



**NY Power
Authority**

**Canal
Corporation**

**MINUTES OF THE REGULAR JOINT MEETING
OF THE
POWER AUTHORITY OF THE STATE OF NEW YORK AND
NEW YORK STATE CANAL CORPORATION**

December 11, 2018

Table of Contents

<u>Subject</u>	<u>Page No.</u>	<u>Exhibit</u>
Introduction	2	
1. Adoption of the December 11, 2018 Proposed Meeting Agenda	3	
2. Motion to Conduct an Executive Session	4	
3. Motion to Resume Meeting in Open Session	5	
4. CONSENT AGENDA:	6	
a. Governance Matters	7	
i. Minutes of the Regular Joint Meeting of the New York Power Authority's Trustees and Canal Corporation's Board of Directors held on October 2, 2018	7	
ii. Proposed 2019 Schedule of Meetings	8	
iii. Sustainability Plan 2019-2023	9	4a iii-A
b. Power Allocations	11	
i. Contracts for the Sale of Western New York Hydropower - Transmittal to the Governor	11	4b i-A-1; 4b i-A-2 4b i-B; 4b i-C
ii. Transfer of RNY Power, RNY Hydropower, Expansion Power and Replacement Power Allocations	16	
iii. Port Authority Load Serving Entity Service Agreement	20	4b iii-A
c. Procurement (Services) Contracts	22	
i. Procurement (Services) and Other Contracts – Business Units and Facilities – Awards, Extensions and/or Additional Funding	22	4c i-A; 4c i-B

<u>Subject</u>	<u>Page No.</u>	<u>Exhibit</u>
d. Capital Expenditure Authorization Requests	30	
i. Compute-Storage Program - Capital Expenditure Authorization	30	
ii. Cyber Program - Capital Expenditure Authorization	33	
e. Finance	36	
i. Jones Beach Energy and Nature Center – Funding Request	36	
f. Energy Efficiency	38	
i. Program Time Extension for the Five Cities Energy Plan and the Energy Efficiency Market Acceleration Program	38	
ii. Clean Distributed Energy Resource Grant Program - Grant Allocation	40	
g. Canal Corporation	42	
i. Procurement (Services) Contract - On-Demand Marine Vessel Recovery - Contract Award	42	
ii. Procurement (Services) Contract - Canalway Trail System Maintenance/ Enhancement - Contract Award	44	
iii. Temporary Waiver of Tolls for Recreational Vessels for the 2019-2021 Canal System Navigation Seasons	47	
Resolution		
5. DISCUSSION AGENDA:	49	
a. Strategic Initiatives	49	
i. President and Chief Executive Officer's Report	49	5a i-A
b. Financial Operations	51	
i. Chief Financial Officer's Report:	51	5b i-A
1. Release of Funds in Support of the New York State Canal Corporation Resolution	52	

<u>Subject</u>	<u>Page No.</u>	<u>Exhibit</u>
2. 2019 Revolving Credit Facility Resolution	55	
3. 2019 Budget and Four-Year Financial Plan:	58	
a. Power Authority 2019 Budget and Filing of the 2019-2022 Approved Budget and Four-Year Financial Plan Pursuant to Regulations of the Office of the State Comptroller Resolution	58	5b i-3a-A - 5b i-3a-C; 5b i-3a-D
b. Adoption of 2019 Budget for the New York State Canal Corporation -- Resolution	63	5b i-3b-A; 5b i-3b-B
ii. Finance Committee Report	66	
c. Utility Operations	67	
i. Chief Operations Officer's Report	67	5c i-A
1. Procurement (Services) Contract - Moses-Adirondack Smart Path Reliability Project - Steel Pole Structures and Foundation Anchor Bolt Cages - Contract Award Resolution	68	
2. Procurement (Services) Contract - Smart Generation & Transmission Initiative - Communication Backbone Program - Fiber Electronics Project - Contract Award Resolution	71	
3. Niagara Fire Alarm and Safety Systems Program - Capital Expenditure Authorization Request and Contract Award Ratification Resolution	74	
4. Asset Performance Management - Capital Expenditure Authorization Request	77	
5. Richard M. Flynn Power Plant - Gas Turbine Outage - Capital Expenditure Authorization Request Resolution	80	
ii. Canal Corporation	82	
1. Procurement (Services) Contracts - On-Demand Infrastructure Repairs to Canal Facilities -- Contract Awards -- Resolution	82	

Subject

	<u>Page No.</u>	<u>Exhibit</u>
2. Procurement (Services) Contract - Dredging of the Syracuse Inner Harbor - Contract Award	85	
d. Commercial Operations	87	
i. Chief Commercial Officer's Report	87	5d i-A
1. Economic Development Allocations and Awards:	89	
a. Preservation Power Allocations Resolution	89	5d i-1a-A - 5d i-1a-F
b. Recharge New York Power Allocations Resolution	96	5d i-1b-A - 5d i-1b-F
c. Recharge New York Power - Allocation Extensions Resolution	103	5d i-1c-A - 5d i-1c-B
d. Award of Fund Benefits from the Northern New York Economic Development Fund Recommended by the Northern New York Power Proceeds Allocation Board Resolution	108	5d i-1d-A; 5d i-1d-A-1; 5d i-1d-A-2; 5d i-1d-B
e. Flexibility Moonshot:	112	
i. New York Power Authority Flexibility Initiative: Phase 1	112	5e i-A
ii. New York Power Authority Flexibility Initiative: Phase 1 – Funding Request for Three Areas of Investment to Accelerate the Carbon Free Flexibility Market Resolution	115	
6. Board Committee Report:	118	
a. Audit Committee Report	118	
7. Next Meeting	119	
Closing	120	

Minutes of the regular joint meeting of the New York Power Authority and Canal Corporation held, via video conference, at the Clarence D. Rappleyea Building at 123 Main Street, White Plains, New York at approximately 10:06 a.m.

Members of the Boards present were:

John R. Koelmel, Chairman
Eugene L. Nicandri, Vice Chairman
Tracy McKibben
Michael A.L. Balboni
Dennis G. Trainor
Dr. Anne M. Kress - Rochester

Anthony J. Picente, Jr. - Excused

Gil Quiniones	President and Chief Executive Officer
Justin Driscoll	Executive Vice President and General Counsel
Joseph Kessler	Executive Vice President and Chief Operating Officer
Robert Lurie	Executive Vice President and Chief Financial Officer
Sarah Salati	Executive Vice President and Chief Commercial Officer
Lee Garza	Senior Vice President – Financial Operations & Acting Controller
Angela Gonzalez	Senior Vice President – Internal Audit
Kimberly Harriman	Senior Vice President – Public & Regulatory Affairs
Soubhagya Parija	Senior Vice President and Chief Risk Officer
Robert Piascik	Senior Vice President and Chief Information Officer
Kristine Pizzo	Senior Vice President – Human Resources
Karen Delince	Vice President and Corporate Secretary
Keith Hayes	Vice President – Economic Development
Joseph Leary	Vice President – Community & Government Relations
Patricia Lombardi	Vice President – Project Management
Doug McMahon	Vice President – Strategy
Daniella Piper	Vice President – Digital Transformation Office / Acting Chief of Staff
Ethan Riegelhaupt	Vice President – Corporate Communications
Ana Stachowiak	Project Manager – EPCM
Mary Cahill	Manager – Executive Office
Steve Gosset	Manager – Media Relations
Gerard McLoughlin	Manager – Business Power Allocations & Compliance
Lorna Johnson	Senior Associate Corporate Secretary
Sheila Quatrocci	Associate Corporate Secretary
Joseph Rivera	Network Architect – Infrastructure
Glenn Martinez	Senior Network Analyst – Infrastructure

Chairman Koelmel presided over the meeting. Corporate Secretary Delince kept the Minutes.

Introduction

Chairman Koelmel welcomed the Board and staff members who were present at the meeting. He said that the meeting had been duly noticed as required by the Open Meetings Law and called the meeting to order pursuant to the Authority's Bylaws, Article III, Section 3.

1. **Adoption of the December 11, 2018 Proposed Meeting Agenda**

Upon motion made by member Dennis Trainor and seconded by member Tracy McKibben, the meeting Agenda was adopted.

Conflicts of Interest

The following member declared conflicts of interest as indicated below and said she would not participate in the discussions or votes as it relates to those matters.

Anne M. Kress:

- M&T Bank; (Item #4b i)
- LaBella Associates (Item #4c i)

Chairman Koelmel, Vice Chairman Nicandri and members McKibben, Balboni and Trainor declared no conflicts of interest based on the list of entities previously provided for their review.

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

Mr. Chairman, I move that the Board conduct an executive session to discuss the financial and credit history of a particular corporation. Upon motion made by member Michael Balboni and seconded by member Tracy McKibben, the members held an executive session.

3. **Motion to Resume Meeting in Open Session**

Mr. Chairman, I move to resume the meeting in Open Session. Upon motion made by member Tracy McKibben and seconded by member Dennis Trainor, the meeting resumed in Open Session.

Chairman Koelmel said that no votes were taken during the Executive Session.

4. CONSENT AGENDA:

Upon motion made by member Michael Balboni and seconded by member Tracy McKibben, the Consent Agenda was approved.

a. Governance Matters:

i. Approval of the Minutes

The Minutes of the Regular Joint Meeting of the New York Power Authority's Trustees and Canal Corporation's Board of Directors held on October 2, 2018 were unanimously adopted.

ii. **Proposed 2019 Schedule of Meetings**

The Vice President and Corporate Secretary submitted the following report:

“The following schedule of meetings for the year 2019 is recommended:

Date	Boards/Committees	Venue
January 15 (Tuesday) at 9:30	Finance Committee	Video
January 30 (Wednesday) at 8:30	Cyber Committee	WPO
	NYPA/Canal Board	WPO
March 6 (Wednesday) at 9:30	Governance Committee	Video
March 26 (Tuesday) starting at 8:30	Audit Committee	WPO
	NYPA/Canal Board	WPO
May 21 (Tuesday) at 8:30	Finance Committee	WPO
	NYPA/Canal Board	WPO
July 9 (Tuesday) at 9:30	Audit Committee	Video
July 30 (Tuesday) at 8:30	Cyber Committee	WPO
	NYPA/Canal Board	WPO
September 25 (Wednesday) at 8:30	Governance Committee	WPO
	NYPA/Canal Board	WPO
November 20 (Wednesday) at 9:30	Finance Committee	Video
December 11 (Wednesday) at 8:30	Audit Committee	WPO
	NYPA/Canal Board	WPO

RECOMMENDATION

The President and Chief Executive Officer and I support the proposed 2019 meeting schedule as set forth in the foregoing report.

I recommend the approval of the proposed schedule by adoption of the resolution below.”

The following resolution, as submitted by the Vice President and Corporate Secretary, was unanimously adopted.

RESOLVED, That the 2019 meeting schedule, as set forth in the foregoing report of the Vice President and Corporate Secretary, be, and hereby is, approved.

iii. **Sustainability Plan 2019-2023**

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Trustees are requested to approve the Authority's Sustainability Plan 2019-2023 (the 'Plan'), which is attached as Exhibit '4a iii-A.'

BACKGROUND

Sustainability is defined as an approach to development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Corporate sustainability is a growing discipline as companies large and small evaluate the effects they have on the environment, the economy and the community. At a minimum, companies are simply disclosing the issues they are facing, but increasingly they are developing clear strategies to minimize the negative impacts and optimize the positive social, economic and environmental benefits of their operations for long-term value creation. Critical to the success of corporate sustainability is a culture in which sustainability is understood to be a core value and is embraced as a mind-set and a way of doing business.

In 2016, the Authority issued the Sustainability Policy (Company Policy 7-2). The Sustainability Policy establishes NYPA's Sustainability Program and defines responsibilities for planning, executing, monitoring and reporting. The Policy requires sustainability goals to be identified that focus on energy efficiency, greenhouse gas ('GHG') reductions, and sustainable resource and asset management practices. The Policy also calls for the creation of long-term and annual action plans to ensure the goals are met.

The Sustainability Plan now before the Board adheres to and implements the Authority's Sustainability Policy. The Plan was developed through a process of industry benchmarking and internal priority assessments, with guidance and input provided by NYPA's Sustainability Advisory Council. The Council includes senior representatives from the following departments: Utility Operations, Commercial Operations, Business Services, Human Resources & Enterprise Shared Services, Risk Management, Public and Regulatory Affairs, and Law. The Council was formed in 2017 and met regularly in 2018 to provide advice and input into the development of the Plan. The Council will continue to meet on a quarterly basis as the Plan is implemented.

DISCUSSION

The Sustainability Plan reflects the Authority's core values and supports its Strategic Vision. The overarching goals of the Plan are aligned with the Authority's decarbonization strategy and New York State's clean energy and climate policies and Executive Orders.

The Plan sets energy and GHG reduction goals for four primary areas of NYPA's operations: electricity supply, customer programs, buildings, and vehicle fleet. In addition, the Plan identifies goals for water, supply chain, materials and waste, land and employee and external stakeholder engagement.

The Plan also includes two climate change related planning efforts: an assessment of the impacts of a low carbon transition and the physical impacts of climate change, and the development of a climate change adaptation plan.

To internally reinforce the Authority's drive for continuous improvement, the corporate scorecard will be used to track progress towards sustainability goals. The 2019 corporate scorecard will include:

- GHG reduction goals for NYPA's electricity supply
- GHG reduction goals for NYPA's customer and public-facing programs
- Energy and GHG reduction goals for NYPA administrative/support buildings
- GHG reduction and vehicle electrification goals for NYPA's light-duty vehicle fleet

Additional metrics will be added to the corporate scorecard during the Plan implementation.

FISCAL INFORMATION

The Sustainability Plan expands the scope of the Sustainability Program in key areas. The Sustainability Program budget will vary by year as the Plan is implemented and projects and initiatives are identified. The total 2019 Sustainability Program budget is \$5.05 million.

RECOMMENDATION

The Senior Vice President - Public and Regulatory Affairs, the Vice President - Environmental Justice and Sustainability, and the Director - Sustainability recommend that the Trustees approve the adoption of the Authority's Sustainability Plan 2019-2023.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the Authority's Sustainability Plan, as described in the foregoing report of the President and Chief Executive Officer, and as detailed in Exhibit "4a iii-A," be, and hereby is, approved; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

b. Power Allocations:

i. Contracts for the Sale of Western New York Hydropower - Transmittal to the Governor

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Trustees are requested to:

- 1) In accordance with Public Authorities Law ('PAL') §1009, approve the final contract form ('Contract') and the associated Service Tariff No. WNY-2 ('ST WNY-2') for the sale of Expansion Power ('EP') and Replacement Power ('RP') allocations. The Contract and ST WNY-2 will apply to WNY Hydropower allocations of existing customers ('Customers') that were extended through December 31, 2028 as approved by the Trustees at their meeting on October 2, 2018 ('Extended Allocations' or 'Allocations').
- 2) Authorize transmittal of the final Contract to the Governor for his review and for the purpose of seeking his authorization for the Authority to execute the Contract pursuant to PAL §1009.

The list of existing Customers that were conditionally awarded EP and RP ('WNY Hydropower') allocation extensions and the Contract are attached as Exhibits '4b i-A-1,' '4b i-A-2' and '4b i-B,' respectively.

BACKGROUND

Under PAL §1005(13), the Authority may allocate and sell directly or by sale for resale, 250 megawatts ('MW') of EP and 445 MW of RP to businesses located within 30 miles of the Niagara Power Project, provided that the amount of EP allocated to businesses in Chautauqua County on January 1, 1987 shall continue to be allocated in such county. Under PAL §1005(13), the Authority may allocate and sell directly or by sale for resale, 490 MW of Preservation Power to businesses located in Jefferson, Franklin and St. Lawrence Counties.

As required by PAL §1009, when the Authority has reached agreement with its co-party on a power sale contract, it is required to transmit the proposed contract to the Governor and other elected officials and hold a public hearing on the proposed contract. At least 30-days' notice of the hearing must be given by publication once in each week during such period in each of six selected newspapers. Following the public hearing, the contract may be modified, if advisable.

Upon approval of the final proposed contract by the Authority, the Authority 'reports' the proposed contract, along with its recommendations and the public hearing record, to the Governor and other elected officials. Upon authorization of the Governor, the Authority may execute the contract.

On October 2, 2018, the Trustees:

1. Authorized a public hearing, in accordance with PAL §1009, on the Contract that would, along with a new Authority service tariff ST WNY-2, apply to the sale of existing WNY Hydropower allocations that were conditionally extended on such date.
2. Approved an extension through December 31, 2028, of the term of each allocation listed in Exhibits '4b i-A-1' and '4b i-A-2' contingent upon the following conditions:

a. that the sale of the Extended Allocations would be governed by ST WNY-2 and the Contract presented to the Customers in final form following the conclusion of the public hearing and approval process provided for in PAL §1009;

b. that the Customers agree, for the extended term, to the same or substantially similar supplemental commitments for jobs and capital investments that are contained in their current WNY Hydropower agreements, through the incorporation of such supplemental commitments into the final Contract that is executed by each of the Customers;

c. that, in the case of Customers whose existing supplemental commitments do not include an annual capital investment commitment, such customer agree to an annual capital investment commitment for the extended term that Authority staff determines to be appropriate based on the customer's circumstances; and

d. that the Customer is in compliance with its supplemental commitments for jobs and capital investments under its current WNY Hydropower agreement.

3. Authorized the Authority to design and implement comprehensive compliance programs for the purpose of implementing the Authority's power supply programs, including the EP, RP, Preservation Power, RNY Power, and the Authority's governmental power supply programs, in a manner that the Authority determines to be consistent with the State Energy Plan ('SEP') and Clean Energy Standard ('CES'), including Zero Emission Credit/Tier III and Renewable Energy Standard/Tier I requirements and the policies they are intended to advance.

DISCUSSION

In summary:

- The Contract before the Board would provide for the sale of the Extended Allocations to the Customers under a direct sale arrangement and along with ST WNY-2, would implement the Extended Allocations through December 31, 2028 as listed on Exhibits '4b i-A-1' and '4b i-A-2.'
- Transmission and delivery service would continue to be provided by the Customers' local utility in accordance with the utility's Public Service Commission-filed delivery service tariff.
- The Contract and ST WNY-2 would provide for the direct billing of all production charges (*i.e.* demand and energy) as well as all New York Independent System Operator, Inc. charges, plus taxes or any other required assessments, as set forth in ST WNY-2.
- The Contract supports each Customer's agreement to provide, during the extended term, the same or substantially similar supplemental commitments contained in its current WNY Hydropower contract pertaining to job creation/retention, capital investment and power utilization commitments that are detailed in Exhibit '4b i-A-1' and '4b i-A-2.'
- The Contract includes compliance provisions that allow the Authority to reduce the Allocations for a Customer's failure to meet supplemental commitments. The Authority would retain the right to reduce or terminate a Customer's Allocation if employment, power utilization, or capital investment commitments are not met. The Contract now gives the Customer an opportunity to present a proposed plan with actionable milestones to cure compliance deficiencies.
- ST WNY-2 provides for a minimum monthly charge which helps the Authority cover fixed costs of serving a customer even when the Customer does not utilize the allocation in a billing period. The Authority would waive the minimum monthly charge for up to one year if a

Customer that can satisfactorily demonstrate a short-term reduction or interruption of facility operations due to events outside of the Customer's control. This provision would give flexibility to Customers who experience short-term operational hardships allowing them to avoid costs when they are not fully able to utilize the power allocation without permanently relinquishing a portion of it.

- The base rates for demand and energy would be reduced by 4.0% commencing January 1, 2019. The reduction is taken off the currently effective 2018 rates contained in Service Tariff No. WNY-1 ('ST WNY-1'), the existing service tariff applicable to EP and RP allocations.
- The annual adjustment factor ('AAF') would be reduced by 50% when applied to determine the effective rate for the 2019 rate year (July 1, 2019-June 30, 2020). Thereafter, the AAF would be applied in full. This feature compliments the determination by the Authority to waive the application of the AAF authorized by Service Tariff WNY-1 for the 2018 rate year (July 1, 2018-June 30, 2019).
- The Contract contains updated provisions to address a number of matters, including customer metering arrangements, delivery of EP and RP by local electric utilities, the provision of substitute energy in the event of hydropower curtailments caused by adverse water conditions, and early outreach concerning future allocation extensions.
- The Contract clarifies the Authority's obligations to supply 'substitute energy' in the event of 'adverse water conditions' that impacts power project operations, and now gives the Customer the option to procure its own substitute energy pursuant to a process specified by the Contract.
- The Authority would continue to provide unforced capacity to meet a Customer's New York Independent System Operator requirements associated with its Extended Allocation, and the customer would pay for this capacity.
- Customers would be required to perform an energy audit at the facility receiving its WNY Hydropower allocation at least twice during the term of the Allocation. However, Customers would have the option to satisfy the audit requirement through either a traditional physical audit, or a virtual audit using the Authority's New York Energy Manager ('NYEM'). The NYEM audit option is expected to provide considerable savings for customers who select it.
- The Contract contains new provisions to clarify the parties' rights regarding the takedown of Allocations that are awarded to support new or expanded facilities.
- The Authority has agreed to periodically communicate with the Customer about energy-related projects, programs and services offered by the Authority.
- The Contract provides for the sale of additional power allocations to the Customer in appropriate circumstances by incorporating new allocations into Schedule A of the Contract. The Trustees approved this convention in the 2010 long-term extension contract for hydropower, which simplifies contract administration.
- To accommodate non-payment risk that could result from the direct billing arrangement with the Authority, the Contract includes commercially reasonable provisions concerning, among other things, the ability to require deposits in the event of a customer's failure to make payment for any two monthly bills. This is consistent with broader Authority contract template changes that incorporate direct billing, including the Authority's Recharge New York contract forms.

- The Contract incorporates a more developed approach by the Authority to administering the WNY Hydropower programs in a manner that is consistent with the SEP and CES.
- The Contract provides for collection of a Zero Emission Credit Charge and a Renewable Energy Credit Charge to allow the Authority to recover costs it would incur relating to its purchase of Zero Emission Credits and Renewable Energy Credits attributable to the Customer's load served under the Contract.

The Authority has discussed the Contract with the Customers, and each Customer has given its consent to its respective Contract. The Customers have also acknowledged application of the appropriate tariff, discussed above, to the allocations.

A public hearing on the Contract was held on November 28, 2018 at the Authority's Buffalo office. The official transcript of the public hearing is attached as Exhibit '4b i-C.' Staff has not identified any substantive changes to the Contract as a result of the public hearing process.

On November 28, 2018, Power for Economic Prosperity, a coalition of 14 industrial and manufacturing companies located in the Buffalo Niagara region of Western New York, issued a statement in which it stated that it strongly supports the extended allocations and the Contract.

RECOMMENDATION

The Vice President – Economic Development recommends that the Trustees: (1) approve the Contract and the associated Service Tariff No. WNY-2 for the sale of the Extended Allocations listed in Exhibits '4b i-A-1' and '4b i-A-2,' as in the public interest; and (2) authorize the transmittal of the Contract to the Governor for his review and to seek his authorization for the Authority to execute the Contract with these Customers pursuant to PAL §1009.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the form of contract ("Contract") for the sale of Expansion Power ("EP") and Replacement Power ("RP") and associated Service Tariff No. WNY-2, attached as Exhibit "4b i-B" to the foregoing report of the President and Chief Executive Officer ("Report") are approved, the Contract is determined to be in the public interest, and in accordance with Public Authorities Law §1009, the Contract should be submitted to the Governor for his review and to seek his authorization for the Authority to execute the Contract, along with a copy of the record of the public hearing thereon, and copies of the Contract along with the record of the public hearing thereon, be forwarded to the Speaker of the Assembly, the Minority Leader of the Assembly, the Chairman of the Assembly Ways and Means Committee, the Temporary President of the Senate, the Minority Leader of the Senate and the Chairman of the Senate Finance Committee; and be it further

RESOLVED, That the Chairman and the Corporate Secretary are authorized and directed to execute such Contract in the name of and on behalf of the Authority with

the customers identified on Exhibits “4b i-A-1” and “4b i-A-2” to the Report if the Contract is approved by the Governor; and be it further

RESOLVED, That the Executive Vice President and Chief Commercial Officer, or his or her designee, be, and hereby is, authorized, subject to the approval of the form thereof by the Executive Vice President and General Counsel, to negotiate and execute any and all documents necessary or desirable to implement the Contract with the individual businesses as set forth in the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That the Chairman, the Vice Chair, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

ii. **Transfer of RNY Power, RNY Hydropower, Expansion Power and Replacement Power Allocations**

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Trustees are requested to approve the transfer of the following power allocations awarded by the New York Power Authority ('Authority'):

1. Transfer of a 380 kilowatt ('kW') Replacement Power ('RP') allocation from Flexo Transparent, Inc. to Flexo Transparent, LLC in order to address ownership and organizational changes.
2. Authorize the reallocation of a 300 kW Expansion Power ('EP') allocation and a 1,200 kW RP allocation awarded to Tulip Corporation so that the allocations may be used at two facilities – one located at 3125 Highland Avenue and the other at 3123 Highland Avenue, in Niagara Falls, New York.
3. Transfer of a pending 1,800 kW Recharge New York ('RNY') Power allocation from Fresh Direct, LLC to a related company, Fresh Property Bronx, LLC, for use at facilities located at 2 St. Ann's Avenue, Bronx, New York, in order to address internal corporate organizational changes.
4. Transfer of a 1,000 kW RNY Hydropower allocation awarded to RED-Rochester, LLC for use at a facility located at 210 West Ridge Road, Rochester, New York to a facility located at 1200 Ridgeway Avenue, Rochester, New York.
5. Transfer of a 416 kW RNY Power allocation from Ward Lumber Company, Inc. to Ward Pine Mill, Inc., to address corporate organizational changes.

The Economic Development Power Allocation Board ('EDPAB'), at its December 10, 2018 meeting, approved the transfer of the RNY Power allocations. Transfers of RNY Power are subject to EDPAB review and approval.

The Trustees have previously approved transfers of RNY Power program allocations and Western New York hydropower allocations in circumstances that are similar to those presented here.

DISCUSSION

The following discussion describes the facts relating to the recommended transfers.

1) Flexo Transparent, Inc.

Flexo Transparent, Inc. ('Flexo') manufactures and prints custom plastic packaging. Flexo has a 380 kW RP allocation associated with an employment commitment of 100 jobs. The company merged with Flexo Merger Sub, LLC, an investment vehicle created by a private equity firm, and a new company, Flexo Transparent, LLC, was formed. The parties request that the 300 kW RP allocation be transferred to Flexo Transparent, LLC. The new company would agree to honor all commitments, including the employment, power utilization and capital investment commitments, associated with this allocation.

2) Tulip Corporation

Tulip Corporation ('Tulip'), an injection-molding company, recycles rubber and plastic and manufactures battery cases for the major battery manufacturers. Tulip has a 300 kW EP allocation and a 1,200 kW RP allocation which are associated with an employment commitment of 70 jobs.

At its January 31, 2017 meeting, the Board of Trustees approved a transfer of the company's EP and RP allocations from Tulip's 3125 Highland Avenue, Niagara Falls facility to a facility located at 3123 Highland Avenue. However, in order for Tulip to accommodate its growth appropriately, rather than shutter the 3125 Highland Avenue location, Tulip has decided to maintain some manufacturing operations at the 3125 Highland Avenue facility.

Tulip requests that these allocations be re-allocated so that the Company can use the allocations at both facilities (3123 Highland Avenue and 3125 Highland Avenue). Staff would work with Tulip to identify how the allocations would be apportioned between the facilities and the matter would be memorialized in revised contract documents between the parties. The company will continue to honor all commitments related to the allocations, including the employment, power utilization and capital investment commitments associated with these allocations.

3) Fresh Direct, LLC

Fresh Direct, LLC ('Fresh Direct') is a direct-to-consumer New York City-based internet grocer that delivers a full line of grocery products to consumers throughout the New York City metropolitan area. Fresh Direct, which operates out of a facility located at 2 St. Ann's Avenue, Bronx, New York has a pending 1,800 kW RNY Power allocation for use at this facility.

Shortly after Fresh Direct applied for the RNY Power allocation, the parent-owner of the business, Fresh Direct Holdings, Inc., created a limited liability company named Fresh Property Bronx, LLC ('Fresh Bronx') in order to own and run the Bronx-based operations.

The Fresh Direct entities request a formal transfer of the 1,800 kW RNY Power allocation to Fresh Bronx. Fresh Bronx would be subject to the same terms and conditions that have been approved by the Trustees for Fresh Direct.

4) RED-Rochester, LLC

RED-Rochester, LLC ('RED-Rochester') provides the utilities for the entire Eastman Business Park, the largest technology and industrial park east of the Mississippi river. In this role, it has converted an old coal-fired power plant to natural gas and upgraded to a high efficiency boiler and upgraded all of the utility delivery systems in the technology and industrial park. The company has a 1,000 kW RNY Hydropower allocation with an associated employment commitment of 70 jobs.

The company was operating out of temporary facilities located at 210 West Ridge Road in Rochester, which is the site originally approved to receive the RNY Hydropower allocation. However, the company has since moved to long-term facilities located at 1200 Ridgeway Avenue in Rochester. RED-Rochester requests that the allocation be transferred to the 1200 Ridgeway Avenue facility. The company would continue to honor all commitments related to the 1,000 kW RNY Hydropower allocation, including supplemental commitments for employment, power utilization and capital investment.

5) Ward Lumber Company, Inc.

Ward Lumber Company, Inc. ('Ward') has operated one of the largest white pine sawmills and planer mills (collectively, the 'Mill Operation') in New York State at facilities located at 702 Glen Road, Jay, New York. Ward was awarded a 416 kW RNY Power allocation for use at the 702 Glen Road location. The allocation has an associated employment commitment of 35 jobs.

Ward has reorganized and has split from the Mill Operation. The Mill Operation is now operated by an affiliated company named Ward Pine Mill, Inc. ('WPM').

Ward requests that the 416 kW RNY Power allocation be transferred to WPM for use at the 702 Glen Road location to continue to support the Mill Operation. WPM would agree to honor all

commitments, including the employment, power utilization and capital investment commitments associated with this allocation.

RECOMMENDATION

The Vice President - Economic Development recommends that the Trustees approve the transfers discussed above, subject to the following conditions: (1) there be no material reductions in the base employment levels or capital investment commitments associated with the allocations that would be transferred; and (2) the transfers are addressed in contract documents containing such terms and conditions determined by the Authority to be appropriate to effectuate each transfer.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below.”

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the transfer of the 300 kilowatt (“kW”) Replacement Power (“RP”) allocation awarded to Flexo Transparent, Inc. to Flexo Transparent, LLC, as described in the foregoing report of the President and Chief Executive Officer be, and hereby is, approved subject to (i) such terms and conditions as set forth in the foregoing report, and (ii) such terms and conditions contained in contract documents prepared by the Authority to effectuate the transfer, and be it further

RESOLVED, That the re-allocation of the 300 kW Expansion Power (“EP”) allocation and 1,200 kW RP allocation awarded to Tulip Corporation to allow Tulip the use at its facilities located at 3123 Highland Avenue and 3125 Highland Avenue in Niagara Falls, New York, as described in the foregoing report be, and hereby is, approved subject to (i) such terms and conditions as set forth in the foregoing report, and (ii) such terms and conditions contained in contract documents prepared by the Authority to effectuate the re-allocation, including the specific apportionment of the allocations between these facilities, and be it further

RESOLVED, That the transfer of the 1,880 kW Recharge New York (“RNY”) Power allocation awarded to Fresh Direct, LLC for its use at its facility at 2 St. Ann’s Avenue, Bronx, New York, to Fresh Property Bronx, LLC, as described in the foregoing report be, and hereby is, approved subject to (i) such terms and conditions as set forth in the foregoing report, and (ii) such terms and conditions contained in contract documents prepared by the Authority to effectuate the transfer, and be it further

RESOLVED, That the transfer of the 1,000 kW RNY Hydropower allocation awarded to RED-Rochester LLC for its use at temporary facilities located at 210 West Ridge Road, Rochester, New York, to new facilities located at 1200 Ridgeway Avenue, Rochester, New York, as described in the foregoing report be, and hereby is, approved subject to (i) such terms and conditions as set forth in the foregoing report, and (ii) such terms and conditions contained in contract documents prepared by the Authority to effectuate the transfer, and be it further

RESOLVED, That the transfer of the 416 kW RNY Power allocation awarded to Ward Lumber Company, Inc. for use at its facility located at 702 Glen Road, Jay, New York, to Ward Pine Mill, Inc. for use at the same facility, as described in the foregoing report be, and hereby is, approved subject to (i) such conditions and contingencies as set forth in the foregoing report, and (ii) the terms of any contract documents required by the Authority to effectuate this resolution, including preserving Supplemental Commitments, and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

iii. **Port Authority Load Serving Entity Service Agreement**

The President and Chief Executive Officer submitted the following report:

SUMMARY

The Trustees are requested to authorize the execution of a Load Serving Entity ('LSE') Service Agreement to supply power to the Port Authority of New York and New Jersey ('Port Authority') at the John F. Kennedy International Airport ('JFK Airport').

BACKGROUND

The Port Authority has been a full electric supply customer of NYPA since 1976.

The Port Authority power supply load at the JFK Airport is supplied by the KIAC cogeneration facility currently operated by Calpine Corporation, with NYPA as the LSE for the JFK load. There are current agreements between NYPA and the Port Authority and between the Port Authority and Calpine that address the responsibilities amongst the parties regarding the JFK Airport load. The agreement now presented to the Trustees for approval will replace and supersede all existing agreements between NYPA and the Port Authority concerning the JFK Airport load. All of the Port Authority's remaining power supply needs are covered under the recently executed and Trustee approved Long Term Power Supply Agreement

In 2018, NYPA and the Port Authority entered into negotiations for a new agreement that would accurately address the necessary governance, reflective of current NYISO Tariffs and obligations, for NYPA servicing the JFK Load. The LSE Service Agreement incorporates recent shifts in the electricity business, New York State's clean energy goals, and continuing changes in the NYISO marketplace, all in an effort to continue to provide value for, and serve the Port Authority.

DISCUSSION

The features of this LSE Service Agreement are as follows:

- i) NYPA will provide LSE services to the Port Authority for the JFK Airport Load which is on an independent and isolated load bus;
- ii) The Port Authority will be financially responsible to NYPA for costs that NYPA incurs from the NYISO to provide the services under this Agreement;
- iii) NYPA will forecast and schedule the JFK Airport Load and the capacity of the Facility associated with such load, in accordance with NYPA's obligations under the applicable NYISO Tariffs;
- iv) The Port Authority will pay a LSE Fee of \$186,000 per year (subject to a yearly escalator);
- v) Zero Emission Credit and Renewable Energy Credits payments will be collected from the Port Authority under the terms of this agreement;

The LSE Service Agreement has been signed by the Port Authority, in the form attached as Exhibit '4b iii-A,' and is contingent on the approval of the Port Authority Board of Commissioners and the Executive Director of the Port Authority, whose approval is required for the execution of this Agreement.

FISCAL INFORMATION

The adoption of the LSE Service Agreement with the Port Authority would secure a fixed monthly administrative cost, adjusted annually, for NYPA to cover its cost associated with scheduling the JFK Airport Load in the NYISO wholesale energy market.

RECOMMENDATION

The Vice President - Economic Development recommends that the Trustees authorize the execution of a Load Serving Entity Service Agreement in the form attached in Exhibit '4b iii-A.'

For the reasons stated, I recommend the approval of the above-requested action by adoption the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

WHEREAS, the Port Authority's desire that NYPA remain the Load Serving Entity for the JFK load, and that NYPA is willing to continue providing such services;

NOW, THEREFORE BE IT RESOLVED, That the Chairman, or his designee, is authorized to execute a agreement between the Port Authority and the Authority, in the form attached hereto as Exhibit "4b iii-A," with such amendments, deletions and supplements along with any other documents necessary to effectuate the foregoing, subject to approval of the form thereof by the Executive Vice President and General Counsel or their respective designees to be appropriate to effectuate such agreement and be it further;

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

c. Procurement (Services) Contracts:

**i. Procurement (Services) Contracts –
Business Units and Facilities –
Awards, Extensions and/or Additional Funding**

The President and Chief Executive Officer submitted the following report:

“SUMMARY

The Trustees are requested to approve the award and funding of the multiyear procurement (services) contracts listed in Exhibit ‘4c i-A,’ as well as the continuation and/or funding of the procurement (services) and other contracts listed in Exhibit ‘4c i-B,’ in support of projects and programs for the Authority’s Business Units/Departments and Facilities. Detailed explanations of the recommended awards and extensions, including the nature of such services, the bases for the new awards if other than to the lowest-priced, lowest total cost of ownership or ‘best valued’ bidders and the intended duration of such contracts, or the reasons for extension and the projected expiration dates, are set forth in the discussion below.

BACKGROUND

Section 2879 of the Public Authorities Law and the Authority’s Guidelines for Procurement Contracts require the Trustees’ approval for procurement contracts involving services to be rendered for a period in excess of one year.

The Authority’s current Expenditure Authorization Procedures (‘EAPs’) require the Trustees’ approval for the award of non-personal services, construction, equipment purchase or non-procurement contracts in excess of \$6 million, as well as personal services contracts in excess of \$2 million if low bidder or best value, or \$1 million if sole-source, single-source or other non-competitive award.

The Authority’s current EAPs also require the Trustees’ approval when the cumulative change order value of a personal services contract exceeds \$500,000, or when the cumulative change order value of a non-personal services, construction, equipment purchase, or non-procurement contract exceeds the greater of \$6 million or 25% of the originally approved contract amount not to exceed \$6 million.

DISCUSSION

Awards

The Trustees are requested to approve the award and funding of the multiyear procurement (services) contracts listed in Exhibit ‘4c i-A,’ where the EAPs require approval based upon contract value or the terms of the contracts will be more than one year. Except as noted, all of these contracts contain provisions allowing the Authority to terminate the services for the Authority’s convenience, without liability other than paying for acceptable services rendered to the effective date of termination. Approval is also requested for funding all contracts, which range in estimated dollar value from \$0 to \$9 million. Except as noted, these contract awards do not obligate the Authority to a specific level of personnel resources or expenditures.

The issuance of multiyear contracts is recommended from both cost and efficiency standpoints. In many cases, reduced prices can be negotiated for these long-term contracts. Since these services are typically required on a continuous basis, it is more efficient to award long-term contracts than to rebid these services annually.

Extensions

Although the firms identified in Exhibit '4c i-B' have provided effective services, the issues or projects requiring these services have not been resolved or completed and the need exists for continuing these contracts. The Trustees' approval is required because the terms of these contracts will exceed one year including the extension, the term of extension of these contracts will exceed one year and/or because the cumulative change-order limits will exceed the levels authorized by the EAPs in forthcoming change orders. The subject contracts contain provisions allowing the Authority to terminate the services at the Authority's convenience, without liability other than paying for acceptable services rendered to the effective date of termination. These contract extensions do not obligate the Authority to a specific level of personnel resources or expenditures.

Extension of the contracts identified in Exhibit '4c i-B' is requested for one or more of the following reasons: (1) additional time is required to complete the current contractual work scope or additional services related to the original work scope; (2) to accommodate an Authority or external regulatory agency schedule change that has delayed, reprioritized or otherwise suspended required services; (3) the original consultant is uniquely qualified to perform services and/or continue its presence and rebidding would not be practical or (4) the contractor provides proprietary technology or specialized equipment, at reasonable negotiated rates, that the Authority needs to continue until a permanent system is put in place.

The following is a detailed summary of each recommended contract award and extension.

Contract Awards in Support of Business Units/Departments and Facilities:

Commercial Operations – Customer Business Development

The proposed sole-source, personal services contract with **U.S. Department of Energy / National Renewable Laboratory ('NREL') (PO# TBA)** would provide for the development and review of distributed energy technical and financial modeling aspects for documents such as Request for Proposals (RFP), various Power Purchase Agreement models ('PPA') and Design Build contracts to be used for Authority's clean energy projects, programs and advisory services. Staff recommends a sole-source contract be awarded to NREL for assistance in the development and review of solar technical aspects of NYPA projects, programs and services. The contract is for an intended term of three years subject to the Trustees' approval, which is hereby requested. Approval is also requested for the not-to-exceed contract value amount of \$500,000.

Utility Operations – Engineering

On May 18, 2018, the Authority publicly advertised Request for Quotations **Q18-6455JGM, On-Call Engineering Services – Energy Efficiency and Civil-Geotechnical Engineering Services**. The proposed personal services contracts (contract numbers to be announced), for an aggregate of \$9 million and five-year term, would provide for statewide energy efficiency and renewable energy services to program participants that meet eligibility criteria under the Public Authorities Law. The proposed Geotechnical Engineering contracts with **Arcadis of New York, Inc. ('Arcadis'), Gomez and Sullivan Engineers, DPC ('Gomez'), Goldberg Zoino Associates of New York, PC dba GZA GeoEnvironmental of New York ('GZA'), Hatch Associates Consultants, Inc. ('Hatch'), Kleinschmidt Associates PA, PC ('Kleinschmidt'), Mott MacDonald, Inc. dba Mott MacDonald USA LLC ('Mott'), Stantec Consulting Services, Inc. ('Stantec') and WSP USA, Inc., ('WSP')** are valued in the aggregate amount of \$5 million over the five-year term. In addition, the proposed Civil Engineering Contracts with **CDM Smith, Inc. ('CDM'), EME Consulting Engineering Group LLC ('EME'), Imperia Engineering Partners LLC ('Imperia'), LaBella Associates, DPC ('LaBella'), O'Brien & Gere Engineers, Inc., ('O'Brien') and RLM Engineering PLLC, ('RLM')** are valued in the aggregate amount of \$4 million over the five-year term. The Federal Energy Regulatory Commission ('FERC') requires that Licensees maintain the resources necessary to respond to unusual or changed conditions that may affect

public safety. The Authority has historically satisfied program volume and FERC requirements through On-Call Engineering Services Contracts. The On-Call Services identified as part of this proposed award will replace expiring Contracts for this Scope of Services. Bid documents were developed by staff and were accessible through the NYPA.gov site. The Request for Quotations was advertised on the New York State *Contract Reporter* website and posted on the Procurement page of the Authority's website. Sixty-two firms / entities were listed as having been invited to, or requested to participate in, the Ariba event. Twenty-nine proposals were received electronically via Ariba and were evaluated, as further set forth in the Award Recommendation documents. Staff recommends the award of contract to Arcadis, Gomez, GZA, Hatch, Kleinschmidt, Mott, Stantec, WSP, CDM, EME, Imperia, LaBella, O'Brien and RLM which are technically and commercially qualified and meet the bid requirements on the basis of 'best value,' which optimizes quality, cost and efficiency among responsive and responsible offerors. The contracts are for an intended term of five years, subject to the Trustees' approval, which is hereby requested. Approval is also requested for the \$9 million aggregate amount expected to be expended for the term of the contract, with \$5 million for Geotechnical Engineering contracts and \$4 million for Civil Engineering contracts, as detailed above.

Utility Operations – Project Management

The proposed construction contract with **Public Utilities Maintenance, Inc. ('PUM') (Q18-6469JB; PO# TBA)** would provide for the painting of transmission towers in the Western and Central regions of New York. Bid documents were developed by staff and were accessible through the NYPA.gov site. The Request for Quotations was advertised on the New York State *Contract Reporter* website and posted on the Procurement page of the Authority's website. Six firms / entities were listed as having been invited to, or requested to participate in, the Ariba event. Three proposals were received electronically via Ariba and were evaluated, as further set forth in the Award Recommendation documents. Staff recommends the award of contract to PUM which is technically and commercially qualified and meets the bid requirements as the lowest-priced bidder among responsive and responsible offerors. The contract is for an intended term of two years for the lump-sum amount of \$4,653,211, subject to the Trustees' approval, which is hereby requested.

Utility Operations – SENY

The proposed non-personal services contract with **TEG Energy Group, Inc. ('TEG') (A18-000900JV; PO# TBA)** would provide Control Systems support for the Small Clean Power Plants (SCPPs). TEG is familiar with SCPP operations and has provided services to the Authority previously. Bid documents were developed by staff and were accessible through the NYPA.gov site. The Request for Quotations was advertised on the New York State *Contract Reporter* website and posted on the Procurement page of the Authority's website. Six firms / entities were listed as having been invited to, or requested to participate in, the Ariba event. One proposal was received electronically via Ariba and was evaluated, as further set forth in the Award Recommendation documents. Staff recommends the award of a contract to TEG which is technically and commercially qualified and meets the bid requirements on the basis of 'best value,' which optimizes quality, cost and efficiency among responsive and responsible offerors. The contract is for an intended term of five years, subject to the Trustees' approval, which is hereby requested. This contract will begin on January 1, 2019 and end on December 31, 2024. Approval is also requested for the amount expected to be expended for the term of the contract, \$2 million.

Utility Operations – St. Lawrence

The proposed non-personal services contract with **S&S Sanitation & Excavation, Inc. ('S&S') (S18-9256LH; PO# TBA)** would provide a septic and holding tank pump service agreement for the St. Lawrence Power Project. Bid documents were developed by staff and were accessible through the NYPA.gov site. The Request for Quotations was advertised on the New York State *Contract Reporter* website and posted on the Procurement page of the Authority's website. Ten firms / entities were listed as having been invited to, or requested to participate in, the Ariba event. Three proposals were received electronically via Ariba and were evaluated, as further set forth in the Award Recommendation

documents. Staff recommends the award of contract to S&S which is technically and commercially qualified and meets the bid requirements as the lowest-priced bidder among responsive and responsible offerors. The contract is for an intended term of three years, subject to the Trustees' approval, which is hereby requested. Approval is also requested for the amount expected to be expended for the term of the contract, \$95,000.

Utility Operations – St. Lawrence

The proposed non-personal services contract with **Romie D. Clothier, Jr. dba West Parishville Metals LLC ('West') (S18-5687LH; PO# TBA)** would provide scrap metal and copper disposal agreement for the St. Lawrence Power Project ('STL'). The proposed contract is in alignment with past agreements and reflects projected fluctuations in the scrap price bulletin of the American Metal Market – Buffalo Area. When submitting payment to NYPA, the awarded firm must provide all certified weight slips and a copy of the AMM Scrap Price Bulletin's published index price for the day of the pickup. In the event that the flat rate and/or deduction exceeds the market index price, scrap metal and copper material will be removed at no cost to NYPA STL. Bid documents were developed by staff and were accessible through the NYPA.gov site. The Request for Quotations was advertised on the New York State *Contract Reporter* website and posted on the Procurement page of the Authority's website. Six firms / entities were listed as having been invited to, or requested to participate in, the Ariba event. One proposal was received electronically via Ariba and was evaluated, as further set forth in the Award Recommendation documents. Staff recommends the award of contract to West which is technically and commercially qualified and meets the bid requirements on the basis of 'best value,' which optimizes quality, cost and efficiency among responsive and responsible offerors. This zero dollar contract is for an intended term of three years, subject to the Trustees' approval, which is hereby requested.

Utility Operations – Technology & Innovation

Due to the need to maintain continuous and uninterrupted support of the Transformer Asset Health System ('System'), a sole-source, personal services contract with **mPrest Systems Ltd. ('mPrest') (PO# 4500303181)**, became effective November 8, 2018, for the initial interim award amount of \$137,150, subject to the Trustee's approval as soon as practicable, in accordance with the Authority's Guidelines for Procurement Contracts and EAPs. The contract provides for software maintenance and support services associated with the joint development project for advanced command and control ('software') system for electric utility power transformers. By memo dated September 29, 2015, the President and Chief Executive Officer informed the Trustees that the New York Power Authority ('Authority') had been advised by the **Israel-U.S. Binational Industrial Research and Development Foundation ('BIRD')** that its joint application with mPrest for a grant to design and implement a research and development project for such a System had been successful. This joint development project includes the Authority, mPrest and is supported by the Electric Power Research Institute ('EPRI'). As mPrest retains the Intellectual Property ('IP') rights and has the software/analytics expertise for the System, they are the only vendor with the knowledge and qualification to perform this work. Staff recommends that a sole-source contract be awarded to mPrest for an intended term of five years ending November 7, 2023, subject to the Trustees' approval, which is hereby requested. Approval is also requested for the not-to-exceed contract value amount of \$685,750 (\$137,150 per year).

Extensions and/or Additional Funding Requests:

Corporate Affairs – Sustainability

On November 6, 2017, the Authority issued a one-year, personal services contract to **WeSpire, Inc. ('WeSpire') (PO# 4500291319)** in the amount of \$20,000 to provide a Software as a Service ('SaaS') platform, license grant and a Professional Services Success Manager. Offered as a SaaS solution, WeSpire works with NYPA to implement the WeSpire SaaS platform to deploy campaigns and initiatives. These actions are grouped into campaigns and made available for NYPA employees. The requested extension will allow for the continuation for the personal services required for the hosted business

engagement platform to continue sustainability campaigns. Staff requests the Trustees' approval for the extension of the WeSpire personal services contract be extended on a single-source basis for thirty-six months, through November 5, 2021, including the interim period of November 7, 2018 through December 11, 2018. Approval is also requested for additional funding in the amount of \$73,958.

Executive Offices – Digital Transformation Office

Concerning the provision of certain consulting services for the executive offices, the Trustees approved the awarding of contracts to **Customer Care Network, Inc. (4600003141)**, **Firefly Energy Consulting LLC (4600003164)**, **Navigant Consulting, Inc. (4600003156)**, **Ernst & Young LLP (4600003157)**, **PA Consulting Group, Inc. (4600003158)**, **PricewaterhouseCoopers Advisory Services LLP (4600003142)** and **McKinsey & Company, Inc. (4600003159)** on March 29, 2016 in the aggregate amount of \$10 million for a term of three years. Subsequently, the Chief Financial Officer and President approved a \$500,000 increase. These qualified firms have provided a broad range of consulting expertise and experience in the electric utility and energy industries. The aggregate funding for these contracts has nearly been allocated across these seven contracts. On March 20, 2018, a Change Order for Management Consulting Services for the Executive Office was approved to increase the funding in the amount of \$9.5 million and extend the term two additional years, to March 31, 2021, with the new target value of \$20 million. Staff envisions that the multitude of benefits that the Authority continues to see from these contracts warrants an additional increase in the aggregate funding amount to support new and ongoing initiatives while the services can be rebid in 2019. The Trustees are requested to approve additional funding in the amount of \$5 million, for a total aggregate contract value of \$25 million. Firefly Energy Consulting LLC is a NYS-certified Women-owned Business Enterprise.

Utility Operations – Engineering

On January 25, 2018, the Authority issued one-year, personal services contracts to **George A. Harper dba GAH Consulting LLC ('GAH') (PO# 4500293855)**, and **RJ Associates LLC ('RJA') (PO# 4500293858)**, and on February 16, 2018, the Authority issued a one-year, personal services contract to **Barry Keim dba Keim Consulting LLC ('Keim') (PO# 4500294703)**, in the aggregate amount of \$92,865 to provide engineering services related to the analysis of the potential impacts of Hurricane Irene on the site-specific Probable Maximum Precipitation ('PMP') and Probable Maximum Flood ('PMF') for the Blenheim-Gilboa Project. The three firms act as an Independent Board of Consultants ('BOC') for the re-analysis of the previously approved Site-Specific Probable Maximum Precipitation ('PMP') and Site-Specific Probable Maximum Flood ('PMF') studies for the Blenheim-Gilboa Pumped Storage Project as required by the Federal Energy Regulatory Commission ('FERC'). The extensions of the three vendor contracts will allow for the completion of the analysis tasks within the contract scope. Staff requests the Trustees' approval for three-year extensions of the Keim, GAH and RJA contracts, through December 31, 2021. The Trustees are requested to approve additional funding in the amount of \$300,000, for a total aggregate contract value of \$392,865.

Utility Operations – Niagara (LPGP LEM)

At their June 29, 2010 meeting, the Trustees approved the Capital Expenditure Authorization Request ('CEAR') for the Lewiston Pump Generating Plant Life Extension and Modernization ('LPGP LEM') Program estimated at \$460 million to renew the generation assets of LPGP, and were advised that the LEM Program would commence and require about ten years to complete. At such time, the Trustees also authorized the award of a 10-year contract to **Mitsubishi-Hitachi Power Systems Americas, Inc. (Value Contract No. 4600002315)**. The contract became effective July 30, 2010 in the amount of \$174 million for the replacement of 12 pump turbine runners including equipment overhaul. In a memorandum to the Trustees on November 22, 2016, a program schedule extension through 2022 was approved. The extension allowed for the continuation of work to complete the twelfth generating unit and then return to four units that were previously overhauled to replace motor/generator components. It also allowed for the fabrication of long-lead time equipment without increasing project costs and reducing the Authority's exposure to additional risk. The Trustees were also informed that several additional contract extensions

for the LEM program would be requested in the future. In addition, on May 7, 2018 a request to extend the contract by five months, through May 7, 2021, was granted per the EAPs. Extending a contract previously approved by the Trustees for 12 months or less ('grace period') requires approval by the Vice President of the requesting department and concurrence by the Vice President of Strategic Supply Management. Based upon the foregoing, staff requests the Trustees' approval to extend the contract with Mitsubishi-Hitachi Power Systems Americas, Inc., for a 20-month term through December 31, 2022, for the replacement of 12 pump turbine runners, including equipment overhaul. This contract extension will allow for completion of the Programs work scope. No additional funding is required.

Utility Operations – Niagara (LPGP LEM)

At their June 29, 2010 meeting, the Trustees approved the Capital Expenditure Authorization Request ('CEAR') for the Lewiston Pump Generating Plant Life Extension and Modernization ('LPGP LEM') Program estimated at \$460 million to renew the generation assets of LPGP, and were advised that the LEM Program would commence and require about ten years to complete. At their March 25, 2014 meeting, the Trustees authorized the award of a 7-year contract to **Ferguson Electric Construction Co., Inc. (Value Contract No. 4600002788)**. The contract became effective April 21, 2014 in the amount of \$19 million for the installation of auxiliary equipment for ten unit upgrades. In a memorandum to the Trustees on November 22, 2016, a program schedule extension through 2022 was approved. The extension allowed for the continuation of work to complete the twelfth generating unit and then return to four units that were previously overhauled to replace motor/generator components. It also allowed for the fabrication of long-lead time equipment without increasing project costs and reducing the Authority's exposure to additional risk. The Trustees were also informed that several additional contract extensions for the LEM program would be requested in the future. Based upon the foregoing, staff requests the Trustees' approval to extend the contract with Ferguson Electric Construction Co., Inc., for a 20-month term through December 31, 2022, for the installation of auxiliary equipment. This contract extension will allow for completion of the Programs' work scope. No additional funding is required.

Utility Operations – Niagara (LPGP LEM)

At their June 29, 2010 meeting, the Trustees approved the Capital Expenditure Authorization Request ('CEAR') for the Lewiston Pump Generating Plant Life Extension and Modernization ('LPGP LEM') Program estimated at \$460 million to renew the generation assets of LPGP, and were advised that the LEM Program would commence and require about ten years to complete. At their June 26, 2012 meeting, the Trustees authorized the award of a 9-year contract to **Andritz Hydro Corporation (Value Contract No. 4600002534)**. The contract became effective July 2, 2012, in the amount of \$91 million, for the upgrade of 12 motor generators. In a memorandum to the Trustees on November 22, 2016, a program schedule extension through 2022 was approved. The extension allowed for the continuation of work to complete the twelfth generating unit and then return to four units that were previously overhauled to replace motor/generator components. It also allowed for the fabrication of long-lead time equipment without increasing project costs and reducing the Authority's exposure to additional risk. The Trustees were also informed that several additional contract extensions for the LEM program would be requested in the future. Based upon the foregoing, staff requests the Trustees' approval to extend the contract with Andritz Hydro Corporation, for a 27-month term, through December 31, 2022, for the upgrade of 12 motor generators. This contract extension will allow for completion of the Programs' work scope. No additional funding is required.

