicle charging stations throughout the state for use by the public; (2) plan, finance, construct, acquire, operate, improve and maintain, either alone or jointly with one or more other entities, transmission facilities for the purpose of transmitting power and energy generated by renewable wind energy generation projects that are located in State territorial waters, and/or in waters under the jurisdiction or regulation of the U.S.; (3) supply certain market power and energy and renewable energy products to any Authority customer, public entity, or community choice aggregation ("CCA") community in the State (collectively, "Eligible Entities); and (4) alone or jointly with one or more other entities, finance the development of renewable energy generating projects that are located in the State, including its territorial waters, and/or on property or in waters under the jurisdiction or regulatory authority of the United States, purchase power, energy or related credits or attributes produced from such renewable energy generating projects, and allocate and sell such products to Eligible Entities. The Authority may exercise any of this authority at its discretion, and the changes made by the amendments do not affect the Authority's previously-existing statutory authority.

On July 18, 2019, the State enacted the "New York State Climate Leadership and Community Protection Act" as Chapter 106 of the Laws of 2019 ("Chapter 106"). As presently drafted, the date upon which most provisions of Chapter 106 will become effective will depend on the date that related legislation becomes effective.

In its present form, several provisions of Chapter 106 could potentially impact the Authority's business and operations, such as the following: (1) provisions authorizing the New York State Department of Environmental Conservation to promulgate regulations establishing limits for State-wide greenhouse gas ("GHG") emissions and to ensure compliance with such limits; (2) a requirement that specified State entities, including the Authority, adopt regulations to contribute to achieving statewide GHG emissions; (3) a requirement that State entities, including the Authority, assess and implement strategies to reduce GHG emissions; (4) consideration of whether actions that the Authority would undertake in the course of its operations are consistent with State GHG emission limits that will be established pursuant the enactment; and (5) potential allocation or realignment of resources to support State clean energy and energy efficiency goals for disadvantaged communities.

Many of the provisions of Chapter 106 that could impact the Authority are not likely to be implemented for years based on deadlines established in the enactment. Therefore, the Authority is not in a position at this time to evaluate the impact of any particular provision of Chapter 106 on the Authority's business and operations.

Contacting the Authority

This financial report is designed to provide our customers and other interested parties with a general overview of the Authority's finances. If you have any questions about this report or need additional financial information, contact the New York Power Authority, 123 Main Street, White Plains, New York 10601-3107. Email: info@nypa.gov

NEW YORK POWER AUTHORITY

Consolidated Statements of Net Position

(In millions)

	December 31, 2019	December 31, 2018
Assets and Deferred Outflows		
Current Assets:		
Cash and cash equivalents	$ 66	$ 7
Investment in securities	695	940
Receivables - customers	183	180
Materials and supplies, at average cost:		
Plant and general	86	82
Fuel	30	33
Miscellaneous receivables and other	243	192
Total current assets	1,303	1,434
Noncurrent Assets:		
Restricted funds:		
Cash and cash equivalents	52	31
Investment in securities	16	30
Total restricted assets	68	61
Capital funds:		
Cash and cash equivalents	16	2
Investment in securities	10	23
Total capital funds	26	25
Capital Assets:		
Capital assets not being depreciated	931	896
Capital assets, net of accumulated depreciation	4,869	4,623
Total capital assets	5,800	5,519
Other Noncurrent Assets:		
Receivable - New York State	86	129
Other long-term assets	1,490	1,583
Total other noncurrent assets	1,576	1,712
Total noncurrent assets	7,470	7,317
Total assets	8,773	8,751
Deferred outflows of resources:		
Accumulated decrease in fair value of derivative hedging	5	1
Pensions	58	89
Postemployment benefits other than pensions	105	47
Total assets and deferred outflows of resources	$ 8,941	$ 8,888

See accompanying notes to the consolidated financial statements.

(Continued)

NEW YORK POWER AUTHORITY

Consolidated Statements of Net Position

(In millions)

	December 31,	
Liabilities, Deferred Inflows and Net Position	2019	2018
Current liabilities:		
Accounts payable and accrued liabilities	$ 527	$ 424
Short-term debt	692	526
Long-term debt due within one year	31	64
Capital lease obligation due within one year	43	37
Total current liabilities	1,293	1,051
Noncurrent liabilities:		
Long-term debt:		
Senior:		
Revenue bonds	465	653
Subordinated:		
Subordinated Notes	42	43
Commercial paper	5	5
Total long-term debt	512	701
Other noncurrent liabilities:		
Capital lease obligation	1,034	1,077
Disposal of spent nuclear fuel	228	223
Relicensing	256	244
Other long-term liabilities	426	386
Total other noncurrent liabilities	1,944	1,930
Total noncurrent liabilities	2,456	2,631
Total liabilities	3,749	3,682
Deferred inflows of resources:		
Cost of removal obligations	365	348
Accumulated increase in fair value of derivative hedging	1	7
Pensions	20	76
Postemployment benefits other than pensions	46	41
Net position:		
Net investment in capital assets	3,647	3,171
Restricted	45	42
Unrestricted	1,068	1,521
Total net position	4,760	4,734
Total liabilities, deferred inflows of resources and net position	$ 8,941	$ 8,888

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Consolidated Statements of Revenues, Expenses and Changes in Net Position

(In millions)

	Year Ended December 31, 2019	2018
Operating revenues:		
Power sales	$ 1,481	$ 1,812
Transmission charges	214	202
Wheeling charges	647	654
Other	28	21
Total operating revenues	2,370	2,689
Operating Expenses:		
Purchased power	529	710
Fuel oil and gas	140	189
Wheeling	647	654
Operations	562	534
Maintenance	130	145
Depreciation	250	235
Total operating expenses	2,258	2,467
Operating income	112	222
Nonoperating revenues and expenses:		
Nonoperating revenues:		
Investment income	44	21
Other	2	2
Total nonoperating revenues	46	23
Nonoperating expenses		
Interest on long-term debt	45	47
Interest - other	115	117
Interest capitalized	(23)	(18)
Amortization of debt premium	(2)	(3)
Total nonoperating expenses	135	143
Net income before contributed capital	23	102
Contributed capital- Wind farm transmission assets	3	–
Change in net position	26	102
Net position, January 1, as restated (Note 2)	4,734	4,632
Net position, December 31	$ 4,760	$ 4,734

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Consolidated Statements of Cash Flows

(In millions)

	Year Ended December 31, 2019	Year Ended December 31, 2018
Cash flows from operating activities:		
Received from customers for the sale of power, transmission and wheeling	$ 2,356	$ 2,670
Disbursements for:		
Purchased power	(529)	(712)
Fuel, oil and gas	(145)	(193)
Wheeling of power by other utilities	(640)	(647)
Operations and maintenance	(840)	(912)
Net cash provided by operating activities	202	206
Cash flows from capital and related financing activities:		
Gross additions to capital assets	(414)	(293)
Issuance of commercial paper	156	–
Repayment of bonds	(219)	(60)
Repayment of notes	(1)	(1)
Interest paid, net	(42)	(43)
Net cash used in capital and related financing activities	(520)	(397)
Cash flows from noncapital–related financing activities:		
Energy conservation program payments received from participants	193	107
Energy conservation program costs	(153)	(159)
Issuance of commercial paper	138	103
Repayment of commercial paper	(128)	(62)
Interest paid on commercial paper	(10)	(11)
Payment received from New York State	43	43
Margin deposits	15	4
NYISO collateral	8	(12)
Net cash provided by noncapital-related financing activities	106	13
Cash flows from investing activities:		
Earnings received on investments	17	19
Purchase of investment securities	(4,385)	(3,005)
Sale of investment securities	4,674	3,141
Net cash provided by investing activities	306	155
Net increase (decrease) in cash	94	(23)
Cash and cash equivalents, January 1	40	63
Cash and cash equivalents, December 31	$ 134	$ 40
Reconciliation to net cash provided by operating activities:		
Operating income	$ 112	$ 222
Adjustments to reconcile operating income to net cash provided by operating activities:		
Change in assets, deferred outflows, liabilities and deferred inflows:		
Provision for depreciation	250	235
Net increase in miscellaneous receivables and other	(235)	(151)
Net increase in receivables and materials and supplies	(50)	(36)
Net decrease in accounts payable/accrued liabilities and other	125	(64)
Net cash provided by operating activities	$ 202	$ 206

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Statements of Fiduciary Net Position

(In millions)

	December 31,	
	2019	2018
Assets		
Assets:		
Cash and cash equivalents	$ 24	$ 13
Receivables:		
Due from broker for investments sold	–	1
Investment income	1	1
Total receivables	1	2
Investments at fair value:		
Domestic equity	130	297
International equity	46	84
Index Fund	297	–
Real Estate (REIT)	39	31
Fixed Income	152	145
Total investments	664	557
Total assets	689	572
Liabilities:		
Payables:		
Due to broker for investments purchased	3	7
Total liabilities	3	7
Net position available for postemployment benefits other than pensions	$ 686	$ 565

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Statements of Changes in Fiduciary Net Position

(In millions)

	Year Ended December 31, 2019	2018
Additions:		
Employer contributions	$ 25	$ 25
Investment income:		
Net increase / (decrease) in fair value of investments	112	(45)
Interest and dividend income	11	9
Less: investment expense	(2)	(2)
Net investment income / (loss)	121	(38)
Total additions	146	(13)
Deductions:		
Benefits payments	25	25
Total deductions	25	25
Changes in net position	121	(38)
Net position available for postemployment benefits other than pensions – beginning of year	565	603
Net position available for postemployment benefits other than pensions – end of year	$ 686	$ 565

See accompanying notes to the consolidated financial statements.

(1) General

The Power Authority of the State of New York (the Power Authority), doing business as The New York Power Authority, is a corporate municipal instrumentality and political subdivision of the State of New York (State) created in 1931 by Title 1 of Article 5 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State, as amended (Power Authority Act or Act).

The Power Authority's mission is to power the economic growth and competitiveness of the State by providing customers with low-cost, clean, reliable power and the innovative energy infrastructure and services they value. The Authority's financial performance goal is to have the resources necessary to achieve its mission, to maximize opportunities to serve its customers better and to preserve its strong credit rating.

The Power Authority is authorized by the Power Authority Act to help provide a continuous and adequate supply of dependable electricity to the people of the State. The Power Authority generates, transmits and sells electricity principally at wholesale. The Power Authority's primary customers are municipal and investor-owned utilities, rural electric cooperatives, high load factor industries and other businesses located throughout New York State, various public corporations located in Southeastern New York within the metropolitan area of New York City (SENY Governmental Customers), and certain out-of-state customers.

To provide electric service, the Power Authority owns and operates five major generating facilities, eleven small gas-fired electric generating facilities, and four small hydroelectric facilities in addition to a number of transmission lines, including major 765-kV and 345-kV transmission facilities. The Power Authority's five major generating facilities consist of two large hydroelectric facilities (Niagara and St. Lawrence-FDR), a large pumped-storage hydroelectric facility (Blenheim-Gilboa), the combined cycle electric generating plant located in Queens, New York (500-MW Plant) and the Richard M. Flynn combined cycle plant located on Long Island (Flynn). To provide additional electric generation capacity to the Authority's NYC Governmental Customers, the Authority entered into a long-term electricity supply agreement with Astoria Energy II LLC in 2008 for the purchase of the output of an Astoria, Queens based natural-gas fueled 550-MW generating plant, which entered service in the summer of 2011.

The Power Authority acts through a Board of Trustees. The Power Authority's Trustees are appointed by the Governor of the State of New York, with the advice and consent of the State Senate. The Power Authority is a fiscally independent public corporation that does not receive State funds or tax revenues or credits. It generally finances construction of new projects through a combination of internally generated funds and sales of bonds and notes to investors and pays related debt service with revenues from the generation and transmission of electricity. Accordingly, the financial condition of the Authority is not controlled by or dependent on the State or any political subdivision of the State. Under the criteria set forth in Governmental Accounting Standards Board (GASB) the Authority considers its relationship to the State to be that of a related organization.

Income of the Power Authority and properties acquired by it for its projects are exempt from taxation. However, the Authority is authorized by the Act to enter into agreements to make payments in lieu of taxes with respect to property acquired for any project where such payments are based solely on the value of the real property without regard to any improvement thereon by the Authority and where no bonds to pay any costs of such project were issued prior to January 1, 1972.

Article XV of the New York State Constitution provides, in part, that the barge canal, the divisions of which are the Erie canal, the Oswego canal, the Champlain canal, and the Cayuga-Seneca canal, and the terminals constructed as part of the barge canal system (collectively, the "Canal System") shall remain the property of the State and under its management and control forever. Legislation enacted in 1992 (the "1992 Legislation") transferred jurisdiction of the Canal System, among other assets and properties, from the New York State Commissioner of Transportation to the Thruway Authority, to be held by the New York Thruway Authority (the "Thruway Authority") in the name of the people of the State. Such canal system remained the property of the State and under its management and control as exercised by and through the Thruway Authority, through its then newly created subsidiary, the New York State Canal Corporation (the "Canal Corporation"). The 1992 Legislation deemed the Canal Corporation to be the State for the purposes of such management and control of the canals but for no other purposes.

Legislation was enacted on April 4, 2016 (the "Canal Transfer Legislation") which provided for (1) the transfer, effective January 1, 2017, of the New York State Canal Corporation (Canal Corporation) from the New York State Thruway Authority (Thruway Authority) to the Power Authority and (2) as of January 1, 2017, the Power Authority's assumption from the Thruway Authority of powers and duties relating to the Canal System, and jurisdiction over the Canal System and state assets, equipment and property in connection with the planning, development, construction, reconstruction, maintenance and operation of the Canal System, which the Power Authority is authorized to exercise through the Canal Corporation. The Canal Corporation is responsible for a 524-mile Canal System consisting of the Erie, Champlain, Oswego and Cayuga-Seneca canals and the terminals constructed as part of the barge canal system (the "Canal System").

(2) Summary of Significant Accounting Policies

Significant accounting policies include the following:

(a) *Basis of Reporting*

The operations of the Power Authority and its subsidiary, the Canal Corporation, are presented as an enterprise fund following the accrual basis of accounting in order to recognize the flow of economic resources. Accordingly, revenues are recognized in the period in which they are earned and expenses are recognized in the period in which they are incurred. The accounts and transactions of the Canal Corporation are included in the consolidated financial statements and notes to the consolidated financial statements. All significant transactions between the Power Authority and the Canal Corporation have been eliminated. The Power Authority and its blended component unit are referred to collectively as the "Authority" in the consolidated financial statements, except where noted.

The Authority complies with all applicable pronouncements of the Governmental Accounting Standards Board (GASB). In accordance with Governmental Accounting Standards (GAS) Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements,* (GAS No. 62) the Authority applies all authoritative pronouncements applicable to nongovernmental entities (i.e., Accounting Standards Codification (ASC) of the Financial Accounting Standards Board) that do not conflict with GASB pronouncements.

(b) *Regulatory Accounting*

The Power Authority's Board of Trustees has broad rate setting authority for its power sales agreements with customers. The sale of transmission service over the Power Authority's facilities is provided pursuant to New York Independent System Operator (NYISO) tariffs and under contracts that pre-dated existence of the NYISO. The Power Authority files its transmission system revenue requirement with the Federal Energy Regulatory Commission (FERC) for inclusion in the NYISO's open access tariff.

The Authority accounts for its regulated operations under the provisions of GAS No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre November 30, 1989 FASB and AICPA Pronouncements*, paragraphs 476-500. These provisions recognize the economic ability of regulators, through the ratemaking process, to create future economic benefits and obligations affecting rate-regulated entities. Accordingly, the Authority records these future economic benefits and obligations as regulatory assets and regulatory liabilities, respectively. Regulatory assets represent probable future revenues associated with previously incurred costs that are expected to be recovered from customers. Regulatory liabilities represent amounts that are collected from customers through the ratemaking process associated with costs to be incurred in future periods. Based on the action of the Board of Trustees, the Authority believes the future collection of the costs held over through regulatory assets is probable. For regulatory assets see Note 2(l) "Summary of Accounting Polices – Other Long-Term Assets" of the notes to the consolidated financial statements.

(c) *Estimates*

The preparation of consolidated financial statements in conformity with 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 consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

(d) *Capital Assets*

Capital assets are recorded at original cost and consist of amounts expended for labor, materials, services and indirect costs to license, construct, acquire, complete and place in operation the projects of the Authority. Interest on amounts borrowed to finance construction of the Authority's projects is charged to the project prior to completion. Borrowed funds for a specific construction project are deposited in a capital fund account. Earnings on fund investments are held in this fund to be used for construction. Earnings on unexpended funds are credited to the cost of the related project (construction work in progress) until completion of that project. The costs of current repairs are charged to operating expense, and renewals and betterments are capitalized. The cost of capital assets retired less salvage is charged to accumulated depreciation. Depreciation of capital assets is generally provided on a straight-line basis over the estimated lives of the various classes of capital assets.

The related depreciation provisions at December 31, 2019 and 2018 expressed as a percentage of average depreciable capital assets on an annual basis are:

	Average depreciation rate	
	2019	2018
Type of plant:		
Production:		
Hydro	2.0%	2.0%
Gas turbine/combined cycle	2.0	2.1
Transmission	1.9	1.9
General	3.9	3.2
Canal system	3.4	3.3
	2.6%	2.5%

(e) *Asset Retirement and Cost of Removal Obligations*

The Authority has recorded a liability at fair value to recognize legal obligations for asset retirements in the period incurred and to capitalize the cost by increasing the carrying amount of the related long-lived asset. The Authority determined that it had legal liabilities for the retirement of certain Small Clean Power Plants (SCPPs) in New York City and, accordingly, has recorded a liability for the retirement of these assets. In connection with these legal obligations, the Authority has also recognized a liability for the remediation of certain contaminated soils discovered during the construction process.

The Authority also applies GAS No. 49 *Accounting and Financial Reporting for Pollution Remediation Obligations,* to asset retirement obligations involving pollution remediation obligations, which upon the occurrence of any one of five specified obligating events, requires an entity to estimate the components of expected pollution remediation outlays and determine whether outlays for those components should be accrued as a liability or, if appropriate, capitalized when goods and services are acquired. The Authority has approximately $25 million of liabilities recorded under GASB 49 included within the $51 million dollars of ARO's in the table below.

In addition to asset retirement obligations, the Authority has other cost of removal obligations that are being collected from customers and accounted for under the provisions of GAS Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre November 30, 1989 FASB and AICPA Pronouncements*, paragraphs 476-500. These cost of removal obligations are reflected in deferred inflows of resources in the statements of net position.

Asset retirement obligations (ARO) amounts included in other noncurrent liabilities and cost of removal obligation amounts included in deferred inflows are as follows:

	ARO amounts	Cost of removal obligation
	(In millions)	
Balance – December 31, 2018	$ 53	$ 348
Depreciation Expense	–	14
Other expense	–	3
Settlements	(2)	–
Balance – December 31, 2019	$ 51	$ 365

(f) *Long-Lived Assets*

The Authority applies GAS No. 42, *Accounting and Financial Reporting for Impairment of Capital Assets and for Insurance Recoveries*, which states that asset impairments are generally recognized only when the service utility of an asset is reduced or physically impaired.

GAS No. 42 states that asset impairment is a significant, unexpected decline in the service utility of a capital asset. The service utility of a capital asset is the usable capacity that at acquisition was expected to be used to provide service, as distinguished from the level of utilization which is the portion of the usable capacity currently being used. Decreases in utilization and existence of or increases in surplus capacity that are not associated with a decline in service utility are not considered to be impairments.

(g) *Cash, Cash Equivalents and Investments*

Cash includes cash and cash equivalents and short-term investments with maturities, when purchased, of three months or less. The Authority accounts for investments at their fair value. Fair value is determined using quoted market prices. Investment income includes changes in the fair value of these investments. Realized and unrealized gains and losses on investments are recognized as investment income in accordance with GAS No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*.

(h) *Derivative Instruments*

The Authority uses financial derivative instruments to manage the impact of energy and capacity price, fuel cost changes and interest rate when applicable, on its earnings and cash flows. The Authority recognizes the fair value of all financial derivative instruments as either an asset or liability on its statements of net position with the offsetting gains or losses recognized in earnings or deferred charges. The Authority applies GAS No. 53, *Accounting and Financial Reporting for Derivative Instruments*, which establishes accounting and reporting requirements for derivative instruments (see Note 8 "Risk Management and Hedging Activities" of the notes to the consolidated financial statements).

(i) *Accounts Receivable*

Accounts receivable are classified as current assets and are reported net of an allowance for uncollectible amounts.

(j) *Materials and Supply Inventory*

Material and supplies are valued at weighted average cost and are charged to expense during the period in which the material or supplies are used.

(k) *Debt Refinancing Charges*

Debt refinancing charges, representing the difference between the reacquisition price and the net carrying value of the debt refinanced, are amortized using the interest method over the life of the new debt or the old debt, whichever is shorter, in accordance with GAS No. 23, *Accounting and Financial Reporting for Refundings of Debt Reported by Proprietary Activities.* See note 6 "Long-Term Debt" of the notes to the consolidated financial statements.

(l) *Other Long-Term Assets*

Other long-term assets at December 31, 2019 and 2018 consist of the following:

	December 31,	
	2019	**2018**
	(In millions)	
Other long-term assets:		
Regulatory assets (a):		
Recoverable electricity supply market costs	$ 364	$ 338
Other regulatory assets	12	15
Total regulatory assets	376	353
Energy efficiency program costs (b)	286	439
Other long-term receivables	443	367
Transmission line interconnection costs	238	256
Other postemployment employee benefits	–	43
Other	147	125
Total other long-term assets	$ 1,490	$ 1,583

(a) Regulatory assets reflect previously incurred costs that are expected to be recovered from customers through the ratemaking process.

(b) Energy efficiency program costs will be recovered from certain customers through the terms of contracts.

In October 2017, a Memorandum of Understanding was entered between the Authority and ten investor owned utility companies to provide Hurricane Relief assistance in Puerto Rico. The Authority's deployment cost associated with the assistance efforts are subject to reimbursement by the Emergency Management Assistant Compact (EMAC) program. As of December 31, 2019, the related costs are included in other long-term assets in the consolidated statements of net position.

(m) *Compensated Absences*

The Authority accrues the cost of unused sick leave which is payable upon the retirement of its employees. The Authority has accrued $35 million and $34 million in other non-current liabilities at December 31, 2019 and 2018, respectively, and $6 million at December 31, 2019 and 2018, in current liabilities on the statements of net position. The current year's cost is accounted for as a current operating expense in the statements of revenues, expenses, and changes in net position.

(n) *Net Position*

Net Position represents the difference between assets plus deferred outflows and liabilities plus deferred inflows and is classified into three components:

a. Net investment in capital assets – This consists of capital assets, net of depreciation reduced by related outstanding debt and accounts. This indicates that these assets are not accessible for other purposes.

b. Restricted – This represents restricted assets reduced by related liabilities and deferred inflows of resources that are not accessible for general use because their use is subject to restrictions enforceable by third parties.

c. Unrestricted – This represents the net amount of assets, deferred outflows of resources, liabilities and deferred inflows of resources that are not included in the components noted above and that are available for general use.

(o) *New York Independent System Operator (NYISO)*

The Power Authority is a member and a customer of the New York Independent System Operator (NYISO). The NYISO schedules the use of the bulk transmission system in the State, which normally includes all the Power Authority's transmission facilities, and collects ancillary services, losses and congestion fees from customers. In addition, the Power Authority dispatches power from its generating facilities in conjunction with the NYISO. The NYISO coordinates the reliable dispatch of power and operates a market for the sale of electricity and ancillary services within the State.

Based upon the Power Authority's scheduled customer power needs and available electricity generated by the Power Authority's operating assets, the Authority buys and sells energy in an electricity market operated by the NYISO. A significant amount of the Power Authority's energy and capacity revenues result from sales of the Power Authority's generation into the NYISO market. A significant amount of the Power Authority's operating expenses consist of various NYISO purchased power charges in combination with generation related fuel expenses.

(p) *Operating Revenues*

The customers served by the Power Authority and the rates paid by such customers vary with the Power Authority facilities designated to serve such loads. These customers are served under contracts and tariffs approved by the Trustees.

The principal operating revenues are generated from the sale, transmission, and wheeling of power. Revenues are recorded when power is delivered or service is provided. Customers' meters are read, and bills are rendered, monthly. Wheeling charges are for costs the Authority incurred for the transmission and/or delivery of power and energy to customers over transmission lines owned by other utilities. Sales to the Authority's five largest customers operating in the State accounted for approximately 52% and 47% of the Authority's operating revenues in 2019 and 2018, respectively.

In addition to contractual sales to customers, the Power Authority also sells power into an electricity market operated by the NYISO. These sales are affected by market prices and are not subject to rate regulation by the Power Authority's Board of Trustees or other regulatory bodies. Accordingly, the Power Authority does not apply the provisions of GAS No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre November 30, 1989 FASB and AICPA Pronouncements*, paragraphs 476-500 to these transactions.

(q) *Operating Expenses*

The Authority's operating expenses include fuel, operations and maintenance, depreciation, purchased power costs, and other expenses related to the sale of power. Energy costs are charged to expense as incurred.

Purchased power costs include capacity, energy and ancillary service purchases made in the wholesale market on behalf of its customers (except for those made through previously approved purchased power agreements). Wheeling expenses are based on contractual and/or tariff rates of the service provider and are recovered through pass-through provisions in customer contracts.

(r) *Pension Plans*

The Authority is a cost-sharing employer that participates in the New York State and Local Employees' Retirement System (NYSLERS), which is a cost-sharing multiple-employer plan in which the participating government employers pool their assets and their obligations to provide defined benefit pensions. The plan assets of this type of plan can be used to pay the pensions of the retirees of any participating employer. The amounts reported by the Authority for its proportionate share of the net pension liability, pension expense and deferred outflows and deferred inflows have been provided by the New York State and Local Employees' Retirement System to employers participating in the NYSLERS in accordance with Statement No. 68, *Accounting and Financial Reporting for Pensions*, and have been determined on the same basis as reported by the NYSLERS. See Note 10 "Pension Plans" of the notes to the consolidated financial statements.

(s) *Postemployment Benefits Other Than Pensions (OPEB)*

The Power Authority provides certain health care and life insurance benefits for eligible retired employees and their dependents under a single employer noncontributory (except for certain optional life insurance coverage) health care plan (Power Authority OPEB Plan). The Power Authority has an established trust for its OPEB obligations (OPEB Trust) that is a separate entity from the Power Authority held by an independent custodian for the exclusive benefit of the OPEB Trust beneficiaries and not of the Power Authority. The ownership of the OPEB Trust assets are held by the independent custodian at all times and the OPEB Trust assets are not considered funds or assets of the Power Authority for any purpose. All of the OPEB Trust assets are irrevocably dedicated to, and are used for the exclusive purpose of, making payments of benefits to or for the benefit of the Power Authority OPEB Plan beneficiaries and for paying administrative expenses of the Power Authority OPEB Plan and the OPEB Trust and will not be available to any creditors of the Power Authority. The OPEB Trust does not issue a stand-alone financial report and its financial statements are reported as a fiduciary fund in the Authority's financial report.

The Power Authority's net OPEB liability was measured as of December 31, 2017, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of that date. The actuarial valuation is performed biennially. For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expenses, information about the fiduciary net position of the OPEB Trust and additions to/deductions from OPEB Trust's fiduciary net position have been determined on the same basis as they are reported by the Power Authority OPEB Plan as of the same measurement date. For this purpose, the Power Authority OPEB Plan recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value, except investments that have a maturity at the time of purchase of one year or less, which are reported at cost.

(t) *New Accounting Pronouncements*

In 2018, the Authority adopted the GASB issued GAS Statement No. 75 (GAS No. 75), *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, This statement requires governments that provide other postemployment benefits (OPEB) to their employees to recognize their unfunded accrued other postemployment benefits (OPEB) obligation in their financial statements. See Note 11 "Postemployment Benefits Other Than Pension Plans, Deferred Compensation and Savings" of the notes to the consolidated financial statements.

The following details the restatement to net position as a result of the adoption of GAS No. 75.

	Year Ended December 31, 2018
	(In millions)
Net position, January 1	$ 4,739
Adoption of GAS No. 75	(107)
Net position, January 1, as restated	$ 4,632

GASB issued GAS Statement No. 84 (GAS No. 84), *Fiduciary Activities*, which is effective for reporting periods beginning after December 15, 2018. GAS No. 84 addresses criteria for identifying activities of all state and local governments. The focus of the criteria is generally on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exits. Separate criteria are included to identify fiduciary component units and postemployment benefit arrangements that are fiduciary activities. Activities meeting this criteria should present a statement of fiduciary net position and a statement of changes in fiduciary net position. In 2018, the Authority applied the GAS No. 84 criteria as it relates to the fiduciary activities of its postemployment benefits other than pensions arrangements.

GASB issued GAS Statement No. 87 (GAS No. 87), *Leases*, which is effective for reporting periods beginning after December 15, 2019. GAS No. 87 requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows or outflows of resources based on payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right-to-use an underlying asset. Under GAS No. 87, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. The Authority is evaluating the impact of GAS No. 87 on its consolidated financial statements.

GASB issued GAS Statement No. 88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*, which is effective for reporting periods beginning after June 15, 2018. GAS Statement No. 88 addresses improvement of the information that is disclosed in notes to government financial statements related to debt, including direct borrowings and direct placements. GAS Statement No. 88 requires that additional essential information related to debt be disclosed in notes to financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses. The Authority has adopted provisions of GAS No. 88 and has reflected the impact of this adoption in notes to the consolidated financial statements.

GASB issued GAS Statement No. 89 (GAS No. 89), *Accounting for Interest Cost Incurred Before the End of a Construction Period*, which is effective for reporting periods beginning after December 15, 2019 and will be applied prospectively. GAS No. 89 addresses (1) enhancement of the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and (2) simplifies accounting for interest cost incurred before the end of a construction period. GAS No. 89 requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements prepared using the economic resources measurement focus. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity or enterprise fund. Based on the Authority's evaluation and FERC accounting, the Authority being a GAAP regulated utility is exempt from the provisions of GAS No. 89 and will continue capitalizing interest cost incurred before the end of construction period.

GASB issued GAS Statement No. 90 (GASB No. 90), *Majority Equity Interests—An Amendment of GASB Statements No. 14 and No. 61,* which is effective for reporting periods beginning after December 15, 2018. The requirements should be applied retroactively, except for the provisions related to (1) reporting a majority equity interest in a component unit and (2) reporting a component unit if the government acquires 100 percent equity interest which should be applied on a prospective basis. GAS No. 90 addresses (1) a majority equity interest and specifies that a majority interest in a legally separate organization should be reported as an investment, using the equity method, if a government's holding of the equity interest meets the definition of an investment, (2) special-purpose governments engaged only in fiduciary activities, a fiduciary fund or an endowment/permanent fund should measure the majority equity interest at fair value instead of the equity method and (3) all other holdings of a majority interest in a legally separate organization, not meeting the definition of an investment, should report the legally separate organization as a component unit using the equity. The provisions of GAS 90 are deemed not applicable to the Authority's 2019 consolidated financial statements.

GASB issued GAS Statement No. 91 (GAS No. 91), *Conduit Debt Obligations*, which is effective for reporting periods beginning after December 15, 2020. GAS No. 91 provides a single method of reporting conduit debt obligations by issuers associated with (1) commitments extended by issuers, (2) arrangements associated with conduit debt obligations, and (3) related note disclosures. This statement clarifies the definition of a conduit debt obligation, establishes that a conduit debt obligation is not a liability of the issuer, establishes standards for accounting and financial reporting of additional commitments and voluntary commitments extended by issuers and arrangements associated with conduit debt obligations and improves required note disclosures. The Authority is evaluating the impact of GAS No. 91 on its consolidated financial statements.

(3) Bond Resolution and Related Matters

On February 24, 1998, the Authority adopted its "General Resolution Authorizing Revenue Obligations" (as amended and supplemented up to the present time, the Bond Resolution). The Bond Resolution covers all of the Authority's projects, which it defines as any project, facility, system, equipment or material related to or necessary or desirable in connection with the generation, production, transportation, transmission, distribution, delivery, storage, conservation, purchase or use of energy or fuel, whether owned jointly or singly by the Authority, including any output in which the Authority has an interest authorized by the Act or by other applicable State statutory provisions, provided, however, that the term "Project" shall not include any Separately Financed Project as that term is defined in the Bond Resolution. The Authority has covenanted with bondholders under the Bond Resolution that at all times the Authority shall maintain rates, fees or charges, and any contracts entered into by the Authority for the sale, transmission, or distribution of power shall contain rates, fees or charges sufficient together with other monies available therefore (including the anticipated receipt of proceeds of sale of Obligations, as defined in the Bond Resolution, issued under the Bond Resolution or other bonds, notes or other obligations or evidences of indebtedness of the Authority that will be used to pay the principal of Obligations issued under the Bond Resolution in anticipation of such receipt, but not including any anticipated or actual proceeds from the sale of any Project), to meet the financial requirements of the Bond Resolution. Revenues of the Authority (after deductions for operating expenses and reserves, including reserves for working capital, operating expenses or compliance purposes) are applied first to the payment of, or accumulation as a reserve for payment of, interest on and the principal or redemption price of Obligations issued under the Bond Resolution and the payment of Parity Debt issued under the Bond Resolution.

The Bond Resolution also provides for withdrawal for any lawful corporate purpose as determined by the Authority, including but not limited to the retirement of Obligations issued under the Bond Resolution, from amounts in the Operating Fund in excess of the operating expenses, debt service on Obligations and Parity Debt issued under the Bond Resolution, and subordinated debt service requirements.

***Collateral* -** Under the Authority's Bond Resolution, a Trust Estate was created and pledged for the payment of the principal and redemption price of, and interest on, the Authority's Obligations issued under the Bond Resolution and, on a parity basis, other Parity Debt as defined in the Bond Resolution. The Authority's subordinated debt, including the Commercial Paper Notes, loans issued under the Revolving Credit Agreement described below, the Extendible Municipal Commercial Paper Notes, the Subordinated 2012 Notes and Subordinated 2017 Notes, are not Obligations under the Bond Resolution but share a subordinated lien in the Trust Estate. The Trust Estate means, collectively: (i) all Revenues (as defined in the Bond Resolution) of the Authority; (ii) the proceeds of the sale of Obligations until expended for the purposes authorized in the supplemental resolution authorizing the issuance of such Obligations; (iii) all funds, accounts and subaccounts established by the Bond Resolution, including investment earnings thereon; and (iv) all funds, moneys, and securities and any and all other rights and interests in property , whether tangible or intangible, conveyed as and for additional security pursuant to the Bond Resolution by the Authority, or by anyone on its behalf, or with its written consent, to the Trustee.

***Events of Default/Termination* -** Pursuant to the Bond Resolution, upon an Event of Default so long as such Event of Default shall not have been remedied, either the Trustee or the owners of 25% in principal amount of the Obligations then outstanding may declare the principal and accrued interest on all Obligations due and payable immediately.

Under the revolving credit agreement supporting the Authority's Commercial Paper Notes effective January 16, 2019, and amended on November 8, 2019, among the Authority, JP Morgan Chase Bank, National Association, as Administrative Agent, and the lenders thereunder (Revolving Credit Agreement), the Authority is able to borrow up to $700 million in aggregate principal amount outstanding at any time for the repayment of the Commercial Paper Notes. In the case of an Event of Default (as defined in the Revolving Credit Agreement), the lenders under the Revolving Credit Agreement holding 66 2/3% of the commitments thereunder will be able to: terminate their commitments; direct the Authority to cease issuing Commercial Paper Notes; and declare the principal and accrued interest on obligations under the Revolving Credit Agreement due and immediately payable.

(4) Cash and Investments

Investment of the Authority's funds is administered in accordance with the applicable provisions of the Bond Resolution and with the Authority's investment guidelines. These guidelines comply with the New York State Comptroller's investment guidelines for public authorities and were adopted pursuant to Section 2925 of the New York Public Authorities Law.

(a) *Credit Risk*

The Authority's investments are restricted to (a) collateralized certificates of deposit, (b) direct obligations of or obligations guaranteed by the United States of America or the State of New York, (c) obligations issued or guaranteed by certain specified federal agencies and any agency controlled by or supervised by and acting as an instrumentality of the United States government, and (d) obligations of any state or any political subdivision thereof or any agency, instrumentality or local government unit of any such state or political subdivision which is rated in any of the three highest long-term rating categories, or the highest short-term rating category, by nationally recognized rating agencies. The Authority's investments in the senior debt securities of Federal National Mortgage Association (FNMA), Federal Home Loan Bank (FHLB), Federal Farm Credit Bank (FFCB) and Federal Home Loan Mortgage Corp. (FHLMC) were rated Aaa by Moody's Investors Services (Moody's), AAA by Fitch Ratings (Fitch) and AA+ by Standard & Poor's (S&P).

(b) *Interest Rate Risk*

Securities that are the subject of repurchase agreements must have a market value at least equal to the cost of the investment. The agreements are limited to a maximum fixed term of five business days and may not exceed the greater of 5% of the investment portfolio or $100 million. The Authority has no other policies limiting investment maturities.

(c) *Concentration of Credit Risk*

There is no limit on the amount that the Power Authority may invest in any one issuer; however, investments in authorized certificates of deposit shall not exceed 25% of the Authority's invested funds. At December 31, 2019, the Authority's total investment portfolio of $841 million, excluding the Canal Development Fund, consists of investments of $222 million (26%), $124 million (15%), $179 million (21%) $72 million (9%) and $16 million (2%), $108 (12%) in securities of FHLB, FNMA, FFCB, FHLMC, U.S. government and other various municipal debt securities, respectively.

At December 31, 2018, the Power Authority's total investment portfolio of $1,022 million, excluding the Canal Development Fund, consists of investments of $367 million (36%), $169 million (16%), $160 million (16%) $147 million (14%) and $16 million (2%), $134 (13%) in securities of FHLB, FNMA, FFCB, FHLMC, U.S. government and other various municipal debt securities, respectively.

(d) *Other*

All investments are held by designated custodians in the name of the Authority. The bank balances at December 31, 2019 and 2018 were $32 million and $33 million, respectively, of which $31 million and $32 million, respectively, were uninsured, but were collateralized by assets held by the bank in the name of the Authority. As of December 31, 2019, the Authority had no investments in repurchase agreements.

Cash and Investments of the Authority at December 31, 2019 and 2018 are as follows:

			Restricted			
December 31, 2019	**Total**	**Total restricted**	**Canal Development Fund**	**WNYEDF, POCR, projects and other**	**Capital fund**	**Unrestricted**
			(In millions)			
Cash and investments:						
Cash and cash equivalents	$ 134	$ 52	$ 14	$ 38	$ 16	$ 66
U.S. government:						
U.S. Treasury bills	16	16	—	16	—	—
U.S. Treasury notes	—	—	—	—	—	—
	16	16	—	16	—	—
Other debt securities:						
FNMA	124	—	—	—	—	124
FHLMC	72	—	—	—	6	66
FHLB	222	—	—	—	—	222
FFCB	179	—	—	—	1	178
All other	108	—	—	—	3	105
	705	—	—	—	10	695
Total investments	721	16	—	16	10	695
Total cash and investments	$ 855	$ 68	$ 14	$ 54	$ 26	$ 761
Summary of maturities (years):						
0 – 1	$ 336	$ 68	$ 14	$ 54	$ 23	$ 245
1 – 5	497	—	—	—	3	494
5 – 10	13	—	—	—	—	13
10+	9	—	—	—	—	9
	$ 855	$ 68	$ 14	$ 54	$ 26	$ 761

Petroleum Overcharge Restitution (POCR) Funds – Legislation enacted into State law from 1995 to 2002, 2007 and 2008 authorized the Authority to utilize petroleum overcharge restitution (POCR) funds and other State funds (Other State Funds), to be made available to the Authority by the State pursuant to the legislation, for a variety of energy-related purposes, with certain funding limitations. The legislation also states that the Authority "shall transfer" equivalent amounts of money to the State prior to dates specified in the legislation. The use of POCR funds is subject to comprehensive Federal regulations and judicial orders, including restrictions on the type of projects that can be financed with POCR funds, the use of funds recovered from such projects and the use of interest and income generated by such funds and projects. Pursuant to the legislation, the Authority is utilizing POCR funds and the Other State Funds to implement various energy services programs that have received all necessary approvals.

The disbursements of the POCR funds and the Other State Funds to the Authority, and the Authority's transfers to the State totaling $60.9 million, took place from 1996 to 2009. The POCR funds are included in restricted funds in the statements of net position. The funds are held in a separate escrow account until they are utilized.

As of December 31, 2019, restricted funds include the POCR fund ($8 million), the Lower Manhattan Energy Independence Initiative fund ($6 million) and the Fish & Wildlife Habitat Enhancement fund related to the Niagara relicensing ($14 million), the Western New York Economic Development Fund ($10 million), the Northern New York Economic Development Fund ($5 million) (see Note 13(a) "Commitments and Contingencies – Power Programs"), Canal Development Fund ($14 million) and other ($11 million).

December 31, 2018	Total	Total restricted	Restricted: Canal Development Fund	Restricted: WNYEDF, POCR, projects and other	Capital fund	Unrestricted
			(In millions)			
Cash and investments:						
Cash and cash equivalents	$ 40	$ 31	$ 11	$ 20	$ 2	$ 7
U.S. government:						
U.S. Treasury bills	10	—	—	—	10	—
U.S. Treasury notes	6	6	—	6	—	—
	16	6	—	6	10	—
Other debt securities:						
FNMA	169	—	—	—	—	169
FHLMC	147	4	—	4	6	137
FHLB	367	20	—	20	1	346
FFCB	160	—	—	—	2	158
All other	134	—	—	—	4	130
	977	24	—	24	13	940
Total investments	993	30	—	30 #	23	940
Total cash and investments	$ 1,033	$ 61	$ 11	$ 50	$ 25	$ 947
Summary of maturities (years):						
0 – 1	$ 352	$ 61	$ 11	$ 50	$ 21	$ 270
1 – 5	659	—	—	—	4	655
5 – 10	13	—	—	—	—	13
10+	9	—	—	—	—	9
	$ 1,033	$ 61	$ 11	$ 50	$ 25	$ 947

As of December 31, 2018, restricted funds include the POCR fund ($7 million), the Lower Manhattan Energy Independence Initiative fund ($6 million) and the Fish & Wildlife Habitat Enhancement fund related to the Niagara relicensing ($14 million), the Western New York Economic Development Fund ($11 million), the Northern New York Economic Development Fund ($4 million) (see Note 13(a) "Commitments and Contingencies – Power Programs"), Canal Development Fund ($11 million) and other ($8 million).

(5) Capital Assets

The following schedule summarizes the capital assets activity of the Authority for the year ended December 31, 2019.

	Beginning balance	Additions	Retirements/ Transfers	Ending balance
	(In millions)			
Capital assets, not being depreciated:				
Land	$ 193	$ —	$ —	$ 193
Construction in progress	703	506	(471)	738
Total capital assets not being depreciated	896	506	(471)	931
Capital assets, being depreciated:				
Production – Hydro	2,114	160	(12)	2,262
Production – Gas turbine/combined cycle	2,386	17	(50)	2,353
Transmission	2,228	151	(13)	2,366
General	1,198	111	(8)	1,301
Canal System	723	45	—	768
Total capital assets being depreciated	8,649	484	(83)	9,050
Less accumulated depreciation for:				
Production – Hydro	862	38	(12)	888
Production – Gas turbine/combined cycle	1,260	86	(50)	1,296
Transmission	1,304	40	(13)	1,331
General	413	49	(6)	456
Canal System	187	25	(2)	210
Total accumulated depreciation	4,026	238	(83)	4,181
Net value of capital assets, being depreciated	4,623	246	—	4,869
Net value of all capital assets	$ 5,519	$ 752	$ (471)	$ 5,800

The following schedule summarizes the capital assets activity of the Authority for the year ended December 31, 2018.

	Beginning balance	Additions	Retirements/ Transfers	Ending balance
		(In millions)		
Capital assets, not being depreciated:				
Land	$ 193	$ —	$ —	$ 193
Construction in progress	565	295	(157)	703
Total capital assets not being depreciated	758	295	(157)	896
Capital assets, being depreciated:				
Production – Hydro	2,101	18	(5)	2,114
Production – Gas turbine/combined cycle	2,378	8	—	2,386
Transmission	2,193	38	(3)	2,228
General	1,155	85	(42)	1,198
Canal System	712	13	(2)	723
Total capital assets being depreciated	8,539	162	(52)	8,649
Less accumulated depreciation for:				
Production – Hydro	832	35	(5)	862
Production – Gas turbine/combined cycle	1,172	88	—	1,260
Transmission	1,269	38	(3)	1,304
General	417	39	(43)	413
Canal System	165	24	(2)	187
Total accumulated depreciation	3,855	224	(53)	4,026
Net value of capital assets, being depreciated	4,684	(62)	1	4,623
Net value of all capital assets	$ 5,442	$ 233	$ (156)	$ 5,519

Wind Farm Transmission Assets

In April 2019, Jericho Rise Wind Farm, LLC, a wind farm developer, and in accordance with a Large Generator Interconnection Agreement signed in June 2016 between the Authority, Jericho Rise Wind Farm, LLC and the New York Independent System Operator, Inc. transferred title of certain transmission assets (valued at $3 million) to the Authority. The transfer was accounted for as a capital contribution.

(6) Long-Term Debt

a. Components

	Amount 2019	Amount 2018	Interest rate (a)	Maturity		Earliest redemption date prior to maturity
	(In millions)					
Senior debt:						
Revenue Bonds (Tax-Exempt):						
Series 2007 A Revenue Bonds:						
Term Bonds	$ —	$ 82	4.5% to 5.0%	11/15/2047	**	Any date
Series 2007 C Revenue Bonds:						
Serial Bonds	—	110	4.0% to 5.0%	11/15/2019 to 2021		Any date
Series 2011 A Revenue Bonds:						
Serial Bonds	57	59	3.0% to 5.0%	11/15/2019 to 2031	*	11/15/2021
Term Bonds	39	39	4.0% to 5.0%	11/15/2038	**	11/15/2021
Series 2015 A Revenue Bonds:						
Serial Bonds	15	29	2.0% to 5.0%	11/15/2019 to 2020		11/15/2020
Revenue Bonds (Taxable):						
Series 2003 A Revenue Bonds:						
Term Bonds	149	156	5.230% to 5.749%	11/15/2019 to 2033	**	Any date
Series 2007 B Revenue Bonds:						
Term Bonds	231	235	5.905% to 5.985%	11/15/2037 and 2043	**	Any date
	491	710				
Plus unamortized premium and discount	9	12				
Less deferred refinancing costs	5	6				
	495	716				
Less due in one year	30	63				
Long-term senior debt, net of due in one year	$ 465	$ 653				

(a) interest rate at issuance
* $26.4 million due 2022 is non-callable.
** Bonds are subject to sinking fund provisions.

	Amount 2019	Amount 2018	Interest rate (a)	Maturity	Earliest redemption date prior to maturity
	(In millions)				
Subordinate debt:					
Subordinated Notes, Series 2017	$ 23	$ 24	2.61% to 4.27%	2022 to 2041	Any date
Subordinated Notes, Series 2012	20	20	1.70% to 4.05%	2019 to 2037	Any date
Commercial Paper:					
EMCP (Series 1)	5	5	1.41%	2021	
	48	49			
Less due within one year	1	1			
	47	48			
Total Long-term debt	543	765			
Less due within one year	31	64			
Long-term debt, net of due in one year	$ 512	$ 701			

(a) intereest rate at issuance

Interest on Series 2003 A and 2007 B Revenue Bonds and Subordinated Notes, Series 2012 and Subordinated Notes, Series 2017 is not excluded from gross income for bondholders' Federal income tax purposes. In December 2019, the Authority issued Commercial Paper to refund $156 million of its Series 2007 A and Series 2007 C Revenue Bond Senior Debt

As indicated in Note 3 "Bond Resolution" of notes to the consolidated financial statements, the Authority has pledged future revenues to service the Obligations and Parity Debt (Senior Debt) issued under the Bond Resolution. The total principal and interest remaining to be paid on the Senior Debt is $0.8 billion as of December 31, 2019. Principal and interest paid for 2019 and operating income plus depreciation were $104 million and $362 million, respectively. Principal and interest paid for 2018 and operating income plus depreciation were $101 million and $457 million, respectively.

Senior revenue bonds are subject to redemption prior to maturity in whole or in part as provided in the supplemental resolutions authorizing the issuance of each series of bonds, beginning for each series on the date indicated in the table above, at principal amount or at various redemption prices according to the date of redemption, together with accrued interest to the redemption date.

At December 31, 2019 and 2018, the current market value of the senior debt was approximately $632.8 million and $818 million, respectively. Market values were obtained from a third party that utilized a matrix-pricing model.

