MINUTES OF THE REGULAR JOINT MEETING
OF THE
NYPA AND CANAL AUDIT COMMITTEE

March 26, 2019

Table of Contents

March 26, 2019

Minutes of the regular meeting of the New York Power Authority's Audit Committee held at the Clarence D. Rappleyea Building, 123 Main Street, White Plains, New York, at approximately 8:30 a.m.

The following Members of the Audit Committee were present:

Eugene Nicandri, Chairman
John R. Koelmel
Anthony Picente, Jr.
Dennis Trainor

Tracy McKibben – Excused

Also in attendance were:

Gill Quiniones	President and Chief Executive Officer
Justin Driscoll	Executive Vice President and General Counsel
Lee Garza	Senior Vice President – Financial Operations & Acting Controller
Angela Gonzalez	Senior Vice President - Internal Audit
Soubhagya Parija	Senior Vice President and Chief Risk Officer
Daniella Piper	Vice President – VP Digital Transformation/Chief of Staff
Karen Delince	Vice President and Corporate Secretary
Joseph Gryzlo	Vice President and Chief Ethics and Compliance Officer
Daniella Piper	Vice President – Digital Transformation / Chief of Staff
Zlata Latkovic	Acting Team Lead - Accounting
Lorna Johnson	Senior Associate Corporate Secretary
Lori DeMichele	Board Travel Specialist
Todd Fowler	Lead Engagement Audit Partner – KPMG
Scott A. Heiser	Partner, Audit – KPMG
Grace Kachigian	Senior Audit Manager – KPMG

Chairman Eugene Nicandri presided over the meeting. Corporate Secretary Delince kept the Minutes.

<u>Introduction</u>

Chairman Nicandri welcomed committee members and senior staff to the meeting. He said the meeting had been duly noticed as required by the Open Meetings Law and called the meeting to order pursuant to section B(4) of the Audit Committee Charter.

1. <u>Adoption of the Proposed Meeting Agenda</u>

Upon motion made by member Dennis Trainor and seconded by member John Koelmel, the agenda for the meeting was adopted.

2. **Motion to Conduct an Executive Session**

Mr. Chairman, I move that the Authority conduct an executive session to discuss the financial history of a particular corporation (pursuant to section 105f of New York Public Officers Law). Upon motion made by member Dennis Trainor and seconded by member John Koelmel, an Executive Session was held.

3. <u>Motion to Resume Meeting in Open Session</u>

Mr. Chairman, I move to resume the meeting in Open Session. Upon motion made by Member Anthony Picente and seconded by Member Dennis Trainor, the meeting resumed in Open Session.

Chairman Nicandri said no votes were taken during the Executive Session.

4. CONSENT AGENDA

Upon motion made by Member Dennis Trainor and seconded by Member John Koelmel, the Consent Agenda was approved.

a. <u>Approval of the Minutes of the Regular Meeting held on December 11, 2017</u>

Upon motion made and seconded, the Minutes of the Committee's Regular Meeting held on December 11, 2018 were approved.

5. DISCUSSION AGENDA:

a. <u>New York Power Authority's Year-End 2018 Financial Report</u>

Mr. Lee Garza, Senior Vice President of Financial Operations and Acting Controller, provided an update of the Authority's Year-End 2018 Financial Report to the Committee (Exhibit "5a-A").

<u>Financial Report Summary</u>

For the year ended December 31, 2018, the Authority's Net Income was $102 million compared to $119 million in 2017, a decrease of $17 million. The decrease in Net Income is associated primarily with lower Operating Income of $16 million and lower Net Non-Operating expense of $1 million.

The operating income decrease of $16 million compared to last year is associated with lower margin on sales of $97 million, which was offset in 2018 by the absence of a $73 million impairment loss that occurred in 2017 associated with a generation equipment, and a long-term service contract with one of the Authority's commercial partners.

Operating income revenues were higher by $116 million compared to last year. This was primarily due to higher market-based energy sales resulting from marginally higher hydro production and pass-through of higher purchase power costs.

The $5 million negative change in the Authority's Net Position was attributable to a $102 million positive Net Income; and it was offset by a charge related to the adoption of GASB statement No. 75 associated with the Other Post-employment Benefits adjustment resulting in a $107 million noncash adjustment to the beginning Net Position in 2018.

The Authority ended 2018 with a Net Position of $4.7 million and total assets of $8.9 million. Current assets were $1.4 million. This decreased by $146 million, associated with drawdowns of investments or for service debt and the timing of other payments and receipts.

Capital assets increase by $77 million compared to last year. This increase is as a result of continuing investments in the Authority's core generating and transmission business, and upgrades that were undertaken in order to maintain the safety and reliability of its system.

Current liabilities were over $1million dollars, an increase of $67 million compared to last year. This was due to an increase in debt maturities that went from long-term into short-term.

<u>Capital Structure and Debt Ratings</u>

The Authority continues to maintain a strong financial position. This is considered a strategic asset, since it enables the Authority to assure that it has the financial resources necessary to achieve its goals and objectives.

At the end of 2018, total capitalization was $5.4 million, which does not include $590 million of short-term debt and current maturities of long-term debt. The Authority's long-term credit rating continues to be one of the highest in the industry. The Authority's AA rating was affirmed by the rating agencies in January.

Year-end 2018 Financial Report (Consolidated)

Pursuant to Section 2800 of the Public Authorities Law, as amended by the Public Authorities Accountability Act of 2005 ('PAAA'), the Authority is required to file its financial report (consolidated) for the year ended December 31, 2018 and submit this report to the Governor, legislative leaders, the State Comptroller and the Authorities Budget Office. The PAAA reflects the State's commitment to maintaining public confidence in public authorities by ensuring that the essential governance principles of accountability, transparency and integrity and followed at all times.

This year-end 2018 financial report (consolidated) includes financial statements that present the consolidated financial position and result of operations of the Authority as of December 31, 2018 under generally accepted accounting principles. The report is prepared by staff and the consolidated financial statements are audited by independent accountants from KPMG LLP. As required by the PAAA, the financial report (consolidated) has been certified by the Authority's Chief Executive Officer and Chief Financial Officer. After audit committee review, the 2018 financial report (consolidated) is scheduled to be presented for approval by the Authority's Trustees at their meeting later today. Changes of particular significance have been highlighted in the attached draft (Exhibit '5a-A') to facilitate the Audit Committee's review.

REQUIRED ACTION

It is requested that the Audit Committee recommend that the Authority's Trustees approve the consolidated financial statements for the year ended December 31, 2018.

On motion made by member John Koelmel and seconded by member Dennis Trainor, the Audit Committee unanimously approved the recommendation by the Senior Vice President of Financial Operations and Acting Controller that the Authority's Trustees approve the financial statements for the year ended December 31, 2018.

b. <u>New York Power Authority Summary of 2018 Annual Audit of Financial Statements</u>

Mr. Todd Fowler, KPMG's Lead Engagement Audit Partner, introduced Mr. Scott Heiser, Audit Partner and Grace Kachigian, Senior Audit Manager to the Committee. He then presented a summary of the 2018 Annual Audit of the Authority's Financial Statements to the Committee. (Exhibit "5b-A").

<u>Audit Results</u>

Mr. Fowler said that KPMG's audit of the Authority's financial statements for the year ended December 2018 is substantially complete. There were no significant changes to KPMG's Audit plan or audit strategy that was previously presented to the Committee in the fall. KPMG is in a position to issue an unqualified audit opinion on the financial statements, and an unqualified opinion on internal controls over financial reporting, as well as an unqualified report over investment and clients after the committee's approval of the financial statements.

KPMG's opinion on the financial statements includes an emphasis on the Authority's adoption of GASB 75, a significant accounting standard adopted in the current year. That emphasis does not modify KPMG's opinion.

<u>Audit Findings</u>

KPMG identified one significant risk that is related to fraud risk or management override of controls. This significant risk is not unique to the Power Authority; it is pervasive across all of KPMG's clients.

KPMB did not have any uncorrected or corrected audit misstatements in connection with its audit for the current year and did not identify any material weaknesses or significant deficiencies in internal control.

The judgments and estimates utilized by management were consistent with those used in prior years and those judgments and estimates used by management in the current year appeared reasonable. Management judgments and estimates include Asset Retirement Obligations; Derivative Instrument Valuations; Pensions and Other Post-retirement Obligation and Investments.

<u>Audit Results</u>

Mr. Fowler highlighted the following audit results:

Significant Accounting Policies And Practices – KPMG reviewed the accounting policies used in preparation of the consolidated financial statements and found them to be appropriate.

New Accounting Pronouncements - The Authority adopted GASB 75 in the current year. KPMG included Actuarial Valuations Specialists in connection with the OPEB liability recorded by the Authority and a GASB 75 Disclosure Specialist who looked specifically on how the GASB 75 adoption was disclosed and accounted for in the financial statements. KPMG had no findings with how these were adopted in the current period.

Significant Unusual Transactions – KPMG did not note any significant unusual transactions during the year.

Illegal Acts or Fraud – KPMG did not identify any illegal acts or fraud in connection with its audit; any noncompliance with laws and regulations; encountered any significant difficulties during its audit; or have any disagreements with management or any scope limitations placed upon the team by management.

<u>Significant Risks</u>

Fraud Risk over Management, Override of Controls
KPMG looked at the design and implementation of controls and the operating effectiveness over manual journal entries, post-closing entries, tested a sample of those journal entries with high-risk criteria and found those controls to be operating effectively. KPMG also looked at the revenue cutoff, journal entries booked related to significant estimates in judgment of management and did not identify any inappropriate journal entries within those areas.

<u>Significant Accounting Estimates</u>

Asset Retirement Obligations
In the current year, there were no significant changes to the asset retirement obligations recorded in the financial statements. There were no triggering events that required the Authority to look at those asset retirement obligations that, historically, have been recorded on the asset of the Authority.

Valuation of Derivative Instruments
KPMG's specialists in connection with this audit did not have any findings, based on the procedures performed during this audit period.