Utility Operations – Niagara (LPGP LEM)

At their June 29, 2010 meeting, the Trustees approved the Capital Expenditure Authorization Request ('CEAR') for the Lewiston Pump Generating Plant Life Extension and Modernization ('LPGP LEM') Program, estimated at \$460 million, to renew the generation assets of LPGP and were advised that the LEM Program would commence and require about ten years to complete. At their December 16, 2014 meeting, the Trustees authorized the award of a 6-year contract to **Niagara Coatings Services, Inc. (Value Contract No. 4600002866)**. The contract became effective November 13, 2014, in the

amount of \$1.1 million to perform surface preparation and application of high performance coatings on miscellaneous components and infrastructure associated with the LEM. Interim approval for this contract in the amount of \$100,000 was approved on November 12, 2014 by the Chief Operating Officer to permit the contractor to commence painting activities immediately, in an effort to meet the LPGP Unit 7 Overhaul outage schedule which was underway. The target value of the contract was subsequently increased to \$1.3 million in accordance with the EAPs. In a memorandum to the Trustees on November 22, 2016, a program schedule extension through 2022 was approved. The extension allowed for the continuation of work to complete the twelfth generating unit and then return to four units that were previously overhauled to replace motor/generator components. It also allowed for the fabrication of long-lead time equipment without increasing project costs and reducing the Authority's exposure to additional risk. The Trustees were also informed that several additional contract extensions for the LEM program would be requested in the future. Based upon the foregoing, staff requests the Trustees' approval to extend the contract with Niagara Coatings Services, Inc., for a 26-month term through December 31, 2022 to perform surface preparation and application of high performance coatings on miscellaneous components and infrastructure associated with the LEM. This contract extension will allow for completion of the Programs work scope. No additional funding is required.

FISCAL INFORMATION

Funds required to support contract services for various Business Units/Departments and Facilities have been included in the 2018 Approved Operating or Capital Budget. Funds for subsequent years, where applicable, will be included in the budget submittals for those years. Payment will be made from the Operating or Capital Fund, as applicable.

Funds required to support contract services for capital projects have been included as part of the approved capital expenditures for those projects and will be disbursed from the Capital Fund in accordance with the project's Capital Expenditure Authorization Request, as applicable.

RECOMMENDATION

The Senior Vice President – Operations Support Services and Chief Engineer; the Senior Vice President – Power Supply; the Senior Vice President – Technology and Innovation; the Senior Vice President – Public & Regulatory Affairs; the Senior Vice President – Financial Operations & Acting Controller; the Vice President – Project Management; the Vice President – Engineering; the Vice President – Environmental Justice & Sustainability; Vice President – Clean Energy Business & Market Development; the Vice President – Digital Transformation / Chief of Staff; the Regional Manager Northern NY; the Regional Manager SENY; the GM Superintendent / Licensing Manager; the Senior Director Infrastructure; the Senior Director Research, Technology Development & Innovation; the Senior Director Customer Business Development; Treasurer; recommend that the Trustees approve the award of multiyear procurement (services) and other contracts to the companies listed in Exhibit '4c i-A' and the extension and/or funding of the procurement (services) contracts listed in Exhibit '4c i-B,' for the purposes and in the amounts discussed within the report and/or listed in the respective exhibits.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That pursuant to the Guidelines for Procurement Contracts adopted by the Authority, the award and funding of the multiyear procurement services contracts set forth in Exhibit "4c i-A," attached hereto, are hereby approved for the period of time indicated, in the amounts and for the purposes listed therein, as

recommended in the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That pursuant to the Guidelines for Procurement Contracts adopted by the Authority, the contracts listed in Exhibit "4c i-B," attached hereto, are hereby approved and extended for the period of time indicated, in the amounts and for the purposes listed therein, as recommended in the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

d. Capital Expenditure Authorization Requests:

i. Compute-Storage Program - Capital Expenditure Authorization

The President and Chief Executive Officer submitted the following report:

SUMMARY

The Trustees are requested to authorize capital expenditures in the amount of \$7,545,924 for the implementation of a new Compute-Storage Program. The Compute-Storage Program is designed to support the implementation, life extension, and modernization of the enterprise Compute/Storage systems.

These expenditures have been included in the 2019 submitted Capital budget plan.

BACKGROUND

In accordance with the Authority's Capital Planning and Budget Procedures, capital expenditures in excess of \$6 million require the Trustees' approval.

No contract awards are being requested at this time. Any future contract requests associated with this project will be in accordance with the Authority's Expenditure Authorization Procedures ('EAPs').

DISCUSSION

The Authority's drive to be a digital utility by 2020 brings challenges in meeting an ever-growing need for Information Technology ('IT') services. New York Power Authority Information Technology ('NYPA IT') delivers foundational information technology, infrastructure, telecommunications and Compute-Storage services to the enterprise, empowering business units to deliver on NYPA's Vision 2020 goals.

As technology constantly evolves, it remains imperative to stay current with industry trends and anticipate the impact these developments have on business processes and operations. NYPA IT must consider this dynamic landscape among the many complex challenges and opportunities that affect the digital landscape.

NYPA IT has outlined a comprehensive five-year strategy that is a practical and living action plan supporting the Authority's top priorities and initiatives enabling NYPA's digital transformation. The strategy articulates the top goals and programs necessary to ensure that NYPA IT continues to prioritize high standards of quality across its services and the enterprise.

Goal 1. Enhance and Improve Services to offer more advanced and timely technology implementations and streamline processes.

Goal 2. Expand Strategic Role with Digital Transformation Office ('DTO') and business units to be more aligned with their needs.

Goal 3. Provide Robust Infrastructure to protect NYPA's technology, telecommunications and information assets and maintain service operations.

Goal 4. Optimize NYPA-wide Technology Administration to improve IT sourcing options, vendor accountability and save NYPA cost and time.

Goal 5. Facilitate Greater Access to Technology to engage all NYPA employees.

To execute this strategy, NYPA IT has organized its activities around five core investment portfolios necessary to ensure that sufficient funding is available, and that proper governance will be applied:

1. Compute-Storage Portfolio – targeted initiatives to refresh and sustain data center infrastructure and platforms including the retirement of assets as their function is moved to superior platforms or the cloud. This also includes the acquisition and implementation of cloud-based infrastructure and platform as a service to meet business needs.
2. On-Premises Network Portfolio – targeted initiatives to refresh, sustain and enhance premise technologies including wired and wireless networking, mobile workstations, peripherals and all other 'connected' end-user technologies.
3. Communications Portfolio – targeted initiatives to sustain and enhance external technologies including telephony, Virtual Private Network ('VPN'), bandwidth and cloud connectivity.
4. Cyber Portfolio – targeted initiatives to detect and defend NYPA from constantly evolving threats, vulnerabilities and advisories.
5. Business Application Portfolio – targeted initiatives to sustain, upgrade and grow key business productivity applications ensuring that they are current, patched and reliable.

The Compute-Storage Portfolio is designed to support the implementation, life extension, and modernization of the enterprise Compute/Storage systems. It includes initiatives related to the sustainment, enhancement, and integration related to NYPA's business.

The Compute-Storage Portfolio consists of four programs representing the development and implementation of a variety of state-of-the-art Compute-Storage solutions needed to meet NYPA's business requirements at all sites.

- Storage Growth – Support of NYPA's forecasted storage needs resulting from the exponential growth digital data.
- Storage Life Extension & Modernization ('LEM') – Replacement of NYPA's current storage technologies that have reached the end of their supported life.
- Compute Growth – Support of NYPA's forecasted compute needs due to increases in business requirements such as Industry Internet of Things ('IIoT'), Digital Worker, and Data Analytics.
- Compute LEM – Replacement of NYPA's physical, virtual, and cloud compute technologies that have reached the end of their supported life.

Although the Compute-Storage program is part of the IT five-year strategy, this authorization request is based on 2019 requirements. New capital expenditure authorization requests associated with the program will be identified and requested as business needs are developed. It will involve engineering design, new hardware and software, installation and testing.

The major components of the funding are as follows:

• Engineering Design, Hardware, Software, Vendor Labor	\$ 6,955,000
• Internal Labor	\$ 231,594
• HQ Overhead	\$ 359,330
Total	<u>\$ 7,545,924</u>

FISCAL INFORMATION

Payments associated with this project will be made from the Capital Fund.

RECOMMENDATION

The Chief Information Officer – Information Technology recommends that the Trustees approve the Capital Expenditure Authorization Request for \$7,545,924 for the Compute-Storage Program.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below.”

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That Capital Expenditures for the Compute-Storage Program are hereby approved in accordance with the Authority’s Expenditure Authorization Procedures, as recommended in the foregoing report of the President and Chief Executive Officer, in the amount and for the purpose listed below:

<u>Capital</u>	<u>Expenditure Authorization</u>
Compute-Storage Program	<u>\$ 7,545,924</u>

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things and take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

ii. **Cyber Program - Capital Expenditure Authorization**

The President and Chief Executive Officer submitted the following report:

SUMMARY

The Trustees are requested to authorize capital expenditures of \$8,463,609 for the implementation of a new Cyber Program. The Cyber Program is designed to support the implementation, lifecycle and modernization of the existing portfolio of cyber protection and detection systems.

These expenditures have been included in the 2019 submitted Capital budget plan.

BACKGROUND

In accordance with the Authority's Capital Planning and Budget Procedures, capital expenditures in excess of \$6 million require the Trustees' approval.

No contract awards are being requested at this time. Any future contract requests associated with this project will be in accordance with the Authority's Expenditure Authorization Procedures ('EAPs').

DISCUSSION

The Authority's drive to be a digital utility by 2020 brings challenges in meeting an ever-growing need for Information Technology ('IT') services. New York Power Authority Information Technology ('NYPA IT') delivers foundational information technology, infrastructure, telecommunications and cyber services to the enterprise empowering business units to deliver on NYPA's Vision 2020 goals.

As technology constantly evolves, it remains imperative to stay current with industry trends and anticipate the impact these developments have on business processes and operations. NYPA IT must consider this dynamic landscape among the many complex challenges and opportunities that affect the digital landscape.

NYPA IT has outlined a comprehensive five-year strategy that is a practical and living action plan supporting the Authority's top priorities and initiatives enabling NYPA's digital transformation. The strategy articulates the top goals and programs necessary to ensure that NYPA IT continues to prioritize high standards of quality across its services and the enterprise.

Goal 1. Enhance and Improve Services to offer more advanced and timely technology implementations and streamline processes.

Goal 2. Expand Strategic Role with Digital Transformation Office ('DTO') and business units to be more aligned with their needs.

Goal 3. Provide Robust Infrastructure to protect NYPA's technology, telecommunications and information assets and maintain service operations.

Goal 4. Optimize NYPA-wide Technology Administration to improve IT sourcing options, vendor accountability and save NYPA cost and time.

Goal 5. Facilitate Greater Access to Technology to engage all NYPA employees.

To execute this strategy, NYPA IT has organized its activities around five core investment portfolios necessary to ensure that sufficient funding is available, and that proper governance will be applied:

1. Compute-Storage Portfolio – targeted initiatives to refresh and sustain data center infrastructure and platforms including the retirement of assets as their function is moved to superior platforms or the cloud. Also, this includes the acquisition and implementation of cloud-based infrastructure and platform as a service to meet business needs.
2. On-Premises Network Portfolio – targeted initiatives to refresh, sustain and enhance on premise technologies including wired and wireless networking, mobile workstations, peripherals and all other 'connected' end-user technologies.
3. Communications Portfolio – targeted initiatives to sustain and enhance external technologies including telephony, Virtual Private Network ('VPN'), bandwidth and cloud connectivity.
4. Cyber Portfolio – targeted initiatives to detect and defend NYPA from constantly evolving threats, vulnerabilities and advisories.
5. Business Application Portfolio – targeted initiatives to sustain, upgrade and grow key business productivity applications ensuring that they are current, patched and reliable.

The Cyber program is designed to support the implementation, lifecycle and modernization of the existing portfolio of cyber protection and detection systems. It includes work related to the sustainment, enhancement and integration related to protecting NYPA's business.

IT Cyber Security Initiatives are focused into strategic sub-programs representing a variety of state-of-the-art security solutions needed to deliver the security requirements of the NYPA business community. These strategic efforts are to improve services, delivery and security around NYPA's digital vision.

- Segmentation solutions will enable visibility, monitoring and security of various zones of protection both within and externally to NYPA. Technologies will focus on software defined networks, orchestration and access authorization and authentication. This will reduce attack surface and data leakage risks.
- Access Anywhere solutions will focus on the delivery of information, services and software to any device anywhere with proper visibility, monitoring and security controls. Automated and managed services focused at effective cost controls will allow greater speed and enhanced self-service.
- IT / OT Visibility consists of pilots, solutions and architecture standards to incorporate operational technology systems and networks into centralized monitoring, asset control and advance security solutions.
- Threat and Vulnerability & Incident Management will enable consistent, rapid engagement, and communication of security events, threats, and vulnerabilities to mitigate security risks more quickly in a standardized and repeatable way.

Although the Cyber program is part of the IT five-year strategy, this authorization request is based on 2019 requirements. New capital expenditure authorization requests associated with the program will be identified and requested as business needs are developed. It will involve engineering design, new hardware and software, installation and testing.

The major components of the funding are as follows:

- Engineering Design, Hardware, Software, Vendor Labor \$ 7,250,000
 - Internal Labor \$ 810,580
 - HQ Overhead \$ 403,029
- Total \$ 8,463,609

FISCAL INFORMATION

Payments associated with this project will be made from the Capital Fund.

RECOMMENDATION

The Chief Information Officer – Information Technology recommends that the Trustees approve the Capital Expenditure Authorization Request in the amount of \$8,463,609 for the Cyber Program.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below.”

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That Capital Expenditures for the Cyber Program are hereby approved in accordance with the Authority’s Expenditure Authorization Procedures, as recommended in the foregoing report of the President and Chief Executive Officer, in the amount and for the purpose listed below:

<u>Capital</u>	<u>Expenditure Authorization</u>
Cyber Program	<u>\$ 8,463,609</u>

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things and take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

e. Finance

**i. Jones Beach Energy and Nature
Center - Funding Request**

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Trustees are requested to authorize \$3 million towards the development of the Jones Beach Energy and Nature Center to be located at the Jones Beach State Park, Wantagh, NY. These funds will be provided as a grant to the New York State Office of Parks, Recreation and Historic Preservation as authorized under Public Authorities Law Section 1005(17)(a). The funding will support a high performance and sustainable center that will be an interactive facility where the public will learn about smart energy use and environmental stewardship.

BACKGROUND

Under Public Authorities Law §1005(17)(a), the Authority may finance and design, develop, construct, implement, provide and administer energy-related projects, programs and services for any public entity within the state. The Authority's funding will be provided to State Parks for the purpose of financing a high performance and sustainable building program. The funds will be used for design and implementation costs incurred in connection with the construction of the facility through the incorporation of high performance and sustainable construction techniques and related equipment.

DISCUSSION

The Energy and Nature Center will be designed to be an energy efficient and high performance and sustainable building with a LEED Silver certification. The new center will replace an existing structure and is expected to open in 2020. It will showcase the state's and the Authority's efforts to demonstrate and encourage the wise use of energy. Exhibits will highlight how electricity is generated and distributed, focus on renewable power resources and how they connect to the grid and the home, and how consumers can manage energy more efficiently to lower their carbon footprint. Classroom space to instruct consumers in passive and renewable energy techniques will also be developed.

In addition to State Parks and the Authority, other participants in the project include PSEG Long Island and the Long Island Power Authority. The Authority consented to State Parks being the lead agency for the environmental review.

FISCAL INFORMATION

The Authority's contribution to the development of the Jones Beach Energy and Nature Center will be funded from the Authority's Operating Fund.

RECOMMENDATION

The Executive Vice President and Chief Commercial Officer – Commercial Operations recommends that the Trustees approve the requested funding of \$3 million to be used for the development of the Jones Beach Energy and Nature Center described above.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the Trustees hereby authorize the funding of \$3 million for the development of the Jones Beach Energy and Nature Center, as described in the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

f. Energy Efficiency

i. Program Time Extension for the Five Cities Energy Plan and the Energy Efficiency Market Acceleration Program

The President and Chief Executive Officer submitted the following report:

SUMMARY

The Trustees are requested to approve a common end date of December 31, 2019 for two previously authorized programs: the Five Cities Energy Plan and the Energy Efficiency Market Acceleration Program ('EE-MAP').

BACKGROUND

Section 2879 of the Public Authorities Law and the Authority's Guidelines for Procurement Contracts require the Trustees' approval for procurement contracts involving services to be rendered for a period in excess of one year.

The Trustees previously approved two (2) programs: EE-MAP and the Five Cities Energy Plan in support of the Authority's energy efficiency programs.

In February 2015 and January 2017, the Trustees approved program funding for the first Phase of the program for competitive grants and energy managers to support the development of energy plans within the following Five Cities: Albany, Buffalo, Rochester, Syracuse, Rochester, and Yonkers. The program expires on December 31, 2018. In June 2012 and January 2017, the Trustees approved program funding to support market development activities and demonstration projects targeting the deployment of energy efficiency products and systems under EE-MAP. The EE-MAP program also expires in December 31, 2018. The time extension is needed to allow for completion of projects and phase-out of the programs.

DISCUSSION

Both programs have active projects underway that are on schedule to be completed in 2019. The funding for each of these programs previously approved by the Trustees is sufficient to complete each program; therefore, no additional funding is requested at this time.

FISCAL INFORMATION

Implementation of these programs will be funded from the Authority's Operating Fund. Funding for implementation of the programs are accounted for in the 2019 Commercial Operations business unit's budget proposed at the December 2018 Trustees' meeting.

RECOMMENDATION

The Vice President - Clean Energy Business and Market Development recommends that the Trustees approve the requested term extensions for the implementation of the Five Cities Energy Plan and the Energy Efficiency Market Acceleration Program during 2019 as described above.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED That pursuant to the Guidelines for Procurement Contracts adopted by the Authority, the Trustees hereby authorize the term extension of the Five Cities Energy Plan and the Energy Efficiency Market Acceleration Program ("EE-MAP") through December 31, 2019, as described in the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

ii. Clean Distributed Energy Resource Grant Program - Grant Allocation

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Trustees are requested to authorize the establishment of a Clean Distributed Energy Resource ('DER') Grant Program with an aggregate funding amount of \$5 million through December 31, 2025. The intent of this grant program is to help advance DER projects by providing supplemental funding for innovative DER projects such as solar PV, solar plus battery storage, microgrids, standalone storage and Smart inverter functionality. In addition, installation of software technology that will feed into the Authority's New York Energy Manger ('NYEM') will be incorporated into each project. The \$5 million will fund Authority-implemented projects at customer sites for eligible program participants. The funds will not be recoverable from program participants.

BACKGROUND

Public Authorities Law 1005 (17) requires the Trustees' approval to finance, including grants, certain energy related projects, programs, and services for program participants.

The Authority's mission is to provide customers with low-cost, clean, reliable power and the innovative energy infrastructure and services they value. The Authority has worked to help its customers and the State reach the ambitious goals set forth under the Reforming the Energy Vision ('REV'), which calls for the reduction of greenhouse gas emissions by 40%, a 50% increase in electricity from renewable sources, and a 600 trillion Btu increase in statewide energy efficiency.

On March 27, 2012, the Trustees authorized the Solar Market Acceleration Program ('Solar MAP') and granted an extension on January 31, 2017 in support of Governor Andrew M. Cuomo's NY-Sun initiative to expand solar capacity in New York State. The Solar MAP initiative provided funds to support solar research and training, reduce balance of system costs, and implement demonstration projects. Solar Map is due to expire on December 31, 2018. Subsequently, in June 2017, the Authority committed to working with public entities across New York State to develop an additional 125 MW of solar capacity, tripling the amount installed in public facilities at that time.

In his 2018 State-of-the-State address, Governor Andrew M. Cuomo announced a 1,500 MW energy storage target for New York State by 2025 which was followed by a New York State Energy Storage Roadmap ('Roadmap'). The Roadmap identifies the most promising near-term policies, regulations, and initiatives needed to realize the Governor's ambitious 2025 energy storage target. Outlined in the Roadmap is the Authority's commitment to working with its customers to lead New York State by example.

Building upon the successful Solar MAP program, the DER grant program will be structured and aligned to achieve the Authority's current clean energy goals through 2025. The DER Grant Program funds will be allocated to the Authority's current clean energy pipeline of projects, which are in early development, and future customer-implemented work over the next several years in order to make them more economically viable.

Program funds will be available to program participants implementing DER projects in conjunction with the Authority. The Authority's supply customers are ineligible for state grants to support the implementation of solar and battery storage technologies; therefore, the funds being requested would aid in accelerating otherwise unfavorable projects. Funding will be applied, in whole or in part, to the assessment and implementation of distributed energy technology projects. In addition, program participants will provide the Authority access to all data resulting from the implementation of the technologies.

DISCUSSION

The Authority has been expanding its role in distributed energy to assist its customers in implementing clean energy projects and assisting them in achieving their individual goals along with the State's goals. The Authority has developed solar advisory services in which it is the trusted energy advisor for public entities such as state and local governments, state agencies, universities and K-12 schools. Since developing its advisory services, the Authority has been fostering a Clean Energy Program which encompasses a multitude of innovative and clean energy projects as well as various contracting methods.

The Program will provide supplemental funding for innovative DER projects such as solar PV, Solar plus battery storage, microgrids, standalone storage and Smart Inverter functionality. In addition, installation of software technology that will feed into the Authority's NYEM will be incorporated into each project. Established in 2012, NYEM is a platform used to monitor the energy performance and efficiency of a large portfolio of government buildings within New York State and provide actionable information. The \$5 million will fund Authority-implemented projects at customer sites for eligible program participants.

FISCAL INFORMATION

The not-to-exceed amount of \$5 million will be funded from the Authority's Operating Fund. The funds will not be recoverable from program participants.

RECOMMENDATION

The Vice President - Clean Energy Business and Market Development recommends that the Trustees approve the establishment of a Clean Distributed Energy Resource Grant Program with an aggregate funding amount of \$5 million through December 31, 2025.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That in accordance with Public Authorities Law 1005 (17), the Trustees hereby authorize expenditures in the amount of \$5 million for a Clean Distributed Energy Resource ("DER") Grant Program as described in the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

g. Canal Corporation

**i. Procurement (Services) Contract - On-Demand
Marine Vessel Recovery - Contract Award**

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Board of Directors ('Board') is requested to approve the award of a construction contract related to Inquiry No. K18-10273094JT to Tioga Construction Co., Inc. ('Tioga') of Herkimer, New York, as the low bidder for the On-Demand Marine Vessel Recovery, in the bid amount of \$8,869,500.

To meet the On-Demand Services schedule, the contract (Contract #4700000037) with Tioga became effective on November 15, 2018 for the initial interim award amount of \$1,000,000, subject to the Board's approval as soon as practicable, in accordance with the Canal Corporation's Guidelines for Procurement Contracts and Expenditure Authorization Procedures. In addition, the interim approval also required that the contract for *Standby Readiness – Maximum Bid* be initiated under a separate Purchase Order Release ('POR') for the submitted bid amount of \$60,000 in advance of the full contract approval by the Board. Standby readiness for On-Demand Services began on November 15, 2018 and will conclude by the contract completion date of November 30, 2023.

In accordance with the Canal Corporation's Procurement Guidelines and Expenditure Authorization Procedures, the Board's approval is required when the award of Contracts and/or POR exceeds one year in term or the value of such contracts exceeds \$6,000,000.

BACKGROUND

The Canal System includes four canals: the Erie, Champlain, Oswego, and Cayuga-Seneca canals; canalized natural waterways, plus five lakes: Oneida, Onondaga, Cross, Cayuga and Seneca; short canal sections at Ithaca and Watkins Glen; feeder reservoirs, canals and rivers not accessible by boat from the Canal System; and canal terminals on Lake Champlain. The Canal System passes through 25 counties and close to 200 villages, hamlets and towns across an expanse of approximately 525 linear miles. The Canal System is a listed National Historical Landmark. Portions of the original canal systems (e.g., Erie and Champlain) and support infrastructure (e.g., barge canal segments, feeder canals and locks) are listed, or eligible for listing, on the Registry of Historic Places.

Previously, the On-Demand Infrastructure Repairs and Marine Vessel Recovery Contract format offered combined on-demand emergency repairs for canal infrastructure facilities and marine vessel recovery/environmental response for three (3) separate canal service areas (Western, Central and Eastern). The current proposed contract format for this award recommendation will be to require the successful responsible low bidder to provide standby readiness and to only perform on-demand marine vessel recovery/environmental response related work statewide (excluding the prior repairs to canal infrastructure requirements), with one Contractor performing the work as directed by the NYS Canal Corporation on an 'as needed' basis throughout the entire New York State Canal System area.

This 'Statewide' contract will allow for the recovery of marine vessels and/or associated environmental responses in order to: effectively recover canal-owned vessels; protect the environment; protect the Canal Corporation's infrastructure; protect the public interests and safety; avoid prolonged interruptions to navigation; and allow the NYS Canal System to maintain operations and functionality.

DISCUSSION

In response to an advertisement issued on August 27, 2018 for the On-Demand Marine Vessel Recovery, Inquiry No. K18-10273094JT, three (3) proposals ('bids') were received and publicly opened

and read on September 18, 2018. The bids were reviewed by an Evaluation Committee consisting of Canal Corporation's staff from Design, Construction, Procurement and New York Power Authority's Strategic Supply Management.

FISCAL INFORMATION

Identified and directed emergency marine vessel recovery/response work will be paid from the Canal Corporation's operating funds.

RECOMMENDATION

The Evaluation Committee recommends that the Board approve the interim contract in the amount of \$1,060,000 for the period November 15, 2018 to December 11, 2018, and approve award of the construction contract (PO #4700000037) related to Inquiry No. K18-10273094JT to Tioga Construction Co., Inc. of Herkimer, New York as low bidder for the On-Demand Marine Vessel Recovery, in the bid amount of \$8,869,500.00 with the term ending on November 30, 2023.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That pursuant to the Canal Corporation's Expenditure Procurement Guidelines and Expenditure Authorization Procedures, approval is hereby granted to award construction Contract (Contract #4700000037), with a start date of November 15, 2018 and completion date of November 30, 2023, and an interim award of \$1,060,000 and total bid award of \$8,869,500.00, to Tioga Construction Co., Inc. for On-Demand Marine Vessel Recovery, as recommended in the foregoing report of the President and Chief Executive Officer;

<u>Contractor</u>	<u>Location</u>	<u>Contract Award</u>
Tioga Construction Co., Inc.	Herkimer, NY	<u>\$8,869,500.00</u>

**K18-10273094JT
Contract #4700000037**

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer, and all other officers of the Canal Corporation are, and each of them hereby is, authorized on behalf of the Canal Corporation to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

ii. **Procurement (Services) Contract - Canalway Trail
System Maintenance/ Enhancement - Contract Award**

The President and Chief Executive Officer submitted the following report:

SUMMARY

The Board of Directors ('Board') is requested to approve the award of a single-source, personal services contract to Parks & Trails New York, Inc. ('PTNY') of Albany, New York to strengthen the role of volunteers and local communities in helping promote, develop, maintain and enhance the Canalway Trail System. The contract term will be three years, effective January 1, 2019 through December 31, 2021, with a total value of \$357,217.

In accordance with the Canal Corporation's ('Corporation') Procurement Guidelines and Expenditure Authorization Procedures, the Board's approval is required when the award of Single-Source Personal Service Contracts and/or Purchase Order Releases exceeds one year in term or the value of such contracts exceeds \$1,000,000.

BACKGROUND

The Corporation is playing a leadership role in the development of the Empire State Trail, a new initiative focused on developing 750 miles of multi-use land trail that parallels the New York State Canal System. Approximately 400 miles of the Trail already exists in discrete, disconnected segments today and over 250 miles of Canalway Trail is complete today. As a result, nearly 80 percent of the 365-mile Erie Canalway Trail from Buffalo to Albany is complete. When completed, it will be the longest biking and hiking trail in the United States. The length of the Trail, coupled with the fact that ownership falls under multiple jurisdictions, makes consistent management and maintenance along the corridor a major challenge.

PTNY is a statewide non-profit membership organization that works to expand, protect and promote a network of parks, trails, and open spaces throughout the state for use and enjoyment by the public. PTNY has nearly three decades of experience working with governmental agencies, municipalities and citizens in building support for, and advancing greenway and trail corridor initiatives.

PTNY has been identified as a single-source selection because of its organizational mission, geographic focus and staff capabilities, all of which are uniquely aligned with the Corporation's Trail objectives. Through PTNY's partnership with the Corporation over the last decade, the Corporation has seen an increase in trail usership and volunteerism as well as expanded programming and new initiatives undertaken by PTNY. These programs include Canal Clean Sweep, which bring thousands of volunteers together to care for the parks and trails; Bike-Friendly Businesses, which encourages local businesses to be more bike-friendly; and the Adopt-a-Trail program which has over 25 groups, covering nearly 70% of the Canalway trail, to help maintain the path and do beautification projects. PTNY also helps adventure seekers with trip planning through its interactive online Erie Canalway Trail map, statewide Trailfinder map and a comprehensive guidebook it produce every 5 years.

DISCUSSION

The contract with PTNY will seek to strengthen the role of volunteers, local officials and community leaders in helping promote, develop, maintain and enhance the Trail. A component of this will be updating the Erie Canalway Trail map and online resources; expanding the Bike-Friendly Businesses program and trail count program; increase marketing and communication efforts with municipalities, Chambers of Commerce, Bed & Breakfasts and Tourism Promotion Agencies; and continue to produce quarterly publications that update the public on Trail happenings throughout the year.

The Corporation initially contracted with PTNY in 1999 and has had Agreements for the periods 1999-2001, 2002-2004, 2005-2007, 2008-2010, 2011-2013, 2013-15, and 2016-2017. In conformance with the Corporation's Procurement Guidelines, the Corporation has determined that it is beneficial for such services to be contracted rather than performed by employees of the Corporation and that the conditions for a waiver of competition have been met.

FISCAL INFORMATION

The Corporation has sufficient funds in the proposed 2019 Canal System Development Fund budget that will be allocated to this project.

RECOMMENDATION

The Director of Policy & Program Development, the Director of Community & Economic Development and the Executive Deputy Director recommend that the Board approve the award of a single-source, personal services contract to Parks & Trails New York, Inc. ('PTNY') of Albany, New York to strengthen the role of volunteers and local communities in helping to promote, develop, maintain and enhance the Canalway Trail System. The contract term will be three years, effective January 1, 2019 through December 31, 2021, with a total value of \$357,217.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That pursuant to the Canal Corporation's Expenditure Procurement Guidelines and Expenditure Authorization Procedures, approval is hereby granted to award a single-source, personal services Contract (PO# TBA), with a start date of January 1, 2019 and completion date of December 31, 2021, and a total award value of \$357,217.00, to Parks & Trails New York, Inc. of Albany, New York to strengthen the role of volunteers and local communities in helping to promote, develop, maintain and enhance the Canalway Trail System as recommended in the foregoing report of the President and Chief Executive Officer;

<u>Contractor</u>	<u>Location</u>	<u>Contract Award</u>
Parks & Trails New York, Inc.	Albany, NY	<u>\$ 357,217.00</u>
Single-Source PO# TBA		

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer, and all other officers of the Canal Corporation are, and each of them hereby is, authorized on behalf of the Canal Corporation to do any and all things, take any and all actions and execute and deliver any and all agreements,

December 11, 2018

certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

iii. **Temporary Waiver of Tolls for Recreational Vessels
for the 2019-2021 Canal System Navigation Seasons**

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Canal Corporation ('Corporation') Board of Directors ('Canal Board') is requested to approve a temporary waiver of tolls for Canal System lock and lift bridge passages for recreational vessels for the 2019, 2020 and 2021 Canal System navigation seasons.

BACKGROUND

Canal Law §103(1) empowers the Corporation to establish and collect tolls for lock and lift bridge passage by vessels and use of locks and lift bridges. In accordance with this statutory provision, the Corporation has, in 21 NYCRR §150.2 of the Corporation's rules and regulations, established a schedule of tolls for recreational vessels ('Recreational Tolls'). The Recreational Tolls range from \$5.00 to \$100.00 depending on the nature of the pass (annual, unlimited 2-day, or unlimited 10-day) and the length of the vessel.

The Canal Board has on four prior occasions in 2006, 2007, 2017 and 2018 waived Recreational Tolls. In 2006, the Canal Board approved a waiver of Recreational Tolls for the 2006 navigation season to encourage an increase in the use of the Canal System by recreational boaters. Significant flooding negatively impacted the use of the Canal in 2006, prompting the Canal Board to extend the waiver of Recreational Tolls for the 2007 navigation season. In 2017 and 2018, the Canal Board waived Recreational Tolls as a promotional tool designed to commemorate the Erie Canal's Bicentennial, and to encourage increased recreational use of the Canal System.

DISCUSSION

Staff recommends that the Board authorize a temporary waiver of Recreational Tolls for the Canal System for the 2019, 2020 and 2021 navigation seasons.

The temporary waiver of Recreational Tolls in 2017 and 2018 appears to have been successful in expanding the recreational user base for the Canal System. Average daily recreational vessel lockings increased dramatically, from an average of 326/day in 2016 to an average of 475/ day in 2017 and 505/day in 2018, an increase of 55%. Though many factors may have contributed to this increase in daily average use, historic data does suggest a likely correlation to the waiver of Recreational Tolls.

FISCAL INFORMATION

Recreational toll revenue was not collected in 2017 or 2018, but accounted for \$182,045 of Canal Development Fund revenue in 2016. Based on staff estimates, staff has determined that administering a program for Recreational Tolls – e.g., the process of selling, tracking and reconciling recreational passes at Canal Corporation sites and collecting revenues – will likely cause the Corporation to incur costs that exceed the revenue that is expected to be collected from the pass program.

RECOMMENDATION

The Senior Vice President – Public & Regulatory Affairs recommends that the Board of Directors approve a temporary waiver of tolls for the Canal System's lock and lift bridge passages for recreational vessels for the 2019, 2020, and 2021 navigation seasons as established by the Corporation.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below.”

The following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the Board of Directors hereby authorizes a temporary waiver of tolls for the Canal System lock and lift bridge passages for recreational vessels for the 2019, 2020 and 2021 Canal System navigation seasons as established by the Corporation; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the Director, and all officers of the Canal Corporation are, and each of them hereby is, authorized on behalf of the Canal Corporation to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

5. DISCUSSION AGENDA:

a. Strategic Initiatives

i. President and Chief Executive Officer's Report

President Quiniones provided highlights of the Authority's performance, to date, to the Board (Exhibit "5a i-A").

NYPA's Accomplishments - 2018

- NYPA 2020 Strategic Plan Implementation

NYPA's 2020 Strategic Plan consists of six initiatives: Customer Solutions; Smart Generation & Transmission; Asset Management; Process Excellence; Workforce Planning and Knowledge Management. Enabled by digitization, these initiatives will achieve customer success, cost leadership and allow NYPA to be a leader in innovation in the utility industry.

Smart Generation & Transmission / Asset Management

- Communications Background

The Authority has started installation of a dedicated Communications Backbone to connect all of its power plant substation transmission system over a fiber optic system. To date, the installation of approximately 75 miles of optical ground wire on top of the Authority's transmission towers has been completed.

- Sensor Deployment

The Authority has been installing sensors in order to gather data from its assets for data analytics. The Authority is now monitoring approximately 30,000 data points and by the end of next year; it will increase to over 100,000 data points. In this era of computing power and data analytics, this is critical to the Authority's operation.

- Digital Utility Worker Program

As part of its digital strategy, the Authority has launched its Digital Utility Worker program in order to have useful and actionable information in real time.

- iSOC

Since the opening of its Integrated Smart Operating Center ("iSOC"), 504 Digital Twins or digital replicas of the Authority's assets were created and 659 cases of anomalies have been recorded. Staff has acted on approximately 150 actionable cases saving the Authority more than \$7 million, to date.

- Asset Management

The Authority is in the process of rolling out its Asset Management Framework, seeking to be one of the first utilities with the ISO 55,000 Certification. This certification is more prevalent in Europe, and NYPA aspires to be the first utility in the United States with that designation.

Customer Solutions

- **New Projects**

The Authority continues in its efforts to grow its Customer Energy Solutions business with energy efficiency projects such as customer-sided renewables like solar, storage, LED Street lighting and Smart Cities LED Pilots.

- **New York Energy Manager (NYEM)**

From a digital perspective, the Authority's New York Energy Manager System monitors the energy usage of approximately 20,000 public buildings and uses that data to help optimize its customers' use of energy. In addition, the Authority is starting to test out demand flexibility as an important capability for the Authority and its customers.

- **Continued Partnerships**

Electric Supply

In terms of its Electric Supply Business, the Authority renewed its Long-Term Power Supply Agreement with the MTA. The Authority previously renewed agreements with its other New York City governmental customers, the City of New York, Port Authority of New York and New Jersey, and New York City Housing Authority.

Economic Development

The Authority has also extended the economic development contracts for its Western New York hydro customers spurring jobs and retaining jobs in Western New York within the 30-mile radius of the Authority's power plant. In addition, the Authority has agreed to a seven-year extension of its Recharge New York program, its statewide, low-cost Economic Development Power Program.

Workforce Planning / Process Excellence / Knowledge Management

In a market that is changing dynamically, it is critical that the Authority foster innovation amongst its employees. To that end, the Authority conducted a "Eureka" competition and provided awards to its employees for their innovative ideas.

As part of its digitization strategy, the Authority is implementing an organization-wide Succession Planning Tool and a Recruiting and Applicant Tracking System in order to increase efficiency and productivity within NYPA.

The Authority is also employing design thinking and general enterprise agility in order to increase cycle time and productivity, while enhancing the quality of work at NYPA. For example, Robotic Process Automation project, Phase one, data analytics -- the first applications of artificial intelligence to optimizing the Authority's internal processes.

Forbes Magazine has cited the Authority as one of the best midsize employers for 2018.

Looking ahead to 2019, the Authority will be creating a new strategic plan -- the NYPA 2030 Strategic Plan. In addition, the Authority is going to be examining the competitiveness of the organization, both from a customer perspective and from its wholesale business with the view to position NYPA so that when the commodity cycle goes up, NYPA can harvest the benefits of such upswing.

b. Financial Operations

i. Chief Financial Officer's Report

Mr. Lee Garza, Senior Vice President of Financial Operations & Acting Controller, provided highlights of the Authority's financial performance, to date, to the Board (Exhibit "5b i-A").

2019 Budget and Four-Year Financial Plan

The 2019 budget and four-year financial plan is centered around investment in the Authority's core operations, i.e., its core utility business - transmission and generation; and investment in new strategies that support its clean energy platform, customer success and innovation, and the Canal Corporation.

The four-year plan is designed to allow the organization to achieve its operational, strategic and policy-related objectives. The Authority's AA credit rated financial profile serves as a strong foundation to complete its 2020 Strategic Plan and its next long-range strategic financial plan.

Over the next four years, the Authority is anticipating investing approximately \$3.3 billion in capital, which averages approximately \$800 million per year. Historically, on average, NYPA have invested approximately \$450 million to \$500 million per year in capital. The Authority is therefore increasing its investments to achieve its objectives and goals in the range of 50% - 70% per year.

O&M Expenditures

NYPA's O&M Plan falls within the overall trajectory of growth that is consistent with historic inflation.

The areas of growth in O&M are investment-centered and investment-driven growth. NYPA is making investments in generation in order to prolong the life of its assets, increase their profitability and add long-term value to them.

The other element that is driving O&M is expenditures related to the costs for headquarters and information technology. Those costs are associated with some of the Authority's strategic initiatives and ensuring that the Authority has the appropriate talent and technology to realize those efforts as well as drive the Authority's goal of being an end-to-end digital utility.

Net Income Forecast

Net Income forecast for 2019 is \$20.9 million. Over the forecast horizon, Net Income will grow to a total of \$109.4 million. This investment-driven growth, based on investments in transmission, will ultimately have long-term customer benefits by reducing congestion and improving reliability across the system. These earnings will allow the Authority to maintain its cost-competitive rate structure for its customers.

At this point, the Authority anticipates Net Income being above budget for 2018. This is subject to year-end realization of energy margins and the Authority's exposure to commodity prices as well as the Authority's progress with its O&M Plan.

1. **Release of Funds in Support of the New York State Canal Corporation**

The President and Chief Executive Officer submitted the following report:

SUMMARY

The Trustees are requested to authorize the release of an additional up to \$21.6 million in funding to the New York State Canal Corporation ('Canal Corporation') to support the operations of the Canal Corporation in calendar year 2019. The amount requested is 25% of the Canal Corporation's revised 2019 O&M Budget as presented to the Canal Corporation Board of Directors at this December 2018 meeting.

BACKGROUND

The Authority has been authorized to provide financial support for the Canal Corporation. See, e.g., Public Authorities Law §1005-b(2). However, certain expenditures associated therewith do not constitute Capital Costs or Operating Expenses ('Operating Expenses') as defined in the Authority's General Resolution Authorizing Revenue Obligations dated February 24, 1998, as amended and supplemented ('Bond Resolution'). Expenditures for the Canal Corporation's operating purposes that do not constitute Capital Costs or Operating Expenses must satisfy the requirements of the Authority's Bond Resolution relating to the release of funds from the trust estate created by the Bond Resolution for lawful corporate purposes. In addition, as set forth in the Trustees' Policy Statement dated May 24, 2011, a debt service coverage ratio of 2.0 is to be used as a reference point in considering any such release of funds.

The Bond Resolution permits the Authority to withdraw monies 'free and clear of the lien and pledge created by the [Bond] Resolution' provided that (a) such withdrawals must be for a 'lawful corporate purpose as determined by the Authority,' and (b) 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 (i) payment of reasonable and necessary operating expenses, (ii) an Operating Fund reserve in amounts determined by the Authority to be adequate for working capital, emergency repairs or replacements, major renewals or for retirement from service, decommissioning or disposal of facilities, (iii) payment of, or accumulation of a reserve for payment of, interest and principal on senior debt or (iv) payment of interest and principal on subordinate debt.

Under the Bond Resolution, Capital Costs (which includes capital costs related to the Canal Corporation) may be paid without satisfying the provision described above.

DISCUSSION

With this authorization, the Trustees will approve the release of \$21.6 million, an amount equal to 25% of the Canal Corporation's 2019 O&M Budget. With regard to Canal Corporation's operating expenses in excess of \$21.6 million in calendar year 2019, staff is not requesting any action at this time, but will return to the Board to request additional releases as needed.

Staff has reviewed the effect of releasing up to an additional \$21.6 million in funding at this time on the Authority's expected financial position and reserve requirements. In accordance with the Board's Policy Statement adopted May 24, 2011, staff calculated the impact of this release, together with the last 12 months releases including (i) the release of \$30 million in Recharge New York Discounts for 2018, (iii) the release of \$74.5 million in Canal related operating expenses for 2018 previously authorized at the March 2018, and August 2018, and October 2018 meetings, (iv) the release of up to \$1 million in Western NY Power Proceeds net earnings, and (v) the release of up to \$2 million in Northern NY Power proceeds net earnings on the Authority's debt service coverage ratio and determined it will fall below the 2.0 reference point level to a level of 1.9. The debt service coverage ratio as calculated per the Board

Policy Statement is also expected to be below the 2.0 reference point for fiscal year 2019 at a level of 1.9. Given the current financial condition of the Authority, its estimated future revenues, operating expenses, debt service and reserve requirements, expected maintenance of a fixed charge coverage ratio above a peer target ratio of 1.75x at each year-end of the 2019-2022 forecast period, staff is of the view that it will be feasible for the Authority to release such amounts from the trust estate created by the Bond Resolution consistent with the terms thereof.

FISCAL INFORMATION

Staff has determined that sufficient funds are available in the Operating Fund to release an additional up to \$21.6 million in funding to support the operation of the Canal Corporation in calendar year 2019. Staff has further determined that the amounts presently held in reserves in the Operating Fund are adequate for the purposes specified in Section 503.2 of the Authority's Bond Resolution and that such Authority funds are not needed for any of the purposes specified in Section 503(1)(a)-(c) of the Authority's Bond Resolution.

The expenses associated with the operations of the Canal Corporation for calendar year 2019 are included in the Canal Corporation's revised 2019 O&M Budget.

RECOMMENDATION

The Chief Financial Officer recommends that the Trustees authorize the release of an additional up to \$21.6 million in funding to the Canal Corporation to support the operations of the Canal Corporation in calendar year 2019. The Chief Financial Officer further recommends that the Trustees affirm that such releases are feasible and advisable, that the amounts presently set aside as reserves in the Operating Fund are adequate for the purposes specified in Section 503.2 of the Authority's Bond Resolution, and that such funds are not needed for any of the purposes specified in Section 503(1)(a)-(c) of the Authority's Bond Resolution and that the release of such funds is authorized.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Lee Garza provided highlights of staff's recommendation to the Board. He said that staff is requesting release of funds to be disbursed from NYPA to Canal Corporation to support the Corporation's operations and maintenance budget. He said staff generally comes to the Board with this request on a quarterly basis. This quarter, staff is requesting the Board's approval to release funds in the amount of \$21.6 million.

Upon motion made by Trustee Michael Balboni and seconded by Trustee Tracy McKibben, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the Trustees hereby authorize the release of an additional up to \$21.6 million in funding to the Canal Corporation to support operations of the Canal Corporation in calendar year 2019, as discussed in the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That the amounts presently set aside as reserves in the Operating Fund are adequate for the purposes specified in Section 503.2 of the Authority's Bond Resolution, that the amount of up to \$21.6 million in funding as described in the foregoing report is not needed for any of the purposes specified in Section 503(1)(a)-(c) of the

Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented, and that the release of such amount is feasible and advisable; and be it further

RESOLVED, That as a condition to making the payments specified in the foregoing report, on the day of such payments, the Treasurer or the Deputy Treasurer shall certify that such monies are not then needed for any of the purposes specified in Section 503(1)(a)-(c) of the Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer, the Executive Vice President and General Counsel, the Executive Vice President and Chief Financial Officer, the Corporate Secretary, the Treasurer and all other officers of the Authority be, and each of them hereby is, authorized and directed, for and in the name and on behalf of the Authority, to do any and all things and take any and all actions and execute and deliver any and all certificates, agreements and other documents that they, or any of them, may deem necessary or advisable to effectuate the foregoing resolution, subject to approval as to the form thereof by the Executive Vice President and General Counsel.

2. 2019 Revolving Credit Facility

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Trustees are requested to approve a \$600 million Revolving Credit Agreement ('RCA') with a syndicate of four banks led by JPMorgan Chase Bank, N.A. ('JPMorgan') for an initial term extending to no later than February 1, 2022, to replace an expiring agreement that provides liquidity support for the Authority's Series 1, 2 and 3 Commercial Paper Notes, and to authorize two, one-year extensions of such RCA not to exceed February 1, 2024.

BACKGROUND

The Authority currently has \$526 million of Series 1, 2 and 3 Commercial Paper Notes outstanding, supporting numerous projects and programs including the Energy Efficiency program. In accordance with the 'Resolution Authorizing Commercial Paper Notes' adopted by the Authority on June 28, 1994, as amended, supplemented, and restated, the Authority is required to maintain in full force and effect a Credit Agreement while the Notes are outstanding. The current RCA will expire on January 18, 2019.

DISCUSSION

The Authority issued a Request for Proposal ('RFP'), No. Q18-6526RM, to provide a \$600 million liquidity facility through the Authority's Ariba System; it was also advertised in the *NYS Contract Reporter* on October 9, 2018. Twelve vendors were invited to the Ariba Event with twenty-eight (28) firms having viewed the RFP on the SSM's website. On October 30, 2018, the Authority received three proposals from banks, or syndicates of banks, meeting the minimum required long-term credit rating of 'A+' or comparable from Moody's Investors Service ('Moody's'), Standard & Poor's ('S&P'), and Fitch Ratings ('Fitch'). The three proposals received were from: JPMorgan on behalf of a syndicate of four banks for the entire \$600 million commitment; and separate proposals for less than the full \$600 million commitment from Bank of New York Merrill Lynch N.A. and Citibank N.A.

The staff's review of the three proposals considered: 1) pricing to provide commitments and borrowings; 2) credit quality of the banks; 3) trading differential on the Commercial Paper Notes based on the bank(s) providing the liquidity; 4) whether the proposed terms and conditions under the agreement would be acceptable to the Authority; and 5) proposer's equal employment opportunities for minority group members and women. Based on this review, staff is recommending the award of the liquidity facility to the JPMorgan led syndicate proposing the entire \$600 million commitment. On an overall basis, the JPMorgan led syndicate proposal provided competitive all-in price terms and conditions, strong credit ratings, and is expected to give the Authority broad and liquid access to the short-term credit markets.

Bank commitments and current ratings from Moody's, S&P, and Fitch are as follows:

	<u>Commitment</u>	<u>Current Rating</u>
JPMorgan Chase Bank, N.A	\$200,000,000	Aa2 / A+ / AA
TD Bank, N.A.	\$175,000,000	Aa2 / AA- / AA-
State Street Bank and Trust Company	\$125,000,000	Aa3 / AA- / AA
Wells Fargo Bank, N.A.	<u>\$100,000,000</u>	Aa2 / A+ / AA-
Total	\$600,000,000	

The syndicate would provide the credit facility for an annual commitment fee payable on the unused amount of the facility and annual administrative fees totaling approximately \$2.24 million. In the

event that the Authority has to draw on the line, the interest rate (the 'Base Rate') would be the highest of the JPMorgan Prime Rate plus 1.5%, the Federal Funds rate plus 2.0%, or 7.5%. JPMorgan's legal fees for execution of the Revolving Credit Agreement are not expected to exceed \$55,000 with a one-time arranging fee of \$75,000.

FISCAL INFORMATION

The annual cost of the proposed line, along with the Administrative Agent and legal fees, will be paid from the Operating Fund. A portion of fees commensurate with the percentage of Commercial Paper Notes issued in support of the Energy Efficiency program will be fully recoverable from Energy Efficiency program participants.

RECOMMENDATION

The Treasurer recommends that the Trustees (1) approve the execution of the 2019 Revolving Credit Agreement with the bank syndicate led by JPMorgan Chase Bank, N.A. with a borrowing capacity not to exceed \$600 million and for an initial term not to exceed February 1, 2022 and (2) authorize two, one-year extensions of such agreement not to exceed February 1, 2024

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Lee Garza provided highlights of staff's recommendation to the Board. He said that staff is asking for the Board's approval of the refinancing of the Authority's Revolving Credit Agreement. He emphasized that this refinancing is of a facility that is currently in place and is due to expire the middle of January. The amount of the current facility, which the Authority is rolling over into its new facility, is \$600 million. In addition, the facility is part of a financing structure that supports the Authority's energy-services business. The Authority launched an RFP process at the beginning of October that resulted in strong interest from the market. J.P. Morgan Chase Bank, N.A., the lead bank for the current facility, is leading a syndicate for the refinancing of this facility. Staff is requesting that the Board approve a \$600 million Revolving Credit Agreement to be led by J.P. Morgan Chase Bank, N.A. and a syndicate of banks, for a term of up to five years.

Upon motion made by Trustee Dennis Trainor and seconded by Vice Chairman Eugene Nicandri, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the Trustees authorize the execution by the Executive Vice President and Chief Financial Officer or the Treasurer, subject to the approval of the form thereof by the Executive Vice President and General Counsel, on behalf of the Authority, of the 2019 Revolving Credit Agreement between the Authority and JPMorgan Chase Bank, N.A., as Administrative Agent and the banks listed in the foregoing report of the President and Chief Executive Officer, with such Agreement having such terms and conditions as the executing officer deems necessary or advisable, such execution to be conclusive evidence of such determinations, provided that such Agreement shall have an initial term not exceeding February 1, 2022 and shall not exceed \$600 million in borrowing capacity; and be it further

RESOLVED, That the Executive Vice President and Chief Financial Officer or the Treasurer are, and each hereby is, authorized to execute two, one-year extensions of the 2019 Revolving Credit Agreement, provided that such extensions shall not, in the aggregate, extend the Agreement beyond February 1, 2024; and be it further

RESOLVED, That the Chairman, the Vice Chair, the President and Chief Executive Officer, the Chief Operating Officer, the Executive Vice President and General Counsel, the Executive Vice President and Chief Financial Officer, the Corporate Secretary, the Treasurer and all other officers of the Authority be, and each of them hereby is, authorized and directed, for and in the name and on behalf of the Authority, to do any and all things and take any and all actions and execute and deliver any and all certificates, agreements and other documents that they, or any of them, may deem necessary or advisable to effectuate the foregoing resolutions, subject to approval as to the form thereof by the Executive Vice President and General Counsel.

3. 2019 Budget and Four-Year Financial Plan

a. Power Authority 2019 Budget and Filing of the 2019-2022 Approved Budget and Four-Year Financial Plan Pursuant to Regulations of the Office of the State Comptroller

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Trustees are requested to approve the 2019 Budget for the Authority, specifically including the expenditures for the (i) 2019 Operations and Maintenance ('O&M') Budget (attached as Exhibit '5b i-3a-A'), (ii) 2019 Capital Budget (attached as Exhibit '5b i-3a-B'), (iii) 2019 Energy Services Budget (attached as Exhibit '5b i-3a-C') and (iv) 2019 Canal Development Fund Budget (collectively, with Exhibits '5b i-3a-A,' '5b i-3a-B,' and '5b i-3a-C,' the '2019 Power Authority Budgets').

The 2019 Power Authority Budgets set forth the expected expenses of the Authority and include the recommended expenditures in the following amounts:

<u>2019 Power Authority Budgets</u>	<u>(\$ million)</u>
O&M	\$ 571.0
Capital	\$ 517.2
Energy Services	\$ 212.0
Canal Development Fund	\$ 2.5

In accordance with regulations of the Office of the State Comptroller ('OSC'), the Trustees are requested to approve the 2019-2022 Four-Year Budget and Financial Plan attached as Exhibit '5b i-3a-D' (in the form approved, the 'Approved 2019-2022 Four-Year Budget and Financial Plan') and authorize: (i) submitting the Approved 2019-2022 Four-Year Budget and Financial Plan to OSC, (ii) posting the Approved 2019-2022 Four-Year Budget and Financial Plan on the Authority's website, and (iii) making the Approved 2019-2022 Four-Year Budget and Financial Plan available for public inspection at not less than five convenient public places throughout New York State.

BACKGROUND

The Authority is committed to providing clean, low-cost and reliable energy consistent with its commitment to the environment and safety, while promoting economic development and job development, energy efficiency, renewables and innovation, for the benefit of the Authority's customers and all New Yorkers. The mission statement of 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 New York State Canal Corporation (the 'Canal Corporation') became a subsidiary of the Authority effective January 1, 2017. The 2019 Power Authority Budgets include the budget information of the Authority and the Canal Corporation. Assumptions that were used by staff to prepare the 2019 Power Authority Budgets, and for forward periods, have been incorporated in the 2019-2022 Four-Year Budget and Financial Plan.

The 2019 Power Authority Budgets are intended to provide the Authority's operating facilities with, and support organizations by providing, the resources needed to meet the Authority's overall mission and the Authority's strategic objectives and to fund the expenses of the Canal Corporation. Any transfers of funds from the Authority to the Canal Corporation would be subject to compliance with the Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented (the 'Revenue Bond Resolution'). Canal Development Fund expenses are expected to be reimbursed to the

Authority by the State Comptroller with monies held in the New York State Canal System Development Fund as discussed in the attached Canal Corporation Budget report.

In approving the 2019 Power Authority Budgets, the Trustees will be authorizing spending for 2019 operations, spending for capital projects, and spending for general plant purchases of \$1.5 million or less. The 2019 Power Authority Budgets includes requests for 40 new positions that are pooled and funded in a cost center under the Executive Office. There are also 20 new positions imbedded in Utility Operations to support two major capital initiatives – Sensor Deployment and Communications Backbone.

In accordance with the Authority's Expenditure Authorization Procedures, the President and Chief Executive Officer may, during the course of the year, authorize an additional 1.0% in the O&M Budget, up to 15 new positions, new capital projects of \$6.0 million or less, or an increase in spending of no more than \$6.0 million to a capital project previously approved by the Trustees. All other spending authorizations must be approved by the Trustees.

The OSC implemented regulations in March 2006 addressing the preparation of annual budgets and four-year financial plans by 'covered' public authorities, including the Authority. (See 2 NYCRR Part 203 ('Part 203')). These regulations, which are discussed below, establish various procedural and substantive requirements relating to the budgets and financial plans of public authorities. The 2019-2022 Four-Year Budget and Financial Plan has been prepared in accordance with these regulations.

DISCUSSION

2019 Power Authority O&M Budget

The 2019 O&M Budget of \$484.8 million reflects a continued concentration on the effective operation and maintenance of the Authority's critical investments in New York State's electric infrastructure and the Canal Corporation in addition to the continued support of other strategic investments.