Subordinate Debt:

Subordinate Notes – In November 2016, the Authority's Trustees authorized the issuance of Subordinated Notes, Series 2017 (Subordinated Notes, Series 2017) in a principal amount not to exceed $30 million to accelerate additional funding for the State Parks Greenway Fund, which was established pursuant to the Niagara Relicensing Settlement entered into by the Authority and the New York State Office of Parks, Recreation & Historic Preservation in connection with the Niagara Project's relicensing. The Authority issued the subordinate notes on February 24, 2017 in the amount of $25.2 million. These Subordinated Notes are subordinate to the Series 2003 A Revenue Bonds, the Series 2007 A, B, and C Revenue Bonds, the Series 2011 A Revenue Bonds, and the Series 2015 A Revenue Bonds.

In November 2012, the Authority's Trustees authorized the issuance of Subordinated Notes, Series 2012 (Subordinated Notes, Series 2012), in a principal amount not to exceed $30 million for the purpose of accelerating the funding for the State Parks Greenway Fund, which was established pursuant to the Niagara Relicensing Settlement entered into by the Authority and the New York State Office of Parks, Recreation & Historic Preservation. The Authority issued the Subordinated Notes on December 18, 2012 in the amount of $25 million. These Subordinated Notes are subordinate to the Series 2003 A Revenue Bonds, the Series 2007 A, B, and C Revenue Bonds, the Series 2011 A Revenue Bonds and the Series 2015 A Revenue Bonds.

Commercial Paper – Under the Extendible Municipal Commercial Paper (EMCP) Note Resolution, adopted December 17, 2002, and as subsequently amended and restated, the Authority may issue a series of notes, designated EMCP Notes, Series 1, maturing not more than 270 days from the date of issue, up to a maximum amount outstanding at any time of $200 million (EMCP Notes). It is the Authority's intent to remarket the EMCP Notes as they mature with their ultimate retirement in 2021. The Authority has the option to extend the maturity of the EMCP Notes and would exercise such right in the event there is a failed remarketing. This option serves as a substitute for a liquidity facility for the EMCP Notes.

Under the Commercial Paper Note Resolution adopted June 28, 1994, as subsequently amended and restated, the Authority may issue from time to time a separate series of notes maturing not more than 270 days from the date of issue, up to a maximum amount outstanding at any time of $400 million (Series 1 CP Notes), $450 million (Series 2 CP Notes), $350 million (Series 3 CP Notes) and $220 million (Series 4 CP Notes). See Note 7 of the notes to the financial statements for Series 1, and certain Series 2 and Series 3 CP Notes designated as short-term debt. There were no Series 4 CP Notes outstanding at December 31, 2019.

The proceeds of certain Series 2 Commercial Paper Notes (CP Notes) were used to refund General Purpose Bonds and the proceeds of the EMCP Notes were used to refund Series 2 and 3 CP Notes. CP Notes and EMCP Notes have been used, and may in the future be used, for other corporate purposes. It is the Authority's intention to renew the EMCP Notes as they mature.

The Authority has a line of credit under a 2019 revolving credit agreement (the 2019 RCA), with a syndicate of banks, to provide liquidity support for the Series 1-3 CP Notes, under which the Authority may borrow up to $700 million in aggregate principal amount outstanding at any time for certain purposes, including the repayment of the Series 1–3 CP Notes. The 2019 RCA expires January 22, 2022. The 2019 RCA succeeded the amended 2015 RCA, which expired by its terms on January 18, 2019 with no outstanding borrowings. There are no outstanding borrowings under the 2019 RCA.

CP Notes and EMCP Notes are subordinate to the Series 2003 A Revenue Bonds, the Series 2007 B Revenue Bonds, the Series 2011 A Revenue Bonds and the Series 2015 A Revenue Bonds.

Interest on the CP (Series 3) is taxable to holders for Federal income tax purposes.

The interest rate used to calculate future interest expense on variable rate debt is the interest rate at issuance.

Maturities and Interest Expense:	**Long-Term Debt** (In millions)			**Capitalized Lease Obligations** (In millions)		
	Principal	**Interest**	**Total**	**Principal**	**Interest**	**Total**
Years ending December 31:						
2020	$ 31	$ 29	$ 60	$ 43	$ 85	$ 128
2021	22	28	50	50	81	131
2022	41	27	68	58	77	135
2023	17	25	42	66	72	138
2024	17	24	41	76	66	142
2025 – 2029	109	103	212	550	216	766
2030 – 2034	140	68	208	234	15	249
2035 – 2039	96	34	130	—	—	—
2040 – 2044	66	10	76	—	—	—
	539	348	887	1,077	612	1,689
Plus unamortized bond premium	9	—	9	—	—	—
Less deferred refinancing cost	5	—	5	—	—	—
Total	$ 543	$ 348	$ 891	$ 1,077	$ 612	$ 1,689

The Authority has a long-term electricity supply contract with Astoria Energy II LLC for the purchase of the output of Astoria Energy II, which is accounted for as a capital lease. The delivery period under the contract is through 2031. The Authority's contract with the customers served by the output of Astoria Energy II is coterminous with the power purchase agreement with Astoria Energy II LLC, and all net costs of the Authority under the power purchase agreement with Astoria Energy II LLC are direct pass through to such customers for the full term of the power purchase agreement. See note 13(b) "Commitments and Contingencies – Governmental Customers in the New York City Metropolitan Area" of the notes to the consolidated financial statements.

b. Terms by Which Interest Rates Change for Variable Rate Debt

CP Notes and EMCP Notes (Long-Term Portion)

The Authority determines the rate for each rate period which is the minimum rate necessary to remarket the notes at par in the Dealer's opinion. If the Authority exercises its option to extend the maturity of the EMCP Notes, the reset rate will be the higher of (SIFMA + E) or F, where SIFMA is the Securities Industry and Financial Markets Association Municipal Swap Index, which is calculated weekly, and where "E" and "F" are fixed percentage rates expressed in basis points (each basis point being 1/100 of one percent) and yields, respectively, that are determined based on the Authority's debt ratings subject to a cap rate of 12%. As of December 31, 2019, the reset rate would have been 8.32%.

c. Changes in Noncurrent Liabilities

Changes in the Authority's noncurrent liabilities for the year ended December 31, 2019 are comprised of the following:

	Beginning balance	Additions	Maturities/ refundings and other	Ending balance	Due within one year
			(In millions)		
Senior debt:					
Revenue bonds	$ 710	$ —	$ 219	$ 491	$ 30
Subtotal	710	—	219	491	30
Subordinate debt:					
Subordinated Notes, Series 2017	24	—	1	23	—
Subordinated Notes, Series 2012	20	—	—	20	1
Commercial paper	5	—	—	5	—
Subtotal	49	—	1	48	1
Net unamortized discounts/ premiums and deferred losses	6	—	2	4	—
Total debt, net of unamortized discounts/ premiums/ deferred losses	$ 765	$ —	$ 222	$ 543	$ 31
Other noncurrent liabilities:					
Capitalized lease obligation	$ 1,077	$ —	$ 43	1,034	$ 43
Disposal of nuclear fuel	223	5	—	228	—
Relicensing	244	37	25	256	—
Other	386	34	—	$ 426	$ —
Total other noncurrent liabilities	$ 1,930	$ 76	$ 68	$ 1,944	$ 43

Changes in the Authority's long-term liabilities for the year ended December 31, 2018 are comprised of the following:

	Beginning balance	Additions	Maturities/ refundings and other (In millions)	Ending balance	Due within one year
Senior debt:					
Revenue bonds	$ 770	$ —	$ 60	$ 710	$ 63
Subtotal	770	—	60	710	63
Subordinate debt:					
Subordinated Notes, Series 2017	25	—	1	24	1
Subordinated Notes, Series 2012	21	—	1	20	—
Commercial paper	5	—	—	5	—
Subtotal	51	—	2	49	1
Net unamortized discounts/ premiums and deferred losses	10	—	4	6	—
Total debt, net of unamortized discounts/ premiums/ deferred losses	$ 831	$ —	$ 66	$ 765	$ 64
Other noncurrent liabilities:					
Capitalized lease obligation	$ 1,114	$ —	$ 37	$ 1,077	$ 37
Disposal of nuclear fuel	219	4	—	223	—
Relicensing	250	16	22	244	—
Other	303	83	—	$ 386	$ —
Total other noncurrent liabilities	$ 1,886	$ 103	$ 59	$ 1,930	$ 37

(7) Short-Term Debt

CP Notes (short-term portion) outstanding was as follows:

	December 31,			
	2019		2018	
	Availability	Outstanding	Availability	Outstanding
	(In millions)			
CP Notes (Series 1)	$ 91	$ 309	$ 194	$ 206
CP Notes (Series 2)	233	217	176	274
CP Notes (Series 3)	184	166	304	46

Under the Commercial Paper Note Resolution adopted June 28, 1994, as subsequently amended and restated, the Authority may issue from time to time a separate series of notes maturing not more than 270 days from the date of issue, up to a maximum amount outstanding at any time of $400 million (Series 1 CP Notes), $450 million (Series 2 CP Notes), $350 million (Series 3 CP Notes) and $220 million (Series 4 CP Notes). It had been and shall be the intent of the Authority to use the proceeds of the Series 1 CP Notes and certain Series 2 and Series 3 CP Notes to finance the Authority's current and future energy efficiency programs and for other corporate purposes. In December 2019, the Authority issued Series 3 CP Notes to refund $156 million of its Series 2007 A and Series 2007 C Revenue Bond.

The changes in short-term debt are as follows:

	Beginning balance	Increases	Decreases	Ending balance
	(In millions)			
Year:				
2019	$ 526	294	128	$ 692
2018	$ 485	103	62	$ 526

(8) Risk Management and Hedging Activities

Overview

The Authority purchases insurance coverage for its operations, and in certain instances, is self-insured. Property insurance protects the various real and personal property owned by the Authority and the property of others while in the care, custody and control of the Authority for which the Authority may be held liable. Liability insurance protects the Authority from third-party liability related to its operations, including general liability, automobile, aircraft, marine and its officers and directors. Cyber liability insurance protects the Authority against first- and third-party losses. Insured losses by the Authority did not exceed coverage for any of the four preceding fiscal years. The Authority self-insures a certain amount of its general liability coverage, the physical damage claims for its owned and leased vehicles and for portions of its medical, dental and workers' compensation insurance programs. The Authority pursues subrogation claims as appropriate against any entities that cause damage to its property.

Another aspect of the Authority's risk management program is to manage risk and related volatility on its earnings and cash flows associated with electric energy prices, fuel prices and electric capacity prices. Through its participation in the NYISO and other commodity markets, the Authority is subject to electric energy price, fuel price and electric capacity price risks that impact the revenue and purchased power streams of its facilities and customer market areas. Such volatility can potentially have adverse effects on the Authority's financial condition. To mitigate potential adverse effects and to moderate cost impacts to its customers (many of the Authority's customer contracts provide for the complete or partial pass-through of these costs), the Authority hedges market risks through the use of financial derivative instruments and/or physical forward contracts. Hedges are transacted by the Authority to mitigate volatility in the cost of energy or related products needed to meet customer needs; to mitigate risk related to the price of energy and related products sold by the Authority; to mitigate risk related to margins (electric sales versus fuel use) where the Authority owns generation or other capacity; and to mitigate geographic cost differentials of energy procured or sold for transmission or transportation to an ultimate location. Commodities to be hedged include, but are not limited to, natural gas, natural gas basis, electric energy, electric capacity and congestion costs associated with the transmission of electricity.

To achieve the Authority's risk management program objectives, the Authority's Trustees have authorized the use of various interest rate, energy, and fuel derivative instruments for hedging purposes that are considered derivatives under GAS No. 53, *Accounting and Financial Reporting for Derivative Instruments* (GAS No. 53).

The fair values of all Authority derivative instruments, as defined by GAS No. 53, are reported in current and noncurrent assets or liabilities on the statements of net position as risk management activities. For designated hedging derivative instruments, changes in the fair values are deferred and classified as deferred outflows or deferred inflows on the statements of net position. The fair value for over-the-counter and exchange-traded energy, and capacity derivative instruments are determined by the latest end-of-trading-month forward prices over the lifetime of each outstanding energy derivative instrument using the prices published by Standard & Poor's Global Platt's ("Platts") or internal pricing models.

Derivative Instruments

The following table shows the fair value of outstanding derivative instruments for 2019 and 2018:

Derivative instrument description	Fair value balance December 31, 2018	Net change in fair value	Fair value balance December 31, 2019	Type of hedge or transaction	Financial statement classification for changes in fair value	Notional amount December 31, 2019	Unit of Measure
			($ in millions)				
Energy swaps/futures (sales)	$ (7)	$ 12	$ 5	Cash Flow	Deferred outflow	(2,165,600)	MWh
Energy swaps (purchases)	—	(1)	(1)	Cash Flow	Deferred inflow	122,760	
Energy capacity futures	1	(1)	—	Cash Flow	—	(255,000)	KWm
Totals	$ (6)	$ 10	$ 4				

Energy swaps and futures – As of December 31, 2019, the Authority has outstanding short-term energy swaps and futures to manage the revenue stream from forecasted merchant hydro generation through 2022. Net settlement receipts were $5.8 million and payments were $27.3 million in 2019 and 2018, respectively. As of December 31, 2019, the Authority has outstanding short-term energy swaps to manage the cost of energy for the benefit of its NYC Governmental Customers. There were no settlements in 2019 and 2018.

Energy capacity futures – As of December 31, 2019, the Authority has outstanding forward installed capacity futures intended to mitigate the volatility of market prices for transactions in the NYISO markets through 2020. Net settlement receipts were $0.7 million and payments were $7.8 million in 2019 and 2018, respectively.

Other – The Authority from time to time enters into certain derivative instruments that may become ineffective due to changes in the hedged item. The change in fair value of such derivative instruments would be recognized as other nonoperating charges or credits in the statements of revenues, expenses and changes in net position. The Authority did not recognize hedging ineffectiveness in 2019 and in 2018 was insignificant.

Counterparty Credit Risk

The Authority imposes thresholds, based upon agency-published credit ratings and/or analysis, for unsecured credit that can be extended to counterparties to the Authority's commodity derivative transactions. The thresholds are established in bilateral credit support agreements with counterparties and require collateralization of market values in excess of the thresholds. In addition, the Authority regularly monitors each counterparty's market-implied credit ratings and financial ratios and the Authority can restrict transactions with counterparties on the basis of that monitoring, even if the applicable unsecured credit threshold is not exceeded.

Based upon the fair values as of December 31, 2019, the Authority's individual or aggregate exposure to derivative instrument counterparty credit risk is not significant.

Other Considerations

The Authority from time to time may be exposed to any of the following risks:

Basis risk – The Authority is exposed to other basis risk in a portion of its electrical commodity-based swaps where the electrical commodity swap payments received are based upon a reference price in a NYISO Market Zone that differs from the Zone in which the hedged electric energy load is forecasted. If the correlation between these Zones' prices should fall, the Authority may be exposed to risk as a result of the hedging inability of the electrical commodity swaps to offset the delivery price of the related energy.

Rollover risk – Certain electrical commodity swaps are based upon projected future customer loads or facility operations. Beyond the terms of these swaps, the Authority is subject to the corresponding market volatilities.

Termination risk – The Authority or its counterparties may terminate a derivative instrument agreement if either party fails to perform under the terms of the agreement. The risk that such termination may occur at a time which may be disadvantageous to the Authority has been mitigated by including certain terms in these agreements by which the counterparty has the right to terminate only as a result of certain events, which includes a payment default by the Authority; other Authority defaults which remain uncured within a defined time-frame after notice; bankruptcy or insolvency of the Authority (or similar events); or a downgrade of the Authority's credit rating below investment grade. If at the time of termination the Authority has a liability position related to its hedging derivative instruments, the Authority would be liable to the counterparty for a payment equal to the liability, subject to netting arrangements.

Market access risk – The Authority remarkets its CP Notes on a continuous basis. Should the market experience a disruption or dislocation, the Authority may be unable to remarket its Notes for a period of time. To mitigate this risk, the Authority has entered into liquidity facilities with highly rated banks to provide loans to support the CP Note programs. See Note 6 "Long-Term Debt" of the notes to the consolidated financial statements.

Dodd Frank Act

The Dodd-Frank Wall Street Reform and Consumer Protection Act (DF Act) addresses, among other things, interest rate and commodity swap transactions of the type in which the Authority may engage. The requirements and processes are set forth in regulations promulgated by the Commodities Futures Trading Commission (CFTC). The CFTC rules are not anticipated to have significant impact on the Authority's liquidity and/or future risk mitigation activities. The Authority continues to monitor developments with respect to Dodd-Frank rules and regulations.

(9) Fair Value Measurements

GAS No. 72 establishes a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Inputs are used in applying the various valuation techniques and take into account the assumptions that market participants use to make valuation decisions. Inputs may include price information, credit data, interest and yield curve data, and other factors specific to the financial instrument. Observable inputs reflect market data obtained from independent sources. In contrast, unobservable inputs reflect the entity's assumptions about how market participants would value the financial instrument.

The fair value hierarchy prioritizes the inputs used to measure fair value into three broad Levels (Levels 1, 2, and 3), moving from quoted prices in active markets in Level 1 to unobservable inputs in Level 3. A financial instrument's level within the fair value hierarchy (where Level 1 is the highest and Level 3 is the lowest) is based on the lowest level of any input that is significant to the fair value measurement. The categorization of a financial instrument within the fair value hierarchy is based upon pricing transparency and is not necessarily an indication of the Authority's perceived risk of that financial instrument.

The following describes the fair value hierarchy of inputs used by the Authority to measure fair value and the primary valuation methodologies used for financial instruments measured at fair value on a recurring basis:

- Level 1 – quoted prices for identical assets or liabilities in active markets that the Authority can access at the measurement date.
- Level 2 – quoted prices other than quoted prices included within Level 1 and other inputs that are observable for an asset or liability, either directly or indirectly.
- Level 3 – pricing inputs are unobservable for the asset or liability and may rely on inputs using the best available data under the circumstances, including the Authority's own data.

The following describes the valuation methodologies used by the Authority for assets and liabilities measured at fair value:

- U.S. government obligations – The fair value is based on institutional bond quotes and evaluations based on various market data/inputs.
- U.S. government agencies and instrumentalities – The fair value of government agencies and instrumentalities are based on institutional bond quotes and evaluations based on various market and industry inputs.
- Corporate obligations – The fair value is based on institutional bond quotes and evaluations on various market and industry inputs.
- Derivative instruments – The Authority hedges market risks through the use of derivative instruments. Derivative instruments are traded on both exchange-based and non-exchange based markets. A detail disclosure on derivatives is included in Note 8 "Risk Management and Hedging Activities" of notes to the consolidated financial statements.
    - The fair values for over-the-counter and exchange-traded energy, derivative instruments are determined by the latest end-of-trading-month forward prices over the lifetime of each outstanding derivative instrument using prices published by Platts.
    - The fair value for capacity derivative instruments is based on internal pricing models which develop a demand curve for the NYISO monthly spot market capacity auctions. Capacity reference

points are observed from the NYISO filing with FERC. Peak load forecast are observed in the NYISO's Gold Book and NYPSC's publications.

The following tables summarize the Authority's outstanding assets and liabilities, of which there are no Level 3, within the fair value hierarchy at December 31, 2019 and December 31, 2018:

	Fair Value Measurements (in millions)			
December 31, 2019	**Total**	**Level 1**	**Level 2**	**Level 3**
Assets				
Cash and cash equivalents	$ 134	$ 134	$ -	$ -
Treasury bills	16	16	-	-
Federal Agency securities:				
FNMA	124	-	124	-
FHLMC	72	-	72	-
FHLB	222	-	222	-
FFCB	179	-	179	-
Municipal Bonds	105	-	105	-
All other	3	3	-	-
Total cash and investments at fair value	855	153	702	-
Derivative instruments:(a)				
Energy capacity futures	5	-	5	-
Total derivative assets at fair value	5	-	5	-
Total assets at fair value	$ 860	$ 153	$ 707	$ -
Liabilities				
Derivative instruments:(a)				
Energy swaps	$ 1	$ -	$ 1	$ -
Total derivative liabilites at fair value	1	-	1	-
Total liabilities at fair value	$ 1	$ -	$ 1	$ -

December 31, 2018	Fair Value Measurements (in millions) Total	Level 1	Level 2	Level 3
Assets				
Cash and cash equivalents	$ 40	$ 40	$ -	$ -
Treasury bills	10	10	-	-
Treasury notes	6	6		
Federal Agency securities:				
FNMA	169	-	169	-
FHLMC	147	-	147	-
FHLB	367	-	367	-
FFCB	160	-	160	-
Municipal Bonds	130	-	130	-
All other	4	4	-	-
Total cash and investments at fair value	1,033	60	973	-
Derivative instruments:(a)				
Energy capacity futures	1	-	1	-
Total derivative assets at fair value	1	-	1	-
Total assets at fair value	$ 1,034	$ 60	$ 974	$ -
Liabilities				
Derivative instruments:(a)				
Energy swaps	$ 7	$ -	$ 7	$ -
Total derivative liabilites at fair value	7	-	7	-
Total liabilities at fair value	$ 7	$ -	$ 7	$ -

(a) The accounting rules for fair value measurements and disclosures require consideration of the impact of nonperformance risk (including credit risk) from a market participant perspective in the measurement of the fair value of assets and liabilities. At December 31, 2019 and 2018 the Authority determined that nonperformance risk would have no material impact on the financial position or results of operations.

(10) Pension Plans

General Information

The Authority and substantially all of the Authority's employees participate in the New York State and Local Employees' Retirement System (NYSLERS) and the Public Employees' Group Life Insurance Plan (the Plan). These are cost-sharing multiple-employer defined benefit retirement plans.

The NYSLERS uses a tier concept to distinguish membership classes (i.e. tiers 1 through 6) with tier membership based on the date an employee joins the System. The ERS is non-contributory for tiers 1 and 2 employees who joined the NYSLERS on or prior to July 27, 1976. Tiers 3 and 4 employees, who joined the NYSLERS between July 28, 1976 and December 31, 2009 and have less than ten years of service, contribute 3% of their salary. Tier 5 employees who joined the NYSLERS on or after January 1, 2010 contribute 3% of their salary during their entire length of service. Tier 6 employees who joined the NYSLERS on or after April 1, 2013 contribute 3% of their salary through March 31, 2013 and up to 6% thereafter, based on their annual salary, during their entire length of service. Members become vested in the plan after ten years of service and generally are eligible to receive benefits at age 55. The benefit is generally 1.67 percent of final average salary (FAS) times the number of years of service, for members who retire with less than 20 years of service, and 2 percent of FAS for members who retiree with 20 or more years of service. The NYSLERS provides an annual automatic cost of living adjustment to members or surviving spouses based on certain eligibility criteria.

The NYSLERS and the Plan provide retirement benefits as well as death and disability benefits. Obligations of employers and employees to contribute and benefits to employees are governed by the New York State Retirement and Social Security Law (NYSRSSL). As set forth in the NYSRSSL, the Comptroller of the State of New York (Comptroller) serves as sole trustee and administrative head of the NYSLERS and the Plan. The Comptroller adopts and may amend rules and regulations for the administration and transaction of the business of the NYSLERS and the Plan, and for the custody and control of their funds. Under the authority of the NYSRSSL, the Comptroller shall certify annually the rates expressed as proportions of payroll of members, which shall be used in computing the contributions required to be made by employers.

The Authority is required to contribute at an actuarially determined rate. The average contribution rate relative to payroll for the NYSLERS fiscal year ended March 31, 2019 was 15%. The average contribution rates relative to payroll for the NYSLERS fiscal years ending March 31, 2020 and 2021 have been set at approximately 15% for both years. The required contributions for 2019 and 2018 were $30 million and $28 million, respectively. The Authority's contributions to the NYSLERS were equal to 100% of the required contributions for each year.

The NYSLERS and the Plan issue a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained by writing to the New York State and Local Employees' Retirement System, 110 State Street, Albany, NY 12244 or may be found on the internet at www.osc.state.ny.us/retire/publications/index.php.

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At December 31, 2019, the Authority reported a liability of $53 million for its proportionate share of the net pension liability. The NYSLERS total pension liability, which was used to calculate the NYSLERS net pension liability, was determined by the NYSLERS actuarial valuation as of March 31, 2019 (measurement date). The Authority's proportion of the net pension liability was based on a projection of the Authority's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined. At March 31, 2019, the Authority's proportion percentage (0.671%) of the net pension liability changed slightly compared to its proportion measured as of March 31, 2018 (0.639%). The Canal Corporation's proportionate share was 0.08% at March 31, 2019 and March 31, 2018.

For the year ended December 31, 2019 and 2018, the Authority recognized pension expense of $35 million and $28 million, respectively. At December 31, 2019, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows	Deferred Inflows
	(In millions)	
Difference between expected and actual experience	$ 10	$ 3
Net difference between projected and actual earnings on investments	–	14
Change of assumptions	13	–
Net difference between employer contributions and proportionate share of contributions	4	3
Employer contributions subsequent to the measurement date	31	–
Total	$ 58	$ 20

The $31 million reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended December 31, 2020. The other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows (in millions):

Year ending December 31,	
2020	$ 11
2021	(10)
2022	(1)
2023	7
Total	$ 7

Actuarial Assumptions

The NYSLERS total pension liability at March 31, 2019 was determined by using the NYSLERS actuarial valuation as of April 1, 2018 with updated procedures to roll forward the NYSLERS total pension liability to March 31, 2019. The following actuarial assumptions were used for the April 1, 2018 NYSLERS actuarial valuation:

Actuarial cost method:	Entry age normal
Inflation rate:	2.5%
Salary increases:	4.2% annually
Investment rate of return:	7.0% compounded annually, net of investment
Cost of living adjustments:	1.3 % annually

The NYSLERS Annuitant mortality rates are based on April 1, 2010 – March 31, 2015 NYSLERS experience with adjustments for mortality improvements based on the Society of Actuaries' Scale MP-2014. The actuarial assumptions used in the April 1, 2018 valuation are based on the results of an actuarial experience study for the period April 1, 2010 – March 31, 2015.

The NYSLERS long term expected rate of return on pension plan investments was determined using a building block method in which best estimate ranges of expected future real rates of return (expected returns net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of March 31, 2019 are summarized below.

Long-Term Expected Rate of Return

Asset Type	Target Allocation	Long-term Expected Real Rate
Domestic Equity	36%	4.55%
International Equity	14	6.35
Private Equity	10	7.50
Real Estate	10	5.55
Absolute Return	2	3.75
Opportunistic Portfolio	3	5.68
Real Asset	3	5.29
Bonds and Mortgages	17	1.31
Cash	1	(0.25)
Inflation Indexed Bonds	4	1.25
	100%	

Discount Rate

The NYSLERS discount rate used to calculate the total pension liability for the March 31, 2019 and 2018 measurement date was 7.0%. The projection of cash flows used to determine the discount rate assumes that contributions from plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially. Based upon the assumptions, the NYSLERS fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of Proportionate Share of the Net Pension Liability to Changes in the Discount Rate

The following presents the Authority's proportionate share of the net pension liability calculated using the discount rate of 7.0 percent, as well as what the Authority's proportionate share of the net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.0 percent) or one percentage point higher (8.0 percent) than the current rate:

	1% Decrease	Current Assumption	1% Increase
Discount rate	6.0%	7.0%	8.0%
The Authority's proportionate share of the net pension liability (asset)	$ 234 million	$ 53 million	$ (98) million

The NYSLERS actuary has not recommended any future changes to the actuarial assumptions used in the NYSLERS April 1, 2018 actuarial valuation.

(11) Postemployment Benefits Other Than Pensions, Deferred Compensation and Savings

Adoption of GASB Statement No. 75

The Authority, effective January 1, 2018, adopted Government Accounting Standard Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (GAS No. 75). GAS No. 75 refines reporting guidance established under GAS No. 45, Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions. GAS No. 75 requires governments that provide OPEB plans to their employees, to recognize their long-term obligation for OPEB benefits as a liability and to more comprehensively and comparably measure the annual costs of OPEB benefits. GAS No. 75 concluded that OPEB's are a form of employee compensation and should be recognized in the same period in which the compensated service is provided by the employees. GAS No. 75 also eliminated the phase-in over a period of years of the amortization for the unfunded actuarial accrued liabilities (or funding excess). GAS No. 75 also enhances accountability and transparency through revised and new note disclosures and required supplemental information. As a result of the adoption of GAS No. 75, the Authority recorded a $(107) million adjustment to its January 1, 2018 net position reflected in its consolidated statements of revenues, expenses and changes in net position for the year ended December 31, 2018. See Note 2 (t) "Summary of Significant Accounting Policies –New Accounting Pronouncements" of the notes to the consolidated financial statements.

(a) *Power Authority*

The Power Authority provides certain health care and life insurance benefits for eligible retired employees and their dependents under a single employer noncontributory (except for certain optional life insurance coverage) health care plan (Power Authority OPEB Plan). Employees and/or their dependents become eligible for these benefits when the employee has at least 10 years of service and retires or dies while working at the Power Authority. Salaried employees hired after December 31, 2015 and IBEW employees hired after October 15, 2015, become eligible after 15 years of service. In addition, they will be required to contribute 50% of the active plan contribution.

The Power Authority has an established trust for OPEB obligations (OPEB Trust), with the trust to be held by an independent custodian. Plan members are not required to contribute to the OPEB Trust. The OPEB Trust is set-up to pay for the exclusive benefit of the OPEB Trust. The funding of the Power Authority's OPEB Trust is at the discretion of management as approved by the Board of Trustees. The Power Authority made contributions on a pay-as you go basis in 2019 and 2018 and did not contribute any amount beyond these contributions to the OPEB Trust.

As of the December 31, 2019, the following current and former employees were covered by the benefit terms, under the Plan. It is assumed that 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.

Active employees	1,867
Inactive employees and beneficiaries, receiving and or entitled to benefits	2,914
Total	4,781

OPEB Expense and Deferred Outflows of Resources and Deferred inflows of Resources Related to OPEB

For the year ended December 31, 2019, the Authority recognized OPEB expense of $14.9 million. At December 31, 2019, the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
	(In millions)	
Differences between expected and actual experience	$ –	$ –
Changes in assumptions	–	–
Differences between projected & actual investment earnings	62	31
Employer contributions subsequent to the measurement date	25	–
Total	$ 87	$ 31

The $25 million reported as deferred outflows of resources related to OPEB resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the total OPEB liability in the following year. The other amount reported as deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year ending December 31,	(In millions)
2020	$ 5
2021	5
2022	5
2023	16
	$ 31

Net OPEB Liability

The Authority's net OPEB liability (asset) was measured as of December 31, 2018, and the total OPEB liability used to calculate the net OPEB liability (asset) was based on a no gain or loss rollforward of the December 31, 2017 valuation. The Authority's net OPEB asset of $5 million is recorded in miscellaneous receivables in current assets, respectively, in the Authority's consolidated statements of net position.

The following table shows the components of the Authority's changes in its total OPEB liability, the OPEB fiduciary net position, and the net OPEB (asset) during the measurement period ending December 31, 2018.

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB (Asset)
	Increase (Decrease) (In millions)		
Balance – beginning of year	$ 535	$ 603	$ (68)
Service Cost	12	–	12
Interest	38	–	38
Differences between expected and actual experience	–	–	–
Contributions – employer	–	25	(25)
Net investment income	–	(36)	(36)
Benefit payments	(25)	(25)	–
Administrative expense	–	(2)	(2)
Net changes	25	(38)	63
Balance – end of year	$ 560	$ 565	$ (5)

The components of the net OPEB asset at December 31, 2019, were as follows (in millions):

Total OPEB liability	$ 590
Plan fiduciary net position	(686)
Net OPEB (Asset)	$ (96)
Plan fiduciary net position as a percentage of the total OPEB liability	116%

Actuarial Assumptions

The total OPEB liability in the December 31, 2017 biennial actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Investment rate of return:	7.00%
Inflation:	2.50%
Healthcare Cost Trend Rates:	Pre-Medicare - 8.0 percent for 2018, decreasing 0.5 percent per year to an ultimate rate of 4.5 percent for 2025 and later years. Post-Medicare - 5.1 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025. Prescription drugs (Rx) – 9.0 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025.
Salary increases:	Varies by service, average of 4.5 percent for 1-5 years of service, 3.8 percent for 6-10 years of service, 3.3 percent for 11-15 years of service, and 3.0 percent for 20 years or more of service.
Mortality:	Gender distinct pre- and post-commencement rates based on experience under the New York State Local Retirement System. Base rates reflect a 2014 base year, and the MP-2017 Projection Scale is applied to the base rates.

Long-Term Expected Rate of Return

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best estimate ranges of expected future real rates (expected returns net of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Type	Target Allocation	Long-term Expected Real Rate of Return
Domestic Equity	37 %	5.3 %
International Equity	24	7.9
Fixed Income	30	2.4
Real Estate	6	6.5
Cash	3	2.0
Total	100 %	

Rate of Return

For the year ended December 31, 2019, the annual money-weighted rate of return on investments, net of investment expense, was 21.42 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Discount Rate

The discount rate used to calculate the total OPEB liability was 7.0%, the long-term rate of return on the OPEB Trust assets. The projection of cash flows used to determine the discount rate assumed that NYPA will contribute at a rate equal to the average of contributions made over the most recent five-year period (2013 through 2017), and that contributions apply first to service cost of current and future plan members and then to past service costs. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected OPEB payments for current active and inactive employees for the foreseeable future.

Sensitivity of the Net OPEB (Asset) to Changes in the Discount Rate

Changes in the discount rate affect the measurement of the total OPEB liability. The following table depicts the Authority's Net OPEB liability / (asset), as well as the sensitivity of using a discount rate that is 1 percentage point lower (6.0 percent) or 1 percentage point higher (8.0 percent) than the current discount rate:

	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Net OPEB Liability / (Asset)	$ 73 million	$ (5) million	$ (69) million

Sensitivity of the Net OPEB Liability / (Asset) to Changes in the Healthcare Cost Trend Rates

Changes in the healthcare cost trends affect the measurement of the total OPEB liability. The table below shows the sensitivity of the net OPEB liability / (asset) to the changes in the healthcare cost trends:

	1% Decrease	Current Healthcare Trend Rate	1% Increase
Net OPEB Liability / (Asset)	$ (82) million	$ (5) million	$ 99 million

(b) Canal Corporation

The Canal Corporation provides health care and death benefit for eligible retired employees. Substantially all employees may become eligible for these benefits if they reach normal retirement age while working for the Canal Corporation. The Canal Corporation participates, pursuant to the provision of Section 163(4) of the New York State Civil Service Law, in the New York State health Insurance Program (NYSHIP). NYSHIP does not issue a standalone financial report since there are no assets legally segregated for the sole purpose of paying benefits under the plan.

To be eligible an employee must (1) retiree as a member of Canal Corporation, or be at least 55 years old at time of termination; (2) be enrolled in the NYSHIP on date of retirement; and (3) complete at least 5 years of service for the retiree and dependent to have coverage while the employee is living. Ten years of service are needed for continued dependent coverage upon death of the employee. The Plan currently pays a portion of the medical premium cost for retired employees and covered dependents. Additionally, the Plan reimburses retirees and covered dependents for their Medicare Part B premiums.

As of the December 31, 2017 actuarial valuation, the following current and former employees were covered by the benefit terms, under the Plan. It is assumed that 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.

Active employees, including opt-out (actives not in medical plan)	494
Inactive employees and beneficiaries, receiving and or entitled to benefits	579
Total	1,073

OPEB Expense and Deferred Outflows of Resources and Deferred inflows of Resources Related to OPEB

The Authority's consolidated financial statements include the Canal Corporation's OPEB costs of $16.0 million, for the year ended December 31, 2019. In addition, the Authority's consolidated statements include the Canal Corporations deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
	(in millions)	
Differences between expected & actual experience	$ –	$ –
Changes in assumptions	12	15
Employer contributions subsequent to the measurement date	6	–
Total	$ 18	$ 15

The $6 million reported as deferred outflows of resources related to OPEB resulting from the Canal Corporation's contributions subsequent to the measurement date will be recognized as a reduction of the total OPEB liability in the following year. The other amount reported as deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year ending December 31,	(in millions)
2020	$ –
2021	–
2022	–
2023	(3)
	$ (3)

Total OPEB Liability

The Canal Corporation's total OPEB liability was measured as of December 31, 2018, based on a no gain or loss rollforward of the May 1, 2018 valuation. The Canal Corporation's total OPEB liability is recorded in the Authority's consolidated statements of net position in other long-term liabilities in the amount of $226 million.

The following table shows the components of the Canal Corporation's changes in its total OPEB liability during the measurement period ending December 31, 2018.

	Total OPEB Liability Increase (Decrease) (in millions)
Balance – beginning of year	$ 234
Changes for the year:	
Service cost	9
Interest	7
Changes of benefit terms	–
Differences between expected & actual experience	–
Changes of assumptions	(18)
Benefit payments	(6)
Net Changes in Total OPEB Liability	(8)
Balance – end of year	$ 226

Actuarial Assumptions

The total OPEB liability in the December 31, 2017 biennial actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Inflation:	2.50%
Healthcare Cost Trend Rates:	Pre-Medicare - 5.75 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025 and later years. Post-Medicare - 5.1 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025. Prescription drugs (Rx) – 9.0 percent for 2018, decreasing to an ultimate rate of 4.5 percent for 2025.
Salary increases:	Varies by service, average of 4.5 percent for 1-5 years of service, 3.8 percent for 6-10 years of service, 3.3 percent for 11-15 years of service, and 3.0 percent for 20 years or more of service.
Mortality:	Gender distinct pre- and post-commencement rates based on experience under the New York State Local Retirement System. Base rates reflect a 2014 base year, and the MP-2017 Projection Scale is applied to the base rates.

Discount Rate

The discount rate at the measurement date used to calculate the total OPEB liability is 3.64%. The discount rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2018. Benefit payments are funded on a pay-as-you go basis. The discount rate at the previous measurement date is 3.16% based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 29, 2017.

Sensitivity of the Total OPEB Liability to Changes in the Discount Rate

Changes in the discount rate affect the measurement of the total OPEB liability. The following table depicts the Canal Corporation' Total OPEB liability, as well as the sensitivity of using a discount rate that is 1 percentage point lower (2.64 percent) or 1 percentage point higher (4.64 percent) than the current discount rate:

	1% Decrease (2.64%)	Current Discount Rate (3.64%)	1% Increase (4.64%)
Total OPEB Liability	$ 266 million	$ 226 million	$ 194 million

Sensitivity of the Total OPEB Liability to Changes in the Healthcare Cost Trend Rates

Changes in the healthcare cost trends affect the measurement of the total OPEB liability. The table below shows the sensitivity of the total OPEB liability to the changes in the healthcare cost trends:

	1% Decrease	Current Healthcare Trend Rate	1% Increase
Total OPEB Liability	$ 184 million	$ 226 million	$ 284 million

(c) Deferred Compensation and Savings Plans

The Power Authority offers union employees and salaried employees a deferred compensation plan created in accordance with Internal Revenue Code, Section 457. This plan permits participants to defer a portion of their salaries until future years. Amounts deferred under the plan are not available to employees or beneficiaries until termination, retirement, death or unforeseeable emergency.

The Power Authority also offers salaried employees a savings plan created in accordance with Internal Revenue Code, Section 401(k). This plan also permits participants to defer a portion of their salaries. The Power Authority matches contributions of employees up to limits specified in the plan. Matching annual contributions were approximately $3.5 million and $3.7 million for 2019 and 2018, respectively.

Both the deferred compensation plan and the savings plan have a loan feature.

Independent trustees are responsible for the administration of the 457 and 401(k) plan assets under the direction of a committee of union representatives and nonunion employees and a committee of nonunion employees, respectively. Various investment options are offered to employees in each plan. Employees are responsible for making the investment decisions relating to their savings plans.

(12) Nuclear Plant Divestiture and Related Matters

On November 21, 2000, the Power Authority sold the James A. Fitzpatrick nuclear plant (JAF) and the Indian Point 3 nuclear plant (IP3) to two subsidiaries of Entergy Corporation (collectively, Entergy or the Entergy Subsidiaries). On March 31, 2017, Entergy transferred JAF to Exelon Generation Company, LLC (Exelon).

In accordance with the Nuclear Waste Policy Act of 1982, in June 1983, the Power Authority entered into a contract with the U.S. Department of Energy (DOE) under which DOE, commencing not later than January 31, 1998, would accept and dispose of spent nuclear fuel. In conjunction with the sale of the nuclear plants, the Power Authority's contract with the DOE was assigned to Entergy. Entergy assigned the portion of the pre-1983 spent fuel obligation applicable to JAF to Exelon in connection with the sale of JAF to Exelon. The Power Authority remains liable for the pre-1983 spent fuel obligation to Exelon for JAF and to Entergy for IP3 (see Note 13(e) "Commitments and Contingencies – New York State Budget and Other Matters" relating to a temporary transfer of such funds to the State). As of December 31, 2019 and 2018, the pre-1983 spent fuel liability for JAF and IP3 totaled $228 million and $223 million, respectively.

(13) Commitments and Contingencies

(a) *Power Programs*

Recharge New York Power Program

Chapter 60 (Part CC) of the Laws of 2011 (Chapter 60) established the "Recharge New York Power Program" (RNYPP), administered by the Authority, which has as its central benefit up to 910 MW of low cost power comprised of up to 455 MW of hydropower from the Niagara and St. Lawrence-FDR Projects and up to 455 MW of other power procured by the Authority from other sources. The 910 MW of power is available for allocation as provided by Chapter 60 to eligible new and existing businesses and not-for-profit corporations under contracts of up to seven years. RNYPP was effective beginning July 1, 2012.

The hydropower used for the RNYPP was power formerly used to provide low-cost electricity to domestic and rural customers of the three private utilities that serve upstate New York. To mitigate the impacts from the redeployment of this hydropower for the RNYPP, Chapter 60 created a "Residential Consumer Discount Program" (RCDP). The RCDP authorizes the Authority, as deemed feasible and advisable by its Trustees, to provide annual funding of $100 million for the first three years following withdrawal of the hydropower from the residential and farm customers, $70 million for the fourth year, $50 million for the fifth year, and $30 million each year thereafter, for the purpose of funding a residential consumer discount program for those customers that had formerly received the hydropower that is utilized in the RNYPP. Chapter 60 further authorizes the Authority, as deemed feasible and advisable by the Trustees, to use revenues from the sales of hydroelectric power, and such other funds of the Authority, as deemed feasible and advisable by the Trustees, to fund the RCDP. The Authority's Trustees have authorized the release of a total $564 million for the period from August 2011 to December 2019 in support of the RCDP. The Authority supplemented the market revenues through the use of internal funds, from the August 2011 start of the program through December 31, 2019, totaling approximately $67 million. Operations and maintenance expenses included $30 million of residential consumer discounts in each year ended December 31, 2019 and 2018.

Western New York Power Proceeds Allocation Act

Effective March 30, 2012, Chapter 58 (Part GG) of the Laws of 2012 (Chapter 58) created the Western New York Power Proceeds Act (WNYPPA). The WNYPPA authorizes the Authority, as deemed feasible and advisable by the Trustees, to deposit net earnings from the sale of unallocated Expansion Power and Replacement Power from the Authority's Niagara project into an account administered by the Authority known as the Western New York Economic Development Fund (WNYED Fund). Net earnings are defined as any excess revenues earned from such power sold into the wholesale market over the revenues that would have been received had the power been sold at the Expansion Power and Replacement Power rates. Proceeds from the Fund may be used to support eligible projects undertaken within a 30-mile radius of the Niagara power project that satisfy applicable criteria. Chapter 58 also establishes a five-member Western New York Power Allocations Board, which is appointed by the Governor. Chapter 58 also repealed Chapter 436 of the Laws of 2010 which had created a similar program that could not be effectively implemented.

The Authority's Trustees have approved the release of up to $64 million in net earnings, calculated for the period August 30, 2010 through December 31, 2019 as provided in the legislation, for deposit into the Fund. As of December 31, 2019, approximately $42 million has been deposited into the Fund. As of December 31, 2019, the Authority has approved awards of Fund money totaling approximately $38 million to businesses that have proposed eligible projects and has made payments totaling $32 million to such businesses. Payment of these awards is contingent upon the execution of acceptable contracts between the Authority and individual awardees.

Northern New York Power Proceeds Allocation Act

Chapter 545 of the Laws of 2014 enacted the "Northern New York Power Proceeds Act" (NNYPPA). The NNYPPA authorizes the Authority, as deemed feasible and advisable by the Trustees, to deposit "net earnings" from the sale of unallocated St. Lawrence County Economic Development Power (SLCEDP) by the Authority in the wholesale energy market into an account the Authority would administer known as the Northern New York Economic Development Fund (NNYED Fund), and to make awards to eligible applicants that propose eligible projects that satisfy applicable criteria. The NNYPPA also establishes a five-member Northern New York Power Allocations Board appointed by the Governor to review applications seeking NNY Fund benefits and to make recommendations to the Authority concerning benefits awards.

SLCEDP consists of up to 20 MW of hydropower from the Authority's St. Lawrence-FDR Power Project which the Authority has made available for sale to the Town of Massena Electric Department ("MED") for MED to sub-allocate for economic development purposes in accordance with a contract between the parties entered into in 2012 (Authority-MED Contract). The NNYPPA defines "net earnings" as the aggregate excess of revenues received by the Authority from the sale of energy associated with SLCEDP by the Authority in the wholesale energy market over what revenues would have been received had such energy been sold to MED on a firm basis under the terms of the Authority-MED contract. For the first 5 years after enactment, the amount of SLCEDP the Authority could use to generate net earnings may not exceed the lesser of 20 MW or the amount of SLCEDP that has not been allocated by the Authority pursuant to the Authority-MED contract. Thereafter, the amount of SLCEDP that the Authority could use for such purpose may not exceed the lesser of 10 MW or the amount of SLCEDP that has not been allocated.

As of December 31, 2019, the Authority's Trustees approved the release of funds, of up to $14 million, into the NNYED Fund representing "net earnings" from the sale of unallocated SLCEDP into the wholesale energy market for the period December 29, 2014 through December 31, 2019. As of December 31, 2019, approximately $5 million has been deposited into the Fund. As of December 31, 2019, the Authority has approved awards of NNYED Fund money totaling approximately $2 million to businesses that have proposed eligible projects. Payment of approved awards of the NNYED Fund money is contingent upon the execution of acceptable contracts between the Authority and individual awardees.

(b) *Governmental Customers in the New York City Metropolitan Area*

In 2018 and 2019, the Authority executed new supplemental long-term electricity supply agreements (Supplemental LTAs) with its eleven NYC Governmental Customers. Under the Supplemental LTAs, the NYC Governmental Customers agreed to purchase their electricity from the Authority through December 31, 2027, with the NYC Governmental Customers having the right to (1) terminate at any time upon at least 12 months' notice or (2) terminate effective December 31, 2022 upon at least 6 months' notice. Under the Supplemental LTAs, fixed costs were set for each customer and are subject to renegotiation in 2022. Variable costs, including fuel, purchased power and NYISO related costs, will be passed through to each customer by an energy charge adjustment.

The Authority's other Southeastern New York (SENY) Governmental Customers are Westchester County and numerous municipalities, school districts, and other public agencies located in Westchester County (collectively, the "Westchester Governmental Customers"). The Authority has entered a supplemental electricity supply agreement with all 103 Westchester Governmental Customers. Among other things, under the agreement, an energy charge adjustment mechanism is applicable, and customers are allowed to partially terminate service from the Authority on at least two months' notice prior to the start of the NYISO capability periods. Full termination is allowed on at least one year's notice, effective no sooner than January 1 following the one year notice.

Astoria Energy II

In 2008, the Authority entered a long-term electricity supply contract with Astoria Energy II LLC for the purchase of the output of Astoria Energy II, a new 550-MW plant, which was constructed and entered into commercial operation on July 1, 2011 in Astoria, Queens. The delivery period under the contract is through 2031. The Authority's contract with the customers served by the output of Astoria Energy II is coterminous with the power purchase agreement with Astoria Energy II LLC, and all net costs of the Authority under the power purchase agreement with Astoria Energy II LLC are direct pass through to such customers for the full term of the power purchase agreement.

The Authority is accounting for and reporting this lease transaction as a capital lease in the amount of $1.077 billion as of December 31, 2019, which reflects the present value of the monthly portion of lease payments allocated to real and personal property. The balance of the monthly lease payments represents the portion of the monthly lease payment allocated to operations and maintenance costs which are recorded monthly. As of December 31, 2019, the Authority has a recorded capital asset (net of depreciation) of $713 million and a regulatory asset with respect to the recoverable cost associated with the lease obligation of $364 million (see note 2 (l) "Summary of Accounting Policies – Other Long-Term Assets" of the notes to the consolidated financial statements).