Pension and Other Post-Retirement Obligations
This relates to the GASB 75 adoption. Based on the procedures performed during the audit period, KPMG determined that there were no matters identified related to the estimate of the pensions and other post retirement obligation.

Investments
The valuation of investments also requires estimates of judgments for management. Based on the procedures performed during the audit period, KPMG did not have any findings related to the estimate of the investments.

Upcoming Accounting Standards
Mr. Fowler said that, as stated earlier, there was a significant adoption of GASB 75 in the current year and he highlight the newly effective accounting standards and upcoming accounting standards related to 2019 and 2020 to the committee.

- GASB 84. In the current year, there are new statements within the financial statements related to fiduciary activities of the Authority. The Authority's OPEB assets are in a Trust and those assets have been recorded as fiduciary activities in the statements. GASB 84, which is effective next year, requires that all assets which the Authority put into a Trust should be included within that fiduciary statement.

- GASB 87. This will be effective for the Authority in 2020 and will be a significant effort for the Authority in terms of adopting the new leasing standard. The new leasing standard will require the Authority to put all operating leases on its Balance Sheet as is done with capital leases.

- GASB 88 and 89 are related to disclosures only. Therefore, they will not have a significant impact on the Authority.

c. New York Power Authority and Canal Corporation
<u>Internal Audit Update</u>

Ms. Angela Gonzalez, Senior Vice President, Internal Audit, provided an update on Internal Audit's activities. (Exhibit "5c-A")

2019 Audit Plan Status

- 2019 Plan Status:
  - 50 audits are included in the NYPA and Canal Corporation ("Canals") Audit Plan.
  - 3 audit reports have been issued to date.
  - 6 audits are in the final reporting stage and are expected to be issued by the end of Q1.
  - 2 audits in fieldwork are expected to be issued during the first week of April.
  - 4 remaining audits in fieldwork – 2 ongoing audit projects and 2 audits are in the midst of fieldwork.
  - 3 audits are in Planning for Q2.
  - 1 high-risk observation has been identified and management has developed action plans to address this issue.

Changes to 2019 Internal Audit Plan

Every year, Internal Audit does Third-Party Contract Compliance. As a result, a Third-Party Contract Audit was added to the 2019 Internal Audit Plan

Internal Audit Remediation Status – NYPA

- As of March 22, 2019, three 2019; 26 2018 and two 2017 recommendations remained open. Closure of high and medium 2017 open recommendations are on track to close by their due dates.

- Internal Audit continues to assist management by providing monthly reporting to the Executive Management Committee ("EMC") on open recommendation status. Internal Audit is also monitoring remediation efforts for 2017-2019 issues with priority on High-risk issues.

Internal Audit Remediation Status – CANAL

- As of March 15, 2019, four 2018 and three 2017 recommendations remained open and will be closed by July 31st.

- Internal Audit continues to assist management by providing monthly reporting to the EMC on open recommendation status. In addition, Internal Audit is monitoring remediation efforts for 2017- 2018 issues with the priority on High-risk issues.

Audit Cycle Coverage

Background

Internal Audit is introducing a new audit product, Quick Impact Review (“QIR”), to assist with ensuring adequate coverage of the 46 high-risk rated audit entities that have been identified within the NYPA Audit Universe.

The 2019 Audit Plan is covering 20 of the 46 high-rated entities. The Canals Audit Universe has nine high-rated entities, to date, of which six are part of the 2019 Audit Plan and coverage will be adequate.

Quick Impact Review

QIRs are short and focused reviews that emphasize critical processes that drive the operations of the audit entity.

It aims to get a sense of the controlled environment of the business units. Information will be gathered from stakeholders to understand the general control environment regarding:

- Key business objectives
- Policies and procedures
- Roles and responsibilities/Personnel changes
- Performance management
- Continuous improvement
- Risk management
- Regulatory requirements
- Safety
- Fraud
- Information technology.

The introduction of a QIR will enable Internal Audit to provide coverage for those entities not covered in the 2019 Audit Plan. Of the twenty-six (26) audit entities remaining in the NYPA Audit Universe; seven are eligible for a QIR review in 2019. The remaining 19 audit entities are not ready for audit due to:

- They are new initiatives
- Internal assessments/system implementations are underway
- They have been covered in recent prior audits/assessments
- They will be an advisory engagement or included in the 2020 Audit Plan.

QIRs will be performed using a questionnaire and process walkthroughs to be completed over a two-week period.

- Key controls will be tested for design effectiveness only, not operating effectiveness to determine they can mitigate risk.

- The test sample for these controls will be a test of one sample.

- The QIR will follow some of the requirements of the traditional audit phases of planning, fieldwork and reporting, however, scaled down as follows:

    - Notification to stakeholders involved will be via email that a QIR will be conducted.
    - Meetings will be set up to discuss the areas within the questionnaire; perform walkthroughs.
    - Execute walkthroughs; obtain documentation and complete the questionnaire
    - Test sample of one for key controls.
    - Document results will conclude on control design and discussed with management.

- Prepare memo with observations and finalize with management.

Internal Audit will gain insight as to the control environment for the audit entity and will address management's concerns identified with reference to the design of the controls. A memo documenting the results of the review and a conclusion on the effectiveness of the control design (e.g. effective, partially effective or ineffective) will be presented to management. A conclusion of ineffective control design may lead to a full audit or assessment.

Internal Audit will pilot one QIR in Q1 and expects to execute the remaining six throughout Q2 – Q4. Feedback will be obtained from the Business Units undergoing the QIR for any necessary improvement.

Internal Audit Transformation - Update

BRANDING

- Survey to EMC and their direct reports has been developed and was sent in March to obtain their view of Internal Audit so that Internal Audit can obtain both internal and external perspectives to assist with the brand refresh.
- Surveys to Internal Audit staff were done in late 2018. With the addition of staff to Internal Audit, another survey will be done in order to get a real holistic view of what the team believes the IA brand refresh should be.
- A timeline for the brand refresh has been completed and the target for rollout is July 2019.

DELIVERY

Agile Methodology

- IA held departmental Agile project methodology training in January 2019 and two audit projects were executed using this methodology in Q1.
- The teams were engaged, learned the concepts and applied them successfully. To continue this level of staff engagement, motivation and skills learned amongst the staff, the number of audit projects using this methodology was increased.
- The original plan for the Agile project methodology rollout was to execute eight audits using this approach. Internal Audit has expanded this to 17 projects or about 40% of the Plan.
- The goal is to be fully using the Agile methodology for audit project execution in 2020 from the original plan of 2021.

GRC Automation

- Internal Audit has spent the last several weeks working with a consultant contracted by Risk Management to develop design requirements for the Risk Management module and audit management module within RSA Archer. Design requirements have been completed and final review is underway.
- The vendor has been onsite to prepare for configuration based on the design requirements. An implementation roadmap will be developed.
- The “Go live” is targeted for 12/31/19.

Data Analytics

- For the 2019 Audit Plan, 20 of the 42 NYPA projects have been identified where data analytics can be applied. Five out of 13 Q1 audit projects targets for data analytics have applied these techniques to date.
- The Data Analytics team is working with IT to prepare requirements for the data analytics routines Internal Audit wants to build for analysis of ProCards, T&E, and others. Internal Audit has one script developed to search for Personally Identifiable Information (PII) on share files, to date.
- The Data Analytics team has been attending Tableau training and advanced Excel training is scheduled in Q2 for the department to enhance data analytics skills.

Quality Assurance Improvement Program

- Internal Audit has developed a Quality Assurance Improvement Program (QAIP) based on the IIA QAIP Manual and the self-assessment is in progress to prepare for an external assessment in 2019.
- An external assessor has been contracted from the IIA with experience in completing external quality assessments for the utility industry. The assessor will be onsite at NYPA in July 2019 to complete the review.

INNOVATION

- The Innovation team completed timesheet development to capture audit project hours. Staff have been completing timesheets since January 2019.
- The team is currently working on aggregating timesheet data for the first quarter to analyze budgeted hours to actual hours for audit projects.
- Monthly reporting will be developed subsequent to the first quarter report.

TALENT

Training and Development Program

- The contents of the Training and Development Program have been developed based on skill level: Core, Intermediate and Advanced.
- The Core level provides training that auditors should take if they are new auditors, new to NYPA or have not taken during their past experience or while at NYPA. It also includes learning about NYPA through site visits, tours of key business areas and utility industry specific training. Training areas include communication, technical auditing techniques, specific business area auditing, basic data analytics, information technology and energy market, utility accounting and work order/asset management.
- The Intermediate level adds on from the core level and provides training for more seasoned auditors and/or auditors that manage projects. Training areas include communication, critical thinking, project and time management, risk assessment for audit planning, and information technology.
- The Advanced level provides training in disciplines where an auditor may want to develop subject matter expertise such as in information technology, cybersecurity, data analytics, accounting, regulations or specific areas within utilities.
- The Training and Development will be shared with HR to ensure Internal Audit has covered the appropriate training and once finalized it will be used as a tool for staff to enhance their individual development plans and career aspirations.

d. Managing Energy Commodity Market Risk

Mr. Soubhagya Parija, Senior Vice President and Chief Risk Officer, provided highlights of the Authority's Commodity Risk Management program. (Exhibit "5d-A").

Portfolio Composition

Seventy percent of the Authority's portfolio is in two bilateral contracts - 1) Economic Development programs such as Recharge NY and 2) Power supply to municipal and cooperative utilities; and

Thirty percent in Merchant Sales monetized in the wholesale market – energy, capacity and ancillary services transacted through the New York Independent System Operator.

The uncertainty level is much higher for the merchant fees compared to the bilateral contracts. The Authority will need to manage its portfolio closely because the gross margin contribution of the merchant portfolio is proportionately much higher than the bilateral contracts.

Market Risk and Challenges

Evolving Competitive Market

- Hydroflow fluctuations - hydro volume has certain variability around it, both in long-term as well as in the short-term.
- Weather - drives price volatility in the short-term.
- Customer Load Variability - although the bilateral contracts are fixed, the customer loads vary year to year.
- Increased renewable adoption – NYPA is making its assets more flexible. With increased renewables, the Authority will have more volatility in the market.