The 2019 O&M Budget for Operations provides \$245.8 million for baseline, or recurring work. In addition to the baseline work, scheduled maintenance outages at the 500 MW plant and the Small Clean Power Plants and Richard M. Flynn Power Plant (totaling \$7.2 million), and planned enhancements in non-recurring maintenance work at the operating facilities (totaling \$40.4 million), are designed to support high reliability goals. Some of the major non-recurring projects include: Niagara Region Tower Painting (\$2.8 Million), Robert Moses Headgate Refurbishment (\$2.3 Million), Niagara Buried Water Conduit Inspection (\$2.1 million), St. Lawrence Wood Pole Treatment & Inspection (\$1.7 million), St. Lawrence Joint Works Downstream Surface Concrete Rehab (\$1.7 million), St. Lawrence Joint Works Intake Roadway Deck Rehab (\$1.7 million), and the Blenheim-Gilboa Hatch Refurbishment (\$1.6 million).

The Astoria Energy II Budget totals \$22.7 million and represents the contractual O&M costs for the plant, which was placed in commercial operation in New York City in July 2011. These costs are being recovered from the Authority's New York City governmental customers, who are beneficiaries of the outputs of these projects under a long-term contract with the Authority.

The 2019 O&M Budget for Operations includes \$86.2 million for the Canal Corporation for the purposes described in the 2019 Canal Corporation Budget report being presented to the Canal Corporation Board of Directors at this December 2018 meeting.

2019 Power Authority Capital Budget

The 2019 Capital Budget totals \$462.5 million, which is a 79% increase over the 2018 Budget. Of this amount, \$278.1 million – or 60.1% of the total – represents planned investments in the Authority's Upstate New York facilities at Niagara and St. Lawrence, as well as in the Authority's statewide Transmission network. Significant capital projects for 2019 include: Sensor Deployment – All Sites –

Phase I (\$51.5 million), Moses Adirondack 1 & 2 Transmission Line Upgrade (\$36.7 million), Strategic Electric Vehicle Charging Station Installation (\$34.2 million), Communications Backbone (\$33.9 million), Lewiston Pump Generation Plant Life Extension and Modernization ('LEM') (\$28.1 million), Richard M. Flynn Power Plant Outage (\$23.8 million), Zone D Storage Facility (\$15.8 million), and the Niagara Transmission Life Extension and Modernization ('LEM') (\$15.1 million).

The 2019 Capital Budget includes \$54.7 million for the Canal Corporation for the purposes described in the 2019 Canal Corporation Budget report being presented to the Canal Corporation Board of Directors at this December 2018 meeting.

2019 Energy Services Budget

The 2019 Energy Services Budget totals \$212.0 million, an increase of \$17.2 million from the 2018 Energy Services Budget. These expenditures will be subsequently recovered over time from the benefiting customers. The 2019 Energy Services Budget includes funding for energy efficiency projects for Authority customers and other eligible entities as the Authority strives to support the State's improved energy efficiency and clean, renewable energy goals.

2019 Canal Development Fund Budget

The 2019 Canal Development Fund Budget totals \$2.5 million, representing ongoing costs associated with the New York State Canal System Development Fund ('Canal Development Fund').

The Canal Development Fund, created by State Finance Law §92-u, is a fund established in the joint custody of the State Comptroller and the Commissioner of Taxation and Finance. The Canal Development Fund consists largely of revenues received from the operation of the Canal System. Monies of the Canal Development Fund, following appropriation by the legislature, is made available to the Authority, and may be expended by the Authority or the Canal Corporation for the maintenance, construction, reconstruction, development or promotion of the Canal System. In addition, monies of the Canal Development Fund may be used for the purposes of interpretive signage and promotion for appropriate historically significant Erie Canal lands and related sites. Monies from the Canal Development Fund are paid out by the State Comptroller on certificates issued by the Director of the Budget.

2019-2022 Four-Year Budget and Financial Plan

Under Part 203 of the OSC Regulations, the Trustees are required to adopt a Four-Year Budget and Financial Plan. The approved Four-Year Budget and Financial Plan must be available for public inspection not less than seven days before the commencement of the next fiscal year for a period of not less than 45 days and in not less than five convenient public places throughout the State. The approved Four-Year Budget and Financial Plan must also be submitted to OSC, via electronic filing through the Public Authorities Reporting Information System, within seven days of approval by the Trustees. The regulations also require the Authority to post the approved Four-Year Budget and Financial Plan on its website.

Under Part 203, each Four-Year Budget and Financial Plan must be shown on both an accrual and cash basis and be prepared in accordance with generally accepted accounting principles; be based on reasonable assumptions and methods of estimation; be organized in a manner consistent with the public authority's programmatic and functional activities; include detailed estimates of projected operating revenues and sources of funding; contain detailed estimates of personal service expenses related to employees and outside contractors; list detailed estimates of non-personal service operating expenses and include estimates of projected debt service and capital project expenditures.

Other key elements that must be incorporated in each Four-Year Budget and Financial Plan are a description of the budget process and the principal assumptions, as well as a self-assessment of risks to

the budget and financial plan. Additionally, each Four-Year Budget and Financial Plan must include a certification by the Chief Operating Officer.

The first year of the 2019-2022 Four-Year Budget and Financial Plan is based on the 2019 Power Authority Budgets being brought to the Board for approval at this time. The remaining three years are indicative forecasts.

FISCAL INFORMATION

Payment of O&M expenses will be made from the Operating Fund. Any transfers of funds from the Authority for payment O&M expenses of the Canal Corporation would be subject to approval by the Authority's Board of Trustees and compliance with the Authority's Revenue Bond Resolution.

Payment for Capital and Energy Services expenditures will be made from the Capital Fund and the Energy Conservation Construction and Effectuation Fund, respectively. Monies of up to \$517.2 million from the Operating Fund will be transferred to the Capital Fund for capital expenditures, subject to compliance with the Revenue Bond Resolution.

Canal Development Fund expenses are expected to be reimbursed to the Authority by the State Comptroller with monies held in the Canal Development Fund as discussed above.

The 2019 Operating Budget shows adequate earnings levels so that the Authority may maintain its financial goals for cash flow and reserve requirements.

The 2019-2022 Four-Year Budget and Financial Plan's net income estimates for each of the years 2019 through 2022 are indicative forecasts. The Trustees are not being asked to approve any revenue and expenditure amounts for those years at this time.

RECOMMENDATION

The Chief Financial Officer recommends that the Trustees approve the 2019 Budget for the Power Authority, specifically including the expenditures for the (i) 2019 Operations and Maintenance Budget, (ii) 2019 Capital Budget, (iii) 2019 Energy Services Budget and (iv) 2019 Canal Development Fund Budget, each as discussed herein.

In connection with the 2019 Capital Budget, the Chief Financial Officer recommends the Trustees authorize the transfer of up to \$517.2 million from the Operating Fund to the Capital Fund, subject to compliance with the Revenue Bond Resolution.

The Chief Financial Officer further recommends that the Trustees (1) approve the 2019-2022 Four-Year Budget and Financial Plan, and (2) authorize (i) submitting the Approved 2019-2022 Four-Year Budget and Financial Plan to the OSC in the prescribed format, (ii) posting the Approved 2019-2022 Four-Year Budget and Financial Plan on the Authority's website, and (iii) making the Approved 2019-2022 Four-Year Budget and Financial Plan available for public inspection at not less than five convenient public locations throughout New York State.

For the reasons stated, I recommend the approval of the above-requested actions by adoption of the resolution below."

Mr. Lee Garza provided highlights of staff's recommendation to the Board.

Upon motion made by Trustee Dennis Trainor and seconded by Trustee Michael Balboni, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the 2019 Budget for the Power Authority, specifically including the expenditures for the (i) 2019 Power Authority Operations and Maintenance Budget, (ii) 2019 Capital Budget, (iii) 2019 Energy Services Budget and (iv) 2019 Canal Development Fund Budget, each as discussed in the foregoing report of the President and Chief Executive Officer, are hereby approved; and be it further

RESOLVED, That up to \$517.2 million of monies in the Operating Fund are hereby authorized to be withdrawn from such Fund and deposited in the Capital Fund, provided that at the time of withdrawal of such amount or portions of such amount, the monies withdrawn are not then needed for any of the purposes specified in Sections 503(1)(a)-(c) of the General Resolution Authorizing Revenue Obligations as amended and supplemented, with the satisfaction of such condition being evidenced by a certificate of the Treasurer or the Deputy Treasurer; and be it further

RESOLVED, That pursuant to 2 NYCRR Part 203, the attached 2019-2022 Four-Year Budget and Financial Plan, including its certification by the Chief Operating Officer, is approved in accordance with the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That pursuant to 2 NYCRR Part 203, the Corporate Secretary be, and hereby is, authorized to submit the Approved 2019-2022 Four-Year Budget and Financial Plan to the Office of the State Comptroller in the prescribed format, post the Approved 2019-2022 Four-Year Budget and Financial Plan on the Authority's website and make the Approved 2019-2022 Four-Year Budget and Financial Plan available for public inspection at not less than five convenient public places throughout New York State; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things and take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

b. Adoption of 2019 Budget for the New York State Canal Corporation

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Canal Corporation Board of Directors ('Canal Board') is requested to approve the 2019 Budget for the Canal Corporation, specifically including expenditures for the (i) 2019 Operations and Maintenance ('O&M') Budget (attached as Exhibit '5b i-3b-A'), (ii) 2019 Capital Budget (attached as Exhibit '5b i-3b-B'), and (iii) 2019 Canal Development Fund Budget (collectively, the '2019 Canal Corporation Budgets'). The 2019 Canal Corporation Budgets set forth the expected expenses of the Canal Corporation and include the recommended expenditures in the following amounts:

<u>2019 Canal Corporation Budgets</u>	<u>(\$ million)</u>
O&M	\$ 86.2
Capital	\$ 54.7
Canal Development Fund	\$ 2.5

BACKGROUND

The Canal Corporation is authorized to operate, maintain, construct, reconstruct, improve, develop, finance, and promote the New York State canal system (the 'Canal System').

The 2019 Canal Corporation Budgets are intended to provide the Canal Corporation with the resources needed to meet the Canal Corporation's overall mission and objectives.

DISCUSSION**2019 Canal Corporation O&M Budget**

The 2019 O&M Budget of \$86.2 million reflects a concentration on the effective operation and maintenance of the Canal Corporation's critical investments in New York State Canal System.

The 2019 O&M Budget for Operations provides appropriations for baseline, or recurring work, along with programs which have been created to more safely and effectively manage on-going operations. Significant projects in 2019 are: Code Compliance and Energy Efficiency Programs (\$2.8 million), Fairport and Spencerport Lift Bridge rehabilitation (\$3.3 million), and dam safety and structural inspections (\$2.5 million).

2019 Canal Corporation Capital Budget

The 2019 Capital Budget totals \$54.7 million, representing on going, and new capital projects. Significant projects in 2019 are: Lock O-7 Rehabilitation (\$10.4 million), Embankment Rehabilitation Program (\$6.9 million), Utica Section Relocation (\$5.0 million), Rochester East Guard Lock (\$5.8 million), and pumpout projects (\$10.8 million). Also included are trail way projects reimbursable through the Empire State Trail Program; these projects are budgeted as net zero cost to the Canal Corporation.

2019 Canal Development Fund Budget

The 2019 Canal Development Fund Budget totals \$2.5 million, representing on-going costs associated with the New York State Canal System Development Fund ('Canal Development Fund').

The Canal Development Fund, created by State Finance Law §92-u, is a fund established in the joint custody of the State Comptroller and the Commissioner of Taxation and Finance. The Canal Development Fund consists largely of revenues received from the operation of the Canal System.

Monies of the Canal Development Fund, following appropriation by the legislature, is made available to the Power Authority, and may be expended by the Power Authority or the Canal Corporation for the maintenance, construction, reconstruction, development or promotion of the Canal System. In addition, monies of the Canal Development Fund may be used for the purposes of interpretive signage and promotion for appropriate historically significant Erie Canal lands and related sites. Monies from the Canal Development Fund are paid out by the State Comptroller on certificates issued by the Director of the Budget.

FISCAL INFORMATION

The Canal Corporation's O&M, Capital and Canal Development Fund expenses are expected to be funded by transfers of funds from the Power Authority. Any transfers of funds from the Power Authority to the Canal Corporation would be subject to approval by the Power Authority's Board of Trustees and compliance with the Power Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented.

Canal Development Fund expenses are expected to be reimbursed to the Power Authority by the State Comptroller with monies held in the Canal Development Fund as discussed above.

RECOMMENDATION

The Chief Financial Officer recommends that the Canal Board approve the 2019 Budgets for the Canal Corporation, specifically including the expenditures for (i) 2019 Operations and Maintenance ('O&M') Budget (attached as Exhibit '5b i-3b-A'), (ii) 2018 Capital Budget (attached as Exhibit '5b i-3b-B'), and (iii) the 2019 Canal Development Fund Budget.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Lee Garza provided highlights of staff's recommendation to the Board.

Upon motion made by Trustee Dennis Trainor and seconded by Trustee Michael Balboni, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the 2019 Budget for the Canal Corporation, specifically including the expenditures for (i) 2019 Operations and Maintenance Budget, (ii) 2019 Capital Budget, and (iii) 2019 Canal Development Fund Budget, each as discussed in the foregoing report of the President and Chief Executive Officer, are hereby approved; and be it further

RESOLVED, That the Canal Corporation Board of Directors acknowledges that any transfers of funds from the Power Authority to the Canal Corporation would be subject to approval by the Power Authority's Board of Trustees and compliance with the Power Authority's General Resolution Authorizing Revenue Obligations, as amended and supplemented; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer and all other officers of the Canal Corporation are, and each of them hereby is, authorized on behalf of the Canal

December 11, 2018

Corporation to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

ii. **Finance Committee Report**

Committee Chair, Tracy McKibben, said that the Finance Committee met earlier today and staff provided the members with a report on the Authority's 2019-2022 Budget and Financial Plan. In addition, the Chief Financial Officer had detailed discussions on the budget and financial plan with the members of Board.

Mr. Lurie added that staff did a more extensive presentation of the budget and financial planning in public session of the Finance Committee meeting.

Chairperson McKibben said that the Committee recommended the Boards' approval of:

- i) Power Authority 2019 Budget and Filing of the 2019-2022 Approved Budget and Four-Year Financial Plan Pursuant to Regulations of the Office of the State Comptroller
- ii) Adoption of the 2019 Budget for the New York State Canal Corporation

Chair McKibben added that the budget and four-year financial will be placed on the Authority's website for public viewing and also be submitted to the Office of the State Controller and distributed to various public agencies, as required.

c. Utility Operations

i. Chief Operations Officer's Report

Mr. Joseph Kessler, Executive Vice President and Chief Operations Officer provided highlights of Utility Operations' activities to the Board Exhibit "5c i-A."

Performance Measures – Year-to-Date October 2018

Generation Market Readiness

Generation Market Readiness factor was at 99.38%. This is below the target of 99.40%.

Generation Market Readiness is trending downward due to a breaker failure incident at the Blenheim-Gilboa Project. Because of the location of the breaker, this incident is classified as a "general outage." This target will continue to trend downward because of the outage hours; therefore, the target will not be met by the end of the year. This measure will be adjusted for next year because the breaker will not be back in service until about May of 2019.

Transmission reliability

- Transmission Reliability factor was 95.12%. This is above the target of 95.01%.

Environmental Incidents

- Year-to-date, there were 12 incidents. The Annual Target is not to exceed 23 incidents.

Safety

DART (Days Away, Restricted or Transferred) is the Authority's safety metrics.

- The year-to-date DART Rate is 0.96. The target is 0.78.

There were 15 DART incidents this year. Although trending in the right direction, the target will not be achieved.

1. Procurement (Services) Contract - Moses-Adirondack Smart Path Reliability Project - Steel Pole Structures and Foundation Anchor Bolt Cages - Contract Award

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Trustees are requested to approve the award of a five-year, competitively bid contract to Sabre Industries, Inc. ('Sabre') of Alvarado, Texas, in the amount of \$79 million for engineering, design, furnishing and delivery for the Moses-Adirondack Smart Path Reliability Project ('Project'). An additional \$20 million is requested for managing risks of fluctuations in metal indices, additional appurtenances to be installed on structures, inflation adjustments, engineering optimization and additional full load structure testing as required, bringing the total authorized amount to \$99 million.

BACKGROUND

In accordance with the Authority's Expenditure Authorization Procedures, the award of equipment contracts exceeding \$6 million require the Trustees' approval.

The Project will replace 78 miles of single-circuit wooden transmission structures with new, single-circuit, steel pole structures that can support 345kV transmission, but will operate at 230kV until the full length of the transmission system is upgraded.

The total estimated cost of the Project is \$483.8 million, of which \$142.7 million has been authorized, to date.

DISCUSSION

The Authority issued a Request for Proposal, No. Q18-6426HM, via Ariba e-sourcing which was advertised in the New York State *Contract Reporter* on April 26, 2018. On May 24, 2018, four bidders submitted proposals based on preliminary engineering data.

Subsequently, a post-bid addendum was issued to these four bidders on August 29, 2018 based on the intermediate engineering design. This addendum requested technical, commercial, quality information and an updated schedule of values with pricing. On October 29, 2018, the four bidders submitted revised proposals. Clarification questions were issued on November 9, 2018, requesting information addressing areas of uncertainty in their proposals.

The proposals were thoroughly reviewed by the evaluation committee. The engineering data was also evaluated by the Engineer of Record. All proposals were reviewed against pre-established evaluation criteria.

Staff evaluated the pricing submitted by each bidder. The evaluated price includes costs for oversight during the manufacturing process. Option pricing was also evaluated, which includes additional appurtenances to be installed on structures and additional structure load testing, as required. The bidders' evaluated prices with options were: Sabre Industries, Inc. - \$103,241,850; SAE Towers, Ltd. - \$79,162,477; Trinity Meyer Utility Structures, LLC - \$113,480,230. Valmont Industries, Inc. did not provide enough information to evaluate.

The Authority requires an experienced supplier with proven capability and capacity to furnish over seven hundred and seventy, 345kV steel pole structures with anchor bolt cages for structures with drilled shaft foundations. Additionally, there are significant schedule constraints on the Project including permitting and outages, which will minimize the supplier's fabrication time and require suppliers with large factory capacity and minimum lead times to reduce risk to the Project. Due to these schedule constraints,

coupled with technical non-conformances, the proposal submitted by SAE was assessed as non-compliant. Valmont Industries did not submit a complete proposal by the required bid due date and was assessed as non-compliant. The proposal from Trinity Meyer did not contain sufficient technical and quality information required and was the highest price of the four bids received.

Sabre Industries, Inc. was evaluated to be technically capable, experienced, low risk and able to furnish the best value product. Sabre will also provide value engineering services to optimize the pole diameters using their proprietary software and reduce the overall installation cost to the project.

Additionally, after successful negotiations with Sabre their proposed price was reduced to \$79 million.

Therefore, the evaluation committee recommends awarding a contract to Sabre for the reasons stated above. The contract award shall be for \$79 million. An additional \$20 million is requested for managing risks of fluctuations in metal indices, additional appurtenances to be installed on structures, inflation adjustments, engineering optimization and additional full load structure testing as required, bringing the total authorized amount to \$99 million.

FISCAL INFORMATION

Payment associated with this Project will be made from the Authority's Capital Fund and 100% of the cost will be recovered under the Authority's Annual Transmission Revenue Requirement.

RECOMMENDATION

The Senior Vice President and Chief Engineer – Operations Support Services, the Senior Vice President – Power Supply, the Vice President – Strategic Supply Management, the Vice President – Project Management and the Project Manager recommend that the Trustees approve award of a five-year contract to Sabre Industries, Inc. in the amount of \$79 million for engineering, design, furnishing and delivery of pole structures and foundation anchor bolt cages for the Moses-Adirondack Smart Path Reliability Project. An additional \$20 million is requested for managing risks and options for a total authorization amount of \$99 million.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Joseph Kessler provided highlights of staff's recommendations to the Board.

Upon motion made by Trustee Balboni and seconded by Vice Chairman Nicandri, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That pursuant to the Guidelines for Procurement Contracts adopted by the Authority and the Authority's Expenditure Authorization Procedures, approval is hereby granted to award a five-year contract to Sabre Industries, Inc. of Alvarado, Texas, in the amount of \$79 million for the engineering, design, and furnishing of pole structures and foundation anchor bolt cages in support of the Moses-Adirondack Smart Path Reliability Project. An additional \$20 million is requested for managing risks and options for a total authorized amount of \$99 million, as recommended in, the foregoing report of the President and Chief Executive Officer;

<u>Supplier</u>	<u>Authorization Amount</u>
Sabre Industries, Inc. (Q18-6426HM)	<u>\$99,000,000</u>

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

2. Procurement (Services) Contract - Smart Generation & Transmission Initiative - Communication Backbone Program - Fiber Electronics Project - Contract Award

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Trustees are requested to authorize the award of a contract in the amount of \$14,133,417.99 and for a term of seven years (which includes five years of maintenance support) to LightSpeed Technologies Inc. ('LightSpeed') of Wall, NJ to furnish, deliver, install and provide maintenance and training services for the Communication Backbone Fiber Electronics and Services Project ('Project'). Interim approval in the amount of \$5,721,299 was approved in November 2018 to allow LightSpeed to commence Phase 1 of this Project in an effort to complete the work by December 31, 2018.

BACKGROUND

In accordance with the Authority's Guidelines for Procurement Contracts and Expenditure Authorization Procedures, the award of a furnish, deliver, install and maintenance services contract to be rendered for a period in excess of one year and/or in excess of \$6,000,000 requires the Trustees' approval.

The Fiber Electronics Equipment and Installation Services contract will support the Communication Backbone Program. The goal of this program is to establish a robust, secure, and scalable communications network that builds on the Authority's existing infrastructure and is integrated into the long-term asset strategy while leveraging the available infrastructure from independent dark-fiber service providers to reduce the dependency on commercial telecommunications.

At their October 2, 2018 meeting, the Trustees approved capital expenditures in the amount of approximately \$77 million for the Communications Backbone Program, bringing the total authorized amount, to date, to approximately \$100 million. This Project will be completed within the approved capital expenditure authorization.

In particular, the Fiber Electronics Project will provide the electronic digital connection element from the Optical Ground Wire ('OPGW') and dark fiber to the substations' existing network, as well as provide network fiber light amplification along extended length segments. In addition to the equipment requirements, the Authority will be provided with project management, installation, services, resident engineer support, training, and a support lab.

The project is being executed in 3 phases across the Authority's facilities as follows:

- Phase 1 includes the Clark Energy Center ('CEC'), Emergency Energy Control Center ('E2C2'), Saint Lawrence ('STL'), Plattsburgh Substation, and all substations between them;
- Phase 2 includes the CEC, Niagara Power Project ('NIA') and White Plains Office ('WPO');
- Phase 3 includes the CEC, Blenheim-Gilboa Power Project ('BG'), WPO and all substations between them.

DISCUSSION

With the intent to procure a complete optical communications solution that connects the Authority's facilities and substations across the regions, the Authority issued a Request for Proposal

('RFP'), No. Q18-6518TB, on August 28, 2018 to five bidders that are under the Office of the General Services ('OGS') Contract No. PM67989.

The solicitation sought bidders that demonstrate the ability to furnish, deliver, install and provide maintenance/monitoring and training services of the Nokia equipment under this Program.

On September 25, 2018, the Authority received one proposal from LightSpeed which was reviewed by a multidisciplinary Evaluation Team. The proposal was evaluated based upon responsiveness to the requirements of the RFP, technical approach for performing the work, proposed project organization, quality and experience of key personnel, and previous experience with projects similar to this scope-of-work. Based on a comprehensive evaluation, LightSpeed Technologies Inc.'s proposal met all the requirements of the RFP, demonstrated an understanding of the scope-of-work, including providing a plan with methodologies and sequences that is in line with the Authority's project schedule for the Communication Backbone Program.

Considering LightSpeed's competitive offer, post-bid negotiations focused on expediting fiber electronics equipment delivery and mitigating the potential for cost increases in order to meet the project schedule. The focused value engineering effort resulted in a cost avoidance of over \$402,500.

FISCAL INFORMATION

Equipment and Services under this contract will be provided on an as-needed basis and/or availability, using the negotiated rates. Payments associated with this value contract will be made from the Authority's Capital Fund, as appropriate.

RECOMMENDATION

The Senior Vice President – Operations Support Services, the Vice President – Project Management, the Vice President – Strategic Supply Management, and the Project Manager recommend that the Trustees approve the award of a seven-year contract to LightSpeed Technologies Inc. in the amount of \$14,133,417.99 for the Communication Backbone Fiber Electronics and Services Project.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Joseph Kessler provided highlights of staff's recommendations to the Board.

Upon motion made by Trustee Balboni and seconded by Vice Chairman Nicandri, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, that pursuant to the Guidelines for Procurement Contracts adopted by the Authority and the Authority's Expenditure Authorization Procedures, approval is hereby granted for a contract award for the Smart Generation & Transmission Communication Backbone Phase 1, 2 & 3 Fiber Electronics and Services Project in the amount of \$14,133,417.99 to LightSpeed Technologies Inc., as recommended in the foregoing report of the President and Chief Executive Officer;

<u>Contractor</u>	<u>Amount</u>
LightSpeed Technologies Inc.	\$14,133,417.99
Q18-6518TB	

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

**3. Niagara Fire Alarm and Safety Systems Program -
Capital Expenditure Authorization Request and
Contract Award Ratification**

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Trustees are requested to authorize capital expenditures in the amount of \$37.3 million for the Niagara Fire Alarm and Safety Systems Program ('Program'). The estimated cost of the Program is \$37.6M, of which \$300,000 was approved in February 2018.

The Trustees are also requested to ratify the award of a competitively bid five-year Construction contract in the amount of \$28,307,111 to Johnson Controls Inc. ('JCI') of Amherst, NY for the Program. Interim funding in the amount of \$600,000 was previously approved by the Chief Operating Officer in September 2018, to allow for project initiation costs and to maintain the schedule.

BACKGROUND

In accordance with the Authority's Capital Planning and Budgeting Procedures, capital expenditure authorizations in excess of \$6 million require the Trustees' approval.

Section 2879 of the Public Authorities Law and the Authority's Guidelines for Procurement Contracts require the Trustees' approval for procurement contracts involving services to be rendered for a period in excess of one year. Additionally, in accordance with the Authority's Expenditure Authorization Procedures, the award of non-personal services contracts exceeding \$6 million requires the Trustees' approval.

A study of the fire alarm and safety systems at the Niagara Power Project ('Niagara Project') was performed and it noted several issues relating to personnel safety and property risk which require remediation. There are areas of the Niagara Project that lack fire detection, notification, or communication equipment necessary to call for assistance when needed. The existing systems are no longer supported by any manufacturer and are at the end of their life cycle.

DISCUSSION

The scope of this Program includes the design, procurement, and installation of the fire alarm, public address, deluge release, emergency lighting, and emergency signage systems throughout the Niagara Project, which will require replacement and upgrades to conform to current codes and industry standards. This Program will create the safety system network and allow for centralized monitoring and notification.

A Request for Proposal ('RFP'), Inquiry No.Q18-6451KS, was issued through the Authority's Ariba system and was advertised in the New York State ('NYS') *Contract Reporter* on May 17, 2018. Two firms were invited into the Ariba Event with one firm having viewed the RFP on the Authority's website. On June 27, 2018, a proposal from JCI was received.

In order to expand the pool of potential bidders, the RFP, Inquiry No. Q18-6531KS, was re-bid through the Authority's Ariba system and was advertised in the *NYS Contract Reporter* on August 31, 2018. Ten firms were invited into the Ariba Event with seven having viewed the RFP on the Authority's website. On September 21, 2018, one proposal was received from JCI.

The JCI proposal was reviewed thoroughly by the Evaluation Committee. JCI demonstrated knowledge and understanding of the scope-of-work and will meet the Program schedule. JCI has extensive experience in design and installation of integrated safety systems and has successfully

completed similar projects with the Authority. As such, JCI is recommended for award of this contract. JCI's award is limited to \$600,000 pending Trustee ratification of the contract award.

The Program cost, inclusive of preliminary funding and this current capital request is estimated at \$37,600,000.

Preliminary Eng./Licensing	\$ 100,000
Engineering/Design/Procurement	\$ 459,536
Construction/Installation	\$34,172,552
Project Closeout	\$ 155,736
Authority Indirect and Direct Expenses	<u>\$ 2,712,176</u>
TOTAL ESTIMATED PROGRAM COST	\$37,600,000

FISCAL INFORMATION

Payment associated with this contract will be made from the Authority's Capital Fund.

RECOMMENDATION

The Senior Vice President – Operations Support Services, the Vice President – Project Management, the Vice President – Strategic Supply Management, the Regional Manager, and the Project Manager recommend that the Trustees approve the current request for capital expenditures in the amount of \$37,300,000 and the ratification of a five-year Design-Build contract to Johnson Controls Inc. of Amherst, NY in the amount of \$28,307,111 for the Niagara Project's Fire Alarm and Safety Systems Program.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Joseph Kessler provided highlights of staff's recommendations to the Board.

Upon motion made by Trustee Balboni and seconded by Vice Chairman Nicandri, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That pursuant to the Authority's Capital Planning and Budgeting Procedures, capital expenditures in the amount of \$37.3 million, for a total Program cost of \$37.6 million, are hereby authorized for the Niagara Power Project's Fire Alarm and Safety Systems Program in accordance with, and as recommended in, the foregoing report of the President and Chief Executive Officer;

<u>Capital</u>	<u>Expenditure Authorization</u>
Niagara Power Project Fire Alarm and Safety Systems Program	<u>\$37,600,000</u>

AND BE IT FURTHER RESOLVED, That pursuant to the Guidelines for Procurement Contracts adopted by the Authority and the Authority's Expenditure Authorization Procedures, approval is hereby granted to award a five-year contract to Johnson Controls Inc. in the amount of \$28,307,111 to support the work associated with the Niagara Project's Fire Alarm and Safety Systems Program, as recommended in the foregoing report of the President and Chief Executive Officer;

<u>Contractor</u>	<u>Contract Approval</u>
Johnson Controls Inc. Amherst, NY	<u>\$28,307,111</u>

(VC No. 4600003531)

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

**4. Asset Performance Management -
Capital Expenditure Authorization Request**

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Trustees are requested to authorize capital expenditures in the amount of \$14,694,800 to implement the General Electric International ('GE') Asset Performance Management ('APM') software. The estimated cost for implementation is \$16,694,800, of which \$2,000,000 was previously approved by the Chief Executive Officer in February 2018.

BACKGROUND

In accordance with the Authority's Capital Planning and Budgeting Procedures, capital expenditures in excess of \$6 million require the Trustees' approval.

To support its customers and the state of New York in adapting to new sources of energy production, storage, and transmission, the Authority is committed to improving its ability to quickly adjust to dynamic grid conditions through the digitization and real-time monitoring of key generation and transmission performance parameters. This transformation enables the Authority to carefully steward its significant generation and transmission assets, and strategically shift toward a flexible and resilient energy system focused on providing economical, reliable, and sustainable power. Becoming the nation's first end-to-end digital utility requires a transformation of the tools and business processes that the Authority uses to manage its assets.

Additionally, the Authority has committed to attaining ISO 55000 certification of its asset management system and will do so by utilizing APM to embed best practice processes into the way that the Authority does its work. Attaining and supporting the standard requires definition and adoption of asset management business processes and a framework for improving and adapting them to the Authority's needs. Achieving and sustaining world class performance will require careful alignment and integration of key operating data and processes through APM.

DISCUSSION

In December 2017, the Trustees ratified a contract award to GE to implement cloud-based asset monitoring and predictive maintenance software. The APM platform will enable the Authority to optimize the performance of its assets to increase reliability and availability, minimize costs, and reduce operational risk.

The funds, in the amount of \$14,694,800, which are being requested, will be utilized for:

- Development of a Detailed Implementation Plan
- Minimum Viable Products
- Rollout to generation and transmission assets
- Software licensing fees
- Information Technology support
- Program Management support

The total Project cost, inclusive of preliminary funding and this current request, is estimated at \$16,694,800, and is summarized as follows:

Engineering/Design	\$ 14,524,500
Material Procurement	\$ 313,500
Authority Direct & Indirect Expense	<u>\$ 1,856,800</u>
Current Capital Request	\$ 14,694,800
Previously Authorized Funding	<u>\$ 2,000,000</u>
TOTAL	\$ 16,694,800

FISCAL INFORMATION

Payment associated with this project will be made from the Authority's Capital Fund.

RECOMMENDATION

The Senior Vice President – Power Supply, the Senior Vice President Technology and Innovation, the Senior Vice President Operations Support Services and Chief Engineer, the Vice President – Project Management, the Vice President – Strategic Operations, and the Project Manager recommend that the Trustees authorize capital expenditures in the amount of \$14,694,800 to proceed with the implementation of the Asset Performance Management software.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Joseph Kessler provided highlights of staff's recommendations to the Board.

Upon motion made by Trustee Balboni and seconded by Vice Chairman Nicandri, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That pursuant to the Authority's Capital Planning and Budgeting Procedures, capital expenditures in the amount of \$14,694,800 are hereby authorized for the implementation of the Asset Performance Management software in accordance with, and as recommended in, the foregoing report of the President and Chief Executive Officer;

<u>Capital</u>	<u>Expenditure Authorization</u>
Asset Performance Management System	<u>\$14,694,800</u>

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is,

authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

5. **Richard M. Flynn Power Plant - Gas Turbine Outage - Capital Expenditure Authorization Request**

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Trustees are requested to authorize a Capital Expenditure Authorization Request ('CEAR') in the amount of \$22,848,778 for the replacement and/or upgrade of critical parts for the Richard M. Flynn Power Plant's ('Plant') gas turbine for the 2019-2020 Major Outage ('Project').

BACKGROUND

In accordance with the Authority's Expenditure Authorization Procedures ('EAPs'), capital expenditures in excess of \$6 million require the Trustees' approval.

The Plant) has been in service since May 1994 and is now considered a merchant plant. The Plant consists of one gas turbine and one steam turbine. The timing of major overhauls and large projects at the Plant is based on the recommended maintenance cycles of the Siemens V84.2 gas turbine. Siemens recommends that the gas turbine be completely overhauled and upgraded approximately every 33,000 operating hours, which, with typical operating parameters, equates to once every four years. When the Plant is offline (outage), other maintenance projects which cannot be done while it is in-service are completed. The outage is due to start in October 2019; the site's management is evaluating the option to postpone the outage to April of 2020. The repairs and upgrades described below are critical to the safe, reliable and efficient operation of the Plant.

DISCUSSION

Following the 2015 Major Outage, critical gas turbine parts installed in the machine face the end of their useful life; such components need to be replaced during the next scheduled major outage. These components have long lead times ranging between 13 to 16 months, therefore, they need to be procured well in advance of the Plant's next outage in order to maintain operational schedules and prevent an extended outage. Examples of these critical components are: HR3 gas burners, compressor inner diffuser, turbine blades/vanes, mixing elbows, rotor disks and the turbine inner case. The costs associated with the purchase of these components are summarized in the following table:

CATEGORY	TOTAL REQUEST AUTHORIZATION (000'S)	LEAD TIME (months)
COMBUSTION CHAMBERS	\$ 4,217.5	15-16
STACKED ROTOR	\$ 9,795.8	15-16
VANES / DIAPHRAGMS	\$ 8,609.3	14-15
Contingency	\$ 226.2	
TOTAL:	\$ 22,848.8	

FISCAL INFORMATION

Payment associated with this Project will be made from the Authority's Capital Fund. At this time, staff is requesting authorization of \$22,848,778 for implementation of the Project during the 2019-2020 Major Outage.

RECOMMENDATION

The Senior Vice President – Power Generation, the Vice President – Procurement, the Regional Manager – Southeastern New York and the Director – Operations, Richard M. Flynn Power Plant, recommend that the Trustees authorize capital expenditures in the amount of \$22,848,778 for the replacement and/or upgrade of critical components for the gas turbine during the Richard M. Flynn Power Plant's 2019-2020 Major Outage.

For the reasons stated, I recommend the approval of the above requested action by adoption of the resolution below."

Mr. Joseph Kessler provided highlights of staff's recommendations to the Board.

Upon motion made by Trustee Balboni and seconded by Vice Chairman Nicandri, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, that pursuant to the Authority's Expenditure Authorization Procedures, Capital expenditures are hereby approved in the amount of \$22,848,778 for the upgrade and purchase of critical components for the gas turbine during the 2019-2020 Richard M. Flynn Power Plant's Major Outage as recommended in the foregoing report of the President and Chief Executive Office.

<u>Capital</u>	<u>Expenditure Authorization</u>
RM Flynn Power Plant – 2019-2020 Major Outage	
Current Request	<u>\$22,848,778</u>
Total Amount Authorized	<u>\$22,848,778</u>

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things and take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

ii. **Canal Corporation**

1. **Procurement (Services) Contracts -
On-Demand Infrastructure Repairs to
Canal Facilities – Contract Awards**

The President and Chief Executive Officer submitted the following report:

“SUMMARY

The Board of Directors ('Board') is requested to approve the award of multiple contracts under one master bid inquiry solicitation (Inquiry No. K18-10275257JT) which were competitively bid for five-year contract periods to the following low bidders for the On-Demand Infrastructure Repairs to Canal Facilities: Tioga Construction Co., Inc. of Herkimer, New York, the responsible low bidder for the Central Canal Area for the amount of \$18,721,000 (Contract #4700000038); D.A. Collins Construction Co., Inc. of Wilton, New York, the responsible low bidder for the Eastern Canal Area for the amount of \$18,512,500 (Contract #4700000039); and Hohl Industrial Services, Inc. of Tonawanda, New York, the responsible low bidder for the Western Canal Area for the amount of \$20,119,900 (Contract #4700000040).

To meet the On-Demand Services schedules for each of the three canal service areas, the contracts noted above became effective on November 15, 2018 for the initial interim award amount of \$1,800,000 per canal service area, subject to the Board's approval as soon as practicable, in accordance with the Canal Corporation's Guidelines for Procurement Contracts and Expenditure Authorization Procedures. In addition, the interim approval also required that the contract for *Standby Readiness – Maximum Bid* be initiated for each canal service area contract for the submitted bid amounts of: \$60,000 (Central Canal Area); \$0.00 (Eastern Canal Area) and \$289,900 (Western Canal Area), respectively, in advance of the full contract approval by the Board. The total aggregate award value is \$57,353,400. Standby readiness for On-Demand Services began on November 15, 2018 and will conclude by the contract completion date of November 30, 2023 for each of these three (3) value contracts.

In accordance with the Canal Corporation's Procurement Guidelines and Expenditure Authorization Procedures, the Board's approval is required when the award of Contracts and/or Purchase Order Releases exceeds one year in term or the value of such contracts exceeds \$6,000,000.

BACKGROUND

The Canal System includes four canals: the Erie, Champlain, Oswego, and Cayuga-Seneca canals; canalized natural waterways, plus five lakes: Oneida, Onondaga, Cross, Cayuga and Seneca; short canal sections at Ithaca and Watkins Glen; feeder reservoirs, canals and rivers not accessible by boat from the Canal System; and canal terminals on Lake Champlain. The Canal System passes through 25 counties and close to 200 villages, hamlets and towns across an expanse of approximately 525 linear miles. The Canal System is a listed National Historical Landmark. Portions of the original canal systems (e.g., Erie and Champlain) and support infrastructure (e.g., barge canal segments, feeder canals and locks) are listed, or eligible for listing, on the Registry of Historic Places.

Previously, the On-Demand Infrastructure Repairs and Marine Vessel Recovery Contract format offered combined on-demand emergency repairs for canal infrastructure facilities and marine vessel recovery/environmental response for three (3) separate canal service areas (Western, Central and Eastern). The current proposed contract format for this award recommendation will be to require the successful responsible low bidder for each of the three canal service areas (Western, Central and Eastern) to provide standby readiness and to only perform on-demand infrastructure repairs to canal facilities as identified and directed by the New State Canal Corporation (excluding the prior Marine Vessel Recovery and Environmental Response requirements).

The Central canal service area is generally intended to be anywhere on the Cayuga-Seneca, and within portions of the Erie and Oswego Canal Systems (Lock E17 to Lock E28B). Counties where work

may be required include: Cayuga, Herkimer, Madison, Oneida, Onondaga, Oswego, Schuyler, Tompkins, Wayne and Yates. The Western canal service area is generally intended to be anywhere within portions of the Erie Canal System (Lock E29 to Lock E35). Counties where work may be required include: Erie, Monroe, Niagara, Ontario, Orleans, Seneca and Wayne. Lastly, the Eastern canal service area is generally intended to be anywhere on Lake Champlain, and within portions of the Erie Canal System (Lock E2 to Lock E16). Counties where work may be required include: Albany, Clinton, Essex, Montgomery, Rensselaer, Saratoga, Schenectady, Warren and Washington.

Each specified canal service area contract will allow for the repair to canal infrastructure facilities in order to: repair and protect the Canal Corporation's infrastructure; protect the environment; protect the public interests and safety; avoid prolonged interruptions to navigation; and to allow the NYS Canal System to maintain operations and functionality.

DISCUSSION

In response to an advertisement issued on August 27, 2018 for the On-Demand Infrastructure Repairs to the Canal Facilities, Inquiry No. K18-10275257JT, Central Canal Area (Value Contract No. 4700000038), four (4) proposals ('bids') were received and publicly opened and read on September 18, 2018. The bids were reviewed by an Evaluation Committee consisting of Canal Corporation's staff from Design, Construction, Procurement and New York Power Authority's Strategic Supply Management.

In response to an advertisement issued on August 27, 2018 for the On-Demand Infrastructure Repairs to Canal Facilities, Inquiry No. K18-10275257JT, Eastern Canal Area (Value Contract No. 4700000039), four (4) proposals ('bids') were received and publicly opened and read on September 18, 2018. The bids were reviewed by an Evaluation Committee consisting of Corporation staff from Design, Construction, Procurement and New York Power Authority's Strategic Supply Management.

In response to an advertisement issued on August 27, 2018 for the On-Demand Infrastructure Repairs to the Canal Facilities, Inquiry No. K18-10275257JT, Western Canal Area (Value Contract No. 4700000040), two (2) proposals ('bids') were received and publicly opened and read on September 18, 2018. The bids were reviewed by an Evaluation Committee consisting of Canal Corporation's staff from Design, Construction, Procurement and New York Power Authority's Strategic Supply Management.

FISCAL INFORMATION

Expenditures for this contract will be paid from the Canal Corporation's Capital Fund, as appropriate.

RECOMMENDATION

The Evaluation Committee recommends that the Board approve an interim contract for Inquiry No. K18-10275257JT – On-Demand Infrastructure Repairs to Canal Facilities in the amount of \$1,800,000 per each individual canal service area, followed by the Board's approval and award of a five-year on-demand construction contract with a term beginning on November 15, 2018 and ending on November 30, 2023 to the responsible lowest bidder for each of the three (3) canal service areas as noted: Central Canal Area Value Contract 4700000038 – Tioga Construction Co., Inc. of Herkimer, New York for the amount of \$18,721,000; Eastern Canal Area Value Contract 4700000039 – D.A. Collins Construction Co., Inc. of Wilton, New York for the amount of \$18,512,500; and Western Canal Area Value Contract 4700000040 – Hohl Industrial Services, Inc. of Tonawanda, New York for the amount of \$20,119,900. The total aggregate award value is \$57,353,400.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Joseph Kessler provided highlights of staff's recommendations to the Board.

Upon motion made by Member Dennis Trainor and seconded by Member Michael Balboni, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That pursuant to the Canal Corporation's Expenditure Procurement Guidelines and Expenditure Authorization Procedures, approval is hereby granted to award Contracts to Tioga Construction Co., Inc. (#4700000038) for \$18,721,000; D.A. Collins Construction Co., Inc. (#4700000039) for \$18,512,500; and Hohl Industrial Services, Inc. (#4700000040) for \$20,119,900, each with a start date of November 15, 2018 and completion date of November 30, 2023, respectively, with an interim award of \$1.8 million per canal service area and standby readiness of \$60,000 (Central), \$0 (Eastern) and \$289,900 (Western) for On-Demand Infrastructure Repairs to Canal Facilities, as recommended in the foregoing report of the President and Chief Executive Officer;

<u>Contractor</u>	<u>Location</u>	<u>Contract Award</u>
Tioga Construction Co., Inc. Contract #4700000038	Herkimer, NY	<u>\$18,721,000.00</u>
D.A. Collins Construction Co., Inc. Contract #4700000039	Wilton, NY	<u>\$18,512,500.00</u>
Hohl Industrial Services, Inc. Contract #4700000040	Tonawanda, NY	<u>\$20,119,900.00</u>
Total aggregate award value		<u>\$57,353,400.00</u>

K18-10275257JT

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer, and all other officers of the Canal Corporation are, and each of them hereby is, authorized on behalf of the Canal Corporation to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

**2. Procurement (Services) Contract - Dredging
of the Syracuse Inner Harbor - Contract Award**

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Board of Directors ('Board') is requested to approve the award of a contract related to Inquiry No. K18-10274219JT to Carver Construction, Inc. ('Carver') of Altamont, New York, as the low bidder for the Dredging of the Syracuse Inner Harbor in the City of Syracuse, Onondaga County, New York, in the bid amount of \$10,344,450. Due to the need to commence services, the contract (PO #4400003154) with Carver became effective on October 26, 2018 for the initial interim award amount of \$4 million, subject to the Board's approval as soon as practicable, in accordance with Canal Corporation's Guidelines for Procurement Contracts and Expenditure Authorization Procedures. This construction project has an expected completion date concurrent with the contract completion date of July 30, 2019.

In accordance with the Canal Corporation's Procurement Guidelines and Expenditure Authorization Procedures, the Board's approval is required when the award of Contracts and/or Purchase Order Releases exceeds one year in term or the value of such contracts exceeds \$6,000,000.

BACKGROUND

The Syracuse Inner Harbor is situated at the southeast end of Onondaga Lake, in the City of Syracuse, Onondaga County. A bathymetric survey conducted by the Canal Corporation in June 2017 revealed severe filling within the navigation channel. In some areas, the available draft is limited to two to three feet. This contract will be for the performance of navigational dredging at the Syracuse Inner Harbor.

DISCUSSION

In response to an advertisement issued on August 6, 2018 for the Dredging of the Syracuse Inner Harbor, Inquiry No. K18-10274219JT, two proposals ('bids') were received and publicly opened and read on September 11, 2018. The bids were reviewed by an Evaluation Committee consisting of the Corporation's staff from Design, Construction, and Procurement and New York Power Authority's Strategic Supply Management.

FISCAL INFORMATION

Expenditures for this contract will be paid from the Canal Corporation's Capital Fund, as appropriate.

RECOMMENDATION

The Evaluation Committee recommends that the Board approve the interim contract in the amount of \$4 million for the period October 26, 2018 to December 11, 2018, and award of the contract (PO #4400003154) related to Inquiry No. K18-10274219JT to Carver Construction, Inc. of Altamont, New York, as low bidder for the Dredging of the Syracuse Inner Harbor, in the City of Syracuse, in the bid amount of \$10,344,450 with the term ending on July 30, 2019.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Upon motion made by Member Dennis Trainor and seconded by Member Michael Balboni, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That pursuant to the Canal Corporation's Expenditure Procurement Guidelines and Expenditure Authorization Procedures, approval is hereby granted to award a construction Contract (PO #4400003154), with a start date of October 26, 2018 and completion date of July 30, 2019; an interim award of \$4 million and total bid award in the amount of \$10,344,450, to Carver Construction, Inc. for the construction of the Dredging of the Syracuse Inner Harbor in the City of Syracuse, Onondaga County, New York, as recommended in the foregoing report of the President and Chief Executive Officer;

<u>Contractor</u>	<u>Location</u>	<u>Contract Award</u>
Carver Construction, Inc.	Altamont, NY	<u>\$10,344,450.00</u>

K18-10274219JT
PO# 4400003154

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer, and all other officers of the Canal Corporation are, and each of them hereby is, authorized on behalf of the Canal Corporation to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

d. Commercial Operations

i. Chief Commercial Officer's Report

Ms. Sarah Salati, Chief Commercial Officer, provided highlights of the Commercial Operations' year-to-date activities to the Board (Exhibit "5d i-A").

Wholesale

- Customer Usage

Customer usage rate is in line with the Authority's budget. Customer usage was slightly higher with the municipal and co-op customers due to the hot summer. However, this was slightly offset with lower-than-anticipated usage by some of the industrial customers.

- Generation

The Authority's generation is in line with the budget. In the beginning of the year, water flows were used to break up the ice; therefore, it was not used for power generation. This however, was offset over the summer months because there were stronger than anticipated hydro flows from precipitation, therefore, the Authority was able to generate more power, meeting the demand of the market.

- Electric Prices / Fuel Prices

Overall, there was a very strong performance of the Authority's gross margin this year in terms of being above the anticipated budget. This is supported by the higher-than-budgeted electricity prices, reflecting the higher demand of the hot summer. In addition, a lower margin was impacted by the lower-than-expected fuel prices, as well as the Authority's ability to maximize the usage of its hydro flows at the Niagara Plant.

Economic Development

The Authority continues to support the economic growth and competitiveness of New York State with its various economic development programs.

Customer

Customer Investments

In line with the request by the Board of Trustees to accelerate the Authority's strategic initiatives, Commercial Operations is approximately 40 percent above its anticipated Customer Investment spend.

Non-utility Revenues

There was a higher-than-budgeted percentage (25%) on the Non-utility Revenues.

Operating Expenses

Operating Expenses is in line with the budget, but slightly above the acceleration of the Authority's project schedules and incorporation of additional projects into the pipeline.

Water Resource Recovery Facility

One of the Authority's projects is the installation of new dewatering centrifuges at NYC DEP's Hunts Point Water Resource Recovery Facility, which spins water around and separates the solid from the waste so that the water can ultimately be retreated. The total cost of that project was \$67 million.

First 100-Day Report

Ms. Salati said that she joined the Authority because of its mission-driven aspects of the organization. She said that she is impressed by the level of competence and expertise of all of her colleagues on the Executive Management team, as well as the expertise of the Commercial Operations' team. In addition, the staff at NYPA are very collegial and cooperative. It has been a joy to be working in problem solving of some of the more challenging issues that New York State faces, and, ultimately, NYPA as well as in supporting the policy objectives of the Governor.

1. Economic Development Allocations and Awards:

a. Preservation Power Allocations

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Trustees are requested to:

1. Approve a proposed new form of contract (hereinafter, 'Proposed PP Contract 1') that would, along with a new Authority service tariff designated as Service Tariff No. 20 ('ST No. 20'), apply to the sale of Preservation Power ('PP') awarded and sold on or after this date to eligible businesses that are not located on the Alcoa industrial campus in Massena, New York (the 'Alcoa Campus'). Copies of the Proposed PP Contract 1 and ST No. 20 are attached as Exhibit '5d i-1a-A.'
2. Approve a proposed new form of contract (hereinafter, 'Proposed PP Contract 2') that would, along with a new Authority service tariff designated as Service Tariff No. 20-A ('ST No. 20-A'), apply to the sale of PP awarded and sold on or after this date to eligible businesses that operate facilities located on the Alcoa Campus and to which the Authority would supply/deliver power, except any business entities currently receiving electric service under Authority Service Tariff No. AL-1 or any successor tariff. Copies of the Proposed PP Contract 2 and ST No. 20-A are attached as Exhibit '5d i-1a-B.'
3. Approve an allocation of 1,000 kW of PP to North American Forest Group Inc. ('NAFG') which is proposing to establish sawmill operations in the Town of Oswegatchie (St. Lawrence County). The project is described in further detail below and in Exhibit '5d i-1a-C.' The term of the allocation would be seven (7) years. The allocation would support capital investment of at least \$2 million and the creation of at least 21 jobs.
4. Approve an allocation of 5,000 kW of PP to Arconic Inc. ('Arconic'). Arconic is a new company formed from a corporate restructuring by Alcoa Inc. ('Alcoa') that will operate at the Alcoa West Plant at 1814 State Highway 131, Massena, New York on the Alcoa Campus. The project is described in further detail below and in Exhibit '5d i-1a-D.' The term of the PP allocation would be from April 1, 2019 through December 31, 2028 (the 'Term'). Staff recommends that the allocation be made subject to the contingencies discussed below.
5. Authorize a public hearing, in accordance with Public Authorities Law ('PAL') §1009, on the contracts attached as Exhibits '5d i-1a-E' and '5d i-1a-F' for the sale of the allocations of PP to NAFG and Arconic as recommended above. These contracts follow the form of Proposed PP Contract 1 and Proposed PP Contract 2 discussed above.

BACKGROUND

Chapter 313 of the Laws of 2005 established the PP program set forth in §1005(13) of the PAL. In summary, PAL §1005(13) authorizes the allocation of 490 megawatts ('MW') of PP to businesses in Franklin, Jefferson and St. Lawrence counties, and applies the same allocation criteria that pertain to the allocations of Replacement Power and Expansion Power.

Among the factors to be considered when evaluating a request for an allocation of hydropower are the number of jobs created as a result of the allocation; the business' long-term commitment to the region as evidenced by the current and/or planned capital investment in the business' facilities in the region; the ratio of the number of jobs to be created to the amount of power requested; the types of jobs created, as measured by wage and benefit levels, security and stability of employment and the type and cost of buildings, equipment and facilities to be constructed, enlarged or installed.

For PP, NYPA confers with economic development officials from Franklin, Jefferson and St. Lawrence counties along with the Northern New York ('NNY') representative of the Empire State Development Corporation to coordinate other economic development incentives that could help bring projects to New York State. Staff discusses potential recommendations with these entities to help maximize the value of hydropower to improve the economy of NNY and New York State.

There is currently 235,250 kW of PP available to allocate to qualified businesses.

DISCUSSION

1. Revised Contract Forms and Service Tariffs

As part of a periodic review of power program contracts and related documents, Staff has developed revised contract forms and service tariffs for the sale of PP.

One contract form, referred to herein as Proposed PP Contract 1, and ST No. 20, would apply to PP allocations awarded and sold on or after this date to eligible businesses that are not located on the Alcoa Campus. Proposed PP Contract 1 and ST No. 20-A would apply to the sale of the PP allocation being recommended for NAFG in this item.

The second contract form, referred to herein as Proposed PP Contract 2, and ST No. 20-A, would apply to eligible businesses that are located on the Alcoa Campus except any business currently receiving electric service under Authority Service Tariff No. AL-1 or any successor tariff. Proposed PP Contract 2 and ST No. 20-A would apply to the sale of the PP allocation being recommended for Arconic in this item.

Copies of Proposed PP Contract 1 and Proposed PP Contract 2 (along with the corresponding service tariffs) are attached to this report as Exhibits '5d i-1a-A' and '5d i-1a-B,' respectively.

Proposed PP Contract 1 and Proposed PP Contract 2 and their corresponding service tariffs, which have numerous provisions in common with revised contract and tariff documents recently approved by the Trustees for the Authority's other power programs, may be summarized as follows:

- The tariffs provides for a minimum monthly charge such that the Authority's fixed costs are recovered in the event the customer does not utilize and purchase the allocation during a month.
- The base rates for demand and energy would be the currently effective 2018 rates contained in Service Tariff No. 10, the current tariff for PP.
- The tariffs provide for an annual adjustment factor ('AAF') based on certain economic indices to modify rates annually relative to the greater economy. The same AAF calculation method is employed in the Authority's recently Trustee-approved service tariffs for the Western New York hydropower and Recharge New York power programs.
- The Authority would continue to provide unforced capacity to meet a customer's New York Independent System Operator requirements associated with its PP allocation, and the customer would pay for this capacity.
- The proposed PP contracts contain updated provisions to address such matters relating to customer metering arrangements, delivery of PP by the local electric utility (in the case of ST No. 20, as further explained below), the provision of substitute energy in the event of hydropower curtailments caused by adverse water conditions, and early outreach concerning allocation extensions.

- Customers under these contracts would be required to perform an energy audit at the facility receiving its PP allocation at least twice during the term of their allocation. However, customers would have the option to satisfy the audit requirement through either a traditional physical audit, or a virtual audit using the Authority's New York Energy Manager ('NYEM'). The NYEM audit option is expected to provide considerable savings for customers who select it.
- The proposed contracts contain revised provisions to clarify the parties' rights regarding the takedown of allocations that are awarded to support new or expanded facilities.
- The Authority will periodically communicate with the customer about energy-related projects, programs and services offered by the Authority.
- The proposed contracts would continue to provide for supplemental commitments by the customer relating to job creation/retention, capital investment and power utilization. The contracts also include compliance provisions that allow the Authority to reduce the PP allocation for a customer's failure to meet supplemental commitments and gives the customer an opportunity to present a proposed plan with actionable milestones to cure compliance deficiencies.
- Based on previous Trustee authorization, the proposed Contracts incorporates a more developed approach by the Authority to administering the PP program in a manner that the Authority determines to be consistent with the State Energy Plan and Clean Energy Standard and includes provisions for recovery of the Authority's costs for actions that the Authority undertakes for these purposes such as the purchase of Zero Emission Credits and Renewable Energy Credits in amounts that correspond to the load served under the contract.

