

# 2017-2020 Proposed Budget and Financial Plan

Background and Mission Statement.....	1
NYPA’s Relationship with the New York State Government.....	2
Budget Process .....	2
NYPA’s Four-Year Projected Income Statements.....	3
2017 Budget – Sources and Uses.....	4
NYPA’s Multi-Year Statement of Cash Flows .....	5
Budget Assumptions.....	6
Self-Assessment of Budgetary Risks.....	13
Revised Forecast of 2016 Budget.....	19
Reconciliation of 2016 Budget and 2016 Revised Forecast.....	19
Statement of 2015 Financial Performance .....	20
Employee Data.....	21
Gap-Closing Initiatives .....	21
Material Non-recurring Resources .....	21
Shift in Material Resources .....	21
Debt Service .....	21
Capital Commitments and Sources of Funding.....	25

In compliance with 2 NYCRR Part 203



## **Background and Mission of the Power Authority of the State of New York**

The mission of the Power Authority of the State of New York (“NYPA” or the “Authority”) 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.

The Authority generates, transmits and sells electric power and energy; principally at wholesale. The Authority’s primary customers are municipal and rural electric cooperatives located throughout New York State, investor-owned utilities, high load factor industrials, statewide commercial/industrial and not-for-profit businesses, various public corporations located in Southeastern New York within the metropolitan area of New York City (“SENY governmental customers”) and certain neighboring states.

To provide electric service, the 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 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 (the “500-MW plant”) and the Richard M. Flynn combined cycle plant located on Long Island (“Flynn”).

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 and St. Lawrence-FDR projects; (b) long-term supplemental electricity supply agreements with the SENY governmental customers; (c) construction and operation of the 500-MW plant 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 (“Astoria Energy II”); (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 PJM ISO; (f) refinancing outstanding bonds to lower the overall cost of debt; and (g) implementation of an enterprise-wide and energy/fuel risk management program. As a component of NYPA’s strategic plan, efforts to modernize NYPA’s generation and transmission infrastructure are being developed to increase flexibility and resiliency, and to serve customers’ needs in an increasingly dynamic energy marketplace.

The Authority provides customers with wide-ranging on-site energy solutions including energy data analytics, planning, operations and the development of capital projects such as energy efficiency, distributed generation, advanced technologies and renewables. The Authority also has responsibility for implementation of the Governor’s Executive Order No. 88, known as “BuildSmart NY” (to improve energy efficiency at State owned and managed buildings), the Five Cities Energy Efficiency Implementation Plans (for the cities of Albany, Buffalo, Rochester, Syracuse and Yonkers to reduce overall energy costs and consumption, strength the reliability of energy infrastructure, create jobs in local clean energy industries and contribute to a cleaner environment), and the K-Solar program (to reduce schools’ energy costs through the use of solar power). From January 2013 through June 2016, NYPA has provided approximately \$228 million in financing for energy efficiency projects at State agencies and authorities covered by Executive Order 88.

To achieve its goal of promoting energy efficiency, NYPA implements energy services programs aimed for the benefit of its SENY governmental customers and for various other public entities throughout the State. Under these programs, the Authority finances the installation of energy saving measures and equipment, which are owned by the customers and public entities upon their installation and which focus primarily on the reduction of the demand for electricity and the efficient use of energy. These programs provide funding for, among other things, high efficiency lighting technology conversions; high efficiency heating, ventilating and air conditioning systems and controls; boiler conversions; replacement of inefficient refrigerators with energy efficient units in public housing projects; distributed generation technologies and clean energy technologies; and installation of non-electric energy saving measures. The Authority has authorized, as of June 30, 2016, the expenditure of an aggregate of \$4.8 billion on these programs.

Legislation was enacted on April 4, 2016 which provided for the transfer to the Authority, effective January 1, 2017, of the New York State Canal Corporation, a public benefit corporation responsible for the management of the New York State Canal System’s 524 miles of waterways for four canals and 27 hydroelectric facilities (three of which the Authority already owns). Such enacted legislation provides that

the Canal Corporation will become a subsidiary of the Authority. Such legislation also authorizes the Authority to reimburse the NYS Thruway Authority for the operation and maintenance costs of the Canal System and the Canal Corporation for the interim period of April 1, 2016 through January 1, 2017.

**(a) NYPA’s Relationship with the New York State Government**

The Authority is a corporate municipal instrumentality and political subdivision of the State of New York (the “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 from time to time (the “Act”), to help provide a continuous and adequate supply of dependable electric power and energy to the people of the State.

The Authority’s operations are overseen by a Board of Trustees. NYPA’s Trustees are appointed by the Governor of the State, with the advice and consent of the State Senate. The Authority is a fiscally independent public corporation that does not receive State funds, tax revenues or credits. NYPA generally finances construction of new projects through a combination of internally generated funds and the sale of bonds and notes to investors, and pays related debt service with revenues from the generation and transmission of electricity. Income of the Authority and properties acquired by it for its projects are exempt from taxation.

**(b) Budget Process**

NYPA operates in a capital intensive industry where operating revenues and expenses are significant and highly variable due to the volatility of electricity prices and fuel costs. NYPA’s operations are not only subject to electric and fuel cost volatility, but changing water flows have a direct effect on hydroelectric generation levels. This 2017-2020 Proposed Budget and Financial Plan (“Four-Year Plan”) relies on data and projections developed through the following timeframe:

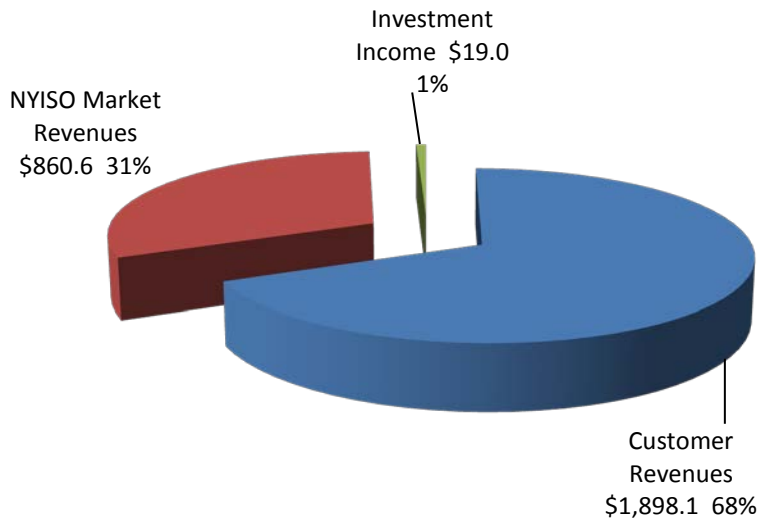
- During July – October 2016, develop preliminary forecasts of electric prices (both energy and capacity) and fuel expenses; NYPA customer power and energy use; NYPA customer rates; generation levels at NYPA power projects reflecting scheduled outages; and purchased energy & power requirements and sources.
- During July – October 2016, develop preliminary operations & maintenance and capital expense targets.
- November 2016 – post 2017-2020 Proposed Budget and Financial Plan for public inspection at five convenient locations and on NYPA’s internet website.
- During October – November 2016, update and finalize all forecasts and cost estimates.
- During November – December 2016, integrate above data to produce Final 2017-2020 Budget and Financial Plan.
- Seek authorization of NYPA’s Trustees to approve the 2017-2020 Budget and Financial Plan at their meeting currently scheduled for December 15, 2016 and submit the information to the State Comptroller’s Office; and make the document available for public inspection at five convenient locations and on NYPA’s internet website.