HTP Transmission Line

In 2011 the Trustees authorized Authority staff to enter into an agreement with Hudson Transmission Partners, LLC ("HTP") for the purchase of capacity to meet the long-term requirements of the Authority's NYC Governmental Customers and to improve the transmission infrastructure serving New York City through the transmission rights associated with HTP's transmission line (the "Line") extending from Bergen County, New Jersey in the PJM Interconnection, LLC (PJM) transmission system, to Consolidated Edison Company of New York, Inc.'s ("Con Edison") West 49th Street substation in the NYISO. Specifically, the Authority executed a Firm Transmission Capacity Purchase Agreement (FTCPA) with HTP under which the Authority gained the entitlement to 75% of the Line's 660 MW capacity, or 495 MW, for 20 years. On March 31, 2017, the Authority and HTP amended the FTCPA to, among other changes, (a) create a mechanism for HTP to relinquish its Firm Transmission Withdrawal Rights as discussed below and (b) increase the Authority's leased portion of the Line's capacity to 87.12%, or 575 MW, at a monthly capacity charge rate that represents a decrease in the unit price (on a $/MW-month basis) paid to HTP in the original FTCPA.

The Authority's payment obligations under the FTCPA include capacity payments, interconnection and transmission upgrades, and Regional Transmission Enhancement Plan ("RTEP") charges allocated to HTP in accordance with the PJM tariff. Interconnection and transmission upgrades were completed in 2018 at a total cost to the Authority of $334.9 million. The RTEP charges imposed upon HTP, which are still subject to legal challenge, are discussed in more detail below.

It is estimated that the revenues derived from the Authority's rights under the FTCPA will not be sufficient to fully cover the Authority's costs under the FTCPA during the 20-year term of the FTCPA. In December 2019, the Authority estimated that its under-recovery of costs for the Line could be in the range of approximately $91 million to $95 million per year over the period from 2020-2023. The under-recovery estimates were based on projections of the capacity payment obligations, the costs of interconnection and transmission upgrades and energy revenues.

The Authority's obligations under the FTCPA include payment of the RTEP charges allocated to HTP. From June 2013 through December 2019, the Authority has paid approximately $97 million in RTEP charges for the Line. Effective 2018, HTP relinquished the Firm Transmission Withdrawal Rights ("FTWRs") held by HTP on the Line that were the basis for the bulk of its RTEP allocations. PJM's annual RTEP cost allocation update for 2018 eliminated the Authority's obligation in 2018 and beyond to pay RTEP charges related to the Bergen Linden Corridor project, which accounted for the bulk of the RTEP charges allocated to HTP.

(c) *Small, Clean Power Plants*

To meet capacity deficiencies and ongoing load requirements in the New York City metropolitan area in the early 2000s, the Authority placed into operation the Small, Clean Power Plants (SCPPs), consisting of eleven natural-gas-fueled combustion-turbine electric units, six sites in New York City and one site in the service region of LIPA.

As a result of the settlement of litigation relating to certain of the SCPPs, the Authority has agreed under the settlement agreement to cease operations at one of the SCPP sites, which houses two units, under certain conditions and if the Mayor of New York City directs such cessation. No such cessation has occurred.

(d) *Legal and Related Matters*

St. Regis Litigation

In 1982 and again in 1989, several groups of Mohawk Indians, including a Canadian Mohawk tribe, filed lawsuits (the St. Regis litigation) against the State, the Governor of the State, St. Lawrence and Franklin counties, the St. Lawrence Seaway Development Corporation, the Authority and others, claiming ownership to certain lands in St. Lawrence and Franklin counties and to Barnhart, Long Sault and Croil islands. These islands are within the boundary of the Authority's St. Lawrence-FDR Project and Barnhart Island is the location of significant Project facilities. Settlement discussions were held periodically between 1992 and 1998. In 1998, the Federal government intervened on behalf of all Mohawk plaintiffs.

The parties agreed to a land claim settlement, dated February 1, 2005, which if implemented would have included, among other things, the payment by the Authority of $2 million a year for 35 years to the tribal plaintiffs and the provision of up to 9 MW of low cost Authority power for use on the reservation. The legislation required to effectuate the settlement was never enacted and the litigation continued.

In 2013, all claims against the Authority were dismissed and the lawsuit against the Authority was concluded. On May 28, 2014, the State of New York, the St. Regis Mohawk Tribe, St. Lawrence County and the Authority executed a Memorandum of Understanding (St. Regis MOU) that outlined a framework for the possible settlement of all the St. Regis land claims. In the St. Regis MOU, the Authority endorses a negotiated settlement that, among other terms and conditions, would require the Authority to pay the Tribe $2 million a year for 35 years and provide up to 9 MW of its hydropower at preference power rates to serve the needs of the Tribe's Reservation. The St. Regis MOU would require an Act of Congress to forever extinguish all Mohawk land claims prior to such a settlement becoming effective.

Any settlement agreement, including the terms endorsed in the St. Regis MOU, would in the first instance need to be negotiated and agreed upon by all parties to the St. Regis litigation, including parties that did not execute the St. Regis MOU, such as the two other Mohawk groups, the federal government and Franklin County. In addition, before any settlement becomes effective and the Authority is obligated to make any payments contemplated by the St. Regis MOU, federal and state legislation must be enacted which approves the settlement and extinguishes all Mohawk land claims.

Auer. V. NYPA

The surviving plaintiff of a case known as Auer I, which resulted in a 1984 order issued by Judge Tenney of the New York State Supreme Court, Oswego County, brought an enforcement action seeking to enforce the 1984 order. The 1984 order related to the manner in which the Authority computes its rates for its preference power customers. By statute, those rates must be as low as possible, which essentially means the Authority must sell the power at its cost. The plaintiff contends that the Authority's rate-making methodology does not adhere to the statutory scheme nor spirit of the Auer I order and subsequent settlement. The plaintiff is seeking monetary damages of an unspecified amount. The plaintiff has also made a motion to add certain other residential customers of certain New York municipal electric systems to the action as additional plaintiffs.

The Authority successfully made a motion to transfer the venue from New York State Supreme Court in Oswego County to the same court in Albany County. The Authority had a motion pending in Albany County to dismiss the action on multiple grounds. Plaintiff then appealed the Oswego Judge's decision to transfer venue to the Appellate Division, Fourth Department. The Authority's motion to dismiss in Albany County was stayed pending the outcome of the appeal. On October 4, 2019, the Appellate Division, Fourth Department issued a decision that dismissed plaintiff's appeal of the change of venue motion and declared that the plaintiff has improperly brought this action which should have been commenced as a plenary action.

On December 2, 2019, the New York State Supreme Court, Albany County, issued an order granting the Authority's motion to dismiss the proceeding. Plaintiff did not appeal that decision. In addition, Plaintiff's motion to the Court of Appeals, seeking permission to further appeal the venue decision, was denied in an order dated February 18, 2020. This litigation has concluded with no financial impact on the Authority's consolidated financial statements.

Long Island Sound Cable Project

In January 2014, one of the Sound Cable Project underwater cables was severely impacted by an anchor and /or anchor chain dropped by one or more vessels, causing the entire electrical circuit to fail and the circuit to trip. As a result of the impact to the cable, dielectric fluid was released into Long Island Sound. At December 31, 2019 and December 31, 2018, the consolidated statements of net position includes approximately $19 million and $18 million, respectively, in other long-term assets, reflecting the cost of damages net of insurance recoveries. The Authority believes that it will be able to recover the full amount of its damages through legal proceedings, insurance coverage and contractual obligations.

Helicopter Incident Near the Authority's Transmission Lines in Beekmantown, New York

The Authority contracted with Northline Utilities, LLC ("Northline") to install fiber optic ground wire along the Authority's transmission system. Thereafter, Northline entered into a contract with Catalyst Aviation, LLC ("Catalyst") for helicopter services. On October 30, 2018, a Catalyst helicopter was destroyed when it collided with a wooden utility pole and power lines near Beekmantown, New York. Members of the helicopter crew were injured, and two members of that crew died as a result of their injuries. The Authority has received two notices of claim arising out of this incident. The Authority has pursued insurance coverage under Northline's insurance policies that name the Authority as an additional insured. The Authority tendered its defense of these Notices of Claim to Northline's insurer and the insurer has accepted the Authority's tender. The Authority believes that there exists sufficient insurance coverage to cover these claims. In any event, to the extent that the insurance coverage limitations are insufficient, Northline is responsible under the defense and indemnification provisions of its contract with the Authority.

Other Actions or Claims

In addition to the matters described above, other actions or claims against the Authority are pending for the taking of property in connection with its projects, for negligence, for personal injury (including asbestos-related injuries), in contract, and for environmental, employment and other matters. All of such other actions or claims will, in the opinion of the Authority, be disposed of within the amounts of the Authority's insurance coverage, where applicable, or the amount which the Authority has available therefore and without any material adverse effect on the business of the Authority. While the Authority cannot presently predict the outcome of the matters described above or any related litigation, the Authority believes that it has meritorious defenses and positions with respect thereto. However, adverse decisions of a certain type in the matters discussed above could adversely affect Authority operations and revenues.

(e) *New York State Budget and Other Matters*

Section 1011 of the Power Authority Act (Act) constitutes a pledge of the State to holders of Authority obligations not to limit or alter the rights vested in the Authority by the Act until such obligations together with the interest thereon are fully met and discharged or unless adequate provision is made by law for the protection of the holders thereof. Bills are periodically introduced into the State Legislature, which propose to limit or restrict the powers, rights and exemption from regulation that the Authority currently possesses under the Act and other applicable law or otherwise would affect the Authority's financial condition or its ability to conduct its business, activities, or operations, in the manner presently conducted or contemplated by the Authority. It is not possible to predict whether any such bills or other bills of a similar type which may be introduced in the future will be enacted.

In addition, from time to time, legislation is enacted into New York law that purports to impose financial and other obligations on the Authority, either individually or along with other public authorities or governmental entities. The applicability of such provisions to the Authority would depend upon, among other things, the nature of the obligations imposed and the applicability of the pledge of the State set forth in Section 1011 of the Act to such provisions. There can be no assurance that in the case of each such provision, the Authority will be immune from the financial obligations imposed by such provision. Examples of such legislation affecting only the Authority include legislation, discussed below and elsewhere herein, relating to the Authority's voluntary contributions to the State, the Authority's temporary transfer of funds to the State, and contributions and transfers to fund temporary and permanent programs administered by the Authority and other State entities.

Budget

The Authority is requested, from time to time, to make financial contributions or transfers of funds to the State. Any such contribution or transfer of funds must (i) be authorized by law (typically, legislation enacted in connection with the State budget), and (ii) satisfy the requirements of the Bond Resolution. The Bond Resolution requirements to withdraw moneys "free and clear of the lien and pledge created by the (Bond) Resolution" are as follows: (1) such withdrawal must be for a "lawful corporate purpose as determined by the Authority," and (2) the Authority must determine "taking into account, among other considerations, anticipated future receipt of Revenues or other moneys constituting part of the Trust Estate, that the funds to be so withdrawn are not needed" for (a) payment of reasonable and necessary operating expenses, (b) an Operating Fund reserve for working capital, emergency repairs or replacements, major renewals, or for retirement from service, decommissioning or disposal of facilities, (c) payment of, or accumulation of a reserve for payment of, interest and principal on senior debt, or (d) payment of interest and principal on subordinate debt.

In May 2011, the Authority's Trustees adopted a policy statement (Policy Statement) which relates to, among other things, voluntary contributions, transfers, or other payments to the State by the Authority after that date. The Policy Statement provides, among other things, that in deciding whether to make such contributions, transfers, or payments, the Authority shall use as a reference point the maintenance of a debt service coverage ratio of at least 2.0 (this reference point should not be interpreted as a covenant to maintain any particular coverage ratio), in addition to making the other determinations required by the Bond Resolution. The Policy Statement may at any time be modified or eliminated at the discretion of the Authority's Trustees.

Temporary Asset Transfers

In addition to the authorization for voluntary contributions, as a result of budget legislation enacted in February 2009, the Authority was requested to provide temporary asset transfers to the State of funds held in reserves. Pursuant to the terms of a Memorandum of Understanding dated February 2009 (MOU) between the State, acting by and through the State's Director of Budget, and the Authority, the Authority agreed to transfer approximately $215 million associated with its Spent Nuclear Fuel Reserves (Asset B) by March 27, 2009. The Spent Nuclear Fuel Reserves are funds that had been set aside for payment to the federal government sometime in the future when the federal government accepts the spent nuclear fuel for permanent storage (see note 12 "Nuclear Plant Divestiture and Pre-1983 Spent Fuel Obligations"). The MOU provides for the return of these funds to the Authority, subject to appropriation by the State Legislature and the other conditions described below, at the earlier of the Authority's payment obligation related to the transfer and disposal of the spent nuclear fuel or September 30, 2017. Further, the MOU provides for the Authority to transfer within 180 days of the enactment of the 2009-2010 State budget $103 million of funds set aside for future construction projects (Asset A), which amounts would be returned to the Authority, subject to appropriation by the State Legislature and the other conditions described below, at the earlier of when required for operating, capital or debt service obligations of the Authority or September 30, 2014. The MOU provides that the obligation of the State to return all or a portion of an amount equal to the moneys transferred by the Authority to the State is subject to annual appropriation by the State Legislature. Further, the MOU provides that as a condition to any such appropriation for the return of the moneys earlier than September 30, 2017 for the Spent Nuclear Fuel Reserves and earlier than September 30, 2014 for the construction projects, the Authority must certify that the monies available to the Authority are not sufficient to satisfy the purposes for which the reserves, which are the source of the funds for the transfer, were established.

In February 2009, the Authority's Trustees authorized the execution of the MOU relating to the temporary transfers of Asset B ($215 million) and Asset A ($103 million) and such transfers were made in March 2009 and September 2009, respectively, following Trustee approval.

In lieu of interest payments, the State has waived certain future payments from the Authority to the State. The waived payments include the Authority's obligation to pay amounts to which the State is entitled under a governmental cost recovery process for the costs of central governmental services. In the Second Amendment to the MOU discussed below, the Authority and the State agreed on a framework for alternative cost recovery agreements for each of State Fiscal Year 2017-18 through State Fiscal Year 2022-23 that the asset transfers have not been fully returned to the Authority that would relieve the Authority of up to $5 million in cost recovery assessment payments to the State in each year.

On April 24, 2014, the Authority and the State executed an Amendment to the MOU which provides that the State shall, subject to appropriation by the State Legislature, return the $103 million (Asset A) in five installments over State Fiscal Years 2014-2018. The Authority received cumulative installment payments of $103 million as of December 31, 2018.

The Authority and the State executed a Second Amendment to the MOU, dated as of June 30, 2017, that provides for the return to the Authority of the $215 million (Asset B) in the following amounts and by no later than September 30 of each of the following State fiscal years: (1) $22 million for State Fiscal Year 2017-18, (2) $21 million for State Fiscal Year 2018-19, (3) $43 million for State Fiscal Year 2019-20, (4) $43 million for State Fiscal Year 2020-21, (5) $43 million for State Fiscal Year 2021-22, and (6) $43 million for State Fiscal Year 2022-23. The obligation of the State to return the moneys transferred by the Authority to the State is subject to annual appropriation by the State Legislature. The Authority has received cumulative installment payments of $86 million and $43 million as of December 31, 2019 and 2018, respectively. The asset transfers are reported in miscellaneous receivables and other ($43 million as of December 31, 2019 and December 31, 2018) and in other noncurrent assets ($86 million and $129 million at December 31, 2019 and December 31, 2018, respectively) in the statements of net position.

(f) *Relicensing of Niagara*

By order issued March 15, 2007, FERC issued the Authority a new 50-year license for the Niagara project effective September 1, 2007. In doing so, FERC approved six relicensing settlement agreements entered into by the Authority with various public and private entities. By decision dated March 13, 2009, the U.S. Court of Appeals for the District of Columbia Circuit denied a petition for review of FERC's order filed by certain entities, thereby concluding all litigation involving FERC's issuance of the new license. In 2007, the Authority estimated that the capital cost associated with the relicensing of the Niagara project would be approximately $495 million. This estimate does not include the value of the power allocations and operation and maintenance expenses associated with several habitat and recreational elements of the settlement agreements. As of December 31, 2019, the balance in the recorded liability associated with the Niagara relicensing on the statement of net position is $225 million ($18 million in current and $207 million in other noncurrent liabilities).

In addition to internally generated funds, the Authority issued additional debt obligations in October 2007 to fund, among other things, Niagara relicensing costs. The costs associated with the relicensing of the Niagara project, including the debt issued therefore, were incorporated into the cost-based rates of the project beginning in 2007.

New York State Office of Parks, Recreation and Historic Preservation

On July 18, 2005, the Authority executed the Relicensing Settlement Agreement Addressing New License Terms and Conditions ("Settlement Agreement") entered into by several parties to the relicensing of the Niagara Project, including The New York State Office of Parks, Recreation and Historic Preservation ("OPRHP"). The Settlement Agreement provides, among other things, for the establishment of a Relicensing Settlement Agreement State Parks Greenway Fund, which is to be funded by the Authority in the amount of $3 million per year to OPRHP for the term of the 50-year License. In 2012 and 2017, OPRHP requested that the Authority accelerate such payments by making two lump sum payments of approximately $25 million each to pay for authorized projects. In order to make the lump sum payments, the Authority issued (a) $25.2 million in subordinated notes in 2012 and (b) $25.2 million in subordinated notes in 2017. The proceeds of those subordinated note issuances were made available to OPRHP (see Note 6 "Long-Term Debt – Subordinate Debt" of notes to the financial statements).

(g) *St. Lawrence-FDR Relicensing – Local Task Force Agreement*

The St. Lawrence-FDR Power Project No. 2000 Relicensing Agreement ("LGTFSA") between the Authority and the Local Government Task Force ("LGTF") provides for a review of the LGTFSA every ten years to discuss issues not contemplated at the time of relicensing in 2003. The first such review commenced in December 2013. The Authority and the LGTF entered into an agreement effective May 4, 2015 in which the Authority agreed to commit up to $45.1 million over 10 years for certain actions, including to: (1) fund an economic development strategic marketing study (the "Marketing Study"); (2) temporarily reduce electricity costs for certain farms and businesses (the "Discount Program"); (3) initiate an energy efficiency and renewable energy program for the LGTF communities; and (4) enhance certain recreational facilities in the LGTF communities.

In July 2016, the Authority's Trustees approved a proposal to terminate the Discount Program early and repurpose funding to be used to support a collaborative marketing effort between the Authority and North Country communities through the St. Lawrence County Economic Development Study Advisory Board created in connection with the Marketing Study at the rate of $2 million/year for five years ($10 million total) commencing in 2017.

In July 2017, the Authority's Trustees approved: (1) a new temporary business incentive program consisting of a monetary discount or rebate that would be payable to eligible private business applicants who agree to establish new business operations in certain North Country counties ("Business Incentive Discount Program"); and (2) the repurposing of funds previously approved for the marketing effort to include funding for the Business Incentive Discount Program. Funding repurposed for the marketing effort, including the Business Incentive Discount Program, would not exceed a total of $10 million.

As of December 31, 2019, the Authority has spent approximately $27 million of the $45.1 million authorized by the Trustees.

(h) *Relicensing of Blenheim-Gilboa Pumped Storage Power Project*

On April 30, 2019, the Federal Energy Regulatory Commission issued a new 50-year operating license, effective May 1, 2019, to the Power Authority for the Blenheim-Gilboa Pumped Storage Power Project. In May 2019, the Power Authority's Trustees accepted the new license and approved the settlement package with state and federal resource agencies, the towns of Gilboa and Blenheim, and Schoharie County. The Trustees also authorized $37.1 million in capital expenditures for the period 2019-2069 for all compliance, implementation and settlement activities. Through December 31, 2019, the Authority has spent approximately $1.2 million. In addition, through December 31, 2019, the Authority funded a Recreation Fund in the amount of $2 million (total commitment under the settlement package is $6 million) and an Ecological Fund in the amount of $2 million (total commitment under the settlement package is $3.5 million). As of December 31, 2019, the recorded a liability of the Blenheim-Gilboa Pumped Storage Power Project relicensing is approximately $21 million.

(i) *Regional Greenhouse Gas Initiative, Clean Power Plant Rule, Proposed Affordable Clean Energy Rule and Air Pollution Rule*

The Regional Greenhouse Gas Initiative (the "RGGI") is a cooperative effort by Northeastern and Mid-Atlantic states, including New York, to reduce carbon dioxide emission levels. Participating states have established a regional carbon dioxide emissions cap from the power sector (fossil fuel-fired power plants 25MW or greater). The emissions cap reduces by 2.5% annually until 2020. Central to this initiative is the implementation of a multi-state cap-and-trade program with a market-based emissions trading system. The program requires electricity generators to hold carbon dioxide allowances in a compliance account in a quantity that matches their total emissions of carbon dioxide for the compliance period. The Authority's Flynn plant, the SCPPs, and 500-MW Plant are subject to the RGGI requirements as is the Astoria Energy II plant. The Authority has participated in program auctions to acquire carbon dioxide allowances, which the Authority requires to cover operation of its fossil-fueled power plants and the Astoria Energy II plant and expects to recover RGGI costs through its power sales revenues. The number of allowances offered in the auction by RGGI cap and trade program was reduced from allowances covering 165 million tons of carbon dioxide emissions in 2013 to 60.3 million tons in 2018 and will decline by 2.5% each year through 2020. On December 19, 2017, the RGGI states released an updated Model Rule that includes an additional 30% regional cap reduction between 2020 and 2030. The Authority is monitoring federal legislation and proposed programs that would impact RGGI.

On June 19, 2019, the United States Environmental Protection Agency (EPA) released its final Affordable Clean Energy (ACE) rule. This rule replaces the Clean Power Plan ("CPP") rule. The ACE rule established guidelines for states, including New York, to use for carbon dioxide emissions from coal-fired plants and other regulations for implementation of the Clean Air Act Section 111 (d) for existing power plants. Previously, the CPP Rule was stayed by the U.S. Supreme Court on February 9, 2016 pending disposition of petitions for review before the U.S. Court of Appeals for the District of Columbia Circuit. Thereafter, the D.C. Circuit Court granted EPA's motion to suspend cases challenging the CPP Rule, which the EPA has now rescinded and replaced, and is likely moot pending the D.C. Circuit Court formally ending the litigation. On August 13, 2019, twenty-two states, including New York, and seven local governments filed a petition with the U.S. Court of Appeals for the D.C. Circuit challenging the ACE rule (on August 14, 2019, a coalition of health and environmental groups followed suit by filing a petition challenging ACE). With regard to greenhouse gas emissions in New York, on July 18, 2019, Governor Andrew Cuomo signed the New York State Climate Leadership and Community Protection Act that sets a goal of net-zero carbon emissions for the entire state, not limited to the energy sector, by 2050 (85% reduction of greenhouse gas emissions from 1990 levels and implement measures to offset the remaining 15%), with a requirement for 70% of the state's electricity to be from renewable sources by 2030 (see discussion in "New Legislation Affecting the Authority"). The Authority continues to monitor developments in this area.

During 2011, the EPA issued a series of rulings to establish the Cross-State Air Pollution Rule ("CSAPR"), which was updated in 2016. The CSAPR establishes emission allowance budgets for sulfur dioxide and nitrogen oxides for eastern states, including New York, and requires power plants in those states to hold allowances to cover their emissions. Certain trading of allowances is authorized under the CSAPR. In July 2018, a proposed determination published by the EPA found that the 2016 CSAPR Update to the National Ambient Air Quality Standards ("NAAQS") was sufficient to address the good neighbor provisions of the Clean Air Act, and that no further rulemaking is required to address out-of-state emissions as additional upwind reductions are not required to meet the 2008 ozone NAAQS. The U.S. Court of Appeals for the D.C. Circuit has not yet decided the legality of the CSAPR 2016 update (oral arguments were heard by the Court in October 2018). The Authority continues to operate its fossil-fueled plants within the allocated allowances and anticipates that operation of its fossil-fueled plants will not be impacted by CSAPR.

(j) *Construction Contracts and Net Operating Leases*

Estimated costs to be incurred on outstanding contracts in connection with the Authority's construction programs aggregated approximately $1.1 billion at December 31, 2019.

Noncancelable operating leases primarily include leases on real property (office and warehousing facilities and land) utilized in the Authority's operations. Rental expense for years ended December 31, 2019 and 2018 was $5.6 million and $3.2 million, respectively. Commitments under noncancelable operating leases are as follows:

	Total	2020	2021	2022	2023	2024	Thereafter
				(In millions)			
Operating leases	$ 9.0	1.9	1.7	1.6	1.4	1.0	1.4

(k) *Other Developments*

Marcy to New Scotland Upgrade Project

On August 1, 2014, the Public Policy Transmission Planning Process administered by the NYISO invited solicitations of new transmission lines to relieve the congested Central East and UPNY/SENY transmission interfaces. In March 2016, the Authority executed a Memorandum of Understanding ("MOU") with North America Transmission ("NAT") to develop and submit proposals to the solicitation. The MOU provided that, if any of the Authority/NAT proposals are accepted, the Authority, at its sole discretion, may elect to purchase an ownership share in the project(s) or operate and maintain the project(s). In December 2016, the Authority's Trustees' approved funding in the amount of approximately $1 million for the Authority's share of expenses pursuant to the MOU.

In June 2018, the Authority and NAT entered into a Participation Agreement that supersedes the MOU, which granted the Authority the option to secure an ownership interest of up to 37.5% in the jointly proposed projects. In April 2019, the NYISO board selected the project proposed by LS Power Grid New York, LLC (formerly known as NAT) and the Authority for Segment A (also known as the Marcy to New Scotland Upgrade Project) to increase transfer capability from central to eastern New York.

The NYISO estimated the total cost of the Segment A project to be about $750 million (in 2018 dollars, including 30 percent contingency). In August 2019, LS Power and the Authority submitted an Article VII application to the PSC and the Authority filed an incentive to FERC under Order 679. If the PSC authorizes the project, construction of the project would begin, which is targeted for late 2020. Ultimately, the transmission lines to be rebuilt as part of the Segment A project are expected to be energized as part of the New York electrical system by the end of 2023.

In May 2019, the Authority's Trustees approved capital expenditures of approximately $28 million for the Segment A project. In December 2019, the Authority's Trustees approved a capital commitment of $275 million for the Segment A project as part of the 2020-2023 Budget and Financial Plan. As of December 31, 2019, the Authority has spent approximately $4.6 million. In consideration of maintaining the purchase option under the Participation Agreement, the Authority will fund 33% of the Segment A project development costs until such time as the Authority decides to exercise its 37.5% purchase option.

The Development Agreement was approved by the Authority's Trustees in January 2020 and the executed agreement was filed at FERC on March 4, 2020. The Authority expects its costs with respect to the development of the Segment A project to be recovered through FERC's cost-recovery mechanisms.

Build Smart NY Initiative

On December 28, 2012, the Governor of New York issued Executive Order No. 88 (EO 88) directing state agencies collectively to reduce energy consumption in state-owned and managed buildings by 20 percent within seven years – an initiative designed to produce significant savings for New York taxpayers, generate jobs, and significantly reduce greenhouse gas emissions. To meet this initiative, the Governor launched Build Smart NY, a plan to strategically implement EO 88 by accelerating priority improvements in energy performance. The Authority has offered to provide low-cost financing for this initiative for state owned buildings and an additional $350 million for towns and municipalities. The Authority's costs of financing would be recovered from the energy efficiency customers in this program. In addition, as provided for in EO 88, the Authority has established a central management and implementation team which designed implementation guidelines milestones and data collection and analysis systems to support the program. As of December 31, 2019, the Authority has in aggregate provided approximately $651 million in financing for energy efficiency projects at State agencies and authorities covered by EO 88.

Clean Energy Standard

On August 1, 2016, the NYPSC issued an order establishing a Clean Energy Standard (the "CES Order") to implement the clean energy goals of the State Energy Plan. Pursuant to the CES Order, load serving entities identified in the order are required to purchase "Zero Emission Credits" ("ZECs") from the New York State Energy Research Development Authority ("NYSERDA") to support the preservation of existing at-risk zero emissions nuclear generation. The Authority is not subject to NYPSC jurisdiction for purposes of the CES Order but has assumed an obligation to purchase ZECs consistent with the terms of the CES Order and intends to seek recovery of such costs from the Authority's customers. On January 31, 2017, the Authority's

Trustees authorized (a) participation in the NYPSC's ZEC program and (b) execution of an agreement with NYSERDA to purchase ZECs associated with the Authority's applicable share of energy sales. The Authority and NYSERDA executed an agreement covering a two year period from April 1, 2017 to March 31, 2019 under which the Authority committed to purchase ZECs in a quantity based on its proportional load in the New York control area. As of March 2020, the Authority estimates that it will incur ZEC purchase costs associated with participation in the ZEC program of approximately $289.7 million in aggregate over the 2020-2023 period, of which approximately $31.2 million is not expected to be recovered under customer contracts that predate the adoption of the CES Order. As of December 31, 2019, the Authority has paid $150.1 million in ZEC purchase costs.

AGILe

The Authority, in collaboration with the State utilities, NYSERDA and NYISO, has developed an advanced grid innovation lab for energy ("AGILe") to create new tools to better monitor, control, accommodate and respond to the evolving energy sector. Costs to the Authority are estimated at $20 million over the initial three year period and are not expected to exceed $50 million through final build-out of the facility. Upon completion, operating and maintenance costs are expected to be shared among AGILe participants. On July 25, 2017, the Authority's Trustees authorized capital expenditures in the amount of $20 million for the initial phase of AGILe, which has since commenced. As of December 31, 2019, approximately $4.7 million has been spent.

Moses Adirondack Line

The Authority is moving forward with its plans to update a major section of the Moses Adirondack Line, one of the Authority's backbone transmission facilities. The project covers 78 miles of 230 kV transmission line from Massena to the Town of Croghan in Lewis County. In July 2017, the Authority received authorization under the NYISO tariff to include the costs of this project in its NYPA Transmission Adjustment Charge mechanism for cost recovery of the Authority's transmission system costs, which means that the costs will be allocated to all ratepayers in the State. The project includes the update of obsolete wood pole structures with higher, steel pole structures, as well as update of failing conductor with new conductor and insulation. The line will operate at its current 230 kV level, but the conductor and insulation design will accommodate future 345 kV operation. The Authority anticipates that the Moses Adirondack line will support the transmission of growing levels of renewable generation located in upstate New York and Canada, such as wind and hydroelectricity, and assist in meeting the State's renewable energy goals. The rebuilt line is also expected to enhance grid reliability by supporting the NYISO's black start plan. On September 21, 2018, the Public Service Commission (PSC) determined that the Authority's April 2018 Article VII application was complete. The PSC granted the Certificate of Compatibility and Public Need for the project on November 14, 2019, approving the Joint Proposal. On February 6, 2020, the PSC issued an order approving Part One of the Environmental Management and Construction Plan. Additionally, the Authority has received its Nationwide Permit from the U.S. Army Corps of Engineers and the New York State Department of Public Service has issued a Notice to Proceed. It is anticipated that construction will begin in 2020. The Authority estimates a project cost of $484 million through project completion in 2023.

Niagara Parkway Redevelopment

The State plans to replace an underutilized two-mile stretch of the Robert Moses Parkway North in Niagara Falls with open space, scenic overlooks and recreational trails. Construction commenced in 2018 and is expected to take approximately three years to complete with funding to be provided by the Authority. As of December 31, 2019, the Authority has approved up to $46.3 million in funding. As of December 31, 2019, the Authority has disbursed approximately $25.4 million.

Electric Vehicle Acceleration Initiative

In May 2018, the Authority's Trustees approved an overall allocation of up to $250 million to be used through 2025 for an electric vehicle acceleration initiative and authorized $40 million for the first phase of the initiative.

Large-Scale Renewable Program

In support of the Clean Energy Standard goal for the State to achieve 50% renewable energy by 2030, the Authority issued a request for proposals in June 2017 to solicit renewable energy credits, energy and capacity from eligible large-scale renewable projects with a minimum size of 5MW, 10MW or 20MW, depending on the underlying technology. In February 2019, the Authority executed a 20-year power purchase agreement with Canisteo Wind Energy LLC for energy, capacity and renewable energy credits to be generated from a to-be-constructed 290 MW wind project. The agreement requires the project to be in-service by December 31, 2020, subject to limited extensions. The Authority intends to seek recovery of costs associated with the agreement through sales of energy and capacity through the NYISO and sales of RECs to the Authority's customers.

(14) Canal Corporation

The Canal Transfer Legislation enacted April 4, 2016, authorized, but does not require, the Authority, to the extent that the Authority's Trustees deem it feasible and advisable as required by the Resolution, to transfer moneys, property and personnel to the Canal Corporation.

The Canal Corporation operates at a loss and is expected to require substantial operating and maintenance support and capital investment. The Canal Corporation's expenses are expected to be funded by transfers of funds from the Authority. Any transfer of funds would be subject to approval by the Authority's Board of Trustees and compliance with the Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented. Certain expenses eligible for reimbursement are expected to be reimbursed to the Authority by moneys held in the Canal Development Fund maintained by the State Comptroller and the Commissioner of Taxation and Finance. For the year ended December 31, 2019, the Canal Corporation recognized $2 million in revenues, $86 million in operations and maintenance expenses and $25 million in depreciation expense. For the year ended December 31, 2018, the Canal Corporation recognized $2 million in revenues, $101 million in operations and maintenance expenses and $23 million in depreciation expense.

(15) Subsequent Events

In March 2020, the World Health Organization declared the novel strain of the coronavirus (COVID-19) a global pandemic and recommended containment and mitigation measures worldwide. As of the date of this filing, the Authority is unable to determine if the COVID-19 disruption will materially impact its 2020 results of operations or financial position. However, the Authority cannot reasonably estimate the overall length or severity of this pandemic, which if prolonged for a longer duration, could potentially have material impact to the Authority's financial position or results of operations.

REQUIRED SUPPLEMENTARY INFORMATION
(UNAUDITED)

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Changes in the New York Power Authority's Net OPEB Liability and Related Ratios

($ in millions, expect percentages)

	2019	2018
Total OPEB liability		
Service cost	$ 15	$ 13
Interest	40	37
Change of benefit terms	–	–
Differences between expected and actual experience	–	–
Change of assumptions	–	–
Benefit payments	(25)	(25)
Net change in total OPEB liability	30	25
Total OPEB liability - beginning	560	535
Total OPEB liability – ending	$ 590	$ 560
Plan fiduciary net position		
Contributions – employer	25	25
Net investment income	123	(36)
Benefit payments	(25)	(25)
Administrative expense	(2)	(2)
Net change in plan fiduciary net position	121	(38)
Plan fiduciary net position – beginning	565	603
Plan fiduciary net position - ending	$ 686	$ 565
Net OPEB liability / (asset) - ending	$ (96)	$ (5)
Plan fiduciary net position as a percentage of the total OPEB liability	116%	101%
Covered-employee payroll	$ 188	$ 182
Total OPEB liability as a percentage of covered-employee payroll	314%	307%
Net OPEB liability / (asset) as a percentage of covered-employee payroll	(51)%	(3)%

Notes to schedule:

The amounts presented for 2019 were determined based on a no gain loss roll-forward of the Power Authority OPEB Plan's December 31, 2017 biennial actuarial valuation.

This schedule is intended to present 10 years of data. Additional years will be presented prospectively.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of the New York Power Authority's OPEB Contributions

($ in millions, expect percentages)

Year Ending December 31,	(a) Contractually / Actuarially determined contribution	(b) Contributions made	Contribution deficiency / (excess)	(c) Covered employee payroll	Contributions as a percent of covered employee payroll column (b ÷ c)
2019	$ 25	$ 25	$ –	$ 188	13%
2018	25	25	–	177	14%
2017	40	22	18	166	13%
2016	39	24	15	161	15%
2015	38	38	–	149	25%
2014	33	39	(1)	145	27%
2013	41	42	(1)	147	29%
2012	41	41	–	143	29%
2011	35	60	(25)	144	42%
2010	32	17	15	140	12%

Notes to schedule:

Contributions: The Power Authority made contributions on a pay as you go basis in 2019 and 2018 and did not contribute any amount beyond the contractually / actuarially required amounts.

Valuation date: 12/31/2017

Methods and assumptions used to determine contributions:

Actuarial cost method:	Entry Age Normal, Level Percent of Salary
Amortization period:	Five-year period for differences between the expected earnings on plan investments and actual returns. Differences in assumptions and experience are recognized over the average remaining service lives of all employees that are provided with benefits through the plan.
Asset Valuation:	Market Value.
Per Capita Claims:	Developed using 2018 projected funding rates using NYPA claims experience from January 1, 2016 through July 1, 2017.
Salary increases:	Varies by service, average of 4.5 percent for 1-5 years of service, 3.8 percent for 6-10 years of service, 3.3 percent for 11-15 years of service, and 3.0 percent for 20 years or more of service.
General inflation:	Consumer Price Index 2.5%
Participation rates:	Assumed 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.
Discount rate:	7.0%
Mortality:	Gender distinct pre- and post-commencement rates based on experience under the New York State Local Retirement System. Base rates reflect a 2014 base year, and the MP-2017 Projection Scale is applied to the base rates.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Investment Returns for the New York Power Authority OPEB Trust

Schedule of Investment Returns

Year Ending December 31,	Annual money-weighted rate of return, net of investment expense
2019	21.42%
2018	(6.30)%
2017	16.70%
2016	7.00%
2015	0.41%
2014	3.99%
2013	20.41%
2012	12.57%
2011	1.43%
2010	9.85%

Note:

This schedule is intended to present 10 years of data.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Changes in the Canal Corporation's Total OPEB Liability and Related Ratios

($ in millions, expect percentages)

	2019	2018
Total OPEB liability		
Service cost	$ 9	$ 7
Interest	7	8
Change of benefit terms	–	–
Differences between expected and actual experience	–	–
Change of assumptions	(18)	20
Benefit payments	(6)	(6)
Net change in total OPEB liability	(8)	29
Total OPEB liability - beginning	234	205
Total OPEB liability – ending	$ 226	$ 234
Total OPEB liability - ending	$ 226	$ 234
Covered-employee payroll	$ 25	$ 24
Total OPEB liability as a percentage of covered-employee payroll	904%	975%

Notes to Schedule:

Changes of assumptions: Changes of assumptions reflect the effect of changes in the S&P Municipal Bond 20 Year High Grade Rate index. The discount rate, based on this index, changed from 3.16% at December 29, 2017 to 3.64% at December 31, 2018.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedules Relating to the Employees' Retirement System Pension Plan

($ in millions, expect percentages)

Schedule of Proportionate Share of the Net Pension Liability

As of March 31,	Proportion of the Net Pension Liability (Asset) Percentage	Proportionate Share of the Net Pension Liability (Asset)	Covered Employee Payroll	Proportionate Share of the Net Pension Liability (Asset) as a percentage of Covered Payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2019	0.76%	$ 53	$214	25.0%	96.3%
2018	0.72	23	205	11.3	98.2
2017	0.72	67	193	35.0	94.7
2016	0.60	96	166	57.4	90.7
2015	0.59	20	150	13.3	97.9
2014	0.60	27	148	18.2	97.2

Schedule of Contributions

Year Ending December 31,	Actuarially Required Contribution	Actual Contribution	Contribution (Excess) Deficiency	Covered Employee Payroll	Contribution as a Percentage of Covered Payroll
2019	29	29	–	214	14%
2018	28	28	–	205	14
2017	28	28	–	193	14
2016	24	24	–	166	15
2015	25	25	–	150	17
2014	28	28	–	148	19
2013	29	29	–	146	20
2012	27	27	–	146	19
2011	21	21	–	141	15
2010	17	17	–	145	12

KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

Board of Trustees
Power Authority of the State of New York:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the consolidated financial statements of the business-type activities and fiduciary funds of the Power Authority of the State of New York, (the Authority) and its blended component unit, as of December 31, 2019 and 2018, and the related notes to the consolidated financial statements, which collectively comprise the Authority's consolidated financial statements as listed in the table of contents, and have issued our report thereon dated March 30, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements, we considered the Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the consolidated financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of consolidated financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

New York, New York
March 30, 2020

NEW YORK POWER AUTHORITY

Financial Report

December 31, 2020 and 2019

NEW YORK POWER AUTHORITY
Financial Report
December 31, 2020 and 2019

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KPMG LLP
345 Park Avenue
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Independent Auditors' Report

Board of Trustees
New York Power Authority:

We have audited the accompanying consolidated financial statements of the business-type activities and fiduciary funds of the Power Authority of the State of New York (the Authority) and its blended component unit, as of and for the years ended December 31, 2020 and 2019, and the related notes to the consolidated financial statements, which collectively comprise the Authority's consolidated financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated 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 consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements.

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

Opinions

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities and fiduciary funds of the Authority and its blended component as of December 31, 2020 and 2019, and the respective changes in financial position and, where applicable, cash flows thereof for the years then ended in accordance with U.S. generally accepted accounting principles.

KPMG

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the Management's Discussion and Analysis on pages 4 through 18 and Required Supplementary Information on pages 78 through 82 be presented to supplement the consolidated financial statements. Such information, although not a part of the consolidated financial statements, are required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the consolidated financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the consolidated financial statements, and other knowledge we obtained during our audit of the consolidated financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated March 31, 2021 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.

KPMG LLP

New York, New York
March 31, 2021

Management Report

Management is responsible for the preparation, integrity and objectivity of the consolidated financial statements of the Authority, as well as all other information contained in the Annual Report. The consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles (U.S. GAAP) and, in some cases, reflect amounts based on the best estimates and judgments of management, giving due consideration to materiality. Financial information contained in the Annual Report is consistent with the financial statements.

The Authority maintains a system of internal controls to provide reasonable assurance that transactions are executed in accordance with management's authorization, that financial statements are prepared in accordance with U.S. generally accepted accounting principles and that the assets of the Authority are properly safeguarded. The system of internal controls is documented, evaluated and tested on a continuing basis. No internal control system can provide absolute assurance that errors and irregularities will not occur due to the inherent limitations of the effectiveness of internal controls; however, management strives to maintain a balance, recognizing that the cost of such system should not exceed the benefits derived.

The Authority maintains an internal auditing program to independently assess the effectiveness of internal controls and to report findings and recommend possible improvements to management. This program includes a comprehensive assessment of internal controls to ensure that the system is functioning as intended. Additionally, as part of its audit of the Authority's consolidated financial statements, KPMG LLP, the Authority's independent auditors, considers internal controls over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal controls over financial reporting. Management has considered the recommendations of its internal auditors, the Office of the State Comptroller (OSC), and the independent auditors concerning the system of internal controls and has taken actions that it believed to be cost-effective in the circumstances to respond appropriately to these recommendations. Based on its structure and related processes, management believes that, as of December 31, 2020, the Authority's system of internal controls provides reasonable assurance related to material items, as to the integrity and reliability of the financial statements, the protection of assets from unauthorized use or disposition and the prevention and detection of fraudulent financial reporting.

The members of the Authority's Board of Trustees (the Authority's Trustees), appointed by the Governor, by and with the advice and consent of the Senate, are not employees of the Authority. The Authority's Trustees' Audit Committee meets with the Authority's management, its Sr. Vice President of Internal Audit and its independent auditors periodically, throughout the year, to discuss internal controls and accounting matters, the Authority's financial statements, the scope and results of the audit by the independent auditors and the periodic audits by the OSC, and the audit programs of the Authority's internal auditing department. The independent auditors and the Sr. Vice President of Internal Audit have direct access to the Audit Committee.

Adam Barsky
Executive Vice President and Chief Financial Officer

March 30, 2021

Overview of the Consolidated Financial Statements

The New York Power Authority (the "Power Authority") is considered a special-purpose government entity engaged in business-type activities and follows financial reporting for enterprise funds. Effective January 1, 2017, the New York State Canal Corporation (the "Canal Corporation") became a subsidiary of the Power Authority, and the Power Authority assumed certain powers and duties relating to the Canal System to be exercised through the Canal Corporation. The Canal Corporation is responsible for a 524-mile canal system consisting of the Erie, Champlain, Oswego, and Cayuga-Seneca canals (the "Canal System"). The Power Authority and its subsidiary (collectively "the Authority") follow financial reporting for enterprise funds. The consolidated financial statements of the Authority are prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) as prescribed by the Governmental Accounting Standards Board (GASB). Under the criteria set forth in GASB Statement No. 14, *The Financial Reporting Entity*, as amended by Governmental Accounting Standard (GAS) No. 39, *Determining Whether Certain Organizations Are Component Units* and GAS No. 61, *The Financial Reporting Entity: Omnibus--an amendment of GASB Statements No. 14 and No. 34*, the Authority considers its relationship to the State to be that of a related organization. The Power Authority and its subsidiary the Canal Corporation are referred to collectively as the "Authority" in the consolidated financial statements, except where noted.

This consolidated report consists of three parts: management's discussion and analysis, the basic consolidated financial statements, and the notes to the consolidated financial statements.

The consolidated financial statements provide summary information about the Authority's overall financial condition. The notes provide explanation and more details about the contents of the consolidated financial statements.

Forward Looking Statements

The statements in this management's discussion and analysis (MD&A) that are not purely historical facts are forward-looking statements based on current expectations of future events. Such forward-looking statements are necessarily based on various assumptions and estimates and are inherently subject to various risks and uncertainties, including, but not limited to, risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes to or development in various important factors. Accordingly, actual results may vary from those we presently expect and such variations may be material. We therefore caution against placing undue reliance on the forward-looking statements contained in this MD&A. All forward-looking statements included in this MD&A are made only as of the date of this MD&A and we assume no obligation to update any such forward-looking statements as a result of new information, future events or other factors.

Summary of Consolidated Revenues, Expenses and Changes in Net Position

The following is a summary of the Authority's consolidated financial information for 2020, 2019, and 2018:

	2020	2019	2018	2020 vs. 2019 favorable (unfavorable)	2019 vs. 2018 favorable (unfavorable)
		($ In millions)		(In Percentages)	
Operating revenues	$ 2,265	$ 2,370	$ 2,689	(4)%	(12)%
Operating expenses:					
Purchased power	484	529	710	9	25
Fuel oil & gas	109	140	189	22	26
Wheeling	650	647	654	—	1
Operations and maintenance	683	692	679	1	(2)
Depreciation	258	250	235	(3)	(6)
Total operating expenses	2,184	2,258	2,467	3	8
Operating income	81	112	222	(28)	(50)
Nonoperating revenues	26	46	23	(43)	100
Nonoperating expenses	124	135	143	8	(6)
Net income before contributed capitaal	(17)	23	102	(174)	(77)
Contributed capital	—	3	—		
Net loss and change in net position	(17)	26	102		
Net position – beginning, as restated	4,760	4,734	4,632		
Net position – ending	$ 4,743	$ 4,760	$ 4,734		

The following summarizes the Authority's consolidated financial performance for the years 2020 and 2019:

The Authority had a net loss of $17 million for the year ended December 31, 2020 compared to $23 million net income in 2019, a decrease of $40 million (174%). The 2020 decrease in net income compared to 2019 was primarily due to lower operating income of $31 million (28%), lower nonoperating revenues of $20 million (43%), partially offset by lower operating expenses of $74 million (3%) and non-operating expenses of $11 million (8%). The decrease in operating income resulted from lower market-based energy sales due to lower market prices and the pass through of lower power costs to customers as well as lower customer consumption. The decrease in operating expenses was primarily due to lower purchase power costs and lower fuel prices attributable to lower customer consumption, partially offset by Regional Transmission Expansion Plan ("RTEP") charges allocated to the Hudson Transmission line ("HTP") totaling $33 million, of which $20 million is retroactive to 2018 and 2019 and $13 million for 2020. The operations and maintenance expenses were $9 million (1%) lower compared to 2019 primarily due to lower direct operating costs associated with the decline in operating revenue and cost containment measures initiated by management across broad categories of expenses, partially offset by incremental expenses of $20 million, net related to COVID-19 pandemic.

The change in net position was attributable to the 2020 net loss of $17 million.

The Authority had net income of $23 million for the year ended December 31, 2019 compared to $102 million in 2018, a decrease of $79 million (77%). The decrease in net income was primarily due to lower operating income of $110 million (50%), partially offset by lower non-operating expenses of $8 million (6%) and higher non-operating revenues of $23 million. Operating income decreased by $110 million compared to 2018 primarily due to lower margins on sales of $82 million resulting from lower energy prices. Operating expenses were lower in 2019, primarily due to lower purchased power costs. The operations and maintenance expenses were $13 million (2%) higher compared to 2018 primarily due to higher postemployment benefits other than pensions (OPEB) and pension expenses.

The change in net position was attributable to the positive 2019 net income of $23 million and $3 million of contributed capital related to certain wind farm transmission assets (see note 5 "Capital Assets" of notes to the consolidated financial statements).

Operating Revenues

Operating revenues of $2,265 million in 2020 were $105 million, or 4%, lower than the $2,370 million in 2019, primarily due to lower market-based energy sales resulting from lower market prices and the pass through of lower power costs to customers as well as lower customer consumption attributable to the COVID-19 pandemic environment, partially offset by higher generation at both our hydro and fossil fuel plants resulting in a higher volume sold in the market.

Purchased Power and Fuel

Purchased power costs decreased by $45 million or 9% in 2020 to $484 million from $529 million in 2019, primarily due to lower prices in 2020 compared to 2019 resulting from lower energy and capacity costs, partially offset by RTEP charges allocated to the HTP line totaling $33 million, of which $20 million is retroactive to 2018 and 2019 and $13 million for 2020, (see note 13 "Commitments and Contingencies-(b) Governmental Customers in the New York City Metropolitan Area - HTP Transmission Line" of the notes to the financial statements), as well as lower volume due to lower customer consumption. Fuel costs were $31 million (22%) lower during 2020, primarily due to lower fuel prices ($44 million) and partially offset by higher generation volume ($13 million).