The major difference between Proposed PP Contract 1/ST No. 20, and Proposed PP Contract 2/ST No. 20-A, relates to power delivery.

PP Customers that will receive delivery of PP at facilities that are not located on the Alcoa Campus will have their Allocation delivered by their local electric utility. Proposed PP Contract 1 and ST No. 20 are drafted to accommodate this business model and, accordingly, contain provisions similar to those found in Authority contracts for the sale Western New York hydropower and Recharge New York Power which is delivered by the customer's local electric utility.

In contrast, the Authority itself will deliver power to PP customers that operate facilities located on the Alcoa Campus, because the Alcoa Campus is located within the Authority's transmission district (i.e., it is directly connected to the Authority's transmission system) and therefore, there is no local electric utility service or service territory obligation. Proposed PP Contract 2 and ST No. 20-A are drafted to address this circumstance. Accordingly, Proposed PP Contract 2 and ST No. 20-A contain provisions providing for, among other things, the delivery of PP by the Authority, the supply and delivery by the Authority of incremental power and energy to such facilities, and charges that apply to such services.

2. PP Allocation to NAFG

NAFG, formed two years ago to begin a sawmill operation by Patrick, Timothy and Lee Curran, is proposing to purchase and rehabilitate the former 144,000-square-foot ACCO manufacturing facility located on 28 acres in the Town of Oswegatchie to house sawmill operations. The building, which is located along the St. Lawrence Seaway, has been vacant for five years.

The individuals currently own and operate timber harvesting and pellet manufacturing operations (Seaway Timber Harvesting and Curran Renewable Energy) employing nearly 100 local residents from the Massena/St. Lawrence County area.

NAFG, which submitted an application requesting 3,000 kW of PP, is initially planning to use 60,000-square-feet in the building for sawmill operations, but long-range plans include expanded operations.

NAFG plans to invest at least \$2 million: approximately \$600,000 for the purchase of the building; \$300,000 for renovations/rehab of building; \$200,000 for lot/site improvement work; \$300,000 for a saw mill; \$100,000 for a kiln planer room; \$150,000 for electrical improvements for lighting, furnace, fans, etc.; and \$350,000 for other equipment and miscellaneous work.

Currently, most of the processing/finished product of logs and wood products harvested in the North Country takes place in Quebec. With the NAFG facility, this type of work would now be done in New York and offer the benefit of providing an American source for regional loggers to deliver their logs.

NAFG would create 21 new jobs at an average salary/benefits package of \$43,284 annually per worker.

The job creation ratio for the proposed allocation of 1,000 kW is 21 new jobs per MW. This ratio is below the historic average of 30.4 new jobs per MW based on allocations made during the past eight years. The total project investment of at least \$2 million would result in a capital investment ratio of \$2 million per MW. This ratio is below the eight-year historic average of \$23.4 million per MW.

Staff recommends that an allocation of 1,000 kW of PP for a term of 7 years be awarded to NAFG in support of its proposed project.

3. PP Allocation to Arconic

Alcoa announced in or around September 2015 that its Board of Directors had approved a plan to separate the company into two independently-traded companies. The company subsequently divided into Alcoa Corp. and Arconic Inc. Staff understands that Arconic will focus on supplying materials for aerospace, automotive and other growing industries, while Alcoa will streamline production on auxite, alumina and aluminum products. The Authority consented to the transfer, novation and/or assignment of certain of Alcoa's rights and obligations under the parties' 2016 power sale agreement to the company that became Arconic.

Arconic has expressed to the Authority the need for receiving PP under its own contract when the Alcoa agreement expires on March 31, 2019. Arconic intends to continue to operate out of the Alcoa Campus. The company has agreed to commit to employ a minimum of 145 full-time equivalent employees at its facilities for the Term. These positions are among the 600 that Alcoa committed to employ under its 2016 power sale agreement with the Authority. Staff expects that Arconic will also agree to make an annual capital investment at the facilities that would receive the allocation based on recent historic capital spending.

For the foregoing reasons, Staff recommends that the Trustees award an allocation of 5,000 kW of PP to Arconic for the Term, subject to the following contingencies: (1) Arconic agrees to retain 145 full-time equivalent jobs at the facilities at which the allocation would be used for the length of the Term (April 1, 2019 through December 31, 2028); and (2) Arconic agrees to a capital investment commitment that the Authority determines to be acceptable.

4. Public Hearing

Staff intends to discuss the contracts that are attached as Exhibit '5d i-1a-E' and Exhibit '5d i-1a-F' with NAFG and Arconic for the sale of the PP allocations recommended above, and anticipates reaching agreement with these applicants on contracts substantially similar to those attached as Exhibits '5d i-1a-E' and '5d i-1a-F.'

Under PAL §1009, when the Authority believes it has reached agreement with its prospective co-party on a contract for the sale of PP, it will transmit the proposed form of the contract to the Governor and other elected officials, and hold a public hearing on the contract. At least 30-days' notice of the hearing must be given by publication once in each week during such period in each of six selected newspapers. Following the public hearing, the form of the contract may be modified, if advisable. Staff will report to the Board of Trustees on the public hearing and the proposed contract at a later time and make additional recommendations regarding the proposed contract.

Upon approval of the final proposed contract by the Authority, the Authority must 'report' the final proposed contract, along with its recommendations and the public hearing record, to the Governor and other elected officials. Upon approval by the Governor, the Authority is authorized to execute the contract.

Accordingly, the Trustees are requested to authorize a public hearing pursuant to PAL §1009 on Exhibit '5d i-1a-E' and Exhibit '5d i-1a-F' which, along with the corresponding service tariff, would apply to the sale of allocations recommended for NAFG and Arconic.

RECOMMENDATION

The Vice President, Economic Development, recommends that the Trustees:

1. Approve Proposed PP Contract 1 attached as Exhibit '5d i-1a-A' that would, along with a new Authority service tariff ST No. 20, apply to the sale of PP awarded and sold on or after this date to eligible businesses that are not located on the Alcoa Campus.
2. Approve Proposed PP Contract 2 attached as Exhibit '5d i-1a-B' that would, along with a new Authority service tariff ST No. 20-A, apply to the sale of PP awarded and sold on or after this date to eligible businesses that operate facilities located on the Alcoa Campus and to which the Authority would supply/deliver power subject to the exception noted.
3. Approve an allocation of 1,000 kW of PP to NAFG.
4. Approve an allocation of 5,000 kW of PP to Arconic, subject to the contingencies discussed above.
5. Authorize a public hearing, in accordance with PAL §1009, on the contracts attached as Exhibits '5d i-1a-E' and '5d i-1a-F' for the sale of the recommended allocations of PP to NAFG and Arconic.

For the reasons stated, I recommend the approval of the above-requested actions by adoption of the resolution below."

Mr. Keith Hayes, Vice President of Economic Development, provided highlights of staff's recommendations to the Board.

Upon motion made by Vice Chairman Nicandri and seconded by Trustee Trainor, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the form of contract attached as Exhibit "5d i-1a-A" to the foregoing report of the President and Chief Executive Officer ("Report"), and new Authority service tariff designated as Service Tariff No. 20, are approved and shall apply to the sale of Preservation Power ("PP") awarded and sold on or after this date to eligible businesses that are not located on the Alcoa industrial

campus in Massena, New York ("Alcoa Campus"); and be it further

RESOLVED, That the form of contract attached as Exhibit "5d i-1a-B" to the foregoing Report, and new Authority service tariff designated as Service Tariff No 20-A, are approved and shall apply to the sale of PP awarded and sold on or after this date to eligible businesses (1) which operate facilities located on the Alcoa Campus to which the Authority delivers power, and (2) which do not receive electric service under existing Authority Service Tariff No. AL-1 (or any successor tariff); and be it further

RESOLVED, That an allocation of 1,000 kilowatts ("kW") of PP to North American Forest Group Inc. for a term of seven (7) years as detailed in the foregoing Report and Exhibit "5d i-1a-C" be and hereby is approved, subject to rates that will be set forth in Authority Service Tariff No 20; and be it further

RESOLVED, That an allocation of 5,000 kW of PP to Arconic Inc. ("Arconic") for a term to run from April 1, 2019 through December 31, 2028 (the "Term") as detailed in the foregoing Report and Exhibit "5d i-1a-D" be and hereby is approved, subject to rates that will be set forth in Authority Service Tariff No 20-A, and further subject to the following contingencies: (1) Arconic agrees to retain 145 full-time equivalent jobs at the facilities at which the allocation would be used for the length of the Term; and (2) Arconic agrees to a capital investment commitment that the Authority determines to be acceptable; and be it further

RESOLVED, That the Trustees hereby authorize a public hearing pursuant to Public Authorities Law ("PAL") §1009 on the contracts attached to the foregoing Report as Exhibit "5d i-1a-E" and Exhibit "5d i-1a-F" for the sale of PP to NAFG and Arconic, respectively; and be it further

RESOLVED, That the Corporate Secretary be, and hereby is, authorized to transmit a copy of the contracts attached to the accompanying Report as Exhibit "5d i-1a-E" and Exhibit "5d i-1a-F" (collectively, the "Contracts") to the Governor, the Speaker of the Assembly, the Minority Leader of the Assembly, the Chairman of the Assembly Ways and Means Committee, the Temporary President of the Senate, the Minority Leader of the Senate and the Chairman of the Senate Finance Committee pursuant to PAL §1009; and be it further

RESOLVED, That in connection with the proposed Contracts, the Corporate Secretary be, and hereby is, authorized to arrange for the publication of a notice of public hearing in six newspapers throughout the State, in accordance with the provisions of PAL §1009; and be it further

RESOLVED, That the Chairman, the Vice Chair, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

b. Recharge New York Power Allocations

The President and Chief Executive Officer submitted the following report:

“SUMMARY

The Trustees are requested to:

1. award allocations of Recharge New York ('RNY') Power available for 'retention' purposes to the businesses listed in Exhibit '5d i-1b-A' in the amounts indicated on Exhibit '5d i-1b-A';
2. award allocations of RNY Power available for 'expansion' purposes to the businesses listed in Exhibit '5d i-1b-B' in the amounts indicated on Exhibit '5d i-1b-B'; and
3. award allocations of RNY Power available for eligible small businesses and/or not-for-profit corporations to the entities listed in Exhibit '5d i-1b-C' in the amounts indicated on Exhibit '5d i-1b-C.'

These actions have been recommended by the Economic Development Power Allocation Board ('EDPAB') at its December 10, 2018 meeting.

BACKGROUND

On April 14, 2011, Governor Andrew M. Cuomo signed into law the RNY Power Program as part of Chapter 60 (Part CC) of the Laws of 2011 ('Chapter 60'). The program makes available 910 megawatts ('MW') of 'RNY Power,' 50% of which will be provided by the Authority's hydropower resources and 50% of which will be procured by the Authority from other sources. RNY Power contracts can be for a term of up to 7 years in exchange for job and capital investment commitments.

RNY Power is available to businesses and not-for-profit corporations for job retention and business expansion and attraction purposes. Specifically, Chapter 60 provides that at least 350 MW of RNY Power shall be dedicated to facilities in the service territories served by the New York State Electric and Gas, National Grid and Rochester Gas and Electric utility companies; at least 200 MW of RNY Power shall be dedicated to the purpose of attracting new businesses and encouraging expansion of existing businesses statewide; and up to 100 MW shall be dedicated for eligible not-for-profit corporations and eligible small businesses statewide.

Under the statute, 'eligible applicant' is defined to mean an eligible business, eligible small business, or eligible not-for-profit corporation, however, an eligible applicant shall not include retail businesses as defined by EDPAB, including, without limitation, sports venues, gaming or entertainment-related establishments or places of overnight accommodations. At its meeting on April 24, 2012, EDPAB defined a retail business as a business that is primarily used in making retail sales of goods or services to customers who personally visit such facilities to obtain goods or services, consistent with the rules previously promulgated by EDPAB for implementation of the Authority's Economic Development Power program.

Prior to entering into a contract with an eligible applicant for the sale of RNY Power, and prior to the provision of electric service relating to a RNY Power allocation, the Authority must offer each eligible applicant that has received an award of RNY Power the option to decline to purchase the RNY Market Power component of such award. If the applicant declines to purchase the RNY Market Power component from the Authority, the Authority has no responsibility for supplying RNY Market Power component of the award.

As part of Governor Andrew M. Cuomo's initiative to foster business activity and streamline economic development, applications for all statewide economic development programs, including the

RNY Power Program, have been incorporated into a single on-line Consolidated Funding Application ('CFA') marking a fundamental shift in how State economic development resources are marketed and allocated. Beginning in September 2011, the CFA was available to applicants. The CFA continues to serve as an efficient and effective tool to streamline and expedite the State's efforts to generate sustainable economic growth and employment opportunities. All applications that are considered for an RNY Power allocation are submitted through the CFA process.

Applications for RNY Power are subject to a competitive evaluation process and are evaluated based on the following criteria set forth in the statutes providing for the RNY Power Program (the 'RNY Statutes'):

- '(i) the significance of the cost of electricity to the applicant's overall cost of doing business, and the impact that a recharge New York power allocation will have on the applicant's operating costs;
- (ii) the extent to which a recharge New York power allocation will result in new capital investment in the state by the applicant;
- (iii) the extent to which a recharge New York power allocation is consistent with any regional economic development council strategies and priorities;
- (iv) the type and cost of buildings, equipment and facilities to be constructed, enlarged or installed if the applicant were to receive an allocation;
- (v) the applicant's payroll, salaries, benefits and number of jobs at the facility for which a recharge New York power allocation is requested;
- (vi) the number of jobs that will be created or retained within the state in relation to the requested recharge New York power allocation, and the extent to which the applicant will agree to commit to creating or retaining such jobs as a condition to receiving a recharge New York power allocation;
- (vii) whether the applicant, due to the cost of electricity, is at risk of closing or curtailing facilities or operations in the state, relocating facilities or operations out of the state, or losing a significant number of jobs in the state, in the absence of a recharge New York power allocation;
- (viii) the significance of the applicant's facility that would receive the recharge New York power allocation to the economy of the area in which such facility is located;
- (ix) the extent to which the applicant has invested in energy efficiency measures, will agree to participate in or perform energy audits of its facilities, will agree to participate in energy efficiency programs of the authority, or will commit to implement or otherwise make tangible investments in energy efficiency measures as a condition to receiving a recharge New York power allocation;
- (x) whether the applicant receives a hydroelectric power allocation or benefits supported by the sale of hydroelectric power under another program administered in whole or in part by the authority;
- (xi) the extent to which a recharge New York power allocation will result in an advantage for an applicant in relation to the applicant's competitors within the state; and
- (xii) in addition to the foregoing criteria, in the case of a not-for-profit corporation, whether the applicant provides critical services or substantial benefits to the local community in which the facility for which the allocation is requested is located.'

Based on the evaluation of these criteria, the applications were scored and ranked.

In arriving at recommendations for EDPAB's consideration, staff, among other things, attempted to maximize the economic benefits of low-cost NYPA hydropower, the critical state asset at the core of the RNY Power Program, while attempting to ensure that each recipient receives a meaningful RNY Power allocation.

Business applicants with relatively high scores were recommended for allocations of retention RNY Power of 50% of the requested amount or average historic demand, whichever was lower. These allocations were capped at 10 MW for any recommended allocation. Not-for-profit corporation applicants that scored relatively high were recommended for allocations of 33% of the requested amount or average historic demand, whichever was lower. These allocations were capped at 5 MW. Applicants currently receiving hydropower allocations under other Authority power programs were recommended for allocations of RNY Power of 25% of the requested amount, subject to the caps as stated above.

RNY Power allocations have been awarded by the Trustees on twenty prior occasions spanning from April 2012 through August 2018. Of the 200 MW block of RNY Power made available pursuant to Chapter 60 for business 'expansion' purposes, 87.1 MW remain unallocated. Of the 100 MW of RNY Power that is set aside for not-for-profit corporations and small businesses pursuant to Chapter 60, 6.6 MW remain unallocated. Of the remaining RNY Power made available pursuant to Chapter 60, 69.6 MW remain unallocated. These figures reflect Trustee actions on RNY Power applications taken prior to any actions the Trustees take today.

An allocation recommended by EDPAB qualifies the subject applicant to enter into a contract with the Authority for the purchase of the RNY Power assuming that the Authority concurs with EDPAB and makes an allocation award.

At its meeting on October 2, 2018, the Trustees approved a revised form of contract for the sale of RNY Power. The following is a summary of some of the provisions contained in the revised RNY contract:

- Customers would have an obligation to perform an energy audit at the facility that receives the RNY Power allocation during the term of the allocation. Customers would now have the option to satisfy the audit requirement through either a traditional physical audit or a virtual audit using the Authority's New York Energy Manager ('NYEM'). The NYEM option is expected to result in considerable cost savings for customers who select the NYEM option.
- The Authority will periodically communicate with the customer about energy-related projects, programs and services offered by the Authority.
- The contract will obligate the customer to provide supplemental commitments in the areas of job creation/retention, capital investment and power usage. The contract also contains provisions addressing such matters as effective periodic audits of the customer for the purpose of determining contract and program compliance, including supplemental commitments for jobs, capital investment and power utilization, and provides for the partial or complete withdrawal of an RNY Power if the customer fails to maintain mutually agreed upon commitments relating to, among other things, the aforementioned supplemental commitments.
- The contract contains enhanced provisions to address the parties' rights and obligations relating to RNY Power allocations that are provided to support new or expanded facilities.
- The contract incorporates a more developed approach by the Authority to administering the RNY Power program in a manner that the Authority determines is consistent with the State Energy Plan and Clean Energy Standard (as discussed above), and includes provisions for recovery of the Authority's costs for actions that the Authority undertakes for these purposes such as the

purchase of Zero Emission Credits and Renewable Energy Credits in amounts that correspond to the load served under the contract.

As discussed below, EDPAB, at its December 10, 2018 meeting, recommended that each of the applicants identified in Exhibits '5d i-1b-A,' '5d i-1b-B,' and '5d i-1b-C' be awarded an RNY Power allocation in the amount indicated in the respective Exhibits. Consistent with provisions of the RNY Statutes, EDPAB also recommended that the contract for the sale of the Allocations contain:

- (1) provisions for effective periodic audits of the recipient of an allocation for the purpose of determining contract and program compliance, and for the partial or complete withdrawal of an allocation if the recipient fails to maintain commitments, relating to such things as employment levels, power utilization, capital investments, and/or energy efficiency measures;
- (2) requirements for an agreement by the recipient of an allocation, to undertake at its own expense, an energy audit of its facilities at which the allocation is consumed, modified by the Authority on a showing of good cause by the recipient, and that the recipient provide the Authority with a copy of any such audit or a report describing the results of such audit;
- (3) a requirement for an agreement by the recipient of an allocation to make its facilities available at reasonable times and intervals for energy audits and related assessments that the Authority desires to perform; and
- (4) a recommendation shall require that if the actual metered load at the facility where the allocation is utilized is less than the allocation, such allocation will be reduced accordingly.

The terms and conditions in the revised RNY Power contract form are consistent with EDPAB's recommendations.

DISCUSSION

1. Retention-Based RNY Power Allocations – Action Item

The Trustees are asked to address applications submitted via the CFA process for RNY Power retention-based allocations. Unless otherwise indicated in Exhibit '5d i-1b-A,' these applications seek a RNY Power allocation for job retention purposes only.

Consistent with the evaluation process as described above, EDPAB recommended, at its December 10, 2018 meeting, that RNY Power retention allocations be awarded to the businesses listed in Exhibit '5d i-1b-A.' Each business has committed to retain jobs in New York State and to make capital investments at their facilities in exchange for the recommended RNY Power allocations. The RNY Power 'retention' allocations identified in Exhibit '5d i-1b-A' are each recommended for a term of 7 years unless otherwise indicated.

Staff recommends that the Trustees accept EDPAB's recommendations and award RNY Power allocations to each of the businesses listed on Exhibit '5d i-1b-A' in the amounts indicated.

2. Expansion-Based RNY Power Allocations – Action Item

The Trustees are also asked to address applications submitted for RNY Power expansion-based allocations via the CFA process. Allocations for this purpose would be sourced from the 200 MW block of RNY Power dedicated by statute for 'for-profit' businesses that propose to expand existing businesses or create new business in the State. Unless otherwise indicated in Exhibit '5d i-1b-B,' these applications seek a RNY Power allocation for expansion of an existing business or a new business/facility. EDPAB recommended, at its December 10, 2018 meeting, that RNY Power expansion-based allocations be made

to the businesses listed in Exhibit '5d i-1b-B.' Each such allocation would be for a term of 7 years unless otherwise indicated.

As with the evaluation process used for the retention recommendations described above, applications for the expansion-based RNY Power were scored based on the statutory criteria, albeit with a focus on information regarding each applicants' specific project to expand or create their new facility or business (e.g., the expansion project's cost, associated job creation, and new electric load due to the expansion).

The respective amounts of the expansion-related allocations listed in Exhibit '5d i-1b-B' are largely intended to provide approximately 70% of the individual expansion projects' estimated new electric load. Because these projects have estimated new electric load amounts, and to ensure that an applicant's overestimation of the amount needed would not cause that applicant to receive a higher proportion of RNY Power to new load, the allocations in Exhibit '5d i-1b-B' are recommended based on an 'up to' amount basis. Each of these applicants would be required to, among other commitments, add the new electric load as stated in its application, and would be allowed to use up to the amount of their RNY Power allocation in the same proportion of the RNY Power allocation to requested load as stated in Exhibit '5d i-1b-B.'

Staff recommends that the Trustees accept EDPAB's recommendations and award RNY Power allocations to each of the businesses listed on Exhibit '5d i-1b-B' in the amounts indicated.

3. Small Business and/or Not-for-Profit-Based RNY Power Allocations – Action Item

The Trustees are also asked to address applications submitted via the CFA process for RNY Power for eligible small businesses and/or not-for-profit corporations. Chapter 60 specifies that no more than 100 MW of RNY Power may be made available for eligible small businesses and eligible not-for-profit corporations. Consistent with the evaluation process described above, EDPAB recommended, at its December 10, 2018 meeting, that RNY Power allocations be awarded to the small businesses and/or not-for-profit applicants listed in Exhibit '5d i-1b-C.' These applicants have committed to retain or create jobs in New York State and make capital investments to the extent indicated in Exhibit '5d i-1b-C' in exchange for the recommended RNY Power allocations as described in Exhibit '5d i-1b-C.' The RNY Power allocations identified in Exhibit '5d i-1b-C' are recommended for a term of 7 years except as otherwise indicated.

Staff recommends that the Trustees accept EDPAB's recommendations and award RNY Power allocations to each of the not-for-profit entities and/or small businesses listed on Exhibit '5d i-1b-C' in the amounts indicated.

4. EDPAB – Applicants Not Eligible – Informational Item

At its meeting on December 10, 2018, EDPAB determined that the applicants listed on Exhibit '5d i-1b-D' are not eligible to receive a RNY Power allocation for the reasons specified on Exhibit '5d i-1b-D.' No action by the Trustees is required on these applications.

5. EDPAB – Applicants Not Recommended for RNY Power – Informational Item

At its meeting on December 10, 2018, EDPAB determined not to recommend the applicants listed on Exhibit '5d i-1b-E' for a RNY Power allocation for the reasons specified on Exhibit '5d i-1b-E.' No action by the Trustees is required on these applications.

6. EDPAB – Termination of Application/Review Process – Informational Item

At its meeting on December 10, 2018, EDPAB terminated the application review process for the applicants listed on Exhibit '5d i-1b-F' for the reasons listed on Exhibit '5d i-1b-F.' No action by the

Trustees is required on this matter. In the past, some applicants in these circumstances have decided to refile and advance more complete applications for RNY Power.

RECOMMENDATION

The Vice President of Economic Development recommends that the Trustees: (1) award the allocations of RNY Power for retention purposes to the businesses listed in Exhibit '5d i-1b-A' as indicated therein; (2) award the allocations of RNY Power for expansion purposes to the businesses listed in Exhibit '5d i-1b-B' as indicated therein; and (3) award the allocations of RNY Power for the small business and/or not-for-profit applicants identified in Exhibit '5d i-1b-C' for retention and/or expansion purposes as indicated therein.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below."

Mr. Keith Hayes, Vice President of Economic Development, provided highlights of staff's recommendations to the Board.

Upon motion made by Trustee Balboni and seconded by Trustee Trainor, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

WHEREAS, the Economic Development Power Allocation Board ("EDPAB") has recommended that the Authority's Trustees award Recharge New York ("RNY") Power allocations for retention purposes to the applicants listed in Exhibit "5d i-1b-A" in the amounts indicated; and

WHEREAS, EDPAB has recommended that the Authority's Trustees award RNY Power allocations for expansion purposes to the applicants listed in Exhibit "5d i-1b-B" in the amounts indicated; and

WHEREAS, EDPAB has recommended that the Authority's Trustees award RNY Power allocations for retention and expansion purposes to the small businesses and/or not-for-profit applicants listed in Exhibit "5d i-1b-C" in the amounts indicated;

NOW THEREFORE BE IT RESOLVED, That, upon considering the foregoing and the information contained in the report of the President and Chief Executive Officer and the accompanying exhibits, the Trustees hereby:

- (1) award allocations of RNY Power for retention purposes to the applicants listed on Exhibit "5d i-1b-A" in the amounts indicated;**
- (2) award allocations of RNY Power for expansion purposes to the applicants listed on Exhibit "5d i-1b-B" in the amounts indicated; and**
- (3) award allocations of RNY Power for expansion and/or retention purposes to the small businesses and/or not-for-profit applicants listed on Exhibit "5d i-1b-C" in the amounts indicated; and be it further**

RESOLVED, That the Chief Commercial Officer – Energy Solutions, or such official's designee, hereby is, authorized on behalf of the Authority to provide for final terms and conditions that will be applicable to the foregoing allocations and/or projects, including without limitation progress milestones and provisions for the expiration of any allocation in the event that such milestones are not met; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

c. Recharge New York Power - Allocation Extensions

The President and Chief Executive Officer submitted the following report:

"SUMMARY"

The Trustees are requested to authorize the extension of each of the existing 62 allocations of Recharge New York ('RNY') Power ('Allocation' or collectively 'Allocations') awarded to the businesses listed in Exhibit '5d i-1c-A' for a term of 7 years, to commence on the expiration of each such Allocation, or in the Authority's discretion, on a date to be agreed upon by the Authority and the customer for a term not to exceed 7 years (collectively, the 'Extended Term'), subject to the following conditions:

- a) The sale of any Allocation extended as proposed herein will be governed by the new RNY Power contract form approved by the Trustees and their meeting on October 2, 2018 and Authority Service Tariff RNY-1.
- b) A customer whose Allocation would be extended would have to agree to provide supplemental commitments for, among other things, jobs and capital investments, as it has in its current RNY Power agreement(s) with the Authority (collectively, 'Current RNY Power Agreement') for the length of any Extended Term, through the incorporation of such supplemental commitments in the proposed final contract that is executed by the parties. With respect to capital investments, the vast majority of RNY Power customers (i.e., those who do not have project/expansion capital investment commitments) would be expected to meet a minimum capital investment commitment which may be satisfied through capital expenditures made over a five-year period.
- c) The customer is in compliance with its contractual obligations to the Authority under its Current RNY Power Agreement.

As discussed below, the Economic Development Power Allocation Board ('EDPAB'), at its meeting held on December 10, 2018, recommended to the Trustees that each of the Allocations listed on Exhibit '5d i-1c-A' be extended for 7 years as further described herein.

An allocation recommended by EDPAB qualifies the subject applicant to enter into a contract with the Authority for the purchase of the RNY Power assuming that the Authority concurs with EDPAB and makes an allocation award.

BACKGROUND

On April 14, 2011, Governor Andrew M. Cuomo signed into law the RNY Power Program as part of Chapter 60 (Part CC) of the Laws of 2011. The RNY Power Program is codified primarily in Economic Development Law ('EDL') §188-a and Public Authorities Law ('PAL') §1005(13-a) (the 'Statutes'). The program makes available 910 megawatts ('MW') of 'RNY Power,' 50% of which will be provided by the Authority's resources and 50% of which will be procured by the Authority from other sources. RNY Power contracts can be for a term of up to 7 years in exchange for job and capital investment commitments. RNY Power is available to businesses and not-for-profit corporations for job retention and business expansion and attraction.

'Eligible applicant' is defined by statute to mean an eligible business, eligible small business, or eligible not-for-profit corporation, however, an eligible applicant shall not include retail businesses as defined by EDPAB, including, without limitation, sports venues, gaming or entertainment-related establishments or places of overnight accommodations.

RNY Power allocation awards are comprised of 50% hydropower and 50% Authority-procured market power. Prior to entering into a contract with an eligible applicant for the sale of RNY power, and

prior to the provision of electric service relating to the RNY power allocation, the Authority shall offer each eligible applicant the option to decline to purchase the RNY market power component of such allocation. If an eligible applicant declines to purchase the RNY market power component, the Authority has no responsibility for supplying such market power to the eligible applicant.

Under applicable law, applications for RNY Power are first considered by EDPAB. EDPAB is authorized to recommend applicants to the Authority's Trustees that it believes should receive an award of RNY Power based on applicable statutory criteria and other pertinent considerations. The statutory criteria are listed in Exhibit '5d i-1c-B' to this report. An allocation recommended by EDPAB qualifies the subject applicant to enter into a contract with the Authority for the purchase of the RNY Power if the Authority makes an allocation award.

Currently, there are 742 RNY Power customers who have been awarded a collective total of 828 allocations of RNY Power.

At their meeting held on October 2, 2018, the Trustees authorized extensions to 180 RNY Power Allocations. An additional 62 RNY Power Allocations have now been recommended for extensions by EDPAB at their meeting held on December 10, 2018. These customers were among the RNY Power applicants to receive RNY Power applications at the inception of the RNY Power program in 2012.

At its meeting on October 2, 2018, the Trustees approved a revised form of contract for the sale of RNY Power. The following is a summary of some of the provisions contained in the revised RNY contract:

- Customers would have an obligation to perform an energy audit at the facility that receives the RNY Power allocation during the term of the allocation. Customers would now have the option to satisfy the audit requirement through either a traditional physical audit or a virtual audit using the Authority's New York Energy Manager ('NYEM'). The NYEM option is expected to result in considerable cost savings for customers who select the NYEM option.
- The Authority will periodically communicate with the customer about energy-related projects, programs and services offered by the Authority.
- The contract will obligate the customer to provide supplemental commitments in the areas of job creation/retention, capital investment and power usage. The contract also contains provisions addressing such matters as effective periodic audits of the customer for the purpose of determining contract and program compliance, including supplemental commitments for jobs, capital investment and power utilization, and provides for the partial or complete withdrawal of an RNY Power if the customer fails to maintain mutually agreed-upon commitments relating to among other things the aforementioned supplemental commitments.
- The contract contains enhanced provisions to address the parties' rights and obligations relating to RNY Power allocations that are provided to support new or expanded facilities.
- The contract incorporates a more developed approach by the Authority to administering the RNY Power program in a manner that the Authority determines is consistent with the State Energy Plan and Clean Energy Standard (as discussed above), and includes provisions for recovery of the Authority's costs for actions that the Authority undertakes for these purposes such as the purchase of Zero Emission Credits and Renewable Energy Credits in amounts that correspond to the load served under the contract.

The Trustees also determined that RNY Power allocations that are awarded or extended on or after October 2, 2018 will be governed by the revised RNY Power contract form, and Authority Service Tariff RNY-1.

DISCUSSION

1. Extension of Existing Allocations

For the current round of recommendations, Authority staff has reviewed applications from 62 RNY Power customers who have filed applications requesting that their existing RNY Power allocations be extended. Staff has analyzed the applications of the RNY Power customers listed on Exhibit '5d i-1c-A' and a copy of each application has been made available to the Board. Staff's review has included, on a customer-specific basis, consideration of such issues as the amount of each Allocation that would be extended, the supplemental commitments that these customers have made under their Current RNY Power Agreement and are prepared to make as consideration for an extension, and the customer's compliance status under its Current RNY Power Agreement, including its compliance with supplemental commitments for jobs and capital investments.

The businesses listed on Exhibit '5d i-1c-A' which are located throughout the State bring valuable benefits to the State. In total, the Allocations listed in Exhibit '5d i-1c-A' are supporting the retention of some 97,496 jobs and over \$4 billion in capital investments throughout New York State, and the Authority will require customers to commit to the same or substantially similar supplemental commitments for jobs and capital investments that are summarized in Exhibit '5d i-1c-A' for the Extended Term.

At its meeting held on December 10, 2018, EDPAB recommended to the Trustees that each of the Allocations listed on Exhibit '5d i-1c-A' be extended for 7 years as described above. As part of its recommendation that these Allocations be extended, EDPAB, consistent with provisions of applicable Statutes, also recommended that the contract for the sale of the Allocations contain:

- (1) provisions for effective periodic audits of the recipient of an allocation for the purpose of determining contract and program compliance, and for the partial or complete withdrawal of an allocation if the recipient fails to maintain commitments, relating to such things as employment levels, power utilization, capital investments, and/or energy efficiency measures;
- (2) requirements for an agreement by the recipient of an allocation to undertake, at its own expense, an energy audit of its facilities at which the allocation is consumed, modified by the Authority on a showing of good cause by the recipient, and that the recipient provide the Authority with a copy of any such audit or a report describing the results of such audit;
- (3) a requirement for an agreement by the recipient of an allocation to make its facilities available at reasonable times and intervals for energy audits and related assessments that the Authority desires to perform; and
- (4) a recommendation shall require that if the actual metered load at the facility where the allocation is utilized is less than the allocation, such allocation will be reduced accordingly.

Staff believes that an extension of each Allocation listed on Exhibit '5d i-1c-A' is appropriate and is consistent with the statutory criteria that are used to evaluate applications for an award of RNY Power which are listed in Exhibit '5d i-1c-B.' In addition, the terms and conditions in the revised RNY Power contract form is consistent with EDPAB's recommendations.

Based on the foregoing discussion, staff recommends that the Trustees extend the Allocations listed on Exhibit '5d i-1c-A' subject to the following conditions:

- (a) The sale of any Allocation extended as proposed herein will be governed by the new RNY Power contract form approved by the Trustees at their meeting on October 2, 2018 and Authority Service Tariff RNY-1.

- (b) In order to receive an extension of its Allocation, the customer must agree, for the Extended Term, to provide the supplemental commitments for jobs and capital investments that are the same or substantially similar to those that are summarized generally in Exhibit '5d i-1c-A,' through the incorporation of such supplemental commitments in the final contract that is executed by the parties. With respect to capital investments, RNY Power customers who do not have current project/expansion capital investment commitments would be expected to meet a minimum capital investment commitment which may be satisfied through capital expenditures made over a five-year period.
- (c) The customer is in compliance with its contractual obligations to the Authority under its Current RNY Power Agreement.

RECOMMENDATION

The Vice President – Economic Development recommends that the Trustees accept the recommendations of EDPAB, and authorize the extension of each of the existing 62 Allocations of RNY Power for the customers listed on Exhibit '5d i-1c-A' for a term of 7 years to commence on the expiration of the Allocation, or commencing on a date to be agreed-upon by the parties for a term not to exceed 7 years, subject to the following conditions:

- (a) The sale of any Allocation extended, as proposed herein, will be governed by the new RNY Power contract form approved by the Trustees and their meeting on October 2, 2018 and Authority Service Tariff RNY-1.
- (b) In order to receive an extension of its Allocation, the customer must agree, for the Extended Term, to provide supplemental commitments for jobs and capital investment that are the same or substantially similar to those that are summarized in Exhibit '5d i-1c-A,' through the incorporation of such supplemental commitments in the final contract that is executed by the parties. With respect to capital investments, RNY Power customers who do not have ongoing project/expansion capital investment commitments would be required to meet a minimum capital investment commitment which may be satisfied through capital expenditures made over a five-year period.
- (c) The customer is in compliance with its contractual obligations to the Authority under its Current RNY Power Agreement.

For the reasons stated, I recommend the approval of the above-requested action by adoption the resolution below."

Mr. Keith Hayes, Vice President of Economic Development, provided highlights of staff's recommendations to the Board.

Upon motion made by Trustee Balboni and seconded by Trustee Trainor, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the Trustees hereby accept the recommendations of the Economic Development Power Allocation Board and approve the extension of each of the existing 62 RNY Power allocations ("Allocation" or collectively "Allocations") previously awarded to the customers listed in Exhibit "5d i-1c-A" for a term of 7 years, to commence on (1) the expiration of the term of the Allocation, or (2) in the Authority's discretion, commencing on a date to be agreed-upon by the Authority and the

customer for a term not to exceed 7 years (collectively, the 'Extended Term'), subject to the following conditions:

- (a) the sale of the Allocations as extended hereunder shall be made under the revised contract form previously approved by the Board and Authority Service Tariff RNY-1;
- (b) in order to receive an extension of its Allocation, the customer agrees to provide the supplemental commitments for jobs, capital investment and power utilization that are the same or determined by the Authority to be substantially similar to those contained in Exhibit "5d i-1c-A" for the Extended Term, through the incorporation of such supplemental commitments in the final contract that is executed by the parties, and RNY Power customers who do not have an ongoing project/expansion capital investment commitment shall meet a minimum capital investment commitment which may be satisfied through capital expenditures made over a five-year period; and
- (c) that customer is in compliance with its contractual obligations to the Authority under its current RNY Power agreement(s) with the Authority; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

d. Award of Fund Benefits from the Northern New York Economic Development Fund Recommended by the Northern New York Power Proceeds Allocation Board

The President and Chief Executive Officer submitted the following report:

"SUMMARY

The Trustees are requested to accept the recommendations of the Northern New York Power Proceeds Allocation Board (the 'Allocation Board') and make awards of Fund Benefits from the Northern New York Economic Development Fund to Queenaire Technologies, Inc. ('Queenaire'), and St. Lawrence County Chamber of Commerce, Inc. ('SLC Chamber'), and authorize the other actions described herein with respect to the applicants and recommended awards. The applicants' projects and the amount of the awards being recommended are summarized in Exhibit '5d i-1d-A' and are discussed in further detail below and in Exhibits '5d i-1d-A-1' and '5d i-1d-A-2.'

BACKGROUND

1. Northern New York Power Proceeds Allocation Act

On December 29, 2014, Governor Cuomo signed into law the Northern New York Power Proceeds Allocation Act (the 'Act'). The Act adds provisions to two chapters of consolidated law, the Economic Development Law ('EDL'), and the Public Authorities Law within the Power Authority Act, the enabling statute of the New York Power Authority ('NYPA') (collectively, the 'Statutes'). As discussed in more detail below, the Act creates a program, administered by NYPA and the Board, to support economic development in Northern New York ('Program'). Under the Program, financial assistance known as 'fund benefits' may be awarded to 'eligible applicants' for 'eligible projects' based on criteria set forth in the Statutes.

Under the Act, an 'eligible applicant' is a private business, including a not-for-profit corporation that is a private business. 'Eligible projects' is defined to mean 'economic development projects' that are or would be physically located within St. Lawrence County that will support the growth of business in St. Lawrence County and thereby lead to the creation or maintenance of jobs and tax revenues for the state and local governments. 'Eligible projects' include, for example, capital investments in buildings, equipment, and associated infrastructure owned by an eligible applicant; transportation projects under state or federally approved plans; the acquisition of land needed for infrastructure; research and development where the results of such research and development will directly benefit New York State; support for tourism and marketing and advertising efforts for St. Lawrence County tourism and business; and energy-related projects.

Eligible projects do not include, and fund benefits may not be used for, public interest advertising or advocacy; lobbying; the support or opposition of any candidate for public office; the support or opposition to any public issue; legal fees related to litigation of any kind; expenses related to administrative proceedings before state or local agencies; or retail businesses as defined by the board, including without limitation, sports venues, gaming and gambling or entertainment-related establishments, residential properties, or places of overnight accommodation.

NYPA and the Town of Massena Electric Department are parties to a contract that provides for NYPA's sale of up to 20 megawatts ('MW') of hydropower known as 'St. Lawrence County Economic Development Power' ('SLCEDP') to the Town. As detailed in the Statutes, NYPA is authorized to sell unallocated SLCEDP into the market to generate revenue for the Program. The Statutes provide that NYPA will deposit proceeds from such sales into the Fund no less than quarterly.

At least 15% percent of the Fund is dedicated to eligible projects which are 'energy-related projects, programs and services,' which are defined as 'energy efficiency projects and services, clean

energy technology projects and services, and high performance and sustainable building programs and services, and the construction, installation and/or operation of facilities or equipment done in connection with any such projects, programs or services.'

Monies from the Fund – known as 'fund benefits' – are paid to awardees in the form of grants, and staff expects that, in most cases, fund benefits will be disbursed as reimbursement for expenses incurred by an awardee. Allocations of fund benefits may only be made on the basis of monies that have been deposited in the Fund. No award may encumber funds that have not been deposited in the Fund.

2. Northern New York Power Proceeds Allocation Board

Under the Act, the Allocation Board's primary responsibilities regarding applications for fund benefits under the Program are to (i) administer the application process, (ii) make determinations relating to eligibility, and (iii) where an applicant and project are eligible, evaluate applications against the statutory criteria and make a recommendation to the NYPA Board of Trustees on whether an applicant should be awarded fund benefits. The Allocation Board uses the criteria applicable to EP, RP and PP allocations, and for revitalization of industry, provided for in Public Authorities Law § 1005.

Additionally, the Allocation Board is authorized to consider the extent to which an award of fund benefits is consistent with the strategies and priorities of the North Country Regional Economic Development Council, which covers the region in which an eligible projects may be proposed.

At its meeting on January 25, 2017, the Allocation Board, in accordance with the Act, adopted by-laws, operating procedures, guidelines related to the application, and a form of application. A copy of the relevant criteria (collectively, 'Program Criteria'), adapted from the Allocation Board's 'Procedures for the Review of Applications for Fund Benefits,' is attached as Exhibit '5d i-1d-B' to this report.

Under the Act, a recommendation for Fund Benefits by the Allocation Board is a prerequisite to an award of Fund Benefits by the Authority, and the Act authorizes the Authority to award Fund Benefits to an applicant upon a recommendation of the Allocation Board. Upon a showing of good cause, the Authority has discretion as to whether to adopt the Allocation Board's recommendation, or to award benefits in a different amount or on different terms and conditions than proposed by the Allocation Board. In addition, the Authority is authorized to include within the contract covering an award ('Award Contract') such other terms and conditions the Authority deems appropriate.

3. Application Process

In an effort to provide for the efficient review of applications and disbursement of Fund Benefits, the Allocation Board established a schedule of dates through the end of 2019 on which the Allocation Board would meet to consider applications. At this time, applications are being accepted on a rolling basis. A webpage was created that is hosted on WWW.NYPA.GOV/NNYPPAB with application instructions, a link to the approved application form and other program details including a contact phone number and email address staffed by NYPA.

DISCUSSION

At its October 10, 2018 meeting, the Allocation Board considered applications from (1) Queenaire, seeking \$59,600 in Fund Benefits, and (2) the SLC Chamber, seeking \$220,305 in Fund Benefits.

Allocation Board staff analyzed the applications and made recommendations to the Allocation Board based on eligibility requirements and Program Criteria. The applicable criteria are described in Exhibit '5d i-1d-B.' Copies of the recommendation memoranda provided to the Allocation Board for Queenaire and SLC Chamber are attached as Exhibits '5d i-1d-A-1' and 'A-2,' respectively. The applications themselves have also been made available to the Trustees for review.

As detailed in Exhibit '5d i-1d-A-1,' the Queenaire application seeks Fund Benefits to support a building expansion, the purchase of machinery and equipment and reimbursement of other costs related to its proposed project to develop a new product line. The applicant indicates that as part of the project it would create 6 full time positions over 3 years and that it would spend approximately \$298,000 on this project.

As detailed in Exhibit '5d i-1d-A-2,' the SLC Chamber application seeks Fund Benefits to support the creation of a Tourism and Events Division. The Division would be used to coordinate existing tourism-related events and leverage them to create new events focused on year round recreational tourism prospects presented by the County's natural resources. Project costs include event and tournament productions, and other soft costs. The applicant indicates that as part of the project it would create 1 full time position over 3 years and that it would spend approximately \$1.1M on this project.

The Allocation Board has recommended that these applicants receive a Fund Benefit award in the amounts indicated on Exhibit '5d i-1d-A.' Given the nascent stage of the proposed projects, it was not possible to make recommendations concerning the terms and conditions that would be applicable to the awards and memorialized in an Award Contract between the Authority and the applicants.

If these applicants receive a Fund Benefit award, it is anticipated that Authority staff would negotiate final terms and conditions with the applicants after receipt of more detailed information concerning the projects and proposed schedules. Award Contracts may include scheduled payments keyed to commitment milestones, such as employment creation and retention. In addition, staff anticipates that Award Contracts will contain provisions for periodic audits of the successful applicants for the purpose of determining contract and program compliance and, where appropriate, terms providing for the partial or complete recapture of Fund Benefits disbursements if an applicant fails to maintain agreed-upon commitments.

RECOMMENDATION

The Vice President – Economic Development recommends that:

- (1) the Trustees accept the recommendations of the Allocation Board and make awards of Fund Benefits to Queenaire in the amount recommended in Exhibit '5d i-1d-A-1,' and to the SLC Chamber in the amount proposed in Exhibit '5d i-1d-A-2,' conditioned upon an agreement to be negotiated with the applicants on the final terms and conditions that would be applicable to the awards to be contained in the Award Contract approved by the President and Chief Executive Officer, or his designee, and approved by the Executive Vice President and General Counsel, or his designee, as to form;
- (2) the Chief Commercial Officer – Energy Solutions, or such official's designee, be authorized to negotiate with the applicants concerning such final terms and conditions that will be applicable to the awards; and
- (3) the Chief Commercial Officer – Energy Solutions, or such official's designee, be authorized to execute on behalf of the Authority an Award Contract for the awards listed on Exhibit '5d i-1d-A' subject to the foregoing conditions.

For the reasons stated, I recommend the approval of the above-requested actions by adoption of the resolution below."

Mr. Keith Hayes, Vice President of Economic Development, provided highlights of staff's recommendations to the Board.

Upon motion made by Trustee Balboni and seconded by Trustee Trainor, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

WHEREAS, The Northern New York Power Proceeds Allocation Board ("Allocation Board") has recommended that the Authority make an award of Fund Benefits from the Northern New York Economic Development Fund ("Fund") to the eligible applicants listed in Exhibit "5d i-1d-A" in the amounts indicated in Exhibit "5d i-1d-A";

NOW THEREFORE BE IT RESOLVED, That the Authority hereby accepts the recommendations of the Allocation Board and authorizes an award of Fund Benefits to the applicants listed in Exhibit "5d i-1d-A" in the amounts indicated for the reasons set forth in the foregoing report and the exhibits and other information referred to therein, conditioned upon an agreement between the Authority and each applicant on the final terms and conditions that would be applicable to the award and set forth in a written award contract ("Award Contract") between the Authority and each applicant, approved by the President and Chief Executive Officer, or his designee, and approved by the Executive Vice President and General Counsel or his designee, as to form; and be it further

RESOLVED, That the Chief Commercial Officer – Energy Solutions, or such official's designee, is authorized to negotiate with the applicants concerning such final terms and conditions that will be applicable to the award; and be it further

RESOLVED, That the Chief Commercial Officer – Energy Solutions, or such official's designee, is authorized to execute on behalf of the Authority an Award Contract for the awards listed on Exhibit "5d i-1d-A" subject to the foregoing conditions; and be it further

RESOLVED, That the Chairman, the Vice Chairman, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

e. **Flexibility Moonshot:**

i. **New York Power Authority Flexibility Initiative: Phase 1**

Mr. Doug McMahon, Vice President of Strategy, provided highlights of the Flexibility Moonshot initiative to the Board. He said that following the Authority's announcements on Electric Vehicles and Offshore Wind earlier this year, he is introducing another new proposed area of investment as NYPA continues to demonstrate its commitment to the state and its customers' clean energy goals.

Flexibility

As the Authority moves toward a more intermittent renewable generation future, new challenges with regard to the grid system's efficiency will emerge.

A more flexible grid will play a critical role in achieving the state's energy goals. Building out carbon free flexibility into the energy grid, particularly in the forms of storage and demand management, will have a significant influence on not only the de-carbonization of the energy system, but also on the affordability of clean renewable electricity in New York State.

The compensation and regulatory mechanisms for carbon free flexibility is still emerging because the flexibility tools at the Authority's disposal will have a profound impact on the way the grid is planned and operated.

With the advancement in data controls, software, and communications, there is greater ability to reduce or shift the demand for electricity. The grid no longer solely has to manage uncertainty and demand by building excess generation, but, instead, can start to match demand to the natural behaviors of renewable supply such as solar, wind and battery storage which can be deployed when the energy system and consumers need it the most.

Carbon free flexibility can, not only achieve the state's de-carbonization goals, but also REV, and, in particular, ensuring a renewable energy system that is affordable. To that end, NYSERDA has recently launched an energy storage road map that will put in place 1,500 megawatts of storage by 2025.

NYPA has also undertaken some independent market analysis over the last few months for flexibility products and services. This also suggests a significant growth in the carbon free flexibility market by 2025, in particular, Renewals Smoothing and Firming, when the market is likely to place a high value on products and services that fill shortfalls in renewables and when the sun is not shining, and the wind not blowing. The other areas are Grid Reliability and Capacity Utilization, improving utilization of renewable energy resources, maximizing the value that each kilowatt of bulk and distribution clean energy resource delivers to the grid.

There are, however, barriers preventing market acceleration for carbon free flexibility that are preventing the acceleration of this market.

To be able to implement the necessary amount of carbon free flexibility to support the state's clean energy goals, market evolution is required. There are new market rules and mechanisms currently in development that will provide opportunities for storage and demand flexibility participants to be adequately compensated.

There is an opportunity for NYPA to help accelerate the development of these market rules by:

- 1) Demonstrating ways in which storage and demand flexibility can draw on the emerging value streams and de-risk investment to the private sector.
- 2) Reducing the operational risks of integrating new technologies and software into the electricity system.

- 3) Value stacking flexibility services and products; and
- 4) Addressing some of the operational challenges of high renewable penetration on the electricity system before it actually becomes a material issue.

For each project implemented, NYPA will demonstrate the capabilities storage and demand management can provide the grid and what value they can create. More importantly, NYPA will demonstrate how that value will be compensated.

NYPA will test various approaches and business models to see how that value needs to be compensated in the future so that tools such as storage, demand response, and demand flexibility can be financeable at scale.

The key areas of opportunities for storage in the grid include:

- 1) the opportunity to demonstrate the value of deploying storage and demand flexibility to defer, reduce, and avoid investment in the bulk and distribution grid caused by locational congestion, and retiring plants and infrastructure; and
- 2) optimizing the role behind the meter read customer energy resources such as solar and storage, and flexible building loads such as HVAC and heating can play in supporting a clean renewable energy system; and to simplify the role that these resources play in both the distribution and the NYISO markets.

In addition, there are significant opportunities to demonstrate the value of pairing storage and renewables for longer intermittency durations including:

- 1) Looking at emerging forms of storage technology, such as flow batteries.
- 2) Building flexibility into the generation transmission system to balance the different geographical locations of renewables; and
- 3) Exploring longer duration demand flexibility beyond the services currently provided in the market today.

Each of these investment areas will be applied to opportunities across the bolt grid and the distribution grid.

NYPA will work to accelerate the market in the following ways:

- 1) Open Innovation

NYPA will invite 7 New York State distribution utilities, and 51 municipal cooperatives to conduct test-and-learn demonstrations with NYPA using an open-innovation process.

NYPA will provide complete transparency around design, development and operation, and perform some of these projects. This way, the experience and lessons learned from these projects could be applied to help develop appropriate market signals and regulatory rules to properly compensate the value streams provided by storage and demand flexibility.

- 2) Lead by Example

Utilizing NYSERDA's Energy Storage road map, NYPA will continue to lead the state's efforts in delivering energy services, including storage and demand flexibility to its public sector customers.

3) Partnership and Collaboration

NYPA plans to find mutually-beneficial ways of complimenting its strengths with third-party technology and service providers.

As part of an overall five-year plan to accelerate storage and demand flexibility, NYPA projects include a 20-megawatt project (Generation & Transmission); a small demand response test-and-learn project that will be utilized on the New York Energy Manager platform, and some distribution and customer-sided projects.

Next Steps

- Successfully launch Phase 1 Flexibility projects, and evaluate progress.
- Mobilize a cross-functional Flexibility team.
- Finalize business cases and identify initial locations for the first set of projects.
- Continue focused collaboration discussions with utilities and other public and private sector entities.

ii. **New York Power Authority Flexibility Initiative:
Phase 1 – Funding Request for Three Areas of
Investment to Accelerate the Carbon Free Flexibility Market**

The President and Chief Executive Officer submitted the following report:

SUMMARY

The Trustees are requested to authorize an investment of \$65 million to be used for the deployment of three Phase 1 Carbon Free Flexibility Initiative programs between now and end of 2020 ('Phase I Flexibility Initiative' or the 'Initiative'). The three Phase 1 Flexibility Initiative programs will comprise the following: (1) deployment of storage and demand flexibility to defer, reduce or remove grid investments caused by locational congestion or retiring plants and infrastructure; (2) optimizing the role that behind the meter customer energy resources and buildings can play in supporting a clean, renewable energy system; and (3) implementing storage and longer duration demand flexibility to address longer periods of renewables intermittency. Additional funding of up to a total of \$250 million, including this request, will be sought for additional projects as warranted.

BACKGROUND

Over the next few years, the Authority is seeking to accelerate the building out of carbon free grid flexibility capability consistent the Authority's enabling legislation and the Governor's renewable energy and greenhouse gas ('GHG') targets.

Building carbon free flexibility into the energy grid in the form of storage, demand response and load shifting will be critical to ensure that wind and solar resources are efficiently integrated into the state's energy system. Deploying these tools will allow the energy system to be more flexible with how and when clean energy is consumed and produced, meaning to assure a better match between energy consumption and the natural generation patterns of renewables. NYSERDA has identified the importance of storage in achieving the state's clean energy goals and has created a roadmap that outlines the path to 1500MW of storage in New York by 2025.

This first phase of investment is specifically aimed at accelerating the storage and demand flexibility market, demonstrating clarity regarding where flexibility tools can provide value to the grid and how best to compensate participants for the value created.

This Authority's initiative will support the Governor's State Energy Plan goals of reducing statewide GHG emissions by 40% below 1990 levels by 2030, and integrating approximately 30% of solar and wind as part of the 2030 50% renewable generation target. To that end, the Authority, consistent with its enabling legislation, will collaborate with other public agencies, New York utilities and eligible private sector participants to accelerate the flexibility market.

DISCUSSION

The Authority aims to increase the amount of carbon free flexibility on the grid and help the state meet its greenhouse gas reduction and renewables goals by reducing key barriers to implementation such as complicated and emerging market mechanisms required to ensure storage and demand flexibility participants get adequately compensated, and high technology and soft costs.

As part of this first phase of investment, the Authority plans to implement a series of 'test and learn' projects. The Authority will focus these 'test and learn' projects on three key areas of flexibility opportunity:

1. Grid Investment Deferral: Identify and demonstrate opportunities to defer, reduce or remove investments caused by locational congestion or retiring plants and infrastructure.

2. Grid Monetization of Distributed Energy Resources: Optimize the role that behind the meter customer energy resources and buildings can play in supporting a clean, renewable energy system – simplify the role that these resources play in the New York energy markets.
3. Renewables Smoothing and Firming: Pair storage and renewables for longer intermittency durations, build flexibility into the G&T system to balance different geographical locations of renewables and explore longer duration demand flexibility.

FISCAL INFORMATION

Subject to future Trustee approvals, the \$65 million Phase 1 program will be funded from the Authority's Operating Fund.

RECOMMENDATION

The Chief Financial Officer and the Vice President - Strategy recommend that the Trustees approve Phase I of the Carbon Free Flexibility Initiative as described above.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below.