## **NYPA's Four-Year Projected Income Statements**

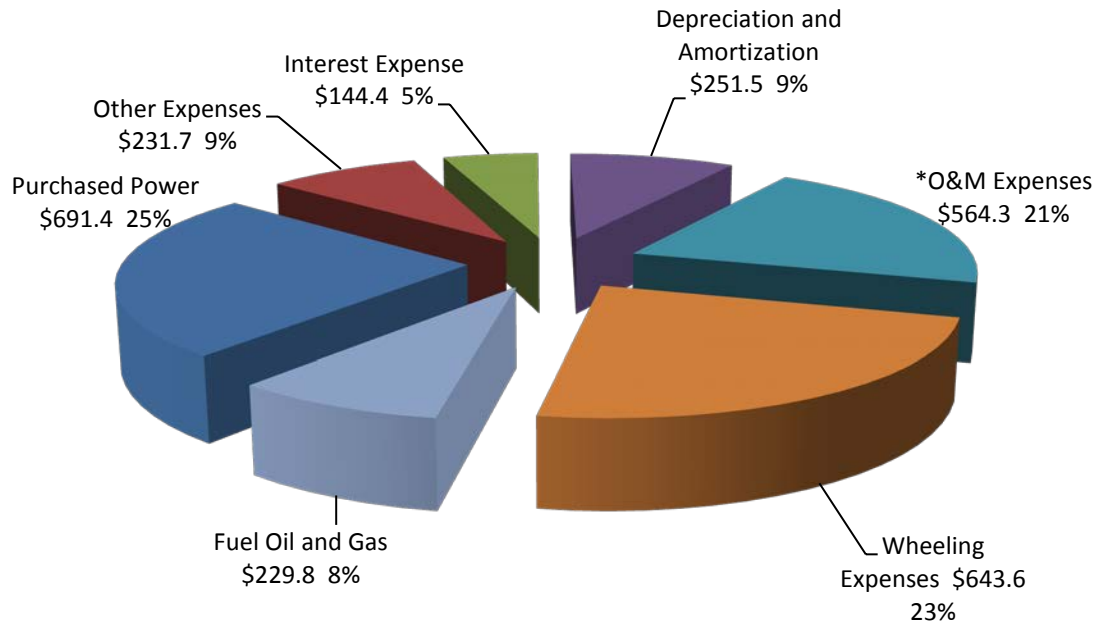
*(in Millions)*

	<b><u>2017</u></b>	<b><u>2018</u></b>	<b><u>2019</u></b>	<b><u>2020</u></b>
<b><u>Operating Income:</u></b>				
Customer Revenues	\$1,898.1	\$1,933.7	\$1,955.3	\$1,968.2
NYISO Market Revenues	<u>\$860.6</u>	<u>\$960.2</u>	<u>\$952.0</u>	<u>\$931.7</u>
<b>Total Operating Income</b>	<b>\$2,758.7</b>	<b>\$2,893.9</b>	<b>\$2,907.3</b>	<b>\$2,899.8</b>
<b><u>Operating Expenses:</u></b>				
Purchased Power	\$691.4	\$824.6	\$847.1	\$849.8
Fuel	\$229.8	\$242.7	\$240.2	\$260.0
Wheeling Expenses	\$643.6	\$643.6	\$643.5	\$643.3
O&M Expenses	\$576.7	\$570.9	\$584.1	\$575.8
Other Expenses	\$231.7	\$186.9	\$178.7	\$168.3
Depreciation and Amortization	\$251.5	\$255.1	\$258.3	\$261.5
Allocation to Capital	<u>(\$12.4)</u>	<u>(\$12.4)</u>	<u>(\$12.4)</u>	<u>(\$12.4)</u>
<b>Total Operating Expenses</b>	<b>\$2,612.3</b>	<b>\$2,711.3</b>	<b>\$2,739.5</b>	<b>\$2,746.3</b>
<b>NET OPERATING INCOME</b>	<b>\$146.4</b>	<b>\$182.5</b>	<b>\$167.7</b>	<b>\$153.5</b>
<b><u>Other Income:</u></b>				
Investment Income	\$19.0	\$20.1	\$21.4	\$24.9
Other Income	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
<b>Total Other Income</b>	<b>\$19.0</b>	<b>\$20.1</b>	<b>\$21.4</b>	<b>\$24.9</b>
<b><u>Non-Operating Expenses:</u></b>				
Interest Expense	\$144.4	\$140.4	\$142.7	\$147.1
Contributions to State	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
<b>Total Non-Operating Expenses</b>	<b>\$144.4</b>	<b>\$140.4</b>	<b>\$142.7</b>	<b>\$147.1</b>
<b>NET INCOME</b>	<b>\$21.0</b>	<b>\$62.2</b>	<b>\$46.4</b>	<b>\$31.4</b>

**2017 Budget – Sources**  
(in Millions)



**2017 Budget – Uses**  
(in Millions)



\* Reflects NYPA's Base O&M Expenses plus Administrative Expenses less the Allocation to Capital.

**NYPA's Statement of Cash Flows**

*(in Millions)*

**Revenue Receipts :**

	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Sale of Power, Use of Transmission Lines						
Wheeling Charges and other receipts	\$2,600.1	\$2,407.0	\$2,710.3	\$2,848.9	\$2,872.4	\$2,870.5
Earnings on Investments and Time Deposits	<u>\$19.9</u>	<u>\$17.4</u>	<u>\$17.1</u>	<u>\$21.3</u>	<u>\$23.1</u>	<u>\$26.7</u>
<b>Total Revenues</b>	<b>\$2,620.0</b>	<b>\$2,424.4</b>	<b>\$2,727.4</b>	<b>\$2,870.2</b>	<b>\$2,895.5</b>	<b>\$2,897.2</b>

**Expenses:**

Operation and Maintenance, including Transmission of Electricity by others, Purchased Power and Fuel Purchases	<b>(\$2,264.9)</b>	<b>(\$2,310.4)</b>	<b>(\$2,497.4)</b>	<b>(\$2,596.3)</b>	<b>(\$2,623.9)</b>	<b>(\$2,633.6)</b>
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**Debt Service :**

Interest on Bonds and Notes	(\$57.7)	(\$60.5)	(\$53.0)	(\$50.6)	(\$54.5)	(\$58.4)
Bonds and Notes Retired	<u>(\$138.0)</u>	<u>(\$57.5)</u>	<u>(\$58.1)</u>	<u>(\$36.8)</u>	<u>(\$39.1)</u>	<u>(\$41.5)</u>
<b>Total Debt Service</b>	<b>(\$195.7)</b>	<b>(\$118.0)</b>	<b>(\$111.0)</b>	<b>(\$87.4)</b>	<b>(\$93.6)</b>	<b>(\$99.9)</b>

<b>Total Requirements</b>	<b>(\$2,460.6)</b>	<b>(\$2,428.4)</b>	<b>(\$2,608.4)</b>	<b>(\$2,683.7)</b>	<b>(\$2,717.5)</b>	<b>(\$2,733.5)</b>
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<b>Net Operations</b>	<b>\$159.4</b>	<b>(\$4.0)</b>	<b>\$119.0</b>	<b>\$186.5</b>	<b>\$178.0</b>	<b>\$163.7</b>
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**Capital Receipts :**

Sale of Bonds, Promissory Notes & Commercial Paper	\$210.5	\$211.9	\$76.5	\$99.1	\$262.4	\$119.0
Less : Repayments	(\$106.0)	(\$100.0)	(\$63.9)	(\$15.1)	(\$19.3)	(\$25.6)
Earnings on Construction Funds	\$0.0	\$0.2	\$0.2	\$0.3	\$0.4	\$0.3
DSM Recovery Receipts	\$91.4	\$125.0	\$149.1	\$117.3	\$143.2	\$149.3
Temporary Asset Transfer Return from NYS	\$21.0	\$22.0	\$65.0	\$65.0	\$43.0	\$43.0
Other	<u>\$93.3</u>	<u>\$94.5</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
<b>Total Capital Receipts</b>	<b>\$310.2</b>	<b>\$353.6</b>	<b>\$226.9</b>	<b>\$266.6</b>	<b>\$429.7</b>	<b>\$286.0</b>

**Capital Additions & Refunds :**

Additions to Electric Plant in Service and Construction Work in Progress, and Other costs	(\$473.0)	(\$504.6)	(\$520.6)	(\$529.6)	(\$603.6)	(\$614.0)
Construction Funds - Net Transfer	<u>\$0.0</u>	<u>(\$0.2)</u>	<u>(\$0.2)</u>	<u>(\$0.3)</u>	<u>(\$0.4)</u>	<u>(\$0.3)</u>
<b>Total Capital Additions &amp; Refunds</b>	<b>(\$473.0)</b>	<b>(\$504.8)</b>	<b>(\$520.8)</b>	<b>(\$529.9)</b>	<b>(\$604.0)</b>	<b>(\$614.3)</b>

<b>Net Capital</b>	<b>(\$162.8)</b>	<b>(\$151.2)</b>	<b>(\$293.9)</b>	<b>(\$263.3)</b>	<b>(\$174.3)</b>	<b>(\$328.3)</b>
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<b>Net Increase/(Decrease)</b>	<b>(\$3.4)</b>	<b>(\$155.2)</b>	<b>(\$174.9)</b>	<b>(\$76.8)</b>	<b>\$3.7</b>	<b>(\$164.6)</b>
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## **(c) Budget Assumptions**

### **NYISO Revenue and Expenses**

Based on scheduled customer power needs and available electricity generated by NYPA's operating assets, the Authority buys and sells capacity and energy through markets operated by the New York Independent System Operator ("NYISO"). Various NYISO purchased power charges in combination with generation related fuel expenses comprise a significant portion of NYPA's operating expenses. A significant amount of the Authority's revenues result from sales of the Authority's generation into the NYISO market for which the energy revenues are projected based on available forward price curves while the capacity revenues are estimated using the NYISO demand curve methodology.

### **Customer and Project Revenue**

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

#### **St. Lawrence-FDR and Niagara Customers**

Power and energy from the St. Lawrence-FDR and Niagara hydroelectric facilities are sold under contract to municipal electric systems, rural electric cooperatives, industrial and other business customers, certain public bodies, investor-owned utilities, and out-of-state customers, with the balance sold into the NYISO 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; and seven out-of-state public customers have been established on the basis of the cost to serve these loads. This Four-Year Plan models Trustee-approved rate increases for customers as well as prospective rate increases.

Niagara's expansion and replacement power industrial customers and St. Lawrence-FDR's industrial customers are allocated over 35% of the firm contract demand of the plants. Sale of expansion and replacement power historically had been handled on a sale-for-resale basis through National Grid and New York State Electric and Gas. However, the direct sale of low cost hydro power to these customers commenced July 1, 2013. As a result, NYPA is now the load-serving entity for these transactions.