Merchant Revenues

Merchant revenue is uncertain with a range of outcomes that may affect NYPA's:

- Ability to cover operating expenses
- Ability to meet financial budget requirements
- Support for organizational initiatives

In order to manage the operating expenses and financial budget requirements, merchant revenues need to be tracked appropriately. Hedging instruments are used to reduce and control the risk of adverse price movements. Financial hedging only allows the Authority to manage the price risk; it does not allow the Authority to manage any other risk that the merchant portfolio is exposed to.

Strategy Execution and Program Guidance

Governance

- Targets approved by Executive Risk Management Committee
- Monitored by Operational Risk group within Risk Management

Multi-Year Strategy

- Developed and executed by Energy Resource Management within Commercial Operations
- Reduces variability in gross margin results within established targets and limits

Analytics

- Energy Commodity Risk Management Solution (ECRM) was approved by the Trustees on July 2017

- Phase I of multi-stage project completed January 2018:

    - Forecasting
    - Risk reporting and valuations
    - Counterparty tracking and credit exposure
    - Enhanced transaction control

- Phase II – vision refined to enhance portfolio management:

    - Customer contract valuation – pricing and data management
    - Collateral management
    - Official projections with flexible reporting
    - Day-ahead and real-time market optimizations
    - Derivative hedge accounting
    - Fuel

6. **Next Meeting**

Chairman Nicandri said that the next regular meeting of the Audit Committee would be held on July 9, 2019 at the Clarence D. Rappleyea Building in White Plains, New York at a time to be determined.

Closing

Upon motion made by member Tracy McKibben and seconded by member Anthony Picente, the meeting was adjourned by the Chairman at approximately 9:05 a.m.

Karen Delince

Karen Delince
Corporate Secretary

EXHIBITS

For

Audit Committee

Minutes

March 26, 2019

Exhibit 5a
March 26, 2019

NEW YORK STATE OF OPPORTUNITY | NY Power Authority | Canal Corporation

Financial Report Summary – Year Ended December 31, 2018

Board Meeting

Lee Garza
Senior Vice President, Financial Operations

March 26, 2019

$’s in millions

Summary of Revenues, Expenses & Changes in Net Position (Actual 2018 vs 2017)	2018	2017
Operating Revenues	$2,689	$2,573
Operating Expenses	2,467	2,335
Operating Income	222	238
Non-operating Expenses, Net	120	119
Net Income	102	119
Net Position – Beginning	4,739	4,.620
OPEB adjustment – adoption of GASB No.75	(107)	-
Net Position – Beginning as restated (1)	4,632	4,739
Net Position - Ending	$4,734	$4,739

NEW YORK STATE OF OPPORTUNITY. | NY Power Authority | Canal Corporation

Financial Report Summary – Year Ended December 31, 2018

$’s in millions

Summary of Consolidated Statement of Net Position	2018	2017
Current Assets	$1,434	$1,580
Capital Assets	5,519	5,442
Other Noncurrent Assets	1,798	1,638
Deferred Outflows of Resources	137	66
Total Assets and Deferred Outflows	$8,888	$8,726
Current Liabilities	$1,051	$ 984
Noncurrent Liabilities	2,631	2,655
Total Liabilities	3,682	3,639
Deferred Inflows of Resources	472	348
Net Position	4,734	4,739
Total Liabilities, Deferred Inflows & Net Position	$8,888	$8,726

Financial Report Summary – Year Ended December 31, 2018

$'s in millions

Capital Structure and Debt Ratings	2018	2017
Long-term Debt, Net of Current Maturities:		
Senior:		
Revenue Bonds	$ 653	$ 720
Subordinated:		
Subordinated Notes, Series 2017 and 2012	43	44
Commercial Paper	5	5
Total Long-term Debt, Net of Current Maturities	701	769
Net Position	4,734	4,739
Total Capitalization	$5,435	$5,508

NYPA's Underlying Credit Ratings:	Moody's	Standard & Poor's	Fitch
Senior:			
Long-term Debt	Aa1	AA	AA
Subordinated:			
Subordinated Notes, Series 2017	N/A	AA-	N/A
Subordinated Notes, Series 2012	N/A	N/A	AA
Commercial Paper	P-1	A1+	F1+

2018 Consolidated Net Income Actual vs Budget (Exhibit B)

$’s in millions

For the year ended December 31 2018	Actual	Budget	Variance Favorable / (Unfavorable)
Operating Revenues			
Customer	$ 1,896	$ 1,861	$ 35
NYISO Market Revenues	793	844	(51)
	2,689	2,705	(16)
Operating Expenses			
Purchased Power/Fuel/Wheeling	1,553	1,566	13
Operations & Maintenance	679	689	10
Depreciation & Amortization	235	240	5
	2,467	2,495	28
Operating Income	222	210	12
Non-operating Revenues			
Investment Income	23	19	4
Non-operating Expenses			
Interest and Other Expenses	143	152	9
Net Income	$ 102	$ 77	$ 25

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Exhibit 5a-A
March 26, 2019

NEW YORK POWER AUTHORITY

Financial Report
December 31, 2018 and 2017

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

Table of Contents

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 income 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 income 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	15
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 Power Authority of the State of New York (the Authority), as of and for the years ended December 31, 2018 and 2017, and the related notes to the financial statements, which comprise 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 financial position of the Authority as of December 31, 2018 and 2017, and its changes in its financial position, and its 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.

(signed) KPMG LLP

New York, New York
March 26, 2019

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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)

	December 31,	
	2018	2017
Liabilities, Deferred Inflows and Net Position		
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	Year Ended December 31, 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:		1
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	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).

December 31, 2017	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	$ 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 (In millions)	Amount 2017	Interest rate	Maturity	Earliest redemption date prior to maturity
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 (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	31
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	$ 31

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 $29 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	207%	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

DRAFT

KPMG LLP
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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 Power Authority of the State of New York, (the Authority), which comprise the statements of net position as of December 31, 2018, and the related statements of revenues, expenses, changes in net position and cash flows for the years then ended, and the related notes to the consolidated financial statements, 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.

(signed) KPMG LLP

New York, New York
March 26, 2019

KPMG

New York Power Authority
Audit Results

Consolidated Financial Statements for the year ended December 31, 2018

March 26, 2019

Introduction

To the Audit Committee of the New York Power Authority

We are pleased to have the opportunity to meet with you on March 26, 2019 to discuss the results of our audit of the consolidated financial statements of the New York Power Authority (the "Authority") as of and for the year ended December 31, 2018. Our audit was conducted in accordance with the terms established in the audit engagement letter dated December 11, 2018.

We are providing this document in advance of our meeting to enable you to consider our findings and hence enhance the quality of our discussions. This document should be read in conjunction with our audit plan, presented on December 11, 2018. We will be pleased to elaborate on the matters covered in this document when we meet.

Our audit is substantially complete. There have been no significant changes to our audit plan and strategy.

We expect to be in a position to sign our audit opinion on the New York Power Authority's consolidated financial statements and our report on internal control and on compliance and other matters based on an audit of financial statements performed in accordance with Government Auditing Standards on March 26, 2019.

We expect to issue an unqualified Auditor's Report.

Content

Our audit findings

Audit matters

Page 4/5

Audit risk		Risk change	
Management override of controls	●	Consistent	Page 7

Uncorrected audit misstatements

Understatement/(overstatement)		
	$m	**%**
Revenues	–	–
Operating Expenses	–	–
Total assets	–	–
Net Position	–	–

Outstanding matters

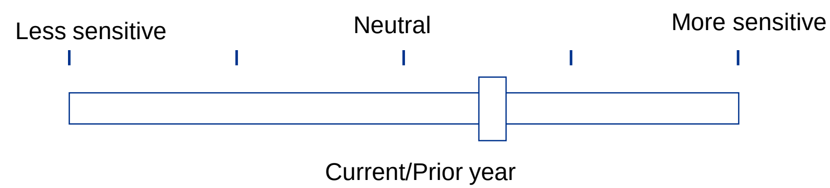
- Management representation letter
- Finalize audit report and sign opinion

Control deficiencies

Material weaknesses 0

Accounting judgments related to estimates

Page 8–11



Certain estimates made by the Authority are sensitive to the judgments made by management. The judgments made by management in the determination of these estimates has been consistently applied from the prior year to the current year. The engagement team found that the judgments and estimates made by management appeared reasonable. There were no changes from prior year.

Estimates include: Asset Retirement Obligations, Derivative Instrument Valuations, Pensions and Other Postretirement Obligation, and Investments

Audit results, required communication and other matters summary

Communication topic	Response
Scope of audit	Our audit of the consolidated financial statements of the New York Power Authority (the "Authority") as of December 31, 2018, and for each of the years in the two-year period ended December 31, 2018, was performed in accordance with the standards of U.S. generally accepted auditing standards (GAAS) and the standards applicable to financial audits contained in Government Auditing Standards issued by the Comptroller General of the United States.
Changes to our planned risk assessment and planned audit strategy	There were no changes to our audit plan which was presented to you on December 11, 2018.
Auditors' report	We expect to issue an unqualified audit opinion on the consolidated financial statements with an emphasis of matter paragraph related to GASB 75, which does not modify our opinion. Refer to appendix for a draft of our auditors' report and report on internal control and on compliance and other matters based on an audit of financial statements performed in accordance with Government Auditing Standards.
Outstanding matters	Outstanding matters as of March 26, 2019 are as follows: – Management representation letter – Finalize audit report and sign opinion
Significant accounting policies and practices	Significant accounting policies and practices are discussed within footnote 2 in the New York Power Authority's consolidated financial statements. – We have reviewed the accounting policies utilized by management in preparation of the consolidated financial statements and found such policies to be appropriate.
Critical Accounting Estimates	The engagement team did not identify any critical accounting estimates.