Mr. Doug McMahon presented the highlights of staff's recommendations to the Trustees. Mr. McMahon confirmed that staff was presently seeking Trustee programmatic and financial scope approval of the Carbon Free Flexibility Initiative. At future Trustee meetings, staff will request approval of specific programs and projects.

Upon motion made by Vice Chairman Nicandri and seconded by Trustee McKibben, the following resolution, as submitted by the President and Chief Executive Officer, was unanimously adopted.

RESOLVED, That the Trustees hereby approve the development of the Carbon Free Flexibility Initiative between now and the end of 2025 at a cost of up to \$250 million. Subject to future Trustee action, Phase 1 of this Initiative will represent an investment of \$65 million to be used between now and the end of 2020. Subsequent approvals will be required for additional Initiative programs and projects. The initial \$65 million Phase 1 will be deployed across three areas of investment: (1) deployment of storage and demand flexibility to defer, reduce or remove grid investments caused by locational congestion or retiring plants and infrastructure, (2) optimizing the role that behind the meter customer energy resources and buildings can play in supporting a clean, renewable energy system, and (3) implementing storage and longer duration demand flexibility to address longer periods of renewables intermittency, with the authorized funds being utilized over a four-year period for the Initiative as described in the foregoing report of the President and Chief Executive Officer; and be it further

RESOLVED, That the Chairman, the Vice Chair, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each

December 11, 2018

of them hereby is, authorized on behalf of the Authority to do any and all things, take any and all actions and execute and deliver any and all agreements, certificates and other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.

6. Board Committee Report

a. Audit Committee

Committee Chair, Eugene Nicandri reported that the Audit Committee of the Power Authority and Canal Corporation (“Canals”) met earlier this morning. The members adopted the Minutes of the last meeting; received an Internal Audit activity report; and reviewed and approved the 2019 Internal Audit Plan for NYPA and Canals, as well as the 2019 Internal Audit budget.

7. **Next Meeting**

The Regular meeting of the Trustees will be held on January 30, 2019 **at the Clarence D. Rappleyea Building, White Plains, New York**, unless otherwise designated by the Chairman with the concurrence of the Trustees.

Closing

Upon motion made by Member Dennis Trainor and seconded by Member Tracy McKibben, the meeting was adjourned at approximately 12: 52 p.m.

Karen Delince

Karen Delince
Corporate Secretary



SUSTAINABILITY PLAN | 2019-2023



**NY Power
Authority**



SUSTAINABILITY AT THE NEW YORK POWER AUTHORITY

Sustainability is defined as an approach to development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Corporate sustainability is accordingly a business strategy that manages economic, social and environmental performance for long-term value creation. As a clean energy provider, the New York Power Authority (NYPA) is seeking to demonstrate sustainability leadership in every aspect of its business by taking a comprehensive approach to sustainability management and integrating sustainability principles into day-to-day decision-making.

■ ABOUT THIS PLAN

This enterprise-wide Sustainability Plan adheres to and implements NYPA's Sustainability Policy. The Plan recognizes and advances sustainability efforts from business units and departments across NYPA. The Sustainability group developed the plan with guidance from NYPA's Sustainability Advisory Council, key stakeholders and subject matter experts. The Sustainability group will coordinate and work with cross-functional teams from all facilities to ensure projects and initiatives identified in each section of the Plan are implemented.

CONTENTS

INTRODUCTION	4
GOVERNANCE	6
MANAGING AND COMMUNICATING PERFORMANCE	8
CLIMATE ASSESSMENT AND ADAPTATION	10
GENERATION, TRANSMISSION AND SUPPLY	12
CUSTOMER, MARKET AND PUBLIC-FACING PROGRAMS	15
BUILDINGS	16
TRANSPORTATION	18
WATER EFFICIENCY	21
SUPPLY CHAIN	22
MATERIALS AND WASTE	24
ECOSYSTEMS AND BIODIVERSITY	26
STAKEHOLDER ENGAGEMENT	28
APPENDIX	31



INTRODUCTION

SUSTAINABILITY PLAN OVERVIEW

This enterprise-wide Sustainability Plan reflects the New York Power Authority's core values and supports its Strategic Vision. The overarching goals of the Plan are aligned with NYPA's decarbonization strategy and New York State's clean energy and climate policies and Executive Orders.

The Plan addresses internal operations as well as customer and public-facing programs. Internal operations includes generation and transmission, buildings, transportation, supply chain, materials and waste, water and land. The customer and public-facing programs include energy efficiency, renewable energy, energy storage and transportation electrification.

OVERARCHING GOALS

1. Support climate stabilization at 1.5 degrees and establish strategies to address greenhouse gas emissions and the impacts of climate change across NYPA's value chain
2. Meet and exceed New York State's goal to reduce greenhouse gas emissions 40% by 2030 across NYPA's electricity supply, administrative/support buildings and vehicle fleet
3. Reduce energy use and improve resource efficiency across NYPA operations
4. Protect and conserve natural resources, including water and land, across NYPA operations and supply chain
5. Lead by example in sustainability and accelerate adoption of sustainable technologies, processes and behaviors by showcasing NYPA's efforts

EXECUTIVE ORDER

166

- Issued in 2017
- Upholds Paris climate agreement
- Directs state entities to take action to meet 40x30 and 80x50 greenhouse gas reduction goals
 - Mitigate operational GHG emissions from all sources
- Develop public-facing programs to accelerate adoption of new technologies



MAPPING PATHWAYS TO DECARBONIZATION

The Intergovernmental Panel on Climate Change (IPCC)¹ recently issued a special report indicating that a temperature rise of 1.5 degrees Celsius above preindustrial levels could have devastating impacts on society and ecosystems at the global level. Global warming is projected to reach 1.5 degrees C between 2030 and 2052 if warming continues to increase at the current rate. Limiting temperature rise to 1.5 degrees is still possible but will require “rapid and far reaching transitions in energy, land, infrastructure (including transport and buildings), and industrial systems.” The report summarizes a range of behavioral changes and technological advancements that will be needed across all emitting sectors, including:

- Rapid and profound decarbonization of the energy sector
- End-use energy-efficiency in all sectors
- Switching from fossil fuels to electricity in end-use sectors
- Ecosystem-based adaptation, restoration, avoided degradation and deforestation, and biodiversity management
- Coastal defense and hardening
- Education and outreach to accelerate behavior change

Governor Cuomo has set ambitious goals to reduce statewide greenhouse gas (GHG) emissions 40% by 2030 (40x30) and 80% by 2050 (80x50) from 1990 levels. In response to US withdrawal from the Paris Agreement on climate change, the Governor issued Executive Order (EO) 166, which directs state entities to lead by example in reducing operational GHG emissions and accelerate market transformation through public-facing programs. EO166 identifies pathways to achieving state 40x30 goals that align with IPCC guidance.

NYPA is implementing these strategies internally and with its customers, and is also developing public-facing programs to accelerate market transformation. This Sustainability Plan presents a framework to measure the impact of NYPA’s internal, customer and public-facing programs and track progress towards achieving New York State’s goals.

¹ The IPCC is an intergovernmental body of the United Nations, dedicated to providing an objective, scientific view of climate change and its political and economic impacts.

EO 166

DECARBONIZATION PATHWAYS

- Increase electric generation from renewable sources to 50% by 2030 (Clean Energy Standard)
- Reduce building energy use by 23% by 2030 through building shell and end-use equipment upgrades
- Increase air- and ground-source heat-pump sales to majority of heating/cooling equipment sales by 2030
- Increase light-duty electric vehicle sales to 20% by 2030, accelerate to 90% by 2050
- Reduce vehicle miles travelled by fossil-fuel vehicles through smart growth and other strategies
- Make advanced biofuels from sustainable feed stocks part of the transportation fuel mix



GOVERNANCE

COMPANY SUSTAINABILITY POLICY

The NYPA Sustainability Policy establishes NYPA's Sustainability Program and defines responsibilities for planning, executing, monitoring and reporting. The Sustainability Program identifies and sets sustainability goals and targets that focus on energy efficiency, greenhouse gas reductions, and sustainable resource and asset management practices. The Sustainability Policy calls for the creation of long-term and annual action plans to ensure the goals and targets are reached.

Strong and inclusive governance structures are essential to ensure the successful implementation of the Sustainability Plan. In order to fully integrate sustainability into NYPA's operations, the NYPA Executive Management Committee (EMC) will oversee the achievement of the goals identified in the Plan. The following individuals are responsible for oversight and implementation:

- The Senior Vice President Public & Regulatory Affairs has oversight of the NYPA Sustainability Policy and the NYPA Sustainability Plan, and as such serves as NYPA's Chief Sustainability Officer.
- The Vice President Environmental Justice & Sustainability has direct oversight of the NYPA Sustainability Plan and implementation milestones.
- The Director of Sustainability is responsible for overall development of the Sustainability Plan, including engagement with the NYPA Sustainability Advisory Council and business units on plan implementation, performance management and reporting.
- The Utility Operations Asset Management group is responsible for the integration of goals and key performance indicators into Regional NYPA Asset Management Plans.
- Regional Managers and other members of the Sustainability Advisory Council are responsible for identifying subject matter experts to support the implementation of projects and initiatives identified in the Sustainability Plan.

SUSTAINABILITY ADVISORY COUNCIL

The Sustainability Advisory Council (SAC) serves as the collaborative body to advise on the NYPA Sustainability Program and the development and implementation of the Sustainability Plan. Advisory Council members work with the Director of Sustainability to identify goals and targets, develop and implement plans to ensure goals are met, and where necessary, create or revise facility/department policies and/or procedures to support plan implementation.

The Advisory Council will meet quarterly to increase coordination among business units, communicate progress, and drive continuous improvement. The Sustainability Advisory Council consists of representatives (vice president or equivalent) identified in the table on the adjacent page.



ANNUAL ACTION PLANS AND PROGRESS REPORTS

The Sustainability group will prepare annual action plans based on the goals, strategies and action items identified in this Plan. The Sustainability group will also produce annual progress reports that include all activities and results for the previous year.

PROGRAM IMPLEMENTATION

The Sustainability Plan develops and expands the Sustainability Program in key areas. Funds for Plan implementation will be included in the annual Program budget. Projects will be implemented by staff at each site. In cases where NYPA staff is not available, NYPA will contract for outside services.

GOALS STRATEGIES ACTIONS		2019	2020	2021	2022	2023
GOALS	ENSURE SUCCESSFUL IMPLEMENTATION OF SUSTAINABILITY PLAN					
STRATEGY	ESTABLISH GOVERNANCE STRUCTURES AND PROCESSES					
ACTIONS	Create SAC charter and establish roles and responsibilities	●				
	Prepare annual action plans	●	●	●	●	●
	Review/reassess goals and revise if necessary			●		
	Schedule quarterly meetings of Sustainability Advisory Council	●	●	●	●	●
	Prepare annual progress reports	●	●	●	●	●
	Prepare and track annual Sustainability Plan budget	●	●	●	●	●
	Incorporate plan goals in Regional Asset Management Plans	●		●		

MEMBERS OF THE SUSTAINABILITY ADVISORY COUNCIL

PUBLIC & REGULATORY AFFAIRS Environmental Justice & Sustainability Community & Government Relations HR & ENTERPRISE SHARED SERVICES Enterprise Shared Services HR & Organizational Development LAW Relicensing & Implementation	COMMERCIAL OPERATIONS Project & Business Development Clean Energy Business & Market Development Energy Efficiency Economic Development New York Energy Manager Energy Resource Management RISK MANAGEMENT Enterprise Risk Management	UTILITY OPERATIONS NIA STL CEC BG SENY Environment, Health & Safety Engineering Project Management BUSINESS SERVICES Strategic Supply Management Financial Operations Strategy



MANAGING AND COMMUNICATING PERFORMANCE

The Sustainability group collects and analyzes all sustainability performance data, monitors and reports progress towards sustainability targets, and works with the Sustainability Advisory Council, subject matter experts and project leads to keep the programs on track.

CORPORATE SCORECARD

Sustainability targets and metrics will be integrated into the corporate scorecard. This will reinforce NYPA's drive for continuous improvement. Key performance areas that will be integrated into the scorecard in 2019 include:

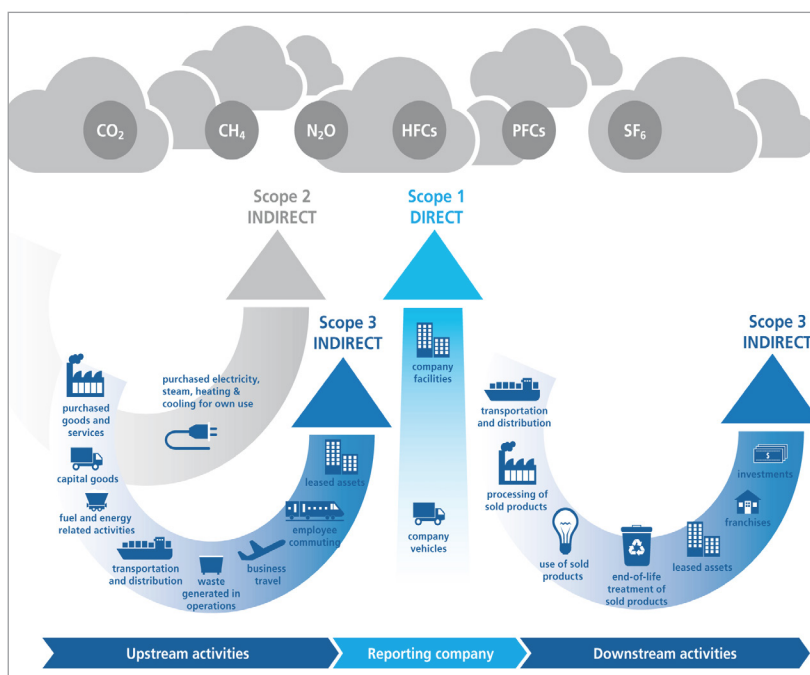
- Carbon emission reduction goals for NYPA's electricity supply
- Energy and carbon emission reduction goals for NYPA administrative/support buildings
- Carbon emission reduction and vehicle electrification goals for NYPA's light-duty vehicle fleet
- Carbon emission reduction goals for NYPA's customer and public-facing programs

As targets and metrics are established for new program areas, they will be integrated into the scorecard.

COMPREHENSIVE GHG INVENTORY

NYPA voluntarily reports annual greenhouse gas emissions to The Climate Registry (TCR). Current reporting includes GHG emissions from stationary combustion of fuels (power plants, building heating systems), transportation (vehicle fleet), and sulfur hexafluoride (SF₆) associated with electrical equipment.

The plan expands reporting to meet the full reporting requirements of TCR in accordance with best practice in the electricity sector. This includes GHG emissions associated with NYPA's electricity sales (owned, contracted and wholesale market purchases) and transmission line losses. NYPA will also respond to the CDP¹ Climate Change Questionnaire for annual New York State EO166 reporting.



¹ The Climate Registry is a non-profit that operates a GHG reporting program for US states.

² CDP is a non-profit organization that runs a global reporting system for companies, cities, states and regions to manage their environmental performance.

SUSTAINABILITY DASHBOARD

The Sustainability group leverages existing data management systems and analytics platforms to automate data collection and ensure accuracy and timeliness of reporting activities. New York Energy Manager (NYEM) is currently used to track and report building and facility energy use from a combination of both utility billing information (for locations connected to the grid and supplied by another utility) and smart interval meters. Future NYEM development will allow the Sustainability group to track greenhouse gas emissions associated with building energy consumption.

In 2017, the Sustainability group developed a dashboard and data management system that was designed in collaboration with IT to analyze energy use and associated GHG emissions from buildings and vehicles, as well as generation and diversion of non-hazardous solid waste. As goals and metrics are identified for new program areas such as supply chain, land and water, the Sustainability group will pursue a more comprehensive solution tailored specifically to sustainability performance management and reporting.

ANNUAL REPORTING

The Sustainability group will develop an annual enterprise-wide sustainability report that adheres to Global Reporting Initiative (GRI) Standards¹. GRI has developed a comprehensive reporting framework for companies and governments (including public and private utilities) to manage and communicate the impact of their operations on critical environmental, social and economic issues.

¹ The Global Reporting Initiative is an international independent standards organization that helps businesses, governments and other organizations understand and communicate their impacts on issues such as climate change and human rights.

GOALS STRATEGIES ACTIONS		2019	2020	2021	2022	2023
GOALS	IMPROVE PERFORMANCE MANAGEMENT PROCESSES AND INCREASE TRANSPARENCY IN REPORTING					
STRATEGY	INTEGRATE SUSTAINABILITY METRICS AND TARGETS INTO THE CORPORATE SCORECARD					
ACTIONS	Integrate GHG targets and metrics for NYPA's electricity supply, buildings and facilities, vehicle fleet and customer/public-facing programs	●				
	Integrate additional metrics as new programs are established		●			
STRATEGY	DEVELOP COMPREHENSIVE GHG INVENTORY					
ACTIONS	Expand Climate Registry reporting to include purchased electricity, electricity sales and line losses	●	●			
	Provide CDP Climate Change Response in support of EO166 requirements		●	●	●	●
STRATEGY	INTEGRATE DATA COLLECTION PROCESSES TO IMPROVE PERFORMANCE MANAGEMENT					
ACTION	Identify and procure SaaS data analytics platform	●	●			
STRATEGY	CREATE ENTERPRISE-WIDE REPORT TO COMMUNICATE SUSTAINABILITY PERFORMANCE TO STAKEHOLDERS					
ACTION	Produce annual sustainability report that adheres to GRI Standards	●	●	●	●	●

WORKING GROUP | MANAGING AND COMMUNICATING PERFORMANCE

PUBLIC & REGULATORY AFFAIRS

Sustainability
Corporate Communications

COMMERCIAL OPERATIONS

New York Energy Manager

UTILITY OPERATIONS

Environment, Health & Safety

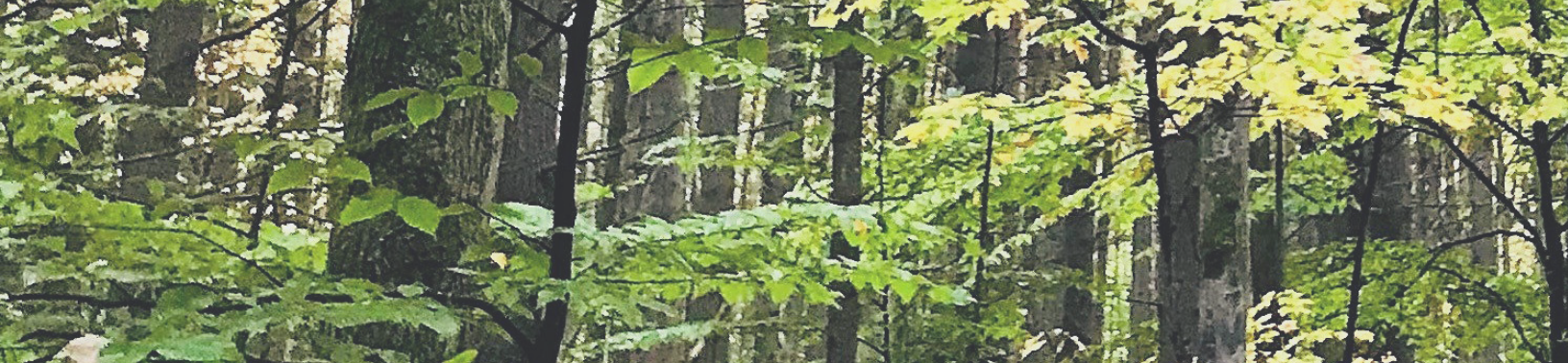
BUSINESS SERVICES

Strategy

HUMAN RESOURCES & SHARED SERVICES

Enterprise Excellence

INFORMATION TECHNOLOGY



CLIMATE ASSESSMENT AND ADAPTATION

ASSESSMENT OF LOW CARBON TRANSITION AND PHYSICAL IMPACTS OF CLIMATE CHANGE

NYPA will leverage its annual scenario planning exercise to assess the potential implications of the transition in the New York power sector and economy that will be necessary to reduce emissions consistent with limiting global average temperature rise to 1.5 degrees Celsius above preindustrial levels.

This planning exercise will develop and apply scenarios that allow for an assessment of the risks and opportunities associated with a 1.5 degree transition and the physical impacts of climate change. NYPA will determine the appropriate emission reduction trajectory and time horizon using New York's 2030 and 2050 goals as the starting point, and will identify key indicators that illuminate emerging trends as well as critical milestones that should be monitored for potential strategy adjustments. Climate scenarios will then be developed showing expected long-term changes in New York State that would impact NYPA's operational objectives.

CLIMATE CHANGE ADAPTATION PLAN

Building off the climate strategy assessment, an interdisciplinary team under the coordination of the Sustainability group will develop a Climate Change Adaptation Plan. Adaptation is the process of adjustment to actual or expected climate and its physical, social, or economic effects. Adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. This effort will support New York State's ongoing Climate Vulnerability Assessment.

NYPA assessments of existing generation and transmission facilities have identified three primary weather-related risks: extreme winter weather, specifically ice and wind loading combinations on transmission assets; extreme flooding; and extreme high temperatures and heat waves on the generation facilities in New York City.

KEY QUESTIONS AND CONSIDERATIONS

- What market transformations are necessary to achieve 40x30?
- What transformations are necessary to achieve 80x50?
- What are the state policy and market implications?
- What are the implications of decarbonization for NYPA?

1.5-DEGREE TRANSITION

- Greenhouse gas emission reduction trajectory
- Policy landscape
- Advances in energy efficiency and electrification of end-uses
- Pace of deployment of clean energy and energy storage technologies
- Consumer expectations and corporate procurement
- Grid transformation and distributed energy resource deployment

PHYSICAL IMPACTS

- Extreme temperatures
- Water availability and precipitation patterns
- Sea level rise
- Extreme precipitation events
- Wildfires
- Changes in wind patterns



GOALS | STRATEGIES | ACTIONS

		2019	2020	2021	2022	2023
GOALS	ENSURE LONG-TERM STRATEGY ADDRESSES POTENTIAL IMPACTS OF A 1.5 DEGREE TRANSITION AND PHYSICAL IMPACTS OF CLIMATE CHANGE					
	MODERATE OR AVOID HARM FROM CLIMATE CHANGE IMPACTS					
STRATEGY	DEVELOP 1.5-DEGREE SCENARIOS AND INTEGRATE ASSESSMENT OF RISKS AND OPPORTUNITIES INTO NYPA'S LONG-TERM STRATEGY					
ACTIONS	Develop climate scenarios and integrate into existing scenario planning effort	●				
	Refresh climate scenarios and reassess climate strategy as part of annual scenario planning exercise		●	●	●	●
STRATEGY	ASSESS POTENTIAL PHYSICAL IMPACTS OF CLIMATE CHANGE ON NYPA'S OPERATIONS					
ACTIONS	Review previous NYPA vulnerability assessments	●				
	Evaluate how changes in temperature, precipitation patterns, and sea level rise may impact electricity generation and transmission as part of scenario planning exercise	●				
STRATEGY	CREATE ADAPTATION PLAN TO ADDRESS PHYSICAL, SOCIAL AND ECONOMIC IMPACTS OF CLIMATE CHANGE					
ACTIONS	Review past NYPA assessments; research industry best practices	●				
	Identify adaptation strategies necessary to avoid negative operational impacts; prepare and issue adaptation plan	●	●			
	Implement changes to ensure NYPA continues to deliver energy safely and reliably to customers			●	●	●
	Determine adjustments necessary to align with new developments in climate change research				●	●

WORKING GROUP | CLIMATE ASSESSMENT AND ADAPTATION

PUBLIC & REGULATORY AFFAIRS

Sustainability
Legislative & Regulatory Affairs

BUSINESS SERVICES

Strategy

UTILITY OPERATIONS

Engineering
Technical Compliance
Environment, Health & Safety

RISK MANAGEMENT

Enterprise Risk Management

COMMERCIAL OPERATIONS

Energy Resource Management
Project & Business Development
Energy Efficiency



ELECTRICITY GENERATION, TRANSMISSION AND SUPPLY

PROGRAM OVERVIEW

With an extensive hydropower generation fleet, NYPA has one of the lowest emission rates in the country and is an established leader in generating clean electricity. Forecasts of NYPA’s electricity supply (owned generation, contracted generation, and NYISO purchases) indicate that NYPA will meet the state’s 40x30 reduction goal for both absolute emissions and emissions intensity. This is primarily due to three factors:

1. New York’s Clean Energy Standard, which is driving a reduction in the GHG emissions rate of grid electricity (and NYPA power purchases)
2. Declining demand caused by increases in energy efficiency, and hence declining generation from NYPA facilities and associated reductions in NYPA’s absolute GHG emissions
3. Replacement of the Poletti Power Project with the 500-MW combined-cycle plant, which has significantly reduced the carbon intensity of NYPA generation since 2005 (the baseline that NYPA is using to meet the state’s 40x30 goal)¹

Projects planned by NYPA or in progress are expected to further reduce the GHG emissions rate of NYPA’s electricity supply. These include plant modernization, transmission upgrades, energy storage and other advanced technology demonstrations. If large-scale renewable power purchase agreements are executed, these will also have a positive impact.

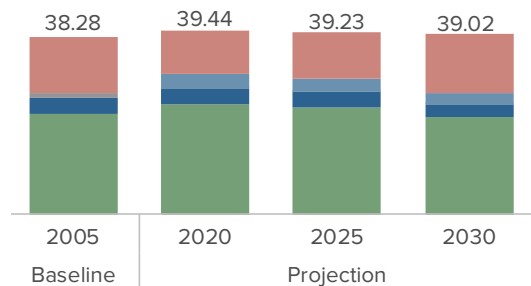
NYPA will monitor the absolute GHG emissions and GHG emissions rate of its electricity supply to track progress towards the 40x30 target. NYPA will also measure the impacts to GHG intensity of the various generation, transmission and energy storage projects as they are implemented.

¹ NYPA will use 2005 as the baseline year for electricity supply in accordance with the Paris Climate Agreement.

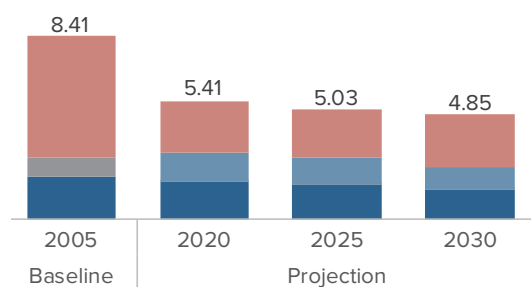
GHG EMISSIONS METRICS ABSOLUTE VS. INTENSITY

- **Emissions Intensity** | Quantity of emissions normalized by a specific unit such as MWh or square footage
- **Absolute Emissions** | Total quantity of emissions released

NYPA GENERATION & SUPPLY (TWH)



NYPA CO₂ Emissions (million short tons)



CO₂ EMISSIONS CHANGE (ALL SOURCES)

	2020	2025	2030
2005 BASELINE	-36%	-40%	-42%





GOALS | STRATEGIES | ACTIONS

2019 2020 2021 2022 2023

GOAL	IMPROVE GHG EMISSIONS RATE OF NYPA’S ELECTRICITY SUPPLY 40% BY 2030 FROM 2005 BASELINE					
STRATEGIES	GENERATION • POWER PLANT MODERNIZATION AND HEAT RATE IMPROVEMENTS TO THERMAL GENERATION ASSETS • ELIMINATION OF R22 REFRIGERANT IN SENY • REDUCTION IN PARASITIC STATION SERVICE LOADS ACROSS FACILITIES THROUGH LIGHTING UPGRADES, HVAC SMART CONTROLS, AND POTENTIAL OPTIMIZATION OF TUNNEL COOLING TEMPERATURES AT HYDRO FACILITIES • ENERGY STORAGE TO OPTIMIZE NYPA GENERATION ASSETS AND CURB PEAKS IN DEMAND					
	TRANSMISSION • TRANSMISSION PROJECTS THAT WILL DELIVER RENEWABLE RESOURCES FROM UPSTATE TO DOWNSTATE • REDUCTION IN LINE LOSSES DUE TO TRANSMISSION UPGRADES • REDUCTION IN SULFUR HEXAFLORIDE (SF₆) LEAKAGE RATES DUE TO EQUIPMENT UPGRADES					
	SUPPLY • LARGE SCALE RENEWABLE POWER PURCHASE AGREEMENTS OF UP TO 4 TWH					
ACTIONS	Track/report absolute emissions from NYPA’s electricity supply	●	●	●	●	●
	Measure impacts to GHG intensity of the various strategies as projects are implemented	●	●	●	●	●
	Track fugitive emission leakage rates for SF ₆ and set leakage rate reduction target	●	●			
	Track elimination of R22	●	●			
	Identify opportunities to further reduce GHG emissions intensity and absolute emissions		●	●	●	●
	Assess progress towards state’s 40x30 target and determine if an absolute target can be set			●		

WORKING GROUP | ELECTRICITY GENERATION, TRANSMISSION AND SUPPLY

PUBLIC & REGULATORY AFFAIRS

Sustainability

UTILITY OPERATIONS

Regional Managers | All Sites
Environment, Health & Safety
Project Management
Engineering

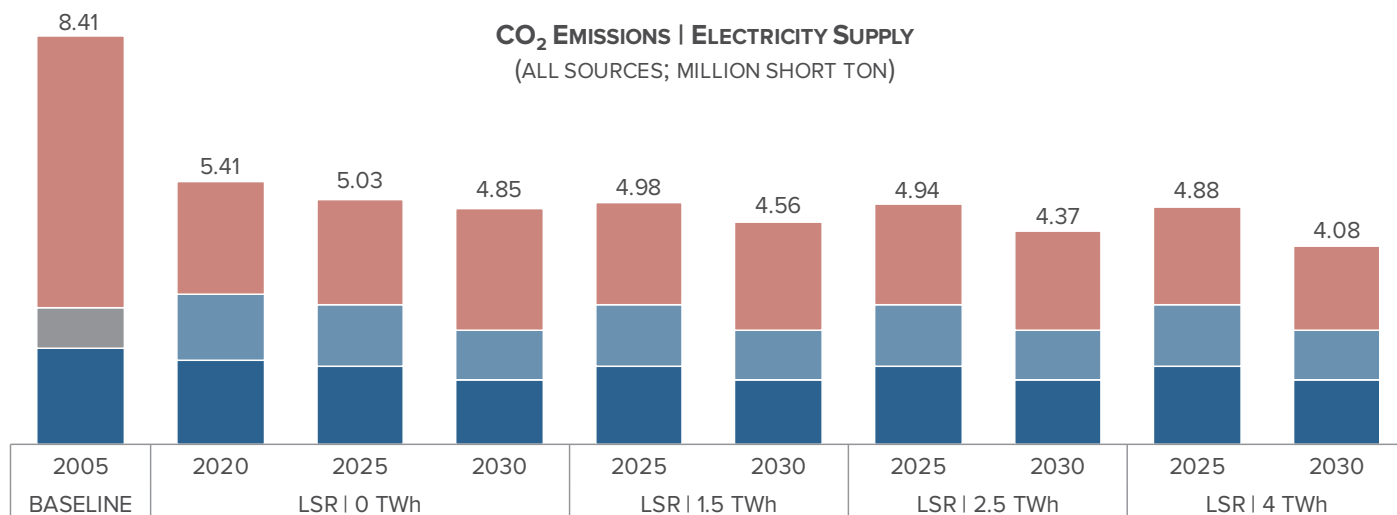
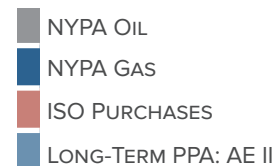
COMMERCIAL OPERATIONS

Energy Resource Management
Project & Business Development
Economic Development

ELECTRICITY SUPPLY ANALYSIS - GREENHOUSE GAS EMISSIONS

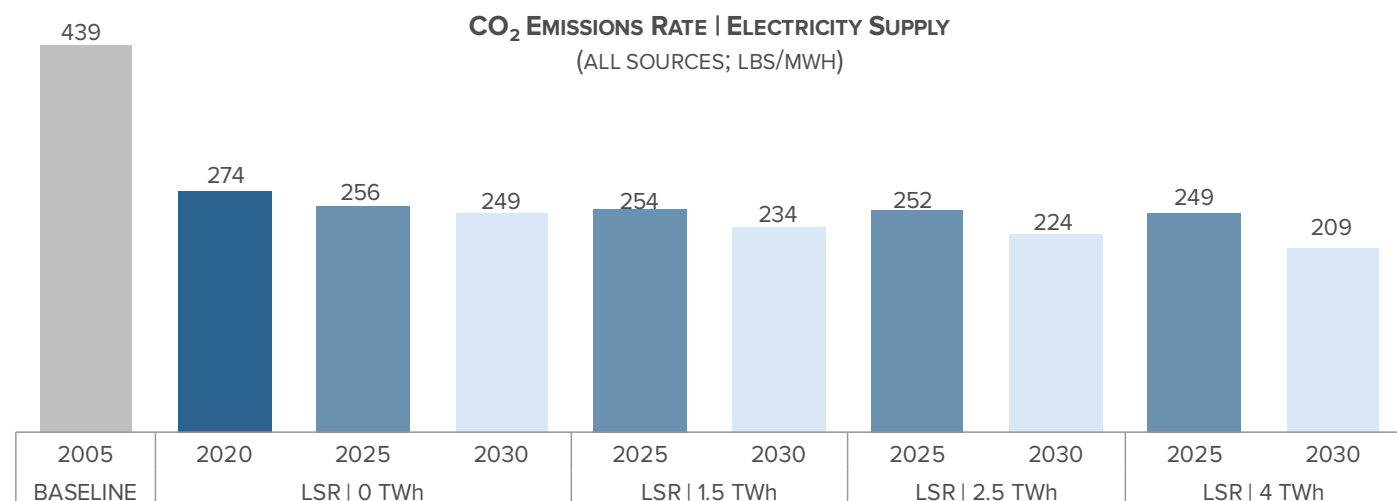
ASSUMPTIONS - VARIABLE LARGE-SCALE RENEWABLE (LSR) CAPACITY

- NYPA output projections for NYPA-owned facilities and Astoria Energy II (AE II)
- 2021 generation share held constant for in-city, SCPP
- Renewable energy increases linearly starting 2025 to a total of up to 4 TWh by 2030
- NYISO purchases to meet demand as needed



CHANGE IN ABSOLUTE CO₂ EMISSIONS FROM BASELINE

2005 BASELINE	LSR 0 TWh			LSR 1.5 TWh		LSR 2.5 TWh		LSR 4 TWh	
	2020	2025	2030	2025	2030	2025	2030	2025	2030
	-36%	-40%	-42%	-41%	-46%	-41%	-48%	-42%	-51%



CHANGE IN ABSOLUTE CO₂ EMISSIONS FROM BASELINE

2005 BASELINE	LSR 0 TWh			LSR 1.5 TWh		LSR 2.5 TWh		LSR 4 TWh	
	2020	2025	2030	2025	2030	2025	2030	2025	2030
	-38%	-42%	-43%	-42%	-47%	-43%	-49%	-43%	-52%



CUSTOMER, MARKET AND PUBLIC-FACING PROGRAMS

PROGRAM OVERVIEW

NYPA’s customer, market and public-facing programs provide opportunities to advance the state’s energy and greenhouse gas reduction policies and goals.

NYPA programs include energy efficiency and energy management services, transportation electrification, solar and energy storage. Under this plan, NYPA will assess the projected GHG reduction benefits of these programs, establish GHG reduction goals and track progress towards meeting these goals.

CURRENT PROGRAM GOALS

ENERGY EFFICIENCY

- 11 TBtus saved by 2025

RENEWABLE ENERGY AND STORAGE

- Up to 4 TWh of renewables by 2030
- 125 MW of solar development by 2020
- 20 MW of energy storage by 2020

TRANSPORTATION

- EVolve NY | Up to 800 DC fast charge stations by 2025

GOALS STRATEGIES ACTIONS		2019	2020	2021	2022	2023
GOAL	CAPTURE EMISSIONS REDUCTION BENEFITS FROM CUSTOMER, MARKET AND PUBLIC-FACING PROGRAMS					
STRATEGY	DEVELOP GHG GOALS FOR CUSTOMER, MARKET AND PUBLIC-FACING PROGRAMS					
ACTIONS	Identify all customer program goals (energy efficiency, solar, electric vehicles) and assess projected GHG reduction benefits	●				
	Identify goals for market and public-facing programs (large scale renewables, energy storage, electric vehicle fast charging and workplace charging) and assess GHG reduction benefits	●				
	Establish GHG reduction goals for customer programs	●				
	Establish GHG reduction goals for market/public-facing initiatives	●				
	Review/revise GHG reduction goals as programs develop		●	●	●	●

WORKING GROUP | CUSTOMER, MARKET AND PUBLIC-FACING PROGRAMS

PUBLIC & REGULATORY AFFAIRS

Sustainability

BUSINESS SERVICES

Strategy

COMMERCIAL OPERATIONS

Energy Efficiency

Clean Energy Business & Market Development

Project & Business Development

New York Energy Manager

UTILITY OPERATIONS

Regional Manager | STL

Project Management

Engineering



BUILDINGS

PROGRAM OVERVIEW

The residential, commercial and industrial sectors account for more than 1,600 TBtu or 60% of energy consumption in New York State. The state has set goals to improve the energy efficiency of the building sector by 185 TBtu through 2025. EO166 directs state entities to lead by example in reducing absolute greenhouse gas emissions from administrative/support buildings and sets a 40% by 2030 target.

NYPA's building portfolio consists of 120 buildings and facilities and spans over three million square feet. Approximately 40% of these buildings serve administrative/support functions, and the remainder house generation and transmission (G&T) assets. This section addresses administrative/support buildings only. Efforts to improve the energy efficiency of auxiliary systems at G&T facilities are captured under Electricity Generation, Transmission and Supply.

Much work has been done to increase building efficiency under Executive Order 88 (BuildSmart NY) and NYPA's Carbon Footprint Program, and efforts have largely focused on "low hanging fruit." However, there are a number of opportunities to further reduce energy use and emissions across all buildings. Projects range from lighting and building envelope upgrades to advanced building system and HVAC controls.

PROGRESS TO DATE

BuildSmart NY, which was launched in 2012, directs state entities to reduce the energy use intensity (EUI) of its largest buildings by 20% by 2020. In 2014, NYPA created the Carbon Footprint Program, which expands the scope of EO88 to include all administrative/support buildings.

Between 2010 and 2017, NYPA reduced the EUI of all administrative/support buildings by 15%, with a compound annual growth rate (CAGR) of -2.0%. The GHG emissions intensity fell by 37% within the same time period. This reduction is the result of more than 25 energy efficiency projects, coupled with decreasing grid emission rates. Most of the energy savings can be attributed to NYPA efforts under EO88, which reduced energy consumption across the 12 reporting buildings by 18,300 MMBtu.

In FY 2018, NYPA exceeded the 20% target for EO88, achieving a 24% reduction in EUI two years ahead of the target date.

EXECUTIVE ORDER

88

- Issued in 2012 to improve the energy efficiency of New York State buildings
- Scope: All admin/support buildings greater than 20,000 ft.²
- Baseline: FY 2011
- Target: 20% reduction in energy-use intensity by FY 2020
- Metric: kBtu/ft.²

TARGET ACHIEVED | 24% REDUCTION

EXECUTIVE ORDER

166

- Issued in 2017 to reduce NYS operational GHG emissions from all sources
- Scope: Includes all admin/support buildings and all fleet vehicles
- Baseline: 2010¹
- Target: 40% reduction in GHG emissions by 2030, 80% by 2050
- Metric: MT CO₂e

¹ NYPA will use 2010 as the baseline year to align with EO88.

GOALS | STRATEGIES | ACTIONS

2019 2020 2021 2022 2023

GOALS	REDUCE ENERGY AND GHG EMISSIONS ASSOCIATED WITH ADMINISTRATIVE/SUPPORT BUILDINGS				
	ENERGY REDUCTION TARGETS ENERGY INTENSITY 20% BY 2020 30% BY 2025 40% BY 2030 FROM 2010 BASELINE				
	GHG EMISSIONS REDUCTION TARGETS - GHG INTENSITY 40% BY 2020 50% BY 2025 60% BY 2030 FROM 2010 BASELINE - GHG ABSOLUTE 50% BY 2030 FROM 2010 BASELINE				
STRATEGY	DEVELOP AND IMPLEMENT ENERGY EFFICIENCY PROJECTS AT ALL SITES - PRIORITIZE UPGRADES TO EQUIPMENT AND SYSTEMS NEARING END OF LIFE - EXPAND SCOPE OF ONGOING PROJECTS TO INCLUDE MORE EFFICIENT TECHNOLOGIES - ACCELERATE PLANNED PROJECTS THAT DEMONSTRATE POSITIVE ENVIRONMENTAL AND FINANCIAL RETURNS				
ACTIONS	Begin Implementation of 15 new projects; complete 10 ongoing projects by the end of 2019	●			
	Conduct assessments of building systems including HVAC, lighting, and envelope and identify opportunities for efficiency improvements	●	●		
	Integrate sustainability criteria into the project assessment and scoring process	●	●		
	Develop policy establishing standards for new construction and renovations		●		
	Develop project portfolio and work plan for subsequent year		●	●	●
	Implement energy efficiency projects identified in work plan		●	●	●
STRATEGY	MONITOR & ANALYZE ENERGY AND EMISSIONS PERFORMANCE WITH DIGITAL APPLICATIONS				
ACTIONS	Analyze building performance through NYEM, Sustainability Dashboard and other modeling tools	●	●	●	●
	Forecast energy and GHG reductions based on project pipeline and other critical variables	●	●	●	●
	Install smart meters for all energy sources (electricity, natural gas, fuel oil); identify location/number based on energy use	●	●	●	●
GOAL	EXPAND THE INSTALLED CAPACITY OF ON-SITE RENEWABLES 2.5 MW BY 2025				
STRATEGY	IDENTIFY OPPORTUNITIES FOR ADDITIONAL RENEWABLE GENERATION CAPACITY AT ALL SITES				
ACTIONS	Conduct assessments at each site to identify locations suitable for solar PV and/or geothermal	●			
	Develop engineering and design packages for small-scale renewable energy projects	●	●		
	Complete construction and installation of all projects			●	●
	Incubate and pilot new technologies at NYPA sites that can be replicated for customers		●	●	●

WORKING GROUP | BUILDINGS
PUBLIC & REGULATORY AFFAIRS

Sustainability

HR & ENTERPRISE SHARED SERVICES

Facility Management

BUSINESS SERVICES | Strategy

UTILITY OPERATIONS

Regional Managers

Asset Management

Engineering

Site Project Teams

COMMERCIAL OPERATIONS

Energy Efficiency

Clean Energy Business & Market Development



TRANSPORTATION

PROGRAM OVERVIEW

In New York State, the transportation sector contributes 41% of all greenhouse gas emissions, the largest portion of any sector. NYPA has taken a leadership role in accelerating the market for electric vehicles with EVolve NY, and has a responsibility to lead by example with fleet electrification and workplace charging.

VEHICLE FLEET

Executive Order 166 directs state entities to reduce emissions from light-, medium-, and heavy-duty vehicles 40% by 2030. NYPA will take a comprehensive approach to reducing fleet GHG emissions that includes rapidly expanding the number of battery electric (BEV) and plug-in hybrid (PHEV) vehicles in its fleet. NYPA will also promote right-sizing and will explore opportunities to test low-carbon fuels in the medium- and heavy-duty fleet.

COMMUTING

NYPA's Workplace Charging Program (WPC) provides electric vehicle charging access to employees at all facilities. It has proven to be an effective way to encourage electric vehicle adoption by reducing range anxiety. Membership in the program has grown significantly since 2016, and there are now more than 40 employee vehicles plugging in across sites, from NIA to STL to the 500-MW.



LIGHT-DUTY FLEET

NYPA's light-duty vehicle (LDV) fleet is comprised of a range of passenger and specialty vehicles, ranging from sedans to full-size SUVs to pickup trucks. The data below provides a snapshot of the 2017 LDV fleet.

343 VEHICLES

5.5 % ELECTRIFIED

3.0 MILLION
MILES TRAVELED

272K GALLONS OF
FUEL

20.9 AVERAGE MPG

1.5K MT CO₂E

GOALS | STRATEGIES | ACTIONS

		2019	2020	2021	2022	2023
GOALS	REDUCE GHG INTENSITY AND ABOLUTE GHG EMISSIONS FROM ALL VEHICLES 25% BY 2025 40% BY 2030 FROM 2010 BASELINE					
	ELECTRIFY LIGHT-DUTY FLEET 50% BY 2025 100% BY 2030					
STRATEGY	REPLACE EXISTING INTERNAL COMBUSTION (ICE) VEHICLES WITH PLUG-IN HYBRID (PHEV) AND BATTERY ELECTRIC VEHICLES (BEV) AS NEW MODELS BECOME COMMERCIALY AVAILABLE					
ACTIONS	Revise existing fleet policy to incorporate selection and assignment guidelines for BEVs and PHEVs	●				
	Replace existing internal combustion (ICE) vehicles with BEVs and PHEVs as suitable models become commercially available	●	●	●	●	●
	Complete charging station installations for fleet vehicles at sites	●				
	Expand number of charging stations as needed in line with vehicle replacement strategy		●	●	●	●
	Develop a Smart Charging pilot/demo at White Plains Office		●	●		
STRATEGY	REDUCE FUEL CONSUMPTION BY PROMOTING VEHICLE RIGHT-SIZING					
ACTION	Revise fleet policy to require replacement of existing vehicles with smaller, more efficient vehicles where feasible	●				
STRATEGY	REDUCE TOTAL FLEET MILES TRAVELED BY PROMOTING ALTERNATIVES TO SINGLE PASSENGER TRIPS					
ACTION	Create policy to promote carpooling, video-conferencing and use of public transportation where feasible	●	●			
STRATEGY	DEMONSTRATE EMERGING TECHNOLOGIES FOR MEDIUM-, HEAVY-DUTY AND OFF-ROAD VEHICLES					
ACTION	Test electric and alternative-fuel vehicles if suitable models become commercially available			●	●	●
STRATEGY	EXPAND USE OF LOW-CARBON FUELS FOR MEDIUM- AND HEAVY-DUTY FLEET VEHICLES					
ACTION	Conduct renewable diesel pilot if fuel is available; assess feasibility of expansion			●	●	●
GOALS	PROMOTE MORE EFFICIENT MODES OF COMMUTING AND SUPPORT ADOPTION OF ELECTRIC VEHICLES					
STRATEGY	EXPAND WORKPLACE CHARGING PROGRAM					
ACTIONS	Complete first phase of employee charging station installations at sites	●				
	Expand number of charging stations as employee demand increases		●	●	●	●
	Provide guidance and resources to employees seeking to purchase EVs	●	●	●	●	●
	Reassess program and monthly fee structure based on number of program participants and feedback		●		●	

WORKING GROUP | TRANSPORTATION
PUBLIC & REGULATORY AFFAIRS

Sustainability

HR & ENTERPRISE SHARED SERVICES

Fleet Management

Facility Management

UTILITY OPERATIONS

Regional Managers

Site Project Teams

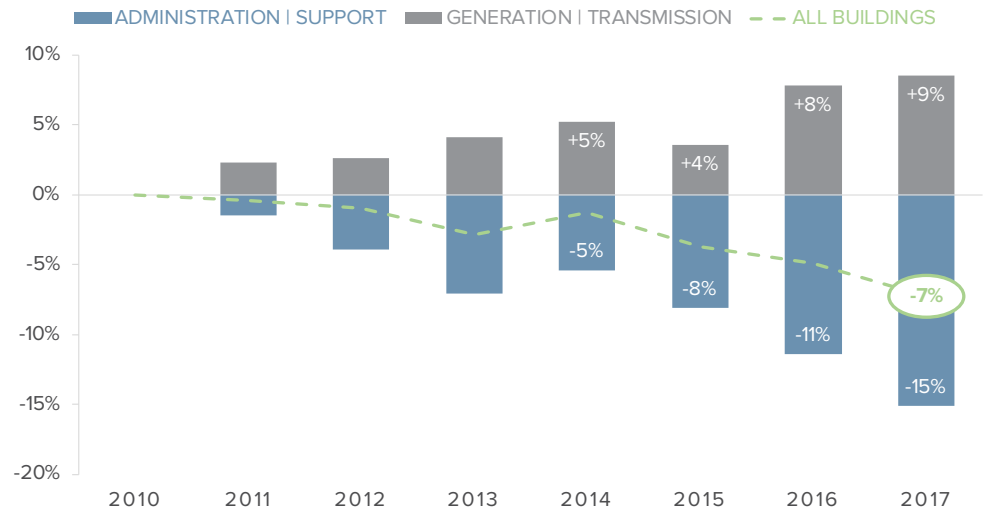
Engineering

Technical Compliance

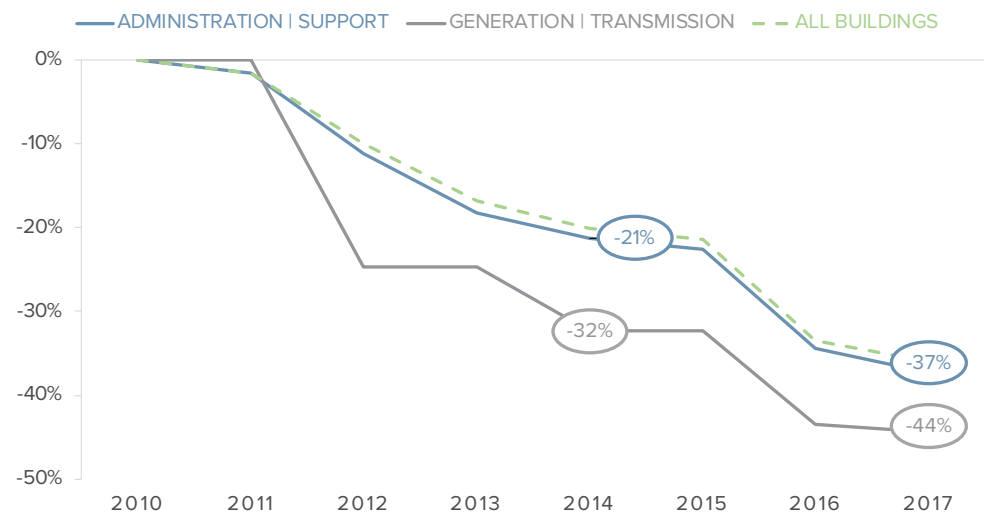
BUILDINGS AND FLEET PERFORMANCE

These graphs show energy-use and GHG emissions performance for NYPA buildings and vehicle fleet from 2010 to 2017.

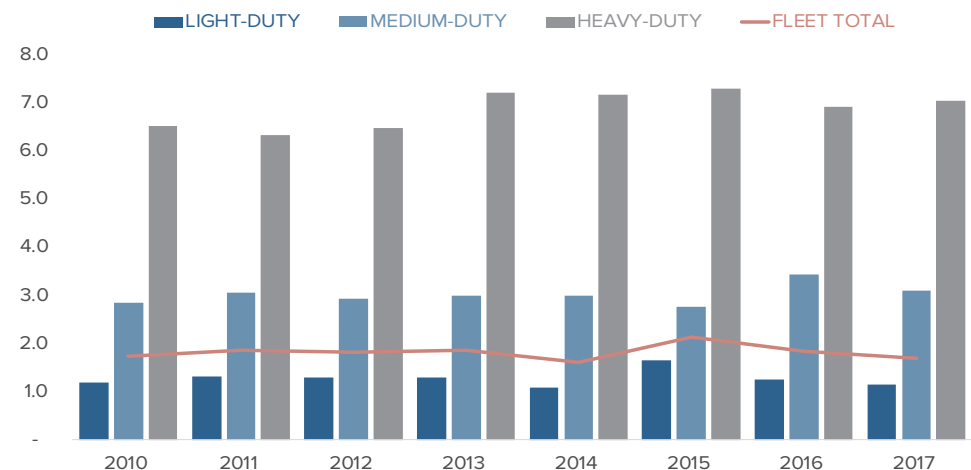
BUILDINGS AND FACILITIES | CHANGE IN ENERGY-USE INTENSITY



BUILDINGS AND FACILITIES | CHANGE IN GHG EMISSIONS INTENSITY



VEHICLE FLEET | GHG EMISSIONS INTENSITY (LBS. CO₂E/MILE)





WATER EFFICIENCY

PROGRAM OVERVIEW

While New York is not located in a water scarce region, the widespread availability of water resources cannot be taken for granted. New York has strong public policies to protect and conserve water, and as a public authority and an electric utility, NYPA has an interest in prudent water management. The goal of this program is to reduce the impact of NYPA’s operations on groundwater aquifers and surface water sources by (1) improving the efficient use of potable water in buildings and facilities, and (2) optimizing water utilization during electricity production consistent with NYPA’s obligations to water managing agencies.¹

Based on gross square footage as well as the CBECS² industry benchmark for water consumption, NYPA buildings and facilities consume an estimated 165,000 gallons of water daily, or approximately 60 million gallons per year. Typical uses include cooling systems, bathroom and kitchen fixtures, and landscape irrigation.

Total water consumed by NYPA for electricity generation in 2017 was 1,879 million gallons, with a water consumption rate of 68.68 gallons per MWH for all generation and 58.20 gallons per MWH for fossil only. NYPA’s water withdrawal rate for all generation (hydro and fossil) in 2017 was 1,965,535 gallons per MWH.

¹ The International Joint Commission and the New York State Canals Corporation
² The U.S. Energy Information Administration’s Commercial Buildings Energy Consumption Survey

GOALS STRATEGIES ACTIONS		2019	2020	2021	2022	2023
GOAL	REDUCE THE ENVIRONMENTAL IMPACTS OF NYPA’S CONSUMPTIVE USE OF WATER RESOURCES					
STRATEGIES	REDUCE POTABLE WATER USE INTENSITY OF BUILDINGS AND FACILITIES					
	OPTIMIZE WATER UTILIZATION DURING ELECTRICITY PRODUCTION (GALLONS/MWH)					
ACTIONS	Utilize existing data to establish baselines for water consumption at all sites	●				
	Establish goals, targets and metrics for reducing consumptive water use	●				
	Install smart meters to track water consumption; identify locations/number based on consumption/environmental impacts	●	●			
	Assess water systems and identify opportunities to improve efficiency; prioritize projects based on impact and payback	●	●			
	Implement water conservation projects; track and report results		●	●	●	●

WORKING GROUP | WATER EFFICIENCY

- PUBLIC & REGULATORY AFFAIRS
- Sustainability
- HR & ENTERPRISE SHARED SERVICES
- Facility Management
- LAW | Licensing

- UTILITY OPERATIONS
- Regional Managers
- Site Project Teams
- Engineering
- Environment, Health & Safety



SUPPLY CHAIN

PROGRAM OVERVIEW

NYPA aims to reduce the upstream and downstream environmental impacts of its operations by embedding sustainability principles in its procurement processes. By improving the environmental performance of suppliers and products, NYPA can increase resource efficiency and asset longevity, reduce waste, and create savings. Moreover, greater transparency to NYPA’s upstream environmental footprint will make it possible to measure and mitigate indirect GHG emissions.

NYPA will evaluate how suppliers are measuring, reporting and managing GHG emissions, resources and waste. NYPA will also assess the environmental lifecycle attributes of products, such as material and resource composition, disposal process and carbon footprint.

PROGRESS TO DATE

The Sustainability group has partnered with Strategic Supply Management (SSM) to establish sustainability scoring criteria that will be embedded in NYPA’s vendor and product selection process. As a member of the Electric Utility Industry Sustainable Supply Chain Alliance (EUISSCA), NYPA is taking part in the annual supplier survey to benchmark the environmental performance of strategic suppliers. SSM has moved to a digital catalog which identifies and promotes green products.