Legislation enacted in March 2011, effective July 2012, created a new economic development power program, the ReCharge New York Power Program ("RNYPP"), to replace two other economic development programs: the Power for Jobs ("PFJ") and Energy Cost Savings Benefits ("ECSB") programs. RNYPP is a permanent power program administered by the Authority and the Economic Development Power Allocation Board ("EDPAB"). The RNYPP utilizes 455 MW of hydropower from the Authority's Niagara and St. Lawrence-FDR projects combined with up to 455 MW of other power procured by the Authority from other sources. The 455 MW of hydropower was, until August 1, 2011, provided to residential and domestic customers of three upstate utilities. The 910 MW of power is available for allocations to eligible new and existing businesses and not-for-profit corporations under contracts of up to seven years. PFJ and ECSB program customers that applied for, but were not awarded RNYPP allocations, were eligible for certain transitional electricity discounts. This transitional electricity discounts program provides for declining levels of discounts through June 30, 2016 when the program terminates, if payment of such discounts is deemed feasible and advisable by the Authority's Trustees. As of June 30, 2016, approximately \$9.8 million of such discounts have been paid with approximately an additional \$3.4 million in payments remaining to be made. The RNYPP legislation also authorizes the Authority, as deemed feasible and advisable by the Trustees, to provide annual funding of \$100 million for the first three years following withdrawal of the hydropower from the rural and domestic customers, then \$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 previously received this hydropower. Revenues earned from the sale of unused RNYPP power into the wholesale market may be used to offset the cost of these residential discounts. The Authority supplemented the market revenues through the use of internal funds, from the August 2011 start of the program through June 30, 2016, totaling cumulatively \$114 million.

In April 2014 a partial shutdown went into effect at Alcoa (Massena East Plant) due to the economic downturn, and specifically the decreased prices for aluminum. In response, NYPA created the temporary North Country Discount Program ("TNCDP"), which was approved by the Trustees in March 2015. The funds

to support this program are generated by the net margins produced by the sale of unused hydropower at Alcoa East into the wholesale energy market. This plan is limited to ten million dollars (\$10,000,000) per year, with a total authorization requested of thirty million dollars (\$30,000,000). NYPA worked with the upstate utilities (National Grid and NYSEG) to construct a financial pathway to flow dollars from NYPA to the businesses and active dairy farms in the targeted St. Lawrence Preservation Power region through reductions in the local utility's monthly electric bill. This commitment runs for three years or until Alcoa East returns to service. In November 2015, Alcoa announced a temporary curtailment of production at its second smelting facility, the Massena West plant, also due to the depressed aluminum market. Similar events were also announced at other Alcoa facilities in the United States. In June, 2016 the Authority made an agreement for the sale of 245 MW of firm hydroelectric power and energy from the St. Lawrence-FDR project to Alcoa at its West Plant facilities. This contract with the Aluminum Company of America ("ALCOA") for an aggregate of 245 MW has been executed effective October 1, 2015 through March 31, 2019, replacing prior long-term contracts with ALCOA. The contract provides for rate adjustments based upon a formula containing various indices, and has provisions for price adjustments based on the price of aluminum on the London Metal Exchange. The contract has job compliance provisions based on employment commitments. In response to certain economic factors surrounding the aluminum smelting industry, and in response to ALCOA's announcement that it would curtail smelting operations at its Massena plant, the Authority's Trustees in December 2015 approved execution of this Agreement with ALCOA to replace prior power sales contracts that totaled 478 MW.

The Authority estimates that the total costs associated with the relicensing of the St. Lawrence-FDR Project for a period of 50 years will be approximately \$210 million, of which approximately \$192 million has already been spent. These total costs could increase in the future as a result of authorities reserved by FERC in the New License. The Authority is collecting in its rates for the sale of St. Lawrence-FDR power amounts necessary to fund such relicensing costs.

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 known as the Northern New York Economic Development Fund ("NNY Fund"), and to make awards to eligible applicants that propose eligible projects that satisfy applicable criteria. The NNYPPA established a five-member allocation board appointed by the Governor.

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 (the "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 sold 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. The Authority's estimates of payments from the Authority to the NNY Fund have been incorporated into this Four-Year Plan.

The Western New York Power Proceeds Act ("WNYPPA"), which was enacted on March 30, 2012, authorizes the Authority to deposit net earnings from the sale of unused Expansion Power and Replacement Power from the Authority's Niagara project into the Western New York Economic Development Fund ("WNY Fund") as deemed feasible and advisable by the Authority's Trustees. "Net earnings" are defined as any excess revenue earned from such power sold into the wholesale market over the revenue that would have been received had the power been sold at the Expansion Power and Replacement Power rates. Starting in May 2013, proceeds from the WNY Fund have been used to support eligible projects undertaken within a 30-mile radius of the Niagara project that qualify under the applicable criteria. The WNYPPA established a five member allocation board appointed by the Governor. The Authority's estimates of payments from the Authority to the WNY Fund have been incorporated into this Four-Year Plan.

#### SENY Governmental Customers

Various municipalities, school districts and public agencies in New York City and Westchester County are served by the Authority's combined cycle 500-MW plant, the four small hydroelectric plants, the contracted



output of the Astoria Energy II plant, and capacity and energy purchased by the Authority in the NYISO markets. Sales into the NYISO of energy generated by these resources and grandfathered transmission rights offset the cost of the energy purchased. A set amount of capacity from the Blenheim-Gilboa project is also dedicated to serving a portion of this customer class.

In 2005, the Authority and its major New York City governmental customers entered into long-term supplemental electricity supply agreements ("2005 LTA"). Under the 2005 LTA, the NYC governmental customers agreed to purchase their electricity from the Authority through December 31, 2017, with the NYC governmental customers having the right to terminate service from the Authority at any time on three years' notice and, under certain limited conditions, on one year's notice, provided that they compensate the Authority for any above-market costs associated with certain resources used to supply these customers. The Authority and the New York City governmental customers are currently in negotiations for a continued electricity and supply agreement.

Under the 2005 LTA, the Authority modifies rates annually through a formal rate proceeding if there is a change in fixed costs to serve the New York City governmental customers. Generally, changes in variable costs, which include fuel and purchased power, are captured through annual contractual pricing adjustment mechanisms.

In 2007, the Authority entered into new supplemental electricity supply agreements ("2007 Supplemental Agreements") with more than one-hundred governmental customers in Westchester County, resulting in the Westchester governmental customers remaining full requirements customers of NYPA. The Westchester County customers can terminate the contract upon one year's notice, effective no sooner than the January 1<sup>st</sup> following such notice. The Authority may modify the rates charged the customer pursuant to a specified procedure; an energy charge adjustment mechanism is applicable to all variable costs; the customer is committed to pay for any supply resources secured for it by the Authority under a collaborative process; and NYPA will continue to make available financing for energy efficiency projects and initiatives, with costs thereof to be recovered from the customer.

For purposes of the Four-Year Plan, it is assumed that both the 2005 LTA and the 2007 Supplemental Agreements will be extended through the Four-Year Plan forecast period, such that the SENY governmental customers will continue to be served and rates for these customers will be set on the basis of the cost to serve these loads.

#### Blenheim-Gilboa Customers

The Authority had a contract for the sale of 50 MW of firm capacity from the Blenheim-Gilboa plant to the Long Island Power Authority ("LIPA") which expired in April of 2015. The Authority additionally has an active contract for the sale of 250 MW of firm capacity to the Authority's New York City governmental customers, the rates for which are reset periodically on the basis of cost. The remainder of the plant's capacity is used to meet the requirements of some of the Authority's other business and governmental customers and/or sold in the NYISO market. For purposes of the Four-Year Plan, it has been assumed that the allocation to the New York City governmental customers continues.

#### Small Clean Power Plants ("SCPPs")

In the summer of 2001, the Authority placed in operation ten 44-MW natural-gas-fueled SCPPs in New York City and one on Long Island, to address a potential local reliability deficiency in the New York City metropolitan area and its potential impact on statewide reliability. The plant at the Vernon location is assumed to be retired during the forecast period pursuant to the terms of an agreement entered into at the time of construction.

For the Four-Year Plan, it is assumed that the capacity of the SCPPs may be used by the Authority to meet its customers' capacity requirements, sold to other users via bilateral arrangements or sold into the NYISO capacity auction. NYPA sells the energy produced by the SCPPs into the NYISO energy market.

#### Flynn

The Flynn project is a combined-cycle facility with a net dependable capability of 162.7 MW. The entire output of the plant had previously been sold to LIPA, however LIPA terminated the Flynn contract on April 30, 2014. The Flynn project now operates as a merchant plant, with capacity and energy output sold into the NYISO market. The forecast is for Flynn to operate as a merchant plant for the next four years.

### Transmission Projects

The Authority owns approximately 1,400 circuit miles of high voltage transmission lines, the major lines being the 765-kV Massena-Marcy line, the 345-kV Marcy-South line, the 345-kV Niagara-to-Edic line, and the 345-kV Long Island Sound Cable.

Since the formation of the NYISO in November 1999, cost recovery for the Authority's provision of transmission service over its facilities has been governed by the NYISO tariff which included an annual transmission revenue requirement ("TRR") for NYPA of \$165.4 million. NYPA receives cost recovery through the NYISO tariff mechanism known as the NYPA Transmission Adjustment Charge ("NTAC"), which recovers transmission costs on a statewide basis after accounting for NYPA's revenues received from pre-existing customer transmission service contracts, a Transmission Service Charge assessed on customers in NYPA's upstate load zone, and other sources.

In July 2012, the Authority filed for its first TRR increase with FERC. The Authority's filing resulted in an uncontested settlement approved by FERC for a new, \$175.5 million TRR applicable to the Authority, effective August 1, 2012. The increased TRR is necessary to cover increased operating and maintenance expenses of NYPA's bulk transmission system, as well as to make necessary capital improvements.