Audit results, required communication and other matters summary (continued)

Communication topic	Response
Significant risks and other significant audit matters	Significant risks and other significant audit matters relate to: – Fraud risk related to management override of controls
Financial statement presentation	We have no matters to report on the financial statement presentation.
New accounting pronouncements	The Authority adopted GASB 75 - *Accounting and Financing Reporting for Postemployment Benefits Other than Pension* Plans in the current year. Refer to slide 14 for the recent accounting pronouncements that the Authority is currently evaluating.
Significant Unusual Transactions	There were no significant unusual transactions identified during our audit.
Uncorrected misstatements	No matters to report.
Corrected misstatements	No matters to report.
Financial presentation and disclosure omissions	No matters to report.

Audit results, required communication and other matters summary (continued)

Communication topic	Response
Control deficiencies	No matters to report.
Other information in documents containing audited financial statements	Our responsibility with respect to information in a document does not extend beyond the financial information identified in our report, and we have no obligation to perform any procedures to corroborate other information contained in a document. However, we do have a responsibility to read the other information and consider whether such information, or the manner of its presentation, is materially inconsistent with information, or the manner of its presentation, appearing in the financial statements. As a result of our consideration of the other information, no material inconsistences or material misstatements of facts were identified related to other information.

Audit results, required communication and other matters summary (continued)

Type		Response
Related parties	OK	All related party transactions have been appropriately identified, accounted for, and disclosed in the consolidated financial statements at December 31, 2018.
Illegal acts or fraud	OK	No Matters to report
Noncompliance with laws and regulations	OK	No Matters to report
Modifications to auditor's report	OK	None
Group audit considerations	OK	N/A
Subsequent events	OK	None
External confirmations (if relevant)	OK	No Matters to report

Type		Response
Significant difficulties encountered during the audit	OK	No matters to report.
Disagreements with management or scope limitations	OK	No matters to report
Management's consultation with other accountants	OK	No matters to report
Significant issues discussed, or subject to correspondence with, management	OK	No matters to report.
Difficult or contentious matters for which the auditors consulted	OK	No matters to report
Material Written Communications between KPMG and Management	OK	Engagement letter & Management representation letter
Other matters (if relevant)	OK	None noted

Significant risks

1 Management override of controls

Management is in a unique position to perpetrate fraud because of its ability to manipulate accounting records and prepare fraudulent financial statements by overriding controls that appear to be operating effectively.

Significant Risk	Our audit response and findings
The risk — Management is in a unique position to perpetrate fraud because of management's ability to manipulate accounting records and prepare fraudulent consolidated financial statements by overriding controls that otherwise appear to be operating effectively. Although the level of risk of management override will vary from entity to entity, the risk nevertheless is present in all entities.	***Internal Controls*** — Assessed management's design and implementation of controls and the operating effectiveness of those controls over journal entries and post-closing adjustments. ***Substantive Procedures*** — Examine journal entries and other adjustments — Reviewing accounting estimates for bias — Evaluating the business purpose of any significant unusual transactions that may have occurred throughout the year — The engagement team considered the risk of management override of controls related to revenue and noted that the Authority's revenue recognition is straight forward. Additionally, the engagement team confirmed through inquiries that there is no incentive to fraudulently manipulate revenue — The engagement team reconciled a sample of revenue transactions to cash receipts and noted no issues over collectability nor revenue cut-off. ***Our Findings*** — The engagement team concluded that there was no fraud risk over revenue recognition. — The engagement team determined that internal controls over management override are operating effectively as of December 31, 2018 — The engagement team did not identify instances of fraud as a result of our substantive procedures

Significant accounting estimates

Description of significant accounting estimates

Asset Retirement Obligation

The determination of the asset retirement obligation utilizes estimates and management's judgement

Audit findings

Management's process used to develop the estimates

— Management uses internal and external experts to determine the valuation of asset retirement obligation

Significant assumptions used that have a high degree of subjectivity

— The only significant assumption with a high degree of subjectivity identified is the estimated removal cost used in the valuation.

— The Authority did not perform any new engineering studies during the year related to removal costs as there were no triggering events to update the estimate.

Conclusions

KPMG determined that there were no matters identified related to the estimate of the asset retirement obligation based on the procedures performed during the period ended December 31, 2018.

Significant accounting estimates (continued)

Description of significant accounting estimates

Valuation of Derivative Instruments

The determination of the fair value and the hedge effectiveness of the hedging derivative instruments involves accounting estimates and management's judgment

Audit findings

Management's process used to develop the estimates

— Management uses experts (Swap Financial Group and PA Consulting Group) to determine the fair value of and the hedge effectiveness of its hedging instruments.

Significant assumptions used that have a high degree of subjectivity

— No assumptions are considered to have a high degree of subjectivity. Assumptions are obtained through observable market data.

Conclusions

KPMG determined that there were no matters identified related to the estimate of the valuation of derivative instruments based on the procedures performed during the period ended December 31, 2018.

Significant accounting estimates (continued)

Description of significant accounting estimates

Pensions and other postretirement obligations

Management utilizes assumptions to determine future obligations to their pension and other postretirement benefits associated with the Authority's workforce

Audit findings

Management's process used to develop the estimates

— The Authority engages Buck Consulting to value the other postretirement benefit

— The Authority receives pension plan information directly from the NYSLERS

Significant assumptions used that have a high degree of subjectivity

— The only significant assumption with a high degree of subjectivity identified is the discount rate used in the valuation.

Conclusions

KPMG determined that there were no matters identified related to the estimate of the pensions and other postretirement obligations based on the procedures performed during the period ended December 31, 2018.

Significant accounting estimates (continued)

Description of significant accounting estimates

Investments

The determination of the fair value of investments involves accounting estimates and management's judgment

Audit findings

Management's process used to develop the estimates

— Management uses experts to determine the valuation of the investments

Significant assumptions used that have a high degree of subjectivity

— No assumptions are considered to have a high degree of subjectivity. Assumptions are obtained through observable market data.

Conclusions

KPMG determined that there were no matters identified related to the estimate of the investments based on the procedures performed during the period ended December 31, 2018.

Significant accounting practices

Significant accounting policies and practices	Results of evaluation and conclusions about the qualitative aspects
Revenue recognition	— Confirmed accounts receivables with the NYISO and SENY/Wholesale customers as of December 31, 2018 — Detail tested SENY/Wholesale revenue by agreeing recorded amounts to invoices and cash receipts — Agreed SENY/Wholesale billed rates to the approved tariffs — Re-performed SENY/Wholesale volume reconciliations — Confirmed and detail tested revenue with the NYISO throughout the year — Detail tested wheeling charges
Long term debt	— Confirmed outstanding long term debt obligations and short term borrowing program with third parties — Recalculated interest expense throughout the year — Reviewed debt covenants and ensured the Authority was compliant as of December 31, 2018
Investments	— Tested the fair market value of the complete portfolio of investments utilizing the KPMG National Pricing Desk — Reviewed a sample of investments for compliance with Board approved policies — Confirmed investment balances with the respective banks as of December 31, 2018 — Review of consolidated financial statements for completeness and accuracy of trust assets and obligations

Significant accounting practices (continued)

Significant accounting policies and practices	Results of evaluation and conclusions about the qualitative aspects
Capital Assets	— Tested the additions to Construction Work In Process (CWIP) and the additions to Plant-in-Service (EPIS) — Performed substantive analytical procedures to determine appropriate depreciation expense throughout the year — Ensured proper classification as capital or operating lease — Tested amounts determined to be capitalized — Ensured proper impairment disclosure within the financial statements

Newly effective accounting standards

Recent Accounting Pronouncements	Effective for years ending December 31		Note
	2019	2020	
GASB Statement No. 84 – Fiduciary Activities	✓		
GASB Statement No. 87 - Leases		✓	
GASB Statement No. 88 – Certain Disclosures Related to Debt, including Director Borrowings and Direct Placements	✓		
GASB Statement No. 89 – Accounting for Interest Cost Incurred before the End of a Construction Period		✓	
GASB Statement No. 90 – Majority Equity Interests (an amendment of GASB Statements No. 14 and No. 61)	✓		

Appendix

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 Power Authority of the State of New York (the Authority), as of and for the years ended December 31, 2018 and 2017, and the related notes to the financial statements, which comprise 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 financial position of the Authority as of December 31, 2018 and 2017, and its changes in its financial position, and its 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.

(signed) KPMG LLP

New York, New York
March 26, 2019

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 Power Authority of the State of New York, (the Authority), which comprise the statements of net position as of December 31, 2018, and the related statements of revenues, expenses, changes in net position and cash flows for the years then ended, and the related notes to the consolidated financial statements, 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.

(signed) KPMG LLP

New York, New York
March 26, 2019

Independent Accountants' Report on Compliance with the Requirements of Section 201.3 of Title Two of the *Official Compilation of Codes, Rules, and Regulations of the State of New York*

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

We have examined the Power Authority of the State of New York's (the Authority) compliance with Section 201.3 of Title Two of the *Official Compilation of Codes, Rules, and Regulations of the State of New York* during the year ended December 31, 2018. Management is responsible for the Authority's compliance with those requirements. Our responsibility is to express an opinion on the Authority's compliance based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants and, accordingly, included examining, on a test basis, evidence about the Authority's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances. We believe that our examination provides a reasonable basis for our opinion. Our examination does not provide a legal determination on the Authority's compliance with specified requirements.

In our opinion, the Authority complied, in all material respects, with the aforementioned requirements during the year ended December 31, 2018.

In accordance with *Government Auditing Standards*, we are required to report findings of deficiencies in internal control, violations of provisions of laws, regulations, contracts or grant proceeds, and instances of fraud and abuse that are material to the Authority's compliance with the requirements of Section 201.3 of Title Two of the *Official Compilation of Codes, Rules, and Regulations of the State of New York* that come to our attention during our examination. We are also required to obtain the views of management on those matters. We performed our examination to express an opinion on whether the Authority complied with the aforementioned requirements and not for purpose of expressing an opinion on the internal control over compliance with those requirements or the other matters referred to above; accordingly, we express no such opinions. The results of our tests disclosed no matters that are required to be reported under *Government Auditing Standards*.