Operations and Maintenance (O&M)

O&M expenses decreased by $9 million or 1% in 2020 compared to 2019 primarily due to $29 million (4%) of lower direct operating costs associated with the decline in operating revenue and cost containment measures initiated by management across broad categories of expenses to offset lower operating margins, partially offset by incremental expenses of $20 million related to the COVID-19 pandemic ranging from critical employee sequestration and sanitization/cleaning supplies to facility protective measures and equipment for a remote workforce.

Nonoperating Revenues

Nonoperating revenues decreased by $20 million, or 43% to $26 million from $46 million in 2019, primarily due to lower investment income and decreased market value on the Authority's investment portfolio.

Nonoperating Expenses

Nonoperating expenses decreased by $11 million, or 8%, primarily attributable to capitalization of interest related to increased construction work in progress and lower debt related costs.

Net (loss) income before non-recurring charges

	2020	2019
	(In millions)	
Net (loss) income	$ (17)	$ 23
Add: RTEP (HTP line related charges) (1)	20	–
Incremental COVID-19 expenses, net (2)	20	–
Net income before non-recurring	$ 23	$ 23

(1) In 2020, HTP RTEP charges totaling $33 million were incurred, of which $20 million is retroactive to 2018 and 2019 and $13 million for 2020.
(2) See note 15 "Impact of COVID-19 Pandemic" of the notes to the financial statements.

EBIDA

Reconciliation of Net (Loss) Income to EBIDA and EBIDA after certain non-cash charges

	2020	2019	2018
		(In millions)	
Net (loss) income	$ (17)	$ 23	$ 102
Add: Interest	124	135	143
Depreciation	258	250	235
EBIDA (1)	365	408	480

(1) In 2020, EBIDA, excluding $39 million of non-cash pension expense, was $404 million. Total Pension expense recognized in accordance with GAS No. 68 was $69 million in 2020. In 2019, EBIDA, excluding $4 million of non-cash pension expense, was $412 million in 2019. Total pension expense recognized in 2019 was $35 million.

EBIDA represents net income (loss) before interest expense, depreciation and amortization and is a non-GAAP financial measure. EBIDA does not represent net income (loss), as that term is defined under Generally Accepted Accounting Principles (GAAP) and should not be considered as an alternative to net income (loss) as an indicator of the Authority's operating performance or any other measure of performance derived in accordance with GAAP. EBIDA is not intended to be a measure of cash flows, as depicted on the statement of cash flows, available for management or discretionary use as such measures do not consider certain cash requirements such as capital expenditures and debt service requirements. EBIDA as presented herein is not necessarily comparable to similarly titled measures presented by the Authority.

Cash Flows

Net cash flows provided by operating activities decreased by $6 million in 2020 compared to 2019 due to the timing of payments and receipts.

Net Generation

Net generation was 31.5 million megawatt-hours (MWh) in 2020 and 30.1 million MWh in 2019. Net generation from the Niagara and St. Lawrence hydroelectric plants in 2020 (25.0 million MWh) was 3% higher than 2019

(24.3 million MWh) due to the average river flow for both Niagara and St. Lawrence being higher in 2020 than in 2019 resulting in higher water flow to the Niagara and St. Lawrence hydroelectric plants. For 2020, net hydro generation was approximately 123% of long-term average and above 2019, which was 120%. Combined net generation of the fossil fuel plants for 2020 was 6.5 million MWh, or 12% higher than 2019 (5.8 million MWh).

Summary of Consolidated Statements of Net Position

The following is a summary of the Authority's consolidated statements of net position for 2020, 2019, and 2018:

	2020	2019	2018	2020 vs. 2019	2019 vs. 2018
		($ In millions)		(In Percentage)	
Current assets	$ 1,101	$ 1,303	$ 1,434	(16) %	(9) %
Capital assets	6,032	5,783	5,519	4	5
Other noncurrent assets	2,667	1,670	1,798	60	(7)
Deferred outflows of resources	261	185	137	41	35
Total assets and deferred outflows	$ 10,061	$ 8,941	$ 8,888	13	1
Current liabilities	$ 1,037	$ 1,293	$ 1,051	(20)	23
Noncurrent liabilities	3,690	2,456	2,631	50	(7)
Total liabilities	4,727	3,749	3,682	26	2
Deferred inflows of resources	591	432	472	37	(8)
Net position	4,743	4,760	4,734	0	1
Total liabilities, deferred inflows and net position	$ 10,061	$ 8,941	$ 8,888	13	1

The following summarizes the Authority's consolidated statements of net position variances for the years 2020 and 2019:

In 2020, current assets decreased by $202 million (16%) to $1,101 million due to use of investments to fund capital projects. Capital assets increased by $249 million (4%) to $6,032 million, compared to last year, as a result of continuing investments in generating assets at existing facilities and transmission upgrades necessary to maintain reliability. Other noncurrent assets, increased by $997 million (60%), compared to last year, as a result of bond proceeds allocation for planned capital investments and energy efficiency program and an increase in postemployment benefits other than pension (OPEB) asset as a result of the current valuation. Deferred outflows increased by $76 million (41%) primarily due to changes in deferral of pension resources and a reclassification related to asset retirement obligations, partially offset by changes in deferral of OPEB resources. Current liabilities decreased by $256 million (20%) to $1,037 million compared to last year. This decrease is attributable primarily to the decrease in short-term debt by $190 million, long-term debt due in one year by $30 million and the timing of accounts payable payments. Noncurrent liabilities were higher by $1,234 million (50%), primarily due to the issuance of the $1,235 million of Series 2020A and Series 2020B Revenue Bonds, partially offset by the redemption of certain Series 2003A Revenue Bonds and defeasance of certain Series 2007B Revenue Bonds and the outstanding Series 2011A and Series 2015A Revenue Bonds. Deferred inflows increased by $159 million (37%) compared to last year, primarily due to the changes in the deferral of OPEB resources. The changes in net position for 2020 and 2019 are discussed in the summary of revenues, expenses and changes in net position in this Management's Discussion and Analysis.

In 2019, current assets decreased by $131 million (9%) to $1,303 million due to use of investments to fund capital projects. Capital assets increased by $264 million (5%) to $5,783 million, compared to last year, as a result of continuing investments in generating assets at existing facilities and transmission upgrades necessary to maintain reliability. Other noncurrent assets, decreased by $128 million (7%), primarily due to decreased energy efficiency program work in progress and OPEB assets. Deferred outflows increased by $48 million (35%) primarily due to changes in deferral of OPEB resources and a reclassification related to asset retirement obligations, partially offset by changes in deferral of pension resources. Current liabilities increased by $242 million (23%) to $1,293 million compared to last year. This increase is attributable primarily to the increase in short-term debt due to issuance of commercial paper to refund $156 million of the Authority's Series 2007 A and Series 2007 C Revenue Bonds and the timing of accounts payable payments. Noncurrent liabilities were lower by $175 million (7%), primarily due to the decrease in long-term debt resulting from refunding of $156 million of Series 2007 A and Series 2007 C Revenue Bonds and scheduled maturities. Deferred inflows decreased by $40 million (8%) compared to last year, primarily due to the changes in the deferral of pension resources. The changes in net position for 2019 and 2018 are discussed in the summary of revenues, expenses and changes in net position in this Management's Discussion and Analysis.

Capital Asset and Long-Term Debt Activity

The Authority currently estimates that it will expend approximately $5.0 billion ($3.4 billion for various capital improvements, which includes Reimagine the Canals Initiative capital projects of approximately $214 million, and $1.6 billion for energy services projects) over the five-year period 2021-2025. The Authority anticipates that these expenditures will be funded using existing construction funds, internally generated funds and additional borrowings. Such additional borrowings are expected to be accomplished through the issuance of commercial paper notes and/or the issuance of long-term fixed rate debt.

The Authority's capital plan includes the provision of approximately $1.6 billion, the amount of which will be reimbursed subsequently back to the Authority, in financing for Energy Services projects to be undertaken by the Authority's governmental customers and other public entities in the State. It should also be noted that due to projects currently under review as well as energy initiatives announced in the Governor's State of the State address, there is a potential for significant increases in the capital expenditures indicated in the table below. Such additional capital expenditures would be subject to evaluation and Trustee approval.

Projected capital requirements during this period include (in millions):

Transmission Development	$ 606
Ma1 & Ma2 Transmission Line Upgrade	308
Marcy-Scott Yard Transmission Upgrade	257
RM Mechanical & Electricl LEM	143
Strategic EV Charging Stations Installs	102
Communications Backbone	102
Transmission LEM (Nia, Massena)	97
RM Controls LEM	65
Replacement of Superstructure Bridges At RMNPP	51
Lewiston Pump Gener. Plant LEM	44
Cyber Resilience	40
T-LEM: Stl Remote Substations	38
L33P & L34P Phase Shifter	29
RM Penstock LEM	28
Garage - Centroplex Upgrade (WPO)	28
Common Application LEM	28
Core IT Infrastructure LEM	25
Transmission Power Flow Control	24
T-LEM Tower Coating Upgrades (CNY, WNY)	40
Breaker & Relay Replacement (STL)	21
Reimagine Canals initiatives	214
Canal Corporation	201
All Other (Projects Below $20.0 Million)	888
	$ 3,379

The Authority is moving forward with its plans to update a major section of the Moses Adirondack line, one of the Authority's backbone transmission facilities. The project covers 78 miles of 230 kV transmission line from Massena to the town of Croghan in Lewis County. In July 2017, the Authority received authorization under the New York Independent System Operator (NYISO) tariff to include the costs of this project in its NYPA Transmission Adjustment Charge mechanism for cost recovery of the Authority's transmission system costs, which means that the costs will be allocated to all ratepayers in the State. The project includes the update of obsolete wood pole structures with higher, steel pole structures, as well as update of failing conductor with new conductor and insulation. The line will operate at its current 230 kV level, but the conductor and insulation design will accommodate future 345 kV operation. The Authority anticipates that the Moses Adirondack line will support the transmission of growing levels of renewable generation located in upstate New York and Canada, such as wind and hydroelectricity, and assist in meeting the State's renewable energy goals. The rebuilt line is also expected to enhance grid reliability by supporting the NYISO's black start plan. On September 21, 2018, the Public Service Commission (PSC) determined that the Authority's April 2018 Article VII application was complete. The PSC granted the Certificate of Compatibility and Public Need for the project on November 14, 2019, approving the Joint Proposal. On February 6, 2020, the PSC issued an order approving Part One of the Environmental Management and Construction Plan. Additionally, the Authority has received its Nationwide Permit from the U.S. Army Corps of Engineers and the New York State Department of Public Service has issued a Notice to Proceed. The Authority estimates a project cost of $484 million through project completion in 2023. As of December 31, 2020, the Authority has spent approximately $124 million on the Moses Adirondack project, which commenced in 2020.

In 2012, the Authority's Trustees approved a $726 million Transmission Life Extension and Modernization Program (Transmission LEM Program) on the Authority's Transmission system through 2025. As of December 31, 2020, the Authority has spent approximately $396 million. The Transmission LEM Program encompasses transmission assets in the Central, Northern and Western regions of New York and will include work to be done such as upgrades, refurbishments and replacements associated with switchyards and substations, transmission line structures or towers and associated hardware and replacement of the submarine cable on the PV-20 line. Reinvestment in this strategic component of the Authority's overall mission supports the repair, upgrade and/or expansion of the transmission infrastructure. The Transmission LEM Program will be financed with internal funds and proceeds from debt obligations issued by the Authority. The work on the Transmission LEM Program is underway and is expected to continue through 2025.

The Authority's Trustees approved a $460 million Life Extension and Modernization Program at the Niagara project's Lewiston Pump-Generating Plant, (Lewiston LEM Program) of which approximately $357 million has been spent as of December 31, 2020. The work to be done includes a major overhaul of the plant's 12 pump turbine generator units. The Lewiston LEM Program will increase pump and turbine efficiency, operating efficiency, and the peaking capacity of the overall Niagara project. The Authority filed an application with the Federal Energy Regulatory Commission (FERC) for a non-capacity license amendment in connection with the program. The amendment was approved with a FERC order issued in 2012. The Lewiston LEM Program will be financed with internal funds and proceeds from debt obligations issued by the Authority. The unit work began in late 2012 and is on-going, with the final unit expected to be completed in 2022.

More detailed information about the Authority's capital assets is presented in note 2 "Summary of Significant Accounting Policies" and note 5 "Capital Assets" of the notes to the consolidated financial statements.

Capital Structure

	2020	2019	2018
		(In millions)	
Long-term debt, net of current maturities:			
Senior:			
Revenue bonds	$ 1,629	$ 465	$ 653
Subordinated:			
Subordinated Notes, Series 2017 and 2012 (1)	40	42	43
Commercial paper	5	5	5
Total long-term debt, net of current maturities	1,674	512	701
Net position	4,743	4,760	4,734
Total capitalization	$ 6,417	$ 5,272	$ 5,435

(1) The Subordinated Notes, Series 2017 and 2012, which were issued in 2017 and 2012, respectively, are subordinate to the Series 2003A Revenue Bonds, the Series 2007B Revenue Bonds, the Series 2020A Revenue Bonds and 2020B Revenue Bonds.

During 2020, long-term debt, net of current maturities, increased by $1,162 million, primarily due to the issuance of 2020A and 2020B Revenue Bond partially offset by the redemption of certain 2003A Revenue Bonds and the defeasance of certain Series 2007B Revenue Bonds and the outstanding Series 2011A and Series 2015A Revenue Bonds.

Long-term debt to equity (long-term debt/net position) ratio as of December 31, 2020, was at .35-to-1 when compared to .11-to-1 as of December 31, 2019. Short Term debt of $502 million, consisting of the Series 1 CP Notes and certain Series 2 and Series 3 CP Notes, is excluded from the long-term debt to equity ratio, as it is used by the Authority to finance the Authority's current and future energy efficiency programs and for other corporate purposes.

Debt Ratings

	Moody's	Standard & Poor's	Fitch
NYPA's underlying credit ratings:			
Senior debt:			
Long-term debt (a)	Aa2	AA	AA
Subordinate debt:			
Subordinate Notes, Series 2017	N/A	AA-	N/A
Subordinate Notes, Series 2012	N/A	N/A	AA
Commercial paper	P-1	A-1+	F1+

(a) Long term debt includes certain bonds – Series 2007B Revenue Bonds and Series 2003A Revenue Bonds – the principal and interest when due is guaranteed under insurance policies issued by MBIA Insurance Corporation and Assured Guaranty Municipal Corporation, respectively. The credit ratings of MBIA Insurance Corporation and Assured Guaranty Municipal Corporation are currently at or below the Authority's underlying credit ratings.

In April 2020, Standard & Poor's Ratings Service affirmed the Authority's commercial paper rating, senior debt rating and Subordinated Notes rating (Series 2017). In October 2020, Moody's Investors Service affirmed the Authority's commercial paper rating and downgraded the Authority's senior debt rating to Aa2 from Aa1(Moody's did not reconfirm or review the Authority's Subordinated Notes, Series 2017 or Series 2012). In April 2020, Fitch Ratings affirmed the Authority's commercial paper rating, senior debt rating and Subordinated Notes (Series 2012).

The Authority has a line of credit under a 2019 revolving credit agreement (the 2019 RCA), with a syndicate of banks, to provide liquidity support for the Series 1-3 CP Notes, under which the Authority may borrow up to $700 million in aggregate principal amount outstanding at any time for certain purposes, including the repayment of the Series 1–3 CP Notes. The 2019 RCA expires January 14, 2022. There are no outstanding borrowings under the 2019 RCA.

In April 2020, the Authority entered into a hybrid revolving line of credit (the 2020 RCA) with a single bank under an agreement to provide liquidity support for the Series 3 and Series 4 CP Notes and/or to borrow directly. The Authority may borrow up to $250 million in aggregate principal amount outstanding at any time for certain purposes, including the repayment of Commercial Paper or for general corporate purposes. The 2020 RCA expires April 21, 2021 and the Authority is in process of renewing this RCA for an additional one-year period. There are no outstanding borrowings under the 2020 RCA.

Economic Conditions

In December 2020, the Authority's Board of Trustees approved its strategic plan, VISION2030, which focuses on preserving the value of its hydropower assets; leading the transition away from natural gas while ensuring system reliability; rapidly developing new transmission assets to meet market needs; partner with customers' and the state to help meet energy goals; and reimagine the New York State Canals System. The Authority's strategic plan will also ensure the continuation of its evolution to a digital utility; ensure long-term environmental, social, and governance (ESG) performance; the commitment to Diversity, Equity and Inclusion (DE&I); the incorporation of resiliency into all of NYPA; and the on-going focus on employee development through Resource Alignment initiatives. The costs and revenues with respect to the plan are reflected in the Authority's 2021-2024 financial plan.

Climate Leadership and Community Protection Act (CLCPA)

VISION2030 is anchored in helping achieve the greenhouse gas reduction targets in New York State's Climate Leadership and Community Protection Act (CLCPA), which was passed in 2019 and is the most ambitious climate change legislation in the country. CLCPA's targets for decarbonizing power generation include bringing 28 GW (16 GW of land-based renewables, 6 GW of offshore wind, and 6 GW of distributed solar) of renewables to market by 2030; accelerating transmission network investment to integrate renewables and alleviate load pockets; and ensuring grid reliability and flexibility through an integrated set of solutions including 3 GW of storage, dispatchable clean generation, and demand-side solutions. Targets for decarbonizing beyond the power sector include reduction of statewide energy use by 185 TBtu; electrification of transportation; and coordinated electrification of building heating and industrial processes. Fundamental to the CLCPA and NYPA's participation in achieving its goals is ensuring an equitable transition to a thriving clean energy.

Transmission Congestion and System Operation Issues

Infrastructure limitations in the vicinity of the Authority's Niagara Project contribute to transmission congestion that limits the amount of Niagara Project output that can be accommodated on the transmission system. Transmission congestion prevents the full and efficient use of this asset, as well as other generation assets located in Western New York. To begin alleviating this congestion, on July 20, 2015, the NYPSC issued an order that granted requests from the Authority and National Grid to establish a Public Policy Requirement driving the need for transmission additions to, among other things, enable the Authority to fully operate the Niagara Project and support the import of capacity from Ontario during emergency conditions. This order initiated the NYISO's competitive solicitation process which resulted in the NYISO Board of Directors selection of the NextEra Energy Transmission New York, Inc. (NextEra) Empire State Line transmission project on October 17, 2017. NextEra currently has requests pending before the PSC for two regulatory approvals that are necessary before it may begin developing the line. The project is a partial solution to the identified congestion issues and is expected to be completed in June 2022.

In 2020, New York State passed the Accelerated Renewable Energy Growth and Community Benefit Act ("Renewable Energy Act"), the purpose of which is to help prioritize the planning, investment, and responsible development of a state-of-the-art grid infrastructure the Renewable Energy Act focuses on grid planning and energy delivery constraint relief and calls for a comprehensive study to identify cost-effective distribution, local and bulk electric system upgrades and a bulk transmission investment program that draws upon NYPA's capability to expeditiously construct new transmission (Renewable Energy Act discussed herein).

Regional Greenhouse Gas Initiative

The Regional Greenhouse Gas Initiative (the "RGGI") is a cooperative effort by Northeastern and Mid-Atlantic states, including New York, to reduce carbon dioxide emission levels. Participating states have established a regional carbon dioxide emissions cap from the power sector (fossil fuel-fired power plants 25MW or greater). RGGI States will make an adjustment to the RGGI cap to account for banked CO2 allowances accumulated through the third control period. The size of the adjustment will be calculated in March 2021 and the adjustment will be made over a five-year period (2021-2025), as specified in the 2017 Model Rule. Central to this initiative is the implementation of a multi-state cap-and-trade program with a market-based emissions trading system. The program requires electricity generators to hold carbon dioxide allowances in a compliance account in a quantity that matches their total emissions of carbon dioxide for the three-year compliance period. The Authority's Flynn plant, the SCPPs, and 500-MW Plant are subject to the RGGI requirements as is the Astoria Energy II plant. The Authority has participated in program auctions to acquire carbon dioxide allowances and expects to recover RGGI costs through its power sales revenues. The Authority is monitoring federal legislation and proposed programs that would impact RGGI.

Competitive Environment

The Authority's new mission statement that was ratified by the Trustees in December 2020, is to "Lead the transition to a carbon-free, economically vibrant New York through customer partnerships, innovative energy solutions, and the responsible supply of affordable, clean, and reliable electricity."

The new mission statement adheres to maintaining NYPA's core operating businesses while also moving to support the energy goals of New York State, codified in the Clean Energy Standard, New York State Climate Leadership and Community Protection Act, our Enhanced Authority under changes to the Power Authority Act enacted in 2019, and the Accelerated Renewable Energy Growth and Community Benefit Act.

The Authority's financial performance goal is to maintain a strong financial position to have the resources necessary to achieve its mission.

To maintain its position as a reliable provider of power in a changing environment, the Authority has undertaken and continues to carry out a multifaceted program, including: (a) the upgrade and relicensing of the Niagara, St. Lawrence-FDR, and Blenheim-Gilboa ("BG") projects; (b) long-term supplemental electricity supply agreements with NYPA's governmental customers located in Southeastern New York (NYC and Westchester Governmental Customers); (c) construction and operation of the Eugene W. Zeltmann Power Project (NYPA's 500 MW combined cycle electric generating plant) located at the Authority's Poletti plant site; (d) a long-term electricity supply contract with Astoria Energy II LLC for the purchase of the output of a 550-MW power plant in Astoria, Queens, ("AEII"), in which the Authority's net costs associated with the AEII power purchase agreement are recovered under a separate contract with the NYC Governmental Customers who are served by the output; (e) a firm transmission capacity purchase agreement with Hudson Transmission Partners, LLC ("HTP") for a portion of the output of the 660 MW, seven mile, underground and underwater transmission line connecting into the transmission system operated by PJM Interconnection LLC; (f) construction and maintenance of new transmission lines to relieve congestion and increase transfer capability from central to eastern New York addressing NYISO's AC Transmission Public Policy Need ("AC Proceeding"); (g) refinancing outstanding callable bonds to lower the overall cost of debt; (h) implementation of an enterprise-wide risk management program; and (i) implementation of an enterprise-wide resiliency program to embed resilience culture and to prepare for a more uncertain operating environment. As a component of the Authority's strategic plan, efforts to modernize the Authority's generation and transmission infrastructure are being developed and implemented to increase flexibility and resiliency, and to serve customers' needs in an increasingly dynamic energy marketplace.

To achieve its goal of promoting clean energy and efficiency, the Authority implements energy efficiency services for the benefit of its power supply customers and for various other public entities throughout the States. The Authority finances the installation of energy saving greenhouse measures and equipment which are owned by the customers and public entities to focus on the reduction of the demand for electricity and the efficient use of energy.

The Authority operates in a competitive and sometimes volatile energy market environment. Through its participation in the NYISO and other commodity markets, the Authority is subject to electric energy prices, fuel prices and electric capacity price risks that impact the revenue and purchased power streams of its facilities and customer market areas. Such volatility can potentially have adverse effects on the Authority's financial condition. To mitigate downside effects, many of the Authority's customer contracts provide for the complete or partial pass-through of these costs.

To moderate cost impacts to the Authority and its customers, the Authority, at times, hedges market risks through the use of financial instruments and physical contracts. Hedges are transacted by the Authority to mitigate volatility in the cost of energy or related products needed to meet customer needs; to mitigate risk related to the price of energy and related products sold by the Authority; to mitigate risk related to margins (electric sales versus fuel use) where the Authority owns generation or other capacity; and to mitigate geographic cost differentials of energy procured or sold for transmission or transportation to an ultimate location. Commodities to be hedged include, but are not limited to, natural gas, natural gas basis, electric energy, capacity, congestion costs and aluminum associated with the supply of electricity. Any such actions are taken pursuant to policies approved by the Authority's Trustees and under the oversight of an Executive Risk Management Committee.

The Authority can give no assurance that, even with these measures, it will retain its competitive status in the marketplace in the future as a result of the restructuring of the State's electric utility industry and the emergence of new competitors or increased competition from existing participants.

Rate Actions

Power and energy from the St. Lawrence-FDR and Niagara hydroelectric facilities are sold to municipal electric systems, rural electric cooperatives, industrial and other business customers, certain public bodies, investor-owned utilities, out-of-state customers, and into the wholesale market. The charges for firm and/or firm peaking power and associated energy sold by the Authority, as applicable, to the fifty-one municipal electric systems and rural electric cooperatives in New York State, two public transportation agencies, two investor-owned utilities for the benefit of rural and domestic customers, nine host communities and seven out-of-state public customers have been established on the basis of the hydroelectric project costs.

Expansion and Replacement Power commercial and industrial customers supplied from the Niagara facility and Preservation Power industrial customers supplied from the St. Lawrence-FDR facility are allocated over 35% of the combined firm contracted demand of the plants. Their rates are subject to annual adjustment based on the average of three contractually agreed-upon economic indices reflecting changes in industrial energy prices. In addition, one of the customers served by the St. Lawrence-FDR facility has an energy rate partially tied to market prices of aluminum.

ReCharge New York ("RNY") is Governor Cuomo's statewide economic development electric power program, designed to retain and create jobs through the allocation of low-cost power. The RNY program allocates 455 MW of hydropower from the Authority's Niagara and St. Lawrence-FDR projects at Preservation Power rates, which are similar to the Expansion and Replacement power customer rates, with certain adjustments. An additional 455 MW of market power can also be procured for RNY customers upon request.

The Authority has supplied electric power to its governmental customers located within New York City and Westchester County since 1976. New long-term agreements have been executed with the New York City governmental customers, incorporating recent shifts in the electricity business, New York State's clean energy goals, and continuing changes in the Authority's supply portfolio, all in an effort to continue to provide value for, and serve this customer group.

In an order issued January 27, 1999, FERC approved the use of a $165.4 million transmission system revenue requirement in developing rates for use of NYPA's transmission facilities in the NYISO market. FERC also approved, among other things, the imposition of a NYPA Transmission Adjustment Charge ("NTAC") and the NYPA Transmission Service Charges ("TSC") which are the tariff elements established to achieve full recovery of the Authority's annual transmission revenue requirement ("ATRR"). In July 2012, the Authority filed for its first requested increase in the revenue requirement with FERC since the implementation of the NYISO. This filing resulted in FERC's October 4, 2013 order accepting an uncontested settlement agreement establishing a new $175.5 million revenue requirement. In January 2016, the Authority filed to convert from a Stated Rate to a Formula Rate to ensure full recovery of its revenue requirement based upon operating and maintenance expenses as well as the capital spending necessary to maintain the reliability of its transmission system, such as the Life Extension and Modernization program. The Authority filed an unopposed Offer of Settlement on September 30, 2016 that fully resolved the issues raised by interested parties in settlement negotiations concerning the formula rate. The settlement was approved by FERC on January 19, 2017. Separately, the ATRR under the formula of $190 million initially made effective April 1, 2016 was updated on July 1, 2016 to $198.2 million pursuant to the formula rate annual update process. The ATRR is updated annually prior to the start of each rate year (July 1st - June 30th). The ATRR effective July 1, 2020 is $278.7 million and includes the revenue requirements for NTAC, the Marcy South Series Compensation, and AC Transmission projects.

Certain New Legislation Affecting the Authority

Bills are periodically introduced or passed in the New York State Legislature which propose to limit or restrict the powers, rights and exemptions from regulation which the Authority currently possesses under the Power Authority Act and other laws, or could otherwise affect the Authority's financial condition or its ability to conduct its business, activities, or operations in the manner presently conducted or contemplated hereby. It is not possible to predict whether any such bills, or other bills of a similar type which may be introduced or passed in the future, will be enacted.

As more specifically described in the enactment, and subject to limitations described therein, the 2019-20 Enacted State Budget (2019-20 ESB) amended the Power Authority Act to authorize the Authority, subject to feasible and advisable determinations by the Authority's Trustees, to: (1) design, finance, develop, construct, install, lease, operate and maintain electric vehicle charging stations throughout the state for use by the public; (2) plan, finance, construct, acquire, operate, improve and maintain, either alone or jointly with one or more other entities, transmission facilities for the purpose of transmitting power and energy generated by renewable wind energy generation projects that are located in State territorial waters, and/or in waters under the jurisdiction or regulation of the U.S.; (3) supply certain market power and energy and renewable energy products to any Authority customer, public entity, or community choice aggregation ("CCA") community in the State (collectively, "Eligible Entities); and (4) alone or jointly with one or more other entities, finance the development of renewable energy generating projects that are located in the State, including its territorial waters, and/or on property or in waters under the jurisdiction or regulatory authority of the United States, purchase power, energy or related credits or attributes produced from such renewable energy generating projects, and allocate and sell such products to Eligible Entities. The Authority may exercise any of this authority at its discretion, and the amendments made by 2019-20 ESB do not affect the Authority's previously existing statutory authority.

On July 18, 2019, the State enacted the "New York State Climate Leadership and Community Protection Act" as Chapter 106 of the Laws of 2019 ("CLCPA"). CLCPA directs the New York State Department of Environmental Conservation (the "NYSDEC") to develop regulations to reduce statewide greenhouse gas emissions ("GHG") to 60% of 1990 levels by 2030 and 15% of 1990 levels by 2050. NYSDEC is currently drafting regulations that would implement these and other related goals.

Several provisions of CLCPA could potentially impact the Authority's business and operations, such as the following: (1) a requirement that specified State entities, including the Authority, adopt regulations to contribute to achieving statewide GHG emissions; (2) a requirement that State entities, including the Authority, assess and implement strategies to reduce GHG emissions; (3) consideration of whether actions that the Authority would undertake in the course of its operations are consistent with State GHG emission limits that will be established pursuant to the enactment; and (4) potential allocation or realignment of resources to support State clean energy and energy efficiency goals for disadvantaged communities.

Many of the provisions of CLCPA that could impact the Authority are not likely to be implemented for years based on deadlines established in the enactment. Therefore, the Authority is not in a position at this time to evaluate the impact of any particular provision of CLCPA on the Authority's business and operations.

As part of the 2020-2021 Enacted State Budget, legislation was enacted that is expected to expedite the siting and construction of clean energy projects to combat climate change in an effort to improve the State's economic recovery from the COVID-19 health crisis. The Accelerated Renewable Energy Growth and Community Benefit Act ("Renewable Energy Act") will create an Office of Renewable Energy Siting to improve and streamline the process for environmentally responsible and cost-effective siting of large-scale renewable energy projects across the State while delivering significant benefits to local communities. The Renewable Energy Act, which will be implemented by the Authority and New York State Department of State, NYSERDA, the Department of Public Service (DPS), NYSDEC and the Empire State Development Corporation, will accelerate progress towards the State's clean energy and climate goals, including the goal to obtain 70% of the State's electricity from renewable sources by 2030.

Accelerated Renewable Energy Growth and Community Benefit Act

The Accelerated Renewable Energy Growth and Community Benefit Act (the "Renewable Energy Act") was enacted as part of the 2020-21 Enacted State Budget. In summary, the Renewable Energy Act:

- Establishes a new Office of Renewable Energy Siting, through which the State will consolidate the environmental review of major renewable energy facilities.
- Provides accelerated timetables for review of applications for major utility transmission facilities.
- Authorizes NYSERDA to undertake several "host community benefit" programs to provide benefits to residents of local communities where new renewable general projects are slated for development.
- Directs the Department of Public Service ("DPS"), in consultation with NYSERDA, the Authority, the Long Island Power Authority, the New York Independent System Operator ("NYISO"), and the state's regulated utilities, to undertake a comprehensive study of the power delivery system in the state, for the purpose of identifying investor-owned utility distribution and local transmission upgrades, and bulk transmission system investments necessary to help the State meet the environmental goals of the Climate Leadership and Community Protection Act ("CLCPA").
- Requires the PSC to identify bulk transmission projects that need to be developed expeditiously to meet CLCPA goals ("Priority Transmission Project(s)" or "PTP(s)").
- Declares that it is appropriate for the Authority, by itself or in collaboration with other parties to develop those bulk transmission investments designated as PTPs that are needed expeditiously to achieve CLCPA targets.
- Authorizes the Authority, through a public process, to solicit interest from potential co-participants in each PTP it has agreed to develop and assess whether any joint development would provide for significant additional benefits in achieving the CLCPA targets, and thereafter determine to undertake the development of the PTP on its own, or undertake the PTP jointly with one or more other parties and enter into such agreements and take such other actions the Authority determines to be necessary in

order to develop the PTP. For PTPs substantially within the Authority's existing rights of way, the Renewable Energy Act authorizes the Authority to select private sector participants through a competitive bidding process.

Large-Scale Renewable Program

The current Clean Energy Standard set by the PSC requires that 50% of the State's electricity come from renewable sources by 2030. In support of the Clean Energy Standard goal for the State, the Authority issued a request for proposals in July 2020 to solicit renewable energy credits, energy and capacity from eligible large-scale renewable projects which includes wind, solar and battery storage technology. The Authority expects to award project(s) with long-term agreements for the purchase of renewable energy credits that will be generated from the projects. The Authority intends to seek recovery of costs associated with the agreements through sales of renewable energy credits by the Authority to the Authority's customers. The Authority anticipates it will undertake future procurements of large-scale renewable projects in order to fully support its customers and the State-wide Clean Energy Standard.

Commitments and contingencies

The Authority's commitments and contingencies are more fully detailed in note 13 "Commitments and Contingencies" of the notes to the consolidated financial statements.

Canal Corporation

The Canal Transfer Legislation enacted April 4, 2016, authorized, but does not require, the Authority, to the extent that the Authority's Trustees deem it feasible and advisable as required by the Resolution, to transfer moneys, property and personnel to the Canal Corporation.

The Canal Corporation operates at a loss and is expected to require substantial operating and maintenance support and capital investment. The Canal Corporation's expenses are expected to be funded by transfers of funds from the Authority. Any transfer of funds would be subject to approval by the Authority's Board of Trustees and compliance with the Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented. Certain expenses eligible for reimbursement are expected to be reimbursed to the Authority by moneys held in the Canal Development Fund maintained by the State Comptroller and the Commissioner of Taxation and Finance. For the year ended December 31, 2020, the Canal Corporation recognized $1.8 million in revenues, $83 million in operations and maintenance expenses and $27 million in depreciation expense. For the year ended December 31, 2019, the Canal Corporation recognized $2 million in revenues, $86 million in operations and maintenance expenses and $25 million in depreciation expense.

By resolution adopted December 9, 2020, the Canal Corporation's Board of Directors adopted a budget for 2021-2024 that consisted of expenditures for operations and maintenance expenses and for capital expenses. The Authority's budget and financial plan for 2021-2024 includes Canal-related operating expenditures of approximately $80-$90 million per year and capital expenditures of approximately $40 million per year and $1.5 million per year for Canal Development Fund expenses.

Contacting the Authority

This financial report is designed to provide our customers and other interested parties with a general overview of the Authority's finances. If you have any questions about this report or need additional financial information, contact the New York Power Authority, 123 Main Street, White Plains, New York 10601-3107. Email: info@nypa.gov

NEW YORK POWER AUTHORITY

Consolidated Statements of Net Position

(In millions)

	December 31, 2020	December 31, 2019
Assets and Deferred Outflows		
Current Assets:		
Cash and cash equivalents	$ 219	$ 66
Investment in securities	349	695
Receivables - customers	219	183
Materials and supplies, at average cost:		
Plant and general	90	86
Fuel	29	30
Miscellaneous receivables and other	195	243
Total current assets	1,101	1,303
Noncurrent Assets:		
Restricted funds:		
Cash and cash equivalents	51	52
Investment in securities	16	16
Total restricted assets	67	68
Capital funds:		
Cash and cash equivalents	677	16
Investment in securities	192	10
Total capital funds	869	26
Capital Assets:		
Capital assets not being depreciated	984	931
Capital assets, net of accumulated depreciation	5,048	4,852
Total capital assets	6,032	5,783
Other Noncurrent Assets:		
Receivable - New York State	86	86
Other long-term assets	1,645	1,490
Total other noncurrent assets	1,731	1,576
Total noncurrent assets	8,699	7,453
Total assets	9,800	8,756
Deferred outflows of resources:		
Asset retirement obligation	17	17
Accumulated decrease in fair value of derivative hedging	2	5
Pensions	154	58
Postemployment benefits other than pensions	88	105
Total assets and deferred outflows of resources	$ 10,061	$ 8,941

See accompanying notes to the consolidated financial statements.

(Continued)

NEW YORK POWER AUTHORITY

Consolidated Statements of Net Position

(In millions)

Liabilities, Deferred Inflows and Net Position	December 31, 2020	December 31, 2019
Current liabilities:		
Accounts payable and accrued liabilities	$ 484	$ 527
Short-term debt	502	692
Long-term debt due within one year	1	31
Capital lease obligation due within one year	50	43
Total current liabilities	1,037	1,293
Noncurrent liabilities:		
Long-term debt:		
Senior:		
Revenue bonds	1,629	465
Subordinated:		
Subordinated Notes	40	42
Commercial paper	5	5
Total long-term debt	1,674	512
Other noncurrent liabilities:		
Capital lease obligation	984	1,034
Disposal of spent nuclear fuel	229	228
Relicensing	251	256
Postemployment benefits other than pensions	198	226
Other long-term liabilities	354	200
Total other noncurrent liabilities	2,016	1,944
Total noncurrent liabilities	3,690	2,456
Total liabilities	4,727	3,749
Deferred inflows of resources:		
Cost of removal obligations	383	365
Accumulated increase in fair value of derivative hedging	13	1
Pensions	7	20
Postemployment benefits other than pensions	188	46
Net position:		
Net investment in capital assets	3,238	3,647
Restricted	869	45
Unrestricted	636	1,068
Total net position	4,743	4,760
Total liabilities, deferred inflows of resources and net position	$ 10,061	$ 8,941

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Consolidated Statements of Revenues, Expenses and Changes in Net Position

(In millions)

	Year Ended December 31, 2020	Year Ended December 31, 2019
Operating revenues:		
Power sales	$ 1,360	$ 1,481
Transmission charges	237	214
Wheeling charges	649	647
Other	19	28
Total operating revenues	2,265	2,370
Operating Expenses:		
Purchased power	484	529
Fuel oil and gas	109	140
Wheeling	650	647
Operations	555	562
Maintenance	128	130
Depreciation	258	250
Total operating expenses	2,184	2,258
Operating income	81	112
Nonoperating revenues and expenses:		
Nonoperating revenues:		
Investment income	23	44
Other	3	2
Total nonoperating revenues	26	46
Nonoperating expenses		
Interest on long-term debt	42	45
Interest - other	109	115
Interest capitalized	(27)	(23)
Amortization of debt premium	–	(2)
Total nonoperating expenses	124	135
Net income before contributed capital	(17)	23
Contributed capital- Wind farm transmission assets	–	3
Net loss and change in net position	(17)	26
Net position, January 1	4,760	4,734
Net position, December 31	$ 4,743	$ 4,760

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Consolidated Statements of Cash Flows

(In millions)

	Year Ended December 31, 2020	Year Ended December 31, 2019
Cash flows from operating activities:		
Received from customers for the sale of power, transmission and wheeling	$ 2,206	$ 2,356
Disbursements for:		
Purchased power	(478)	(529)
Fuel, oil and gas	(102)	(145)
Wheeling of power by other utilities	(638)	(640)
Operations and maintenance	(792)	(840)
Net cash provided by operating activities	196	202
Cash flows from capital and related financing activities:		
Gross additions to capital assets	(489)	(414)
Issuance of commercial paper	140	156
Repayment of commercial paper	(231)	–
Proceeds from issuance of Series 2020A revenue bonds	1,192	–
Proceeds from issuance of 2020B revenue bonds	114	–
Redemption of bonds	(32)	(219)
Defeasance of- bonds	(131)	–
Repayment of notes	(1)	(1)
Bonds issuance costs	(18)	–
Earning on investments	1	–
Interest paid, net	(54)	(42)
Net cash provided by (used in) capital and related financing activities	491	(520)
Cash flows from noncapital–related financing activities:		
Energy conservation program payments received from participants	289	193
Energy conservation program costs	(207)	(153)
Issuance of commercial paper	80	138
Repayment of commercial paper	(179)	(128)
Interest paid on commercial paper	(6)	(10)
Payment received from New York State	–	43
Empire State Trailways and other	57	–
Margin deposits	(18)	15
NYISO collateral	–	8
Net cash provided by noncapital-related financing activities	16	106
Cash flows from investing activities:		
Earnings received on investments	28	17
Purchase of investment securities	(3,476)	(4,385)
Sale of investment securities	3,558	4,674
Net cash provided by investing activities	110	306
Net increase in cash	813	94
Cash and cash equivalents, January 1	134	40
Cash and cash equivalents, December 31	$ 947	$ 134
Reconciliation to net cash provided by operating activities:		
Operating income	$ 81	$ 112
Adjustments to reconcile operating income to net cash provided by operating activities:		
Change in assets, deferred outflows, liabilities and deferred inflows:		
Provision for depreciation	258	250
Net increase in miscellaneous payments and other	(75)	(235)
Net increase in receivables and materials and supplies	(10)	(50)
Net decrease in accounts payable/accrued liabilities and other	(58)	125
Net cash provided by operating activities	$ 196	$ 202

See accompanying notes to the consolidated financial statements.

NEW YORK POWER AUTHORITY

Statements of Fiduciary Net Position

(In millions)

	December 31, 2020	December 31, 2019
Assets:		
Cash and cash equivalents	$ 142	$ 24
Receivables:		
Due from broker for investments sold	–	–
Investment income	1	1
Total receivables	1	1
Investments at fair value:		
Domestic equity	92	130
International equity	93	46
Index Fund	195	297
Real Estate (REIT)	39	39
Fixed Income	169	152
Total investments	588	664
Total assets	731	689
Liabilities:		
Payables:		
Accrued liability	3	-
Due to broker for investments purchased	-	3
Total liabilities	3	3
Net position available for postemployment benefits other than pensions	$ 728	$ 686

See accompanying notes to the consolidated financial statements

NEW YORK POWER AUTHORITY

Statements of Changes in Fiduciary Net Position

(In millions)

	Year Ended December 31, 2020	2019
Additions:		
Employer contributions	$ 25	$ 25
Investment income:		
Net increase / (decrease) in fair value of investments	41	112
Interest and dividend income	5	11
Less: investment expense	(1)	(2)
Net investment income / (loss)	45	121
Total additions	70	146
Deductions:		
Management expense	3	-
Benefits payments	25	25
Total deductions	28	25
Changes in net position	42	121
Net position available for postemployment benefits other than pensions – beginning of year	686	565
Net position available for postemployment benefits other than pensions – end of year	$ 728	$ 686

See accompanying notes to the consolidated financial statements.

(1) General

The Power Authority of the State of New York (the Power Authority), doing business as The New York Power Authority, is a corporate municipal instrumentality and political subdivision of the State of New York (State) created in 1931 by Title 1 of Article 5 of the Public Authorities Law, Chapter 43-A of the Consolidated Laws of the State, as amended (Power Authority Act or Act).

The Power Authority's mission is to lead the transition to a carbon-free, economically vibrant New York through customer partnerships, innovative energy solutions, and the responsible supply of affordable, clean, and reliable electricity. The mission statement adheres to maintaining the Power Authority's core operating businesses while also moving to support the energy goals of New York State, codified in the Clean Energy Standard, New York State Climate Leadership and Community Protection Act, our enhanced authority under changes to the Power Authority Act enacted in 2019, and the Accelerated Renewable Energy Growth and Community Benefit Act. The Authority's financial performance goal is to have the resources necessary to achieve its mission, to maximize opportunities to serve its customers better and to preserve its strong credit rating.

The Power Authority is authorized by the Power Authority Act to help provide a continuous and adequate supply of dependable electricity to the people of the State. The Power Authority generates, transmits and sells electricity principally at wholesale. The Power Authority's primary customers are municipal and investor-owned utilities, rural electric cooperatives, high load factor industries and other businesses located throughout New York State, various public corporations located in Southeastern New York within the metropolitan area of New York City (SENY Governmental Customers), and certain out-of-state customers. In addition to contractual sales to customers, the Power Authority also sells power into an electricity market operated by the NYISO.

To provide electric service, the Power Authority owns and operates five major generating facilities, eleven small gas-fired electric generating facilities, and four small hydroelectric facilities in addition to a number of transmission lines, including major 765-kV and 345-kV transmission facilities. The Power Authority's five major generating facilities consist of two large hydroelectric facilities (Niagara and St. Lawrence-FDR), a large pumped-storage hydroelectric facility (Blenheim-Gilboa), the Eugene W. Zeltmann combined cycle electric generating plant located in Queens, New York (Zeltmann or 500-MW Plant) and the Richard M. Flynn combined cycle plant located on Long Island (Flynn). To provide additional electric generation capacity to the Authority's NYC Governmental Customers, the Authority entered into a long-term electricity supply agreement with Astoria Energy II LLC in 2008 for the purchase of the output of an Astoria, Queens based natural-gas fueled 550-MW generating plant, which entered service in the summer of 2011.

The Power Authority acts through a Board of Trustees. The Power Authority's Trustees are appointed by the Governor of the State of New York, with the advice and consent of the State Senate. The Power Authority is a fiscally independent public corporation that does not receive State funds nor tax revenues nor credits. The Power Authority generally finances construction of new projects through a combination of internally generated funds and sales of bonds and notes to investors and pays related debt service with revenues from the generation and transmission of electricity. Accordingly, the financial condition of the Authority is not controlled by or dependent on the State or any political subdivision of the State. Under the criteria set forth in Governmental Accounting Standards Board (GASB) the Authority considers its relationship to the State to be that of a related organization.

Income of the Power Authority and properties acquired by it for its projects are exempt from taxation. However, the Authority is authorized by the Act to enter into agreements to make payments in lieu of taxes with respect to property acquired for any project where such payments are based solely on the value of the real property without regard to any improvement thereon by the Authority and where no bonds to pay any costs of such project were issued prior to January 1, 1972.

Article XV of the New York State Constitution provides, in part, that the barge canal, the divisions of which are the Erie canal, the Oswego canal, the Champlain canal, and the Cayuga-Seneca canal, and the terminals constructed as part of the barge canal system (collectively, the “Canal System”) shall remain the property of the State and under its management and control forever. Legislation enacted in 1992 (the “1992 Legislation”) transferred jurisdiction of the Canal System, among other assets and properties, from the New York State Commissioner of Transportation to the Thruway Authority, to be held by the New York Thruway Authority (the “Thruway Authority”) in the name of the people of the State. Such canal system remained the property of the State and under its management and control as exercised by and through the Thruway Authority, through its then newly created subsidiary, the New York State Canal Corporation (the “Canal Corporation”). The 1992 Legislation deemed the Canal Corporation to be the State for the purposes of such management and control of the canals but for no other purposes.

Legislation was enacted on April 4, 2016 (the “Canal Transfer Legislation”) which provided for (1) the transfer, effective January 1, 2017, of the New York State Canal Corporation (Canal Corporation) from the New York State Thruway Authority (Thruway Authority) to the Power Authority and (2) as of January 1, 2017, the Power Authority’s assumption from the Thruway Authority of powers and duties relating to the Canal System, and jurisdiction over the Canal System and state assets, equipment and property in connection with the planning, development, construction, reconstruction, maintenance and operation of the Canal System, which the Power Authority is authorized to exercise through the Canal Corporation. The Canal Corporation is responsible for a 524-mile Canal System consisting of the Erie, Champlain, Oswego and Cayuga-Seneca canals and the terminals constructed as part of the barge canal system (the “Canal System”).

(2) Summary of Significant Accounting Policies

Significant accounting policies include the following:

(a) *Basis of Reporting*

The operations of the Power Authority and its subsidiary, the Canal Corporation, are presented as an enterprise fund following the accrual basis of accounting in order to recognize the flow of economic resources. Accordingly, revenues are recognized in the period in which they are earned and expenses are recognized in the period in which they are incurred. The accounts and transactions of the Canal Corporation are included in the consolidated financial statements and notes to the consolidated financial statements. All significant transactions between the Power Authority and the Canal Corporation have been eliminated. The Power Authority and its blended component unit are referred to collectively as the “Authority” in the consolidated financial statements, except where noted.

The Authority complies with all applicable pronouncements of the Governmental Accounting Standards Board (GASB). In accordance with Governmental Accounting Standards (GAS) Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements,* (GAS No. 62) the Authority applies all authoritative pronouncements applicable to nongovernmental entities (i.e., Accounting Standards Codification (ASC) of the Financial Accounting Standards Board) that do not conflict with GASB pronouncements.

(b) *Regulatory Accounting*

The Power Authority’s Board of Trustees has broad rate setting authority for its power sales agreements with customers. The sale of transmission service over the Power Authority’s facilities is provided pursuant to New York Independent System Operator (NYISO) tariffs and under contracts that pre-dated existence of the NYISO. The Power Authority files its transmission system revenue requirement with the Federal Energy Regulatory Commission (FERC) for inclusion in the NYISO’s open access tariff.