In January 2016, the Authority filed for a transmission revenue requirement formula rate with FERC. In March 2016, FERC accepted the filing and made it effective April 1, 2016, as requested, subject to hearing and settlement judge procedures. The Authority requested a formula rate to more efficiently recover its increased capital expenditures needed to maintain the reliability of its transmission system. The Authority filed an unopposed Offer of Settlement on September 30, 2016 that fully resolves the issues raised by interested parties in settlement negotiations concerning the formula rate. Separately, the annual TRR under the formula of \$190.0 million initially made effective April 1 was updated on July 1, 2016 to \$198.2 million pursuant to the formula rate annual update process. Annual updates commensurate with projected costs are assumed to continue throughout the forecast period.

### Hudson Transmission Project

Following a request for proposals issued by the Authority in March 2005, the Authority executed a firm transmission capacity purchase agreement with HTP in April 2011. HTP constructed a 345-kV underground/submarine transmission line extending from Bergen County, New Jersey to Con Edison's West 49<sup>th</sup> Street substation in midtown Manhattan. The transmission line commenced operation in June 2013, and is operating as a merchant facility.

The Authority executed a Firm Transmission Capacity Purchase Agreement (FTCPA) with HTP, which provides the Authority with 75% of the Line's 660 MW of transmission 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. The costs of those interconnection and transmission upgrades associated with the Line are estimated to be approximately \$343 million. As of June 30, 2016, the Authority paid approximately \$315 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 transmission tariff. Such RTEP costs are estimated to grow significantly in future years, 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 initial 20-year term of the FTCPA. PJM's RTEP charges contribute to this under-recovery. PJM's RTEP cost allocation methodology for certain upgrades, such as the Bergen-Linden Corridor and Edison Rebuild projects, is being challenged at FERC 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. Depending on a variety of factors, including the outcome of FERC's review and whether any other parties decide to terminate their PJM transmission rights, HTP could be allocated, and NYPA could be obligated to pay, substantially more RTEP costs. Any RTEP costs relating to the Bergen-Linden Corridor and Edison Rebuild projects would be paid over a number of years once construction of the improvements commences, which is expected in 2017.

### **Purchased Power Expenses**

Capacity, energy and ancillary service purchases made on behalf of customers (except for those made through previously approved purchased power agreements) are assumed to be transacted at the market clearing price in the wholesale market. For purposes of developing the Four-Year Plan, projected energy rates are based on available forward price curves while the capacity rates are estimated using the NYISO demand curve methodology.

### **Fuel Expenses**

Fossil-fuel purchases in the Four-Year Plan are based on expected net generation levels determined through the use of an economic dispatch model for the Authority's plants and on available forward fuel price curves. Fuel expenses also include the costs associated with emission credit requirements under the Regional Greenhouse Gas Initiative ("RGGI"). RGGI requires the Authority to buy emission credits for its fossil-fuel plants, and the Authority also purchases such credits for the contracted Astoria Energy II plant. The projections for RGGI costs are based on projected emission rates and forecasted consumption of natural gas and oil, with such costs recovered either through specific customer contract pass-through provisions or from the wholesale market.

### **Wheeling Expenses**

Wheeling (i.e., the transmission and/or delivery of power and energy to customers over the lines of a third party) expenses are based on contractual and/or tariff rates of the service provider, and are recovered through pass-through provisions in customer contracts.

### **Strategic Initiatives**

The Authority is pursuing several initiatives, which are in varying stages of implementation. These initiatives include, but are not limited to:

- Customer Solutions – to develop innovative, cost-effective and resilient energy solutions that enable customers to achieve their energy goals in new ways;
- Asset Management – to strengthen investment planning through enhanced use of technology, data, people and processes;
- Smart Generation and Transmission – to deploy advanced technologies that ensure that grid operations become increasingly intelligent;
- Workforce Planning – to identify and acquire the skills that NYPA will need to succeed, through internal training, succession planning, employee retention and external recruiting;
- Knowledge Management – to promote enhanced sharing of information and knowledge as part of day-to-day operations;
- Process Excellence – to enhance processes in order to optimize resources and costs, manage risk, and reduce environmental impact.

The Four-Year Plan reflects costs and revenues with respect to these initiatives.

### **Canal Corporation**

Legislation was enacted on April 4, 2016 which provided for the transfer to the Authority, effective January 1, 2017, of the New York State Canal Corporation (the "Canal Corporation"), a corporation responsible for the management of the New York State Canal System. The Canal System includes 524 miles of waterways for four canals (Erie, Oswego, Champlain and Cayuga-Seneca) and 27 hydroelectric facilities (three of which the Authority already owns). Such enacted legislation provided that the Canal Corporation will become a subsidiary of the Authority. The legislation authorizes the Authority to transfer moneys, property and personnel to the Canal Corporation and also authorizes the Authority to issue subordinated debt for the purposes of financing the construction, reconstruction, development and improvement of the Canal System. Such legislation also authorizes the Authority to reimburse the NYS Thruway Authority (the "Thruway Authority") for the operation and maintenance costs of the Canal System and the Canal Corporation for the interim period of April 1, 2016 through January 1, 2017.

The Authority and the Thruway Authority executed a Canal Reimbursement Agreement, dated as of July 6, 2016, providing for the monthly reimbursements authorized in the legislation. As of August 31, 2016, the Authority has remitted \$19.1 million to the Thruway Authority for reimbursement for the months of April, May and June. Because the Authority does not currently own the Canal Corporation, all reimbursement costs, including those for capital related activities, are being treated as non-operating expenses for the Authority's

2016 fiscal year. Capital expenses, subsequent to assuming ownership of the Canal System, will be reported as such for financial reporting purposes.

The Authority is in the process of determining what the remaining interim and long term level of its financial support to the Canal Corporation will be. For fiscal year 2015 the Canal Corporation's operating expenses were \$62.1 million and operating revenues were \$2.37 million with the difference provided by the Thruway Authority or other resources. For fiscal year 2015, the Canal Corporation's capital program was \$48.8 million with funding from various sources, including the Thruway Authority. Certain information relating to the Canal Corporation's capital and operating expenses and budgets and the level of financial assistance provided to the Canal Corporation by the Thruway Authority is included in the Thruway Authority's audited financial statements, monthly financial reports and budgets, copies of which are available at the Thruway Authority's website: [www.thruway.ny.gov](http://www.thruway.ny.gov). For the purposes of preparing this Four-Year Plan, certain assumptions have been made with respect to expenses and revenues related to Canal Corporation.

## **Investment and Other Income**

### Investment Income

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.

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 and Federal Home Loan Bank, Federal Farm Credit Bank and Federal Home Loan Mortgage Corp. were rated Aaa by Moody's Investors Services, AAA by Fitch Ratings, and AA+ by Standard & Poor's. All of the Authority's investments in U.S. debt instruments are issued or explicitly guaranteed by the U.S. Government.

### Other Income

On November 21, 2000 ("Closing Date"), the Authority sold its nuclear plants, the Indian Point 3 ("IP3") and James A. FitzPatrick ("JAF") Projects, to two subsidiaries of the Entergy Corporation for cash and non-interest bearing notes totaling \$967 million, maturing over a 15-year period. The present value of these payments recorded on the Closing Date, utilizing a discount rate of 7.5%, was \$680 million. In addition, the Authority entered into two "value sharing agreements" ("VSAs") with the Entergy subsidiaries whereby the Authority is entitled to receive annual payments up to a maximum of \$72 million, with the last VSA cash payment made in early 2015 while being recorded as revenue on the 2014 income statement.

On August 8, 2016, the Authority entered into certain agreements with Entergy Nuclear Operations, Inc. and certain of its affiliates (collectively, "Entergy") related to the sale by Entergy to Exelon Generation Company, LLC of the James A. Fitzpatrick nuclear power plant. Such agreements provide for the transfer, subject to approval by the Nuclear Regulatory Commission, from the Authority to Entergy of the nuclear decommissioning trust funds ("NDTFs"), as well as all remaining nuclear decommissioning financial obligations, relating to the nuclear plants that the Authority sold to Entergy in 2000. In addition, the Authority provided a standby letter of credit to Entergy Nuclear Fitzpatrick, LLC in the amount of \$35 million, which may be drawn upon by the beneficiary upon certain conditions, including, among others, the failure of independent regulatory bodies to provide their approval of the sale. The Authority expects the sale to be completed in 2017. The letter of credit was issued on August 8, 2016 by T.D. Bank, NA under a Reimbursement Agreement whereby the Authority is obligated to reimburse T.D. Bank immediately for any draws upon the letter of credit.