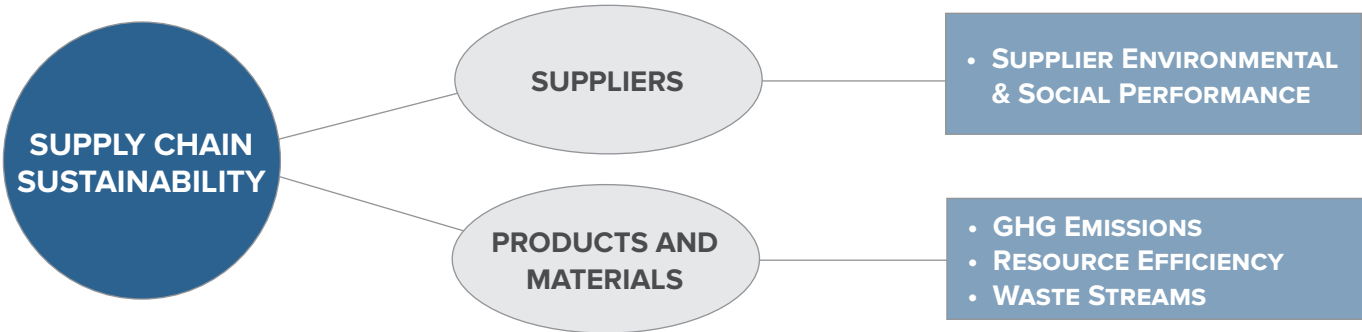
EXECUTIVE ORDER 4

- Establishes Green Procurement and Agency Sustainability program
- Directs state agencies and authorities to green their procurement practices
- Creates green procurement list for products and services that meet environmental standards in 50 purchasing categories

UPSTREAM FUGITIVE EMISSIONS

Methane has a global warming potential (GWP) that is 25 times greater than CO₂. Fugitive methane emissions from the production, processing and transport of natural gas are a significant source of greenhouse gas emissions.

NYPA will participate in the Natural Gas Supplier Collaborative to promote responsible natural gas production and transportation practices and increase transparency in reporting.



GOALS	REDUCE THE ENVIRONMENTAL IMPACTS OF NYPA'S SUPPLIERS AND PURCHASED PRODUCTS				
STRATEGY	INTEGRATE SUSTAINABILITY PRINCIPLES INTO THE PROCUREMENT PROCESS				
ACTIONS	Develop sustainability code of conduct and set expectations and standards for vendors and contractors	●			
	Develop sustainable procurement policy that identifies environmentally-preferable standards for products	●			
	Prioritize product spend by environmental impact and define sustainability specifications for at least one high impact product per year	●	●	●	●
	Embed sustainability criteria in RFP scorecard for vendor and product selection	●			
STRATEGY	DEVELOP KEY PERFORMANCE INDICATORS AND TARGETS FOR SUPPLIER AND PRODUCTS				
ACTIONS	Use EUISSCA survey tool to determine baseline performance of top suppliers by spend; set performance targets for suppliers	●			
	Identify metrics and set targets for product selection	●			
	Assign weight to sustainability criteria in RFP scorecard; reassess weighting	●		●	
	Reassess targets, strategies and suppliers to be evaluated			●	
STRATEGY	ENGAGE SUPPLIERS TO DRIVE CONTINUOUS IMPROVEMENT IN SUSTAINABLE PRACTICES				
ACTIONS	Schedule webinars and workshops with suppliers to provide guidance on improving sustainability performance and NYPA's expectations		●	●	●
	Integrate sustainability into performance management scorecard for strategic suppliers and monitor performance			●	●
STRATEGY	UTILIZE LIFECYCLE APPROACH TO ANALYZE PRODUCTS AND PROCESSES WITH SMALLER ENVIRONMENTAL FOOTPRINTS AND TEST ALTERNATIVES				
ACTIONS	Conduct an SF ₆ alternatives pilot project on circuit breakers through a collaboration with a strategic supplier		●	●	
	Assess feasibility of adopting sustainable transformer oils; conduct a pilot test if determined to be feasible		●	●	
	Research products with smaller environmental footprints and conduct product testing where applicable		●	●	●
STRATEGY	SUPPORT NEW YORK STATE GREEN PROCUREMENT GOALS				
ACTIONS	Install water coolers across sites to reduce water bottle purchases in support of Executive Order 18	●			
	Create green procurement guidelines and ensure NYPA green product lists meet EO4 specifications	●	●		
	Conduct pilot for green cleaning products	●	●		
	Track purchases to measure progress	●	●	●	●
STRATEGY	PARTICIPATE IN INDUSTRY ORGANIZATIONS TO PROMOTE RESEARCH OF ALTERNATIVE TECHNOLOGIES AND SHARE INDUSTRY BEST PRACTICES				
ACTIONS	Participate in Natural Gas Supply Collaborative to promote responsible natural gas production and transportation practices	●	●	●	●
	Participate in Electric Power Research Institute's Sulfur Hexafluoride Supplemental Program to test SF ₆ alternatives	●	●		

WORKING GROUP | SUPPLY CHAIN

PUBLIC & REGULATORY AFFAIRS

Sustainability

BUSINESS SERVICES

Strategic Supply Management

UTILITY OPERATIONS

Regional Managers

Site Project Teams

Engineering

COMMERCIAL OPERATIONS

Energy Resource Management



MATERIALS AND WASTE

PROGRAM OVERVIEW

Global consumption is increasing at an alarming rate and rapidly depleting and degrading the earth's resources. The goal of this program is to minimize the impacts of NYPA's operations by improving resource efficiency. By reducing the need for raw materials, NYPA can reduce environmental impacts along the whole life cycle, including upstream and downstream greenhouse gas emissions.

NYPA's activities range from office work to construction projects, and the waste streams across the sites are categorized based on their source as office or non-office. This program will expand efforts to reduce office waste and will also explore opportunities to reduce non-office waste. The scope of this plan is limited to non-hazardous waste.

PROGRESS TO DATE

In 2017, NYPA conducted a site-wide audit of non-hazardous waste streams, with a focus on office waste. The results of the audit have informed strategies to reduce office waste, increase office diversion rates, and improve waste data accuracy and tracking. The Sustainability group has begun developing a data management tool to house waste stream data for internal benchmarking and external reporting.

Various initiatives are under way to reduce office waste. Strategic Supply Management is in the process of transitioning to an electronic inventory management system to eliminate paper use at warehouses. Drafting departments are testing smart boards to reduce paper use. The Sustainability group is working with facility teams to roll out centralized waste stations to encourage waste sorting and recycling, and is equipping kitchens with plates and silverware to reduce use of disposable items. Efforts to reduce kitchen waste have been supplemented by education on proper recycling practices and campaigns that incentivize reusable over single-use items.

EXECUTIVE ORDER

4

- Sets an annual 10% reduction target for office waste generation
- Requires reporting of all solid waste generated and diverted from landfill

EXECUTIVE ORDER

18

- Prohibits use of state funds to purchase cooler-sized and single-serve bottles of water
- Requires all executive agencies to report bottled water purchases annually

WASTE STREAMS

OFFICE WASTE	
MUNICIPAL SOLID WASTE	LANDFILL
METAL, PLASTIC & GLASS	RECYCLED
PAPER & CARDBOARD	RECYCLED
ELECTRONICS	RECYCLED
LAMPS & BALLASTS	RECYCLED
BATTERIES	RECYCLED
NON-OFFICE WASTE	
CONSTRUCTION & DEMOLITION	LANDFILLED ¹
BULK METALS	RECYCLED
AUTOMOTIVE BATTERIES	RECYCLED
AUTOMOTIVE TIRES	RECYCLED
USED OIL	INCINERATED
WOOD	LANDFILLED ²
YARD WASTE	COMPOSTED

¹ Certain types of construction & demolition waste, such as cement, are currently recycled or recovered.

² Wood disposal practices vary by site. Chemically treated wood is always sent for disposal. Untreated wood is sometimes reused or recycled.

GOALS | STRATEGIES | ACTIONS

2019 2020 2021 2022 2023

GOALS	REDUCE OVERALL WASTE GENERATED ACROSS OFFICE AND NON-OFFICE OPERATIONS				
	INCREASE WASTE DIVERSION AND RECOVERY RATES				
STRATEGY	IMPROVE ACCURACY OF WASTE DATA TRACKING AND REPORTING				
ACTIONS	Finalize waste data collection policy and process	●			
	Segment waste streams into office and non-office categories at each site	●			
	Integrate waste data requirements into waste hauling contracts	●	●		
STRATEGY	IDENTIFY AND COMMIT TO WASTE DIVERSION AND WASTE-TO-LANDFILL GOALS				
ACTION	Establish baselines, identify metrics and set targets for waste stream totals and diversion rates	●			
STRATEGY	REDUCE GENERATION OF OFFICE WASTE THROUGH PURCHASING AND REUSE STRATEGIES				
ACTIONS	Transition to an electronic inventory management system at warehouses to reduce paper use	●	●		
	Establish office swap station for office supplies	●	●		
	Purchase and equip all kitchens with reusable supplies	●	●	●	
	Assess costs and benefits of using smart boards for drafting purposes; expand use if feasible		●		
	Install hardwired hand dryers and dispensers in bathrooms			●	
	Evaluate success of waste initiatives; identify additional opportunities to reduce paper and cardboard waste				●
STRATEGY	IMPROVE WASTE SORTING CAPABILITIES AT EACH SITE				
ACTIONS	Expand new office waste station roll outs across sites	●	●		
	Evaluate costs and benefits of installing additional recycling containers where diversion rates are low		●		
STRATEGY	USE INVESTMENT RECOVERY STRATEGIES TO DIVERT NON-OFFICE MATERIALS FROM LANDFILL				
ACTIONS	Conduct audit to assess investment recovery opportunities at each site	●			
	Develop site plans and establish processes to reduce non-office waste		●	●	
STRATEGY	REDUCE ORGANIC WASTE SENT TO THE LANDFILL				
ACTION	Assess opportunities for composting and anaerobic digestion; conduct pilot if feasible			●	●
STRATEGY	IDENTIFY AND COMMIT TO A ZERO-WASTE TO LANDFILL PLAN				
ACTIONS	Conduct assessment of costs, benefits, and requirements			●	
	Identify diversion rate milestones, targets, responsibilities and timeline for transition				●

WORKING GROUP | MATERIALS AND WASTE
PUBLIC & REGULATORY AFFAIRS

Sustainability

BUSINESS SERVICES

Strategic Supply Management

UTILITY OPERATIONS

Environment, Health & Safety
Site Project Teams

HR & ENTERPRISE SHARED SERVICES

Facility Management



ECOSYSTEMS AND BIODIVERSITY

PROGRAM OVERVIEW

Both the IPCC report and EO166 guidelines identify conservation and protection of land and water resources as necessary for climate change mitigation and adaptation. Strategies identified include ecosystem-based adaptation, ecosystem restoration, avoided degradation and deforestation, and biodiversity management. These strategies are also consistent with the objectives of the New York State Pollinator Protection Plan, the New York Natural Heritage Program, and state efforts to protect threatened and endangered species.

The goal of this program is to promote these strategies and demonstrate best practice, building on the successes of NYPA’s Right-of-Way (ROW) Integrated Vegetation Management (IVM) Program and wildlife habitat restoration projects. NYPA’s operations span across more than 80,000 acres of water and land. NYPA owns 12,000 acres of forested and non-forested areas, including facility grounds, parks, wildlife areas and rights of way. NYPA also manages 16,000 acres of privately owned land through ROW easements. This program will assess land management practices on land owned and/or used by NYPA and will identify opportunities to expand wildlife habitat, increase compatible vegetation density for carbon mitigation, and improve resilience to severe weather events. NYPA will communicate the importance of protecting healthy ecosystems and encourage adoption of sustainable land management practices by showcasing these efforts.

PROGRESS TO DATE

As part of the state and federal process for the relicensing and permitting of NYPA’s hydroelectric generating facilities, NYPA has made a commitment to implement a variety of mitigation activities, and has successfully restored and improved the ecosystem health of wetlands and other wildlife habitats across NYPA-owned lands.

NYPA’s industry leading ROW IVM Program selectively controls tall growing plant species while promoting low growth species such as shrubs, herbs, grasses, forbs, and ferns. This approach is supporting the development of a rich pollinator habitat along the ROWs while maintaining reliability-oriented vegetation management best practices.

IMPORTANCE OF POLLINATORS

Pollination is a critical ecosystem service that is vital to the security of our food and associated human health. Declines in pollinator populations over the last decade are causing global alarm. The electric power industry is seeing increasing pressure from regulatory agencies, customers, and other stakeholders to consider pollinators in their operations. NYPA has the opportunity to enhance and expand pollinator habitat through well-designed and cost-effective actions.

LAND OWNED OR MANAGED BY NYPA

SITE / LOCATION	ACRES
ST. LAWRENCE	10,200
NIAGARA	500
BLenheim-GILBOA	1,005
CLARK	160
500 MW & SCPPs	16
FLYNN	9
WHITE PLAINS	0.5
RIGHTS OF WAY	16,000
TOTAL	27,891

GOALS | STRATEGIES | ACTIONS

2019 2020 2021 2022 2023

GOALS	PROTECT ECOSYSTEMS AND INCREASE RESILIENCY AND CARBON SEQUESTRATION ON LAND OWNED OR MANAGED BY NYPA OR IMPACTED BY NYPA OPERATIONS				
	COMMUNICATE IMPORTANCE OF PROTECTING HEALTHY ECOSYSTEMS AND PROMOTE SUSTAINABLE LAND MANAGEMENT PRACTICES				
STRATEGY	INVENTORY AND ASSESS LAND MANAGEMENT PRACTICES				
ACTIONS	Inventory land coverage, habitat types, and species ranges using geographic information system (GIS) data and field surveys	●			
	Develop annual and long-term land management plans	●			
	Identify habitat improvement metrics	●			
	Review and revise existing policies or create new policies that support recommended practices	●	●		
	Work with industry experts and state partners to monitor threatened or endangered pollinators	●	●	●	●
	Seek Wildlife Habitat Council (WHC) and/or National Wildlife Federation (NWF) guidance and certification	●	●	●	●
STRATEGY	ENHANCE AND EXPAND HABITAT FOR POLLINATORS AND OTHER SPECIES AND INCREASE VEGETATION DENSITY FOR CARBON SEQUESTRATION				
ACTIONS	Identify mowed and low growth areas where practices can be modified to promote native habitat	●	●		
	Identify areas where biodiversity can be improved by managing invasive plants and promoting native plant species	●	●		
	Support remediation efforts in areas impacted by invasive species such as the Emerald Ash Borer	●	●	●	●
	Identify open areas for forestry compatible with local ecology	●	●		
	Develop methodology to estimate carbon stock	●	●	●	●
	Implement projects and actively monitor impacts	●	●	●	●
STRATEGY	IMPROVE RESILIENCE TO SEVERE WEATHER EVENTS				
ACTIONS	Identify strategies to protect areas prone to erosion or flooding	●	●		
	Implement projects and actively monitor impacts		●	●	●
STRATEGY	PROTECT AQUATIC ECOSYSTEMS FROM INVASIVE SPECIES				
ACTION	Support the efforts of state and local partners to manage invasive species of aquatic plants and animals		●	●	●
STRATEGY	INCREASE ACCESS TO WILDLIFE AREAS AND SHOWCASE NYPA'S HABITAT RESTORATION EFFORTS				
ACTIONS	Create native plant pollinator gardens near visitor centers and other buildings	●	●		
	Construct trails, walkways, and viewing platforms; install informational kiosks and other signage as needed	●	●	●	
	Identify opportunities to create grassland pollinator habitats for customer and large-scale renewable energy installations; implement projects where feasible	●	●	●	●

WORKING GROUP | ECOSYSTEMS AND BIODIVERSITY
PUBLIC & REGULATORY AFFAIRS

Sustainability

LAW

Licensing

UTILITY OPERATIONS

General Maintenance | All Sites
Environmental ROW Maintenance
Environment, Health & Safety
Engineering

COMMERCIAL OPERATIONS

Project & Business Development
Customer Business Development



STAKEHOLDER ENGAGEMENT

■ EMPLOYEES

PROGRAM OVERVIEW

Employee engagement and support are critical to the success of NYPA’s sustainability efforts. The objective of this program is to effectively communicate NYPA’s sustainability goals, encourage employee adoption of sustainable workplace practices, and strengthen understanding of the inherent value of sustainability in all their activities. Areas of focus include: waste, reuse and recycling, energy efficiency, solar energy, green commuting and electric vehicle adoption, green purchasing, and biodiversity and sustainable land management practices.

NYPA has been facilitating the transition to more sustainable workplace practices by providing the tools to make it easy. This includes installing charging stations to support EV commuting, installing water coolers to reduce purchases of bottled water, and installing waste stations to promote recycling.

The key strategies used to engage employees and influence behavior change are training, workshops, campaigns, and events.

- **Training and Workshops** | Provide training at all sites on sustainable technologies, products, processes and practices. Topics include electric vehicles, energy efficiency, green procurement, waste and recycling, and sustainable land management practices.
- **Campaigns and Events** | Engage employees on a broad range of sustainability topics through workplace campaigns and events, public campaigns and industry events. Topics include climate change, carbon footprint, transportation, responsible consumption, sustainable land management practices, and New York State sustainability goals, policies and programs.

PROGRESS TO DATE

In the last two years, more than 100 training sessions have been held across sites on topics ranging from NYPA’s sustainability program to electric vehicles and recycling.

Campaigns and events are scheduled throughout the year. These include Green Your Commute, Daylight Hour, Refuse Single Use, Pollinator Week, National Drive Electric Week, and the EcoCinema series. NYPA uses a sustainability engagement software platform to promote the campaigns, and tracks participation levels to improve effectiveness.

- The NYPA WeSpire software platform was launched in April 2018. More than 40% of employees have registered, making NYPA’s launch the most successful WeSpire roll-out to date.

WESPIRE UPDATE SIX MONTHS POST-LAUNCH	
690+ ACTIVE USERS	40% ENGAGEMENT RATE
5,000+ ACTIONS COMPLETED	1,800+ ENGAGEMENT STORIES POSTED
40+ CAMPAIGNS LAUNCHED	18% NOTIFICATION RESPONSE RATE

GOALS | STRATEGIES | ACTIONS

2019	2020	2021	2022	2023

GOALS	DRIVE ENTERPRISE-WIDE SUSTAINABILITY PERFORMANCE BY ENCOURAGING EMPLOYEES TO ADOPT SUSTAINABLE PRACTICES IN THE WORKPLACE				
STRATEGY	HOLD EMPLOYEE TRAINING ON SUSTAINABLE PRODUCTS, PROCEDURES AND PRACTICES				
ACTIONS	Provide green procurement training to ProCard holders	●	●	●	●
	Hold workshops on sustainable workplace practices for department and site administrators	●	●	●	●
	Provide training on EVs for Fleet users; hold EV Ride & Drive events at all sites	●	●	●	●
	Administer annual mandatory recycling training through Mosaic	●	●	●	●
	Conduct site-by-site assessments of workplace practices and identify opportunities for improvement		●	●	
	Hold best practice-sharing workshops for project teams on building energy efficiency, supply chain management, land management and other topics	●	●	●	●
STRATEGY	HOLD WORKPLACE CAMPAIGNS AND EVENTS, AND PARTICIPATE IN INDUSTRY CAMPAIGNS AND EVENTS				
ACTIONS	Develop and implement campaigns, including displays, exhibits, materials	●	●	●	●
	Hold Lunch & Learn events, guest speaker events, and expos at all sites	●	●	●	●
	Participate in other NYPA events with tabling and exhibits	●	●	●	●
	Create/update sustainability-related signage - all sites		●	●	
STRATEGY	USE SOFTWARE PLATFORM TO INCREASE PARTICIPATION AT ALL SITES				
ACTIONS	Promote campaigns and track participation levels	●	●	●	●
	Train sustainability partners at all sites to curate location-specific content	●	●	●	
	Build out new content areas for platform			●	●
	Identify metrics to assess effectiveness of campaigns; analyze and report progress	●	●	●	●

WORKING GROUP | EMPLOYEE ENGAGEMENT

PUBLIC & REGULATORY AFFAIRS

Sustainability
Community Relations
Corporate Communications

UTILITY OPERATIONS

General Maintenance
Site Project Teams

HR & ENTERPRISE SHARED SERVICES

Facility Management

■ EXTERNAL STAKEHOLDERS

PROGRAM OVERVIEW

EO166 directs state entities to lead by example in developing programs and strategies to address global warming, and emphasizes the importance of sharing best practices to accelerate change. This program identifies opportunities for NYPA to engage with the public on sustainability and promote New York's climate strategy. NYPA will hold exhibits, workshops and events on sustainability-related topics at NYPA visitor centers, and will participate in and provide sustainability exhibits for other public events.

GOALS STRATEGIES ACTIONS		2019	2020	2021	2022	2023
GOAL	DRIVE STATE-WIDE ENGAGEMENT AROUND SUSTAINABILITY TO ADVANCE STATE GOALS AND STRATEGIES					
STRATEGY	HOLD SUSTAINABILITY EXHIBITS, WORKSHOPS AND EVENTS AT NYPA VISITORS CENTERS					
ACTIONS	Develop seasonal and topical exhibits and materials specific to NYPA sustainability goals, programs and accomplishments	●	●	●	●	●
	Hold public EV Ride & Drive events	●	●	●	●	
	Hold public workshops and speaker events on sustainability, climate change, resiliency and other topics			●	●	●
	Integrate sustainability messaging and signage at visitors centers		●	●		
STRATEGY	INTEGRATE SUSTAINABILITY INTO NYPA EVENTS AND EXHIBITS					
ACTIONS	Integrate sustainability messaging into NY State Fair, NY Auto Show and other exhibits		●	●	●	●
	Integrate sustainable practices into NYPA public events – areas include food, waste, and vehicles		●	●	●	●
STRATEGY	SHARE NYPA BEST PRACTICES WITH CUSTOMERS AND STAKEHOLDERS					
ACTIONS	Establish relationships with regional sustainability organizations; share best practices and foster collaboration	●	●	●	●	●
	Identify opportunities to share NYPA internal best practices and lessons learned with customers		●	●	●	●

WORKING GROUP | EMPLOYEE ENGAGEMENT

PUBLIC & REGULATORY AFFAIRS

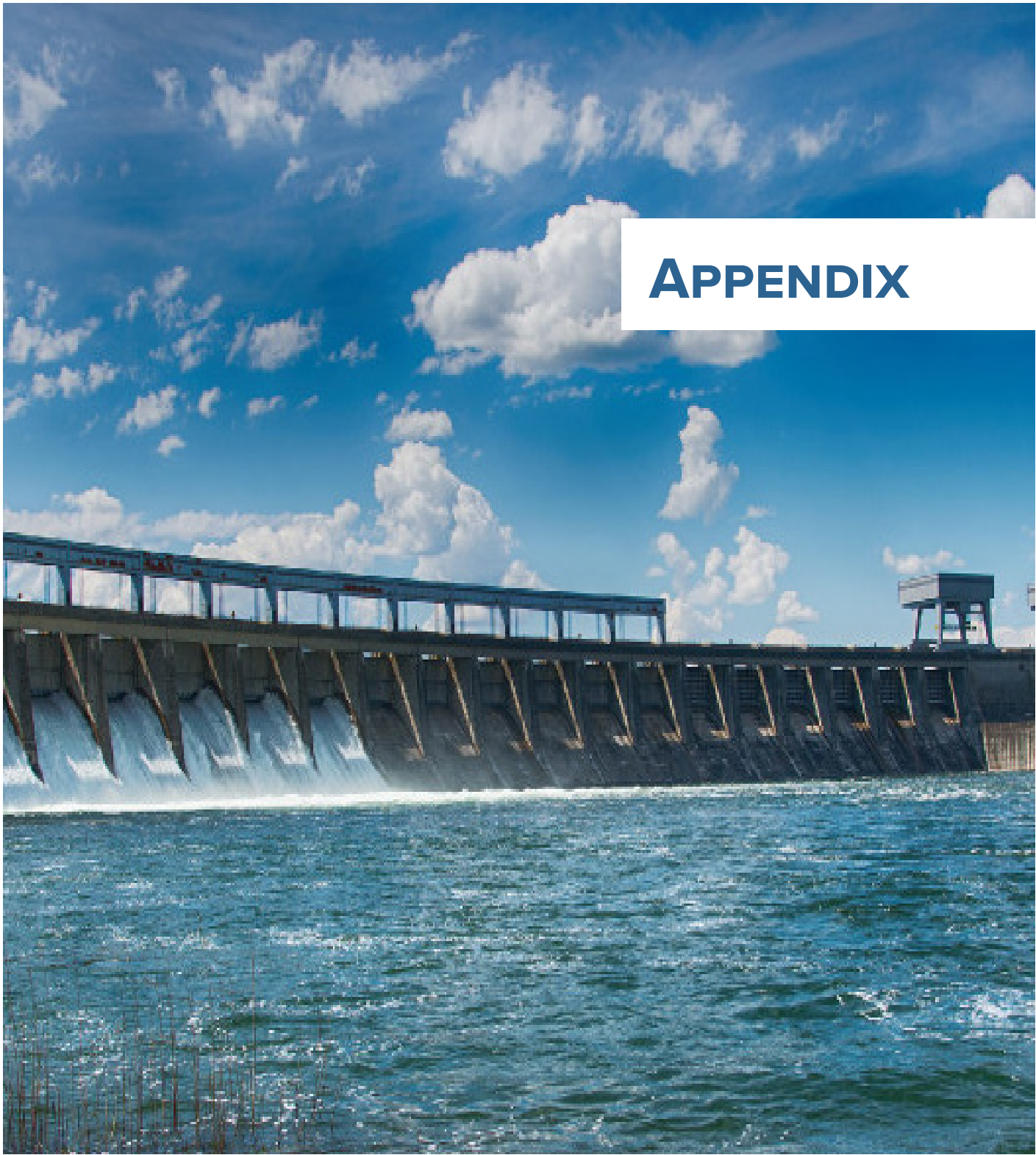
Sustainability
Community Relations
Corporate Communications

COMMERCIAL OPERATIONS

Clean Energy Business & Market Development
Energy Efficiency
Product & Business Development

BUSINESS SERVICES

Strategy

A wide-angle photograph of a large concrete dam with multiple spillways. Water is cascading over the spillways, creating white foam. The dam has a walkway on top with railings. The sky is bright blue with scattered white clouds. In the foreground, there is a body of water with some reeds or grasses visible on the left.

APPENDIX

MEMBERS OF THE SUSTAINABILITY ADVISORY COUNCIL

LEADERSHIP

Executive Sponsor	Senior Vice President, Public & Regulatory Affairs
Chair	Vice President, Environmental Justice & Sustainability
Manager	Director, Sustainability

UTILITY OPERATIONS

Power Supply	Regional Manager, Central NY
Power Supply	Regional Manager, Western NY
Power Supply	Regional Manager, Northern NY
Power Supply	Regional Manager, Southeastern NY
Transmission	Regional Manager, Transmission
Engineering	Director, Mechanical Engineering
Environment, Health & Safety	Environmental Scientist II, Environmental Operations
Project Management	Director, Mechanical Engineering

BUSINESS SERVICES

Finance	VP, Finance
Strategic Supply Management	VP, Strategic Supply Management
Strategy	VP, Strategy

COMMERCIAL OPERATIONS

Clean Energy Business & Market Development	VP, Clean Energy Business & Market Development
Economic Development	VP, Economic Development
Energy Efficiency	VP, Energy Efficiency
Energy Resource Management	VP, Energy Resource Management
New York Energy Manager	VP, New York Energy Manager
Project & Business Development	VP, Project & Business Development

HUMAN RESOURCES & ENTERPRISE SHARED SERVICES

Enterprise Shared Services	VP, Enterprise Shared Services
HR & Organizational Development	VP, Enterprise Shared Services

LAW

Relicensing & Implementation	Special Counsel I, Relicensing & Implementation

PUBLIC & REGULATORY AFFAIRS

Community & Government Relations	VP, Community & Government Relations

RISK MANAGEMENT

Enterprise Risk Management & Corporate Insurance	Senior Director, Enterprise Risk & Corporate Insurance

■ NYPA CORPORATE SUSTAINABILITY POLICY

Title: Sustainability Policy

Document Type: Company Policy

Document Number: CP 7-2

Revision Date: 8/25/2017

President: Quiniones, Gil | President & CEO

Executive Owner: Harriman, Kimberly | SVP Public & Regulatory Affairs

Content Owner: King, Kerry-Jane | Director Sustainability

1 - PURPOSE AND SCOPE

Sustainability is defined as an approach to development that seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs. It uses a “triple bottom line” accounting framework with three parts: economic, social and environmental. Corporate sustainability is accordingly a business approach that strategically manages economic, social and environmental performance for long-term value creation.

NYPA has taken a leadership role in building a new, clean energy economy that will sustain the prosperity of New York and protect the environment for future generations. NYPA is committed to maintaining leadership in sustainability and to helping New York State achieve its Energy Plan goals by increasing energy efficiency, reducing greenhouse emissions, and increasing the percentage of renewable energy generation. NYPA has made sustainability integral to its Strategic Vision. The Strategic Vision incorporates sustainability principles into processes guiding NYPA’s investment decisions, procurement and operational practices and human resources policies, which will achieve efficient and cost-effective use of energy, resources, and assets while minimizing environmental impacts.

This Policy establishes NYPA’s Sustainability Program and defines responsibilities for planning, executing, monitoring and reporting. In support of the State Energy Plan and NYPA’s Strategic Vision, the Sustainability Program aims to reduce source energy use intensity and source greenhouse gas intensity and to improve resource efficiency across NYPA operations, including: generation and transmission facilities, buildings, vehicles and transportation, procurement and supply chain, materials and waste management, water efficiency, and land management. The Sustainability Program identifies and sets sustainability goals and targets that focus on energy efficiency, greenhouse gas reductions, and sustainable resource and asset management practices. The Sustainability Program’s goals and targets are achieved through long-term and annual action plans in a way that makes good business sense, improves the work environment and brings value to employees and the communities in which NYPA operates.

2 - APPLICABILITY

This Policy shall be adhered to by all NYPA personnel and departments.

3 - INITIALISMS (ACRONYMS) AND DEFINITIONS

Initialisms

BTU: British Thermal Unit

EMC: Executive Management Committee

EO: Executive Order

GHG: Greenhouse Gases (includes CO₂, CH₄, N₂O and SF₆)

GWP: Global Warming Potential

Definitions

Source Energy: Measure aggregating for fuels consumed. Incorporates all transmission, delivery, and production losses. Reported in British Thermal Units (BTU).

Source Energy Use Intensity: Average building energy use rate as a function of gross area, expressed as BTU per ft.²

Source Greenhouse Gases: Measure aggregating for all greenhouse gas (GHG) emissions, including fugitive emissions from the production, transmission and delivery of fuel for electricity generation. Reported in metric tons (Mt).

Carbon Dioxide Equivalent (CO₂e): Measure used to compare source GHG emissions based on global warming potential (GWP), expressed in terms of GWP of one unit of CO₂. Reported in metric tons (Mt).

Source Greenhouse Gas or CO₂e Intensity: Average emission rate of GHG or CO₂e from given source relative to intensity of specific activity; for example: grams CO₂e per building/facility sq. ft.; grams CO₂e per vehicle mile traveled; metric tons CO₂e per gross Megawatt hour of generation.

4 - RESPONSIBILITY

The Sustainability Director is responsible for the maintenance of this document.

5 - POLICY IMPLEMENTATION

Sustainability Program implementation is a collaborative process. The Sustainability Group relies on the active participation of executives, designated as Key Stakeholders (see Section 5.2), for the development and execution of facility/department policies and procedures, identification of goals and targets, and development and implementation of action plans to ensure NYPA achieves its Sustainability Program goals.

5.1 The Senior Vice President, Public & Regulatory Affairs

The executive owner in charge of managing the overall requirements and the implementation of this policy. The Senior Vice President, Public & Regulatory Affairs is responsible for:

- 5.1.1 Oversight of NYPA's Sustainability Program, including goals, targets and metrics, action plans and reports.
- 5.1.2 Communication and coordination with Executive Management Committee (EMC) regarding Sustainability Program goals, targets, metrics, action plans and reports.

5.2 The Sustainability Director

The Sustainability Director has responsibility for overall development of the Sustainability Program. Responsibilities include:

- 5.2.1 Setting the direction, defining program requirements, and collaborating with Key Stakeholders to:
 - a) Develop NYPA-wide and departmental sustainability goals, targets, and metrics.
 - b) Develop long-term and annual sustainability action plans.
 - c) Identify sustainability standards and criteria for project design planning and implementation.
- 5.2.2 Communication and coordination with Executive Management Committee (EMC) regarding Sustainability Program goals, targets, metrics, action plans and reports.
- 5.2.3 Development and oversight of cross-departmental programs that support the Sustainability Program and coordination of cross-functional teams.
- 5.2.4 Establishing a sustainability committee to advise on the Sustainability Program and to support the integration of sustainability across NYPA.
- 5.2.5 Sustainability performance management, including conducting site visits to review progress, developing performance tracking tools, data collection and analysis, and internal and external reporting.
- 5.2.6 Development and oversight of employee engagement initiatives, including educational workshops and activities, and resources that support sustainable practices.
- 5.2.7 Preparation of internal reports (addressing metrics and facility/department performance) and external reports (including reports for New York State programs such as Clean Fleets NY, Executive Order (EO) 88 Build Smart NY, EO 4 State Green Procurement and Agency Sustainability, and EO 18 Restricting the Use of Bottled Water at State Facilities and Promoting Executive Agency Sustainability).
- 5.2.8 Participation in industry working groups and collaborative partnerships with state and federal agencies, utilities and other organizations to foster regional sustainability coordination and support for NYPA's Sustainability Program.

5.3 Key Stakeholders

Key Stakeholders include, but are not limited to, VP Environmental Justice & Sustainability, Regional Managers, VP Transmission, VP Engineering, VP Project Management, VP Operational Performance, VP Environment Health & Safety, VP Enterprise Shared Services, VP Procurement, VP Information Technology, VP Energy Services Implementation, VP Energy Management Center, VP Project & Business Development, VP HR & Organizational Development, and VP Corporate Communications.

Key Stakeholders have overall responsibility for the sustainability performance of their facilities/departments, which is tracked and reported against Sustainability Program metrics and targets and against the Strategic Planning balanced scorecard as part of NYPA's Strategic Vision implementation. Responsibilities include:

- 5.3.1 Develop sustainability goals, targets, metrics, and long-term and annual action plans, in collaboration with the Sustainability Director, as set forth above in subsection 4.2.
- 5.3.2 Identify and incorporate sustainability standards and criteria for project design planning and implementation, in consultation with the Sustainability Director.

- 5.3.3 Designate Content Owners to develop and maintain facility/department policies and/or procedures addressing Sustainability Program requirements, and approve and enforce facility/department policies and procedures to ensure compliance.
- 5.3.4 Designate Project Leads and provide oversight and guidance to ensure facility/department sustainability goals and targets are met. Responsibilities of Project Leads includes:
- a) Support development of facility/department sustainability goals, targets, metrics, and long-term action plans.
 - b) Support development and coordinate implementation of facility/department long-term and annual action plans to ensure sustainability goals and targets are met, including: identify projects that will achieve facility/department goals and targets, ensure projects are budgeted and appropriately resourced, and report on status and results achieved.
- 5.3.5 Ensure the facility/department meets all sustainability reporting requirements and maintains supporting documentation, including tools to track reporting obligations (as approved or provided by the Sustainability Director).

5.4 Strategy

Shall work with the Sustainability Director to ensure the Sustainability Program goals, targets and metrics address implementation of NYPA's Strategic Vision and align with the goals, targets and metrics of the balanced scorecard.

5.5 Office of Ethics and Compliance

Shall be responsible for monitoring NYPA's overall compliance with sustainability-related policies and applicable laws and regulations by reviewing reports produced by the Sustainability Group. The Office of Ethics and Compliance shall communicate any ethics or compliance issues to the Sustainability Director.

5.6 Program Goals, Targets, Metrics, and Action Plans

The Sustainability Program sets goals, targets and metrics for sustainability performance. These goals and targets align with and support New York State goals and the requirements of relevant Executive Orders and programs, including EO88: Build Smart NY, Clean Fleets NY, EO4: Green Procurement and Agency Sustainability, and EO18: Restricting the Use of Bottled Water at State Facilities.

The Sustainability Program prepares long-term and annual action plans to ensure the goals and targets are met. The long-term plans are developed through the collaborative effort of the Sustainability Director, Key Stakeholders and Project Leads under the guidance and with the approval of the EMC. Annual facility/department action plans and targets are developed by Project Leads under the guidance and with the approval of Key Stakeholders and the Sustainability Director. The facility/department action plans are submitted to the Sustainability Group, which is responsible for consolidation of these plans into an annual company action plan. As part of long-term and annual action plans, baselines are established, metrics identified and targets set for all program target areas as appropriate.

The Sustainability Director and VP Strategy work together to ensure the Sustainability Program goals, targets and metrics are aligned with goals and metrics on the balanced scorecard and address implementation of NYPA's Strategic Vision. All approved targets align with and support New York State requirements and are achievable and appropriately budgeted and resourced.

5.6.1 Program Target Areas

The Sustainability Program aims to achieve source energy use intensity and source greenhouse gas intensity reductions and to improve resource efficiency across NYPA's operations and especially in the following target areas:

5.6.1.1 Generation and Transmission Facilities

Establish baselines, identify metrics and set targets to reduce the source energy use intensity and source greenhouse gas (CO₂e) intensity of NYPA generation and transmission facilities where possible. Incorporate energy efficiency measures and other sustainable practices into design, construction, renovation, operation and maintenance, and deconstruction; these include measures to reduce energy consumption from auxiliary equipment process loads.

5.6.1.2 Buildings

Meet the requirements of Build Smart NY, which requires NYPA to reduce source energy use intensity 20 percent by 2020 in buildings 20,000 square feet and greater.

Establish baselines, identify metrics and set targets to reduce the source energy use intensity and source greenhouse gas intensity of NYPA buildings, including offices, visitor centers, warehouses and maintenance buildings. Adopt high performance green building standards and incorporate sustainable practices into design, construction, renovation, operation and maintenance, and deconstruction. These include energy efficiency measures and renewable energy installations.

5.6.1.3 Vehicles and Transportation

Meet the requirements of Clean Fleets NY. Under this program, NYPA has committed to electrify 50 percent of its light-duty administrative fleet by 2020. Establish baselines, identify metrics and set targets to reduce the source energy use intensity and source greenhouse gas intensity of NYPA vehicles. Incorporate high fuel efficiency and low emission requirements into fleet procurement practices, including right-sizing and electrification. Promote public transit and carpooling for business travel. Promote sustainable commuting alternatives for employees, including plug-in vehicles.

5.6.1.4 Procurement and Supply Chain

Meet the requirements of EO4, which requires NYPA to adopt green procurement specifications wherever possible. Establish baselines, identify metrics and set targets for sustainable procurement and supply chain management. Identify standards for vendor operations that address environmental performance, social responsibility, reporting, and resiliency. Evaluate lifecycle impacts of products, including environmental impacts of production, transport, use and disposal. Integrate sustainability criteria into vendor and product selection and bid evaluation processes.

5.6.1.5 Materials and Waste Management

Meet the requirements of EO4, which requires NYPA to reduce total office waste generated by 10 percent annually. Meet the requirements of EO18 prohibiting the purchase of bottled water except where potable water is not available. Establish baselines, identify metrics and set targets to reduce waste where possible. Conserve resources and minimize waste generation through adoption of procurement and waste management best practices, including promoting reuse. Establish processes to ensure all recyclable materials are diverted from the waste stream.

5.6.1.6 Water Efficiency

Establish baselines, identify metrics and set targets for water efficiency. Identify and implement measures to reduce potable water use intensity at buildings and facilities. Make more efficient use of potable and non-potable water in electricity generation processes where possible.

5.6.1.7 Land and Water Management and Biodiversity

Establish baselines, identify metrics and set targets for sustainable land and water management. Implement practices that protect wildlife and promote biodiversity, including habitat restoration, invasive plant management, and storm water controls.

5.6.1.8 Employee Engagement

Create campaigns and initiatives across program target areas that align with and directly support Sustainability Program goals. Provide sustainability education and resources to employees at all facilities. Incorporate sustainability into NYPA values and daily practices, and recognize individuals and departments achieving sustainability objectives. Leverage NYPA communities of interest to create a location for employees to share ideas and organize events around sustainability. Support the formation of green teams at all facilities.

5.6.1.9 Stakeholder Engagement

Develop collaborative partnerships with state and federal agencies, utilities and other organizations to foster regional sustainability coordination and support for NYPA's Sustainability Program.

5.7 Sustainability Program Tracking and Reporting

The Sustainability Group collects and analyzes all performance data, monitors progress towards sustainability targets, and works with Key Stakeholders, Content Owners and Project Leads to keep the Sustainability Program on track. The Sustainability Group reports performance results to Strategic Planning for inclusion in the balanced scorecard.

The Sustainability Group produces annual reports for internal and external stakeholders that include activities and results of the previous fiscal year. These reports may be published as part of the NYPA annual report or as an independent report and may include information on the energy efficiency, greenhouse gas emissions and water use associated with NYPA's electricity generation and transmission operations, as well as customer programs that promote sustainability.

The Sustainability Group prepares annual reports to meet specific New York State requirements, such as Clean Fleets NY, EO 88 Build Smart NY, EO 4 State Green Procurement and Agency Sustainability, and EO 18 Restricting the Use of Bottled Water at State Facilities and Promoting Executive Agency Sustainability.

6 - VIOLATIONS

NYPA is committed to this Sustainability Policy and expects all employees to support and help NYPA achieve Sustainability Program goals and targets. All NYPA Employees should report violations of this Policy to a supervisor, a human resources representative, or the Ethics and Compliance Office. They may also report such concerns anonymously through NYPA's Employee Concerns Line (1-877-TEL-NYPA).

Violations of this Policy and related policies and procedures by employees may result in disciplinary action up to and including termination. Violations of this Policy by contractors and other authorized third parties may result in the revocation of such party's access to NYPA's premises and/or electronic access to its systems, and the termination of such party's contract for services. In addition, where the conduct engaged in is illegal, violators may be subject to prosecution under applicable federal, state or local laws.

7 - REFERENCES

- 7.1 Clean Fleets NY
- 7.2 EO 88: BuildSmart NY
- 7.3 EO 4: Green Procurement and Agency Sustainability
- 7.4 EO 18: Restricting the Use of Bottled Water

8 - POLICY REVIEW AND EXPIRATION

This document will be reviewed and updated as business needs require. However, a mandatory review will be required on the anniversary date of the approved document.

Revision cycle: Every Other Year

9 - ATTACHMENTS

N/A



New York Power Authority
 Contracts for the Sale of Western New York Hydropower – Transmittal to the Governor
 Expansion and Replacement Power In-Service Allocations

December 11, 2018

Line	Customer Name	City	County	Region	IOU	Program	Allocation (kW)	Current Job Commitment	Extension Job Commitment	Annual Capital Investment Commitment (\$)	Current Allocation Expiration Date	Extended Allocation Expiration Date
1	3M Company	Tonawanda	Erie	Western New York	NGRID	EP	150	351	351	*	8/31/2024	12/31/2028
2	3M Company	Tonawanda	Erie	Western New York	NGRID	EP	500	*	*	*	6/30/2020	12/31/2028
3	3M Company	Tonawanda	Erie	Western New York	NGRID	EP	1,000	*	*	\$ 5,936,601	6/30/2020	12/31/2028
4	ADM Milling Company	Buffalo	Erie	Western New York	NGRID	EP	1,500	84	84	\$ 660,874	6/30/2020	12/31/2028
5	ADM Milling Company	Buffalo	Erie	Western New York	NGRID	RP	1,900	*	*	*	6/30/2020	12/31/2028
6	Advance 2000, Inc.	Amherst	Erie	Western New York	NGRID	RP	2,900	160	160	To be determined	1/31/2025	12/31/2028
7	Air Products and Chemicals, Inc.	Medina	Orleans	Finger Lakes	NGRID	RP	350	7	7	\$ 33,000	9/30/2020	12/31/2028
8	API Heat Transfer, Inc.	Buffalo	Erie	Western New York	NGRID	RP	250	238	238	\$ 384,000	11/30/2021	12/31/2028
9	Ascension Industries, Inc.	North Tonawanda	Niagara	Western New York	NGRID	RP	150	100	100	\$ 224,010	6/30/2020	12/31/2028
10	Ashland Advanced Materials LLC	Niagara Falls	Niagara	Western New York	NGRID	EP	2,050	44	44	\$ 150,000	12/31/2021	12/31/2028
11	Ashton Potter (USA) LTD	Williamsville	Erie	Western New York	NGRID	RP	450	50	50	\$ 50,000	6/30/2020	12/31/2028
12	ATI Allvac	Lockport	Niagara	Western New York	NYSEG	EP	200	71	71	\$ 398,765	6/30/2020	12/31/2028
13	ATI Allvac	Lockport	Niagara	Western New York	NYSEG	EP	1,000	*	*	*	10/31/2019	12/31/2028
14	ATI Allvac	Lockport	Niagara	Western New York	NYSEG	RP	300	*	*	*	10/31/2019	12/31/2028
15	Aurubis Buffalo, Inc.	Buffalo	Erie	Western New York	NGRID	EP	1,200	710	710	\$ 1,699,538	11/30/2019	12/31/2028
16	Aurubis Buffalo, Inc.	Buffalo	Erie	Western New York	NGRID	RP	250	*	*	*	6/30/2020	12/31/2028
17	Aurubis Buffalo, Inc.	Buffalo	Erie	Western New York	NGRID	RP	250	*	*	*	6/30/2020	12/31/2028
18	Aurubis Buffalo, Inc.	Buffalo	Erie	Western New York	NGRID	RP	3,000	*	*	*	6/30/2020	12/31/2028
19	Aurubis Buffalo, Inc.	Buffalo	Erie	Western New York	NGRID	RP	8,060	*	*	*	6/30/2020	12/31/2028
20	Aurubis Buffalo, Inc.	Buffalo	Erie	Western New York	NGRID	RP	2,800	*	*	*	6/30/2020	12/31/2028
21	BlackRock Niagara LLC	Getzville	Erie	Western New York	NGRID	EP	2,000	25	25	To be determined	11/30/2023	12/31/2028
22	Brunner, Inc.	Medina	Orleans	Finger Lakes	NGRID	EP	1,500	406	406	\$ 1,640,858	6/30/2020	12/31/2028
23	Brunner, Inc.	Medina	Orleans	Finger Lakes	NGRID	EP	300	*	*	*	6/30/2020	12/31/2028
24	Brunner, Inc.	Medina	Orleans	Finger Lakes	NGRID	RP	1,200	*	*	*	6/30/2020	12/31/2028
25	Brunner, Inc.	Medina	Orleans	Finger Lakes	NGRID	RP	2,500	*	*	*	11/30/2020	12/31/2028
26	Brunner, Inc.	Medina	Orleans	Finger Lakes	NGRID	RP	2,400	*	*	*	5/31/2022	12/31/2028
27	Buffalo Newspress Inc.	Buffalo	Erie	Western New York	NGRID	EP	200	138	138	\$ 303,630	6/30/2020	12/31/2028
28	Buffalo Tungsten Incorporated	Depew	Erie	Western New York	NGRID	RP	800	62	62	\$ 98,620	6/30/2020	12/31/2028
29	Buffalo Tungsten Incorporated	Depew	Erie	Western New York	NGRID	RP	1,250	*	*	*	6/30/2020	12/31/2028
30	Carleton Technologies Inc.	Orchard Park	Erie	Western New York	NYSEG	EP	700	262	262	\$ 534,493	6/30/2020	12/31/2028
31	CCL Label Inc.	Buffalo	Erie	Western New York	NGRID	RP	250	106	106	\$ 259,216	6/30/2020	12/31/2028
32	CertainTeed Corporation	Buffalo	Erie	Western New York	NGRID	EP	2,400	86	86	\$ 163,522	6/30/2020	12/31/2028
33	Citigroup Technology, Inc.	Getzville	Erie	Western New York	NGRID	RP	750	480	480	\$ 7,500	6/30/2020	12/31/2028
34	Cliffstar LLC	Dunkirk	Chautauqua	Western New York	NGRID	EP	400	428	428	\$ 2,642,313	6/30/2020	12/31/2028
35	Confer Plastics, Inc.	North Tonawanda	Niagara	Western New York	NGRID	EP	400	204	204	\$ 100,000	10/31/2024	12/31/2028
36	Confer Plastics, Inc.	North Tonawanda	Niagara	Western New York	NGRID	RP	300	*	*	*	6/30/2020	12/31/2028
37	Cummins Inc.	Lakewood	Chautauqua	Western New York	NGRID	EP	700	1,417	1,417	To be determined	8/31/2024	12/31/2028
38	Delaco AMTB, LLC	Tonawanda	Erie	Western New York	NGRID	RP	100	7	7	\$ 227,950	4/30/2019	12/31/2028
39	DKP Buffalo, LLC	Tonawanda	Erie	Western New York	NGRID	EP	750	57	57	\$ 350,000	6/30/2020	12/31/2028
40	Dunkirk Specialty Steel, LLC	Dunkirk	Chautauqua	Western New York	NGRID	EP	5,250	146	146	\$ 998,382	6/30/2020	12/31/2028
41	E.I. du Pont de Nemours & Co., Inc.	Buffalo	Erie	Western New York	NGRID	EP	1,800	605	605	\$ 8,533,333	6/30/2020	12/31/2028
42	E.I. du Pont de Nemours & Co., Inc.	Buffalo	Erie	Western New York	NGRID	RP	500	*	*	*	6/30/2020	12/31/2028
43	E.I. du Pont de Nemours & Co., Inc.	Buffalo	Erie	Western New York	NGRID	RP	1,300	*	*	*	6/30/2020	12/31/2028
44	E.I. du Pont de Nemours & Co., Inc.	Buffalo	Erie	Western New York	NGRID	RP	675	*	*	*	6/30/2020	12/31/2028
45	Fieldbrook Foods Corporation	Dunkirk	Chautauqua	Western New York	NGRID	EP	1,000	478	478	\$ 2,785,420	6/30/2020	12/31/2028
46	Fieldbrook Foods Corporation	Dunkirk	Chautauqua	Western New York	NGRID	EP	2,000	*	*	*	6/30/2020	12/31/2028
47	Finger Food Products, Inc.	Sanborn	Niagara	Western New York	NGRID	EP	100	29	29	To be determined	5/31/2024	12/31/2028
48	Flexo Transparent, Inc.	Buffalo	Erie	Western New York	NGRID	RP	380	100	100	\$ 192,335	6/30/2020	12/31/2028
49	Ford Motor Company	Buffalo	Erie	Western New York	NGRID	EP	2,900	990	990	\$ 6,733,333	6/30/2020	12/31/2028
50	Ford Motor Company	Buffalo	Erie	Western New York	NGRID	EP	4,300	*	*	*	6/30/2020	12/31/2028
51	Ford Motor Company	Buffalo	Erie	Western New York	NGRID	EP	1,500	*	*	*	6/30/2020	12/31/2028
52	Ford Motor Company	Buffalo	Erie	Western New York	NGRID	EP	1,000	*	*	*	8/31/2022	12/31/2028
53	Fresenius Kabi USA, LLC	Grand Island	Erie	Western New York	NGRID	RP	1,000	568	568	\$ 1,135,955	6/30/2020	12/31/2028
54	Fresenius Kabi USA, LLC	Grand Island	Erie	Western New York	NGRID	RP	1,000	*	*	*	6/30/2020	12/31/2028
55	Fresenius Kabi USA, LLC	Grand Island	Erie	Western New York	NGRID	RP	500	*	*	*	5/31/2019	12/31/2028
56	GEICO	Getzville	Erie	Western New York	NGRID	EP	1,300	2,900	2,900	\$ 825,709	6/30/2020	12/31/2028
57	GEICO	Getzville	Erie	Western New York	NGRID	RP	400	*	*	*	4/30/2025	12/31/2028
58	General Mills Flour Division	Buffalo	Erie	Western New York	NGRID	EP	1,000	400	400	\$ 5,974,667	6/30/2020	12/31/2028

New York Power Authority
Contracts for the Sale of Western New York Hydropower – Transmittal to the Governor
Expansion and Replacement Power In-Service Allocations

Exhibit "4b i-A-1"
December 11, 2018

Line	Customer Name	City	County	Region	IOU	Program	Allocation (kW)	Current Job Commitment	Extension Job Commitment	Annual Capital Investment Commitment (\$)	Current Allocation Expiration Date	Extended Allocation Expiration Date
59	General Mills Flour Division	Buffalo	Erie	Western New York	NGRID	RP	1,000	*	*	*	6/30/2020	12/31/2028
60	General Mills Flour Division	Buffalo	Erie	Western New York	NGRID	RP	3,100	*	*	*	6/30/2020	12/31/2028
61	General Motors LLC	Buffalo	Erie	Western New York	NGRID	EP	12,750	675	675	\$ 14,136,667	6/30/2028	12/31/2028
62	General Motors LLC	Buffalo	Erie	Western New York	NGRID	EP	5,000	*	*	*	6/30/2028	12/31/2028
63	General Motors LLC	Buffalo	Erie	Western New York	NGRID	EP	1,100	*	*	*	6/30/2028	12/31/2028
64	General Motors LLC	Buffalo	Erie	Western New York	NGRID	EP	800	*	*	*	6/30/2028	12/31/2028
65	General Motors LLC	Buffalo	Erie	Western New York	NGRID	RP	600	*	*	*	6/30/2028	12/31/2028
66	General Motors LLC	Buffalo	Erie	Western New York	NGRID	RP	2,000	*	*	*	6/30/2028	12/31/2028
67	Global Abrasive Products, Inc.	Lockport	Niagara	Western New York	NYSEG	EP	120	30	30	*	6/30/2020	12/31/2028
68	Globe Metallurgical, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	18,400	100	100	\$ 3,366,667	9/30/2021	12/31/2028
69	GM Components Holdings LLC	Lockport	Niagara	Western New York	NYSEG	EP	8,200	779	779	\$ 5,165,233	6/30/2020	12/31/2028
70	GM Components Holdings LLC	Lockport	Niagara	Western New York	NYSEG	EP	11,750	*	*	*	6/30/2020	12/31/2028
71	Graphic Controls Acquisition Corporation	Buffalo	Erie	Western New York	NGRID	EP	130	318	318	\$ 357,679	3/31/2020	12/31/2028
72	Graphic Controls Acquisition Corporation	Buffalo	Erie	Western New York	NGRID	RP	334	*	*	*	8/31/2023	12/31/2028
73	Graphic Controls Acquisition Corporation	Buffalo	Erie	Western New York	NGRID	RP	250	*	*	*	6/30/2020	12/31/2028
74	Graphic Controls Acquisition Corporation	Buffalo	Erie	Western New York	NGRID	RP	120	*	*	*	6/30/2020	12/31/2028
75	Greatbatch Inc	Alden	Erie	Western New York	NYSEG	EP	1,500	333	333	\$ 1,041,555	6/30/2020	12/31/2028
76	Greenpac Mill, LLC	Niagara Falls	Niagara	Western New York	NGRID	RP	10,000	108	108	To be determined	6/30/2020	12/31/2028
77	Habasit America, Inc.	Buffalo	Erie	Western New York	NGRID	RP	200	80	80	\$ 200,000	6/30/2020	12/31/2028
78	Hammond Manufacturing Company Inc.	Cheektowaga	Erie	Western New York	NGRID	RP	100	24	24	\$ 5,000	6/30/2020	12/31/2028
79	Honeywell International	Buffalo	Erie	Western New York	NGRID	RP	300	132	132	\$ 1,400,000	6/30/2020	12/31/2028
80	Hurtubise Tire, Inc.	North Tonawanda	Niagara	Western New York	NGRID	RP	100	10	10	\$ 30,000	6/30/2020	12/31/2028
81	Hydro-Air Components, Inc.	Buffalo	Erie	Western New York	NGRID	EP	250	116	116	\$ 125,224	6/30/2020	12/31/2028
82	I Squared R Element Co., Inc.	Akron	Erie	Western New York	NGRID	RP	500	93	93	\$ 76,521	6/30/2020	12/31/2028
83	I Squared R Element Co., Inc.	Akron	Erie	Western New York	NGRID	RP	400	*	*	*	7/31/2019	12/31/2028
84	Ingram Micro, Inc.	Williamsville	Erie	Western New York	NGRID	EP	130	1,600	1,600	\$ 71,433	9/30/2021	12/31/2028
85	Ingram Micro, Inc.	Williamsville	Erie	Western New York	NGRID	EP	900	*	*	*	10/31/2020	12/31/2028
86	Innomotive Solutions Group LLC	Lancaster	Erie	Western New York	NYSEG	RP	100	21	21	To be determined	5/31/2024	12/31/2028
87	International Imaging Materials	Amherst	Erie	Western New York	NGRID	EP	1,000	358	358	\$ 1,217,581	6/30/2020	12/31/2028
88	International Imaging Materials	Amherst	Erie	Western New York	NGRID	EP	1,250	*	*	*	6/30/2020	12/31/2028
89	International Imaging Materials	Amherst	Erie	Western New York	NGRID	RP	250	*	*	*	6/30/2020	12/31/2028
90	International Imaging Materials	Amherst	Erie	Western New York	NGRID	RP	200	*	*	*	6/30/2020	12/31/2028
91	International Imaging Materials	Amherst	Erie	Western New York	NGRID	RP	200	*	*	*	11/30/2020	12/31/2028
92	Kreher's Sunrise Farm, LLC	Basom (Town of Alabama)	Genesee	Finger Lakes	NGRID	RP	100	29	29	To be determined	1/31/2023	12/31/2028
93	Life Technologies Corporation	Grand Island	Erie	Western New York	NGRID	RP	400	525	525	\$ 564,929	6/30/2020	12/31/2028
94	Life Technologies Corporation	Grand Island	Erie	Western New York	NGRID	RP	375	*	*	*	6/30/2020	12/31/2028
95	Linde LLC	Buffalo	Erie	Western New York	NGRID	EP	10,500	40	40	\$ 386,000	6/30/2020	12/31/2028
96	Lockheed Martin Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	200	26	26	\$ 223,667	6/30/2020	12/31/2028
97	M&T Bank	Amherst	Erie	Western New York	NGRID	EP	1,050	116	116	To be determined	6/30/2020	12/31/2028
98	Maclean Curtis, LLC	Buffalo	Erie	Western New York	NGRID	RP	300	150	150	\$ 1,088,196	6/30/2020	12/31/2028
99	Maclean Curtis, LLC	Buffalo	Erie	Western New York	NGRID	RP	350	*	*	*	6/30/2020	12/31/2028
100	Maclean Curtis, LLC	Buffalo	Erie	Western New York	NGRID	RP	1,100	*	*	*	6/30/2020	12/31/2028
101	Mahle Behr Troy, Inc.	Lockport	Erie	Western New York	NYSEG	EP	500	208	208	To be determined	3/31/2019	12/31/2028
102	Mahle Behr Troy, Inc.	Lockport	Erie	Western New York	NYSEG	RP	1,000	*	*	*	3/31/2019	12/31/2028
103	Mayer Brothers Apple Products	West Seneca	Erie	Western New York	NYSEG	EP	200	134	134	\$ 1,983,667	6/30/2020	12/31/2028
104	Metaullics Systems (2040 Cory Rd)	Sanborn	Niagara	Western New York	NGRID	RP	1,000	29	29	\$ 156,599	6/30/2020	12/31/2028
105	Metaullics Systems (2050 Cory Rd)	Sanborn	Niagara	Western New York	NGRID	EP	1,050	30	30	\$ 25,000	6/30/2020	12/31/2028
106	Metaullics Systems (2050 Cory Rd)	Sanborn	Niagara	Western New York	NGRID	RP	500	*	*	*	6/30/2020	12/31/2028
107	MOD-PAC Corporation	Buffalo	Erie	Western New York	NGRID	EP	400	405	405	To be determined	10/31/2019	12/31/2028
108	Moldtech, Inc.	Lancaster	Erie	Western New York	NYSEG	EP	100	65	65	\$ 326,733	12/31/2020	12/31/2028
109	Monofrax, LLC	Falconer	Chautauqua	Western New York	James	EP	750	76	76	\$ 294,644	1/31/2021	12/31/2028
110	Moog Inc.	East Aurora	Erie	Western New York	NYSEG	EP	750	2,567	2,567	\$ 13,911,658	6/30/2020	12/31/2028
111	Moog Inc.	East Aurora	Erie	Western New York	NYSEG	EP	3,000	*	*	*	6/30/2020	12/31/2028
112	Moog Inc.	East Aurora	Erie	Western New York	NYSEG	EP	500	*	*	*	6/30/2020	12/31/2028
113	Moog Inc.	East Aurora	Erie	Western New York	NYSEG	EP	300	*	*	*	6/30/2020	12/31/2028
114	Moog Inc.	East Aurora	Erie	Western New York	NYSEG	RP	800	*	*	*	6/30/2020	12/31/2028
115	Nestle Purina PetCare Company	Dunkirk	Chautauqua	Western New York	NGRID	EP	500	419	419	\$ 2,920,536	6/30/2020	12/31/2028
116	Nestle Purina PetCare Company	Dunkirk	Chautauqua	Western New York	NGRID	EP	900	*	*	*	6/30/2020	12/31/2028