The Authority accounts for its regulated operations under the provisions of GAS No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre November 30, 1989 FASB and AICPA Pronouncements*, paragraphs 476-500. These provisions recognize the economic ability of regulators, through the ratemaking process, to create future economic benefits and obligations affecting rate-regulated entities. Accordingly, the Authority records these future economic benefits and obligations as regulatory assets and regulatory liabilities, respectively. Regulatory assets represent probable future revenues associated with previously incurred costs that are expected to be recovered from customers. Regulatory liabilities represent amounts that are collected from customers through the ratemaking process associated with costs to be incurred in future periods. Based on the action of the Board of Trustees, the Authority believes the future collection of the costs held over through regulatory assets is probable. For regulatory assets see Note 2(l) "Summary of Accounting Polices – Other Long-Term Assets" of the notes to the consolidated financial statements.

(c) *Estimates*

The preparation of consolidated financial statements in conformity with 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 consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

(d) *Capital Assets*

Capital assets are recorded at original cost and consist of amounts expended for labor, materials, services and indirect costs to license, construct, acquire, complete and place in operation the projects of the Authority. Interest on amounts borrowed to finance construction of the Authority's projects is charged to the project prior to completion. Borrowed funds for a specific construction project are deposited in a capital fund account. Earnings on fund investments are held in this fund to be used for construction. Earnings on unexpended funds are credited to the cost of the related project (construction work in progress) until completion of that project. The costs of current repairs are charged to operating expense, and renewals and betterments are capitalized. The cost of capital assets retired less salvage is charged to accumulated depreciation. Depreciation of capital assets is generally provided on a straight-line basis over the estimated lives of the various classes of capital assets.

The related depreciation provisions at December 31, 2020 and 2019 expressed as a percentage of average depreciable capital assets on an annual basis are:

	Average depreciation rate	
	2020	**2019**
Type of plant:		
Production:		
Hydro	2.0%	2.0%
Gas turbine/combined cycle	2.0	2.0
Transmission	1.9	1.9
General	3.8	3.9
Canal system	3.4	3.4
	2.6%	2.6%

(e) *Asset Retirement and Cost of Removal Obligations*

The Authority has recorded a liability at fair value to recognize legal obligations for asset retirements in the period incurred and to capitalize the cost by increasing the carrying amount of the related long-lived asset. The Authority determined that it had legal liabilities for the retirement of certain Small Clean Power Plants (SCPPs) in New York City and, accordingly, has recorded a liability for the retirement of these assets. In connection with these legal obligations, the Authority has also recognized a liability for the remediation of certain contaminated soils discovered during the construction process. Accordingly, at December 31, 2020 and 2019, the Authority has reclassified $17 million from capital assets to deferred outflows of resources to reflect the application of GAS Statement No. 83 (GAS No. 83), *Accounting for Certain Asset Retirement Obligations*.

The Authority also applies GAS No. 49 *Accounting and Financial Reporting for Pollution Remediation Obligations,* to asset retirement obligations involving pollution remediation obligations, which upon the occurrence of any one of five specified obligating events, requires an entity to estimate the components of expected pollution remediation outlays and determine whether outlays for those components should be accrued as a liability or, if appropriate, capitalized when goods and services are acquired. At December 31, 2020 and 2019, the Authority had approximately $35 million and $25 million, respectively, of liabilities recorded under GASB 49.

In addition to asset retirement obligations, the Authority has other cost of removal obligations that are being collected from customers and accounted for under the provisions of GAS Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre November 30, 1989 FASB and AICPA Pronouncements*, paragraphs 476-500. These cost of removal obligations are reflected in deferred inflows of resources in the statements of net position.

Asset retirement obligations (ARO) amounts included in other noncurrent liabilities and cost of removal obligation amounts included in deferred inflows are as follows:

	ARO amounts	Cost of removal obligation
	(In millions)	
Balance – December 31, 2019	$ 17	$ 365
Depreciation Expense	–	14
Other expense	–	4
Settlements		–
Balance – December 31, 2020	$ 17	$ 383

(f) *Long-Lived Assets*

The Authority applies GAS No. 42, *Accounting and Financial Reporting for Impairment of Capital Assets and for Insurance Recoveries*, which states that asset impairments are generally recognized only when the service utility of an asset is reduced or physically impaired.

GAS No. 42 states that asset impairment is a significant, unexpected decline in the service utility of a capital asset. The service utility of a capital asset is the usable capacity that at acquisition was expected to be used to provide service, as distinguished from the level of utilization which is the portion of the usable capacity currently being used. Decreases in utilization and existence of or increases in surplus capacity that are not associated with a decline in service utility are not considered to be impairments.

(g) *Cash, Cash Equivalents and Investments*

Cash includes cash and cash equivalents and short-term investments with maturities, when purchased, of three months or less. The Authority accounts for investments at their fair value. Fair value is determined using quoted market prices. Investment income includes changes in the fair value of these investments. Realized and unrealized gains and losses on investments are recognized as investment income in accordance with GAS No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investment Pools*.

(h) *Derivative Instruments*

The Authority uses financial derivative instruments to manage the impact of energy and capacity price, fuel cost changes and interest rate when applicable, on its earnings and cash flows. The Authority recognizes the fair value of all financial derivative instruments as either an asset or liability on its statements of net position with the offsetting gains or losses recognized in earnings or deferred charges. The Authority applies GAS No. 53, *Accounting and Financial Reporting for Derivative Instruments*, which establishes accounting and reporting requirements for derivative instruments (see Note 8 "Risk Management and Hedging Activities" of the notes to the consolidated financial statements).

(i) *Accounts Receivable*

Accounts receivable are classified as current assets and are reported net of an allowance for uncollectible amounts.

(j) *Materials and Supply Inventory*

Material and supplies are valued at weighted average cost and are charged to expense during the period in which the material or supplies are used.

(k) *Debt Refinancing Charges*

Debt refinancing charges, representing the difference between the reacquisition price and the net carrying value of the debt refinanced, are amortized using the interest method over the life of the new debt or the old debt, whichever is shorter, in accordance with GAS No. 23, *Accounting and Financial Reporting for Refundings of Debt Reported by Proprietary Activities.* See note 6 "Long-Term Debt" of the notes to the consolidated financial statements.

(l) *Other Long-Term Assets*

Other long-term assets at December 31, 2020 and 2019 consist of the following:

	December 31,	
	2020	**2019**
	(In millions)	
Other long-term assets:		
Regulatory assets (a):		
Recoverable electricity supply market costs	$ 383	$ 364
Other regulatory assets	33	12
Total regulatory assets	416	376
Energy efficiency program costs (b)	287	286
Other long-term receivables	438	443
Transmission line interconnection costs	220	238
Other postemployment employee benefits	168	–
Other	116	147
Total other long-term assets	$ 1,645	$ 1,490

(a) Regulatory assets reflect previously incurred costs that are expected to be recovered from customers through the ratemaking process.

(b) Energy efficiency program costs will be recovered from certain customers through the terms of contracts.

In 2017, a Memorandum of Understanding was entered between the Authority and five investor-owned utility companies to provide Hurricane Relief assistance in Puerto Rico. The Authority's deployment cost associated with the assistance efforts are subject to reimbursement by the Emergency Management Assistant Compact (EMAC) program. As of December 31, 2020, the related costs are included in other long-term assets in the consolidated statements of net position.

(m) *Compensated Absences*

The Authority accrues the cost of unused sick leave which is payable upon the retirement of its employees. The Authority has accrued $44 million and $35 million in other non-current liabilities at December 31, 2020 and 2019, respectively, and $6 million at December 31, 2020 and 2019, in current liabilities on the statements of net position. The current year's cost is accounted for as a current operating expense in the statements of revenues, expenses, and changes in net position.

(n) *Net Position*

Net Position represents the difference between assets plus deferred outflows and liabilities plus deferred inflows and is classified into three components:

a. Net investment in capital assets – This consists of capital assets, net of depreciation reduced by related outstanding debt and accounts. This indicates that these assets are not accessible for other purposes.

b. Restricted – This represents restricted assets reduced by related liabilities and deferred inflows of resources that are not accessible for general use because their use is subject to restrictions enforceable by third parties.

c. Unrestricted – This represents the net amount of assets, deferred outflows of resources, liabilities and deferred inflows of resources that are not included in the components noted above and that are available for general use.

(o) *New York Independent System Operator (NYISO)*

The Power Authority is a member and a customer of the New York Independent System Operator (NYISO). The NYISO schedules the use of the bulk transmission system in the State, which normally includes all the Power Authority's transmission facilities, and collects ancillary services, losses and congestion fees from customers. In addition, the Power Authority dispatches power from its generating facilities in conjunction with the NYISO. The NYISO coordinates the reliable dispatch of power and operates a market for the sale of electricity and ancillary services within the State.

Based upon the Power Authority's scheduled customer power needs and available electricity generated by the Power Authority's operating assets, the Authority buys and sells energy in an electricity market operated by the NYISO. A significant amount of the Power Authority's energy and capacity revenues result from sales of the Power Authority's generation into the NYISO market. A significant amount of the Power Authority's operating expenses consist of various NYISO purchased power charges in combination with generation related fuel expenses.

(p) *Operating Revenues*

The customers served by the Power Authority and the rates paid by such customers vary with the Power Authority facilities designated to serve such loads. These customers are served under contracts and tariffs approved by the Trustees.

The principal operating revenues are generated from the sale, transmission, and wheeling of power. Revenues are recorded when power is delivered or service is provided. Customers' meters are read, and bills are rendered, monthly. Wheeling charges are for costs the Authority incurred for the transmission and/or delivery of power and energy to customers over transmission lines owned by other utilities. Sales to the Authority's five largest customers operating in the State accounted for approximately 49% and 52% of the Authority's operating revenues in 2020 and 2019, respectively.

In addition to contractual sales to customers, the Power Authority also sells power into an electricity market operated by the NYISO. These sales are affected by market prices and are not subject to rate regulation by the Power Authority's Board of Trustees or other regulatory bodies.

(q) *Operating Expenses*

The Authority's operating expenses include fuel, operations and maintenance, depreciation, purchased power costs, and other expenses related to the sale of power. Energy costs are charged to expense as incurred.

Purchased power costs include capacity, energy and ancillary service purchases made in the wholesale market on behalf of its customers (except for those made through previously approved purchased power agreements). Wheeling expenses are based on contractual and/or tariff rates of the service provider and are recovered through pass-through provisions in customer contracts.

(r) *Pension Plans*

The Authority is a cost-sharing employer that participates in the New York State and Local Employees' Retirement System (NYSLERS), which is a cost-sharing multiple-employer plan in which the participating government employers pool their assets and their obligations to provide defined benefit pensions. The plan assets of this type of plan can be used to pay the pensions of the retirees of any participating employer. The amounts reported by the Authority for its proportionate share of the net pension liability, pension expense and deferred outflows and deferred inflows have been provided by the New York State and Local Employees' Retirement System to employers participating in the NYSLERS in accordance with Statement No. 68, *Accounting and Financial Reporting for Pensions*, and have been determined on the same basis as reported by the NYSLERS. See Note 10 "Pension Plans" of the notes to the consolidated financial statements.

(s) *Postemployment Benefits Other Than Pensions (OPEB)*

The Power Authority provides certain health care and life insurance benefits for eligible retired employees and their dependents under a single employer noncontributory (except for certain optional life insurance coverage) health care plan (Power Authority OPEB Plan). The Power Authority has an established trust for its OPEB obligations (OPEB Trust) that is separate from the Power Authority and is held by an independent custodian for the exclusive benefit of the OPEB Trust beneficiaries and not of the Power Authority. The ownership of the OPEB Trust assets are held by the independent custodian at all times and the OPEB Trust assets are not considered funds or assets of the Power Authority for any purpose. All of the OPEB Trust assets are irrevocably dedicated to, and are used for the exclusive purpose of, making payments of benefits to or for the benefit of the Power Authority OPEB Plan beneficiaries and for paying administrative expenses of the Power Authority OPEB Plan and the OPEB Trust and will not be available to any creditors of the Power Authority. The OPEB Trust does not issue a stand-alone financial report and its financial statements are reported as a fiduciary fund in the Authority's financial report.

The Power Authority's net OPEB liability was measured as of December 31, 2019, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of that date. The actuarial valuation is performed biennially. For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expenses, information about the fiduciary net position of the OPEB Trust and additions to/deductions from OPEB Trust's fiduciary net position have been determined on the same basis as they are reported by the Power Authority OPEB

Plan as of the same measurement date. For this purpose, the Power Authority OPEB Plan recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value, except investments that have a maturity at the time of purchase of one year or less, which are reported at cost.

The Canal Corporation provides health care and death benefit for eligible retired employees. Substantially all employees may become eligible for these benefits if they reach normal retirement age while working for the Canal Corporation. The Canal Corporation participates, pursuant to the provision of Section 163(4) of the New York State Civil Service Law, in the New York State health Insurance Program (NYSHIP). NYSHIP does not issue a standalone financial report since there are no assets legally segregated for the sole purpose of paying benefits under the plan. Benefit payments are funded on a pay-as-you go basis.

(t) *New Accounting Pronouncements*

GASB issued GAS Statement No. 87 (GAS No. 87), *Leases*, which was effective for reporting periods beginning after December 15, 2019 prior to issuance of (GAS No.95). GAS No. 87 requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows or outflows of resources based on payment provisions of the contract. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right-to-use an underlying asset. Under GAS No. 87, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. The Authority is currently evaluating the impact of GAS No. 87 on its consolidated financial statements.

GASB issued GAS Statement No. 91 (GAS No. 91), *Conduit Debt Obligations*, which was effective for reporting periods beginning after December 15, 2020 prior to issuance of GASB Statement 95 (GAS No.95). GAS No. 91 provides a single method of reporting conduit debt obligations by issuers associated with (1) commitments extended by issuers, (2) arrangements associated with conduit debt obligations, and (3) related note disclosures. This statement clarifies the definition of a conduit debt obligation, establishes that a conduit debt obligation is not a liability of the issuer, establishes standards for accounting and financial reporting of additional commitments and voluntary commitments extended by issuers and arrangements associated with conduit debt obligations and improves required note disclosures. The Authority is evaluating the impact of GAS No. 91 on its consolidated financial statements.

In May 2020, in response to challenges arising from the COVID-19 virus, GASB issued Statement No. 95 (GAS No. 95), *Postponement of the Effective Dates of Certain Authoritative Guidance*, in which GASB approved an 18-month postponement for Statement 87, *Leases*. In addition, GAS No. 95 postponed for one-year effective dates for all statements and implementation guides with a current effective date of reporting periods beginning after June 15, 2018, and later. As such GAS No. 87 will be effective for reporting periods beginning after June 15, 2021 and GAS No. 91 will be effective for reporting period beginning after December 31, 2021.

GASB issued GAS Statement No.92 (GAS No. 92), *Omnibus 2020*, which originally had an effective date for reporting periods beginning after June 15, 2020. This effective date has been postponed to June 15, 2021 due to the issuance of GAS No.95. GAS No.92 establishes accounting and financial reporting requirements for specific issues related to leases, intra-entity transfers of assets, postemployment benefits, government acquisitions, risk financing and insurance-related activities of public entity risk pools, fair value measurements, and derivative instruments. The Authority is evaluating the impact of GAS No.92 on its consolidated financial statements.

GASB issued GAS Statement No. 93 (GAS No. 93) *Replacement of Interbank Offered Rates*, which originally had an effective date for reporting periods beginning after June 15, 2020. This effective date has been postponed to June 15, 2021 due to the issuance of GAS No.95. Some governments have entered into agreements in which variable payments made or received depend on an interbank offered rate (IBOR)—most notably, the London Interbank Offered Rate (LIBOR). As a result of global reference rate reform, LIBOR is expected to cease to exist in its current form at the end of 2021, prompting governments to amend or replace financial instruments for the purpose of replacing LIBOR with other reference rates, by either changing the reference rate or adding or changing fallback provisions related to the reference rate. GASB 93 objective is to address those and other accounting and financial reporting implications that result from the replacement of an IBOR. The Authority is evaluating the impact of GAS No.93 on its consolidated financial statements.

GASB Issued GASB Statement No. 96 (GAS No. 96), *Subscription-Based Information Technology Arrangements*, which is effective for reporting periods beginning after June 15, 2022. GAS No.96 requires recognition of certain subscription assets and liabilities for Subscription-based information Technology Arrangements (SBITA) which were previously either capitalized or expensed. It establishes that a SBITA results in a right-to-use subscription asset—an intangible asset—and a corresponding subscription liability. The Authority is evaluating the impact of GAS No.96 on its consolidated financial statements.

GASB Issued GASB Statement No. 97 (GAS No. 97), C*ertain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans-an amendment of GASB Statements No.14 and No.84 and superseded of GASB Statement No.32*, which is effective for reporting periods beginning after June 15, 2021. The primary objectives of this Statement are to increase consistency and comparability related to the reporting of fiduciary component units in circumstances in which a potential component unit does not have a governing board, mitigate costs associated with the reporting of certain defined contribution pension plans, defined contribution other postemployment benefit (OPEB) plans, and employee benefit plans other than pension plans or OPEB plans and to enhance the relevance, consistency, and comparability of the accounting and financial reporting for Internal Revenue Code (IRC) Section 457 deferred compensation plans. The Authority is evaluating the impact of GAS No.97 on its consolidated financial statements.

(3) Bond Resolution and Related Matters

On February 24, 1998, the Authority adopted its "General Resolution Authorizing Revenue Obligations" (as amended and supplemented up to the present time, the Bond Resolution). The Bond Resolution covers all of the Authority's projects, which it defines as any project, facility, system, equipment or material related to or necessary or desirable in connection with the generation, production, transportation, transmission, distribution, delivery, storage, conservation, purchase or use of energy or fuel, whether owned jointly or singly by the Authority, including any output in which the Authority has an interest authorized by the Act or by other applicable State statutory provisions, provided, however, that the term "Project" shall not include any Separately Financed Project as that term is defined in the Bond Resolution. The Authority has covenanted with bondholders under the Bond Resolution that at all times the Authority shall maintain rates, fees or charges, and any contracts entered into by the Authority for the sale, transmission, or distribution of power shall contain rates, fees or charges sufficient together with other monies available therefore (including the anticipated receipt of proceeds of sale of Obligations, as defined in the Bond Resolution, issued under the Bond Resolution or other bonds, notes or other obligations or evidences of indebtedness of the Authority that will be used to pay the principal of Obligations issued under the Bond Resolution in anticipation of such receipt, but not including any anticipated or actual proceeds from the sale of any Project), to meet the financial requirements of the Bond Resolution. Revenues of the Authority (after deductions for operating expenses and reserves, including reserves for working capital, operating expenses or compliance purposes) are applied first to the payment of, or accumulation as a reserve for payment of, interest on and the principal or redemption price of Obligations issued under the Bond Resolution and the payment of Parity Debt issued under the Bond Resolution.

The Bond Resolution also provides for withdrawal for any lawful corporate purpose as determined by the Authority, including but not limited to the retirement of Obligations issued under the Bond Resolution, from amounts in the Operating Fund in excess of the operating expenses, debt service on Obligations and Parity Debt issued under the Bond Resolution, and subordinated debt service requirements.

Collateral **-** Under the Authority's Bond Resolution, a Trust Estate was created and pledged for the payment of the principal and redemption price of, and interest on, the Authority's Obligations issued under the Bond Resolution and, on a parity basis, other Parity Debt as defined in the Bond Resolution. The Authority's subordinated debt, including the Commercial Paper Notes, loans issued under the Revolving Credit Agreement described below, the Extendible Municipal Commercial Paper Notes, the Subordinated 2012 Notes and Subordinated 2017 Notes, are not Obligations under the Bond Resolution but share a subordinated lien in the Trust Estate. The Trust Estate means, collectively: (i) all Revenues (as defined in the Bond Resolution) of the Authority; (ii) the proceeds of the sale of Obligations until expended for the purposes authorized in the supplemental resolution authorizing the issuance of such Obligations; (iii) all funds, accounts and subaccounts established by the Bond Resolution, including investment earnings thereon; and (iv) all funds, moneys, and securities and any and all other rights and interests in property , whether tangible or intangible, conveyed as and for additional security pursuant to the Bond Resolution by the Authority, or by anyone on its behalf, or with its written consent, to the Trustee.

Events of Default/Termination **-** Pursuant to the Bond Resolution, upon an Event of Default so long as such Event of Default shall not have been remedied, either the Trustee or the owners of 25% in principal amount of the Obligations then outstanding may declare the principal and accrued interest on all Obligations due and payable immediately.

Under the revolving credit agreement supporting the Authority's Commercial Paper Notes effective January 16, 2019, and amended on November 8, 2019, among the Authority, JP Morgan Chase Bank, National Association, as Administrative Agent, and the lenders thereunder (Revolving Credit Agreement), the Authority is able to borrow up to $700 million in aggregate principal amount outstanding at any time for the repayment of the Commercial Paper Notes. In the case of an Event of Default (as defined in the Revolving Credit Agreement), the lenders under the Revolving Credit Agreement holding 66 2/3% of the commitments thereunder will be able to: terminate their commitments; direct the Authority to cease issuing Commercial Paper Notes; and declare the principal and accrued interest on obligations under the Revolving Credit Agreement due and immediately payable.

Under the hybrid revolving credit and note purchase agreement supporting the Authority's Commercial Paper Notes and Liquidity effective April 22, 2020, among the Authority, JP Morgan Chase Bank, National Association, as Administrative Agent, and sole lender thereunder (Revolving Credit Agreement), the Authority is able to borrow up to $250 million in aggregate principal amount outstanding at any time for the repayment of the Commercial Paper Notes and/or Direct Purchase Note(s) under the agreement. In the case of an Event of Default (as defined in the Revolving Credit Agreement), the sole lender under the Revolving Credit Agreement holding 100% of the commitment thereunder will be able to: terminate their commitment; direct the Authority to cease issuing Commercial Paper Notes; and declare the principal and accrued interest on obligations under the Revolving Credit Agreement due and immediately payable.

(4) Cash and Investments

Investment of the Authority's funds is administered in accordance with the applicable provisions of the Bond Resolution and with the Authority's investment guidelines. These guidelines comply with the New York State Comptroller's investment guidelines for public authorities and were adopted pursuant to Section 2925 of the New York Public Authorities Law.

(a) *Credit Risk*

The Authority's investments are restricted to (a) authorized collateralized certificates of deposit, time deposits and money market funds, which shall not exceed 40% of the Authority's invested funds and no more than $50 million invested in any one fund, (b) direct obligations of or obligations guaranteed by the

United States of America or the State of New York, (c) obligations issued or guaranteed by certain specified federal agencies and any agency controlled by or supervised by and acting as an instrumentality of the United States government, and (d) obligations of any state or any political subdivision thereof or any agency, instrumentality or local government unit of any such state or political subdivision which is rated in any of the three highest long-term rating categories, or the highest short-term rating category, by nationally recognized rating agencies, (e) Guaranteed Investment Contracts or GIC Funds issued by creditworthy insurance companies and collateralized by issuer's general or separate account assets, with no more than $50 million invested in any one contract or fund. The Authority's investments in the senior debt securities of Federal National Mortgage Association (FNMA), Federal Home Loan Bank (FHLB), Federal Farm Credit Bank (FFCB) Federal Agricultural Mortgage Corporation (FAMC) and Federal Home Loan Mortgage Corporation (FHLMC) were rated Aaa by Moody's Investors Services (Moody's), AAA by Fitch Ratings (Fitch) and AA+ by Standard & Poor's (S&P).

(b) *Interest Rate Risk*

Securities that are the subject of repurchase agreements or reverse repurchase agreements must have a market value at least equal to the cost of the investment. The agreements are limited to a maximum fixed term of 30 days and may not exceed $250 million or $50 million with any one dealer or bank. Monies will not be invested for terms in excess of the projected use of funds. As of December 31, 2020, the Authority had $52 million invested in repurchase agreements. As of December 31, 2019, the Authority had no investments in repurchase agreements.

(c) *Concentration of Credit Risk*

There is no limit on the amount that the Power Authority may invest in any one issuer; however, investments in authorized certificates of deposit shall not exceed 25% of the Authority's invested funds and shall not exceed $25 million from any one bank. At December 31, 2020, the Authority's total investment portfolio of $1,488 million, excluding the Canal Development Fund, consists of investments of $100 million (7%), $147 million (10%), $16 million (1%) $75 million (5%), $146 million (10%) and $73 million (5%) in securities of FAMC, FHLMC, FHLB, FFCB, U.S. government and other various municipal debt securities, respectively.

At December 31, 2019, the Authority's total investment portfolio of $841 million, excluding the Canal Development Fund, consists of investments of $222 million (26%), $124 million (15%), $179 million (21%) $72 million (9%) and $16 million (2%), $108 (13%) in securities of FHLB, FNMA, FFCB, FHLMC, U.S. government and other various municipal debt securities, respectively.

(d) *Other*

All investments are held by designated custodians in the name of the Authority. The bank balances at December 31, 2020 and 2019 were $662 million and $32 million, respectively, of which $661 million and $31 million, respectively, were uninsured, but were collateralized by assets held by the bank in the name of the Authority.

Cash and Investments of the Authority at December 31, 2020 and 2019 are as follows:

December 31, 2020	Total	Total restricted	Restricted: Canal Development Fund	Restricted: WNYEDF, POCR, projects and other	Capital fund	Unrestricted
			(In millions)			
Cash and investments:						
Cash and cash equivalents	$ 947	$ 51	$ 16	$ 35	$ 677	$ 219
U.S. government:						
U.S. Treasury bills	18	—	—		—	18
U.S. Treasury notes	128	—	—	—	—	128
	146	—	—	—	—	146
Other debt securities:						
FAMC	100	—	—	—	65	35
FHLMC	147	—	—	—	77	70
FHLB	16	16	—	16	—	—
FFCB	75	—	—	—	50	25
All other	73	—	—	—	—	73
	411	16	—	16	192	203
Total investments	557	16	—	16	192	349
Total cash and investments	$ 1,504	$ 67	$ 16	$ 51	$ 869	$ 568
Summary of maturities (years):						
0 – 1	$ 1,116	$ 67	$ 16	$ 51	$ 677	$ 372
1 – 5	303	—	—	—	157	146
5 – 10	35	—	—	—	35	—
10+	50	—	—	—	—	50
	$ 1,504	$ 67	$ 16	$ 51	$ 869	$ 568

As of December 31, 2020, restricted funds include the POCR fund ($8 million), the Lower Manhattan Energy Independence Initiative fund ($6 million) and the Fish & Wildlife Habitat Enhancement fund related to the Niagara relicensing ($13 million), the Western New York Economic Development Fund ($8 million), the Northern New York Economic Development Fund ($4 million) (see Note 13(a) "Commitments and Contingencies – Power Programs"), Canal Development Fund ($16 million) and other ($12 million).

As of December 31, 2019, restricted funds include the POCR fund ($8 million), the Lower Manhattan Energy Independence Initiative fund ($6 million) and the Fish & Wildlife Habitat Enhancement fund related to the Niagara relicensing ($14 million), the Western New York Economic Development Fund ($10 million), the Northern New York Economic Development Fund ($5 million) (see Note 13(a) “Commitments and Contingencies – Power Programs”), Canal Development Fund ($14 million) and other ($11 million).

December 31, 2019	Total	Total restricted	Restricted: Canal Development Fund	Restricted: WNYEDF, POCR, projects and other	Capital fund	Unrestricted
			(In millions)			
Cash and investments:						
Cash and cash equivalents	$ 134	$ 52	$ 14	$ 38	$ 16	$ 66
U.S. government:						
U.S. Treasury bills	16	16	—	16	—	—
U.S. Treasury notes	—	—	—	—	—	—
	16	16	—	16	—	—
Other debt securities:						
FNMA	124	—	—	—	—	124
FHLMC	72	—	—	—	6	66
FHLB	222	—	—	—	—	222
FFCB	179	—	—	—	1	178
All other	108	—	—	—	3	105
	705	—	—	—	10	695
Total investments	721	16	—	16	10	695
Total cash and investments	$ 855	$ 68	$ 14	$ 54	$ 26	$ 761
Summary of maturities (years):						
0 – 1	$ 336	$ 68	$ 14	$ 54	$ 23	$ 245
1 – 5	497	—	—	—	3	494
5 – 10	13	—	—	—	—	13
10+	9	—	—	—	—	9
	$ 855	$ 68	$ 14	$ 54	$ 26	$ 761

(5) Capital Assets

The following schedule summarizes the capital assets activity of the Authority for the year ended December 31, 2020.

	Beginning balance	Additions	Retirements/ Transfers	Ending balance
		(In millions)		
Capital assets, not being depreciated:				
Land	$ 193	$ —	$ —	$ 193
Construction in progress	738	490	(437)	791
Total capital assets not being depreciated	931	490	(437)	984
Capital assets, being depreciated:				
Production – Hydro	2,262	53	(2)	2,313
Production – Gas turbine/combined cycle	2,336	49	—	2,385
Transmission	2,366	185	—	2,551
General	1,301	120	(16)	1,405
Canal System	768	34	—	802
Total capital assets being depreciated	9,033	441	(18)	9,456
Less accumulated depreciation for:				
Production – Hydro	888	38	(2)	924
Production – Gas turbine/combined cycle	1,296	85	—	1,381
Transmission	1,331	40	—	1,371
General	456	52	(16)	492
Canal System	210	30	—	240
Total accumulated depreciation	4,181	245	(18)	4,408
Net value of capital assets, being depreciated	4,852	196	—	5,048
Net value of all capital assets	$ 5,783	$ 686	$ (437)	$ 6,032

The following schedule summarizes the capital assets activity of the Authority for the year ended December 31, 2019.

	Beginning balance	Additions	Retirements/ Transfers	Ending balance
	(In millions)			
Capital assets, not being depreciated:				
Land	$ 193	$ —	$ —	$ 193
Construction in progress	703	506	(471)	738
Total capital assets not being depreciated	896	506	(471)	931
Capital assets, being depreciated:				
Production – Hydro	2,114	160	(12)	2,262
Production – Gas turbine/combined cycle	2,386	17	(67)	2,336
Transmission	2,228	151	(13)	2,366
General	1,198	111	(8)	1,301
Canal System	723	45	—	768
Total capital assets being depreciated	8,649	484	(100)	9,033
Less accumulated depreciation for:				
Production – Hydro	862	38	(12)	888
Production – Gas turbine/combined cycle	1,260	86	(50)	1,296
Transmission	1,304	40	(13)	1,331
General	413	49	(6)	456
Canal System	187	25	(2)	210
Total accumulated depreciation	4,026	238	(83)	4,181
Net value of capital assets, being depreciated	4,623	246	(17)	4,852
Net value of all capital assets	$ 5,519	$ 752	$ (488)	$ 5,783

Wind Farm Transmission Assets

In April 2019, Jericho Rise Wind Farm, LLC, a wind farm developer, and in accordance with a Large Generator Interconnection Agreement signed in June 2016 between the Authority, Jericho Rise Wind Farm, LLC and the New York Independent System Operator, Inc. transferred title of certain transmission assets (valued at $3 million) to the Authority. The transfer was accounted for as a capital contribution.

(6) Long-Term Debt

a. *Components*

	Amount 2020	Amount 2019	Interest rate (a)	Maturity		Earliest redemption date prior to maturity
	(In millions)					
Senior debt:						
Revenue Bonds (Tax-Exempt):						
Series 2011A Revenue (b), (c) Bonds:						
Serial Bonds	—	57	N/A	N/A		N/A
Term Bonds	—	39	N/A	N/A		N/A
Series 2015A Revenue (b) Bonds:						
Serial Bonds	—	15	N/A	N/A		N/A
Series 2020A Revenue Bonds:						
Term Bonds	1,121	—	3.25% to 4.00%	11/15/2045 - 2060	**	5/15/2030
Revenue Bonds (Taxable):*						
Series 2003A Revenue Bonds:						
Term Bonds	117	149	5.649% to 5.749%	11/15/2020 to 2033	**	Any date
Series 2007B Revenue (b) Bonds:						
Term Bonds	210	231	5.905% to 5.985%	11/15/2037 and 2043	**	Any date
Series 2020B Revenue Bonds:						
Term Bonds	114	—	2.818%	11/15/2039	**	Any date
	1,562	491				
Plus unamortized premium and discount	67	9				
Less deferred refinancing costs	—	5				
	1,629	495				
Less due in one year	—	30				
Long-term senior debt, net of due in one year	$ 1,629	$ 465				

(a) interest rate at issuance
(b) Principal due in: 2020-2023 of Series 2007B of $20 million, 2020 of Series 2015A of $15 million and 2020-2023 of Series 2011A of $33 million defeased in May 2020.
(c) Principal due 2024-2038 of Series 2011A of $63 million defeased in December 2020.
* All outstanding taxable term bonds are subject to Make-Whole Call provisions.
** Bonds are subject to sinking fund provisions.

	Amount 2020	Amount 2019	Interest rate (a)	Maturity	Earliest redemption date prior to maturity
	(In millions)				
Subordinate debt:					
Subordinated Notes, Series 2017	$ 22	$ 23	2.61% to 4.27%	2022 to 2041	Any date
Subordinated Notes, Series 2012	19	20	2.50% to 4.05%	2019 to 2037	Any date
Commercial Paper:					
EMCP (Series 1)	5	5	1.41%	2021	
	46	48			
Less due within one year	1	1			
	45	47			
Total Long-term debt	1,675	543			
Less due within one year	1	31			
Long-term debt, net of due in one year	$ 1,674	$ 512			

(a) interest rate at issuance

Interest on Series 2003A, 2007B and 2020B Revenue Bonds and Subordinated Notes, Series 2012 and Subordinated Notes, Series 2017 is not excluded from gross income for bondholders' Federal income tax purposes.

The Revenue Bonds outstanding at December 31, 2020 have an average interest rate of 4.24% and mature through 2060. The Revenue Bonds outstanding at December 31, 2019 had an average interest rate of 5.27% and mature through 2041.

In May 2020, the Authority's Trustees authorized the issuance of $1.235 billion of Revenue Bonds consisting of $1.121 billion tax-exempt Series 2020A Revenue Bonds and $114.1 million of taxable Series 2020B Revenue Bonds for the purpose of refunding certain revenue bonds and commercial paper and funding on-going and future construction projects. The proceeds from the issuance of the 2020 Revenue Bonds were used to (i) redeem $32 million of the Authority's Series 2003A Revenue Bonds and a redemption premium of $3 million; (ii) defease $68 million in aggregate principal of the Authority's Series 2011A and 2015A and certain 2007B Revenue Bonds by placing the net proceeds of new bonds in an irrevocable trust to provide for all future debt service payments on the old bonds; (iii) refund $156 million of commercial paper, which was issued to refund $156 million of its Series 2007A and Series 2007C Revenue Bonds in December 2019; and (iv) pay financing and other costs relating to the issuance of the 2020A and B Revenue Bonds. Accordingly, the trust account assets and the liability for the defeased bonds are not included in the Authority's financial statements at December 31, 2020.

In December 2020, the Authority issued Commercial Paper to refund $66 million of its 2011A Revenue Bond Senior Debt.

As indicated in Note 3 “Bond Resolution and Related Matters” of notes to the consolidated financial statements, the Authority has pledged future revenues to service the Obligations and Parity Debt (Senior Debt) issued under the Bond Resolution. The total principal and interest remaining to be paid on the Senior Debt is $3.3 billion as of December 31, 2020. Principal and interest paid for 2020 and operating income plus depreciation were $283 million and $339 million, respectively. Principal and interest paid for 2019 and operating income plus depreciation were $104 million and $362 million, respectively.

Senior revenue bonds are subject to redemption prior to maturity in whole or in part as provided in the supplemental resolutions authorizing the issuance of each series of bonds, beginning for each series on the date indicated in the table above, at principal amount or at various redemption prices according to the date of redemption, together with accrued interest to the redemption date.

At December 31, 2020 and 2019, the current market value of the senior debt was approximately $2.1 billion and $632.8 million, respectively. Market values were obtained from a third party that utilized a matrix-pricing model.

Subordinate Debt:

Subordinate Notes – In November 2016, the Authority’s Trustees authorized the issuance of Subordinated Notes, Series 2017 (Subordinated Notes, Series 2017) in a principal amount not to exceed $30 million to accelerate additional funding for the State Parks Greenway Fund, which was established pursuant to the Niagara Relicensing Settlement entered into by the Authority and the New York State Office of Parks, Recreation & Historic Preservation in connection with the Niagara Project’s relicensing. The Authority issued the subordinate notes on February 24, 2017 in the amount of $25.2 million. These Subordinated Notes are subordinate to the Series 2003A Revenue Bonds, the Series 2007B, and the Series 2020A and 2020B Revenue Bonds.

In November 2012, the Authority’s Trustees authorized the issuance of Subordinated Notes, Series 2012 (Subordinated Notes, Series 2012), in a principal amount not to exceed $30 million for the purpose of accelerating the funding for the State Parks Greenway Fund, which was established pursuant to the Niagara Relicensing Settlement entered into by the Authority and the New York State Office of Parks, Recreation & Historic Preservation. The Authority issued the Subordinated Notes on December 18, 2012 in the amount of $25 million. These Subordinated Notes are subordinate to the Series 2003 A Revenue Bonds, the Series 2007B, and Revenue Bonds, and the Series 2020A and 2020B Revenue Bonds.

Commercial Paper – Under the Extendible Municipal Commercial Paper (EMCP) Note Resolution, adopted December 17, 2002, and as subsequently amended and restated, the Authority may issue a series of notes, designated EMCP Notes, Series 1, maturing not more than 270 days from the date of issue, up to a maximum amount outstanding at any time of $200 million (EMCP Notes). It is the Authority’s intent to remarket the EMCP Notes as they mature with their ultimate retirement in 2021. The Authority has the option to extend the maturity of the EMCP Notes and would exercise such right in the event there is a failed remarketing. This option serves as a substitute for a liquidity facility for the EMCP Notes.

Under the Commercial Paper Note Resolution adopted June 28, 1994, as subsequently amended and restated, the Authority may issue from time to time a separate series of notes maturing not more than 270 days from the date of issue, up to a maximum amount outstanding at any time of $400 million (Series 1 CP Notes), $450 million (Series 2 CP Notes), $350 million (Series 3 CP Notes) and $220 million (Series 4 CP Notes). See Note 7 “Short-Term Debt” of the notes to the financial statements for Series 1, and certain Series 2 and Series 3 CP Notes designated as short-term debt. There were no Series 4 CP Notes outstanding at December 31, 2020.

The proceeds of certain Series 2 Commercial Paper Notes (CP Notes) were used to refund General Purpose Bonds and the proceeds of the EMCP Notes were used to refund Series 2 and 3 CP Notes. CP Notes and EMCP Notes have been used, and may in the future be used, for other corporate purposes. It is the Authority's intention to renew the EMCP Notes as they mature.

The Authority has a line of credit under a 2019 revolving credit agreement (the 2019 RCA), with a syndicate of banks, to provide liquidity support for the Series 1-3 CP Notes, under which the Authority may borrow up to $700 million in aggregate principal amount outstanding at any time for certain purposes, including the repayment of the Series 1–3 CP Notes. The 2019 RCA expires January 14, 2022. The 2019 RCA succeeded the amended 2015 RCA, which expired by its terms on January 18, 2019 with no outstanding borrowings. There are no outstanding borrowings under the 2019 RCA.

The Authority entered into a hybrid revolving line of credit with a single bank on April 22, 2020 under an agreement (the 2020 RCA) to provide liquidity support for the Series 3 and Series 4 CP Notes and/or to borrow directly. The Authority may borrow up to $250 million in aggregate principal amount outstanding at any time for certain purposes, including the repayment of Commercial Paper or for general corporate purposes. The 2020 RCA expires April 21, 2021 and the Authority is in process of renewing this RCA for an additional one-year period. There are no outstanding borrowings under the 2020 RCA.

CP Notes and EMCP Notes are subordinate to the Series 2003A Revenue Bonds, the Series 2007B, the Series 2020A and 2020B Revenue Bonds.

Interest on the CP (Series 3) is taxable to holders for Federal income tax purposes.

The interest rate used to calculate future interest expense on variable rate debt is the interest rate at issuance.

Maturities and Interest Expense:	**Long-Term Debt** (In millions)			**Capitalized Lease Obligations** (In millions)		
	Principal	**Interest**	**Total**	**Principal**	**Interest**	**Total**
Years ending December 31:						
2021	$ 5	$ 68	$ 73	$ 50	$ 81	$ 131
2022	2	68	70	58	77	135
2023	2	68	70	66	72	138
2024	17	68	85	76	66	142
2025	17	67	84	86	60	146
2026 – 2030	102	320	422	616	169	785
2031 – 2035	135	288	423	82	2	84
2036 – 2040	193	255	448	—	—	—
2041 – 2045	243	207	450	—	—	—
2046-2050	892	277	1,169			
	1,608	1,686	3,294	1,034	527	1,561
Plus unamortized bond premium	67	—	67	—	—	—
Less deferred refinancing cost	—	—	—	—	—	—
Total	$ 1,675	$ 1,686	$ 3,361	$ 1,034	$ 527	$ 1,561

In 2008, the Authority entered into a long-term power supply contract with Astoria Energy II LLC for the purchase of all the output of Astoria Energy II, a new 550-MW plant, which entered into commercial operation on July 1, 2011 in Astoria, Queens. The delivery period under the contract is through 2031. The Authority entered into a separate contract with its' New York City Governmental Customers to purchase the output of Astoria Energy II and is coterminous with the power purchase agreement with Astoria Energy II LLC. All net costs of the Authority under the power purchase agreement with Astoria Energy II LLC pass through to the New York City Governmental Customers for the full term of the power purchase agreement. See note 13(b) "Commitments and Contingencies – Governmental Customers in the New York City Metropolitan Area" of the notes to the consolidated financial statements.

b. Terms by Which Interest Rates Change for Variable Rate Debt

CP Notes and EMCP Notes (Long-Term Portion)

The Authority determines the rate for each rate period which is the minimum rate necessary to remarket the notes at par in the Dealer's opinion. If the Authority exercises its option to extend the maturity of the EMCP Notes, the reset rate will be the higher of (SIFMA + E) or F, where SIFMA is the Securities Industry and Financial Markets Association Municipal Swap Index, which is calculated weekly, and where "E" and "F" are fixed percentage rates expressed in basis points (each basis point being 1/100 of one percent) and yields, respectively, that are determined based on the Authority's debt ratings subject to a cap rate of 12%. As of December 31, 2020, the reset rate would have been 7.09%.

c. *Changes in Noncurrent Liabilities*

Changes in the Authority's noncurrent liabilities for the year ended December 31, 2020 are comprised of the following:

	Beginning balance	Additions	Maturities/ refundings and other (In millions)	Ending balance	Due within one year
Senior debt:					
Revenue bonds	$ 491	$ 1,235	$ 164	$ 1,562	$ —
Subtotal	491	1,235	164	1,562	—
Subordinate debt:					
Subordinated Notes, Series 2017	23	—	1	22	1
Subordinated Notes, Series 2012	20	—	1	19	—
Commercial paper	5	—	—	5	—
Subtotal	48	—	2	46	1
Net unamortized discounts/ premiums and deferred losses	4	67	4	67	—
Total debt, net of unamortized discounts/ premiums/ deferred losses	$ 543	$ 1,302	$ 170	$ 1,675	$ 1
Other noncurrent liabilities:					
Capitalized lease obligation	$ 1,034	$ —	$ 50	984	$
Disposal of nuclear fuel	228	1	—	229	—
Relicensing	256	15	20	251	—
Other	426	126	—	$ 552	$ —
Total other noncurrent liabilities	$ 1,944	$ 142	$ 70	$ 2,016	$ —

Changes in the Authority's long-term liabilities for the year ended December 31, 2019 are comprised of the following:

	Beginning balance	Additions	Maturities/ refundings and other	Ending balance	Due within one year
			(In millions)		
Senior debt:					
Revenue bonds	$ 710	$ —	$ 219	$ 491	$ 30
Subtotal	710	—	219	491	30
Subordinate debt:					
Subordinated Notes, Series 2017	24	—	1	23	—
Subordinated Notes, Series 2012	20	—	—	20	1
Commercial paper	5	—	—	5	—
Subtotal	49	—	1	48	1
Net unamortized discounts/ premiums and deferred losses	6	—	2	4	—
Total debt, net of unamortized discounts/ premiums/ deferred losses	$ 765	$ —	$ 222	$ 543	$ 31
Other noncurrent liabilities:					
Capitalized lease obligation	$ 1,077	$ —	$ 43	1,034	$ 43
Disposal of nuclear fuel	223	5	—	228	—
Relicensing	244	37	25	256	—
Other	386	40	—	$ 426	$ —
Total other noncurrent liabilities	$ 1,930	$ 82	$ 68	$ 1,944	$ 43

(7) Short-Term Debt

CP Notes (short-term portion) outstanding was as follows:

	December 31,			
	2020		2019	
	Authorized	Outstanding	Authorized	Outstanding
	(In millions)			
CP Notes (Series 1)	$ 400	$ 139	$ 400	$ 309
CP Notes (Series 2)	450	288	450	217
CP Notes (Series 3)	350	75	350	166

Under the Commercial Paper Note Resolution adopted June 28, 1994, as subsequently amended and restated, the Authority may issue from time to time a separate series of notes maturing not more than 270 days from the date of issue up to a maximum amount outstanding at any time of $400 million (Series 1 CP Notes), $450 million (Series 2 CP Notes), $350 million (Series 3 CP Notes) and $220 million (Series 4 CP Notes). It had been and shall be the intent of the Authority to use the proceeds of the Series 1 CP Notes and certain Series 2 and Series 3 CP Notes to finance the Authority's current and future energy efficiency programs and for other corporate purposes. In 2020, the Authority issued Series 3 CP Notes of approximately $66 million to defease $63 million of principal and $3 million of interest of the then outstanding 2011A Revenue Bonds. In December 2019, the Authority issued Series 3 CP Notes to refund $156 million of its Series 2007A and Series 2007C Revenue Bonds. In 2020, proceeds from the 2020 Revenue Bonds issuance was used to refund the $156 million of Series 3 CP Notes.

The changes in short-term debt are as follows:

	Beginning balance	Increases	Decreases	Ending balance
	(In millions)			
Year:				
2020	$ 692	220	410	$ 502
2019	$ 526	294	128	$ 692

(8) Risk Management and Hedging Activities

Overview

The Authority purchases insurance coverage for its operations, and in certain instances, is self-insured. Property insurance protects the various real and personal property owned by the Authority and the property of others while in its care, custody and control for which it may be held liable. Liability insurance protects the Authority from third-party liability related to its operations, including general liability, automobile, aircraft, marine and its officers and directors. Cyber liability insurance protects the Authority against first- and third-party losses. Insured losses by the Authority did not exceed coverage for any of the four preceding fiscal years. The Authority self-insures a certain amount of its general liability coverage, the physical damage claims for its owned and leased vehicles and for portions of its medical, dental and workers' compensation insurance programs. The Authority pursues subrogation claims as appropriate against any entities that cause damage to its property.

Another aspect of the Authority's risk management program is to manage risk and related volatility on its earnings and cash flows associated with interest rates, electric energy prices, fuel prices and electric capacity prices. Through its participation in the NYISO and other commodity markets, the Authority is subject to electric energy price, fuel price and electric capacity price risks that impact the revenue and purchased power streams of its facilities and customer market areas. Such volatility can potentially have adverse effects on the Authority's financial condition. To mitigate potential adverse effects and to moderate cost impacts to its customers (certain of the Authority's customer contracts provide for the complete or partial pass-through of these costs), the Authority hedges market risks by utilizing financial derivative instruments and/or physical forward contracts. Hedges are transacted by the Authority to mitigate volatility in the cost of energy or related products needed to meet customer needs; risk related to the price of energy and related products sold by the Authority; risk related to margins (electric sales versus fuel use) where the Authority owns generation or other capacity; and the geographic cost differentials of energy procured or sold for transmission or transportation to an ultimate location. Commodities to be hedged include, but are not limited to, natural gas, natural gas basis, electric energy, electric capacity, congestion costs associated with the transmission of electricity and aluminum.

To achieve the Authority's risk management program objectives, the Authority's Trustees have authorized the use of various interest rate, energy, fuel and certain non-energy commodity derivative instruments for hedging purposes that are considered derivatives under GAS No. 53, *Accounting and Financial Reporting for Derivative Instruments* (GAS No. 53).

The fair values of all Authority derivative instruments, as defined by GAS No. 53, are reported in current and noncurrent assets or liabilities on the statements of net position as risk management activities. For designated hedging derivative instruments, changes in the fair values are deferred and classified as deferred outflows or inflows on the statements of net position. The fair value for over-the-counter and exchange-traded energy, capacity and non-energy commodity derivative instruments are determined by the latest end-of-trading-month forward prices over the lifetime of each outstanding energy derivative instrument using the prices published by Standard & Poor's Global Platt's ("Platts"), market sources and/or internal pricing models.