## Operations and Maintenance Expenses

NYPA's O&M plan by cost element for 2017-2020 is as follows:

### Operations and Maintenance Forecast by Cost Element

	<i>(in Millions)</i>			
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
<b>Payroll</b>				
Regular Pay	\$ 175.8	\$ 181.9	\$ 188.3	\$ 188.3
Overtime	\$ 9.5	\$ 9.8	\$ 10.2	\$ 10.5
Other Payroll	<u>\$ 2.3</u>	<u>\$ 2.3</u>	<u>\$ 2.4</u>	<u>\$ 2.5</u>
<b>Total Payroll</b>	<b>\$ 187.5</b>	<b>\$ 194.1</b>	<b>\$ 200.9</b>	<b>\$ 201.3</b>
<b>Benefits</b>				
Employee Benefits	\$ 35.8	\$ 36.1	\$ 37.6	\$ 35.9
Pension	\$ 33.5	\$ 34.7	\$ 35.9	\$ 37.1
OPEB	\$ 19.0	\$ 19.7	\$ 20.4	\$ 21.1
FICA	<u>\$ 14.0</u>	<u>\$ 14.5</u>	<u>\$ 15.0</u>	<u>\$ 15.5</u>
<b>Total Benefits</b>	<b>\$ 102.3</b>	<b>\$ 105.0</b>	<b>\$ 108.8</b>	<b>\$ 109.6</b>
<b>Materials/Supplies</b>	<b>\$ 19.5</b>	<b>\$ 20.2</b>	<b>\$ 20.9</b>	<b>\$ 21.6</b>
<b>Fees</b>	<b>\$ 9.2</b>	<b>\$ 9.5</b>	<b>\$ 9.8</b>	<b>\$ 10.2</b>
<b>Office &amp; Station</b>	<b>\$ 18.3</b>	<b>\$ 18.9</b>	<b>\$ 19.6</b>	<b>\$ 20.3</b>
<b>Maintenance Repair &amp; Service Contracts</b>	<b>\$ 134.1</b>	<b>\$ 131.3</b>	<b>\$ 136.8</b>	<b>\$ 131.0</b>
<b>Consultants</b>	<b>\$ 32.4</b>	<b>\$ 33.5</b>	<b>\$ 34.7</b>	<b>\$ 35.9</b>
<b>Charges to:</b>				
Outside Agencies	\$ (2.7)	\$ (2.8)	\$ (2.8)	\$ (2.9)
Capital Programs	<u>\$ (47.5)</u>	<u>\$ (49.2)</u>	<u>\$ (50.9)</u>	<u>\$ (52.7)</u>
<b>Total Charges</b>	<b>\$ (50.2)</b>	<b>\$ (51.9)</b>	<b>\$ (53.7)</b>	<b>\$ (55.6)</b>
<b>Research &amp; Development</b>	<b>\$ 9.3</b>	<b>\$ 9.7</b>	<b>\$ 10.0</b>	<b>\$ 10.4</b>
<b>Subtotal</b>	<b>\$ 462.5</b>	<b>\$ 470.2</b>	<b>\$ 487.8</b>	<b>\$ 484.8</b>
Astoria Energy II	\$ 28.2	\$ 28.6	\$ 29.2	\$ 30.0
<b>TOTAL NYPA O&amp;M</b>	<b>\$ 490.7</b>	<b>\$ 498.9</b>	<b>\$ 517.1</b>	<b>\$ 514.8</b>

## Depreciation and Amortization Expenses

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, 2015 expressed as a percentage of average depreciable capital assets was 2.80%. NYPA has recently completed a study of the depreciation provisions on its Transmission and General Plant assets. The results of this depreciation study are currently under review.

## Other Expenses

The Other Expenses category largely reflects various accruals (e.g., Other Post-Employment Benefit prior service obligations) and other miscellaneous expenses, some of which require Trustee authorization on a case-by-case basis.

#### **(d) Self – Assessment of Budgetary Risks**

Set forth below is a summary of certain of the risks associated with the Authority's assets and operations. The following discussion of risks is intended only as a summary and does not purport to identify all of the risk factors that may affect the Authority's assets and operations. Any one or more of the factors discussed and others could adversely affect the Authority's operations, assets, revenues and expenses to an extent that cannot be determined at this time.

##### **Regulatory Risks**

On August 1, 2016, the New York Public Service Commission ("PSC") issued an order establishing a Clean Energy Standard ("CES") to implement the clean energy goals of the State Energy Plan ("SEP") that 50% of New York's consumed electricity be provided by renewable electricity sources by 2030, and statewide greenhouse gases be reduced by 40% by 2030. The CES imposes two requirements on load serving entities identified in the order ("Affected LSEs"): (1) an obligation to purchase "Zero Emission Credits" ("ZECs") from the New York State Energy Research Development Authority to support the preservation of existing at risk zero emissions nuclear generation, in an amount representing the Affected LSE's proportional share of ZECs calculated by the amount of electric load it serves in relation to the total electric load served by all LSEs in the New York Control area ("ZEC Purchase Obligation"); and (2) an obligation to support renewable generation resources to serve the Affected LSE's retail customers to be evidenced by the procurement of qualifying Renewable Energy Credits ("RECs") in quantities that satisfy mandatory minimum percentage proportions of the total retail load served by the Affected LSE ("REC Purchase Obligation") (collectively, the "CES Program"). While the Authority is not subject to PSC jurisdiction for purposes of the CES Order, it (i) supports the SEP's clean energy goals, (ii) may consider the SEP's planning objectives and strategies when making energy-related decisions, and (iii) supplies electricity to end-use customers in the State in a manner similar to an Affected LSE. Therefore, the Authority expects to participate in the CES Program in a manner similar to an Affected LSE by (i) assuming a ZEC Purchase Obligation, and (ii) adapting a form of REC Purchase Obligation to the end-user load for which it serves as LSE.

The Regional Greenhouse Gas Initiative ("RGGI") is a cooperative effort by Northeastern and Mid-Atlantic states, including New York, to hold carbon dioxide emission levels steady from 2009 to 2014 and then reduce such levels by 2.5% annually in the years 2015 to 2018 for a total 10% reduction. 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 the 500-MW Plant are subject to the RGGI requirements as is the Astoria Energy II plant. The Authority has participated in program auctions commencing in September 2008 and expects to recover RGGI costs through its power sales revenues. Beginning 2014, 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 91 million tons in 2014), and will decline by 2.5% each year from 2015 through 2020. This reduction has increased the price for carbon dioxide allowances, which the Authority acquires to cover operation of its fossil-fueled power plants and the Astoria Energy II plant. The Authority is monitoring federal legislation and proposed programs that would impact RGGI.

In 2013, President Obama sent a memorandum to the Environmental Protection Agency (the "EPA") on "Power Sector Carbon Pollution Standards" (the "Presidential Memorandum") as part of the President's Climate Action Plan. The Presidential Memorandum requires the EPA to propose carbon pollution standards for power plants. On August 3, 2015, the EPA met a milestone by releasing its final Clean Power Plan Rule for existing power plants. The objective is to reduce by 2030 carbon pollution (carbon dioxide emissions) nationwide from the power sector (plants in operation before December 31, 2012) by 32% from 2005 levels. Under the EPA's regulations for existing sources, the State will have one year to submit its implementation plan to the EPA. The State will need to be compliant with carbon dioxide reduction starting in 2022, with the state's final goal to be met in 2030. The Authority continues to monitor developments in this area.

During 2011, the U.S. Environmental Protection Agency ("EPA") issued a series of rulings to establish the Cross-State Air Pollution Rule ("CSAPR"). 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. Following decisions by the U.S. Court of Appeals (D.C. Circuit) and the U.S. Supreme Court, the EPA issued an interim final rule on November 21, 2014 to amend the compliance deadline from 2012 and

2013 to 2015 and 2016 for CSAPR's Phase 1 emissions budgets, and from 2014 to 2017 for Phase 2 emissions budgets and assurance provisions. On July 28, 2015, the D.C. Circuit remanded part of CSAPR to the EPA for reconsideration, finding that the EPA erred in 2014 sulfur dioxide and ozone budgets for 13 states by imposing uniform emission reductions instead of assessing each upwind state's contribution (the D.C. Circuit found the result is over-control of emissions in those states based on emissions budgets). While the emissions budgets were not vacated, the DC Circuit remanded the matter for EPA to develop compliant regulations. The Authority continues to operate its fossil-fueled plants within the allocated allowances and anticipates that operation of its fossil fueled power plants will not be impacted by CSAPR.

Congressional and regulatory action for the increased regulation of air, water and contaminants is periodically considered, and there are potential legislative and regulatory proposals which may affect the electric utility industry, including the Authority, in the future. The impact on the Authority's operations of any such proposals is not presently predictable or quantifiable.

The Authority has flexible rate-setting authority for many of its power sales agreements with customers; however, due to FERC's jurisdiction over the Authority's transmission revenue requirement ("TRR"), the Authority's transmission cost recovery must adhere to FERC standards. In 2016, the Authority filed for a formula rate annual TRR consistent with those principles, which resulted in the current \$198.5 million TRR. The formula rate annual TRR is incorporated into the NYISO Open Access Transmission Tariff ("OATT"). This Four-Year Plan assumes full recovery of eligible future costs under the provisions of the NYISO OATT.

### **Legislative and Political Risks**

A series of legislative enactments have called for the Authority to subsidize business customers and the State's general fund. Legislation enacted into law, as part of the 2000-2001 State budget, as amended in subsequent years, has authorized the Authority, "as deemed feasible and advisable by the trustees," to make a series of "voluntary contributions" into the State treasury in connection with the PFJ program and for other purposes. Since December 2002, the Authority has made voluntary contributions to the State of \$475 million in connection with the PFJ program and an additional \$743 million unrelated to the PFJ program. The PFJ program was replaced by the RNYPP beginning July 1, 2012 with the enacting legislation authorizing transitional electricity discounts through June 30, 2016 for those PFJ and ECSB customers applying for but not receiving RNYPP allocations. For the forecast period, the Authority estimates these transitional payments at \$3.4 million for 2016 and \$1.7 million for 2017.