This report is intended solely for the information and use of Authority's Management, the Board of Trustees, the New York State Office of the State Comptroller, the New York State Division of the Budget, and the New York State Authority Budget Office and is not intended to be and should not be used by anyone other than those specified parties.

(signed) KPMG LLP

New York, New York
March 26, 2019

Questions?

For additional information and Audit Committee resources, including National Audit Committee Peer Exchange series, a Quarterly webcast, and suggested publications, please visit KPMG's Audit Committee Institute (ACI) at www.kpmg.com/ACI.

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Audit Committee

Internal Audit Update – NYPA and Canals

March 26, 2019

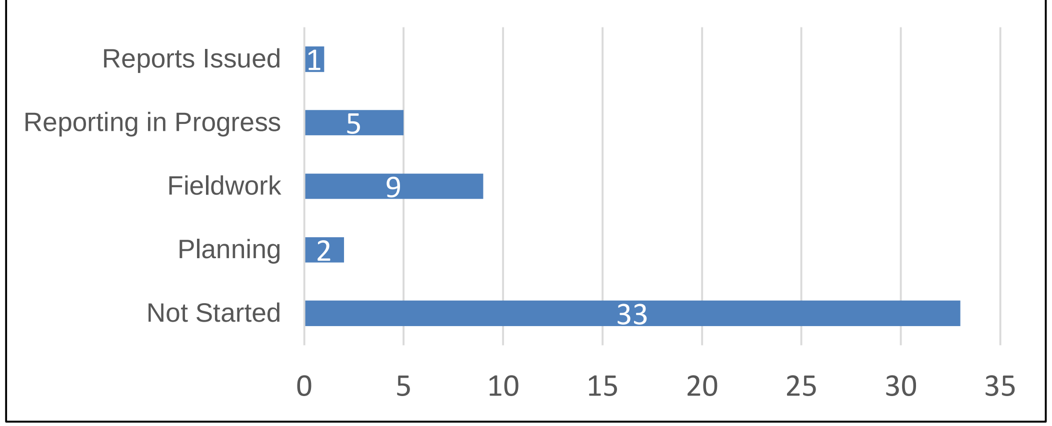
Table of Contents

Executive Summary

2019 Audit Plan Status

- 2019 Plan Status*:
  - 50 audits are included in the NYPA and Canals Audit Plan.
  - One audit report has been issued to date. Five audits have moved to the reporting stage and are expected to be issued by the end of Q1.
  - Three audits are near the end of fieldwork and are expected to be issued by the end of Q1. Two audits in fieldwork are expected to be issued during the first week of April.
  - The four remaining audits in fieldwork are two ongoing audit projects and two audits that have just started fieldwork. Planning for two Q2 audits has begun.
  - One high risk observation has been identified and management has developed action plans to address this issue.

Audit Phase - Status



NOTE: * See Appendix A for details

Changes to 2019 Internal Audit Plan

- Operational, Strategic, Compliance, Finance and IT audits are continuously evaluated for emerging risks through participation in work streams, committees and discussions with leadership. As a result, the following changes have been made to the 2019 Internal Audit Plan:

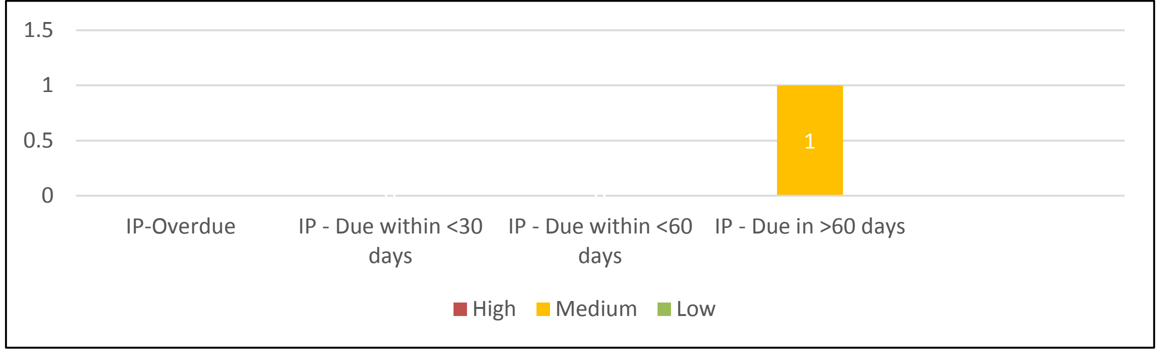
2019 Audit Status	3/15/19
Open 2019 Internal Audit Plan	49
Audits Added to 2019 Internal Audit Plan **NYPA:** Third Party Contract Audit – Wendel Energy Services **Canals:** None	+1
Audits Removed from 2019 Internal Audit Plan **NYPA:** None **Canals:** None	0
Total 2019 Audits	50

- Details explaining rationale for changes can be found in Appendix B.

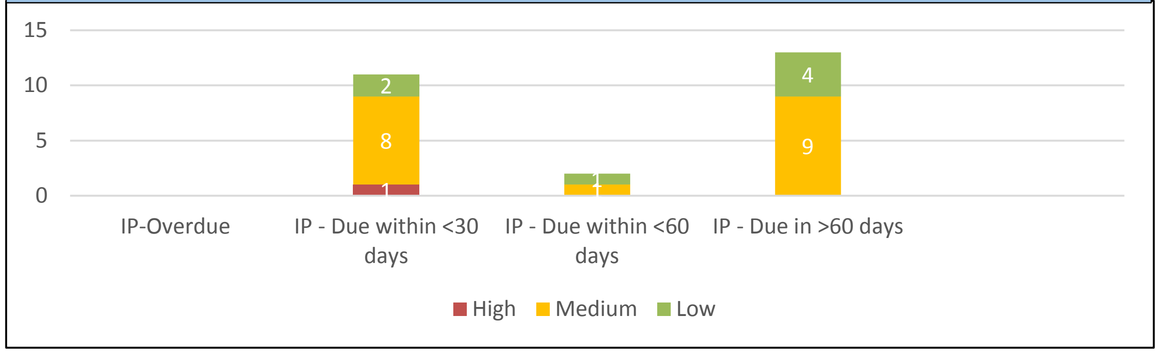
Internal Audit Remediation Status - NYPA

- As of March 15, 2019, one 2019, 26 2018 and two 2017 recommendations remained open. Closure of high and medium 2017 open recommendations are on track to close by their due dates.
- Internal Audit continues to assist management by providing monthly reporting to the EMC on open recommendation status and is monitoring remediation efforts for 2017- 2019 issues, with the priority on High-risk issues.

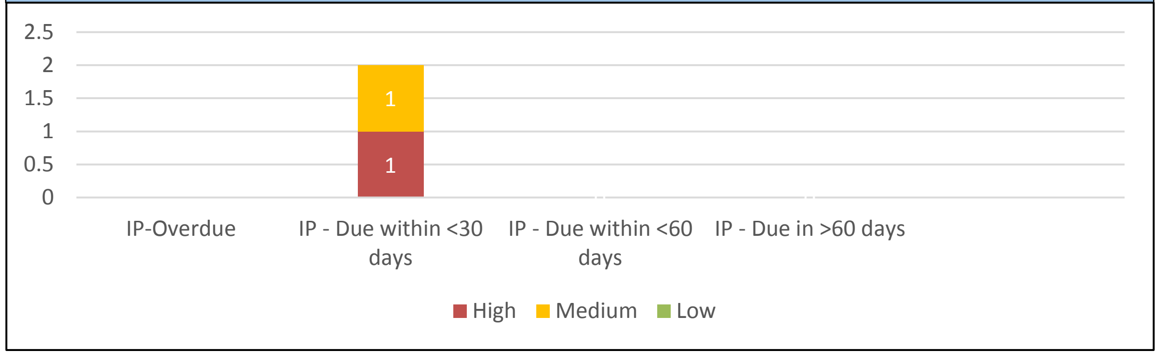
2019 Issue Remediation Status (Total 1)



2018 Issue Remediation Status (Total 26)



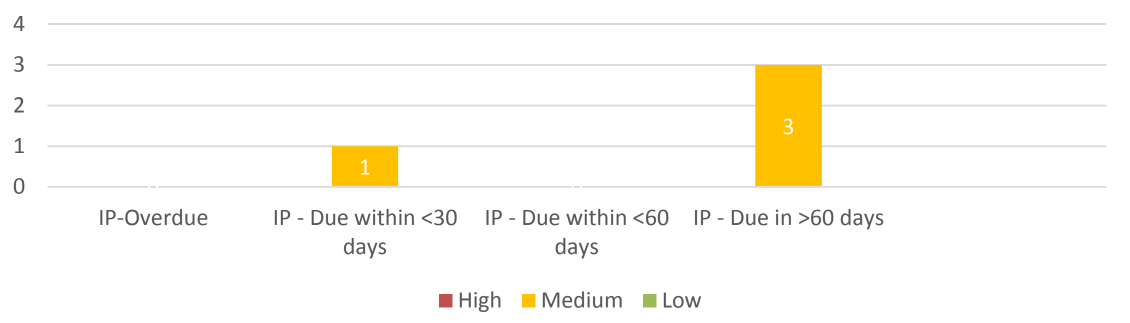
2017 Issue Remediation Status (Total 2)



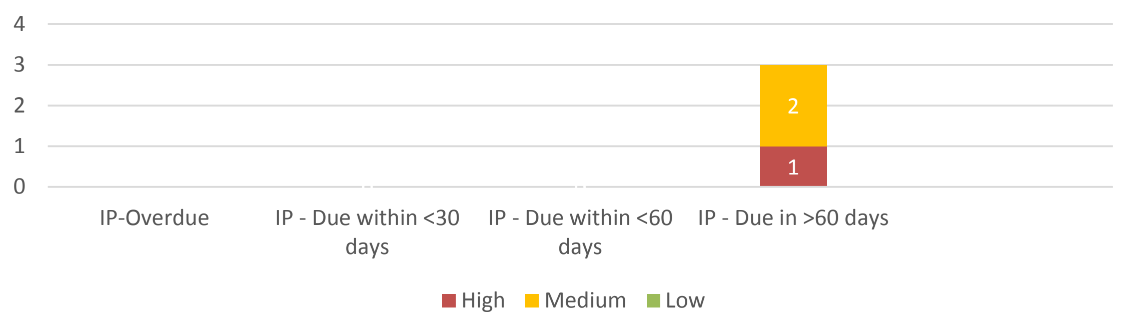
Internal Audit Remediation Status - Canals

- As of March 15, 2019, four 2018 and three 2017 recommendations remained open. Closure of high and medium 2017 open recommendations are on track to close by their due dates.
- Internal Audit continues to assist management by providing monthly reporting to the EMC on open recommendation status and is monitoring remediation efforts for 2017- 2018 issues, with the priority on High-risk issues.