New York Power Authority
Contracts for the Sale of Western New York Hydropower – Transmittal to the Governor
Expansion and Replacement Power In-Service Allocations

Exhibit "4b i-A-1"
December 11, 2018

Line	Customer Name	City	County	Region	IOU	Program	Allocation (kW)	Current Job Commitment	Extension Job Commitment	Annual Capital Investment Commitment (\$)	Current Allocation Expiration Date	Extended Allocation Expiration Date
117	Nestle Purina PetCare Company	Dunkirk	Chautauqua	Western New York	NGRID	EP	2,000	*	*	*	6/30/2020	12/31/2028
118	Nestle Purina PetCare Company	Dunkirk	Chautauqua	Western New York	NGRID	EP	500	*	*	*	6/30/2020	12/31/2028
119	Niacet Corporation	Niagara Falls	Niagara	Western New York	NGRID	EP	500	92	92	\$ 880,000	6/30/2020	12/31/2028
120	Niacet Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	500	*	*	*	6/30/2020	12/31/2028
121	Niacet Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	1,000	*	*	*	6/30/2020	12/31/2028
122	Niacet Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	400	*	*	*	6/30/2020	12/31/2028
123	Niagara Coatings Services, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	200	17	17	To be determined	6/30/2020	12/31/2028
124	Niagara Falls Water Board	Niagara Falls	Niagara	Western New York	NGRID	RP	1,250	0	0	\$ 3,766,667	6/30/2020	12/31/2028
125	Niagara Falls Water Board	Niagara Falls	Niagara	Western New York	NGRID	RP	619	0	0	*	6/30/2020	12/31/2028
126	Niagara Falls Water Board	Niagara Falls	Niagara	Western New York	NGRID	RP	1,775	0	0	*	6/30/2020	12/31/2028
127	Niagara Refining LLC	Depew	Erie	Western New York	NGRID	RP	2,500	50	50	To be determined	4/30/2021	12/31/2028
128	Niagara Sheets, LLC	Wheatfield	Niagara	Western New York	NGRID	RP	400	33	33	\$ 470,000	6/30/2020	12/31/2028
129	Norampac Ind. Inc. Niagara Falls Division	Niagara Falls	Niagara	Western New York	NGRID	EP	1,600	126	126	\$ 1,302,040	6/30/2020	12/31/2028
130	North American Hoganas	Niagara Falls	Niagara	Western New York	NGRID	EP	4,000	57	57	\$ 499,660	6/30/2020	12/31/2028
131	North American Hoganas	Niagara Falls	Niagara	Western New York	NGRID	RP	1,000	*	*	*	6/30/2020	12/31/2028
132	Nuttall Gear Company	Niagara Falls	Niagara	Western New York	NGRID	EP	350	85	85	\$ 85,295	6/30/2020	12/31/2028
133	Oath Holdings, Inc.	Lockport	Niagara	Western New York	NYSEG	EP	7,200	115	115	To be determined	2/28/2022	12/31/2028
134	Oath Holdings, Inc.	Lockport	Niagara	Western New York	NYSEG	EP	15,000	125	125	To be determined	3/31/2025	12/31/2028
135	Occidental Chemical Corporation	Niagara Falls	Niagara	Western New York	NGRID	EP	10,000	170	170	\$ 5,966,667	6/30/2020	12/31/2028
136	Occidental Chemical Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	56,000	*	*	*	6/30/2020	12/31/2028
137	Olin Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	2,290	210	210	\$ 7,800,000	6/30/2020	12/31/2028
138	Olin Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	15,000	*	*	*	6/30/2020	12/31/2028
139	Olin Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	21,300	*	*	*	6/30/2020	12/31/2028
140	Olin Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	40,860	*	*	*	6/30/2020	12/31/2028
141	Olin Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	2,000	*	*	*	6/30/2020	12/31/2028
142	PCB Piezotronics, Inc.	Depew	Erie	Western New York	NYSEG	RP	250	57	57	\$ 82,361	6/30/2020	12/31/2028
143	PeroxyChem LLC	Tonawanda	Erie	Western New York	NGRID	EP	1,500	135	135	\$ 844,333	11/30/2019	12/31/2028
144	PeroxyChem LLC	Tonawanda	Erie	Western New York	NGRID	RP	750	*	*	*	6/30/2020	12/31/2028
145	PeroxyChem LLC	Tonawanda	Erie	Western New York	NGRID	RP	5,500	*	*	*	6/30/2020	12/31/2028
146	PeroxyChem LLC	Tonawanda	Erie	Western New York	NGRID	RP	2,500	*	*	*	6/30/2020	12/31/2028
147	Praxair, Inc.	Niagara Falls	Niagara	Western New York	NGRID	EP	1,950	81	81	\$ 656,246	6/30/2020	12/31/2028
148	Praxair, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	8,750	*	*	*	6/30/2020	12/31/2028
149	Praxair, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	35,900	*	*	*	6/30/2020	12/31/2028
150	Praxair, Inc.	Tonawanda	Erie	Western New York	NGRID	EP	1,950	1,274	1,274	\$ 1,564,217	6/30/2020	12/31/2028
151	Praxair, Inc.	Tonawanda	Erie	Western New York	NGRID	RP	750	*	*	*	6/30/2020	12/31/2028
152	Praxair, Inc.	Tonawanda	Erie	Western New York	NGRID	RP	1,950	*	*	*	6/30/2020	12/31/2028
153	Precious Plate Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	800	164	164	\$ 1,016,075	6/30/2020	12/31/2028
154	Precious Plate Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	400	*	*	*	3/31/2021	12/31/2028
155	Pride Pak Canada Ltd.	Medina	Orleans	Finger Lakes	NGRID	RP	1,000	163	163	To be determined	5/31/2024	12/31/2028
156	Protective Industries, Inc.	Buffalo	Erie	Western New York	NGRID	EP	250	224	224	\$ 2,010,941	6/30/2020	12/31/2028
157	Republic Steel	Blasdell	Erie	Western New York	NGRID	EP	7,200	237	237	\$ 534,528	6/30/2020	12/31/2028
158	Republic Steel	Blasdell	Erie	Western New York	NGRID	RP	1,900	*	*	*	6/30/2020	12/31/2028
159	RockTenn CP, LLC	North Tonawanda	Niagara	Western New York	NGRID	EP	300	128	128	To be determined	3/31/2024	12/31/2028
160	Rosina Food Products, Inc.	Cheektowaga	Erie	Western New York	NYSEG	EP	100	141	141	\$ 816,581	6/30/2020	12/31/2028
161	Rosina Food Products, Inc.	Cheektowaga	Erie	Western New York	NYSEG	EP	250	*	*	*	6/30/2020	12/31/2028
162	Rosina Food Products, Inc.	West Seneca	Erie	Western New York	NYSEG	EP	200	159	159	\$ 533,446	6/30/2020	12/31/2028
163	RubberForm Recycled Products, LLC	Lockport	Niagara	Western New York	NYSEG	EP	100	18	18	\$ 3,000	6/30/2020	12/31/2028
164	Saint-Gobain Advanced Ceramics - Boron Nitride	Amherst	Erie	Western New York	NGRID	RP	570	56	56	\$ 611,667	6/30/2020	12/31/2028
165	Saint-Gobain Advanced Ceramics - Boron Nitride	Amherst	Erie	Western New York	NGRID	RP	2,500	*	*	*	6/30/2020	12/31/2028
166	Saint-Gobain Advanced Structural Ceramics	Niagara Falls	Niagara	Western New York	NGRID	RP	200	114	114	\$ 1,336,533	6/30/2020	12/31/2028
167	Saint-Gobain Advanced Structural Ceramics	Niagara Falls	Niagara	Western New York	NGRID	RP	2,600	*	*	*	6/30/2020	12/31/2028
168	Saint-Gobain Advanced Structural Ceramics	Niagara Falls	Niagara	Western New York	NGRID	RP	1,000	*	*	*	6/30/2020	12/31/2028
169	Saint-Gobain Advanced Structural Ceramics	Niagara Falls	Niagara	Western New York	NGRID	RP	700	*	*	*	6/30/2020	12/31/2028
170	Saint-Gobain Ceramics & Plastics, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	1,005	69	69	\$ 1,384,966	6/30/2020	12/31/2028
171	Saint-Gobain Ceramics & Plastics, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	2,100	*	*	*	6/30/2020	12/31/2028
172	Saint-Gobain Ceramics & Plastics, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	100	*	*	*	6/30/2020	12/31/2028
173	Servotronics, Inc.	Elma	Erie	Western New York	NYSEG	EP	500	155	155	\$ 257,333	6/30/2020	12/31/2028
174	Sorrento Lactalis, Inc.	Buffalo	Erie	Western New York	NGRID	RP	1,500	500	500	\$ 762,000	6/30/2020	12/31/2028

New York Power Authority
Contracts for the Sale of Western New York Hydropower – Transmittal to the Governor
Expansion and Replacement Power In-Service Allocations

Exhibit "4b i-A-1"
December 11, 2018

Line	Customer Name	City	County	Region	IOU	Program	Allocation (kW)	Current Job Commitment	Extension Job Commitment	Annual Capital Investment Commitment (\$)	Current Allocation Expiration Date	Extended Allocation Expiration Date
175	Sorrento Lactalis, Inc.	Buffalo	Erie	Western New York	NGRID	RP	250	*	*	*	6/30/2020	12/31/2028
176	Sotek Inc./Belrix Industries, Inc.	Buffalo	Erie	Western New York	NGRID	RP	100	71	71	\$ 330,145	6/30/2020	12/31/2028
177	Special Metals Corporation	Dunkirk	Chautauqua	Western New York	NGRID	EP	950	76	76	\$ 217,667	6/30/2020	12/31/2028
178	Steuben Foods Incorporated	Elma	Erie	Western New York	NYSEG	EP	3,000	576	576	\$ 934,213	6/30/2028	12/31/2028
179	Steuben Foods Incorporated	Elma	Erie	Western New York	NYSEG	EP	5,000	*	*	*	6/30/2028	12/31/2028
180	Steuben Foods Incorporated	Elma	Erie	Western New York	NYSEG	EP	750	*	*	*	6/30/2028	12/31/2028
181	Stollberg, Inc.	Niagara Falls	Niagara	Western New York	NGRID	EP	300	58	58	\$ 165,500	6/30/2020	12/31/2028
182	Sumitomo Rubber USA, LLC	Tonawanda	Erie	Western New York	NGRID	EP	6,000	1,239	1,239	\$ 5,117,817	6/30/2020	12/31/2028
183	Sumitomo Rubber USA, LLC	Tonawanda	Erie	Western New York	NGRID	RP	800	*	*	*	6/30/2020	12/31/2028
184	Sumitomo Rubber USA, LLC	Tonawanda	Erie	Western New York	NGRID	RP	850	*	*	*	6/30/2020	12/31/2028
185	Sumitomo Rubber USA, LLC	Tonawanda	Erie	Western New York	NGRID	RP	4,191	*	*	*	6/30/2020	12/31/2028
186	Sumitomo Rubber USA, LLC	Tonawanda	Erie	Western New York	NGRID	RP	250	*	*	*	6/30/2020	12/31/2028
187	TAM Ceramics Group of NY, LLC	Niagara Falls	Niagara	Western New York	NGRID	EP	450	71	71	\$ 241,667	6/30/2020	12/31/2028
188	TAM Ceramics Group of NY, LLC	Niagara Falls	Niagara	Western New York	NGRID	RP	5,650	*	*	*	6/30/2020	12/31/2028
189	Time Release Sciences, Inc.	Buffalo	Erie	Western New York	NGRID	RP	250	77	77		6/30/2020	12/31/2028
190	Time Release Sciences, Inc.	Buffalo	Erie	Western New York	NGRID	RP	250	*	*	\$ 25,000	11/30/2020	12/31/2028
191	Time Release Sciences, Inc.	Buffalo	Erie	Western New York	NGRID	RP	200	*	*	*	6/30/2020	12/31/2028
192	Tops Markets, LLC	Lancaster	Erie	Western New York	NYSEG	EP	550	560	560	\$ 427,900	6/30/2020	12/31/2028
193	Tops Markets, LLC	West Seneca	Erie	Western New York	NYSEG	RP	600	63	63	\$ 33,000	11/30/2020	12/31/2028
194	Treibacher Schleifmittel North America, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	400	35	35	\$ 211,492	6/30/2020	12/31/2028
195	Trinity Packaging Corporation	Cheektowaga	Erie	Western New York	NYSEG	RP	200	150	150	To be determined	9/30/2021	12/31/2028
196	Try-It Distributing Co., Inc.	Lancaster	Erie	Western New York	NYSEG	EP	200	265	265	To be determined	6/30/2020	12/31/2028
197	Tulip Corporation	Niagara Falls	Niagara	Western New York	NGRID	EP	300	70	70	\$ 79,333	6/30/2020	12/31/2028
198	Tulip Corporation	Niagara Falls	Niagara	Western New York	NGRID	RP	1,200	*	*	*	6/30/2020	12/31/2028
199	Unifrax I LLC	Sanborn	Niagara	Western New York	NGRID	RP	1,000	95	95	\$ 32,667	6/30/2020	12/31/2028
200	Unifrax I LLC	Tonawanda	Erie	Western New York	NGRID	RP	1,355	238	238	\$ 340,333	2/28/2022	12/31/2028
201	Unifrax I LLC	Tonawanda	Erie	Western New York	NGRID	RP	1,000	*	*	*	6/30/2020	12/31/2028
202	Unifrax I LLC	Tonawanda	Erie	Western New York	NGRID	RP	2,600	*	*	*	6/30/2020	12/31/2028
203	Upstate Niagara Cooperative, Inc.	West Seneca	Erie	Western New York	NYSEG	EP	1,000	144	144	\$ 1,163,716	6/30/2020	12/31/2028
204	Washington Mills Electro Minerals Corp	Niagara Falls	Niagara	Western New York	NGRID	RP	5,250	53	53	\$ 1,475,667	6/30/2020	12/31/2028
205	Washington Mills Tonawanda, Inc.	Tonawanda	Erie	Western New York	NGRID	RP	250	29	29	\$ 237,333	6/30/2020	12/31/2028
206	Welded Tube USA, Inc.	Lackawanna	Erie	Western New York	NGRID	EP	2,870	89	89	To be determined	9/30/2020	12/31/2028
207	Western New York Energy, LLC	Medina	Orleans	Finger Lakes	NGRID	RP	5,000	40	40	\$ 42,402	6/30/2020	12/31/2028
						Totals *	513,009	30,059	30,059	\$ 136,379,621		

* Signifies that a job and/or capital investment commitment listed for a specific customer may also relate to this allocation. To avoid possible confusion, such commitment is listed only once. Commitments will be listed in the final contract with the customer as appropriate.

New York Power Authority
Contracts for the Sale of Western New York Hydropower – Transmittal to the Governor
Expansion and Replacement Power - Pending Allocations

Exhibit "4b i-A-2"
December 11, 2018

Line	Customer Name	City	County	Region	IOU	Program	Allocation (kW)	Current Job Commitment	Extension Job Commitment	Specific Project Investment Commitment (\$)	Current Allocation Expiration Date	Extended Allocation Expiration Date
1	CI Filing Systems LLC	Tonawanda	Erie	Western New York	NGRID	RP	1,000	80	80	\$ 7,900,000	N/A	12/31/2028
2	Flexo Transparent, Inc.	Buffalo	Erie	Western New York	NGRID	RP	300	125	125	\$ 6,500,000	N/A	12/31/2028
3	Fresenius Kabi USA, LLC	Grand Island	Erie	Western New York	NGRID	RP	2,000	665	665	\$ 30,000,000	N/A	12/31/2028
4	Just Greens, LLC	Lackawanna	Erie	Western New York	NGRID	EP	1,840	36	36	\$ 32,620,132	N/A	12/31/2028
5	Mayer Bros. Apple Products, Inc.	Somerset	Niagara	Western New York	NGRID	RP	200	111	111	\$ 3,200,000	N/A	12/31/2028
6	Moog Inc.	East Aurora	Erie	Western New York	NYSEG	RP	4,000	3,224	3,224	\$ 33,800,000	N/A	12/31/2028
7	Niagara Coatings Services, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	100	28	28	\$ 475,000	N/A	12/31/2028
8	Saint-Gobain Ceramics & Plastics, Inc.	Niagara Falls	Niagara	Western New York	NGRID	RP	300	76	76	\$ 4,530,000	N/A	12/31/2028
9	Sumitomo Rubber USA, LLC	Tonawanda	Erie	Western New York	NGRID	RP	1,500	1,271	1,271	\$ 87,000,000	N/A	12/31/2028
10	Unifrax I LLC (Pirson Parkway)	Tonawanda	Erie	Western New York	NGRID	RP	1,400	45	45	\$ 18,500,000	N/A	12/31/2028
11	Unifrax I LLC (Pirson Parkway)	Tonawanda	Erie	Western New York	NGRID	RP	1,000	*	*	\$ 28,500,000	N/A	12/31/2028
12	Unifrax I LLC	Tonawanda	Erie	Western New York	NGRID	RP	1,900	318	318	\$ 33,000,000	N/A	12/31/2028
						Totals *	15,540	5,979	5,979	\$ 286,025,132		

* Signifies that a job and/or capital investment commitment listed for a specific customer may also relate to this allocation. To avoid possible confusion, such commitment is listed only once. Commitments will be listed in the final contract with the customer as appropriate.

POWER AUTHORITY
OF THE
STATE OF NEW YORK

30 South Pearl Street
10th Floor
Albany, New York 12207-3425

AGREEMENT FOR THE SALE
OF EXPANSION POWER AND/OR REPLACEMENT POWER

<Customer Legal Name>

The POWER AUTHORITY OF THE STATE OF NEW YORK (“Authority”), created pursuant to Chapter 772 of the New York Laws of 1931 and existing under Title I of Article V of the New York Public Authorities Law (“PAL”), having its office and principal place of business at 30 South Pearl Street, 10th Floor, Albany, New York 12207-3425, hereby enters into this Agreement for the Sale of Expansion Power and/or Replacement Power (“Agreement”) with <Customer Legal Name> (“Customer”) with offices and principal place of business at <Customer Address>. The Authority and the Customer are from time to time referred to in this Agreement as “Party” or collectively as “Parties” and agree as follows:

RECITALS

WHEREAS, the Authority is authorized to sell hydroelectric power produced by the Niagara Power Project, Federal Energy Regulatory Commission (“FERC”) Project No. 2216, including hydropower known as Expansion Power (“EP”) and Replacement Power (“RP”) to qualified businesses in accordance with PAL § 1005(5) and (13);

WHEREAS, prior to the Effective Date, the Authority has provided the Customer with electric service in accordance with one or more written agreements (collectively, “Prior Agreement”) to enable the Customer to receive Electric Service for one or more allocations of EP and/or RP awarded by the Authority;

WHEREAS, the Customer has requested that its EP and/or RP allocation(s) be extended, and has offered to continue to make specific commitments relating to, among other things, the creation and/or retention of jobs, capital investments and adoption of energy efficiency measures at the Facility, in exchange for such extension;

WHEREAS, the Authority’s Board of Trustees (“Trustees”) approved extension of the Customer’s existing allocation(s) (defined in Article I of this Agreement as the “Allocation”), subject to agreement on the terms and conditions for the sale of the Allocation and related matters;

WHEREAS, the Parties have reached an agreement on the terms and conditions applicable for the sale of the Allocation for an extended term as provided for in this Agreement;

WHEREAS, the Parties desire to enter into this Agreement in advance of expiration of the Allocation in order to promote commercial and financial certainty and long term planning by each of the Parties;

WHEREAS, the Parties intend for this Agreement to supersede and terminate the Prior Agreement and provide the terms and conditions for the sale of the Allocation, except as otherwise provided in this Agreement with respect to certain supplemental commitments of the Customer under the Prior Agreement;

WHEREAS, execution of this Agreement shall cause service hereunder to be subject to the rates and other terms and conditions of Service Tariff No. WNY-2 as provided for in this Agreement;

WHEREAS, the Authority has complied with requirements of PAL § 1009, and has been

authorized to execute the Agreement.

NOW, THEREFORE, in consideration of mutual covenants, terms, and conditions herein, and for other good and valuable consideration, the receipt and adequacy of which the Parties hereby acknowledge, the Parties do hereby mutually covenant and agree as follows:

ARTICLE I **DEFINITIONS**

When used with initial capitalization, whether singular or plural, the following terms, as used in this Agreement, shall have the meanings as set forth below. When used with initial capitalization, whether singular or plural, terms defined in schedules or appendices to this Agreement shall have the meanings set forth in such schedules or appendices.

“Adverse Water Condition” means any event or condition, including without limitation a hydrologic or hydraulic condition, that relates to the flow, level, or usage of water at or in the vicinity of the Project and/or its related facilities and structures, and which prevents, threatens to prevent, or causes the Authority to take responsive action that has the effect of preventing, the Project from producing a sufficient amount of energy to supply the full power and energy requirements of firm power and firm energy customers who are served by the Project.

“Agreement” means this Agreement, and unless otherwise indicated herein, includes all schedules, appendices and addenda thereto, as the same may be amended from time to time.

“Allocation” refers to the allocation(s) of EP and/or RP awarded to the Customer as specified in Schedule A.

“Alternative REC Compliance Program” has the meaning provided in Schedule E.

“Annual Capital Investment Commitment” has the meaning set forth in Schedule B.

“Annual CI Expenditures” has the meaning set forth in Schedule B.

“Base Employment Level” has the meaning set forth in Schedule B.

“Contract Demand” is as defined in Service Tariff No. WNY-2.

“Customer-Arranged Energy” means energy that the Customer procures from sources other than the Authority for the purpose of replacing Firm Energy that is not supplied to the Customer due to a Planned Hydropower Curtailment.

“Effective Date” means the date that this Agreement is fully executed by the Parties.

“Electric Service” is the Firm Power and Firm Energy associated with the Allocation and sold by the Authority to the Customer in accordance with this Agreement, Service Tariff No. WNY-2 and the Rules.

“Energy Services” has the meaning set forth in Article V of this Agreement.

“Expansion Power” (or “EP”) is 250 MW of Firm Power and associated Firm Energy from the Project eligible to be allocated by the Authority for sale to businesses pursuant to PAL § 1005(13).

“Expansion Project” has the meaning set forth in Section IV.3.a of this Agreement.

“Expansion Project Capital Investment Commitment” has the meaning set forth in Schedule B.

“Facility” means the Customer’s facilities as described in Schedule A to this Agreement.

“Firm Power” is as defined in Service Tariff No. WNY-2.

“Firm Energy” is as defined in Service Tariff No. WNY-2.

“FERC” means the Federal Energy Regulatory Commission (or any successor organization).

“FERC License” means the first new license issued by FERC to the Authority for the continued operation and maintenance of the Project, pursuant to Section 15 of the Federal Power Act, which became effective September 1, 2007 after expiration of the Project’s original license which became effective in 1957.

“Hydro Projects” is a collective reference to the Project and the Authority’s St. Lawrence-FDR Project, FERC Project No. 2000.

“International Joint Commission” or “IJC” refers to the entity with responsibility to prevent and resolve disputes between the United States of America and Canada under the *1909 Boundary Waters Treaty* and pursues the common good of both countries as an independent and objective advisor to the two governments. The IJC rules upon applications for approval of projects affecting boundary or transboundary waters and may regulate the operation of these projects.

“Load Reduction” has the meaning set forth in Section IX.6 of this Agreement.

“Load Serving Entity” (or “LSE”) means an entity designated by a retail electricity customer (including the Customer) to provide capacity, energy and ancillary services to serve such customer, in compliance with NYISO Tariffs, rules, manuals and procedures.

“Metering Arrangement” has the meaning set forth in Section II.8 of this Agreement.

“NYEM” means the New York Energy Manager, an energy management center owned and operated by the Authority.

“NYEM Agreement” means a written agreement between the Authority and the Customer providing for the Facility’s enrollment and Customer’s participation in NYEM.

“NYEM Participation” has the meaning specified in Schedule B of this Agreement.

“NYISO” means the New York Independent System Operator or any successor organization.

“NYISO Charges” has the meaning set forth in Section VII.3 of this Agreement.

“NYISO Tariffs” means the NYISO’s Open Access Transmission Tariff or the NYISO’s Market Administration and Control Area Services Tariff, as applicable, as such tariffs are modified from time to time, or any successor to such tariffs.

“Planned Hydropower Curtailment” means a temporary reduction in Firm Energy to which the Customer is entitled to receive under this Agreement made by the Authority in response to an anticipated or forecasted Adverse Water Condition.

“Physical Energy Audit” or “Audit” means a physical evaluation of the Facility in a manner approved by the Authority that includes at a minimum the following elements: (a) an assessment of the Facility’s energy use, cost and efficiency which produces an energy utilization index for the Facility (such as an Energy Use Intensity or Energy Performance Indicator); (b) a comparison of the Facility’s index to indices for similar buildings/facilities; (c) an analysis of low-cost/no-cost measures for improving energy efficiency; (d) a listing of potential capital improvements for improving energy consumption; and (e) an initial assessment of potential costs and savings from such measures and improvements.

“Prior Agreement” has the meaning set forth in the recitals to this Agreement.

“Project” means the Niagara Power Project, FERC Project No. 2216.

“Replacement Power” (or “RP”) is 445 MW of Firm Power and associated Firm Energy from the Project eligible to be allocated by the Authority for sale to businesses pursuant to PAL § 1005(13).

“Reporting Year” means the yearly interval that the Authority uses for reporting, compliance and other purposes as specified in this Agreement. The Reporting Year for this Agreement is from January 1 through December 31, subject to change by the Authority without notice.

“Rolling Average” has the meaning set forth in Schedule B.

“Rules” are the applicable provisions of Authority’s rules and regulations (Chapter X of Title 21 of the Official Compilation of Codes, Rules and Regulations of the State of New York), as may be modified from time to time by the Authority.

“Service Information” has the meaning set forth in Section II.12 of this Agreement.

“Service Tariff No. WNY-2” means the Authority’s Service Tariff No. WNY-2, as may be modified from time to time by the Authority, which contains, among other things, the rate

schedule establishing rates and other commercial terms for sale of Electric Service to Customer under this Agreement.

“Schedule A” refers to the Schedule A entitled “Expansion Power and/or Replacement Power Allocations” which is attached to and made part of this Agreement.

“Schedule B” refers to the Schedule B entitled “Supplemental Expansion Power and/or Replacement Power Commitments” which is attached to and made part of this Agreement, including any appendices attached thereto.

“Schedule C” refers to the Schedule C entitled “Takedown Schedule” which is attached to and made part of this Agreement.

“Schedule D” refers to the Schedule D entitled “Zero Emission Credit Charge” which is attached to and made part of this Agreement.

“Schedule E” refers to the Schedule E entitled “Monthly Renewable Energy Credit Charge” which is attached to and made part of this Agreement.

“Substitute Energy” means energy that is provided to the Customer by or through the Authority for the purpose of replacing Firm Energy that is not supplied to the Customer due to a Planned Hydropower Curtailment or an Unplanned Hydropower Curtailment.

“Takedown” means the portion of the Allocation that Customer requests to be scheduled for a specific period as provided for in Schedule C, if applicable.

“Taxes” is as defined in Service Tariff No. WNY-2.

“Unforced Capacity” (or “UCAP”) means the electric capacity required to be provided by LSEs to serve electric load as defined by the NYISO Tariffs, rules, manuals and procedures.

“Unplanned Hydropower Curtailment” means a temporary reduction in the amount of Firm Energy to which the Customer is entitled to receive under this Agreement due to Adverse Water Condition that the Authority did not anticipate or forecast.

“Utility Tariff” means the retail tariff(s) of the Customer’s local electric utility filed and approved by the PSC applicable to the delivery of EP and/or RP.

ARTICLE II **ELECTRIC SERVICE**

1. The Authority shall make available Electric Service to enable the Customer to receive the Allocation in accordance with this Agreement, Service Tariff No. WNY-2 and the Rules.
2. The Customer shall not be entitled to receive Electric Service under this Agreement for any EP and/or RP allocation unless such EP and/or RP allocation is identified in Schedule A.

3. The Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation specified in Schedule A. If Schedule C specifies a Takedown Schedule for the Allocation, the Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation in accordance with such Takedown Schedule.
4. The Authority shall provide UCAP in amounts necessary to meet the Customer's NYISO UCAP requirements associated with the Allocation in accordance with the NYISO Tariffs. The Customer shall be responsible to pay the Authority for such UCAP in accordance with Service Tariff No. WNY-2.
5. The provision of Electric Service associated with the Allocation is an unbundled service separate from the transmission and delivery of power and energy to the Customer. The Customer acknowledges and agrees that Customer's local electric utility, not the Authority, shall be responsible for delivering the Allocation to the Facility specified in Schedule A in accordance with the applicable Utility Tariff(s).
6. The Contract Demand for the Customer's Allocation may be modified by the Authority if the amount of Firm Power and Firm Energy available for sale as EP or RP from the Project is modified as required to comply with any ruling, order, or decision of any regulatory or judicial body having jurisdiction, including but not limited to FERC. Any such modification will be made on a pro rata basis to all EP and RP customers, as applicable, based on the terms of such ruling, order, or decision.
7. The Contract Demand may not exceed the Allocation.
8. The Customer's Facility must be metered by the Customer's local electric utility in a manner satisfactory to the Authority, or another metering arrangement satisfactory to the Authority must be provided (collectively, "Metering Arrangement"). A Metering Arrangement that is not satisfactory to the Authority shall be grounds, after notice to the Customer, for the Authority to modify, withhold, suspend, or terminate Electric Service to the Customer. If a Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination that it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. After commencement of Electric Service, the Customer shall notify the Authority in writing within thirty (30) days of any alteration to the Facility's Metering Arrangement, and provide any information requested by the Authority (including Facility access) to enable the Authority to determine whether the Metering Arrangement remains satisfactory. If an altered Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. The Authority may, in its discretion, waive any of the requirements provided for in this Section in whole or in part where in the Authority's judgment, another mechanism satisfactory to the Authority can be implemented to enable the Authority to receive pertinent, timely and accurate information relating to the Customer's energy consumption and demand and render bills to the Customer for all fees, assessments and charges that become due in accordance with this Agreement, Service Tariff No. WNY-2, and the Rules.

9. The Customer consents to the exchange of information between the Authority and the Customer's local electric utility pertaining to the Customer that such parties determine is necessary to provide for the allocation, sale and delivery of the Allocation to the Customer, the proper and efficient implementation of the EP and/or RP program, billing related to Electric Service, and/or the performance of such parties' obligations under any contracts or other arrangements between them relating to such matters. In addition, the Customer agrees to complete such forms and consents that the Authority determines are necessary to effectuate such exchanges of information.
10. The provision of Electric Service by the Authority shall be dependent upon the existence of a written agreement between the Authority and the Customer's local electric utility providing for the delivery of the Allocation on terms and conditions that are acceptable to the Authority.
11. The Customer understands and acknowledges that the Authority may from time to time require the Customer to complete forms, execute consents, and provide information (collectively, "Service Information") that the Authority determines is necessary for the provision of Electric Service, the delivery of the Allocation, billing related to Electric Service, the effective administration of the EP and/or RP programs, and/or the performance of contracts or other arrangements between the Authority and the Customer's local electric utility. The Customer's failure to provide Service Information on a timely basis shall be grounds for the Authority in its discretion to modify, withhold, suspend, or terminate Electric Service to the Customer.

ARTICLE III

RATES, TERMS AND CONDITIONS

1. Electric Service shall be sold to the Customer in accordance with the rates, terms and conditions provided for in this Agreement, Service Tariff No. WNY-2 and the Rules. The Authority agrees to waive the Minimum Monthly Charge set forth in Service Tariff No. WNY-2 for a period up to one (1) year upon written request from the Customer that is accompanied by information that demonstrates to the Authority's satisfaction a short-term reduction or interruption of Facility operations due to events beyond the Customer's control. The Customer shall provide such information that the Authority requests during the period of any such waiver to enable the Authority to periodically evaluate the ongoing need for such waiver.
2. If the Authority at any time during the term of this Agreement enters into an agreement with another customer for the sale of EP or RP at power and energy rates that are more advantageous to such customer than the power and energy rates provided in this Agreement and Service Tariff No. WNY-2, then the Customer, upon written request to the Authority, will be entitled to such more advantageous power and energy rates in the place of the power and energy rates provided in this Agreement and Service Tariff No. WNY-2 effective from the date of such written request, provided, however, that the foregoing provision shall not apply to:

- a. any Prior Agreement for the sale of EP and/or RP with an Authority customer who has declined the Authority's offer to enter into a form of agreement for the sale of EP and/or RP that is associated with Service Tariff No. WNY-2; or
 - b. any agreement for the sale of EP and/or RP with an Authority customer which is associated with such customer's participation in an Alternative REC Compliance Program provided for in Schedule E of this Agreement.
3. Notwithstanding any provision of this Agreement to the contrary, the power and energy rates for Electric Service shall be subject to increase by Authority at any time upon 30 days prior written notice to Customer if, after consideration by Authority of its legal obligations, the marketability of the output or use of the Project and Authority's competitive position with respect to other suppliers, Authority determines in its discretion that increases in rates obtainable from any other Authority customers will not provide revenues, together with other available Authority funds not needed for operation and maintenance expenses, capital expenses, and reserves, sufficient to meet all requirements specified in Authority's bond and note resolutions and covenants with the holders of its financial obligations. Authority shall use its best efforts to inform Customer at the earliest practicable date of its intent to increase the power and energy rates pursuant to this provision. With respect to any such increase, Authority shall forward to Customer with the notice of increase, an explanation of all reasons for the increase, and shall also identify the sources from which Authority will obtain the total of increased revenues and the bases upon which Authority will allocate the increased revenue requirements among its customers. Any such increase in rates shall remain in effect only so long as Authority determines such increase is necessary to provide revenues for the purposes stated in the preceding sentences.
4. In addition to all other fees, assessments and charges provided for in the Agreement, Service Tariff WNY-2 and the Rules, the Customer shall be responsible for payment of the Zero Emission Credit Charge and Monthly Renewable Energy Credit Charge provided for in Schedule D and Schedule E, respectively, of this Agreement.

ARTICLE IV

SUPPLEMENTAL COMMITMENTS

1. Supplemental Commitments. Schedule B sets forth the Customer's "Supplemental Expansion Power and/or Replacement Power Commitments" ("Supplemental Commitments"). The Authority's obligation to provide Electric Service under this Agreement is expressly conditioned upon the Customer's timely compliance with the Supplemental Commitments described in Schedule B as further provided in this Agreement. The Customer's Supplemental Commitments are in addition to all other commitments and obligations provided in this Agreement.
2. Supplemental Commitments and Compliance – Reporting Years 2017 and 2018. The Customer's supplemental commitments for Reporting Years 2017 and 2018 provided in the Prior Agreement shall survive the termination of the Prior Agreement and shall be enforceable by the Authority on the terms and conditions provided for in the Prior Agreement.

3. Special Provisions Relating to a New or Expanded Facility.

a. Proposed New or Expanded Facility; Failure to Complete.

If Schedule B provides for the construction of a new facility or an expansion of an existing facility (collectively, “Expansion Project”), and the Customer fails to complete the Expansion Project by the date specified in Schedule B, the Authority may, in its discretion, (a) cancel the Allocation, or (b) if it believes that the Expansion Project will be completed in a reasonable time, agree with the Customer to extend the time for completion of the Expansion Project.

b. Proposed New or Expanded Facility; Partial Performance.

If the Expansion Project results in a completed Facility that is only partially operational, or is materially different than the Expansion Project agreed to in Schedule B (as measured by such factors as size, capital investment expenditures, capital improvements, employment levels, estimated energy demand and/or other criteria determined by the Authority to be relevant), the Authority may, in its discretion, on its own initiative or at the Customer’s request, make a permanent reduction to the Allocation and Contract Demand to an amount that the Authority determines to fairly correspond to the completed Facility.

c. Notice of Completion; Commencement of Electric Service.

- (i) The Customer shall give the Authority not less than ninety (90) days' advance written notice of the anticipated date of completion of an Expansion Project. The Authority will inspect the Expansion Project for the purpose of verifying the status of the Expansion Project and notify Customer of the results of the inspection. The Authority will thereafter commence Electric Service within a reasonable time subject to the other provisions of this Agreement based on applicable operating procedures of the Authority, Customer’s local electric utility and NYISO.
- (ii) In the event of an Expansion Project being completed in multiple phases, at the Customer’s request the Authority may, in its discretion, allow commencement of part of the Allocation upon completion of any such phase, provided the Authority will similarly inspect the Expansion Project for the purpose of verifying the status of the completed phase of the Expansion Project. Upon such verification by the Authority of any such completed phase, the Authority, in its discretion, will determine an amount of kW that fairly corresponds to the completed phase of the Expansion Project, taking into account relevant criteria such as any capital expenditures, increased employment levels, and/or increased electrical demand associated with the completed phase of the Expansion Project.

d. Other Rights and Remedies Unaffected.

Nothing in this Article is intended to limit the Authority's rights and remedies provided for in the other provisions of this Agreement, including without limitation the provisions in Schedule B of this Agreement.

ARTICLE V
ENERGY-RELATED PROJECTS, PROGRAMS AND SERVICES

The Authority shall periodically communicate with the Customer for the purpose of informing the Customer about energy-related projects, programs and services ("Energy Services") offered by the Authority that in the Authority's view could provide value to the Customer and/or support the State's Clean Energy Standard. The Customer shall review and respond to all such offers in good faith, provided, however, that, except as otherwise provided for in this Agreement, participation in any such Energy Services shall be at the Customer's option, and subject to such terms and conditions agreed to by the Parties in one or more definitive agreements.

ARTICLE VI
SERVICE TARIFF; CONFLICTS

1. A copy of Service Tariff No. WNY-2 in effect upon the execution of this Agreement is attached to this Agreement as Exhibit 1, and will apply under this Agreement with the same force and effect as if fully set forth herein. The Customer consents to the application of Service Tariff WNY-2. Service Tariff No. WNY-2 is subject to revision by the Authority from time to time, and if revised, the revised provisions thereof will apply under this Agreement with the same force and effect as if set forth herein. The Authority shall provide the Customer with prior written notice of any revisions to Service Tariff No. WNY-2.
2. In the event of any inconsistencies, conflicts, or differences between the provisions of Service Tariff No. WNY-2 and the Rules, the provisions of Service Tariff No. WNY-2 shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of this Agreement and Service Tariff No. WNY-2 or the Rules, the provisions of this Agreement shall govern.

ARTICLE VII
TRANSMISSION AND DELIVERY

1. The Customer shall be responsible for:
 - a. complying with all requirements of its local electric utility (including any other interconnecting utilities) that are necessary to enable the Customer to receive delivery service for the Allocation. Delivery of the Allocation shall be subject to the Utility Tariff;
 - b. paying its local electric utility for delivery service associated with the Allocation in accordance with the Utility Tariff, and if the Authority incurs any charges associated with such delivery service, reimbursing the Authority for all such charges; and

- c. obtaining any consents and agreements from any other person that are necessary for the delivery of the Allocation to the Facility, and complying with the requirements of any such person, provided that any such consents, agreements and requirements shall be subject to the Authority's approval.
2. The Authority will use good faith efforts to provide the Customer with at least one year's advance notice of the scheduled expiration of Historic Fixed Price Transmission Congestion Contracts. After issuance of any such notice, the Authority will make itself available at reasonable times to collaborate with the Customer and other EP and RP customers to discuss potential risk-hedging options that might be available following expiration of such contracts.
3. The Customer understands and acknowledges that delivery of the Allocation will be made over transmission facilities under the control of the NYISO. The Authority will act as the LSE with respect to the NYISO, or arrange for another entity to do so on the Authority's behalf. The Customer agrees and understands that it shall be responsible to the Authority for all costs incurred by the Authority with respect to the Allocation for the services established in the NYISO Tariff, or other applicable tariff ("NYISO Charges"), as set forth in Service Tariff No. WNY-2 or any successor service tariff, regardless of whether such NYISO Charges are transmission-related.
4. The Authority will consider opportunities to assist the Customer concerning actions, practices, or procedures of the Customer's local electric utility identified by the Customer that could adversely impact the implementation and effectiveness of the EP and RP programs, provided that whether or not to take any action or adopt any position on any issue, including any adverse position, is within the Authority's discretion and further subject to applicable laws, regulations and existing legal obligations.

ARTICLE VIII

BILLING AND BILLING METHODOLOGY

1. The billing methodology for the Allocation shall be determined on a "load factor sharing" basis in a manner consistent with the Utility Tariff and any agreement between the Authority and the Customer's local electric utility. An alternative basis for billing may be used provided the Parties agree in writing and the local electric utility provides its consent if such consent is deemed necessary.
2. All other provisions with respect to billing are set forth in Service Tariff No. WNY-2 and the Rules.
3. The rights and remedies provided to the Authority in this Article are in addition to any and all other rights and remedies available to Authority at law or in equity.

ARTICLE IX

HYDROPOWER CURTAILMENTS AND SUBSTITUTE ENERGY

1. The Customer shall, on a form provided by the Authority, elect to either (a) purchase Substitute Energy from the Authority, or (b) rely on Customer-Arranged Energy, for the purpose of replacing Firm Energy that is not supplied to the Customer due to a Planned

Hydropower Curtailment. The Customer shall make its election in accordance with the time period and other requirements prescribed in such form. The election shall apply for the entire calendar year identified in the form.

2. The Customer may change its election on a form provided by the Authority by giving the Authority notice of such change no later than the first day of November preceding the calendar year to which the Customer intends such change to become effective. Such change shall be effective on the first day of January following the Authority's receipt the Customer's notice and shall remain in effect unless it is changed in accordance with the provisions of this Section IX.1.
3. In the event of an anticipated or planned Adverse Water Condition, the Authority will have the right in its discretion to implement Planned Hydropower Curtailments. The Authority will implement Planned Hydropower Curtailments on a non-discriminatory basis as to all Authority customers that are served by the Project. The Authority will provide the Customer with advance notice of Planned Hydropower Curtailments that in the Authority's judgment will impact Electric Service to the Customer no later than the tenth business day of the month prior to the month in which the Planned Hydropower Curtailment is expected to occur unless the Authority is unable to provide such notice due to the circumstances that impede such notice, in which case the Authority will provide such advance notice that is practicable under the circumstances.
4. If the Customer elected to purchase Substitute Energy from the Authority, the Authority shall provide Substitute Energy to the Customer during all Planned Hydropower Curtailments. Unless otherwise agreed upon by the Parties in writing, Substitute Energy shall be sourced from markets administered by the NYISO. The Authority may require the Customer to enter into one or more separate agreements to facilitate the provision of Substitute Energy to the Customer.
5. If the Customer elected to rely on Customer-Arranged Energy, the Authority shall have no responsibility to provide the Customer with Substitute Energy during any Planned Hydropower Curtailment, and the Customer shall be responsible for the procurement, scheduling, delivery and payment of all costs associated with Customer-Arranged Energy.
6. The Customer shall have the right to reduce its load in response to a Planned Hydropower Curtailment (a "Load Reduction"), provided, however, that the Customer shall, on an Authority form, provide the Authority with no less than seven (7) days' advance notice of the time period(s) during when the Load Reduction will occur, the estimated amount of the Load Reduction (demand and energy), and all other information required by such form. The Authority will confirm whether the notice provides the required information and proposed Load Reduction has been accepted. The Customer shall reimburse the Authority for all costs that the Authority incurs as a result of the Customer's failure to provide such notice.
7. In the event of an Adverse Water Condition that the Authority did not anticipate or forecast, the Authority shall have the right in its discretion to implement Unplanned Hydropower Curtailments. The Unplanned Hydropower Curtailments will be implemented on a non-discriminatory basis as to all Authority customers that are served by the Project.

8. The Authority will provide the Customer with notice of Unplanned Hydropower Curtailments that in the Authority's judgment will impact Electric Service to the Customer within five (5) business days after the first occurrence of an Unplanned Hydropower Curtailment that occurs within a month, and thereafter will provide the Customer with reasonable notice under the circumstances of the potential for any other Unplanned Hydropower Curtailments that are expected to occur within such month or beyond. The Authority will give the Customer notice of any Unplanned Hydropower Curtailments that the Authority believes are likely to exceed forty-eight (48) continuous hours in duration.
9. Notwithstanding the Customer's election pursuant to Section IX.1, the Authority shall provide the Customer with Substitute Energy during Unplanned Hydropower Curtailments.
10. For each kilowatt-hour of Substitute Energy provided by the Authority during a Planned Hydropower Curtailment, the Customer shall pay the Authority directly during the billing month: (1) the difference between the market cost of the Substitute Energy and the charge for firm energy as provided for in this Agreement; and (2) any NYISO charges and taxes the Authority incurs in connection with the provision of such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, billing and payment for Substitute Energy provided for Planned Hydropower Curtailments shall be governed by the provisions of Service Tariff WNY-2 relating to the rendition and payment of bills for Electric Service.
11. The Customer shall be responsible for all costs associated with the Authority's provision of Substitute Energy during Unplanned Hydropower Curtailments. Unless otherwise agreed upon by the Parties in writing, billing and payment for Substitute Energy provided for Unplanned Hydropower Curtailments shall be governed by the provisions of Service Tariff WNY-2 relating to the rendition and payment of bills for Electric Service.
12. The Authority shall be under no obligation to deliver and will not deliver any such curtailed energy to the Customer in later billing periods.

ARTICLE X

EFFECTIVENESS, TERM AND TERMINATION

1. This Agreement shall become effective and legally binding on the Parties on the Effective Date.
2. Once commenced, Electric Service under the Agreement shall continue until the earliest of:
(a) termination by the Customer with respect to its Allocation upon ninety (90) days prior written notice to the Authority; (b) termination by the Authority pursuant to this Agreement, Service Tariff No. WNY-2, or the Rules; or (c) expiration of the Allocation by its own term as specified in Schedule A.
3. The Customer may exercise a partial termination of the Allocation upon at least sixty (60) days' prior written notice to the Authority. The Authority will effectuate the partial termination as soon as practicable after receipt of such notice taking account of the Authority's internal procedures and requirements of the Customer's local electric utility.

4. The Authority may cancel service under this Agreement or modify the quantities of Firm Power and Firm Energy associated with the Allocation: (1) if such cancellation or modification is required to comply with any final ruling, order or decision of any regulatory or judicial body of competent jurisdiction (including any licensing or re-licensing order or orders of the FERC or its successor agency); or (2) as otherwise provided in this Agreement, Service Tariff No. WNY-2, or the Rules.

ARTICLE XI

EXTENSIONS OF ALLOCATION; AWARD OF ADDITIONAL ALLOCATIONS

1. The Customer may apply to the Authority for an extension of the term of the Allocation identified in Schedule A:
 - a. during the thirty-six (36) month period immediately preceding the scheduled expiration of the Allocation;
 - b. pursuant to any other process that the Authority establishes; or
 - c. with the Authority's written consent.
2. Upon proper application by the Customer, the Authority may in accordance with applicable law and Authority procedures award additional allocations of EP and/or RP to the Customer at such rates and on such terms and conditions as the Authority establishes. If the Customer agrees to purchase Electric Service associated with any such additional allocation, the Authority will (a) incorporate any such additional allocations into Schedule A, or in its discretion will produce a supplemental schedule, to reflect any such additional allocations, and (b) produce a modified Appendix to Schedule B, as the Authority determines to be appropriate. The Authority will furnish the Customer with any such modified Schedule A, supplemental schedule, and/or a modified Appendix to Schedule B, within a reasonable time after commencement of Electric Service for any such additional allocation.
3. In addition to any requirements imposed by law, the Customer hereby agrees to furnish such documentation and other information as the Authority requests to enable the Authority to evaluate any requests for extension of the Allocation or additional allocations and consider the terms and conditions that should be applicable of any extension or additional allocations.

ARTICLE XII

NOTICES

1. Notices, consents, authorizations, approvals, instructions, waivers or other communications provided in this Agreement shall be in writing and transmitted to the Parties as follows:

To: The Authority

New York Power Authority

123 Main Street

White Plains, New York 10601

Email:

Facsimile: _____

Attention: Manager – Business Power Allocations and Compliance

To: The Customer

<Customer Legal Name>

<Customer Address>

Email:

Facsimile:

Attention:

2. The foregoing notice/notification information pertaining to either Party may be changed by such Party upon notification to the other Party pursuant to Section XII.1.
3. Except where otherwise herein specifically provided, any notice, communication or request required or authorized by this Agreement by either Party to the other shall be deemed properly given: (a) if sent by U.S. First Class mail addressed to the Party at the address set forth above; (b) if sent by a nationally recognized overnight delivery service, two (2) calendar days after being deposited for delivery to the appropriate address set forth above; (c) if delivered by hand, with written confirmation of receipt; (d) if sent by facsimile to the appropriate fax number as set forth above, with written confirmation of receipt; or (e) on the date of transmission if sent by electronic communication to the appropriate address as set forth above, with confirmation of receipt. Either Party may change the addressee and/or address for correspondence sent to it by giving written notice in accordance with the foregoing.

ARTICLE XIII

SUCCESSORS AND ASSIGNS; RESALE OF HYDROPOWER

1. This Agreement shall be binding upon, shall inure to the benefit of, and may be performed by, the legal successors and assigns of either Party hereto, provided that no assignment by either Party or any successor or assignee of such Party of its rights and obligations hereunder shall be made or become effective without the prior written consent of the other Party, which consent shall not be unreasonably withheld or conditioned. Notwithstanding the foregoing sentence, the Authority may require such approvals, and such consents and other agreements from the Customer and other parties, that the Authority determines are necessary in order to effectuate any such assignment.
2. The Customer may not transfer any portion of the Allocation to any other person, or a location different than the Facility, unless: (a) the Authority in its discretion authorizes the transfer Authority; (b) all other requirements applicable to a transfer, including board approvals, are satisfied; and (c) the transfer is effectuated in a form and subject to such terms and conditions approved by the Authority. Any purported transfer that does not comply with the foregoing requirements shall be invalid and constitute grounds for the Authority in its discretion to suspend Electric Service or terminate the Allocation and/or this Agreement.
3. The Customer may not sell any portion of the Allocation to any other person. Any purported sale shall be invalid and constitute grounds for the Authority in its discretion to suspend Electric Service, or terminate the Allocation and/or this Agreement.

ARTICLE XIV

MISCELLANEOUS

1. Choice of Law

This Agreement shall be governed by and construed in accordance with the laws of the State of New York to the extent that such laws are not inconsistent with the FERC License and the Niagara Redevelopment Act (16 USC §§836, 836a) and rulings by the IJC and without regard to conflicts of law provisions.

2. Venue

The Parties: (a) consent to the exclusive jurisdiction and venue of any state court within or for Albany County, New York, with subject matter jurisdiction for adjudication of any claim, suit, action or any other proceeding in law or equity arising under, or in any way relating to this Agreement; (b) agree to accept service of process; and (c) will not raise any argument of inconvenient forum.

3. Previous Agreements; Modifications; and Interpretation

- a. Subject to paragraph b of this Section, this Agreement shall constitute the sole and complete agreement of the Parties hereto with respect to the sale of the Allocation and the subject matter of the Agreement, and supersedes all previous communications and agreements between the Parties, oral or written, with reference to the sale of the Allocation.
- b. The Prior Agreement is superseded and terminated effective as of the Effective Date of this Agreement, provided, however, that: (i) the Customer shall remain liable to the Authority for all duties, liabilities, charges and obligations due in accordance with the Prior Agreement that have accrued prior to the Effective Date; and (ii) the Parties' rights and obligations concerning the Customer's supplemental commitments under the Prior Agreement for reporting years 2017 and 2018 shall remain in full force and effect and shall be enforceable by the Authority on the basis of the terms and conditions provided for in the Prior Agreement.
- c. No modifications of this Agreement shall be binding upon the Parties hereto or either of them unless such modification is in writing and is signed by a duly authorized officer of each of them.
- d. No provision shall be construed against a Party on the basis that such Party drafted such provision.

4. Waiver

Any waiver at any time by either the Authority or the Customer of their rights with respect to a default or of any other matter arising out of this Agreement shall not be deemed to be a waiver with respect to any other default or matter. No waiver by either Party of any

rights with respect to any matter arising in connection with this Agreement shall be effective unless made in writing and signed by the Party making the waiver.