In the past, the Authority has, from time to time, made voluntary contributions or payments to the State or as otherwise authorized by legislation. Such payments were authorized by legislation and have been conditional upon the Trustees' determination that such payments are "feasible and advisable". The Trustees' decision as to whether and to what extent such payments are feasible and advisable will be made based on the exercise of their fiduciary responsibilities and in light of the requirements of the Authority's Bond Resolution, other legal requirements, and all the facts and circumstances known to them at the time of the decision. On May 24, 2011, the Authority's Trustees adopted a 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 that in deciding whether to make contributions, transfers, or payments, the Authority shall use as a reference the maintenance of a debt service coverage ratio of at least 2.0, in addition to making other determinations required by the General Resolution.

In addition to the authorization for the voluntary contributions, the Authority was authorized by February 2009 budget legislation to make certain temporary asset transfers to the State of funds in reserves. Pursuant to the terms of a Memorandum of Understanding dated February 2009 ("MOU") between the State, acting by and through the Director of the Budget of the State, and the Authority, the Authority agreed to transfer \$215 million associated with its Spent Nuclear Fuel Reserves by the end of State Fiscal Year 2008-2009. The Spent Nuclear Fuel Reserves are funds that have 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. The MOU provides for the return of these funds to the Authority, subject to appropriation by the State Legislature and other conditions, 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 provided for the Authority to transfer during State Fiscal Year 2009-2010 approximately \$103 million of funds set aside for future construction projects, which amounts would be returned to the Authority, subject to appropriation by the State Legislature and other conditions, at the earlier of when required for operating, capital or debt service obligations of the Authority or September 30, 2014. Both temporary transfers were authorized by the Authority's Trustees and made in 2009. On April 24, 2014, the Authority and the State executed an Amendment to the MOU that became effective on July 29, 2014 and provides that the State shall, subject to

appropriation by the State Legislature, return the \$103 million over 5 State fiscal years. The Authority received an installment of \$39 million as of June 30, 2016. The remaining installments provided for by the Amendment to the MOU are \$21 million for State Fiscal Year 2016-2017, \$21 million for State Fiscal Year 2017-2018, and \$22 million for State Fiscal Year 2018-2019.

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. Several bills have been introduced into the State Legislature, some of which propose to limit or restrict the powers, rights and exemption from regulation which 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 of 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 which 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 the Authority will be immune from the financial obligations imposed by any such provision.

Actions taken by the State Legislature or the Executive Branch to cause greater voluntary contributions or other obligation upon the Authority and which attempt to constrain the discretion of or bypass the Authority’s Trustees could negatively affect net income and possibly harm the Authority’s credit ratings.

**Hydroelectric Generation Risk**

The Authority’s net income is highly dependent upon generation levels at its Niagara and St. Lawrence-FDR Projects. The generation levels themselves are a function of the hydrological conditions prevailing on the Great Lakes, primarily, Lake Erie (Niagara Project) and Lake Ontario (St. Lawrence-FDR Project). Long-term generation level at the two hydroelectric projects is about 20.2 terawatt-hours (“TWH”) annually. The Authority’s hydroelectric generation forecast is 22.0 TWH in 2017, 22.5 TWH in 2018, 22.5 TWH in 2019, and 21.5 TWH in 2020. However, these generation amounts are forecasted values, and hydrological conditions can vary considerably from year to year.

The Authority conducted high and low hydroelectric generation sensitivities for 2017-2020 that estimated the potential net income that could result over a reasonable range of hydroelectric generation occurrences. The effects on estimated net income, assuming all other factors remain unchanged, were as follows:

	<u>Low Generation</u>		<u>High Generation</u>	
	Net Hydroelectric Generation	NYPA Net Income Change <i>(in Millions)</i>	Net Hydroelectric Generation	NYPA Net Income Change <i>(in Millions)</i>
2017	19.6 TWH	(\$67.0)	23.2 TWH	\$31.8
2018	20.1 TWH	(\$69.7)	21.5 TWH	\$32.5
2019	19.8 TWH	(\$73.9)	23.6 TWH	\$31.5
2020	19.1 TWH	(\$67.1)	22.6 TWH	\$31.2



## **Electric Price and Fuel Risk**

Through its participation in the NYISO and other commodity markets, NYPA 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 detrimental effects on NYPA's financial condition. To mitigate downside effects, many of NYPA's customer contracts provide for the complete or partial pass-through of these costs. To moderate cost impacts to its customers, NYPA, at times, hedges market risks via the use of financial instruments and physical contracts. Hedges are transacted by NYPA to mitigate 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 NYPA; to mitigate risk related to electric margins (electric sales versus fuel use) where NYPA owns generation or other capacity; and mitigation of 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.

On July 21, 2010, President Obama signed into law the Dodd-Frank Wall Street Reform and Consumer Protection Act ("DF Act") which addresses, among other things, interest rate and energy related commodity swap transactions of the type in which the Authority engages ("Swaps"). The requirements and processes are set forth in regulations promulgated by the Commodities Futures Trading Commission ("CFTC"). Pursuant to CFTC rules thus far, the Authority, as a public entity and electric utility which uses swaps solely to manage its risk, will be exempted from posting collateral beyond that of any existing credit support annexes in support of its open over-the-counter ("OTC") 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 Authority will continue to monitor their potential impact on the Authority's liquidity and/or future risk mitigation activities.

## **Other Business Risks**

### Industry Transformation

Transformative technologies and customer empowerment are creating uncertainty for the Authority and the electric utility industry that can produce new business opportunities or reduced demand for electric energy. Through its Strategic Planning process, the Authority regularly evaluates its mission, objectives, and customer needs and seeks to appropriately position the Authority to effectively meet the challenges of the transforming electric industry through implementation of initiatives such as a long-term asset management strategy and a suite of customer solutions including new/modified product offerings. The impact on the Authority's operations of any such industry transformation is not presently predictable or quantifiable.

### Workforce

Like many other industries, the power and utility sector is realizing increased competition for and a general shortage of talent in high skilled areas. This trend is expected to continue and be further impacted by transformations in the industry where new technologies are being developed and deployed. The Authority recognizes the uncertainty with being able to attract and retain the skills and competencies needed to meet stated objectives and regularly evaluates and positions its recruiting, talent development and benefits programs accordingly, through its workforce planning strategic initiative and other ongoing efforts.

### Physical and Cyber Security

The Federal Government recognizes the electric utility industry as critical infrastructure for the United States and works closely with the industry to ensure awareness of ongoing threats and that appropriate protections are in place against both physical and cyber-attacks. With over 1,400 circuit-miles of high voltage transmission lines and 16 power generation facilities across New York State, the Authority recognizes the critical nature of its assets. Investments to harden both physical and cyber assets and their related infrastructure are continually needed to minimize potential adverse impacts to the bulk electric system, detect and deter sabotage attempts, and protect the Authority and customer information.

### Catastrophic Natural Events

A catastrophic natural event such as severe weather, flooding or earthquake can negatively affect the operability of Authority assets and the bulk electric system. The Authority regularly evaluates the resiliency of its assets. In addition, the Authority has implemented disaster planning programs based on the specific, unique natural threats at each of its generation facilities. The Authority maintains close working relationships with local first responders and government agencies to ensure its ongoing preparedness.

### Canal Corporation

Based on the information available during the integration process, the Authority has identified several risk areas relating to the Canal Corporation and will assess risk mitigation options across multiple enterprise risk fronts in an effort to manage or reduce potential exposures. As more information becomes available, the Authority may identify additional risk areas.

### Critical Infrastructure Failure

As a generation and transmission business the Authority is exposed to potential critical infrastructure failure that may lead to service disruption, injury and/or degradation of system reliability impacting financial results. The Authority engages in several activities in an effort to mitigate these risks such as the purchase of insurance, redundancy of major equipment, capital investments, and a robust operational maintenance program.

### Occupational Health and Workforce Safety

As a generation and transmission business the Authority is exposed to a variety of health and safety risks. The health and safety of NYPA's workforce, customers, contractors and the citizens of New York is of the highest priority to the Authority. The Authority has put in place multiple levels of controls, policies, procedures, and training programs in support of reducing and/or eliminating health and safety incidents

## **Litigation Risk**

### St. Regis Litigation

In 1982 and again in 1989, three groups of Mohawk Indians (collectively, the "St. Regis Plaintiffs"), including a Canadian Mohawk tribe, filed lawsuits in the U.S. District Court for the Northern District of New York 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 (the "St. Regis Litigation"). These islands are within the boundary of the Authority's St. Lawrence-FDR Project and Barnhart Island is the location of significant St. Lawrence-FDR Project facilities. Settlement discussions were held periodically between 1992 and 1998. In 1998, the Federal government intervened on behalf of the St. Regis Plaintiffs.

The parties agreed to a land claim settlement, dated February 1, 2005, which if implemented would include, among other things, the payment by the Authority of \$2 million a year for 35 years to the St. Regis Plaintiffs, the provision of up to 9 MW of low cost Authority power for use on the reservation, the transfer of two Authority-owned islands; Long Sault and Croil, and a 215 acre parcel on Massena Point to the St. Regis Plaintiffs, and the St. Regis Plaintiffs withdrawing any judicial challenges to the Authority's new license, as well as any claims to annual fees from the St. Lawrence-FDR Project.