2018 Issue Remediation Status (Total 4) - Canals



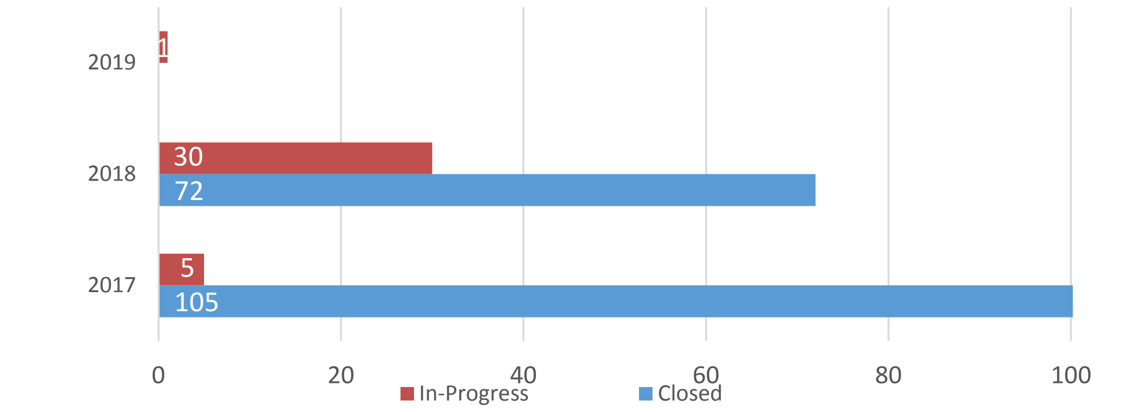
2017 Issue Remediation Status (Total 3) - Canals



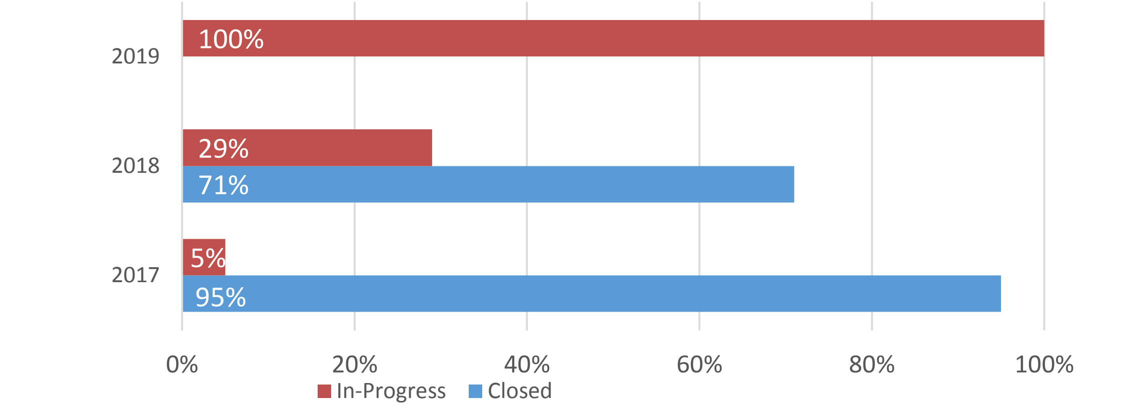
Internal Audit Remediation Status

- Below is the number and percentage of NYPA and Canals open and closed recommendations by year 2017-2019:

No. of Recommendations by Status and Year



Percentage of Recommendations by Status and Year



Status of Audit Recommendations – 2017

2017 Open Recommendations - NYPA	Remediation Status
Customer Credit Assessment (two recommendations)	A project is currently in flight to reassess customer credit processes and procedures within the department and development of the Credit Committee Charter will be addressed by the extended due date. **Due Date: 3/31/19**

2017 Open Recommendations - Canals	Remediation Status
Canals Permit Management (two recommendations)	Management is working on review of contract language for permits, regulations for appropriate insurance for permitted activity, documentation requirements and a strategy for use of Accela for permit administration. Management is on track to close by the due date. **Due Date: 7/31/19**
Physical Asset Verification (one recommendation)	An internal working group was established to begin drafting an asset management procedure to provide guidance for the management of all physical assets and is on track to close by the due date. **Due Date: 6/30/19**

Audit Cycle Coverage

Background

Internal Audit is introducing a new audit product into the mix of audit products it offers to management. It is called a Quick Impact Review (QIR) to assist with ensuring adequate coverage of the 46 high-risk rated audit entities that have been identified within the NYPA Audit Universe. The 2019 Audit Plan is covering 20 of the 46 high-rated entities. The Canals Audit Universe has nine high-rated entities to date, of which six are part of the 2019 Audit Plan and coverage will be adequate.

What is a QIR?

- QIRs are short and focused reviews that emphasize critical processes that drive the operations of the audit entity. It will not include the review of all processes.
- Information will be gathered from stakeholders to understand the general control environment regarding:
  - Key business objectives
  - Policies and procedures
  - Roles and responsibilities/Personnel changes
  - Performance management
  - Continuous improvement
  - Risk management
  - Regulatory requirements
  - Safety
  - Fraud
  - Information technology.

Why a QIR?

The introduction of a QIR will enable Internal Audit to provide coverage for those entities that are not covered in the 2019 Audit Plan. Twenty-six (26) audit entities remain from the NYPA Audit Universe, where seven are eligible for a QIR review in 2019. The remaining 19 audit entities are not ready for audit either due to:

- They are new initiatives
- Internal assessments/system implementations are underway
- They have been covered in recent prior audits/assessments
- Will be an advisory engagement or included in the 2020 Audit Plan.

Audit Cycle Coverage – cont’d

How is a QIR Performed?

- QIRs will be performed using a questionnaire and process walkthroughs to be completed over a two week time period.
- Key controls will be tested for design effectiveness only, not operating effectiveness to determine they can mitigate risk.
- The test sample for these controls will be a test of one sample.
- The QIR will follow some of the requirements of the traditional audit phases of planning, fieldwork and reporting, however, scaled down as follows:
  - Notification to stakeholders involved will be via email that a QIR will be conducted, no announcement memo
  - Meetings will be set up to discuss the areas within the questionnaire and perform walkthroughs
  - Execute walkthroughs, obtain documentation and complete the questionnaire
  - Test sample of one for key controls
  - Document results, conclude on control design and discuss with management
  - Prepare memo with observations and finalize with management.

What are the results of a QIR?

Internal Audit will gain insight as to the control environment for the audit entity and if management needs to address concerns identified with reference to the design of controls. A memo documenting the results of the review and a conclusion on the effectiveness of control design (e.g. effective, partially effective or ineffective) will be presented to management, discussed and distributed. A conclusion of ineffective control design may lead to a full audit or assessment.

Timing for QIRs

Internal Audit will pilot one QIR in Q1 and expect to execute the remaining six throughout Q2 – Q4. Feedback will be obtained from the business units undergoing the QIR for any improvement areas.

Internal Audit Transformation Highlights

BRANDING

- Survey to EMC and their direct reports has been developed and was sent in March to obtain their view of Internal Audit so we can obtain both internal and external perspectives to assist with the brand refresh. Surveys to Internal Audit staff were sent in late 2018.
- A timeline for the brand refresh has been completed and target for rollout is July 2019.

DELIVERY

Agile Methodology

- Held departmental Agile project methodology training in January 2019 and two audit projects were executed using this methodology in Q1.
- The teams were engaged, learned the concepts and applied them successfully. To continue this level of staff engagement, motivation and skills learned amongst the staff, the number of audit projects using this methodology was increased.
- The original plan for Agile project methodology rollout was to execute eight audits using this approach. Internal Audit has expanded this to 17 projects or about 40% of the plan.
- The goal is to be fully using the Agile methodology for audit project execution in 2020 from the original plan of 2021.

Internal Audit Transformation Highlights

GRC Automation

- Internal Audit has spent the last several weeks working with a consultant contracted by Risk Management to develop design requirements for the Risk Management module and audit management module within RSA Archer. Design requirements have been completed and final review is underway.
- The vendor has been onsite to prepare for configuration based on the design requirements. An implementation roadmap will be developed.
- Go live is targeted for 12/31/19.

Data Analytics

- For the 2019 Audit Plan, 20 of the 42 NYPA projects have been identified where data analytics can be applied. Five out of 13 Q1 audit projects targets for data analytics have applied these techniques to date.
- The Data Analytics team is working with IT to prepare requirements for the data analytics routines Internal Audit wants to build for analysis of ProCards, T&E, and others. Internal Audit has one script developed to search for Personally Identifiable Information (PII) on share files to date.
- The Data Analytics team has been attending Tableau training and advanced Excel training is scheduled in Q2 for the department to attend to enhance data analytics skills.

Internal Audit Transformation Highlights

Quality Assurance Improvement Program

- Internal Audit has developed a Quality Assurance Improvement Program (QAIP) based on the IIA QAIP Manual and the self-assessment is in progress to prepare for an external assessment in 2019.
- An external assessor has been contracted from the IIA with experience in completing external quality assessments for the utility industry. The assessor will be onsite at NYPA in July 2019 to complete the review.

INNOVATION

- The Innovation team completed timesheet development to capture audit project hours. Staff have been completing timesheets since January 2019.
- The team is currently working on aggregating timesheet data for the first quarter to analyze budgeted hours to actual hours for audit projects.
- Monthly reporting will be developed subsequent to the first quarter report.