Derivative Instruments

The following table shows the fair value of outstanding derivative instruments for 2020 and 2019:

Derivative instrument description	Fair value balance December 31, 2019	Net change in fair value	Fair value balance December 31, 2020	Type of hedge or transaction	Financial statement classification for changes in fair value	Notional amount December 31, 2020	Unit of Measure
			($ in millions)				
Energy swaps/futures (sales)	$ 5	$ (3)	$ 2	Cash Flow	Deferred outflow	(14,655,019)	MWh
Energy swaps (purchases)	(1)	1	—	Cash Flow	Deferred inflow	–	MWh
Energy capacity futures	—	(13)	(13)	Cash Flow	Deferred outflow	(17,285,000)	KWm
Totals	$ 4	$ (15)	$ (11)				

Energy swaps and futures –The Authority sells energy swaps and futures to manage the revenue stream from forecasted merchant hydro generation through 2024. Net settlement receipts were $19.3 million and $5.8 million in 2020 and 2019, respectively.

The Authority purchases energy swaps to manage the cost of energy for the benefit of its NYC Governmental Customers. Net settlement- payments in 2020 were $4.0 million. There were no settlements in 2019.

Energy capacity futures – The Authority sells forward installed capacity futures intended to mitigate the volatility of market prices for transactions in the NYISO markets through 2024. Net settlement receipts were $0.9 million and $0.7 million in 2020 and 2019, respectively.

Non-energy commodities swaps – During 2020, the Authority sold certain non-energy commodities swap to mitigate volatilities of specific commodity market prices effecting rates in certain customers' energy supply contracts through 2021. Net settlement receipts were $2.5 million in 2020. There was no activity 2019.

Natural gas swaps – During 2020, the Authority purchased natural gas swaps to mitigate the volatility of market prices for fuel to operate certain electrical generation facilities in 2020. Net settlements payments were $0.6 million in 2020.

Other – The Authority from time to time enters into certain derivative instruments that may become ineffective due to changes in the hedged item. The change in fair value of such derivative instruments would be recognized as other nonoperating charges or credits in the statements of revenues, expenses and changes in net position. In 2020 and 2019, all derivative instruments were determined to be effective.

Counterparty Credit Risk

The Authority imposes thresholds, based upon agency-published credit ratings and/or analysis, for unsecured credit that can be extended to counterparties to the Authority's commodity derivative transactions. The thresholds are established in bilateral credit support agreements with counterparties and require collateralization of market values in excess of the thresholds. In addition, the Authority regularly monitors each counterparty's credit ratings and financial ratios and the Authority can restrict transactions with counterparties on the basis of that monitoring, even if the applicable unsecured credit threshold is not exceeded.

Based upon the fair values as of December 31, 2020, the Authority's individual or aggregate exposure to derivative instrument counterparty credit risk is not significant.

Other Considerations

The Authority from time to time may be exposed to any of the following risks:

Basis risk – The Authority is exposed to other basis risk in a portion of its electrical commodity-based swaps where the electrical commodity swap payments received are based upon a reference price in a NYISO Market Zone that differs from the Zone in which the hedged electric energy load is forecasted. If the correlation between these Zones' prices should fall, the Authority may be exposed to risk as a result of the hedging inability of the electrical commodity swaps to offset the delivery price of the related energy.

Rollover risk – Certain electrical commodity swaps are based upon projected future customer loads or facility operations. Beyond the terms of these swaps, the Authority is subject to the corresponding market volatilities.

Termination risk – The Authority or its counterparties may terminate a derivative instrument agreement if either party fails to perform under the terms of the agreement. The risk that such termination may occur at a time which may be disadvantageous to the Authority has been mitigated by including certain terms in these agreements by which the counterparty has the right to terminate only as a result of certain events, which includes a payment default by the Authority; other Authority defaults which remain uncured within a defined time-frame after notice; bankruptcy or insolvency of the Authority (or similar events); or a downgrade of the Authority's credit rating below investment grade. If at the time of termination the Authority has a liability position related to its hedging derivative instruments, the Authority would be liable to the counterparty for a payment equal to the liability, subject to netting arrangements.

Market access risk – The Authority remarkets its CP Notes on a continuous basis. Should the market experience a disruption or dislocation, the Authority may be unable to remarket its Notes for a period of time. To mitigate this risk, the Authority has entered into liquidity facilities with highly rated banks to provide loans to support the CP Note programs. See Note 6 "Long-Term Debt" of the notes to the consolidated financial statements.

Dodd Frank Act

The Dodd-Frank Wall Street Reform and Consumer Protection Act (DF Act) which was enacted into law addresses, among other things, interest rate and energy related commodity swap transactions of the type in which the Authority engages. The requirements and processes are set forth in regulations promulgated by the Commodities Futures Trading Commission (CFTC). Pursuant to CFTC rules, the Authority, as a public entity and electric utility which uses swaps solely to manage its risk, is exempted from posting collateral beyond that of any existing credit support annexes in support of its open over-the-counter hedge positions. These CFTC rules are not anticipated to have significant impact on the Authority's liquidity and/or future risk mitigation activities. CFTC DF Act rules are continually being reviewed for updates and the Authority will continue to monitor their potential impact on the Authority's liquidity and/or future risk mitigation activities.

(9) Fair Value Measurements

GAS No. 72 establishes a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Inputs are used in applying the various valuation techniques and take into account the assumptions that market participants use to make valuation decisions. Inputs may include price information, credit data, interest and yield curve data, and other factors specific to the financial instrument. Observable inputs reflect market data obtained from independent sources. In contrast, unobservable inputs reflect the entity's assumptions about how market participants would value the financial instrument.

The fair value hierarchy prioritizes the inputs used to measure fair value into three broad Levels (Levels 1, 2, and 3), moving from quoted prices in active markets in Level 1 to unobservable inputs in Level 3. A financial instrument's level within the fair value hierarchy (where Level 1 is the highest and Level 3 is the lowest) is based on the lowest level of any input that is significant to the fair value measurement. The categorization of a financial instrument within the fair value hierarchy is based upon pricing transparency and is not necessarily an indication of the Authority's perceived risk of that financial instrument.

The following describes the fair value hierarchy of inputs used by the Authority to measure fair value and the primary valuation methodologies used for financial instruments measured at fair value on a recurring basis:

- Level 1 – quoted prices for identical assets or liabilities in active markets that the Authority can access at the measurement date.

- Level 2 – quoted prices other than quoted prices included within Level 1 and other inputs that are observable for an asset or liability, either directly or indirectly.

- Level 3 – pricing inputs are unobservable for the asset or liability and may rely on inputs using the best available data under the circumstances, including the Authority's own data.

The following describes the valuation methodologies used by the Authority for assets and liabilities measured at fair value:

- U.S. government obligations – The fair value is based on institutional bond quotes and evaluations based on various market data/inputs.

- U.S. government agencies and instrumentalities – The fair value of government agencies and instrumentalities are based on institutional bond quotes and evaluations based on various market and industry inputs.

- Corporate obligations – The fair value is based on institutional bond quotes and evaluations on various market and industry inputs.

- Derivative instruments – The Authority hedges market risks through the use of derivative instruments. Derivative instruments are traded on both exchange-based and non-exchange based markets. A detail disclosure on derivatives is included in Note 8 "Risk Management and Hedging Activities" of notes to the consolidated financial statements.

  - The fair values for over-the-counter and exchange-traded energy, derivative instruments are determined by the latest end-of-trading-month forward prices over the lifetime of each outstanding derivative instrument using prices published by Platts.

  - The fair value for capacity derivative instruments is based on internal pricing models which develop a demand curve for the NYISO monthly spot market capacity auctions. Capacity reference points are observed from the NYISO filing with FERC. Peak load forecast are observed in the NYISO's Gold Book and NYPSC's publications.

The following tables summarize the Authority's outstanding assets and liabilities, of which there are no Level 3, within the fair value hierarchy at December 31, 2020 and December 31, 2019:

	Fair Value Measurements (in millions)			
December 31, 2020	**Total**	**Level 1**	**Level 2**	**Level 3**
Assets				
Cash and cash equivalents	$ 947	$ 947	$ -	$ -
Treasury bills	18	18	-	-
Treasury notes	128	128	-	-
Federal Agency securities:				
FAMC	100	-	100	-
FHLMC	147	-	147	-
FHLB	16	-	16	-
FFCB	75	-	75	-
Municipal Bonds	70	-	70	-
All other	3	3	-	-
Total cash and investments at fair value	1,504	1,096	408	-
Derivative instruments:(a)				
Energy capacity futures	2	-	2	-
Total derivative assets at fair value	2	-	2	-
Total assets at fair value	$ 1,506	$ 1,096	$ 410	$ -
Liabilities				
Derivative instruments:(a)				
Energy capacity futures	$ 13	$ -	$ 13	$ -
Total derivative liabilites at fair value	13	-	13	-
Total liabilities at fair value	$ 13	$ -	$ 13	$ -

	Fair Value Measurements (in millions)			
December 31, 2019	**Total**	**Level 1**	**Level 2**	**Level 3**
Assets				
Cash and cash equivalents	$ 134	$ 134	$ -	$ -
Treasury bills	16	16	-	-
Federal Agency securities:				
FNMA	124	-	124	-
FHLMC	72	-	72	-
FHLB	222	-	222	-
FFCB	179	-	179	-
Municipal Bonds	105	-	105	-
All other	3	3	-	-
Total cash and investments at fair value	855	153	702	-
Derivative instruments:(a)				
Energy capacity futures	5	-	5	-
Total derivative assets at fair value	5	-	5	-
Total assets at fair value	$ 860	$ 153	$ 707	$ -
Liabilities				
Derivative instruments:(a)				
Energy swaps	$ 1	$ -	$ 1	$ -
Total derivative liabilites at fair value	1	-	1	-
Total liabilities at fair value	$ 1	$ -	$ 1	$ -

(a) The accounting rules for fair value measurements and disclosures require consideration of the impact of nonperformance risk (including credit risk) from a market participant perspective in the measurement of the fair value of assets and liabilities. At December 31, 2020 and 2019, the Authority determined that nonperformance risk would have no material impact on the financial position or results of operations.

(10) Pension Plans

General Information

The Authority and substantially all of the Authority's employees participate in the New York State and Local Employees' Retirement System (NYSLERS) and the Public Employees' Group Life Insurance Plan (the Plan). These are cost-sharing multiple-employer defined benefit retirement plans.

The NYSLERS uses a tier concept to distinguish membership classes (i.e., tiers 1 through 6) with tier membership based on the date an employee joins the System. The ERS is non-contributory for tiers 1 and 2 employees who joined the NYSLERS on or prior to July 27, 1976. Tiers 3 and 4 employees, who joined the NYSLERS between July 28, 1976 and December 31, 2009 and have less than ten years of service, contribute 3% of their salary. Tier 5 employees who joined the NYSLERS on or after January 1, 2010 contribute 3% of their salary during their entire length of service. Tier 6 employees who joined the NYSLERS on or after April 1, 2013 contribute 3% of their salary through March 31, 2013 and up to 6% thereafter, based on their annual salary, during their entire length of service. Members become vested in the plan after ten years of service and generally are eligible to receive benefits at age 55. The benefit is generally 1.67% of final average salary (FAS) times the number of years of service, for members who retire with less than 20 years of service, and 2% of FAS for members who retire with 20 or more years of service. The NYSLERS provides an annual automatic cost of living adjustment to members or surviving spouses based on certain eligibility criteria.

The NYSLERS and the Plan provide retirement benefits as well as death and disability benefits. Obligations of employers and employees to contribute and benefits to employees are governed by the New York State Retirement and Social Security Law (NYSRSSL). As set forth in the NYSRSSL, the Comptroller of the State of New York (Comptroller) serves as sole trustee and administrative head of the NYSLERS and the Plan. The Comptroller adopts and may amend rules and regulations for the administration and transaction of the business of the NYSLERS and the Plan, and for the custody and control of their funds. Under the authority of the NYSRSSL, the Comptroller shall certify annually the rates expressed as proportions of payroll of members, which shall be used in computing the contributions required to be made by employers.

The Authority is required to contribute at an actuarially determined rate. The average contribution rate relative to payroll for the NYSLERS fiscal year ended March 31, 2020 was 15%. The average contribution rates relative to payroll for the NYSLERS fiscal years ending March 31, 2021 and 2022 have been set at approximately 15% and 16%, respectively. The required contributions for 2020 was $30 million and $29 million for 2019. The Authority's contributions to the NYSLERS were equal to 100% of the required contributions for each year.

The NYSLERS and the Plan issue a publicly available financial report that includes financial statements and required supplementary information. That report may be obtained by writing to the New York State and Local Employees' Retirement System, 110 State Street, Albany, NY 12244 or may be found on the internet at www.osc.state.ny.us/retire/publications/index.php.

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At December 31, 2020, the Authority reported a liability of $203 million for its proportionate share of the net pension liability. The NYSLERS total pension liability, which was used to calculate the NYSLERS net pension liability, was determined by the NYSLERS actuarial valuation as of March 31, 2020 (measurement date). The Authority's proportion of the net pension liability was based on a projection of the Authority's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined. At March 31, 2020, the Authority's proportion percentage (0.671%) of the net pension liability remained the same as its proportion measured as of March 31, 2019 (0.671%). The Canal Corporation's proportionate share was 0.097% at March 31, 2020 and 0.083% at March 31, 2019.

For the year ended December 31, 2020 and 2019, the Authority recognized pension expense of $69 million and $35 million, respectively. At December 31, 2020, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows	Deferred Inflows
	(In millions)	
Difference between expected and actual experience	$ 12	$ –
Net difference between projected and actual earnings on investments	103	–
Change of assumptions	5	4
Net difference between employer contributions and proportionate share of contributions	4	3
Employer contributions subsequent to the measurement date	30	–
Total	$ 154	$ 7

The $30 million reported as deferred outflows of resources related to pensions resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended December 31, 2021. The other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows (in millions):

Year ending December 31,	
2021	$ 20
2022	30
2023	38
2024	30
Total	$ 118

Actuarial Assumptions

The NYSLERS total pension liability at March 31, 2020 was determined by using the NYSLERS actuarial valuation as of April 1, 2019 with updated procedures to roll forward the NYSLERS total pension liability to March 31, 2020. The following actuarial assumptions were used for the April 1, 2019 NYSLERS actuarial valuation:

Actuarial cost method:	Entry age normal
Inflation rate:	2.5%
Salary increases:	4.2% annually
Investment rate of return:	6.8% compounded annually, net of investment
Cost of living adjustments:	1.3 % annually

The NYSLERS Annuitant mortality rates are based on April 1, 2010 – March 31, 2015 NYSLERS experience with adjustments for mortality improvements based on the Society of Actuaries' Scale MP-2018.

The NYSLERS long term expected rate of return on pension plan investments was determined using a building block method in which best estimate ranges of expected future real rates of return (expected returns net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Long-Term Expected Rate of Return

Asset Type	Target Allocation	Long-term Expected Real Rate
Domestic Equity	36%	4.05%
International Equity	14	6.15
Private Equity	10	6.75
Real Estate	10	4.95
Absolute Return	2	3.25
Opportunistic Portfolio	3	4.65
Real Asset	3	5.95
Bonds and Mortgages	17	0.75
Cash	1	0.00
Inflation Indexed Bonds	4	0.50
	100%	

Discount Rate

The discount rate used to calculate the total pension liability was 6.8%. The projection of cash flows used to determine the discount rate assumes that contributions from plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially. Based upon the assumptions, the NYSLERS fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of Proportionate Share of the Net Pension Liability to Changes in the Discount Rate

The following presents the Authority's proportionate share of the net pension liability calculated using the discount rate of 6.8 percent, as well as what the Authority's proportionate share of the net pension liability would be if it were calculated using a discount rate that is one percentage point lower (5.8 percent) or one percentage point higher (7.8 percent) than the current rate:

	1% Decrease	Current Assumption	1% Increase
Discount rate	5.8%	6.8%	7.8%
The Authority's proportionate share of the net pension liability (asset)	$ 373 million	$ 203 million	$ 47 million

The NYSLERS actuary has not recommended any future changes to the actuarial assumptions used in the NYSLERS August 2020 actuarial valuation report.

(11) Postemployment Benefits Other Than Pensions, Deferred Compensation and Savings

(a) *Power Authority*

The Power Authority provides certain health care and life insurance benefits for eligible retired employees and their dependents under a single employer noncontributory (except for certain optional life insurance coverage) health care plan (Power Authority OPEB Plan). Employees and/or their dependents become eligible for these benefits when the employee has at least 10 years of service and retires or dies while working at the Power Authority. Salaried employees hired after December 31, 2015 and IBEW employees hired after October 15, 2015, become eligible after 15 years of service. In addition, they will be required to contribute 50% of the active plan contribution.

The Power Authority has an established trust for OPEB obligations (OPEB Trust), with the trust to be held by an independent custodian. Plan members are not required to contribute to the OPEB Trust. The OPEB Trust is set-up to pay for the exclusive benefit of the OPEB Trust plan participants. The funding of the Power Authority's OPEB Trust is at the discretion of management. Changes to the Power Authority OPEB Plan or OPEB Trust agreement are approved by the Board of Trustees. The Power Authority made contributions on a pay-as you go basis in 2020 and 2019 and did not contribute any amount beyond these contributions to the OPEB Trust.

As of the December 31, 2020, the following current and former employees were covered by the benefit terms, under the Plan. It is assumed that 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.

Active employees	1,789
Inactive employees and beneficiaries, receiving and or entitled to benefits	2,798
Total	4,587

OPEB Expense and Deferred Outflows of Resources and Deferred inflows of Resources Related to OPEB

For the year ended December 31, 2020, the Authority recognized OPEB expense credit of $(8.9) million. At December 31, 2020, the Authority reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
	(In millions)	
Differences between expected and actual experience	$ 2	$ –
Changes in assumptions	–	60
Differences between projected & actual investment earnings	46	87
Employer contributions subsequent to the measurement date	25	–
Total	$ 73	$ 147

The $25 million reported as deferred outflows of resources related to OPEB resulting from the Authority's contributions subsequent to the measurement date will be recognized as a reduction of the total OPEB liability in the following year. The other amount reported as deferred inflows of resources related to OPEB will be recognized as a credit in OPEB expense as follows:

Year ending December 31,	(In millions)
2021	$ (23)
2022	(23)
2023	(13)
2024	(40)
	$ (99)

Net OPEB Liability

The Authority's net OPEB liability (asset) was measured as of December 31, 2019 based on valuation results as of that date. The Authority's net OPEB asset of $169 million is recorded in miscellaneous receivables in current assets, respectively, in the Authority's consolidated statements of net position.

The following table shows the components of the Authority's changes in its total OPEB liability, the OPEB fiduciary net position, and the net OPEB (asset) during the measurement period ending December 31, 2019.

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB (Asset)
	Increase (Decrease) (In millions)		
Balance – beginning of year	$ 560	$ 565	$ (5)
Service Cost	13	–	13
Interest	39	–	39
Differences between expected and actual experience	2	–	2
Changes of Assumptions	(72)	–	(72)
Contributions – employer	–	25	(25)
Net investment income	–	123	(123)
Benefit payments	(25)	(25)	–
Administrative expense	–	(2)	2
Net changes	(43)	121	(164)
Balance – end of year	$ 517	$ 686	$ (169)

The components of the net OPEB asset at December 31, 2020, were as follows (in millions):

Total OPEB liability	$ 542
Plan fiduciary net position	(728)
Net OPEB (Asset)	$ (186)
Plan fiduciary net position as a percentage of the total OPEB liability	134%

Actuarial Assumptions

The total OPEB liability in the December 31, 2019 biennial actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Investment rate of return:	7.00%
Healthcare Cost Trend Rates:	Pre-Medicare - 7.0 percent for 2020, decreasing 0.5 percent per year to an ultimate rate of 4.5 percent for 2025 and later years. Post-Medicare – 4.9 percent for 2020, decreasing to an ultimate rate of 4.5 percent for 2025. Prescription drugs (Rx) – 7 percent for 2020, decreasing to an ultimate rate of 4.5 percent for 2025.
Salary increases:	Varies by service, average of 8.0 percent for first year of service, 4.5 percent for 5years of service, 3.8 percent for 10 years of service, 3.3 percent for 15 years of service, and 3.0 percent for 20 years or more of service.
Mortality:	The General Pub-2010 headcount weighted tables were used for active employees and healthy retirees and dependents, while the corresponding Contingent Survivor mortality tables were used for current surviving spouses and the corresponding Disabled Retiree mortality tables were used for disabled participants. To project mortality improvement for years after 2010, the MP-2019 Projection Scale is applied on a fully generational basis to the base rates.

Long-Term Expected Rate of Return

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best estimate ranges of expected future real rates (expected returns net of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Type	Target Allocation	Long-term Expected Real Rate of Return
Domestic Equity	37 %	6.8 %
International Equity	24	7.5
Fixed Income	30	3.3
Real Estate	6	6.5
Cash	3	2.4
Total	100 %	

Rate of Return

For the year ended December 31, 2020, the annual money-weighted rate of return on investments, net of investment expense, was 6.53 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Discount Rate

The discount rate used to calculate the total OPEB liability was 7.0%, the long-term rate of return on the OPEB Trust assets. The projection of cash flows used to determine the discount rate assumed that NYPA will contribute at a rate equal to the average of contributions made over the most recent five-year period (2013 through 2017), and that contributions apply first to service cost of current and future plan members and then to past service costs. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be available to make all projected OPEB payments for current active and inactive employees for the foreseeable future.

Sensitivity of the Net OPEB (Asset) to Changes in the Discount Rate

Changes in the discount rate affect the measurement of the total OPEB liability. The following table depicts the Authority's Net OPEB liability / (asset), as well as the sensitivity of using a discount rate that is 1 percentage point lower (6.0 percent) or 1 percentage point higher (8.0 percent) than the current discount rate:

	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Net OPEB Liability / (Asset)	$ (100) million	$ (169) million	$ (225) million

Sensitivity of the Net OPEB Liability / (Asset) to Changes in the Healthcare Cost Trend Rates

Changes in the healthcare cost trends affect the measurement of the total OPEB liability. The table below shows the sensitivity of the net OPEB liability / (asset) to the changes in the healthcare cost trends:

	1% Decrease	Current Healthcare Trend Rate	1% Increase
Net OPEB Liability / (Asset)	$ (225) million	$ (169) million	$ (99) million

(b) Canal Corporation

The Canal Corporation provides health care and death benefit for eligible retired employees. Substantially all employees may become eligible for these benefits if they reach normal retirement age while working for the Canal Corporation. The Canal Corporation participates, pursuant to the provision of Section 163(4) of the New York State Civil Service Law, in the New York State health Insurance Program (NYSHIP). NYSHIP does not issue a standalone financial report since there are no assets legally segregated for the sole purpose of paying benefits under the plan.

To be eligible an employee must (1) retire as a member of Canal Corporation, or be at least 55 years old at time of termination; (2) be enrolled in the NYSHIP on date of retirement; and (3) complete at least 5 years of service for the retiree and dependent to have coverage while the employee is living. Ten years of service are needed for continued dependent coverage upon death of the employee. The Plan currently pays a portion of the medical premium cost for retired employees and covered dependents. Additionally, the Plan reimburses retirees and covered dependents for their Medicare Part B premiums.

As of the December 31, 2019 actuarial valuation, the following current and former employees were covered by the benefit terms, under the Plan. It is assumed that 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.

Active employees, including opt-out (actives not in medical plan)	397
Inactive employees and beneficiaries, receiving and or entitled to benefits	524
Total	921

OPEB Expense and Deferred Outflows of Resources and Deferred inflows of Resources Related to OPEB

The Authority's consolidated financial statements include the Canal Corporation's OPEB costs of $9.0 million, for the year ended December 31, 2020. In addition, the Authority's consolidated statements include the Canal Corporations deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
	(in millions)	
Differences between expected & actual experience	$ –	$ 6
Changes in assumptions	8	35
Employer contributions subsequent to the measurement date	7	–
Total	$ 15	$ 41

The $7 million reported as deferred outflows of resources related to OPEB resulting from the Canal Corporation's contributions subsequent to the measurement date will be recognized as a reduction of the total OPEB liability in the following year. The other amount reported as deferred inflows of resources related to OPEB will be recognized as a credit in OPEB expense as follows:

Year ending December 31,	(in millions)
2021	$ (7)
2022	(7)
2023	(11)
2024	(8)
	$ (33)

Total OPEB Liability

The Canal Corporation's total OPEB liability was measured as of December 31, 2019, based on a no gain or loss rollforward of the May 1, 2020 valuation. The Canal Corporation's total OPEB liability is recorded in the Authority's consolidated statements of net position in other long-term liabilities in the amount of $198 million.

The following table shows the components of the Canal Corporation's changes in its total OPEB liability during the measurement period ending December 31, 2019.

	Total OPEB Liability Increase (Decrease) (in millions)
Balance – beginning of year	$ 226
Changes for the year:	
Service cost	8
Interest	8
Changes of benefit terms	–
Differences between expected & actual experience	(8)
Changes of assumptions	(30)
Benefit payments	(6)
Net Changes in Total OPEB Liability	(28)
Balance – end of year	$ 198

Actuarial Assumptions

The total OPEB liability in the December 31, 2019 biennial actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Healthcare Cost Trend Rates:	Pre-Medicare - 5.75 percent for 2020, decreasing to an ultimate rate of 4.5 percent for 2026 and later years. Post-Medicare – 4.9 percent for 2020, decreasing to an ultimate rate of 4.5 percent for 2025. Prescription drugs (Rx) – 7.0 percent for 2020, decreasing to an ultimate rate of 4.5 percent for 2025.
Salary increases:	Varies by service, 8.0 percent for first year of service, 4.5 percent for 5 years of service, 3.8 percent for 10 years of service, 3.3 percent for 15 years of service, and 3.0 percent for 20 years or more of service.
Mortality:	The General Pub-2010 headcount weighted tables were used for active employees and healthy retirees and dependents, while the corresponding Contingent Survivor mortality tables were used for current surviving spouses and the corresponding Disabled Retiree mortality tables were used for disabled participants. To project mortality improvement for years after 2010, the MP-2019 Projection Scale is applied on a fully- generational basis to the base rates.

Discount Rate

The discount rate at the measurement date used to calculate the total OPEB liability is 3.26%. The discount rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2019. Benefit payments are funded on a pay-as-you go basis. The discount rate at the previous measurement date is 3.64% based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2018.

Sensitivity of the Total OPEB Liability to Changes in the Discount Rate

Changes in the discount rate affect the measurement of the total OPEB liability. The following table depicts the Canal Corporation' Total OPEB liability, as well as the sensitivity of using a discount rate that is 1 percentage point lower (2.26 percent) or 1 percentage point higher (4.26 percent) than the current discount rate:

	1% Decrease (2.26%)	Current Discount Rate (3.26%)	1% Increase (4.26%)
Total OPEB Liability	$ 232 million	$ 198 million	$ 170 million

Sensitivity of the Total OPEB Liability to Changes in the Healthcare Cost Trend Rates

Changes in the healthcare cost trends affect the measurement of the total OPEB liability. The table below shows the sensitivity of the total OPEB liability to the changes in the healthcare cost trends:

	1% Decrease	Current Healthcare Trend Rate	1% Increase
Total OPEB Liability	$ 169 million	$ 198 million	$ 234 million

Amendment to the Authority's OPEB Trust

Prior to 2021, an OPEB Trust was established to pay benefits for those covered under the Authority's OPEB Plan. The Canal Retiree Health Plan operated on a pay-as-you-go basis, as no OPEB Trust existed for this plan. Effective January 2021, the Board approved an amendment to the Authority's OPEB Trust allowing the trust to be used to pay benefits for both the Authority's OPEB Plan and the Canal Retiree Health Plan. This change has been reflected as of the December 31, 2020 measurement date for Fiscal Year 2021 reporting, with both plans being accounted for as a single plan under GASB 75. The trust amendment resulted in an increase in the discount rate used for the Canal Plan liabilities to 7.00% as of the December 31, 2020 measurement date; if this change had not occurred, a rate of 1.93% would have been selected.

(c) Deferred Compensation and Savings Plans

The Power Authority offers union employees and salaried employees a deferred compensation plan created in accordance with Internal Revenue Code, Section 457. This plan permits participants to defer a portion of their salaries until future years. Amounts deferred under the plan are not available to employees or beneficiaries until termination, retirement, death or unforeseeable emergency.

The Power Authority also offers salaried employees a savings plan created in accordance with Internal Revenue Code, Section 401(k). This plan also permits participants to defer a portion of their salaries. The Power Authority matches contributions of employees up to limits specified in the plan. Matching annual contributions were approximately $4.1 million and $3.5 million for 2020 and 2019, respectively.

Both the deferred compensation plan and the savings plan have a loan feature.

Independent trustees are responsible for the administration of the 457 and 401(k) plan assets under the direction of a committee of union representatives and nonunion employees and a committee of nonunion employees, respectively. Various investment options are offered to employees in each plan. Employees are responsible for making the investment decisions relating to their savings plans.

(12) Nuclear Plant Divestiture and Related Matters

On November 21, 2000, the Power Authority sold the James A. Fitzpatrick nuclear plant (JAF) and the Indian Point 3 nuclear plant (IP3) to two subsidiaries of Entergy Corporation (collectively, Entergy or the Entergy Subsidiaries). On March 31, 2017, Entergy transferred JAF to Exelon Generation Company, LLC (Exelon).

In accordance with the Nuclear Waste Policy Act of 1982, in June 1983, the Power Authority entered into a contract with the U.S. Department of Energy (DOE) under which DOE, commencing not later than January 31, 1998, would accept and dispose of spent nuclear fuel. In conjunction with the sale of the nuclear plants, the Power Authority's contract with the DOE was assigned to Entergy. Entergy assigned the portion of the pre-1983 spent fuel obligation applicable to JAF to Exelon in connection with the sale of JAF to Exelon. The Power Authority remains liable for the pre-1983 spent fuel obligation to Exelon for JAF and to Entergy for IP3 (see Note 13(e) "Commitments and Contingencies – New York State Budget and Other Matters" relating to a temporary transfer of such funds to the State). As of December 31, 2020 and 2019, the pre-1983 spent fuel liability for JAF and IP3 totaled $229 million and $228 million, respectively.

(13) Commitments and Contingencies

(a) *Power Programs*

Recharge New York Power Program

Chapter 60 (Part CC) of the Laws of 2011 (Chapter 60) established the "Recharge New York Power Program" (RNYPP), administered by the Authority, which has as its central benefit up to 910 MW of low cost power comprised of up to 455 MW of hydropower from the Niagara and St. Lawrence-FDR Projects and up to 455 MW of other power procured by the Authority from other sources. The 910 MW of power is available for allocation as provided by Chapter 60 to eligible new and existing businesses and not-for-profit corporations under contracts of up to seven years. RNYPP was effective beginning July 1, 2012.

The hydropower used for the RNYPP was power formerly used to provide low-cost electricity to domestic and rural customers of the three private utilities that serve upstate New York. To mitigate the impacts from the redeployment of this hydropower for the RNYPP, Chapter 60 created a "Residential Consumer Discount Program" (RCDP). The RCDP authorizes the Authority, as deemed feasible and advisable by its Trustees, to provide annual funding of $100 million for the first three years following withdrawal of the hydropower from the residential and farm customers, $70 million for the fourth year, $50 million for the fifth year, and $30 million each year thereafter, for the purpose of funding a residential consumer discount program for those customers that had formerly received the hydropower that is utilized in the RNYPP. Chapter 60 further authorizes the Authority, as deemed feasible and advisable by the Trustees, to use revenues from the sales of hydroelectric power, and such other funds of the Authority, as deemed feasible and advisable by the Trustees, to fund the RCDP. The Authority's Trustees have authorized the release of a total $594 million for the period from August 2011 to December 2020 in support of the RCDP. The Authority supplemented the market revenues through the use of internal funds, from the August 2011 start of the program through December 31, 2020 totaling approximately $60 million. Operations and maintenance expenses included $30 million of residential consumer discounts in each year ended December 31, 2020 and 2019.

Western New York Power Proceeds Allocation Act

Effective March 30, 2012, Chapter 58 (Part GG) of the Laws of 2012 (Chapter 58) created the Western New York Power Proceeds Act (WNYPPA). The WNYPPA authorizes the Authority, as deemed feasible and advisable by the Trustees, to deposit net earnings from the sale of unallocated Expansion Power and Replacement Power from the Authority's Niagara project into an account administered by the Authority known as the Western New York Economic Development Fund (WNYED Fund). Net earnings are defined as any excess revenues earned from such power sold into the wholesale market over the revenues that would have been received had the power been sold at the Expansion Power and Replacement Power rates. Proceeds from the Fund may be used to support eligible projects undertaken within a 30-mile radius of the Niagara power project that satisfy applicable criteria. Chapter 58 also establishes a five-member Western New York Power Allocations Board, which is appointed by the Governor. Chapter 58 also repealed Chapter 436 of the Laws of 2010 which had created a similar program that could not be effectively implemented.

The Authority's Trustees have approved the release of up to $66 million in net earnings, calculated for the period August 30, 2010 through December 31, 2020 as provided in the legislation, for deposit into the WNYED Fund. As of December 31, 2020, approximately $43 million has been deposited into the Fund. As of December 31, 2020, the Authority has approved awards of Fund money totaling approximately $38 million to businesses that have proposed eligible projects and has made payments totaling $35 million to such businesses. Payment of these awards is contingent upon the execution of acceptable contracts between the Authority and individual awardees.

Northern New York Power Proceeds Allocation Act

Chapter 545 of the Laws of 2014 enacted the "Northern New York Power Proceeds Act" (NNYPPA). The NNYPPA authorizes the Authority, as deemed feasible and advisable by the Trustees, to deposit "net earnings" from the sale of unallocated St. Lawrence County Economic Development Power (SLCEDP) by the Authority in the wholesale energy market into an account the Authority would administer known as the Northern New York Economic Development Fund (NNYED Fund), and to make awards to eligible applicants that propose eligible projects that satisfy applicable criteria. The NNYPPA also establishes a five-member Northern New York Power Allocations Board appointed by the Governor to review applications seeking NNY Fund benefits and to make recommendations to the Authority concerning benefits awards.

SLCEDP consists of up to 20 MW of hydropower from the Authority's St. Lawrence-FDR Power Project which the Authority has made available for sale to the Town of Massena Electric Department ("MED") for MED to sub-allocate for economic development purposes in accordance with a contract between the parties entered into in 2012 (Authority-MED Contract). The NNYPPA defines "net earnings" as the aggregate excess of revenues received by the Authority from the sale of energy associated with SLCEDP by the Authority in the wholesale energy market over what revenues would have been received had such energy been sold to MED on a firm basis under the terms of the Authority-MED contract. For the first 5 years after enactment, the amount of SLCEDP the Authority could use to generate net earnings may not exceed the lesser of 20 MW or the amount of SLCEDP that has not been allocated by the Authority pursuant to the Authority-MED contract. Thereafter, the amount of SLCEDP that the Authority could use for such purpose may not exceed the lesser of 10 MW or the amount of SLCEDP that has not been allocated.

As of December 31, 2020, the Authority's Trustees approved the release of funds, of up to $15 million, into the NNYED Fund representing "net earnings" from the sale of unallocated SLCEDP into the wholesale energy market for the period December 29, 2014 through December 31, 2020. As of December 31, 2020, approximately $5 million has been deposited into the Fund. As of December 31, 2020, the Authority has approved awards of NNYED Fund money totaling approximately $2 million to businesses that have proposed eligible projects has made payments totaling approximately $1 million to such businesses.

Payment of approved awards of the NNYED Fund money is contingent upon the execution of acceptable contracts between the Authority and individual awardees.

Economic Development Customer Assistance Program

Based upon the current economic conditions relating to COVID-19, the Authority's Trustees on March 31,2020 approved two temporary measures to provide financial relief to its customers in the Authority's Economic Development Power Programs (Recharge New York, Western New York, Expansion Power & Replacement Power, and Preservation Power programs) that are subject to the Annual Adjustment Factor ("AAF"). The AAF, whether it represents an increase or decrease, is normally applied to program base rates annually on July 1st in accordance with the applicable tariffs. Each of the Economic Development Power Programs require a commitment from the recipients of job growth within their business, job retention and/or capital commitment.

These two temporary measures include (1) suspension of the AAF which is otherwise scheduled under applicable tariffs to be applied to energy and demand rates annually on July 1st, for a period of one year from July 1, 2020 through June 30, 2021; and (2) provision to such customers of the option to defer payment of energy bills to the Authority, beginning with the April 2020 invoice, for up to 6 months, with repayment of deferred amounts to occur in equal installments over the subsequent 18-month period. As of December 31, 2020, 373 customers have applied for this program resulting in interest free deferred payments of approximately $50 million with no corresponding increase in interest rates.

(b) *Governmental Customers in the New York City Metropolitan Area*

In 2018 and 2019, the Authority executed new supplemental long-term electricity supply agreements (Supplemental LTAs) with its eleven NYC Governmental Customers. Under the Supplemental LTAs, the NYC Governmental Customers agreed to purchase their electricity from the Authority through December 31, 2027, with the NYC Governmental Customers having the right to (1) terminate at any time upon at least 12 months' notice or (2) terminate effective December 31, 2022 upon at least 6 months' notice. Under the Supplemental LTAs, fixed costs were set for each customer and are subject to renegotiation in 2022. Variable costs, including fuel, purchased power and NYISO related costs, will be passed through to each customer by an energy charge adjustment.

The Authority's other Southeastern New York (SENY) Governmental Customers are Westchester County and numerous municipalities, school districts, and other public agencies located in Westchester County (collectively, the "Westchester Governmental Customers"). The Authority has entered a supplemental electricity supply agreement with all 103 Westchester Governmental Customers. Among other things, under the agreement, an energy charge adjustment mechanism is applicable, and customers are allowed to partially terminate service from the Authority on at least two months' notice prior to the start of the NYISO capability periods. Full termination is allowed on at least one year's notice, effective no sooner than January 1 following the one year notice.

Astoria Energy II

In 2008, the Authority entered into a long-term power supply contract with Astoria Energy II LLC for the purchase of all the output of Astoria Energy II, a new 550-MW plant, which entered into commercial operation on July 1, 2011 in Astoria, Queens. The delivery period under the contract is through 2031. The Authority entered into a separate contract with its' New York City Governmental Customers to purchase the output of Astoria Energy II and is coterminous with the power purchase agreement with Astoria Energy II LLC. All net costs of the Authority under the power purchase agreement with Astoria Energy II LLC pass through to the New York City Governmental Customers for the full term of the power purchase agreement.

The Authority is accounting for and reporting this lease transaction as a capital lease in the amount of $1,034 billion as of December 31, 2020 which reflects the present value of the monthly portion of lease payments allocated to real and personal property. The balance of the monthly lease payments represents the portion of the monthly lease payment allocated to operations and maintenance costs which are recorded monthly. As of December 31, 2020, the Authority has a recorded capital asset (net of depreciation) of $651 million and a regulatory asset with respect to the recoverable cost associated with the lease obligation of $383 million (see note 2 (l) "Summary of Accounting Policies – Other Long-Term Assets" of the notes to the consolidated financial statements).

HTP Transmission Line

In 2011 the Trustees authorized Authority staff to enter into an agreement with Hudson Transmission Partners, LLC ("HTP") for the purchase of capacity to meet the long-term requirements of the Authority's NYC Governmental Customers and to improve the transmission infrastructure serving New York City through the transmission rights associated with HTP's transmission line (the "Line") extending from Bergen County, New Jersey in the PJM Interconnection, LLC (PJM) transmission system, to Consolidated Edison Company of New York, Inc.'s ("Con Edison") West 49th Street substation in the NYISO. Specifically, the Authority executed a Firm Transmission Capacity Purchase Agreement (FTCPA) with HTP under which the Authority gained the entitlement to 75% of the Line's 660 MW capacity, or 495 MW, for 20 years. On March 31, 2017, the Authority and HTP amended the FTCPA to, among other changes, (a) create a mechanism for HTP to relinquish its Firm Transmission Withdrawal Rights as discussed below and (b) increase the Authority's leased portion of the Line's capacity to 87.12%, or 575 MW, at a monthly capacity charge rate that represents a decrease in the unit price (on a $/MW-month basis) paid to HTP in the original FTCPA.

The Authority's payment obligations under the FTCPA include capacity payments, interconnection and transmission upgrades, and Regional Transmission Expansion Plan ("RTEP") charges allocated to HTP in accordance with the PJM tariff. Interconnection and transmission upgrades were completed in 2018 at a total cost to the Authority of $334.9 million. The RTEP charges imposed upon HTP, which are still subject to legal challenge, are discussed in more detail below.

It is estimated that the revenues derived from the Authority's rights under the FTCPA will not be sufficient to fully cover the Authority's costs under the FTCPA during the 20-year term of the FTCPA. In December 2020, the Authority estimated that its under-recovery of costs for the Line could be in the range of approximately $106 million to $111 million per year over the period from 2021-2024. The under-recovery estimates were based on projections of the capacity payment obligations, the costs of interconnection and transmission upgrades and energy revenues.

The Authority's obligations under the FTCPA include payment of the RTEP charges allocated to HTP. From June 2013 through December 2020, the Authority has paid approximately $129.6 million in RTEP charges for the Line. Effective 2018, HTP relinquished the Firm Transmission Withdrawal Rights ("FTWRs") held by HTP on the Line that were the basis for a significant share of its RTEP allocations. PJM's annual RTEP cost allocation update for 2018 eliminated the Authority's obligation in 2018 and beyond to pay RTEP charges related to the Bergen Linden Corridor project, which accounted for the bulk of the projected RTEP allocations to HTP.

While PJM had determined that the Authority had no RTEP payment responsibility starting in 2018 as a result of HTP's FTWR relinquishment, in 2020, FERC reversed PJM's determination over the Authority's objections, and held that a portion of the RTEP charges assignable to the HTP facility dating back to 2018 had to be reinstated as they were unrelated to whether HTP had retained FTWRs. These reinstated RTEP charges were for projects other than the Bergen Linden Corridor project. FERC authorized PJM to begin collection for the back periods starting in August 2020. In 2020, the Authority's incurred $33 million of which $20 million in RTEP charges were retroactive to 2018 and 2019 and $13 million for 2020. In addition, the Authority will accrue approximately $1.1 million per month effective 2021 through the term of the agreement which ends in 2033. Depending on PJM TO's Annual Revenue Requirement, the RTEP charges could trend downward during the out years. The Authority is contesting the ruling.

(c) *Small, Clean Power Plants*

To meet capacity deficiencies and ongoing load requirements in the New York City metropolitan area in the early 2000s, the Authority placed into operation the Small, Clean Power Plants (SCPPs), consisting of eleven natural-gas-fueled combustion-turbine electric units, six sites in New York City and one site in the service region of LIPA.

As a result of the settlement of litigation relating to certain of the SCPPs, the Authority has agreed under the settlement agreement to cease operations at one of the SCPP sites, which houses two units, under certain conditions and if the Mayor of New York City directs such cessation. No such cessation has occurred.

(d) *Legal and Related Matters*

St. Regis Litigation

In 1982 and again in 1989, several groups of Mohawk Indians, including a Canadian Mohawk tribe, filed lawsuits (the St. Regis litigation) against the State, the Governor of the State, St. Lawrence and Franklin counties, the St. Lawrence Seaway Development Corporation, the Authority and others, claiming ownership to certain lands in St. Lawrence and Franklin counties and to Barnhart, Long Sault and Croil islands. These islands are within the boundary of the Authority's St. Lawrence-FDR Project and Barnhart Island is the location of significant Project facilities. Settlement discussions were held periodically between 1992 and 1998. In 1998, the Federal government intervened on behalf of all Mohawk plaintiffs.

The parties agreed to a land claim settlement, dated February 1, 2005, which if implemented would have included, among other things, the payment by the Authority of $2 million a year for 35 years to the tribal plaintiffs and the provision of up to 9 MW of low cost Authority power for use on the reservation. The legislation required to effectuate the settlement was never enacted and the litigation continued.

In 2013, all claims against the Authority were dismissed and the lawsuit against the Authority was concluded. On May 28, 2014, the State of New York, the St. Regis Mohawk Tribe, St. Lawrence County and the Authority executed a Memorandum of Understanding (St. Regis MOU) that outlined a framework for the possible settlement of all the St. Regis land claims. In the St. Regis MOU, the Authority endorses a negotiated settlement that, among other terms and conditions, would require the Authority to pay the Tribe $2 million a year for 35 years and provide up to 9 MW of its hydropower at preference power rates to serve the needs of the Tribe's Reservation. The St. Regis MOU would require an Act of Congress to forever extinguish all Mohawk land claims prior to such a settlement becoming effective.

Any settlement agreement, including the terms endorsed in the St. Regis MOU, would in the first instance need to be negotiated and agreed upon by all parties to the St. Regis litigation, including parties that did not execute the St. Regis MOU, such as the two other Mohawk groups, the federal government and Franklin County. In addition, before any settlement becomes effective and the Authority is obligated to make any payments contemplated by the St. Regis MOU, federal and state legislation must be enacted which approves the settlement and extinguishes all Mohawk land claims. The Authority is in continuing settlement discussions with some of the parties to the St. Regis litigation.

Long Island Sound Cable Project

In January 2014, one of the Sound Cable Project underwater cables was severely impacted by an anchor and /or anchor chain dropped by one or more vessels, causing the entire electrical circuit to fail and the circuit to trip. As a result of the impact to the cable, dielectric fluid was released into Long Island Sound. At December 31, 2020 and December 31, 2019, the consolidated statements of net position includes approximately $19 million, in other long-term assets, reflecting the cost of damages net of insurance recoveries. As of February 2021, the Authority recovered $9.2M of its damages through legal proceedings and believes that it will recover the remainder through contractual obligations.

Helicopter Incident Near the Authority's Transmission Lines in Beekmantown, New York

The Authority contracted with Northline Utilities, LLC ("Northline") to install fiber optic ground wire along the Authority's transmission system. Thereafter, Northline entered into a contract with Catalyst Aviation, LLC ("Catalyst") for helicopter services. On October 30, 2018, a Catalyst helicopter was destroyed when it collided with a wooden utility pole and power lines near Beekmantown, New York. Members of the helicopter crew were injured, and two members of that crew died as a result of their injuries. The Authority has received two notices of claim arising out of this incident. The Authority has pursued insurance coverage under Northline's insurance policies that name the Authority as an additional insured. The Authority tendered its defense of these Notices of Claim to Northline's insurer and the insurer has accepted the Authority's tender. The Authority believes that there exists sufficient insurance coverage to cover these claims. In any event, to the extent that the insurance coverage limitations are insufficient, Northline is responsible under the defense and indemnification provisions of its contract with the Authority.

Other Actions or Claims

In addition to the matters described above, other actions or claims against the Authority are pending for the taking of property in connection with its projects, for negligence, for personal injury (including asbestos-related injuries), in contract, and for environmental, employment and other matters. All of such other actions or claims will, in the opinion of the Authority, be disposed of within the amounts of the Authority's insurance coverage, where applicable, or the amount which the Authority has available therefore and without any material adverse effect on the business of the Authority. While the Authority cannot presently predict the outcome of the matters described above or any related litigation, the Authority believes that it has meritorious defenses and positions with respect thereto. However, adverse decisions of a certain type in the matters discussed above could adversely affect Authority operations and revenues.

(e) *New York State Budget and Other Matters*

Section 1011 of the Power Authority Act (Act) constitutes a pledge of the State to holders of Authority obligations not to limit or alter the rights vested in the Authority by the Act until such obligations together with the interest thereon are fully met and discharged or unless adequate provision is made by law for the protection of the holders thereof. Bills are periodically introduced into the State Legislature, which propose to limit or restrict the powers, rights and exemption from regulation that the Authority currently possesses under the Act and other applicable law or otherwise would affect the Authority's financial condition or its ability to conduct its business, activities, or operations, in the manner presently conducted or contemplated by the Authority. It is not possible to predict whether any such bills or other bills of a similar type which may be introduced in the future will be enacted.

In addition, from time to time, legislation is enacted into New York law that purports to impose financial and other obligations on the Authority, either individually or along with other public authorities or governmental entities. The applicability of such provisions to the Authority would depend upon, among other things, the nature of the obligations imposed and the applicability of the pledge of the State set forth in Section 1011 of the Act to such provisions. There can be no assurance that in the case of each such provision, the Authority will be immune from the financial obligations imposed by such provision. Examples of such legislation affecting only the Authority include legislation, discussed below and elsewhere herein, relating to the Authority's voluntary contributions to the State, the Authority's temporary transfer of funds to the State, and contributions and transfers to fund temporary and permanent programs administered by the Authority and other State entities.