The legislation required to effectuate the settlement was never enacted and the litigation was reactivated. In November 2006, all defendants moved to dismiss the complaints of the St. Regis Plaintiffs as well as the United States' complaint based on the lengthy delay in asserting the land claims (i.e., the laches defense). On September 28, 2012, the U.S. Magistrate recommended dismissal of all land claims brought against the Authority by the St. Regis Plaintiffs as well as the Federal government. The U.S. Magistrate upheld the Authority's laches defense and also recommended dismissal on the same grounds of all claims by the same plaintiffs against the other defendants relating to all but one of the other challenged mainland parcels.

In orders dated July 2013, the District Court accepted the Magistrate's recommendation and granted the Authority judgment on the pleadings. The Court accepted all but one of the Magistrate's other recommendations, which resulted in dismissal of all land claims against the other defendants except those relating to two mainland parcels. Barring an appeal by the plaintiffs, all claims against the Authority have been dismissed and the lawsuit against the Authority is concluded.

The State and the St. Regis Mohawk Tribe (the "Tribe") have been discussing a settlement of the land claims, as well as other issues between the State and the Tribe. On May 28, 2014, the State, the Tribe, St. Lawrence County and the Authority executed a Memorandum of Understanding (the "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. In addition, on or before a final settlement of the litigation, all parties to the St. Regis Litigation would have to agree to a settlement of all outstanding claims, including parties that did not execute the St. Regis MOU, such as the two other Mohawk groups, the federal government and Franklin County. Before any settlement becomes effective and the Authority is obligated to make any payments contemplated by the St. Regis MOU, however, federal and state legislation must be enacted which approves the settlement and extinguishes all Mohawk land claims.

#### Tropical Storm Irene

In August 2012, the County of Schoharie, eight towns and villages therein, and one school district (the "Municipalities") initiated a lawsuit in Schoharie County Supreme Court against the Authority involving the heavy rains and widespread flooding resulting from Tropical Storm Irene's passage through the Northeast in August 2011. The Municipalities essentially alleged that they sustained property damage and lost tax revenues resulting from lowered assessed valuation of taxable real property due to the Authority's negligence in its operations at the Blenheim-Gilboa pumped-storage hydroelectric facility located on the Schoharie Creek in Schoharie County, New York. The Municipalities' complaint seeks judgment "in an amount to be determined at trial with respect to each [of the ten plaintiffs] in the sum of at least \$5,000,000, plus punitive damages in the sum of at least \$5,000,000" as well as attorney fees. As of October 31, 2014, all of the Municipalities have discontinued their lawsuits against the Authority.

In February 2012, a private landowner filed a similar lawsuit in Schoharie County Supreme Court on behalf of a park campground and makes nearly the same allegations made by the Municipalities with the plaintiff seeking at least \$5 million in damages, at least \$5 million in punitive damages, as well as attorney's fees. In December 2012, the Authority was served with a third lawsuit by five plaintiffs arising out of Tropical Storm Irene and the Authority's operation of its Blenheim-Gilboa Pumped Storage Project. The five plaintiffs include three individual landowners owning properties located in Schoharie, NY and Central Bridge, NY and claiming damages in the aggregate amount of \$1.55 million, and two corporations also owning properties in Schoharie, NY and claiming damages in the aggregate amount of \$1.05 million. On October 27, 2014, the Court granted the Authority's motion to change the place of trial. The Court directed the Clerk of Court to transfer the proceedings to Albany County. Discovery, which is joined for these two remaining actions, is ongoing.

#### Long Island Sound Cable Project

In January 2014, one of the Long Island 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 breaker to trip. As a result of the impact to the cable, dielectric fluid was released into Long Island Sound. The Authority incurred approximately \$33 million in costs arising out of this incident and has recovered approximately \$18.9 million from its insurers. The Authority believes that it will be able to recover the full amount of its damages through legal proceedings and contractual obligations.

#### Miscellaneous

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.

**(e) Revised Forecast of 2016 Budget**  
(in Millions)

	Original Budget	Forecast	Variance Better/(Worse)
	<u>2016</u>	<u>2016</u>	<u>2016</u>
<b><u>Operating Revenues:</u></b>			
Customer Revenues	\$1,860.2	\$1,741.5	(\$118.7)
NYISO Market Revenues	<u>\$839.5</u>	<u>\$716.9</u>	<u>(\$122.6)</u>
<b>Total Operating Revenues</b>	<b>\$2,699.7</b>	<b>\$2,458.4</b>	<b>(\$241.3)</b>
<b><u>Operating Expenses:</u></b>			
Purchased Power	\$706.1	\$565.5	\$140.5
Fuel	\$221.8	\$162.5	\$59.2
Wheeling Expenses	\$629.1	\$609.2	\$19.9
O&M Expenses	\$458.9	\$458.6	\$0.3
Other Expenses	\$186.4	\$208.4	(\$22.0)
Depreciation and Amortization	<u>\$229.4</u>	<u>\$230.0</u>	<u>(\$0.6)</u>
<b>Total Operating Expenses</b>	<b>\$2,431.7</b>	<b>\$2,234.4</b>	<b>\$197.2</b>
<b>NET OPERATING REVENUES</b>	<b>\$268.1</b>	<b>\$224.0</b>	<b>(\$44.1)</b>
<b><u>Other Income:</u></b>			
Investment Income	\$29.0	\$24.2	(\$4.8)
Other Income	<u>\$2.5</u>	<u>\$12.0</u>	<u>\$9.5</u>
<b>Total Other Income</b>	<b>\$31.5</b>	<b>\$36.2</b>	<b>\$4.7</b>
<b><u>Non-Operating Expenses</u></b>			
Interest & Other Expenses	\$158.7	\$235.6	(\$76.9)
Contributions to State	<u>\$90.0</u>	<u>\$71.0</u>	<u>\$19.0</u>
<b>Total Non-Operating Expense</b>	<b>\$248.7</b>	<b>\$306.6</b>	<b>(\$57.9)</b>
<b>NET INCOME</b>	<b>\$50.8</b>	<b>(\$46.4)</b>	<b>(\$97.3)</b>

**(f) Reconciliation of 2016 Budget and 2016 Revised Forecast**

The 2016 year-end net income projection is (\$46.4) million, which is \$97.3 million below budget. This negative variance is primarily a result of low energy market prices and the unbudgeted Canal Corporation expenses. These factors are driving the variance in Operating Revenues, Fuel, Purchased Power and Non-Operating Expenses.

**(g) Statement of 2015 Financial Performance**

**New York Power Authority  
Net Income - Actual vs. Budgeted  
For the Year ended December 31, 2015  
(in millions)**

	<b>Actual</b>	<b>Budget</b>	<b>Variance Favorable/ (Unfavorable)</b>
<b>Operating Revenues</b>			
Customer	\$1,820	\$1,985	(\$165)
NYISO Market Revenues	\$805	\$1,113	(\$308)
<b>Total Operating Revenues</b>	<b>\$2,625</b>	<b>\$3,097</b>	<b>(\$473)</b>
<b>Operating Expenses</b>			
Purchased Power	\$689	\$868	\$180
Fuel	\$236	\$292	\$56
Wheeling	\$599	\$618	\$19
Operations & Maintenance	\$440	\$474	\$34
Other Expenses	\$145	\$213	\$69
Depreciation & Amortization	\$237	\$231	(\$6)
Allocation to Capital	(\$15)	(\$17)	(\$2)
<b>Total Operating Expenses</b>	<b>\$2,330</b>	<b>\$2,679</b>	<b>\$349</b>
<b>Operating Income</b>	<b>\$295</b>	<b>\$419</b>	<b>(\$124)</b>
<b>Nonoperating Revenues and Expenses</b>			
<b>Nonoperating Revenues</b>			
Investment Income	\$14	\$39	(\$24)
Other income	\$11	\$4	\$7
<b>Total Nonoperating Revenues</b>	<b>\$25</b>	<b>\$43</b>	<b>(\$17)</b>
<b>Nonoperating Expenses</b>			
Contribution to New York State	\$90	\$90	\$0
Interest and Other Expenses	\$156	\$166	\$10
<b>Total Nonoperating Expenses</b>	<b>\$246</b>	<b>\$256</b>	<b>\$10</b>
<b>Nonoperating Income (Loss)</b>	<b>(\$220)</b>	<b>(\$213)</b>	<b>\$7</b>
<b>Net Income</b>	<b>\$74</b>	<b>\$206</b>	<b>(\$132)</b>

Net Income for the year ended December 31, 2015 was \$74 million, which was \$131.5 million lower than budget of \$205.5 million. This negative variance is primarily the result of lower net margins on sales at Niagara, St. Lawrence and the SCPPs resulting from lower prices, and the impact of lower generation caused by low precipitation and less than normal ice thaw. These factors are driving the variance in Operating Revenues, Fuel, and Purchased Power.

**(h) Employee Data – number of employees, full-time, FTEs and functional classification**

	<u>2017</u> <u>Request</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Headquarters	771	771	771	771
Power Generation	917	917	917	917
Transmission	168	168	168	168
R&D	<u>17</u>	<u>17</u>	<u>17</u>	<u>17</u>
<b>TOTAL</b>	<b>1,873</b>	<b>1,873</b>	<b>1,873</b>	<b>1,873</b>

The figures above do not include projections for employee data relating to the Canal Corporation. The Authority is in the process of evaluating employee data for the Canal Corporation.

**(i) Gap-Closing Initiatives – revenue enhancement or cost-reduction initiatives**

As the Authority is projecting positive net income for the 2017-2020 period, there are no planned gap-closing programs.