Internal Audit Transformation Highlights

TALENT

Training and Development Program

- The contents of the Training and Development Program has been developed based on skill level: Core, Intermediate and Advanced.
- The Core level provides training that auditors should take if they are new auditors, new to NYPA or have not taken during their past experience or while at NYPA. It also includes learning about NYPA through site visits, tours of key business areas and utility industry specific training. Training areas include communication, technical auditing techniques, specific business area auditing, basic data analytics, information technology and energy market, utility accounting and work order/asset management.
- The Intermediate level adds on from the core level and provides training for more seasoned auditors and/or auditors that manage projects. Training areas include communication, critical thinking, project and time management, risk assessment for audit planning, and information technology.
- The Advanced level provides training in disciplines where an auditor may want to develop subject matter expertise such as in information technology, cybersecurity, data analytics, accounting, regulations or specific areas within utilities.
- The Training and Development will be shared with HR to ensure Internal Audit has covered the appropriate training and once finalized it will be used as a tool for staff to enhance their individual development plans and career aspirations.

Appendix

Appendix A – 2019 Internal Audit Plan

Ref	Entity	Audit Project Number	Audit	Business Unit	Audit Type	Report Rating	Date Issued
Deliverable Issued: 1							
1	NYPA	2019-AS-22	ES-C2M2 Maturity Assessment	Information Technology	Assessment	N/A	3-12-19
Reporting – Fieldwork Complete: 5							
2	NYPA	2019-AU-15	Build Smart – EO88 Program	Commercial Operations	Audit		
13	NYPA	2019-AS-06	ISO 55001 Framework Compliance	Utility Operations	Assessment		
3	NYPA	2019-AU-35	Employee Data Protection	Human Resources and Shared Services	Audit		
4	Canals	2019-AU-42-C	Asset Maintenance	Engineering & Maintenance	Audit		
5	Canals	2019-AU-49-C	Inventory & Warehousing	Engineering & Maintenance	Audit		
Fieldwork in Progress: 9							
6	NYPA	2019-AU-25	Energy Commodity Risk Management System Implementation	Risk Management	Audit		
7	NYPA	2019-AU-30	Bid to Bill System Implementation	Commercial Operations	Audit		
8	NYPA	2019-AU-01	Recharge NY Customer Compliance (D&M)	Commercial Operations	Audit		
9	NYPA	2019-AU-02	Commercial Operations Construction Projects	Commercial Operations	Audit		
10	NYPA	2019-AU-07	Site Operations and Maintenance (Central, Northern, Western, SENY)	Utility Operations	Audit		
11	NYPA	2019-AU-08	Market Forecasting Services	Commercial Operations	Audit		
12	NYPA	2019-AU-26	Lockout/Tagout Compliance	Utility Operations	Audit		
14	NYPA	2019-AU-21	Third Party Contract Audit – O'Brien & Gere/ Dewberry Energy	Business Services	Audit		
15	NYPA	2019-AU-50	Third Party Contract Audit – Wendel Energy Services	Business Services	Audit		
Audit Planning in Progress: 2							
16	NYPA	2019-AU-32	Western NY Customer Compliance Audit (D&M)	Commercial Operations	Audit		
17	NYPA	2019-AV-13	IT Vendor Management	Information Technology	*Advisory		
Planning Not Started: 33							
18	NYPA	2019-AU-03	Energy Trading and Hedging	Commercial Operations	Audit		
19	NYPA	2019-AU-04	Utility Operations Construction Projects	Utility Operations	Audit		
20	NYPA	2019-AS-05	Sensor Deployment Roadmap	Utility Operations	Assessment		
21	NYPA	2019-AS-09	Supply Chain Management (NYPA and Canals)	Business Services	Assessment		
22	NYPA	2019-AU-10	OSI PI Expansion Implementation	Utility Operations	Audit		
23	NYPA	2019-AU-11	Business Resiliency	Utility Operations	Audit		
24	NYPA	2019-AU-12	Generator Variable Costs	Commercial Operations	Audit		
25	NYPA	2019-AU-14	Power Systems Operations and Energy Control Center	Utility Operations	Audit		

***Note: The Consulting audit type has been revised to Advisory**

Appendix A – 2019 Internal Audit Plan

Ref	Entity	Audit Project Number	Audit	Business Unit	Audit Type	Report Rating	Date Issued
26	NYPA	2019-AU-16	Customer Revenues – NIA, Flynn, BG, SENY, STL, RNY, Canals	Business Services	Audit		
27	NYPA	2019-AU-17	Energy Settlements	Commercial Operations	Audit		
28	NYPA	2019-AS-18	Physical Security (NYPA and Canals)	Utility Operations	Assessment		
29	NYPA	2019-AS-19	Vendor Management Governance	Business Services	Assessment		
30	NYPA	2019-AU-20	Human Resources Operations: Recruiting, Hiring and Onboarding	Human Resources and Shared Services	Audit		
31	NYPA	2019-AU-23	Emergency Management (NYPA and Canals)	Utility Operations	Audit		
32	NYPA	2019-AU-24	Identity Access Management	Information Technology	Audit		
33	NYPA	2019-AU-27	Financial Planning and Forecasting	Business Services	Audit		
34	NYPA	2019-AU-28	Budgeting	Business Services	Audit		
35	NYPA	2019-AU-29	Cloud Governance	Information Technology	Audit		
36	NYPA	2019-AU-31	Ethics & Compliance Program (NYPA and Canals)	Law	Audit		
37	NYPA	2019-AU-33	IT Project Management Office (PMO)	Information Technology	Audit		
38	NYPA	2019-AS-34	IT Service Management (ITSM) Implementation	Information Technology	Assessment		
39	NYPA	2019-AU-36	Knowledge Management	Human Resources and Shared Services	Audit		
40	NYPA	2019-AU-37	Wireless Networks	Information Technology	Audit		
41	NYPA	2019-AU-38	External Compliance Reporting (NYPA and Canals)	Law	Audit		
42	NYPA	2019-AU-39	Background Checks	HR and Shared Services	Audit		
43	NYPA	2019-AU-40	Technology Change Release Management	Information Technology	Audit		
44	NYPA	2019-AV-41	Sustainability Program	Public and Regulatory Affairs	*Advisory		
45	Canals	2019-AS-43-C	Public Safety	Engineering & Maintenance	Assessment		
46	Canals	2019-AS-44-C	Vegetation Management	Engineering & Maintenance	Assessment		
47	Canals	2019-AU-45-C	Third Party Contracts	Administrative Services	Audit		
48	Canals	2019-AU-46-C	Recruiting, Hiring and Onboarding	Administrative Services	Audit		
49	Canals	2019-AU-47-C	Canals Permit Management	Administrative Services	Audit		
50	Canals	2019-AS-48-C	Maximo Lite Post Implementation	Technical Services	Assessment		

***Note: The Consulting audit type has been revised to Advisory**

Appendix B – Changes to 2019 Internal Audit Plan

NYPA:

Business Unit	Audit Name	Change	Rationale	Est. Start	Impact to IA Plan
Business Services	Third Party Contract Audits	Name Change	Changed name to Third Party Contract Audit – O'Brien & Gere/Dewberry Energy.	Q1	0
Business Services	Third Party Contract Audit – Wendel Energy Services	Added to the Plan	Split Third Party Contract Audits into two audits to reflect separate contractor reviews.	Q1	+1

CANALS:

Business Unit	Audit Name	Change	Rationale	Est. Start	Impact to IA Plan
No changes were made.					

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Exhibit 5d
March 26, 2019

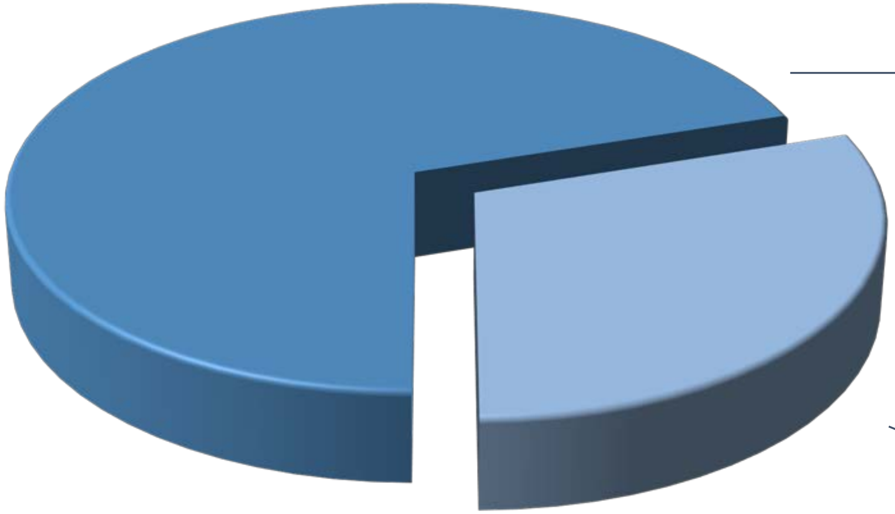
NEW YORK STATE OF OPPORTUNITY. | NY Power Authority | Canal Corporation

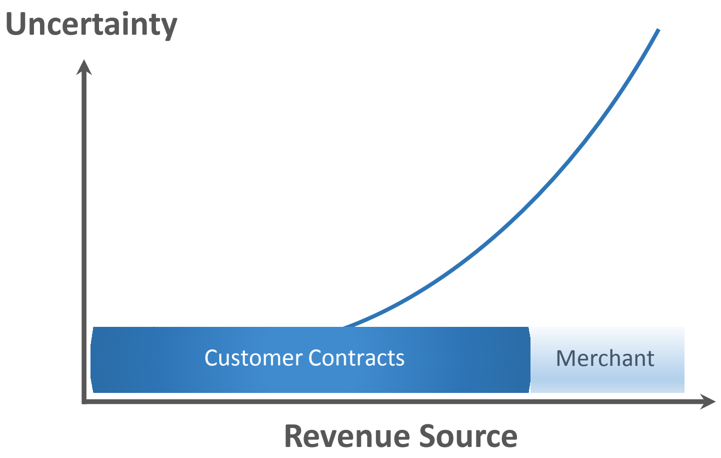
Managing Energy Commodity Market Risk

Soubhagya Parija

Senior Vice President & Chief Risk Officer

Portfolio Composition





Bilateral Contracts – 70%

- Economic development programs such as ReCharge NY
- Power supply to municipal and cooperative utilities