Budget

The Authority is requested, from time to time, to make financial contributions or transfers of funds to the State. Any such contribution or transfer of funds must (i) be authorized by law (typically, legislation enacted in connection with the State budget), and (ii) satisfy the requirements of the Bond Resolution. The Bond Resolution requirements to withdraw moneys "free and clear of the lien and pledge created by the (Bond) Resolution" are as follows: (1) such withdrawal must be for a "lawful corporate purpose as determined by the Authority," and (2) the Authority must determine "taking into account, among other considerations, anticipated future receipt of Revenues or other moneys constituting part of the Trust Estate, that the funds to be so withdrawn are not needed" for (a) payment of reasonable and necessary operating expenses, (b) an Operating Fund reserve for working capital, emergency repairs or replacements, major renewals, or for retirement from service, decommissioning or disposal of facilities, (c) payment of, or accumulation of a reserve for payment of, interest and principal on senior debt, or (d) payment of interest and principal on subordinate debt.

In May 2011, the Authority's Trustees adopted a policy statement (Policy Statement) which relates to, among other things, voluntary contributions, transfers, or other payments to the State by the Authority after that date. The Policy Statement provides, among other things, that in deciding whether to make such contributions, transfers, or payments, the Authority shall use as a reference point the maintenance of a debt service coverage ratio of at least 2.0 (this reference point should not be interpreted as a covenant to maintain any particular coverage ratio), in addition to making the other determinations required by the Bond Resolution. The Policy Statement may at any time be modified or eliminated at the discretion of the Authority's Trustees.

Temporary Asset Transfers

As a result of budget legislation enacted in February 2009, the Authority was authorized to provide, subject to Trustee approval, temporary asset transfers to the State of certain funds held in reserves. Pursuant to the terms of a Memorandum of Understanding dated February 2009 (the "MOU") between the State and the Authority, the Authority transferred to the State in 2009 $103 million of funds set aside for future construction projects ("Asset A") and $215 million of funds associated with its Spent Nuclear Fuel Reserves ("Asset B"). The Authority subsequently executed amendments to the MOU in 2014 and 2017 that extended the return date for Asset A and Asset B and provided for the return of the Assets in installments over several years, subject to annual appropriation by the State Legislature. In the Second Amendment to the MOU in 2017, the Authority and the State agreed on a framework for alternative cost recovery agreements for each of State Fiscal Year 2017-18 through State Fiscal Year 2022-23 the asset transfers have not been fully returned to the Authority that would relieve the Authority of up to $5 million in cost recovery assessment payments to the State in each year. Asset A was returned to the Authority in 2018.

As of December 31, 2020 and 2019, the Authority has received cumulative installment payments of $86 million on the return of Asset B. Pursuant to the amended MOU, the remaining portion of Asset B ($129 million) is to be returned by the State in installments from 2021-2023, subject to annual appropriation by the State Legislature. The asset transfers are reported in miscellaneous receivables and other ($43 million as of December 31, 2020 and December 31, 2019) and in other noncurrent assets ($86 million at December 31, 2020 and December 31, 2019, respectively) in the statements of net position. In February 2021, the Authority received a $43 million installment payment for State Fiscal Year 2020-21.

(f) *Relicensing of Niagara*

By order issued March 15, 2007, FERC issued the Authority a new 50-year license for the Niagara project effective September 1, 2007. In doing so, FERC approved six relicensing settlement agreements entered into by the Authority with various public and private entities. By decision dated March 13, 2009, the U.S. Court of Appeals for the District of Columbia Circuit denied a petition for review of FERC's order filed by certain entities, thereby concluding all litigation involving FERC's issuance of the new license. In 2007, the Authority estimated that the capital cost associated with the relicensing of the Niagara project would be approximately $495 million. This estimate does not include the value of the power allocations and operation and maintenance expenses associated with several habitat and recreational elements of the settlement agreements. As of December 31, 2020, the balance in the recorded liability associated with the Niagara relicensing on the statement of net position is $223 million ($19 million in current and $204 million in other noncurrent liabilities). As of December 31, 2019, the balance in the recorded liability associated with the Niagara relicensing on the statement of net position is $225 million ($18 million in current and $207 million in other noncurrent liabilities).

In addition to internally generated funds, the Authority issued additional debt obligations in October 2007 to fund, among other things, Niagara relicensing costs. The costs associated with the relicensing of the Niagara project, including the debt issued therefore, were incorporated into the cost-based rates of the project beginning in 2007.

New York State Office of Parks, Recreation and Historic Preservation

In 2005, the Authority executed the Relicensing Settlement Agreement Addressing New License Terms and Conditions ("Settlement Agreement") entered into by several parties to the relicensing of the Niagara Project, including The New York State Office of Parks, Recreation and Historic Preservation ("OPRHP"). The Settlement Agreement provides, among other things, for the establishment of a Relicensing Settlement Agreement State Parks Greenway Fund, which is to be funded by the Authority in the amount of $3 million per year to OPRHP for the term of the 50-year License. In 2012 and 2017, OPRHP requested that the Authority accelerate such payments by making two lump sum payments of approximately $25 million each to pay for authorized projects. In order to make the lump sum payments, the Authority issued (a) $25.2 million in subordinated notes in 2012 and (b) $25.2 million in subordinated notes in 2017. The proceeds of those subordinated note issuances were made available to OPRHP (see Note 6 "Long-Term Debt – Subordinate Debt" of notes to the financial statements).

(g) *St. Lawrence-FDR Relicensing – Local Task Force Agreement*

In 2003, FERC approved a Comprehensive Relicensing Settlement Agreement ("Relicensing Agreement") reached by the Authority and numerous parties and issued the Authority a new 50-year license for the St. Lawrence-FDR Project ("St. Lawrence-FDR License"). The St. Lawrence-FDR Power Project No. 2000 Relicensing Agreement ("LGTFSA") between the Authority and the Local Government Task Force ("LGTF") provided for a review of the LGTFSA every ten years to discuss issues not contemplated at the time of relicensing in 2003. The first such review commenced in December 2013. The Authority and the LGTF entered into an agreement in 2015 in which the Authority agreed to commit and the Trustees authorized up to $45.1 million over 10 years for certain actions, including to: (1) fund an economic development strategic marketing study (the "Marketing Study"); (2) temporarily reduce electricity costs for certain farms and businesses (the "Discount Program"); (3) initiate an energy efficiency and renewable energy program for the LGTF communities; and (4) enhance certain recreational facilities in the LGTF communities. In 2016, the Authority's Trustees approved a proposal to terminate the Discount Program early and repurpose funding to be used to support a collaborative marketing effort between the Authority and North Country communities through the St. Lawrence County Economic Development Study Advisory

Board created in connection with the Marketing Study at the rate of $2 million/year for five years ($10 million total) commencing in 2017.

In July 2017, the Authority's Trustees approved: (1) a new temporary business incentive program consisting of a monetary discount or rebate that would be payable to eligible private business applicants who agree to establish new business operations in certain North Country counties ("Business Incentive Discount Program"); and (2) the repurposing of funds previously approved for the marketing effort to include funding for the Business Incentive Discount Program. Funding repurposed for the marketing effort, including the Business Incentive Discount Program, would not exceed a total of $10 million. As of December 31, 2020, the Authority has spent approximately $30 million of the $45.1 million authorized by the Trustees for the purpose of implementing the commitments in the LGTF 10-Year Review Agreement.

(h) *Relicensing of Blenheim-Gilboa Pumped Storage Power Project*

On April 30, 2019, the Federal Energy Regulatory Commission issued a new 50-year operating license, effective May 1, 2019, to the Power Authority for the Blenheim-Gilboa Pumped Storage Power Project. In May 2019, the Power Authority's Trustees accepted the new license and approved the settlement package with state and federal resource agencies, the towns of Gilboa and Blenheim, and Schoharie County. The Trustees also authorized $37.1 million in capital expenditures for the period 2019-2069 for all compliance, implementation and settlement activities. The Authority has spent approximately $1.9 million through December 31, 2020. The Authority has established a Recreation Fund in the amount of $4 million (total commitment under the settlement package is $6 million) and an Ecological Fund in the amount of $2 million (total commitment under the settlement package is $3.5 million). As of December 31, 2020, the recorded a liability of the Blenheim-Gilboa Pumped Storage Power Project relicensing is approximately $21 million.

(i) *Construction Contracts and Net Operating Leases*

Estimated costs to be incurred on outstanding contracts in connection with the Authority's construction programs aggregated approximately $1.0 billion at December 31, 2020.

Noncancelable operating leases primarily include leases on real property (office and warehousing facilities and land) utilized in the Authority's operations. Rental expense for years ended December 31, 2020 and 2019 was $6.5 million and $5.6 million, respectively. Commitments under noncancelable operating leases are as follows:

	Total	2021	2022	2023	2024	2025	Thereafter
				(In millions)			
Operating leases	$ 7.6	1.8	1.7	1.5	1.1	0.6	0.9

(j) *Other Developments*

Marcy to New Scotland Upgrade Project

Authority executed a Memorandum of Understanding ("MOU") with North America Transmission ("NAT") to develop and submit proposals to the solicitation. The MOU provided that, if any of the Authority/NAT proposals are accepted, the Authority, at its sole discretion, may elect to purchase an ownership share in the project(s) or operate and maintain the project(s). In December 2016, the Authority's Trustees' approved funding in the amount of approximately $1 million for the Authority's share of expenses pursuant to the MOU.

In June 2018, the Authority and NAT entered into a Participation Agreement that supersedes the MOU, which granted the Authority the option to secure an ownership interest of up to 37.5% in the jointly proposed projects. In April 2019, the NYISO board selected the project proposed by LS Power Grid New York, LLC (formerly known as NAT) and the Authority for Segment A (also known as the Marcy to New Scotland Upgrade Project) to increase transfer capability from central to eastern New York.

The NYISO estimated the total cost of the Segment A project to be about $750 million (in 2018 dollars, including 30 percent contingency). In August 2019, LS Power and the Authority submitted an Article VII application to the PSC and the Authority filed a petition for incentive rate treatment with the Federal Energy Regulatory Commission ("FERC") pursuant to FERC's regulations Section 219 of the Federal Power Act. FERC granted the Authority's its requested incentive rates effective November 21, 2019 inclusive of a 9.45% return on equity. The Commission approved the Article VII Certificate and first EM&CP on January 21, 2021. Ultimately, the upgraded transmission lines and new substations as part of the Segment A project are expected to be energized as part of the New York electrical system by the end of 2023.

In January 2021, the Authority's Trustees approved a capital expenditure of approximately $208.3 million for Segment A. Prior to this the Trustees approved a total of $31 million in capital expenditures for the Project. In December 2019, the Authority's Trustees approved a capital commitment of $275 million for the Segment A project. As of December 31, 2020, the Authority has spent approximately $11.2 million.

In July 2020, the Trustees approved the Authority's request to exercise its 37.5% purchase option. LS Power transferred its project assets and assigned the participation agreement to LS Power Grid New York Corporation I (LS Corp.) on January 27, 2020. A development agreement relating to Segment A among the NYISO, LS Corp. and the Authority was executed on February 3, 2020, filed with FERC on March 4, 2020 and accepted for filing by FERC on April 16, 2020. The Authority expects its costs of the Segment A project to be recovered through FERC's cost-recovery mechanism outlined in the NYISO tariff.

BuildSmart NY Initiative

On December 28, 2012, the Governor of New York issued Executive Order No. 88 (EO88) directing state agencies collectively to reduce energy consumption in state-owned and managed buildings by 20 percent by April 2020– an initiative designed to produce significant savings for New York taxpayers, generate jobs, and significantly reduce greenhouse gas emissions. To meet this initiative, the Governor launched Build Smart NY, a plan to strategically implement EO88 by accelerating priority improvements in energy performance. The Authority has offered to provide low-cost financing for this initiative for state owned buildings. The Authority's costs of financing would be recovered from the energy efficiency customers in this program. In addition, as provided for in EO88, the Authority has established a central management and implementation team which designed implementation guidelines milestones and data collection and analysis systems to support the program. At the conclusion of EO88 on April 1, 2020, the Authority has in aggregate provided approximately $679 million in financing for the energy efficiency projects at State agencies and authorities covered by EO88.

BuildSmart 2025

Build Smart 2025 is New York State's program for aggressively pursuing energy efficiency savings in New York State owned and occupied buildings of 11 TBtu by December 31, 2025 while advancing economic growth, environmental protection, and energy security in New York State. Build Smart 2025 expands and continues the requirements of Build Smart NY to assist State entities in meeting statutory requirements established by the Climate Leadership and Community Protection Act (CLCPA), that "all state agencies shall assess and implement strategies to reduce their greenhouse gas emissions".

Clean Energy Standard

On August 1, 2016, the NYPSC issued an order establishing a Clean Energy Standard (the "CES Order") to implement the clean energy goals of the State Energy Plan. Pursuant to the CES Order, load serving entities identified in the order are required to purchase "Zero Emission Credits" ("ZECs") from the New York State Energy Research Development Authority ("NYSERDA") to support the preservation of existing at-risk zero emissions nuclear generation. The Authority is not subject to NYPSC jurisdiction for purposes of the CES Order but has assumed an obligation to purchase ZECs consistent with the terms of the CES Order and intends to seek recovery of such costs from the Authority's customers. On January 31, 2017, the Authority's Trustees authorized (a) participation in the NYPSC's ZEC program and (b) execution of an agreement with NYSERDA to purchase ZECs associated with the Authority's applicable share of energy sales. The Authority and NYSERDA executed an agreement covering a two-year period from April 1, 2017 to March 31, 2019 under which the Authority committed to purchase ZECs in a quantity based on its proportional load in the New York control area. The Authority and NYSERDA executed an additional agreement covering a nine-year period from April 1, 2020 to April 1, 2029 under which the Authority committed to purchase ZECs in a quantity based on its proportional load in the New York control area, subject to certain adjustments. As of December 31, 2020, the Authority estimates that it will incur ZEC purchase costs associated with participation in the ZEC program of approximately $320.6 million in aggregate over the 2021-2024 period, of which approximately $21.5 million is not expected to be recovered under customer contracts that predate the adoption of the CES Order. As of December 31, 2020, the Authority has paid $193.1 million in ZEC purchase costs.

AGILe

The Authority, in collaboration with the State utilities, NYSERDA and NYISO, has developed an advanced grid innovation lab for energy ("AGILe") to create new tools to better monitor, control, accommodate and respond to the evolving energy sector. Costs to the Authority are estimated at $20 million over the initial three-year period, which has been extended to five years, and are not expected to exceed $40 million through final build-out of the facility. Upon completion, operating and maintenance costs are expected to be shared among AGILe participants. On July 25, 2017, the Authority's Trustees authorized capital expenditures in the amount of $20 million for the initial phase of AGILe, which has since commenced. As of December 31, 2020, approximately $5.5 million has been spent.

Moses Adirondack Line

The Authority is moving forward with its plans to update a major section of the Moses Adirondack Line, one of the Authority's backbone transmission facilities. The project covers 78 miles of 230 kV transmission line from Massena to the Town of Croghan in Lewis County. In July 2017, the Authority received authorization under the NYISO tariff to include the costs of this project in its NYPA Transmission Adjustment Charge mechanism for cost recovery of the Authority's transmission system costs, which means that the costs will be allocated to all ratepayers in the State. The project includes the update of obsolete wood pole structures with higher, steel pole structures, as well as update of failing conductor with new conductor and insulation. The line will operate at its current 230 kV level, but the conductor and insulation design will accommodate future 345 kV operation. The Authority anticipates that the Moses Adirondack line will support the transmission of growing levels of renewable generation located in upstate New York and Canada, such as wind and hydroelectricity, and assist in meeting the State's renewable energy goals. The rebuilt line is also expected to enhance grid reliability by supporting the NYISO's black start plan. On September 21, 2018, the Public Service Commission (PSC) determined that the Authority's April 2018 Article VII application was complete. The PSC granted the Certificate of Compatibility and Public Need for the project on November 14, 2019, approving the Joint Proposal. On February 6, 2020, the PSC issued an order approving Part One of the Environmental Management and Construction Plan, and construction started on Part One in March 2020. Additionally, the Authority has received its Nationwide Permit from the U.S. Army Corps of Engineers and the New York State Department of Public Service has issued a Notice to

Proceed. Part Two of the Environmental Management & Construction Plan was approved in July 2020, with construction beginning immediately after the approval in July 2020. Part Three of the Environmental Management and Construction Plan was approved in September 2020 with construction beginning in October 2020. The remaining approvals will follow through the end of this year and construction will begin in 2021. Part Four of the Environmental Management and Construction Plan was approved in December 2020 with construction to begin in April 2021. The Authority estimates a project cost of $484 million through project completion in 2023. As of December 31, 2020, the Authority has spent approximately $124 million on Moses Adirondack project, which commenced in 2020.

Niagara Parkway Redevelopment

The State plans to replace an underutilized two-mile stretch of the Robert Moses Parkway North in Niagara Falls with open space, scenic overlooks and recreational trails. Construction commenced in 2018 and is expected to take approximately three years to complete with funding to be provided by the Authority. As of December 31, 2020, the Authority has approved up to $46.3 million in funding. As of December 31, 2020, the Authority has disbursed approximately $38.8 million.

Electric Vehicle Acceleration Initiative

In 2018, the Authority's Trustees approved an overall allocation of up to $250 million to be used through 2025 for an electric vehicle acceleration initiative and authorized $40 million for the first phase of the initiative. The Authority will own and operate a charging network of 800 DC fast chargers across the State, with 25 fast chargers in operation in 2020. As of Dec 31, 2020, approximately $8.2 million has been spent.

(14) Canal Corporation

The Canal Transfer Legislation enacted April 4, 2016, authorized, but does not require, the Authority, to the extent that the Authority's Trustees deem it feasible and advisable as required by the Resolution, to transfer moneys, property and personnel to the Canal Corporation.

The Canal Corporation operates at a loss and is expected to require substantial operating and maintenance support and capital investment. The Canal Corporation's expenses are expected to be funded by transfers of funds from the Authority. Any transfer of funds would be subject to approval by the Authority's Board of Trustees and compliance with the Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented. Certain expenses eligible for reimbursement are expected to be reimbursed to the Authority by moneys held in the Canal Development Fund maintained by the State Comptroller and the Commissioner of Taxation and Finance. For the year ended December 31, 2020, the Canal Corporation recognized $1.8 million in revenues, $83 million in operations and maintenance expenses and $27 million in depreciation expense. For the year ended December 31, 2019, the Canal Corporation recognized $2 million in revenues, $86 million in operations and maintenance expenses and $25 million in depreciation expense.

(15) Impact of COVID-19 Pandemic

In March 2020, the World Health Organization declared the novel strain of the coronavirus (COVID-19) a global pandemic and recommended containment and mitigation measures worldwide. As COVID-19 accelerated throughout New York State the Authority paused all non-essential efforts temporarily and focused on maintaining core operations, keeping its workforce safe and preserving cash. As the year progressed and safety precautions implemented, the Authority methodically un-paused in field construction efforts. Significant construction was able to continue on many of the Authority's major capital projects.

To support the resiliency of the generation and transmission facilities of the Authority for the people of the State and power system generally, the Authority has entered into mutual aid agreements with other utility providers in the State and in Canada and is offering assistance to such other utilities through the exchange of employees as well as the sharing of expertise, equipment and materials. These agreements are currently expected to remain in effect through September 2021.

Because of the evolving nature of the outbreak and federal, state and local responses thereto, the Authority cannot predict the extent or duration of the outbreak or what impact it may have on the Authority's financial condition or operations. There can be no assurances that the spread of the Coronavirus and COVID-19 or other highly contagious or epidemic diseases will not have an adverse impact on the Authority's, financial position, results of operations, supply chains and customers. The effects of the pandemic on the Authority's financial performance or operations could be material.

As of December 31, 2020, the Authority incurred costs totaling $30 million in response to the pandemic ranging from critical employee sequestration and sanitization/cleaning supplies to facility protective measures and equipment for a remote workforce. Per the current federal and state regulations it is anticipated that the Authority is eligible for a total reimbursement of approximately $10 million.

REQUIRED SUPPLEMENTARY INFORMATION
(UNAUDITED)

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Changes in the New York Power Authority's Net OPEB Liability and Related Ratios

($ in millions, expect percentages)

	2020	2019	2018
Total OPEB liability			
Service cost	$ 13	$ 15	$ 13
Interest	37	40	37
Change of benefit terms	–	–	–
Differences between expected and actual experience	–	–	–
Change of assumptions	–	–	–
Benefit payments	(25)	(25)	(25)
Net change in total OPEB liability	25	30	25
Total OPEB liability - beginning	517	560	535
Total OPEB liability – ending	$ 542	$ 590	$ 560
Plan fiduciary net position			
Contributions – employer	25	25	25
Net investment income	46	123	(36)
Benefit payments	(25)	(25)	(25)
Administrative expense	(4)	(2)	(2)
Net change in plan fiduciary net position	42	121	(38)
Plan fiduciary net position – beginning	686	565	603
Plan fiduciary net position - ending	$ 728	$ 686	$ 565
Net OPEB liability / (asset) - ending	$ (186)	$ (96)	$ (5)
Plan fiduciary net position as a percentage of the total OPEB liability	134%	116%	101%
Covered-employee payroll	$ 199	$ 188	$ 182
Total OPEB liability as a percentage of covered-employee payroll	272%	314%	307%
Net OPEB liability / (asset) as a percentage of covered-employee payroll	(93)%	(51)%	(3)%

Notes to schedule:

The amounts presented for 2020 were determined based on a no gain loss roll-forward of the Power Authority OPEB Plan's December 31, 2019 biennial actuarial valuation.

This schedule is intended to present 10 years of data. Additional years will be presented prospectively.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of the New York Power Authority's OPEB Contributions

($ in millions, expect percentages)

Year Ending December 31,	(a) Contractually / Actuarially determined contribution	(b) Contributions made	Contribution deficiency / (excess)	(c) Covered employee payroll	Contributions as a percent of covered employee payroll column (b ÷ c)
2020	$ 25	$ 25	$ –	$ 199	13%
2019	25	25	–	193	13%
2018	25	25	–	182	14%
2017	40	22	18	166	13%
2016	39	24	15	161	15%
2015	38	38	–	149	25%
2014	33	39	(1)	145	27%
2013	41	42	(1)	147	29%
2012	41	41	–	143	29%
2011	35	60	(25)	144	42%

Notes to schedule:

Contributions: The Power Authority made contributions on a pay as you go basis in 2020 and 2019 and did not contribute any amount beyond the contractually / actuarially required amounts.

Valuation date: 12/31/2019

Methods and assumptions used to determine contributions:

Actuarial cost method: Entry Age Normal, Level Percent of Salary

Amortization period: Five-year period for differences between the expected earnings on plan investments and actual returns. Differences in assumptions and experience from expected are recognized over the average remaining service lives of all participants in the plan.

Asset Valuation: Market Value

Per Capita Claims: Developed using 2020 projected funding rates using NYPA claims experience from January 1, 2018 through December 31, 2019.

Salary increases: Varies by service, 8.0 percent for first year of service, 4.5 percent for 5 years of service, 3.8 percent for 10 years of service, 3.3 percent for 15 years of service, and 3.0 percent for 20 years or more of service.

Participation rates: Assumed 100% of future retirees who meet the eligibility requirements will participate in the OPEB plan.

Discount rate: 7.0%

Mortality: The General Pub-2010 headcount weighted tables were used for active employees and healthy retirees and dependents, while the corresponding Contingent Survivor mortality tables were used for current surviving spouses and the corresponding Disabled Retiree mortality tables were used for disabled participants. To project mortality improvement for years after 2010, the MP-2019 Projection Scale is applied on a fully- generational basis to the base rates.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Investment Returns for the New York Power Authority OPEB Trust

Schedule of Investment Returns

Year Ending December 31,	Annual money-weighted rate of return, net of investment expense
2020	6.53%
2019	21.40%
2018	(6.30)%
2017	16.70%
2016	7.00%
2015	0.41%
2014	3.99%
2013	20.41%
2012	12.57%
2011	1.43%

Note:

This schedule is intended to present 10 years of data.

Average rate of return over ten-year period was 8.1%.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedule of Changes in the Canal Corporation's Total OPEB Liability and Related Ratios

($ in millions, expect percentages)

	2020	2019	2018
Total OPEB liability			
Service cost	$ 8	$ 9	$ 7
Interest	8	7	8
Change of benefit terms	–	–	–
Differences between expected and actual experience	(8)	–	–
Change of assumptions	(30)	(18)	20
Benefit payments	(6)	(6)	(6)
Net change in total OPEB liability	(28)	(8)	29
Total OPEB liability - beginning	226	234	205
Total OPEB liability – ending	$ 198	$ 226	$ 234
Total OPEB liability - ending	$ 198	$ 226	$ 234
Covered-employee payroll	$ 27	$ 25	$ 24
Total OPEB liability as a percentage of covered-employee payroll	730%	904%	975%

Notes to Schedule:

- Changes of assumptions reflect the effect of the Further Consolidated Appropriations Act, which was signed on December 20, 2019, repealed the Cadillac Tax. As a result of this, the tax was no longer considered in the liabilities presented herein. This resulted in a decrease in liabilities.
- The per capita cost assumptions for the Empire Plan were updated to reflect claims experience through 2019. The EGWP subsidy assumption and HMO plans' cost assumptions were updated based on the report Development of Recommended Actuarial Assumptions for Other Post Employment Benefit Plans Actuarial Valuations – Participating Employer Version for New York State/SUNY produced by Aon in June of 2019. In addition, premiums were updated for the 2020 calendar year. These updates resulted in a decrease in liabilities.
- The mortality assumptions were updated to the Pub-2010 Public Retirement Plans Mortality Tables, projected forward on a fully-generational basis with the MP-2019 Mortality Improvement Scale in order to reflect the data published by the Society of Actuaries (SOA) in 2019. The prior valuation used gender distinct pre- and post-commencement rates based on experience under the NYSLRS (New York State and Local Retirement System). This update resulted in a decrease in liabilities.
- The discount rate at the measurement date used to calculate the total OPEB liability is 3.26%. The discount rate is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2019. Benefit payments are funded on a pay-as-you go basis. The discount rate at the previous measurement date is 3.64% based on the S&P Municipal Bond 20 Year High Grade Rate Index as of December 31, 2018.

New York Power Authority

Required Supplementary Information

(Unaudited)

Schedules Relating to the Employees' Retirement System Pension Plan

($ in millions, expect percentages)

Schedule of Proportionate Share of the Net Pension Liability

As of March 31,	Proportion of the Net Pension Liability (Asset) Percentage	Proportionate Share of the Net Pension Liability (Asset)	Covered Employee Payroll	Proportionate Share of the Net Pension Liability (Asset) as a percentage of Covered Payroll	Plan Fiduciary Net Position as a percentage of the Total Pension Liability
2020	0.77%	$ 203	$ 219	92.8%	86.4%
2019	0.76	53	214	25.0	96.3
2018	0.72	23	205	11.3	98.2
2017	0.72	67	193	35.0	94.7
2016	0.60	96	166	57.4	90.7
2015	0.59	20	150	13.3	97.9
2014	0.60	27	148	18.2	97.2

Schedule of Contributions

Year Ending December 31,	Actuarially Required Contribution	Actual Contribution	Contribution (Excess) Deficiency	Covered Employee Payroll	Contribution as a Percentage of Covered Payroll
2020	$30	$30	$–	$219	14%
2019	29	29	–	214	14
2018	28	28	–	205	14
2017	28	28	–	193	14
2016	24	24	–	166	15
2015	25	25	–	150	17
2014	28	28	–	148	19
2013	29	29	–	146	20
2012	27	27	–	146	19
2011	21	21	–	141	15

KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

Board of Trustees
Power Authority of the State of New York:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the consolidated financial statements of the business-type activities and fiduciary funds of the Power Authority of the State of New York (the Authority) and its blended component unit, as of December 31, 2020 and 2019, and the related notes to the consolidated financial statements, which collectively comprise the Authority's consolidated financial statements as listed in the table of contents, and have issued our report thereon dated March 31, 2021.

Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements, we considered the Authority's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the consolidated financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the consolidated financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

New York, New York
March 31, 2021

Appendix 13

Invenergy audited financial statements and annual reports

REDACTED

Appendix 14

Permitting Plan figures and maps

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Appendix 15

National Historic Landmarks and NRHP-Listed Sites

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Appendix 16

Air quality dispersion modeling analysis

Clean Power New York

Air Quality Technical Report

Prepared by AKRF, Inc

May, 2021

A. INTRODUCTION

The potential for air quality improvements associated with the Proposed Clean Power New York (CPNY) Project to be located within disadvantaged communities is examined in this technical report. Air quality impacts can be either direct or indirect. Direct impacts result from emissions generated by stationary sources at a development site, such as emissions from on-site fuel combustion for heat and hot water systems. Indirect impacts are caused by off-site emissions associated with a project such as emissions from nearby existing stationary sources or by emissions from on-road vehicle trips generated by the Proposed CPNY Project or other changes to future traffic conditions due to a project. The Proposed CPNY Project would involve the addition of new renewable energy sources that would replace fossil-fuel powered systems and would result in reduced emissions across New York State. The Proposed CPNY Project is not expected to significantly alter traffic conditions. Therefore, a quantified analysis is only performed for the stationary generation sources.

PRINCIPCAL CONCLUSIONS

Overall, approximately 57 percent of the emission reduction would occur within New York City (Zone J). With an additional 15 percent within Long Island (Zone K), 10 percent within the Hudson Valley (Zone G), and 10 percent within the Captial (Zone F). Therefore, most of the benefits from reduced emissions of NO_x, SO_2, and PM would be directly impact communities in these areas within the vicinity of the impacted electricity generating facilities.

Concentrations were predicted at locations across the City and found that extent and magnitude of the concentration reductions would result in approximately 53 percent of short-term reduction occurring within disadvantaged communities and annual reductions. The most significant reductions would occur within Northwest Queens, Southwest Bronx, and West Central Queens. Subsequently, approximately 30 percent of air quality benefits are anticipated to directly impact disadvantaged communities within New York City.

Concentration decreases would extend up to 4 miles from facilities, with the most significant reduction in concentrations occurring within 2 miles from the facility. Disadvantaged communities adjacent to electricity generating facilities within Long Island and Hudson Valley would also be directly impacts by reduced concentrations of pollutants. Subsequently, an additional 6, 6, and 5 percent of air quality benefits are anticipated to directly impact disadvantaged communities within Long Island, Hudson Valley, and the Capital areas, respectively.

Furthermore, many disadvantaged communities in New York City are located within a coastal floodplain, including the coastal communities of the Bronx, portions of Northwest Queens, Northwest Brooklyn, South Brooklyn, and North Staten Island. While the analysis did not quantify the portion of the climate change benefits that would indirectly impact disadvantaged communities, a significant portion of the benefits associated with reduced GHG emissions would result in indirect benefits to these communities with lessened impacts from global climate change. Therefore, the Proposed Project is anticipated to exceed New York State's goal of disadvantaged communities receiving 40 percent of the benefits associated with the reduced emissions of NO_x, SO_2, and PM.

B. PROJECT DESCRIPTION

Operation of the Proposed CPNY Project would increase the share of renewable energy sources within New York City from upstate renewable generation facilities. As described in the discussion of reduced emissions, the additional renewable energy availability would allow for the reduction of fossil-fuel consumption at generation facilities that serve the New York City Metropolitan Area. Subsequently, emissions associated with the generation of electricity at these facilities would be reduced and would result in an overall reduction of emissions. An assessment of the reduced demand for electrical generation was performed and found that the Proposed CPNY Project would result in an average reduction of 4.6 TWh in electricity generation per year (see **Table 1**) that would be generated through fossil-fuel combustion—approximately 2.6 TWh from the introduction of new renewable generation sources across the state and 2.0 TWh from the operation of a high voltage direct current transmission line to bring renewable energy into New York City. Additionally, reductions in annual emissions were estimated for carbon dioxide (CO_2), oxides of nitrogen (NO_x), and sulfur dioxide (SO_2).

Table 1
Summary of Annual Emissions

	2025	2030	2035	*Average*
Baseline				
Power (TWh)	46.4	22.5	15.4	*N/A*
CO_2 (million ton)	25.4	11.7	7.9	*N/A*
NO_x (ton)	17,340	7,984	5,428	*N/A*
SO_2 (ton)	125	57	38	*N/A*
$PM_{2.5}$ (ton)	1,598	736	500	*N/A*
Proposed CPNY Project				
Power (TWh)	39.9	18.0	12.5	*N/A*
CO_2 (million ton)	21.5	9.3	6.4	*N/A*
NO_x (ton)	14,714	6,385	4,363	*N/A*
SO_2 (ton)	106	45	30	*N/A*
$PM_{2.5}$ (ton)	1,356	589	402	*N/A*
Increment				
Power (TWh)	-6.5 (-14%)	-4.4 (-20%)	-2.9 (-19%)	*-4.6*
CO_2 (million ton)	-3.8 (-15%)	-2.3 (-20%)	-1.6 (-20%)	*-2.6*
NO_x (ton)	-2,625 (-15%)	-1,602 (-20%)	-1,065 (-20%)	*-1,764*
SO_2 (ton)	-19 (-15%)	-13 (-22%)	-8 (-20%)	*-13*
$PM_{2.5}$ (ton)	-241 (-15%)	-148 (-20%)	-98 (-20%)	*-162*

Note: Totals may not sum due to rounding.
N/A – Not applicable.
Source: PowerGEM

C. POLLUTANTS FOR ANALYSIS

Air quality is affected by air pollutants produced by both motor vehicles and stationary sources. Emissions from motor vehicles are referred to as mobile source emissions, while emissions from fixed facilities are referred to as stationary source emissions. Ambient concentrations of CO are predominantly influenced by mobile source emissions. PM, volatile organic compounds (VOCs), and nitrogen oxides (nitric oxide [NO] and NO_2, collectively referred to as NO_x) are emitted from both mobile and stationary sources. Fine PM is also formed when emissions of NO_x, sulfur oxides (SO_x), ammonia, organic compounds, and other gases react or condense in the atmosphere. Emissions of sulfur dioxide (SO_2) are associated mainly with stationary sources, and some sources utilizing non-road diesel such as large international marine engines. On-road diesel vehicles currently contribute very little to SO_2 emissions since the sulfur content of on-road diesel fuel, which is federally regulated, is extremely low. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and VOCs. Ambient concentrations of CO, PM, NO_2, SO_2, ozone, and lead are regulated by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act (CAA), and are referred to as criteria pollutants; emissions of VOCs, NO_x, and other precursors to criteria pollutants from certain source categories are also regulated by EPA.

NITROGEN OXIDES, VOCS, AND OZONE

NO_x are of principal concern because of their role, together with VOCs, as precursors in the formation of ozone. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow, and occur as the pollutants are advected downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of NO_x and VOC emissions from all sources are therefore generally examined on a regional basis

In addition to being a precursor to the formation of ozone, one component of NO_x, nitrogen dioxide (NO_2), has been identified as significant endangerment to public health. According to the U.S. Environmental Protection Agency (EPA), current scientific evidence links short-term NO_2 exposures (ranging from 30 minutes to 24 hours) with adverse respiratory effects, which is of particular concern for “susceptible individuals,” including people with asthma, children, and the elderly. EPA states that the highest concentrations of outdoor NO_2 are found in large urban regions, such as the Northeast corridor, Chicago, and Los Angeles, with levels highest near heavily travelled roadways.[1]

SULFUR DIOXIDE

SO_2 emissions are primarily associated with the combustion of sulfur-containing fuels (oil and coal). SO_2 is also of concern as a precursor in the formation of particulate matter (PM) pollution. Similar to NO_2, EPA has found current scientific evidence links short-term SO_2 exposures with adverse respiratory effects, which is of particular concern for “susceptible individuals,” including people with asthma, children, and the elderly. In addition to impacting human health, EPA has found that at high concentrations, SO_2 may result in damage and decreased growth in trees and plants.

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[1] U.S. EPA. Risk and Exposure Assessment to Support the Review of the NO_2 Primary National Ambient Air Quality Standard. EPA-452/R-08-008a, November 2008, p. 15.

RESPIRABLE PARTICULATE MATTER—PM_{10} AND $PM_{2.5}$

PM is a broad class of air pollutants that includes discrete particles of a wide range of sizes and chemical compositions, as either liquid droplets (aerosols) or solids suspended in the atmosphere. The constituents of PM are both numerous and varied, and they are emitted from a wide variety of sources (both natural and anthropogenic). Natural sources include the condensed and reacted forms of naturally occurring VOCs; salt particles resulting from the evaporation of sea spray; wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and material from live and decaying plant and animal life; particles eroded from beaches, soil, and rock; and particles emitted from volcanic and geothermal eruptions and from forest fires. Naturally occurring PM is generally greater than 2.5 micrometers in diameter. Major anthropogenic sources include the combustion of fossil fuels (e.g., vehicular exhaust, power generation, boilers, engines, and home heating), chemical and manufacturing processes, all types of construction, agricultural activities, as well as wood-burning stoves and fireplaces. PM also acts as a substrate for the adsorption (accumulation of gases, liquids, or solutes on the surface of a solid or liquid) of other pollutants, often toxic, and some likely carcinogenic compounds.

As described below, PM is regulated in two size categories: particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$) and particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}, which includes $PM_{2.5}$). $PM_{2.5}$ has the ability to reach the lower regions of the respiratory tract, delivering with it other compounds that adsorb to the surfaces of the particles, and is also extremely persistent in the atmosphere. $PM_{2.5}$ is mainly derived from combustion material that has volatilized and then condensed to form primary PM (often soon after the release from a source) or from precursor gases reacting in the atmosphere to form secondary PM.

GREENHOUSE GASES

Greenhouse gases (GHGs) are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. The general warming of the Earth's atmosphere caused by this phenomenon is known as the "greenhouse effect." Water vapor, carbon dioxide (CO_2), nitrous oxide (N_2O), methane, and ozone are the primary GHGs in the Earth's atmosphere.

CO_2 is the primary pollutant of concern from anthropogenic sources. Although not the GHG with the strongest effect per molecule, CO_2 is by far the most abundant and, therefore, the most influential GHG. CO_2 is emitted from any combustion process (both natural and anthropogenic); from some industrial processes such as the manufacture of cement, mineral production, metal production, and the use of petroleum-based products; from volcanic eruptions; and from the decay of organic matter. CO_2 is removed ("sequestered") from the lower atmosphere by natural processes such as photosynthesis and uptake by the oceans. CO_2 is included in any analysis of GHG emissions.

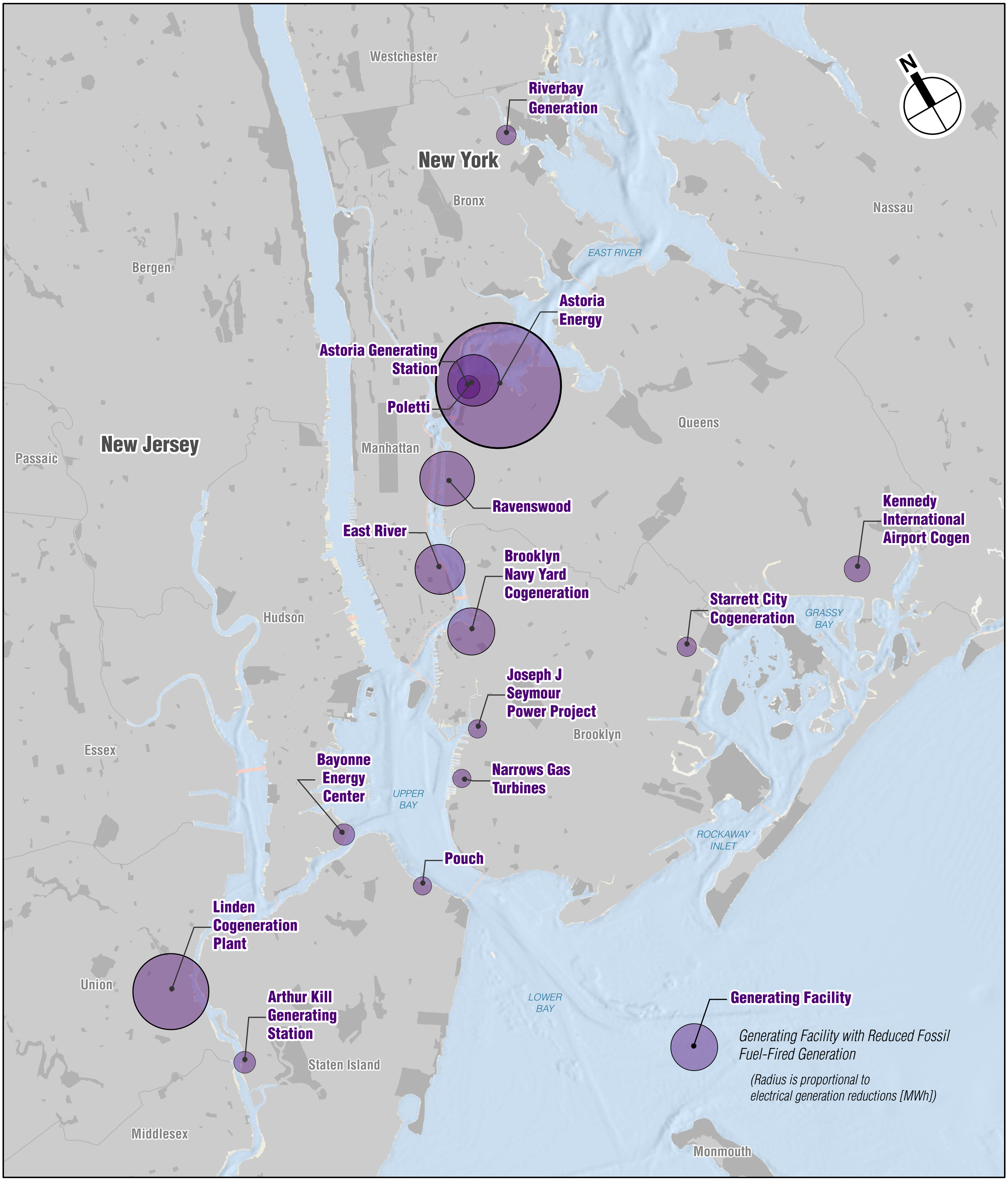
Methane and N_2O also play an important role since the removal processes for these compounds are limited and because they have a relatively high impact on global climate change as compared with an equal quantity of CO_2. While emissions of methane and N_2O were not estimated directly, they are not anticipated to be significant contributions to annual GHG emissions.

D. METHODOLOGY

POLLUTANT EMISSIONS

Daily emissions of NO_x, SO_2, and CO_2 were developed for approximately 170 fossil-fuel generation resources across New York State associated with the reduction in electricity generation per year. Emissions were based on refined modeling of the electric power market to project when facilities would be required to run fossil-fuel equipment in order to meet the State's power demand. Three scenarios were considered: 1) the baseline scenario where none of the renewable generation projects within the Proposed CPNY Project's portfolio would be implements; 2) the generation scenario where the renewable generation projects would be in operation, but the high-voltage transmission line would not be constructed; and 3) the full Proposed CPNY Project with the portfolio of renewable generation sources and the high voltage transmission line in operation.

Both components of the Proposed CPNY Project would result in decreased statewide emissions, the associated decreases would be distributed differently among the regions of New York State. While only 41percent of emission reductions associated with the introduction of renewable generation projects would occur within New York City, up to 77 of the emission reductions would occur in New York City associated transmissions of renewable energy into the City. Overall, approximately 57 percent of the emission reduction would occur within New York City (see **Figure 1**). With an additional 15 percent within Long Island, 10 percent within the Hudson Valley, and 10 percent within the Captial region. Therefore, most of the benefits from reduced emissions of NO_x, SO_2, and PM would be directly impact communities in these areas within the vicinity of the impacted electricity generating facilities. The average projected decreased emissions of NO_x within each zone are presented in **Table 2**.



Facility	MWh
Arthur Kill Generating Station	-26369.794667
Astoria Energy	-815860.664733
Astoria Generating Station	-35465.853533
Bayonne Energy Center	-23959.300167
Brooklyn Navy Yard Cogeneration	-220090.819433
East River	-241795.599267
Joseph J Seymour Power Project	74.550133
Kennedy International Airport Cogen	-58826.5043

Facility	MWh
Linden Cogeneration Plant	-440195.877367
Narrows Gas Turbines	45.5389
Poletti	-253233.200033
Pouch	-578.8318
Ravenswood	-277458.338333
Riverbay Generation	-10805.263267
Starrett City Cogeneration	-8461.363233

Zone J Point Sources

Table 2
Decresaed Annual Emissions of NO_x (tons)
(Compared to Baseline Emissions)

	2025	2030	2035	*Average*
Renewable Generation				
Zone A (West)	-232	-68	-28	*-109*
Zone B (Genesee)	-93	-33	-12	*-46*
Zone C (Central)	-273	-64	-41	*-126*
Zone D (North)	0	0	0	*0*
Zone E (Mohawk Valley)	-15	-5	-3	*-8*
Zone F (Capital)	-225	-85	-38	*-116*
Zone G (Hudson Valley)	-183	-56	-48	*-86*
Zone H (Millwood)	0	0	0	*0*
Zone I (Dunwoodie)	0	0	0	*0*
Zone J (NYC)	-602	-351	-235	*-396*
Zone K (Long Island)	-191	-30	-3	*-75*
Transmission				
Zone A (West)	+99	+42	+20	*+54*
Zone B (Genesee)	+33	+18	+6	*+19*
Zone C (Central)	+114	+36	+42	*+64*
Zone D (North)	0	0	0	*0*
Zone E (Mohawk Valley)	+5	+3	+1	*+3*
Zone F (Capital)	-27	-56	-83	*-55*
Zone G (Hudson Valley)	-66	-113	-66	*-82*
Zone H (Millwood)	0	0	0	*0*
Zone I (Dunwoodie)	0	0	0	*0*
Zone J (NYC)	-701	-667	-461	*-610*
Zone K (Long Island)	-271	-173	-117	*-187*
Full				
Zone A (West)	-133	-26	-8	*-55*
Zone B (Genesee)	-60	-15	-5	*-27*
Zone C (Central)	-159	-28	+1	*-62*
Zone D (North)	0	0	0	*0*
Zone E (Mohawk Valley)	-10	-2	-2	*-4*
Zone F (Capital)	-252	-141	-121	*-172*
Zone G (Hudson Valley)	-249	-169	-114	*-177*
Zone H (Millwood)	0	0	0	*0*
Zone I (Dunwoodie)	0	0	0	*0*
Zone J (NYC)	-1,303	-1,018	-696	*-1,006*
Zone K (Long Island)	-462	-203	-120	*-262*

Note: Totals may not sum due to rounding.
N/A – Not applicable.
Source: PowerGEM

The modeling was performed for the analysis years 2025, 2030, and 2035. The 2025 analysis year was selected for air quality modeling.

PARTICULATE MATTER

While reduced emissions of PM were not directly projected, the results of the regional emissions model were used to project emissions of PM. Modeled CO_2 emissions were used to estimated daily natural gas consumed based on the EPA emission factor of 54.44 gram per cubic foot of natural gas.[2] PM emissions were then estimated based emission factors specific to each resource type (i.e. gas turbine, steam boiler, etc) obtained from the EPA *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources*. PM emissions included both the filterable and condensable fractions.

Table 3
Decresaed Annual Emissions of Particulate Matter (tons)
(Compared to Baseline Emissions)

	2025	2030	2035	*Average*
Renewable Generation				
Zone A (West)	-21	-6	-3	*-10*
Zone B (Genesee)	-9	-3	-1	*-4*
Zone C (Central)	-25	-6	-4	*-12*
Zone D (North)	0	0	0	*0*
Zone E (Mohawk Valley)	-1	0	0	*-1*
Zone F (Capital)	-21	-8	-3	*-11*
Zone G (Hudson Valley)	-17	-5	-4	*-9*
Zone H (Millwood)	0	0	0	*0*
Zone I (Dunwoodie)	0	0	0	*0*
Zone J (NYC)	-55	-32	-22	*-36*
Zone K (Long Island)	-18	-3	0	*-7*
Transmission				
Zone A (West)	+9	+4	+2	*+5*
Zone B (Genesee)	+3	+2	+1	*+2*
Zone C (Central)	+11	+3	+4	*+6*
Zone D (North)	0	0	0	*0*
Zone E (Mohawk Valley)	0	0	0	*0*
Zone F (Capital)	-3	-5	-8	*-5*
Zone G (Hudson Valley)	-6	-10	-6	*-8*
Zone H (Millwood)	0	0	0	*0*
Zone I (Dunwoodie)	0	0	0	*0*
Zone J (NYC)	-64	-61	-42	*-56*
Zone K (Long Island)	-25	-16	-11	*-17*
Full				
Zone A (West)	-12	-2	-1	*-5*
Zone B (Genesee)	-6	-1	0	*-2*
Zone C (Central)	-15	-3	0	*-6*
Zone D (North)	0	0	0	*0*
Zone E (Mohawk Valley)	-1	0	0	*-1*
Zone F (Capital)	-23	-13	-11	*-16*
Zone G (Hudson Valley)	-23	-16	-11	*-16*
Zone H (Millwood)	0	0	0	*0*
Zone I (Dunwoodie)	0	0	0	*0*
Zone J (NYC)	-119	-93	-64	*-92*
Zone K (Long Island)	-43	-19	-11	*-24*
Note: Totals may not sum due to rounding.				