**(j) Material Non-recurring Resources – source and amount**

See discussion in “Other Income” section.

**(k) Shift in Material Resources**

There are no anticipated shifts in material resources from one year to another.

**(l) Debt Service**

<b>New York Power Authority</b>				
<b>Projected Debt Outstanding (FYE)</b>				
<i>(in thousands)</i>				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Revenue Bonds	\$963,690	\$927,710	\$1,032,903	\$992,243
Adjustable Rate Tender Notes	\$0	\$0	\$0	\$0
Subordinated Note	\$45,535	\$43,955	\$42,355	\$40,735
Commercial Paper Notes	\$531,883	\$612,678	\$707,767	\$795,750
<b><u>Grand Total</u></b>	<b><u>\$1,541,108</u></b>	<b><u>\$1,584,343</u></b>	<b><u>\$1,783,025</u></b>	<b><u>\$1,828,728</u></b>

**New York Power Authority**  
**Debt Service as Percentage of Pledged Revenues (Accrual Basis)**  
*(Debt Service in thousands)*

	2017		2018		2019		2020	
	<u>Debt Service</u>	<u>% of Rev.</u>	<u>Debt Service</u>	<u>% of Rev.</u>	<u>Debt Service</u>	<u>% of Rev.</u>	<u>Debt Service</u>	<u>% of Rev.</u>
Revenue Bonds	\$100,102	3.60%	\$79,154	2.72%	\$80,982	2.77%	\$86,463	2.96%
Adjustable Rate Tender Notes	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$0	0.00%
Subordinated Debt	\$1,505	0.05%	\$1,504	0.05%	\$1,505	0.05%	\$1,504	0.05%
Commercial Paper Notes	\$6,337	0.23%	\$6,874	0.24%	\$8,594	0.29%	\$14,941	0.51%
<b><u>Grand Total Debt Service</u></b>	<b><u>\$107,944</u></b>	<b><u>3.89%</u></b>	<b><u>\$87,531</u></b>	<b><u>3.00%</u></b>	<b><u>\$91,081</u></b>	<b><u>3.11%</u></b>	<b><u>\$102,909</u></b>	<b><u>3.52%</u></b>

**New York Power Authority**  
**Planned Use of Debt Issuances**  
*(in thousands)*

<u>TYPE</u>	<u>Amount</u>	<u>Assumed Interest Rate</u>	<u>Project / Description</u>
<b><u>Period January 1, 2017 – December 31, 2017</u></b>			
Tax Exempt Commercial Paper	\$74,165	0.65%	Energy Efficiency Program
Taxable Commercial Paper	\$2,318	0.90%	Energy Efficiency Program
Total Issued 2017	<u>\$76,483</u>		
<b><u>Period January 1, 2018 – December 31, 2018</u></b>			
Tax Exempt Commercial Paper	\$95,758	0.65%	Energy Efficiency Program
Taxable Commercial Paper	\$3,338	0.95%	Energy Efficiency Program
Total Issued 2018	<u>\$99,096</u>		

**Period January 1, 2019 –  
December 31, 2019**

Tax Exempt Commercial Paper	\$114,814	0.75%	Energy Efficiency Program
Taxable Commercial Paper	\$4,082	1.10%	Energy Efficiency Program
Tax Exempt Revenue Bonds	\$81,694	4.25%	Robert Moses Power Plant/Transmission
Taxable Revenue Bonds	\$61,794	5.75%	Robert Moses Power Plant/Lewiston Pump Generating Plant
Total Issued 2019	<u>\$262,385</u>		

**Period January 1, 2020 –  
December 31, 2020**

Tax Exempt Commercial Paper	\$114,305	0.85%	Energy Efficiency Program
Taxable Commercial Paper	\$4,658	1.20%	Energy Efficiency Program
Total Issued 2020	<u>\$118,963</u>		

**Note: The full faith and credit of the Authority are pledged for the payment of bonds and notes in accordance with their terms and provisions of their respective resolutions. The Authority has no taxing power and its obligations are not debts of the State or any political subdivision of the State other than the Authority. The Authority's debt does not constitute a pledge of the faith and credit of the State or of any political subdivision thereof, other than the Authority.**



**Scheduled Debt Service Payments (Accrual Basis)**

**Outstanding (Issued) Debt**

	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2017	\$55,332,806	\$52,359,980	\$107,692,786
2018	\$37,082,722	\$49,618,212	\$86,700,934
2019	\$39,419,111	\$48,958,055	\$88,377,166
2020	\$44,745,389	\$48,083,394	\$92,828,782

**Proposed Debt**

	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2017	-	\$250,793	\$250,793
2018	-	\$830,490	\$830,490
2019	-	\$2,703,356	\$2,703,356
2020	-	\$10,079,823	\$10,079,823

**Total Debt**

	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2017	\$55,332,806	\$52,610,773	\$107,943,579
2018	\$37,082,722	\$50,448,702	\$87,531,424
2019	\$39,419,111	\$51,661,411	\$91,080,522
2020	\$44,745,389	\$58,163,217	\$102,908,605

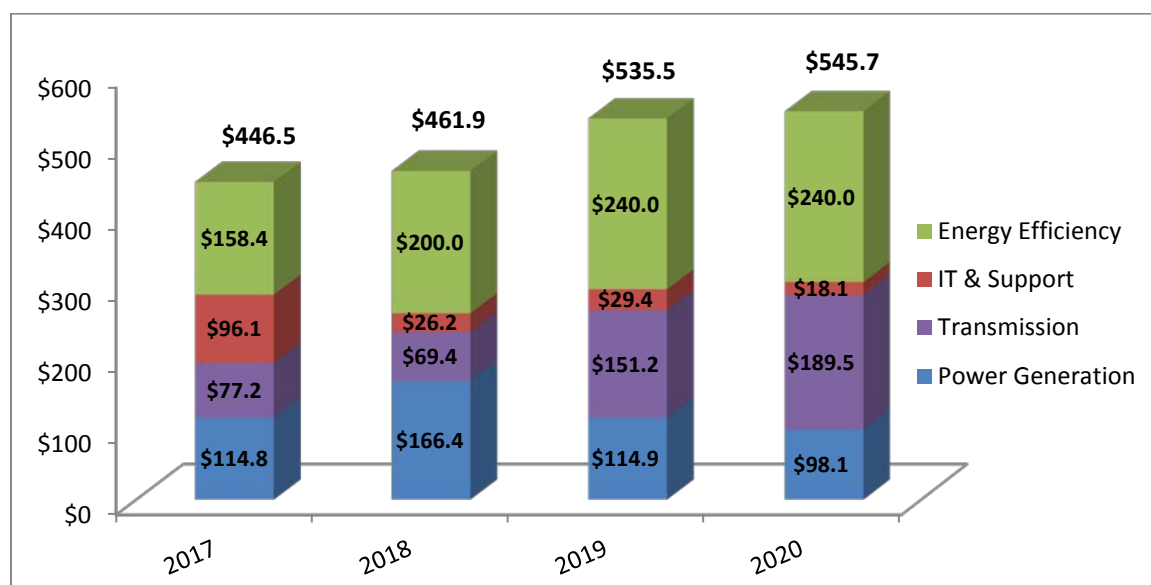
**(m) Capital Commitments and Sources of Funding**

The Authority's commitments for various capital improvements are approximately \$2 billion over the financial period 2017-2020. The Authority anticipates that these improvements 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 additional commercial paper notes and/or the issuance of long-term fixed rate debt. Projected capital commitments during this period include those listed in the table below.

Given the information available during the integration process, some assumptions regarding capital commitments with respect to the Canal Corporation have been made for the purposes of preparing this Four Year Plan. Those assumptions (and related capital commitments) are not included in the table and figures below.

<b>(In thousands)</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Transmission Life Extension & Modernization (LEM)	\$ 52,815	\$ 39,306	\$ 69,038	\$ 63,683
MA & MWP Structure Replacements	\$ 3,184	\$ 3,067	\$ 3,188	\$ 3,195
R-22 Inlet Chilling System - 500MW	\$ -	\$ -	\$ 9,270	\$ 9,287
SGT: MA1 & MA2 Line Rebuild - Construction (Plan "B")	\$ 4,539	\$ 13,632	\$ 50,887	\$ 50,877
Advanced Hot Gas Path Components at the 500MW Facility	\$ -	\$ 20,009	\$ -	\$ -
PID SGT: WNY Energy Link	\$ -	\$ 2,150	\$ 24,150	\$ 70,150
Asset Management Health Center	\$ 3,997	\$ 5,382	\$ 2,385	\$ 2,385
RMNPP Life Extension & Modernization Program	\$ 1,225	\$ 41,862	\$ 41,320	\$ 41,567
SGT: Communications Backbone	\$ 7,089	\$ 12,036	\$ 18,810	\$ 8,628
Lewiston Pump Generating Plant (LPGP) LEM	\$ 45,370	\$ 42,726	\$ 41,864	\$ 29,505
Total Energy Efficiency	\$ 158,413	\$ 200,000	\$ 240,000	\$ 240,000
Other	\$ 169,843	\$ 81,761	\$ 34,636	\$ 26,414
<b>GRAND TOTAL</b>	<b>\$ 446,474</b>	<b>\$ 461,931</b>	<b>\$ 535,547</b>	<b>\$ 545,691</b>

**2017-2020 Capital Commitments by Function**  
(in millions)



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