Merchant Sales – 30%

- Energy, capacity and ancillary services transacted through the New York Independent System Operator
- Generator margins contribute towards operating revenue

Market Risk and Challenges

Evolving competitive market

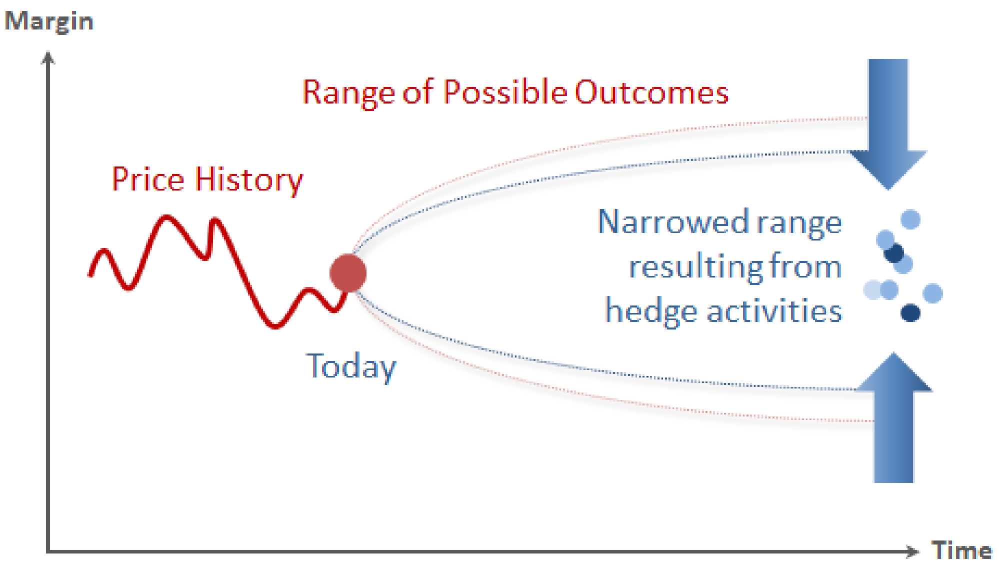
- Hydroflow fluctuations
- Weather driven price volatility
- Customer load variability
- Increased renewable adoption

Merchant revenue is uncertain with a range of outcomes that may affect:

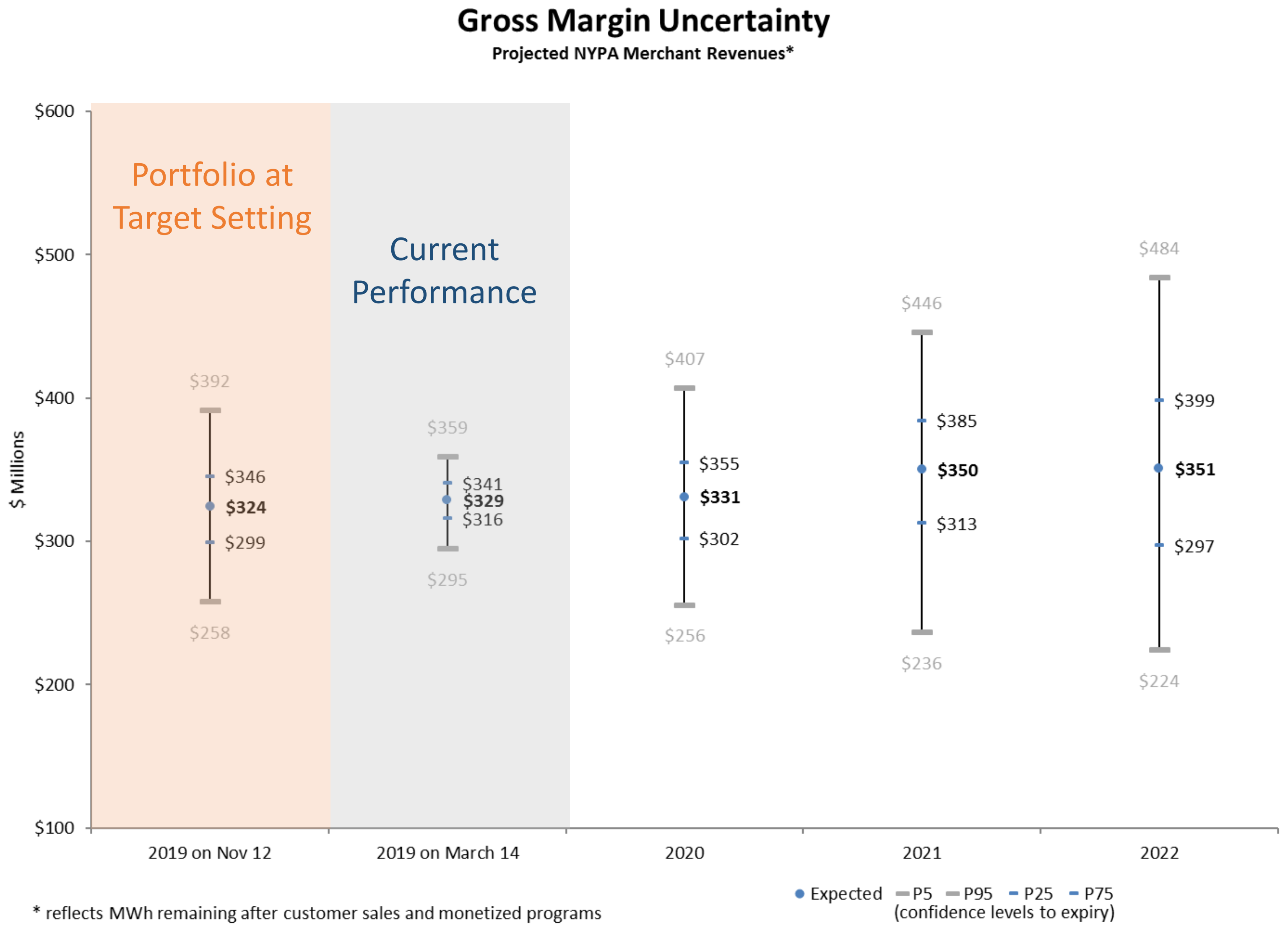
- Ability to cover operating expenses
- Meet financial budget requirements
- Support organizational initiatives

Uncertainty presents challenges to medium- to long-term planning

Hedge instruments reduce and control the risk of adverse price movements

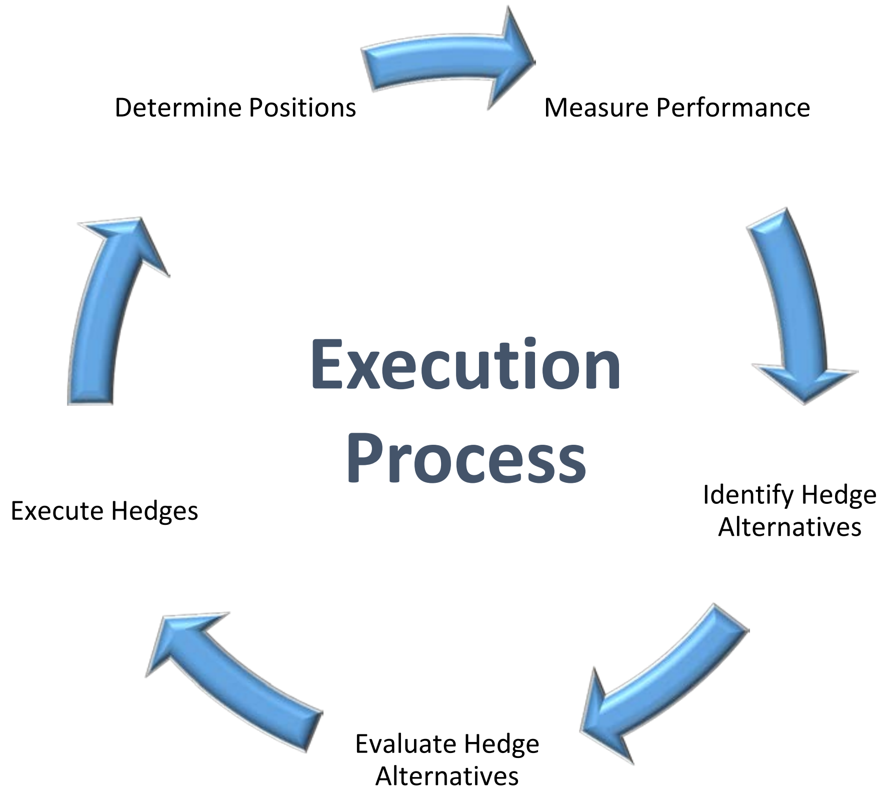


Hedge Program Results



* reflects MWh remaining after customer sales and monetized programs

Strategy Execution and Program Governance



Governance

- Targets approved by Executive Risk Management Committee
- Monitored by Operational Risk group within Risk Management

Multi-Year Strategy

- Developed and executed by Energy Resource Management within Commercial Operations
- Reduces variability in gross margin results within established targets and limits

Managed through Analytics

Energy Commodity Risk Management Solution (ECRM) approved by the Trustees on July 2017

Phase I of multi-stage project completed January 2018:

- Forecasting
- Risk reporting and valuations
- Counterparty tracking and credit exposure
- Enhanced transaction control

Phase II+ vision being refined to enhance portfolio management:

- Customer contract valuation – pricing and data management
- Collateral management
- Official projections with flexible reporting

- Day-ahead and real-time market optimizations
- Derivative hedge accounting
- Fuel

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