[2] EPA. *Emission Factors for Greenhouse Gas Inventories*. 1 April 2021.

Subsequently, PM emissions would be reduced by approximately 162 tons per year. Furthermore, more than half of emission reductions would occur in New York City—over 92 tons of PM emissions annuals—as well as other densely populated areas of New York State. Recent studies have found evidence that immediate health benefits may be realized for any level of reduction in PM concentrations—resulting in improved quality of life and reduced healthcare costs. Therefore, a significant portion of New York State's population would benefit directly from the construction and operation of the CPNY project. The average estimated decreased emissions of PM within each zone are presented in **Table 3**.

NEW YORK CITY GENERATION SOURCES – DISPERSION MODELING

In order to assess the potential decreased concentrations within New York City, the generation sources were modeled for a dispersion analysis. Air pollutant dispersion models mathematically simulate how exhaust plumes, meteorology, and physical configuration combine to affect pollutant concentrations. The mathematical expressions and formulations contained in the various models attempt to describe an extremely complex physical phenomenon as closely as possible. However, because all models contain simplifications and approximations of actual conditions and interactions, and since it is necessary to predict the reasonable worst-case condition, most dispersion analyses predict conservatively high concentrations of pollutants, particularly under adverse meteorological conditions.

The representative modeling employs models approved by EPA that have been used for evaluating air quality impacts of projects in New York City, other parts of New York State, and throughout the country. Since the analysis was performed to assess the portion of air quality benefits that would directly impact disadvantaged communities, the location and relative intensity of projected concentration decreases were used without the inclusion of background concentrations or chemical transformation of NO_x.

MODELING LOCATIONS

Based on emissions modeling, generation sources located within New York City with projected decreases in fossil fuel-power generation were divided into five modeling locations. The modeling location and modeled generation sources are presented in **Table 4**.

Table 4
Modeled Analysis Locations

Location	Modeled Location	Generation Sources
1	Northwestern Queens-Southern Bronx	Astoria Energy I & II
		Astoria Generating Station
		Poletti
		Ravenswood
2	Lower Manhattan-Northwestern Brooklyn	Brooklyn Navy Yard Cogeneration
		East River Generation Station
		North 1st Terminal
3	Southern Brooklyn	Kennedy Airport Terminal Cogeneration
		Starret City Cogeneration Facility
4	Northeastern Staten Island	Bayonne Energy Center
		Pouch Terminal
5	Eastern Bronx	Riverbay Generation Facility

DISPERSION MODEL FOR MICROSCALE ANALYSES

The NO_2 concentrations due to vehicular emissions adjacent to the analysis sites were predicted using the American Meteorological Society/Environmental Protection Agency Regulated Model (AERMOD) Version 19191.[3] AERMOD is a state-of-the-art dispersion model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain, including updated treatments of the boundary layer theory, understanding of turbulence and dispersion, and includes handling of terrain interactions. AERMOD has been a recommended model for air quality analyses for several years and EPA mandated its use for transportation conformity purposes after a three-year transition period.[4]

The 1-hour average NO_2 concentrations were conservative estimated assuming full conversion of NO_x to NO_2.

EMISSION RATES AND STACK PARAMETERS

Hourly emission rates were developed from the projected daily used to estimate hourly emission rates from each modeled roadway segment and predict traffic-related air pollutant concentrations at receptor locations. The exhaust release height, exhaust velocity, estimated stack diameter, and exhaust temperature were taken consistent with NYSDEC permit information as well as previous modeling performed for the generation.

The exhaust stack parameters used in the modeling analysis are presented in **Table 5**.

METEOROLOGY

In general, the transport and concentration of pollutants from stationary sources are influenced by three principal meteorological factors: wind direction, wind speed, and atmospheric stability. Wind direction influences the direction in which pollutants are dispersed, and atmospheric stability accounts for the effects of vertical mixing in the atmosphere. These factors, therefore, influence the concentration at a particular prediction location (receptor).

The AERMOD model includes the modeling of hourly concentrations based on hourly traffic data and five years of monitored hourly meteorological data. The data consists of surface data collected at LaGuardia Airport and upper air data collected at Brookhaven, New York for the Northwestern Queens-Southern Bronx and the Eastern Bronx modeling locations. Similarly, the Lower Manhattan, Northwestern Brooklyn, Northeastern Staten Island, and Southern Brooklyn modeling locations used data that consists of surface data collected at John F Kennedy Airport and upper air data collected at Brookhaven, New York. All meteorologic data represented the period 2016–2020. All hours were modeled, and the highest predicted concentration for each averaging period is presented.

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[3] EPA. *User's Guide for the AMS/EPA Regulatory Model (AERMOD)*. Office of Air Quality Planning and Standards. EPA-454/B-19-027. Research Triangle Park, North Carolina. August 2019.

[4] EPA. Revisions to the Guideline on Air Quality Models: Final rule. Federal Register, Vol. 82, No. 10, January 2017.

RECEPTOR PLACEMENT

Ground-level receptor grids were placed at each modeling location to determine the regional impact to pollutant concentrations within each area. Receptor grids would range in size from 5 km by 5 km to 11km by 11km, and would use a receptor spacing of 100 m.

Table 5
Modeled Stack Parameters

Modeling Location	Facility	Resource Unit	Stack Height (m)	Stack Diameter (m)	Exhaust Velocity (m/s)	Exhaust Temperature (K)
Northwestern Queens-Southern Bronx	Astoria Energy	Astoria Energy I	82.0	11.28	22.47	438.0
		Astoria Energy II	82.0	11.28	22.47	438.0
	Astoria Generating Station	Astoria Generating Station 2	91.1	4.17	21.64	405.4
		Astoria Generating Station 3	91.1	3.02	21.64	405.4
		Astoria Generating Station ST5	91.1	3.02	21.95	410.9
	Poletti	Poletti	76.2	3.99	20.35	423.2
	Ravenswood	Ravenswood 1	152.1	3.08	48.16	399.8
		Ravenswood 2	152.1	4.06	48.16	399.8
		Ravenswood 3	152.1	4.12	34.14	405.4
		Ravenswood 4	121.9	7.16	22.86	412.6
Lower Manhattan-Northwestern Brooklyn	Brooklyn Navy Yard Cogeneration	BNY Cogen 1	94.5	5.18	10.67	366.5
		BNY Cogen 2	94.5	5.18	10.67	366.5
	East River Generation Station	East River 1	112.8	6.55	14.88	370.3
		East River 2	112.8	6.55	14.59	367.2
		East River 6	112.8	4.57	12.07	430.4
		East River 7	112.8	4.57	11.92	435.9
	North 1st Terminal	North 1st N01	32.6	3.66	10.67	366.5
Southern Brooklyn	Kennedy Airport Terminal Cogeneration	Kennedy International Airport Cogen	33.5	2.90	39.56	713.2
	Starret City Cogeneration Facility	Starrett City Cogen Facility GEN1	30.2	1.42	10.67	366.5
		Starrett City Cogen Facility GEN2	30.2	1.42	10.67	366.5
Northeastern Staten Island	Bayonne Energy Center	Bayonne Energy Center GT1	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT2	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT3	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT4	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT5	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT6	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT7	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT8	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT9	46.0	3.53	37.36	648.7
		Bayonne Energy Center GT10	46.0	3.53	37.36	648.7
	Pouch Terminal	Pouch N01	32.6	3.66	24.80	713.2
Eastern Bronx	Riverbay Generation Facility	Riverbay GEN2	42.1	2.08	10.67	366.5

DISADVANTAGED COMMUNITIES

In 2019, New York State enacted the Climate Leadership and Community Protection Act (CLCPA) to achieve the GHG reductions goals established in the New York State Energy Plan, establishing statewide GHG emission limits and agency regulations to reduce emissions, increase investments in renewable energy sources, and ensure that significant portions of investments are made in disadvantaged communities that have historically borne the burden of negative health effects and environmental pollution. Furthermore, the CLCPA established requirements for funding from state agencies, authorities, and entities to be directed towards a goal for disadvantaged communities[5] to receive 40 percent of the overall benefits.

In order to determine the portion of pollutant concentration decreases that would directly benefit disadvantaged communities, project concentration decreases were normalized across each modeling location (i.e. scaled such that the sum of all decreases would equal 1). The percentage of benefits associated with decreased pollutant concentrations that would directly benefit disadvantaged communities would be represented as the sum of the normalized decreases at receptor locations within these communities.

CLIMATE CHANGE

As part of the CLCPA, New York State has called for stringent limits on the statewide emission of GHGs, requiring that those emissions on a statewide basis be reduced by 40 percent by 2030 and 85 percent by 2050, compared with statewide 1990 levels. New York State estimates that the statewide GHG emissions in 1990 were 409.78 million metric tons of CO_2 equivalent. Statewide GHG emissions accounted for approximately 205.61 million metric tons in 2016 (50 percent of 1990 levels). The Proposed CPNY Project would result in more the reduction of approximately 2.6 million metric tons each year and will further the State's emission reduction goals for 2030 and beyond.

Additionally, increased GHG emissions are projected to have wide-ranging effects on the environment, including rising sea levels, increases in temperature, and changes in precipitation levels. Although this is occurring on a global scale, the environmental effects of climate change are also likely to be experienced at the local level within coastal areas of New York State—primarily within New York City and Long Island.

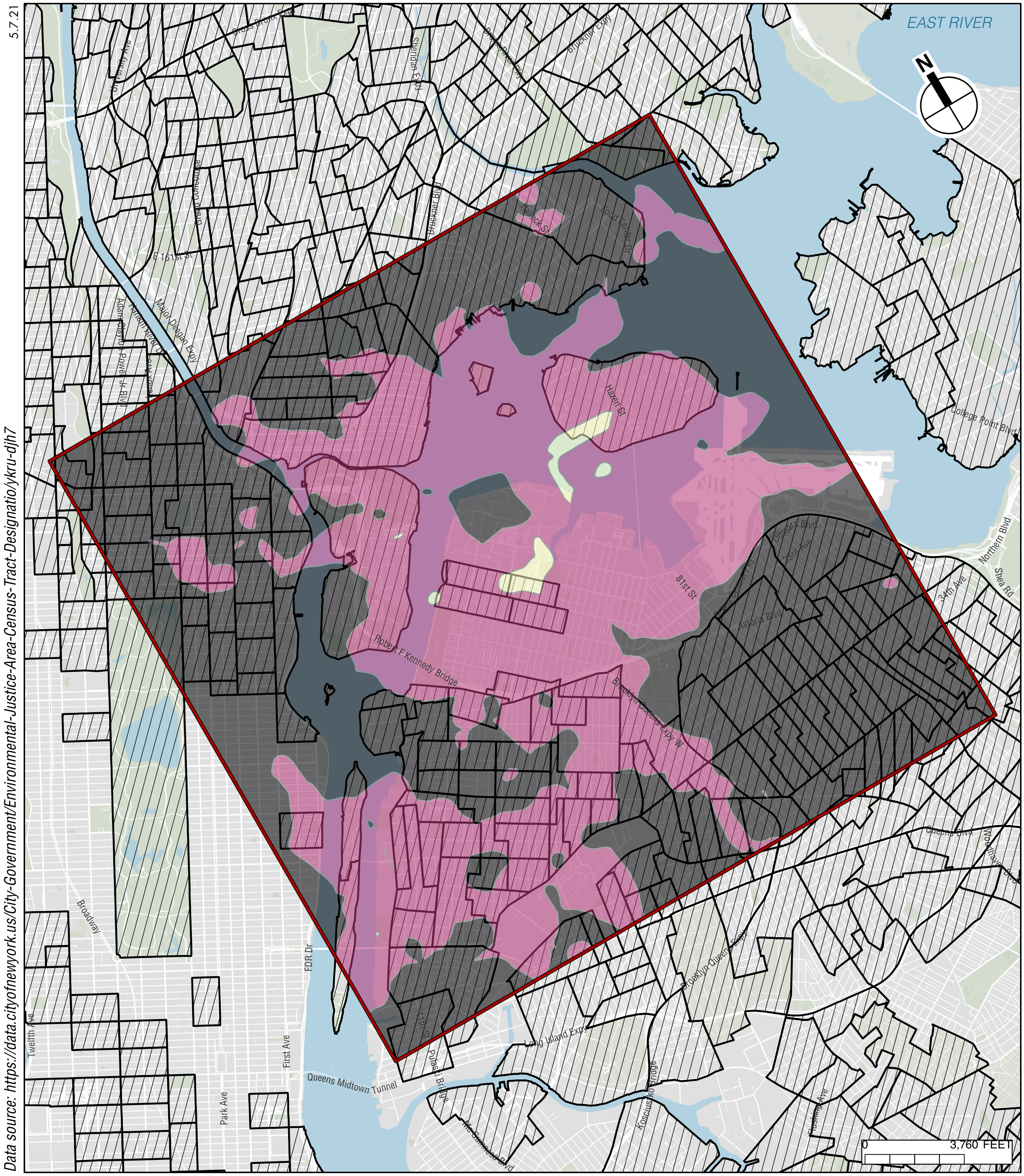
E. ANALYSIS RESULTS

LOCAL CONCENTRATION DECREASES

NEW YORK CITY GENERATION SOURCES

Emission decreases were mapped for each modeled location (see **Figures 2** through **6**) and overlaid with areas of disadvantaged communities. Concentrations were predicted at locations across the City and found that extent and magnitude of the concentration reductions would result in approximately 53 percent of short-term reduction occurring within disadvantaged

[5] While the criteria for defining disadvantaged communities has not been established, however, New York State has identified interim criteria for disadvantaged communities until the criteria is established, which includes communities: 1) located within census block groups that meet the HUD 50% AMI threshold, that are also located within the NYSDEC Potential Environmental Justice Areas; or 2) located within New York State Opportunity Zones.



Potential Environmental Justice Area

Dispersion Modeling Extent

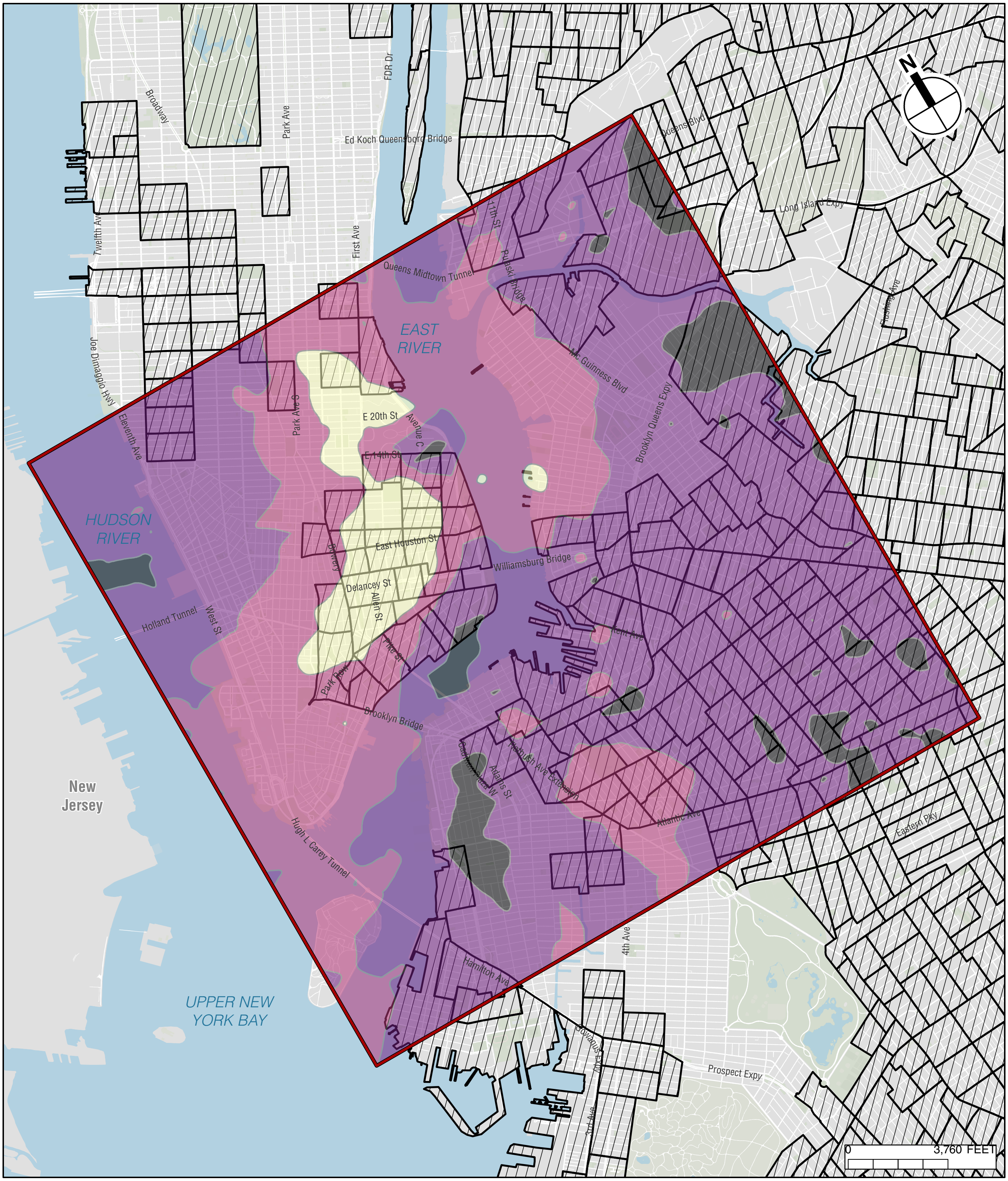
Northwestern Queens-Southern Bronx Concentration Reductions (µg/m³)

1-5

5-10

10-15

Disadvantaged Communities



Data source: https://data.cityofnewyork.us/City-Government/Environmental-Justice-Area-Census-Tract-Designatio/ykru-djh7

Potential Environmental Justice Area

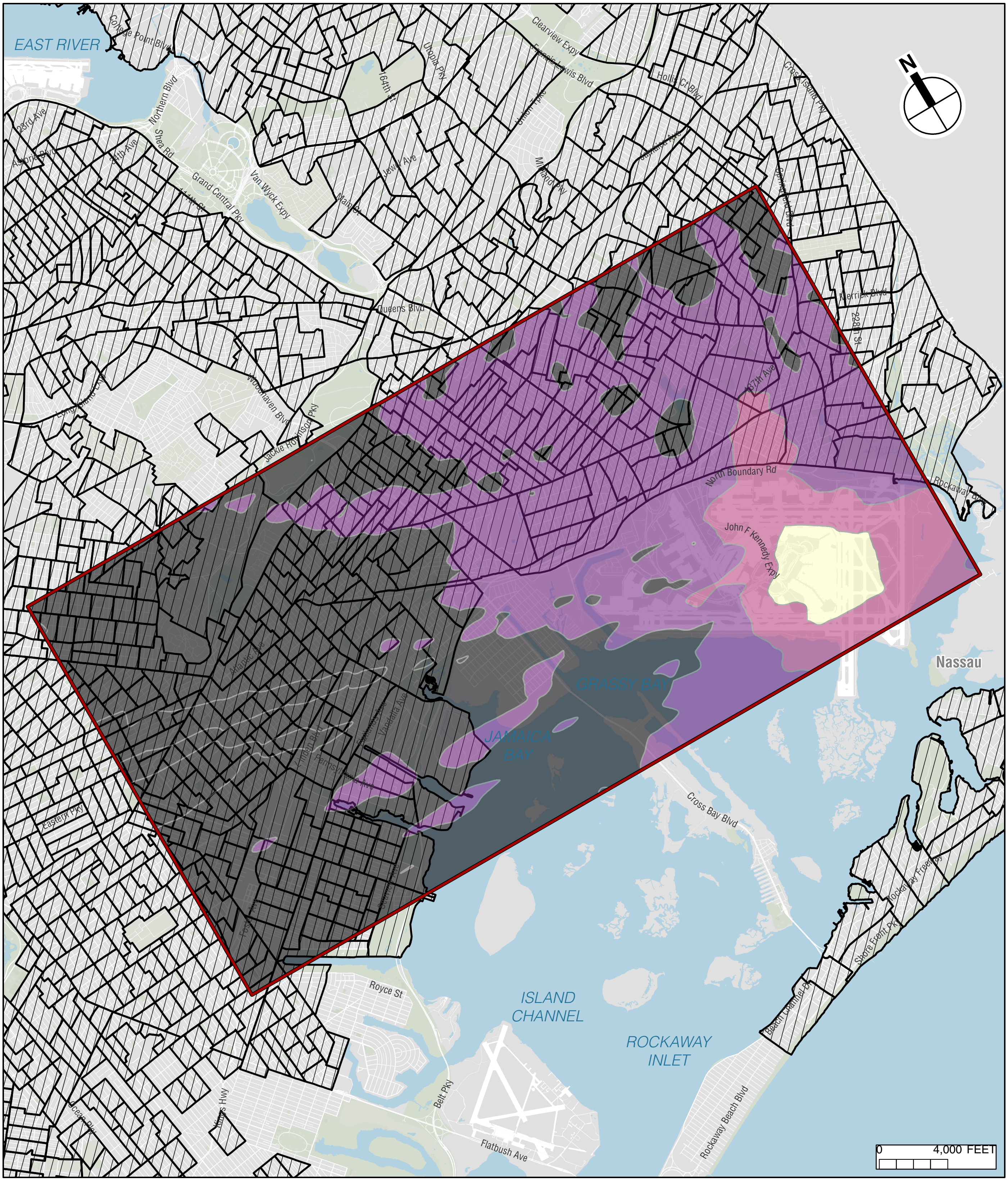
Dispersion Modeling Extent

Lower Manhattan-Northwestern Brooklyn Concentration Reductions (µg/m^3)

- 0.1-0.25
- 0.25-0.5
- 0.5-1
- 1-5

5.7.21

Data source: https://data.cityofnewyork.us/City-Government/Environmental-Justice-Area-Census-Tract-Designatio/ykru-djh7



Potential Environmental Justice Area

Dispersion Modeling Extent

Southern Queens-Southeastern Brooklyn Concentration Reductions (μg/m³)

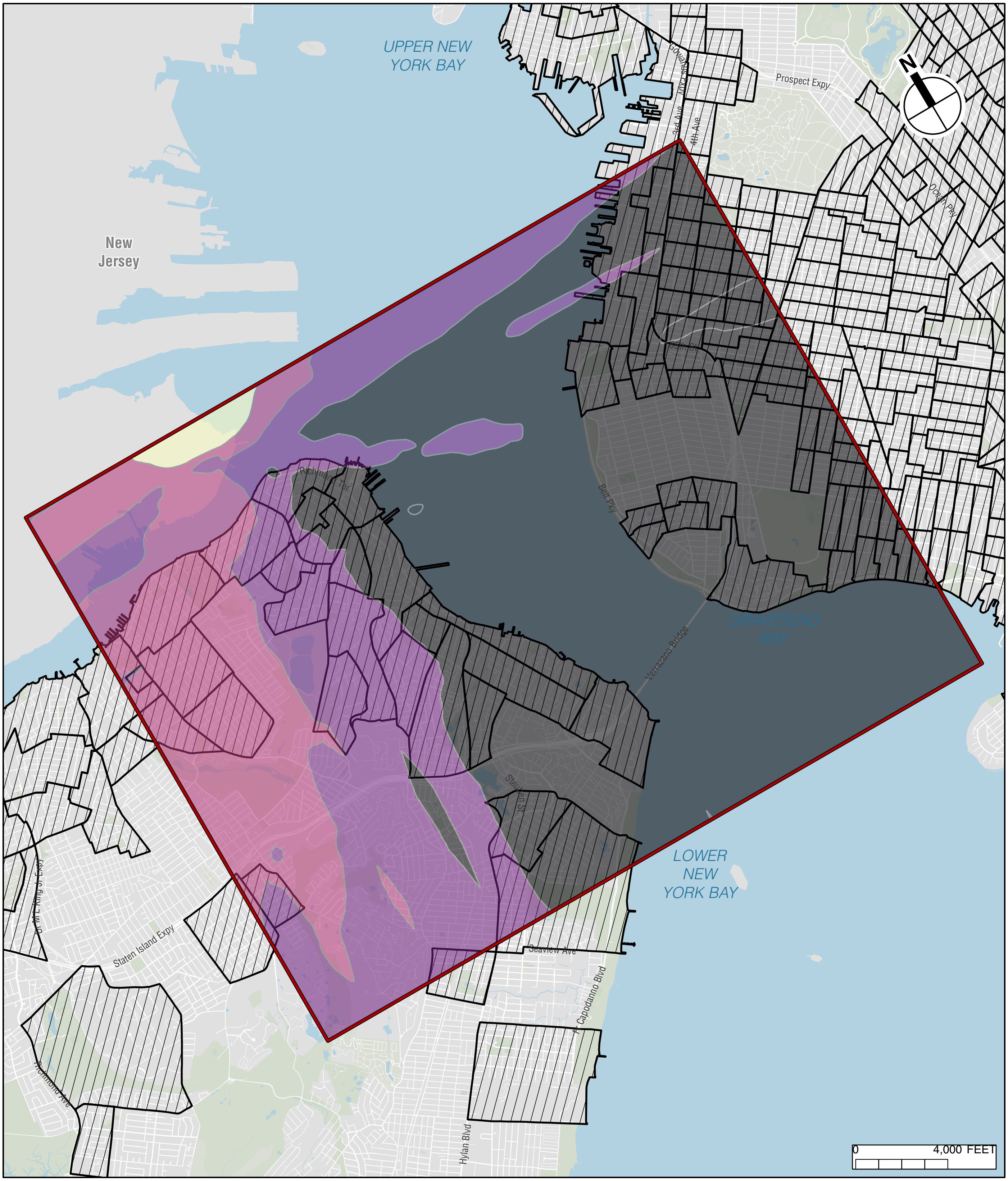
0.1-0.25

0.25-0.5

0.5-1

1-5

Disadvantaged Communities



Data source: https://data.cityofnewyork.us/City-Government/Environmental-Justice-Area-Census-Tract-Designatio/ykru-djh7

Potential Environmental Justice Area

Dispersion Modeling Extent

Northeastern Staten Island Concentration Reductions (µg/m^3)

0.1-0.25

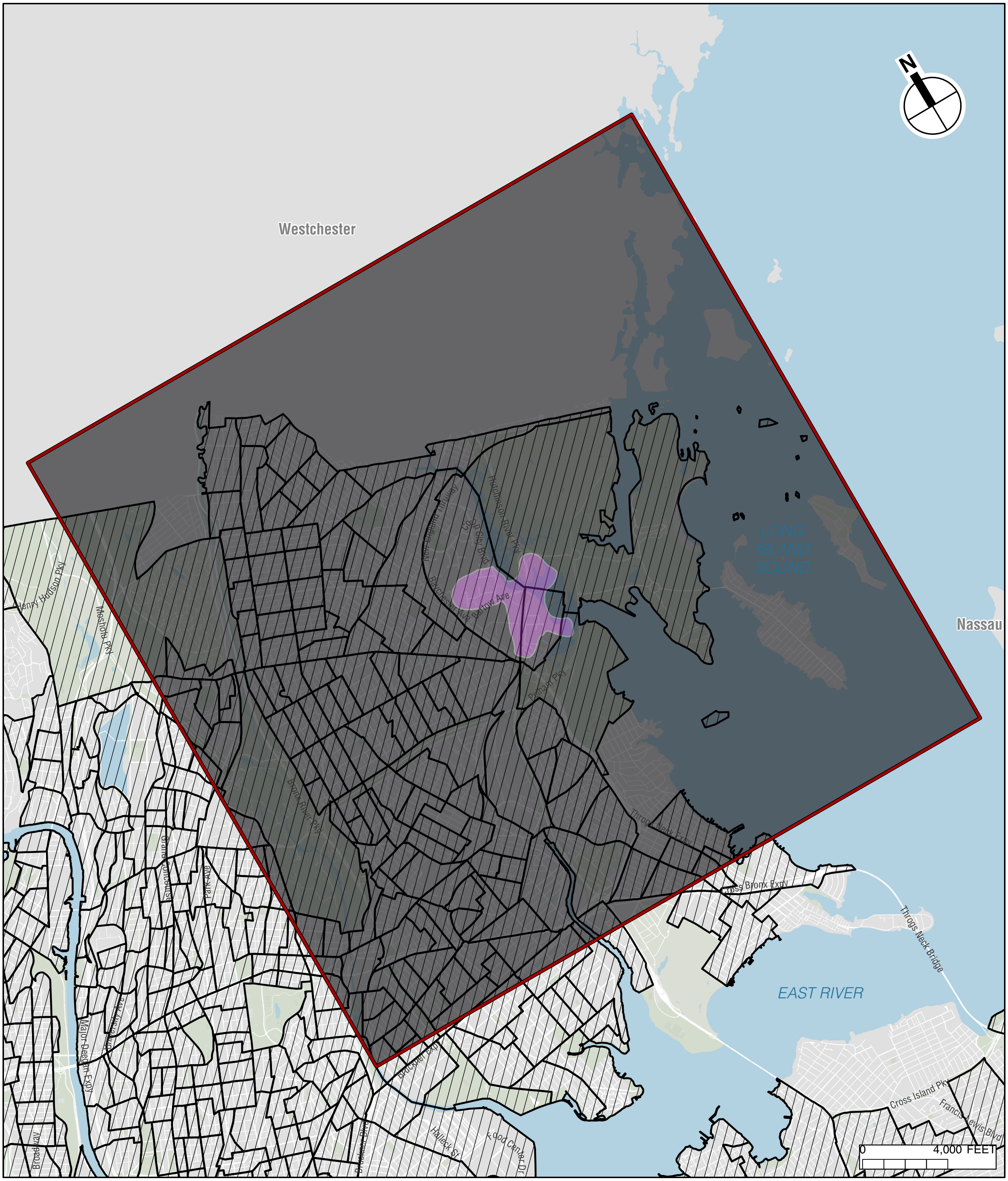
0.25-0.5

0.5-1

1-5

Disadvantaged Communities

5.7.21



Data source: https://data.cityofnewyork.us/City-Government/Environmental-Justice-Area-Census-Tract-Designatio/ykru-djh7

Potential Environmental Justice Area

Dispersion Modeling Extent

Northeastern Bronx Concentration Reductions (µg/m³)

0-0.1

0.1-0.25

Disadvantaged Communities

communities and annual reductions. The most significant reductions would occur within Northwest Queens, Southwest Bronx, and West Central Queens. Subsequently, approximately 30 percent of air quality benefits are anticipated to directly impact disadvantaged communities within New York City.

GENERATION SOURCES OUTSIDE NEW YORK CITY

While detailed modeling was not performed for areas outside of New York City, the modeling results of individual sources were used to determine the radius at which the majority of emission decreases would occur. Concentration decreases were determined to extend up to 4 miles from facilities, with the most significant reduction in concentrations occurring within 2 miles from the facility. Therefore, generating facilities outside of New York City were reviewed for disadvantaged communities within 2 miles of the generating facility. In order to determine the percentage of benefits that would directly impact those communities, the percentage of emissions that would occur at each facility (when compared to the statewide total) was multiplied by the estimated percentage of disadvantaged communities over the 2 mile radius.

Disadvantaged communities adjacent to electricity generating facilities within Long Island and Hudson Valley would also be directly impacts by reduced concentrations of pollutants. Subsequently, an additional 6, 6, and 5 percent of air quality benefits are anticipated to directly impact disadvantaged communities within Long Island, Hudson Valley, and the Capital areas, respectively. The remaining portion of generation sources within New York State combined would add an additional 2 percent. Therefore, the Proposed Project is anticipated to exceed New York State's goal of disadvantaged communities receiving 40 percent of the benefits associated with the reduced emissions of NO_x, SO_2, and PM.

CLIMATE CHANGE

Climate change projections from the New York City Panel on Climate Change (NPCC) include a summary of baseline and projected climate conditions throughout the 21st century including heat waves and cold events, intense precipitation and droughts, sea-level rise, and coastal storm levels and frequency. NPCC projected that sea levels are likely to increase by up to 30 inches by the 2050s and up to 75 inches by the end of the century (more detailed ranges and timescales are available). In general, the probability of increased sea levels is characterized as "extremely likely," but there is uncertainty regarding the probability the various levels projected and timescale. Intense hurricanes are characterized as "more likely than not" to increase in intensity and/or frequency, and the likelihood of changes in other large storms ("nor'easters") are characterized as unknown.

Many disadvantaged communities in New York City are located within a coastal floodplain, including the coastal communities of the Bronx, portions of Northwest Queens, Northwest Brooklyn, South Brooklyn, and North Staten Island. Therefore, a significant portion of the benefits associated with reduced GHG emissions would result in indirect benefits to these communities with lessened impacts from global climate change and would continue to further New York State's goal of directing significant portion of the anticipated benefits towards disadvantaged communities.

✷

Appendix 17

Appleseed report

REDACTED

Appendix 18

Field Investigation Plan

REDACTED

Appendix 19

Preliminary Contracting Strategies and Execution Overview Plan

REDACTED

Appendix 20

Detailed project schedule

REDACTED

Appendix 21

P(50) 8760 schedule

REDACTED

Appendix 24

Clean Path New York Benefit Cost Assessment

REDACTED

Appendix 25

NYS-BCTC PLA Letter

Clean Path New York
c/o 30 Hudson Yards FL 73
New York, New York 10001-2170

May 11, 2021

New York State Building & Construction Trades Council
113 State Street , First Floor
Albany, New York 12207
ATTN: Gary LaBarbera, President

Re: Clean Path New York (Energy RE) Transmission Project

Dear Mr. LaBarbera:

Clean Path New York is a development team consisting of EnergyRE, Invenergy and New York Power Authority. This development team was convened in response to the need for transmission of clean renewable energy into New York City as a result of both NYC Local Law 97 and the NYS Climate Leadership and Community Protection Act (CLCPA), both of which require NYC building owners to increase use of clean energy. Since the downstate energy grid is mostly reliant on fossil fuels, NYSERDA has created a new category of renewable energy credits, known as Tier 4 RECs, designed to subsidize transmission project(s) that develop transmission pathways from upstate New York renewable energy sources to New York City (Zone J). Clean Path New York will be submitting a proposal to NYSERDA in response to its solicitation for Tier 4 RECs, that proposes a development of a transmission project(s) as described below with ground breaking estimated to be in 2022:

• +/- 175 mile, 1,300 MW, merchant, HVDC transmission project to connect upstate clean energy to downstate electricity demand
  – Fraser Substation (Delhi) to New York City (Queens)
  – Mainly located in existing rights-of-way – underground and underwater
• 1,991 MW of new wind generation in upstate New York
• 1,826 MW of new solar generation in upstate New York
• $3.5B in new transmission investment, $7.5B in new renewable
• Over 10,500 construction jobs through first three years of contract term
• Enhances system reliability while diversifying NYC energy supply
• Controllable capacity resource, better for disadvantaged / environmental justice communities than fossil fueled peaker plants
• Extensive use of existing infrastructure and existing rights of way reduce costs and community impacts relative to competitive projects
• Enhances system reliability while diversifying NYC energy supply
  – Fraser to Rock Tavern – Addition of HVDC converter station

and new HVDC circuit underground in NYPA's existing ROW (+/-105 miles)

– Rock Tavern to Zone J - new underground or underwater right of way (+/-70 miles)

• DC converters at Fraser (Delhi) and in Zone J (Queens)
• In service estimated for 2025

Clean Path New York recognizes that the New York State Building & Construction Trades Council ("NYS BCTC") is committed to ensuring that renewable energy jobs are good paying union jobs and has provided consistent advocacy for the just transition from the good union jobs in the fossil fuel industry to good union jobs in the renewable energy industry. The Clean Path New York development team recognizes that the jobs created by this project can provide an opportunity for new, transitioning, and existing union workers throughout NYS BCTC's jurisdiction

In recognition of the common objective of supporting and creating good union jobs, and the development team's interest in meeting its objectives through union agreements, including Project Labor Agreement(s), Clean Path New York's development team will require its Construction Manager(s), Prime Contractor(s) to negotiate and sign a PLA with the NYS BCTC, requiring all subcontractors to be bound, having a form and substance not materially different from that required pursuant to the NYSERDA STANDARD FORM TIER 4 RENEWABLE ENERGY CERTIFICATE PURCHASE AND SALE AGREEMENT, Section 18.11, and as described in Exhibit "G" thereto, and including commercially reasonable terms and conditions for projects of this type to be negotiated with the NYS BCTC and its affiliates. Clean Path New York will work collaboratively with the NYS BCTC to negotiate successful navigation of the geographic and craft jurisdiction of the affiliated councils and trades.

Clean Path New York submits that its proposal has a strong fit with NYSERDA's Tier 4 REC objectives and will result in significant local emissions reductions. Upon award, Clean Path New York will require its Construction Manager(s), and/or Prime Contractor(s) to commence PLA negotiations with the NYS BCTC, and all construction partners, Construction Managers, General Contractors and Primes, selected by Clean Path New York to execute a PLA and manage the project accordingly.

Clean Path New York also wishes to clarify that all parties to this letter, including the NYS BCTC, acknowledge and confirm that their commitment to engage in the discussions and negotiations about the future PLA contemplated herein will only become effective if the bid submitted by Clean Path New York to develop the transmission project is ultimately selected by NYSERDA as part of the competitive bidding process. All of the parties to this letter further wish to acknowledge and confirm that only transmission facilities developed as part of this same bid proposal that are owned by one or more of the entities represented herein working on the Clean Path New York project, will be subject to any of the terms of the PLA which is the subject of this letter.

Clean Path New York's development team looks forward to our collaboration on this project and is excited to advance our many mutual objectives through the Clean Path New York transmission project.

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Sincerely,

DocuSigned by:
Michael Polsky
667F9BF1BF14494...

Jeff T. Blau
EnergyRe

DocuSigned by:
Gil Quiniones
53C2447B95D543F...

Michael Polsky
Invenergy

DocuSigned by:
Jeff T. Blau
4C9F8559FBE3452...

Gil Quiniones
New York Power Authority

Appendix 26

Fraser Converter Station

Site Control

NEW YORK POWER AUTHORITY

COUNTY OF DELAWARE
TOWN OF DELHI

OPTION AGREEMENT FOR PURCHASE OF REAL PROPERTY

THIS AGREEMENT (hereinafter referred to as "Option Agreement"), made this 30 day of April 2021, between The Linda S. Brodeur Revocable Trust dated April 3, 2012, Linda S. Brodeur, Trustee, (hereinafter referred to as "Owner"), with a post office address of 1101 County Highway 16, Delhi, NY 13753, and Power Authority of the State of New York, established and functioning pursuant to Article 5, Title 1, of the Public Authorities Law, (hereinafter referred to as "Authority"), having its principal offices at 30 South Pearl Street, Albany, New York, 12207 (Owner and Authority sometimes are referred to herein collectively as the "Parties" or individually as a "Party").

WITNESSETH

WHEREAS, Owner is the owner in fee simple of 1101 County Highway 16, Delhi, New York, being Delaware County Tax Map Number 192.-1-4.1 and being approximately 50.32 acres of land, and has agreed to grant to the Authority the exclusive option, right and privilege of purchasing approximately forty (40) acres of such parcel (hereinafter referred to as "the Property"); such Property which is generally shown on the map attached hereto as Exhibit "A"; and

WHEREAS, the Authority intends to acquire an option to purchase the Property, and subject to its review of the feasibility of the Property for its purposes, the approval of its Board of Trustees and the satisfactory negotiation of contractual terms, to acquire said Property for its lawful purposes for immediate and future use,

NOW, THEREFORE, in consideration of the mutual promises, covenants, and agreements contained herein, the Parties hereby agree as follows:

1. **GRANT OF OPTION.**

Subject to the terms hereof, Owner hereby grants to Authority the exclusive option to purchase (hereinafter referred to as "Purchase Option") the Property during the Option Period (as such term is hereinafter defined) upon and subject to the terms and conditions set forth in the Purchase and Sale Agreement attached hereto and made a part hereof as Exhibit "B" (hereinafter referred to as "Purchase Agreement"), as may be further negotiated by the Parties.

2. **OPTION PERIOD.**

Authority must elect to exercise its Option within one year of full execution hereof (hereinafter referred to as "Option Period"). If Authority desires to exercise its Option, it must do so in writing on or before the one-year anniversary date of the full execution of this Option Agreement, ("Option Expiration Date"), unless the Parties otherwise extend the Option Period in writing.

3. **OPTION FEE.**

Upon full execution of this Agreement, Authority shall pay Owner the sum of Eighty Thousand ($80,000.00) Dollars ("Option Fee"), as consideration for Authority's exclusive right to inspect and purchase the Property and for Owner's execution, delivery, and performance of this Agreement. In the event that title does not pass to the Authority and provided Owner is not responsible for the failure to complete the conveyance, then Owner may retain the Option Fee as liquidated damages and shall have no other recourse or claim whatsoever against the Authority arising out of this Option Agreement or the Purchase Agreement. If Owner is unable to deliver the Property free and clear of any tenancies or other title defects, or if title cannot be conveyed as a result of any act or omission on the part of Owner, the entire Option Fee of $80,000 shall be refunded and returned to Authority.

4. **APPLICATION OF OPTION FEE.**

In the event Authority exercises its Purchase Option, the Option Fee shall be credited against the Purchase Price at Closing (as such terms are defined in the Purchase Agreement).

5. **NOTICE OF EXERCISE OF OPTION.**

In order to exercise its Purchase Option, Authority must provide Owner written notice thereof on or prior to the Option Expiration Date ("Exercise Notice") via hand-delivery, a nationally recognized overnight courier service (e.g., FedEx or UPS) or via certified mail, return receipt requested. Such Exercise Notice shall consist of a written statement of Authority's intent to exercise the Purchase Option and shall be accompanied by two (2) duplicate originals of the Purchase Agreement duly signed by Authority. Within ten (10) days after its receipt of Authority's Exercise Notice and the two (2) duplicate originals of the duly signed Purchase Agreement, Owner shall duly complete and sign the two (2) duplicate originals of the Purchase Agreement and return one (1) fully-executed duplicate original of said Purchase Agreement to Authority.

6. **CLOSING.**

Both Parties agree to make good faith efforts to complete the purchase and sale of the Property within ninety days of the date of the Authority's Exercise Notice.

7. **ACCESS TO PREMISES.**

During the Option Period, Authority and Authority's employees, consultants, contractors, representatives, agents, or designees shall be entitled to enter on the Property at any reasonable time to conduct or cause to be conducted such inspections, investigations, tests, surveys, examinations and studies of the Property as Authority shall in its sole discretion deem appropriate (including, without limitation, property condition or engineering studies, so-called Phase I and Phase II environmental assessments, soil borings, ground water, septic system and water system tests and studies and any other property or feasibility evaluations). Authority shall give Owner reasonable advance notice of any activities Authority plans to conduct on the Property.

Authority will cause an accurate survey to be made of the Property, at the Authority's sole cost and expense, with an accurate metes and bounds description thereof. Owner shall be solely responsible for obtaining all zoning or planning approvals, if any. Said survey shall include the Right of Way for ingress and egress to be reserved to the Owner and will be commenced within four (4) months of the date of this Option Agreement. Owner shall be allowed to file such survey along with the legal description of the metes and bounds with the Town of Delhi Planning Board for subdivision approval and with the Delaware County Clerk's Office within the Option Period.

8. **PURCHASE PRICE.**

In the event that the Authority elects to exercise its Option as otherwise set forth herein, the total purchase price for the Property, comprising forty (40) ± acres, shall be Nine Hundred Ninety-Five Thousand ($995,000) Dollars, which acreage shall be finally determined by a survey to be carried out at Authority's sole expense and shall be payable as provided for in the Purchase Agreement. In the event that the survey determines that the Property is less than 40 acres, the purchase price shall be reduced by a prorated sum based on a per-acre price of $24,875.

9. **PROPERTY OFF MARKET DURING OPTION PERIOD.**

The Property shall not be shown or offered for sale or lease during the Option Period or any extension thereof. Owner shall not entertain any offers for purchase or lease during the Option Period or any extension thereof. Notwithstanding the foregoing, the Owner may Market and Sell the remaining acreage and residence shown on Exhibit "A" as "Lot 1" and "Lot 3."

10. **ASSIGNMENT.**

Authority shall not assign its rights under this Option Agreement, except to another NYS governmental entity, without the prior written consent of the Owner, which consent may not be unreasonably withheld, conditioned or delayed. Any direct or indirect assignment of Authority's rights under this Option Agreement without the prior written consent of Owner shall automatically terminate the Purchase Option and all of Authority's rights hereunder.

11 **BROKER.**

Owner shall be solely responsible for any real estate broker fees or commissions related to this transaction. Owner will indemnify and hold Authority harmless for any commission claimed due by any broker, realtor or any other person or entity arising out of this Agreement.

12. **RECORDING.**

The Parties agree that this Option Agreement will not be recorded. Upon Authority's request, the Parties shall execute a mutually agreeable memorandum of this Option Agreement in recordable form, which memorandum the Authority shall be free to record at its own cost and expense.

13. **BINDING EFFECT.**

This Option Agreement shall inure to the benefit of and bind the distributees, legal representatives, successors and assigns of the respective Parties.

14. **HEADINGS.**

Headings in this Option Agreement are for convenience only and shall not be used to interpret or construe its provisions.

15. **GOVERNING LAW.**

This Agreement shall be governed by and construed in accordance with the laws of the State of New York, without reference to its choice of law rules or principles.

16. **COUNTERPARTS.**

This Option Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

17. **NOTICES AND CORRESPONDENCE.**

All notices and correspondence pursuant to this Option Agreement shall be sent via hand-delivery, a nationally recognized overnight courier service (e.g., FedEx or UPS) or via certified mail, return receipt requested by certified mail, return receipt requested, or by a nationally recognized overnight courier service (e.g., FedEx or UPS) to the Parties hereto at the following addresses:

If to Owner:

Linda S. Brodeur
1101 County Highway 16

Delhi, NY 13753

If to Authority:

New York Power Authority
30 South Pearl Street, 10th Floor
Albany, New York 12207
Attention: Andrew Pelletier, Manager Corporate Real Estate

Either Party may change the above address by sending a written notice to the other Party setting forth such changed address.

18. **CORPORATE AUTHORITY.**

The transaction contemplated hereunder is subject to the approval of the Authority's Board of Trustees and compliance with the Public Authorities Law of the State of New York.

19. **ENTIRE AGREEMENT.**

This Option Agreement, including the attached Purchase Agreement, constitutes the entire agreement between the Parties. No representation, warranties, or promises pertaining to this Option Agreement or any property affected by it have been made by, or shall be binding on, any of the Parties, except as expressly stated in this Option Agreement and the Purchase Agreement. This Option Agreement and the Purchase Agreement may not be changed orally, but only by agreement signed by the Party against whom enforcement of any such change is sought.

20. **CONFIDENTIALITY.**

The Parties agree that all communications regarding this transaction shall remain confidential, and that all reports, tests, inspections etc. performed by the Authority, its employees, contractors or assignees pursuant hereto shall be for the Authority's sole use and shall not be disseminated to third parties other than in conjunction with this transaction.

21. This Option Agreement may be changed or terminated only by a writing signed by the Authority and Owner.

IN WITNESS WHEREOF, this Option Agreement has been duly executed by the Parties hereto as of the day and year first above written.

Linda S. Brodeur Revocable Trust dated April 3, 2012

By: Linda S Brodeur

Name: Linda S. Brodeur

Date: 05/03/2021

Power Authority of the State of New York

By: [signature]

Title: PRESIDENT - DEVELOPMENT

Date: 05/03/2021

STATE OF NEW YORK)
)SS.:
COUNTY OF DELAWARE)

On the 30 day of April in the year 2021 before me, the undersigned, personally appeared Linda Brodeur, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person(s) upon behalf of which the individual(s) acted, executed the instrument.

SUSAN L. GRAY NOTARY PUBLIC STATE OF NEW YORK NO. 01GR6402286 QUALIFIED IN DELAWARE COUNTY COMM. EXP. 12-30-2023

Susan L Gray
Notary Public, State of New York

STATE OF NEW YORK)
) SS.:
COUNTY OF Onondaga)

On the 3rd day of May, 2021 in the year before me, the undersigned, personally appeared Philip Toia, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Eleanor J. Slank

Notary Public, State of New York

ELEANOR J. SLANK
Notary Public-State of New York
No. 01SL6284485
Qualified in Onondaga County
Commission Expires 06/17/2021

To: Linda S. Brodeur

RE: Removal of Trustee

Dear Linda,

I would like you to consider myself removed as a Trustee and beneficiary of the Linda S. Brodeur Trust that was formed in 2012 by the Pierro, Connor & Associates, LLC - Latham, N.Y.

Sincerely,

William R. Brodeur

Date: MARCH 24, 2017

STATE OF NEW YORK)

:SS.

COUNTY OF Delaware

On the 24th day of March, 2017 before me, the undersigned, personally appeared William R. Brodeur, personaly known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the samein his capacity, and that by his signature on the instrument, or the person on behalf of which the individual acted, executed the instrument.

Notary Public

DEBRA L. RENWICK
Notary Public, State of New York
[illegible] #01RE5086720
[illegible] in Delaware County
[illegible] Expires October 20, 2017