5. Severability and Voidability

If any term or provision of this Agreement shall be invalidated, declared unlawful or ineffective in whole or in part by an order of the FERC or a court of competent jurisdiction, such order shall not be deemed to invalidate the remaining terms or provisions hereof. Notwithstanding the preceding sentence, if any provision of this Agreement is rendered void or unenforceable or otherwise modified by a court or agency of competent jurisdiction, the entire Agreement shall, at the option of either Party and only in such circumstances in which such Party's interests are materially and adversely impacted by any such action, be rendered void and unenforceable by such affected Party.

ARTICLE XV
EXECUTION

To facilitate execution, this Agreement may be executed in as many counterparts as may be required, and it shall not be necessary that the signatures of, or on behalf of, each Party, or that the signatures of all persons required to bind any Party, appear on each counterpart; but it shall be sufficient that the signature of, or on behalf of, each Party, or that the signatures of the persons required to bind any Party, appear on one or more of the counterparts. All counterparts shall collectively constitute a single agreement. It shall not be necessary in making proof of this Agreement to produce or account for more than a number of counterparts containing the respective signatures of, or on behalf of, all of the Parties hereto. The delivery of an executed counterpart of this Agreement as a PDF or similar file type transmitted via electronic mail, cloud based server, e-signature technology or similar electronic means shall be legal and binding and shall have the same full force and effect as if an original executed counterpart of this Agreement had been delivered.

[SIGNATURES FOLLOW ON NEXT PAGE]

AGREED:

<Customer Legal Name>

By: _____

Title: _____

Date: _____

AGREED:

POWER AUTHORITY OF THE STATE OF NEW YORK

By: _____
John R. Koelmel, Chairman

Date: _____

SCHEDULE A
EXPANSION POWER AND/OR REPLACEMENT POWER ALLOCATIONS

Customer: <Customer Legal Name>	Allocation Amount (kW)	Facility and Address	<Trustee Approval Date>	Allocation Expiration Date
Type of Allocation				
<Power Type (EP/RP)>	<Allocation Amount>	<Facility Address>, NY <Facility Zipcode>		December 31, 2028

SCHEDULE B
**SUPPLEMENTAL EXPANSION POWER AND/OR REPLACEMENT POWER
COMMITMENTS**

ARTICLE I
SPECIFIC SUPPLEMENTAL COMMITMENTS

1. Employment Commitments

- a. The Customer shall create and maintain the employment level set forth in the Appendix to this Schedule B (the “Base Employment Level”). Such Base Employment Level shall be the total number of full-time positions held by: (a) individuals who are employed by the Customer at Customer’s Facility identified in the Appendix to this Schedule, and (b) individuals who are contractors or who are employed by contractors of the Customer and assigned to the Facility identified in such Appendix (collectively, “Base Level Employees”). The number of Base Level Employees shall not include individuals employed on a part-time basis (less than 35 hours per week); provided, however, that two individuals each working 20 hours per week or more at such Facility shall be counted as one Base Level Employee.
- b. The Base Employment Level shall not be created or maintained by transfers of employees from previously held positions with the Customer or its affiliates within the State of New York, except that the Base Employment Level may be filled by employees of the Customer laid off from other Customer facilities for *bona fide* economic or management reasons.
- c. The Authority may consider a request to change the Base Employment Level based on a claim of increased productivity, increased efficiency or adoption of new technologies or for other appropriate reasons as determined by the Authority. Any such change shall be within Authority’s discretion.

2. Capital Investment Commitments

The Customer shall make the capital investments specified in the Appendix to this Schedule B.

3. Power Utilization

For each month the Authority provides Electric Service to the Customer, the Customer shall utilize the entire Allocation, as represented by the Billing Demand (as such term is described in Service Tariff No. WNY-2), provided, however, that if only part of the Allocation is being utilized in accordance with Schedule C, the Customer shall utilize such partial amount of the Allocation.

4. Energy Efficiency and Conservation Program

- a. The Customer shall implement an energy efficiency and conservation program at the Facility through either (a) enrollment of the Facility and participation in NYEM in accordance with a NYEM Agreement, or (b) one or more Physical Energy Audits of the Facility, or (c) a combination of such measures, in accordance with the provisions of this Article.
- b. The Authority shall transmit to the Customer a NYEM Agreement and an election form. The Customer shall elect to either (a) enroll the Facility and participate in NYEM for a three-year term (“NYEM Participation”) in accordance with the NYEM Agreement, or (b) perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority’s communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit within three (3) years of the Effective Date of this Agreement, at its own expense.
- c. The Authority shall, on or before the expiration of the three-year term of the NYEM Agreement, transmit to the Customer a NYEM Agreement specifying the terms and conditions that would apply to NYEM participation for a second term, and an election form. The Customer shall elect either (a) NYEM Participation for a second term, or (b) to perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority’s communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit during the calendar year that begins six years after of the Effective Date of this Agreement, at its own expense.
- d. The Authority may in its discretion waive the requirement for a Physical Energy Audit, or may agree to a limited energy audit of the Facility, where it determines that the Physical Energy Audit is unnecessary based on the age of the Facility, energy efficiency and conservation improvements made at the Facility, the length of the Allocation, or other considerations the Authority determines to be relevant.

ARTICLE II
RECORDKEEPING, REPORTING AND FACILITY ACCESS

1. Employment

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority, of the total number of Base Level Employees who are employed at or assigned to the Customer's Facility identified in the Appendix to this Schedule, as reported to the United States Department of Labor (or as reported in such other record as agreed upon by the Authority and the Customer). Such report shall separately identify the individuals who are employed by the Customer, and the individuals who are contractors or who are employed by contractors of the Customer, and shall be certified to be correct by an officer of the Customer, plant manager or such other person authorized by the Customer to prepare and file such report and shall be provided to the Authority on or before the last day of February following the end of the most recent calendar year. The Authority shall have the right to examine and audit on reasonable advance written notice all non-confidential written and electronic records and data concerning employment levels including, but not limited to, personnel records and summaries held by the Customer and its affiliates relating to employment in New York State.

2. Capital Investments

The Customer shall comply with the recordkeeping, recording and reporting requirements specified in the Appendix to this Schedule B.

3. Power Usage

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority on or before the last day of February following the end of the most recent calendar year, of the maximum demand utilized each month in the Facility receiving the power covered by the Agreement.

4. Energy Efficiency and Conservation Program

Upon the Authority's request, the Customer shall provide the Authority with (a) a copy of the results of any Physical Energy Audit performed at the Facility (or, at the Authority's option, a report describing the results), performed pursuant to this Article; and (b) a description of any energy efficiency or conservation measures that the Customer has implemented at the Facility in response to any Physical Energy Audit or as a result of NYEM Participation.

5. Facility Access

Notwithstanding any other provision of the Agreement, the Customer shall provide the Authority with such access to the Facility, and such documentation, as

the Authority deems necessary to determine the Customer's compliance with the Customer's Supplemental Commitments specified in this Schedule B.

ARTICLE III

COMPLIANCE ACTION BY THE AUTHORITY

1. Employment

If the year-end monthly average number of employees is less than 90% of the Base Employment Level set forth in the Appendix to this Schedule B for the subject calendar year, the Authority may reduce the Contract Demand in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount of reduction will be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average monthly employment during the subject calendar year divided by the Base Employment Level. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, the Agreement shall automatically terminate.

2. Capital Investment Commitment

The Authority may reduce the Contract Demand as provided in the Appendix to this Schedule B if the Customer does not comply with the Capital Investment Commitment.

3. Power Utilization Level

If the average of the Customer's six (6) highest Billing Demands (as such term is described in Service Tariff No. WNY-2) for Expansion Power and/or Replacement Power is less than 90% of the Customer's Contract Demand in such calendar year the Authority may reduce the Contract Demand subject to in accordance with the procedures provide in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average of the six (6) highest Billing Demands for in such calendar year divided by the Contract Demand. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.

4. Additional Compliance Action

In addition to the Authority's other rights and remedies provided in this Agreement, Service Tariff WNY-2 and the Rules, the Authority may suspend Electric Service to the Customer if the Customer does not comply with any of the requirements in Section I.4 or Article II of this Schedule B.

5. Notice of Intent to Reduce Contract Demand

In the event that the Authority determines that the Contract Demand will be wholly or partially reduced pursuant to Sections III.1, III.2, or III.3 of this Schedule B, the Authority shall provide the Customer with at least thirty (30) days prior written notice of the proposed reduction, specifying the amount and reason for the reduction.

Before implementing any reduction, the Authority may consider the Customer's scheduled or unscheduled maintenance, Facility upgrade periods, and the business cycle. If, at the end of the thirty (30) day notice period, the Authority determines that a reduction is warranted, it shall provide the Customer with notice of such determination and provide the Customer with sixty (60) days to present a proposed plan with actionable milestones to cure the deficiency. The Authority shall respond to the Customer concerning the acceptability of any proposed plan that is provided in accordance with this Section III.5 within thirty (30) days of the Authority's receipt of such proposed plan. It shall be within the Authority's discretion whether or not to accept the Customer's proposed plan, require a different plan, or implement the reduction of the Contract Demand.

APPENDIX TO SCHEDULE B

BASE EMPLOYMENT LEVEL

The Customer shall employ at least ____ full-time employees (“Base Employment Level”) at the Customer’s Facility. The Base Employment Level shall be maintained for the term of the Allocation in accordance with Article I of Schedule B.

CAPITAL INVESTMENT COMMITMENTS

1. **Annual Capital Investment Commitment** (if applicable, as specified below)
 - a. Each Reporting Year, the rolling average of the annual capital investments made by the Customer at the Facility (“Rolling Average”) shall total not less than \$_____ (the “Annual Capital Investment Commitment”). For purposes of this provision, “Rolling Average” means the three-year average comprised of (1) the total amount of capital investments (“Annual CI Expenditures”) made by the Customer at the Facility during the current Reporting Year, and (2) the Annual CI Expenditures made by the Customer at the Facility during the two prior Reporting Years.
 - b. Each year, the Customer shall record its Annual CI Expenditures for purposes of enabling the Authority to determine and verify the Rolling Average, which shall be provided to the Authority in a form specified by the Authority on or before the last day of February following the end of the most recent calendar year.
 - c. If the Customer’s Rolling Average as determined by the Authority is less than 90% of its Annual Capital Investment Commitment for the Reporting Year, the Contract Demand may be reduced by the Authority in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the Rolling Average divided by the Annual Capital Investment Commitment. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.
2. **Expansion Project–Capital Investment Commitment** (if applicable, as specified below)
 - a. The Customer shall make a minimum capital investment of \$_____ to construct, furnish and/or expand the Facility (“Expansion Project Capital Investment Commitment”). The Expansion Project Capital Investment Commitment is expected to consist of the following approximate expenditures on the items indicated:

Line Item 1 -	\$ _____
Line Item 2 -	\$ _____
Line Item 3 -	\$ _____

Total Expansion Project Capital Investment Commitment:

- b. The Expansion Project Capital Investment Commitment shall be made, and the Facility shall be completed and fully operational, no later than _____ (*i.e.*, within three (3) years of the date of the Authority's award of the Allocation). Upon request of the Customer, such date may be extended in the discretion of the Authority.

SCHEDULE C
TAKEDOWN SCHEDULE

SCHEDULE D
ZERO EMISSION CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in Service Tariff No. WNY-2, or in the Rules.

“Affected LSEs” has the meaning provided in Section II.2 of this Schedule D.

“CES Order” means the Order issued by the PSC entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“EP and RP Programs ZEC Costs” has the meaning provided in Section II.4.b of this Schedule D.

“Government Action” has the meaning provided in Section II.8 of this Schedule D.

“Load Serving Entity” or “LSE” has the meaning provided in the CES Order.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the EP and RP power programs as authorized in the Power Authority Act.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“Zero Emission Credit” or “ZEC” has the meaning provided in the CES Order.

“Zero Emission Credit Charge” or “ZEC Charge” means the charge to the Customer established in this Schedule D.

“ZEC Purchase Obligation” has the meaning provided in Section II.2 of this Schedule D.

“ZEC Program Year” has the meaning provided in Section II.2 of this Schedule D.

II. ZEC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of Service Tariff No. WNY-2 or the Rules, as of January 1, 2019, the Customer shall be subject to a ZEC Charge as provided in this Schedule D. The ZEC Charge shall be in addition to all other charges, fees and assessments provided for in the Agreement, Service Tariff No. WNY-2 and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the ZEC Charge.
2. As provided in the CES Order, the Public Service Commission, as part of the CES and Tier 3 of the Renewable Energy Standard, imposed an obligation on Load Serving Entities that are subject to the CES Order (“Affected LSEs”) to purchase Zero Emission Credits from NYSERDA in an amount representing the Affected LSE’s proportional share of ZECs calculated on the basis of the amount of electric load the LSE serves in relation to the total electric load served by all Load Serving Entities in the New York Control area, to support the preservation of existing at risk nuclear zero emissions attributes in the State (the “ZEC Purchase Obligation”). The ZEC Purchase Obligation is implemented on the basis of program years running from April 1 through March 31 of each year (“ZEC Program Year”).
3. The ZEC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of supporting the CES and Tier 3 of the RES and implementing the EP and RP power programs in a manner that is consistent with the New York State Energy Plan. The Authority will comply with the CES and Tier 3 of the RES by applying a form of ZEC Purchase Obligation to the end-user load for which the Authority serves as a load serving entity, including the load that the Authority serves under the EP and RP power programs.
4. The ZEC Charge, which is intended to recover from the Customer costs that the Authority incurs for purchasing ZECs in quantities that are attributable to the Customer’s EP and/or RP load served under this Agreement, will be determined and assessed to the Customer as follows:
 - a. The cost of the total ZEC Purchase Obligation for all LSEs in the New York Control Area, including the Authority as a participating load serving entity, will be assessed pursuant to the methodology provided in the CES Order. The Authority will purchase its proportionate share of ZECs from NYSERDA based on the proportion of the forecasted total kilowatt-hours load served by

the Authority (i.e., total Authority LSE load) in relation to the forecasted total kilowatt-hours load served by all LSEs in the New York Control Area as provided in the CES Order. The ZEC Purchase Obligations may be based on initial load forecasts with reconciliations made at the end of each ZEC Program Year by NYSERDA.

- b. The Authority will allocate costs from its ZEC Purchase Obligation between its power programs/load for which it serves as load serving entity, including the EP and RP load that it serves (the “EP and RP Programs ZEC Costs”). Such allocation will be based on the forecasted kilowatt-hours load of the EP and RP programs to be served by the Authority in relation to the forecasted total kilowatt-hours load served by the Authority (total Authority LSE load) for each ZEC Program Year. In addition, any balance resulting from the ZEC Program Year-end reconciliation of ZEC Purchase Obligations will be allocated to the EP and RP power programs based on the proportion of the actual annual kilowatt-hours load served under such programs to total actual annual kilowatt-hours load served by the Authority (total Authority LSE load).
 - c. The Authority will allocate a portion of the EP and RP Programs ZEC Costs to the Customer as the ZEC Charge based on the proportion of the Customer’s actual kilowatt-hours load for the EP and/or RP purchased by the Customer to total kilowatt-hours load served by the Authority under the EP and RP power programs (i.e., EP and RP Programs level load). In addition, any balance resulting from the ZEC Program Year-end reconciliation of the ZEC Purchase Obligation referenced above will be passed through to the Customer based on the proportion of the Customer’s annual kilowatt-hours load purchased under this Agreement to total annual kilowatt-hours load served under the EP and RP power program by the Authority (EP and RP Programs level load). The ZEC Charge assessed to the Customer shall not include any costs resulting from the Authority’s inability to collect a ZEC Charge from any other Authority customer.
5. The Authority may, in its discretion, include the ZEC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the ZEC Charge pursuant to another Authority-established procedure.
6. The Authority may, in its discretion, modify the methodology used for determining the ZEC Charge and the procedures used to implement such ZEC Charge on a nondiscriminatory basis among affected EP and RP customers, upon consideration of such matters as Public Service Commission orders modifying or implementing the CES Order, guidance issued by the New York Department of Public Service, and other information that the Authority reasonably determines to be appropriate to the determination of such methodology. The Authority shall

provide Customer with reasonable notice of any modifications to the methodology or procedures used to determine and implement the ZEC Charge.

7. Nothing in this Schedule shall limit or otherwise affect the Authority's right to charge or collect from the Customer any rate, charge, fee, assessment, or tax provided for under any other provision of the Agreement, or any provision of Service Tariff No. WNY-2 or the Rules.
8. If the ZEC Purchase Obligation is modified or terminated by the Public Service Commission or other controlling governmental authority (collectively, "Government Action"), the Authority shall modify or terminate the ZEC Charge, and assess any additional charges or provide any credits to the Customer, to the extent that the Authority determines such actions to be appropriate based on such Government Action.

SCHEDULE E
MONTHLY RENEWABLE ENERGY CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in Service Tariff No. WNY-2, or in the Rules.

“Alternative REC Compliance Program” has the meaning provided in Section III.1 of this Schedule E.

“Annual REC Percentage Target” has the meaning provided in Section II.2 of this Schedule E.

“CES Order” means the Order issued by the Public Service Commission entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“Clean Energy Standard” or “CES” means the Clean Energy Standard adopted by the State in the CES Order.

“Load Serving Entity” has the meaning provided in the CES Order.

“Mandatory Minimum Percentage Proportion” has the meaning provided in the CES Order.

“Monthly Renewable Energy Credit Charge” or “Monthly REC Charge” means the monthly charge to the Customer established in this Schedule E.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Credit” or “REC” refers to a qualifying renewable energy credit as described in the CES Order.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the EP and RP power programs as authorized in the Power Authority Act.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“REC Compliance Measures” mean: (1) the Authority’s procurement of RECs from NYSERDA in accordance with NYSERDA procedures and/or the CES Order; (2) the Authority’s procurement of RECs from available REC markets; (3) the Authority’s procurement of RECs from sources other than those identified in items (1) and (2) of this definition, including through a procurement process adopted by the Authority; and/or (4) any other measure that the PCS authorizes a Load Serving Entity to implement for the purpose of meeting the applicable Mandatory Minimum Percentage Proportion.

“Total Monthly EP-RP Load” has the meaning provided in Section II.3.b of this Schedule E

“Total Monthly REC Costs” has the meaning provided in Section II.3.b of this Schedule E.

II. MONTHLY REC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of Service Tariff No. WNY-2 or the Rules, as of January 1, 2019, the Customer shall be subject to a Monthly REC Charge as provided in this Schedule E. The Monthly REC Charge is in addition to all other charges, fees and assessments provided in the Agreement, Service Tariff No. WNY-2 and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the Monthly REC Charge.
2. The Monthly REC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of complying with the CES and Tier 1 of the RES and implementing the EP and RP power programs in a manner that is consistent with the New York State Energy Plan, pursuant to which the Authority will invest in new renewable generation resources to serve its EP and RP customers. Such investments will be made through the procurement of RECs through REC Compliance Measures in quantities that are intended to address the annual Mandatory Minimum Percentage Proportions as applied by the Authority to the total EP and RP load that the Authority will serve each calendar year (the “Annual REC Percentage Target”) for the purpose of ultimately meeting the RES.
3. The Monthly REC Charge, which is intended to recover from the Customer costs that the Authority incurs for implementing REC Compliance Measures that are attributable to the Customer’s EP and/or RP load served under this Agreement, will be determined and assessed to the Customer as follows:

- a. The Authority shall have the right, for each calendar year to implement such REC Compliance Measures as it determines in its discretion to be appropriate for the purpose of meeting the Annual REC Percentage Target for the total EP and RP load that it will serve during such calendar year.
 - b. The Authority will, for each month of each calendar year, calculate the total costs ("Total Monthly REC Costs") that the Authority has incurred or estimates that it will incur from implementing RES Compliance Measures for the purpose of meeting the Annual REC Percentage Target for the total EP and RP kilowatt-hour load for the month ("Total Monthly EP-RP Load"). The Total Monthly REC Costs may be calculated based on forecasts of the Total Monthly EP-RP Load that the Authority expects to serve for the month, or on a lagged basis based on the actual Total Monthly EP-RP Load that the Authority served for the month.
 - c. Each month, the Authority will assess to the Customer, as a Monthly REC Charge, which will represent the Customer's share of the Total Monthly REC Costs assessed to the Total Monthly EP-RP Load. The Monthly REC Charge will be assessed as the proportion of the Customer's total kilowatt-hours load served by the Authority for such month to the Total Monthly EP-RP Load served by the Authority for such month, provided, however, that:
 - i. the Monthly REC Charge to the Customer shall not include any costs associated with the Authority's inability to collect the Monthly REC Charge from other Authority customers; and
 - ii. the effective per-MWh rate of the Monthly REC Charge to the Customer averaged over the REC Program Year to which the Annual REC Percentage Target applies shall not exceed the per-MWh rate of a Monthly REC Charge based on NYSERDA's published REC price for the REC Program Year.
4. The Authority may, in its discretion, include the Monthly REC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the Monthly REC Charge pursuant to another Authority-established procedure.
5. The Authority will, at the conclusion of each calendar year in which it assesses a Monthly REC Charge, conduct a reconciliation process based on the actual costs that it incurred for REC Compliance Measures and actual load served for the year, compared with cost or load estimates or forecasts, if any, that the Authority used to calculate the Customer's Monthly REC Charges during the year. The Authority will issue a credit, or an adjusted final charge for the year, as appropriate, based on the results of such reconciliation process. Any such final charge shall be payable within the time frame applicable to the Authority's bills

for Electric Service under this Agreement or pursuant to any other procedure established by the Authority pursuant to Section II.4 of this Schedule E.

6. Notwithstanding the provisions of Section II.3 of this Schedule E, if Electric Service for the Allocation is commenced after the Authority has implemented REC Compliance Measures for the year in which such Electric Service is commenced, and as a result the Customer's load cannot be accounted for in such REC Compliance Measures, the Authority may in its discretion implement separate REC Compliance Measures in order to meet the Annual REC Percentage Target for Customer's load for the year, and bill the Customer for the costs associated with such separate REC Compliance Measures.
7. Nothing in this Schedule shall limit or otherwise affect the Authority's right to charge or collect from the Customer, any rate, charge, fee, assessment, or tax provided for under any other provision of the Agreement, or any provision of Service Tariff No. WNY-2 or the Rules.

III. ALTERNATIVE REC COMPLIANCE PROGRAM

1. Nothing in this Schedule E shall be construed as preventing the Parties from entering into other agreements for an alternative arrangement for the Authority to meet the Annual REC Percentage Target with respect to the Customer's Allocation, including but not limited to Customer self-supply of RECs, alternative REC compliance programs and cost allocation mechanisms, in lieu of the Monthly REC Charge provided in this Schedule E (collectively, "Alternative REC Compliance Program").
2. The Authority shall communicate at least biennially with the Customer concerning implementation of the RES Compliance Program and potential Alternative REC Compliance Programs, if any, that the Authority is offering or expects to offer.



POWER AUTHORITY OF THE STATE OF NEW YORK

30 SOUTH PEARL STREET

ALBANY, NY 12207

Schedule of Rates for Sale of Firm Power Service to
Expansion Power and Replacement Power Customers
Located in Western New York

Service Tariff No. WNY-2

Table of Contents

Schedule of Rates for Firm Power Service	Leaf No.
I. Applicability	3
II. Abbreviations and Terms.....	3
III. Monthly Rates and Charges.....	5
A. Expansion Power (EP) and Replacement Power (RP) Base Rates.....	5
B. EP and RP Rates no Lower than Rural/Domestic Rate	5
C. Monthly Base Rates Exclude Delivery Service Charges.....	5
D. Minimum Monthly Charge.....	5
E. Estimated Billing	6
F. Adjustments to Charges	7
G. Billing Period	7
H. Billing Demand	7
I. Billing Energy.....	7
J. Contract Demand.....	7
IV. General Provisions	8
A. Character of Service	8
B. Availability of Energy	8
C. Delivery	8
D. Adjustment of Rates	8
E. Billing Methodology and Billing.....	9
F. Payment by Customer to Authority.....	10
1. Demand and Energy Rates, Taxes	10
2. Transmission Charge	10
3. NYISO Transmission and Related Charges.....	10
4. Taxes Defined	11
5. Substitute Energy.....	11
6. Payment Information	11
7. Billing Disputes	11
G. Rendition and Payment of Bills.....	12
H. Adjustment of Charges – Distribution Losses.....	12
I. Conflicts.....	12
V. Annual Adjustment Factor	13

Schedule of Rates for Firm Power Service

I. Applicability

To sales of Expansion Power and/or Replacement Power directly to a qualified business Customer for firm power service.

II. Abbreviations and Terms

- kW kilowatt(s)
- kW-mo. kilowatt-month
- kWh kilowatt-hour(s)
- MWh megawatt-hour(s)
- NYISO New York Independent System Operator, Inc. or any successor organization
- PAL New York Public Authorities Law
- OATT Open Access Transmission Tariff issued by the NYISO

Agreement: An executed written agreement between the Authority and the Customer for the sale of Expansion Power and/or Replacement Power to the Customer.

Annual Adjustment Factor or **AAF**: This term shall have the meaning set forth in Section V herein.

Authority: The Power Authority of the State of New York, a corporate municipal instrumentality and a political subdivision of the State of New York created pursuant to Chapter 772 of the New York Laws of 1931 and existing and operating under Title 1 of Article 5 of the PAL, also known as the “New York Power Authority.”

Customer: A business entity that has received an allocation of Expansion Power and/or Replacement Power, and that purchases Expansion Power and/or Replacement Power, directly from the Authority.

Electric Service: The power and energy provided to the Customer in accordance with the Agreement, this Service Tariff and the Rules.

Expansion Power or **EP** and/or **Replacement Power** or **RP**: Firm Power and Firm Energy made available under this Service Tariff by the Authority from the Project for sale to the Customer for business purposes pursuant to PAL § 1005(5) and (13).

Firm Power: Capacity (kW) that is intended to be always available from the Project subject to the curtailment provisions set forth in the Agreement between the Authority and the Customer and this Service Tariff. Firm Power shall not include peaking power.

Firm Energy: Energy (kWh) associated with Firm Power.

Load Serving Entity or **LSE**: This term shall have the meaning set forth in the Agreement.

Load Split Methodology or **LSM**: A type of billing methodology applicable to a Customer's Allocation which determines how a Customer's total metered usage is apportioned between the power and energy supplied by the Allocation and the Customer's other source of electricity supply, if any. LSM is usually provided for in an agreement between the Authority and the Customer's local electric utility, an agreement between the Authority and the Customer, or an agreement between the Authority, the Customer and the Customer's local electric utility. The load split methodology is often designated as "Load Factor Sharing" or "LFS", "First through the Meter" or "FTM", "First through the Meter Modified" or "FTM Modified", or "Replacement Power 2" or "RP 2".

Project: The Authority's Niagara Power Project, FERC Project No. 2216.

Rate Year or **RY**: The period from July 1 through June 30. For example, RY 2018 refers to July 1, 2018 through June 30, 2019.

Rules: The Authority's rules and regulations set forth in 21 NYCRR § 450 *et seq.*, as they may be amended from time to time.

Service Tariff: This Service Tariff No. WNY-2.

All other capitalized terms and abbreviations used in this Service Tariff but not defined in this Section or other provisions of this Service Tariff shall have the same meaning as set forth in the Agreement.

III. Monthly Rates and Charges

A. Expansion Power (EP) and Replacement Power (RP) Base Rates

The rates to be charged to the Customer by the Authority shall be as follows:

Billing Period	Demand (\$/kW)	Energy (\$/MWh)
January – June 2019	7.60	13.00

1. For RY 2019 (July 2019 through June 2020 Billing Periods), 50% of the Annual Adjustment Factor ("AAF"), as described in Section V, will be applied to the demand and energy rates stated in the table above.
2. For RY 2020 (July 2020 through June 2021 Billing Periods) and each Rate Year thereafter, the AAF will be applied to the then-effective base rates for demand and energy in accordance with Section V.

B. EP and RP Rates no Lower than Rural/Domestic Rate

At all times the applicable base rates for demand and energy determined in accordance with Sections III.A and V of this Service Tariff shall be no lower than the rates charged by the Authority for the sale of hydroelectricity for the benefit of rural and domestic customers receiving service in accordance with the Niagara Redevelopment Act, 16 U.S.C. § 836(b)(1) (the "Rural/Domestic Rate"). This provision shall be implemented as follows: if the base rates, as determined in accordance with Sections III.A and V of this Service Tariff, are lower than the Rural/Domestic Rate on an average \$/MWh basis, each set of rates measured at 80% load factor which is generally regarded as representative for EP and RP Customers, then the base rates determined under Sections III.A and V of this Service Tariff will be revised to make them equal to the Rural/Domestic Rate on an average \$/MWh basis. However, the base rates as so revised will have no effect until such time as these base rates are lower than the Rural/Domestic Rate.

C. Monthly Base Rates Exclude Delivery Service Charges

The monthly base rates set forth in this Section III exclude any applicable costs for delivery services provided by the local electric utility.

D. Minimum Monthly Charge

The Minimum Monthly Charge shall equal the product of the demand charge and the Contract Demand (as defined herein). Such Minimum Monthly Charge shall be in addition to any NYISO Charges or Taxes (each as defined herein) incurred by the Authority with respect to the Customer's Allocation.

E. Estimated Billing

If the Authority, in its discretion, determines that it lacks reliable data on the Customer's actual demand and/or energy usage for a Billing Period during which the Customer receives Electric Service from the Authority, the Authority shall have the right to render a bill to the Customer for such Billing Period based on estimated demand and estimated usage ("Estimated Bill").

For the purpose of calculating a Billing Demand charge for an Estimated Bill, the demand charge will be calculated based on the Load Split Methodology that is applicable to the Customer as follows:

- For Customers whose Allocation is subject to a Load Factor Sharing/LFS LSM, the estimated demand (kW) will be calculated based on an average of the Customer's Billing Demand (kW) values for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated demand (kW) value for the Estimated Bill will equal the Customer's takedown (kW) amount.
- For Customers whose Allocation is subject to a First through the Meter/ FTM, FTM Modified, or RP 2 LSM, the estimated demand (kW) value will equal the Customer's takedown (kW) amount.

For the purpose of calculating a Billing Energy charge for an Estimated Bill, the energy charge will be calculated based on the Customer's Load Split Methodology as follows:

- For Customers whose Allocation is subject to a Load Factor Sharing/LFS LSM, the estimated energy (kWh) will be based on the average of the Customer's Billing Energy (kWh) values for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated energy value (kWh) will be equal to the takedown (kW) amount at 70 percent load factor for that Billing Period.
- For Customers whose Allocation is subject to a First through the Meter/FTM, FTM Modified, or RP 2 LSM, the estimated energy (kWh) will be equal to the takedown (kW) amount at 100 percent load factor for that Billing Period.

If data indicating the Customer's actual demand and usage for any Billing Period in which an Estimated Bill was rendered is subsequently provided to the Authority, the Authority will make necessary adjustments to the corresponding Estimated Bill and, as appropriate, render a revised bill (or provide a credit) to the Customer.

The Minimum Monthly Charge provisions of Section III.D shall apply to Estimated Bills.

The Authority's discretion to render Estimated Bills is not intended and shall not be construed to limit the Authority's rights under the Agreement.

F. Adjustments to Charges

In addition to any other adjustments provided for in this Service Tariff, in any Billing Period, the Authority may make appropriate adjustments to billings and charges to address such matters as billing and payment errors, and the receipt of actual, additional, or corrected data concerning Customer energy or demand usage.

G. Billing Period

The Billing Period is any period of approximately thirty (30) days, generally ending with the last day of each calendar month but subject to the billing cycle requirements of the local electric utility in whose service territory the Customer's facilities are located.

H. Billing Demand

Billing Demand shall be determined by applying the applicable billing methodology to total meter readings during the Billing Period. See Section IV.E, below.

I. Billing Energy

Billing Energy shall be determined by applying the applicable billing methodology to total meter readings during the Billing Period. See Section IV.E, below.

J. Contract Demand

The Contract Demand will be the amount of Expansion Power and/or Replacement Power, not to exceed the Allocation, provided by the Authority to the Customer in accordance with the Agreement

IV. General Provisions

A. Character of Service

Alternating current; sixty cycles, three-phase.

B. Availability of Energy

1. Subject to Section IV.B.2, the Authority shall provide to the Customer in any Billing Period Firm Energy associated with Firm Power. The offer of Firm Energy for delivery shall fulfill the Authority's obligations for purposes of this provision whether or not the Firm Energy is taken by the Customer.
2. In the event of an Adverse Water Condition, the rights and obligations of the Customer and Authority, including but not limited to such matters as Substitute Energy, Customer-Arranged Energy and responsibility for payment of costs associated therewith, will be governed by Article IX of the Agreement.

C. Delivery

For the purpose of this Service Tariff, Firm Power and Firm Energy shall be deemed to be offered when the Authority is able to supply Firm Power and Firm Energy to the Authority's designated NYISO load bus. If, despite such offer, there is a failure of delivery caused by the Customer, NYISO or local electric utility, such failure shall not be subject to a billing adjustment pursuant to Section 454.6(d) of the Rules.

D. Adjustment of Rates

To the extent not inconsistent with the Agreement, the base rates contained in this Service Tariff may be revised from time to time on not less than thirty (30) days written notice to the Customer.

E. Billing Methodology

Unless otherwise specified in the Agreement, the following provisions shall apply:

1. The billing methodology used to determine the amount of Firm Power and Firm Energy to be billed to the Customer related to its Allocation shall be Load Factor Sharing (“LFS”) in a manner consistent with the Agreement and any applicable delivery agreement between the Authority and the Customer’s local electric utility or both as determined by the Authority. An alternative billing methodology may be used provided the Customer and the Authority agree in writing and the Customer’s local electric utility provides its consent if the Authority determines that such consent is necessary.
2. **Billing Demand** –The Billing Demand charged by the Authority to each Customer will be the highest 15 or 30-minute integrated demand, as determined by the Customer’s local electric utility, during each Billing Period recorded on the Customer’s meter multiplied by a percentage based on the LFS methodology, unless the Customer and the Authority agree in writing to an alternative billing methodology and the Customer’s local electric utility provides its consent if the Authority determines that such consent is necessary. Billing Demand may not exceed the amount of the Contract Demand.
3. **Billing Energy** –The kilowatt-hours charged by the Authority to each Customer will be the total number of kilowatt-hours recorded on the Customer’s meter for the Billing Period multiplied by a percentage based on the LFS methodology, unless the Customer and the Authority agree in writing to an alternative billing methodology and the Customer’s local electric utility provides its consent if the Authority determines that such consent is necessary.
4. With regard to LFS methodology calculations:
 - a. For every hour of the Billing Period, the Customer receives hydropower energy (Firm Energy) equal to the hourly metered load multiplied by the ratio of Customer’s Contract Demand divided by the maximum hourly metered load value recorded in a given Billing Period, such ratio not to exceed the value of 1.
 - b. When the maximum hourly metered demand for the Billing Period is less than or equal to the Contract Demand, all of the Customer’s metered load will be supplied by Firm Energy.
 - c. When the maximum hourly metered demand for the Billing Period is greater than the Contract Demand, the portion of the Customer’s metered load to be supplied by Firm Energy is as follows:
 - i. For Customer with hourly billing: the sum of the values, for each hour of the Billing Period, of the Contract Demand divided by the maximum hourly metered demand in the Billing Period multiplied by the hourly metered energy consumption.
 - ii. For Customer with monthly billing: the Contract Demand divided by the maximum hourly metered demand in the Billing Period multiplied by the total metered energy consumption during the Billing Period.
 - d. All demand values will be adjusted for losses.

F. Payment by Customer to Authority

1. Demand and Energy Charges, Taxes

The Customer shall pay the Authority for Firm Power and Firm Energy during any Billing Period the higher of either (i) the sum of (a), (b) and (c) below, or (ii) the Minimum Monthly Charge (as defined herein):

- a. The demand charge per kilowatt for Firm Power specified in this Service Tariff or any modification thereof applied to the Customer's Billing Demand (as defined in Section IV.E, above) for the Billing Period; and
- b. The energy charge per MWh for Firm Energy specified in this Service Tariff or any modification thereof applied to the Customer's Billing Energy (as defined in Section IV.E, above) for the Billing Period; and
- c. A charge representing reimbursement to the Authority for all applicable Taxes incurred by the Authority as a result of providing Expansion Power and/or Replacement Power allocated to the Customer.

2. Transmission Charge

The Customer shall compensate the Authority for all transmission costs incurred by the Authority with respect to the Allocation, including such costs that are charged pursuant to the OATT.

3. NYISO Transmission and Related Charges

The Customer shall compensate the Authority for the following NYISO transmission and related charges (collectively, "NYISO Charges") assessed on the Authority for services provided by the NYISO pursuant to its OATT or other tariffs (as the provisions of those tariffs may be amended and in effect from time to time) associated with providing Electric Service to the Customer:

- A. Ancillary Services 1 through 6 and any new ancillary services as may be defined and included in the OATT from time to time;
- B. Marginal losses;
- C. The New York Power Authority Transmission Adjustment Charge ("NTAC");
- D. Congestion costs inclusive of any rents collected or owed due to any associated grandfathered transmission congestion contracts as provided in Attachment K of the OATT;
- E. Any and all other charges, assessments, or other amounts associated with deliveries to Customers or otherwise associated with the Authority's responsibilities as a Load Serving Entity for the Customers that are assessed on the Authority by the NYISO under the provisions of its OATT or under other applicable tariffs; and

- F. Any charges assessed on the Authority with respect to the provision of Electric Service to Customers for facilities needed to maintain reliability and incurred in connection with the NYISO's Comprehensive System Planning Process (or similar reliability-related obligations incurred by the Authority with respect to Electric Service to the Customer), applicable tariffs, or required to be paid by the Authority in accordance with law, regardless of whether such charges are assessed by the NYISO or another party.

The NYISO Charges, if any, incurred by the Authority on behalf of the Customer, are in addition to the Authority production charges that are charged to the Customer in accordance with other provisions of this Service Tariff.

The method of billing NYISO charges to the Customer will be based on Authority's discretion.

4. Taxes Defined

Taxes shall be any adjustment as the Authority deems necessary to recover from the Customer any taxes, assessments or any other charges mandated by federal, state or local agencies or authorities that are levied on the Authority or that the Authority is required to collect from the Customer if and to the extent such taxes, assessments or charges are not recovered by the Authority pursuant to another provision of this Service Tariff.

5. Substitute Energy

The Customer shall pay for Substitute Energy, if applicable, as specified in the Agreement.

6. Payment Information

Bills computed under this Service Tariff are due and payable by electronic wire transfer in accordance with the Rules. Such wire transfer shall be made to J P Morgan Chase NY, NY / ABA021000021 / NYPA A/C # 008-030383, unless otherwise indicated in writing by the Authority. The Authority may in its discretion change the foregoing account and routing information upon notice to the Customer.

7. Billing Disputes

In the event that there is a dispute on any items of a bill rendered by the Authority, the Customer shall pay such bill in full. If necessary, any adjustments will be made thereafter.

G. Rendition and Payment of Bills

1. The Authority will render bills to the Customer for Electric Service on or before the tenth (10th) business day of the month for charges due for the previous Billing Period. Such bills shall include charges for Electric Service, NYISO Charges associated with the Allocation (subject to adjustment consistent with any later NYISO re-billings to the Authority), and all other applicable charges, and are subject to adjustment as provided for in the Agreement, the Service Tariff and the Rules.
2. The Authority will charge and collect from the Customer all Taxes (including local, state and federal taxes) the Authority determines are applicable, unless the Customer furnishes the Authority with proof satisfactory to the Authority that (i) the Customer is exempt from the payment of any such Taxes, and/or (ii) the Authority is not obligated to collect such Taxes from the Customer. If the Authority is not collecting Taxes from the Customer based on the circumstances described in (i) or (ii) above, the Customer shall immediately inform the Authority of any change in circumstances relating to its tax status that would require the Authority to charge and collect such Taxes from the Customer.
3. Unless otherwise agreed to by the Authority and the Customer in writing, the Authority will render bills to the Customer electronically.
4. Payment of bills by the Customer shall be due and payable by the Customer within twenty (20) days of the date the Authority renders the bill.
5. Except as otherwise agreed by the Authority in writing, if the Customer fails to pay any bill when due an interest charge of two percent of the amount unpaid will be added thereto as liquidated damages, and thereafter, as further liquidated damages, an additional interest charge of one and one-half percent of the sum unpaid shall be added on the first day of each succeeding Billing Period until the amount due, including interest, is paid in full.
6. If at any time after commencement of Electric Service the Customer fails to make complete payment of any two (2) bills for Electric Service when such bills become due pursuant to Agreement, the Authority shall have the right to require that the Customer deposit with the Authority a sum of money in an amount equal to all charges that would be due under this Agreement for Electric Service for two (2) consecutive calendar months as estimated by the Authority. Such deposit will be deemed security for the payment of unpaid bills and/or other claims of the Authority against the Customer upon termination of Electric Service. The failure or refusal of the Customer to provide the deposit within thirty (30) days of a request for such deposit will be grounds for the Authority in its discretion to suspend Electric Service to the Customer or terminate the Agreement.

Unless otherwise agreed to by the Authority and the Customer in writing, in the event the Customer disputes any item of any bill rendered by Authority, the Customer shall pay such bill in full within the time provided for by this Agreement, and adjustments, if appropriate, will be made thereafter.

H. Adjustment of Charges – Distribution Losses

The Authority will make appropriate adjustments to compensate for distribution losses of the local electric utility.

I. Conflicts

In the event of any inconsistencies, conflicts, or differences between the provisions of this Service Tariff and the Rules, the provisions of this Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of the Agreement and this Service Tariff or the Rules, the provisions of the Agreement shall govern.

DRAFT

V. Annual Adjustment Factor

A. Adjustment of Rates

1. The AAF will be based upon a weighted average of three indices described below. For each new Rate Year, the index value for the latest available calendar year ("Index Value for the Measuring Year") will be compared to the index value for the calendar year immediately preceding the latest available calendar year (the Index Value for the Measuring Year -1"). The change for each index will then be multiplied by the indicated weights. As described in detail below, these products are then summed, producing the AAF. The AAF will be multiplied by the base rate for the current Rate Year to produce the base rates for the new Rate Year, subject to a maximum adjustment of $\pm 5.0\%$ (" $\pm 5\%$ Collar"). Amounts outside the $\pm 5\%$ Collar shall be referred to as the "Excess."

Index 1, "BLS Industrial Power Price" (35% weight): The average of the monthly Producer Price Index for Industrial Electric Power, commodity code number 0543, not seasonally adjusted, as reported by the U.S. Department of Labor, Bureau of Labor Statistics ("BLS") electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 1, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

Index 2, "EIA Average Industrial Power Price" (40% weight): The average weighted annual price (as measured in cents/kWh) for electric sales to the industrial sector in the ten states of CT, MA, ME, NH, NJ, NY, OH, PA, RI and VT ("Selected States") as reported by Coal and Electric Data and Renewables Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration ("EIA"); U.S. Department of Energy Form EIA-861 Final Data File. For Index 2, the Index Value for the Measuring Year will be the index for the calendar year two years preceding July 1 of the new Rate Year.

Index 3, "BLS Industrial Commodities Price Less Fuel" (25% weight): The monthly average of the Producer Price Index for Industrial Commodities less fuel, commodity code number 03T15M05, not seasonally adjusted, as reported by the U.S. Department of Labor, BLS electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 3, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

2. Annual Adjustment Factor Computation Guide

- Step 1: For each of the three Indices, divide the Index Value for Measuring Year by the Index Value for the Measuring Year-1.
- Step 2: Multiply the ratios determined in Step 1 by percentage weights for each Index. Sum the results to determine the weighted average. This is the AAF.
- Step 3: Commencing RY 2014, modifications to the AAF will be subject to $\pm 5\%$ Collar, as described below.
- a) When the AAF falls outside the $\pm 5\%$ Collar, the Excess will be carried over to the subsequent RY. If the AAF in the subsequent RY is within the $\pm 5\%$ Collar, the current RY Excess will be added to/subtracted from the subsequent Rate Year's AAF, up to the $\pm 5\%$ Collar.

- b) Excesses will continue to accrue without limit and carry over such that they will be added to/subtracted from the AAF in any year where the AAF is within the $\pm 5\%$ Collar.

Step 4: Multiply the current Rate Year base rate by the AAF calculated in Step 2 to determine the new Rate Year base rate.

The foregoing calculation shall be performed by the Authority consistent with the sample presented in Section V.B below.

3. Subject to the provisions of Section III.A of this Service Tariff, the Authority shall provide the Customer with notice of any adjustment to the current base rate per the above and with all data and calculations necessary to compute such adjustment by June 15th of each year to be effective on July 1 of such year, commencing in 2014. The values of the latest officially published (electronically or otherwise) versions of the indices and data provided by the BLS and EIA as of June 1 shall be used notwithstanding any subsequent revisions to the indices.
4. If during the term of the Agreement any of the three above indices ceases to be available or ceases to be reflective of the relevant factors or of changes which the indices were intended to reflect, the Customer and the Authority may mutually select a substitute Index. The Customer and the Authority agree to mutually select substitute indices within 90 days, once one of them is notified by the other that the indices are no longer available or no longer reflect the relevant factors or changes which the indices were intended to reflect. Should the 90-day period cover a planned July 1 rate change, the current base rates will remain in effect until substitute indices are selected and the adjusted rates based on the substitute indices will be retroactive to the previous July 1. If the Customer and Authority are unable to reach agreement on substitute indices within the 90-day period, the Customer and the Authority agree to substitute the mathematic average of the PPI—Intermediate Materials, Supplies and Components (BLS Series ID WPUSOP2000) and the PPI-- Finished Goods (BLS Series ID WPUSOP3000) indices for one or more indices that have ceased to be available or reflective of their intended purpose and shall assume the percentage weighting(s) of the one or more discontinued indices as indicated in Section V.A.1.

B. Sample Computation of the AAF (hypothetical values for July 1, 2014 implementation):

STEP 1

Determine the Index Value for the Measuring Year (MY) and Measuring Year - 1 (MY-1) for Each Index

- Index 1 - Producer Price Index, Industrial Power

	Measuring Year <u>(2013)</u>	Measuring Year - 1 <u>(2012)</u>
January	171.2	167.8
February	172.8	167.6
March	171.6	168.2
April	173.8	168.6
May	175.1	171.6
June	185.7	180.1
July	186.4	182.7
August	184.7	179.2
September	185.5	181.8
October	175.5	170.2
November	172.2	168.8
December	171.8	166.6
Average	177.2	172.8
Ratio of MY/MY-1		1.03

- Index 2 – EIA Industrial Rate

<u>State</u>	<u>Revenues</u> (\$000s)	<u>Sales</u> (MWh)	<u>Avg. Rate</u> (cents/kWh)
<u>Measuring Year (2012)</u>			
CT	590,972	6,814,757	
MA	1,109,723	13,053,806	
ME	328,594	4,896,176	
NH	304,363	2,874,495	
NJ	1,412,665	15,687,873	
NY	2,001,588	26,379,314	
OH	3,695,978	78,496,166	
PA	3,682,192	63,413,968	
RI	152,533	1,652,593	
VT	<u>155,903</u>	<u>2,173,679</u>	
TOTAL	13,434,511	215,442,827	6.24

Measuring Year -1 (2011)

CT	579,153	6,678,462	
MA	1,076,431	12,662,192	
ME	310,521	4,626,886	
NH	298,276	2,817,005	
NJ	1,370,285	15,217,237	
NY	1,891,501	24,928,452	
OH	3,622,058	76,926,243	
PA	3,571,726	61,511,549	
RI	144,144	1,561,700	
VT	<u>152,785</u>	<u>2,130,205</u>	
TOTAL	13,016,880	209,059,931	6.23

Ratio of MY/MY-1 **1.00**

- Index 3 – Producer Price Index, Industrial Commodities Less Fuel

	Measuring Year (2013)	Measuring Year -1 (2012)
January	190.1	187.2
February	190.9	188.0
March	191.6	188.7
April	192.8	189.9
May	194.7	191.8
June	195.2	192.3
July	195.5	192.3
August	196.0	193.1
September	196.1	193.2
October	196.2	193.8
November	196.6	193.7
December	196.7	194.0
Average	194.4	191.5
Ratio of MY/MY-1		1.02

STEP 2

Determine AAF by Summing the Weighted Indices

<u>Index</u>	<u>Ratio of MY to MY-1</u>	<u>Weight</u>	<u>Weighted Factors</u>
PPI Industrial Power	1.03	0.35	0.361
EIA Industrial Rate	1.00	0.40	0.400
PPI Industrial Commodities less fuel	1.02	0.25	<u>0.255</u>
AAF			1.016

STEP 3

Apply Collar of $\pm 5.0\%$ to Determine the Maximum/Minimum AAF.

$-5.0\% < 1.6\% < 5.0\%$; collar does not apply, assuming no cumulative excess.

STEP 4

Apply AAF to Calculate the New Rate Year Base Rate

	<u>Demand</u> \$/kW-mo.	<u>Energy</u> \$/MWh
Current Rate Year Base Rate	7.56	12.91
New Rate Year Base Rate	7.68	13.12

*New York State Power Authority
Public Hearing*

*Electric Tower
November 28, 2018*



METSCHL
AND ASSOCIATES

COURT REPORTERS • LEGAL VIDEO SERVICES

Buffalo, NY: 716 856-1906

Rochester, NY: 585 697-0969

Toll Free: 800 397-1796

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

New York State Power Authority
Wednesday, November 28, 2018,
2:00 p.m.
Electric Tower
535 Washington Street, Suite 202
Buffalo, New York 14202

1 SPEAKERS:

2

3 MS. DELINCE 3

4 MR. HAYES 5

5 MS. DELINCE 15

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

1 MS. DELINCE: Good afternoon. This is
2 the public hearing required by law and
3 authorized by the New York Power of
4 Authority's Board of Trustees on a proposed
5 contract form for the sale of hydropower to
6 its Western New York Hydropower Customers.

7 My name is Karen Delince and I'm the
8 Authority's Corporate Secretary.

9 The New York State Public Authorities Law,
10 Section 1009, sets forth procedures for
11 executing certain contracts negotiated by the
12 Authority.

13 First, prior to the hearing, it requires
14 that notice of the hearing be provided.
15 Therefore, a notice was sent to the Governor,
16 the Senate's President Pro Temp, the Senate
17 Minority Leader, the Senate Finance Committee
18 Chair, the Assembly Speaker, the Assembly
19 Minority Leader, and the Assembly Ways and
20 Means Committee Chair.

21 In addition, notices appeared once a week
22 for the four weeks leading up to this hearing
23 in the following newspapers: Albany

1 Times-Union, Buffalo News, Massena Daily
2 Courier Observer, Poughkeepsie Journal,
3 Rochester Democrat & Chronicle, Syracuse
4 Post-Standard.

5 The public was also given access to the
6 proposed contract form on the Authority's
7 website and at the Authority's White Plains
8 office during the 30-day period prior to
9 today's hearing.

10 After the hearing, the public will be
11 given access to the hearing transcript, once
12 it is completed, at www.nypa.gov and at the
13 White Plains office.

14 The next step in the process set forth in
15 Section 1009 will be for the NYPA Trustees to
16 reconsider the purposed contract form in light
17 of public comments.

18 Once the Trustees have completed their
19 final review, the contract form will be
20 forwarded to the Governor for his
21 consideration and approval.

22 If you plan to make an oral statement at
23 this hearing, I ask that you so indicate on

1 the sign-in sheet.

2 Also, if you have a written statement,
3 please provide a copy to Rich Smith and one to
4 the reporter.

5 Written statements may be of any length
6 and will appear in the record of the hearing
7 in addition to oral comments.

8 The record of the hearing will remain open
9 for additional comments through close of
10 business, Thursday, November 29, 2018.

11 Additional comments should be mailed,
12 faxed or emailed to the Corporate Secretary at
13 123 Main Street, 11-P, White Plains, New York
14 10601; or (914) 390-8040; or
15 secretarys.office@nypa.gov.

16 At this point, I would like to introduce
17 Mr. Keith Hayes, the Authority's Vice
18 President of Economic Development, who will
19 provide additional details on the proposed
20 contract form. Thank you. Mr. Hayes.

21 MR. HAYES: Thank you, Ms. Delince.
22 Good afternoon. My name is Keith Hayes and
23 I'm the Vice President of Economic Development

1 at NYPA. I'm here today to present a summary
2 of the proposed contract form for the sale of
3 Hydropower generated here at the Niagara Power
4 Project to existing customers in Western New
5 York. The contract form will be used to
6 extend the term of existing allocations of
7 Expansion Power and Replacement Power,
8 collectively referred to as Western New York
9 Hydropower, to December 31, 2028 as recently
10 approved by NYPA's Board of Trustees.

11 Under Public Authorities Law Section 1005
12 Subsection 13, the Authority may allocate and
13 sell directly or by sale-for-resale, 250 MW of
14 Expansion Power, known as EP, and 445 MW of
15 Replacement Power, known as RP, to businesses
16 located within 30 miles of the Niagara Power
17 Project, provided that the amount of EP
18 allocated to the businesses in Chautauqua
19 County on January 1, 1987 shall continue to be
20 allocated in Chautauqua County.

21 In the 2009-2010 time period, the
22 Authority implemented a practice that
23 encouraged Western New York Hydropower

1 customers to begin discussions with the
2 Authority about the extension of the Western
3 New York Hydropower allocations well in
4 advance of the expiration of such allocations.
5 The practice is intended to give businesses
6 increased certainty about the long-term supply
7 of WNY Hydropower, thereby supporting and
8 encouraging long-term planning and investment
9 in Western New York through employment and
10 capital investment. The process was well
11 received and was formalized in the Authority's
12 current WNY Hydropower contracts, most of
13 which are set to expire on June 30, 2020.

14 On October 2, 2018, the Authority's Board
15 of Trustees authorized today's public hearing
16 on the proposed contract form, or
17 "Proposed Extension Contract," that would,
18 along with a new Authority service tariff
19 designated as Service Tariff No. WNY-2, apply
20 to the sale of RP and EP allocations proposed
21 for extension.

22 In addition, the Trustees approved,
23 subject to conditions that I'll describe in a

1 moment, the extension of all 219 existing
2 allocations of EP and/or RP to December 31,
3 2028. The existing allocations are held by
4 116 customers and a total of 529.7 MW of
5 hydropower. A majority of these existing
6 allocations - 207 - are currently in service,
7 while 12 are not yet being used as they await
8 completion of the customer's associated
9 expansion project to commence electric
10 service.

11 The Trustees' approval of the extensions
12 was conditioned on:

13 (A) The successful conclusion of the
14 public hearing and approval process of the
15 Proposed Extension Contract and Service Tariff
16 No. WNY-2, as provided for in Public
17 Authorities Law Section 1009, that will govern
18 the sale of the allocations during the
19 extended term;

20 (B) The customer agreeing for the Extended
21 Term, to the same or substantially similar
22 supplemental commitments for jobs and capital
23 investments that are contained in its current

1 Western NY Hydropower agreement with the
2 Authority;

3 (C) In the case of a customer whose
4 existing supplemental commitments do not
5 include an annual capital investment
6 commitment, such customer agreeing to an
7 annual capital investment commitment for the
8 Extended Term that Authority staff determines
9 to be appropriate based on the customer's
10 circumstances; and

11 (D) The Customer being in compliance with
12 its supplemental commitments for jobs and
13 capital investments under its Current WNY
14 Hydropower Agreement.

15 Collectively, these proposed contract
16 extensions will support over 30,000 jobs and
17 over \$136 million in annual capital spending.
18 The contract extensions are scheduled to begin
19 as early as January 2019, pending the
20 conclusion of the public hearing process and
21 execution of the contract by the individual
22 customers and NYPA. Assuming that the sale of
23

1 the Extended Allocations begins on or about
2 January 1, 2019, this would represent an
3 effective term of approximately 10 years
4 through December 31, 2028.

5 Copies of the Proposed Extension Contract
6 and Service Tariff No. WNY-2, and the complete
7 list of businesses and their respective
8 allocations and supplemental commitments as
9 presented to the Board are available for
10 public view on the Authority's website,
11 www.nypa.gov.

12 The following is a summary of a few of the
13 pertinent provisions of the Proposed Extension
14 Contract and corresponding Service Tariff No.
15 WNY-2:

16 The contract provides for the direct
17 billing of all hydropower supply charges and
18 all New York Independent System Operator
19 charges and taxes.

20 The contract continues to include
21 compliance provisions that allow the Authority
22 to reduce the allocation amounts for a
23 customer's failure to meet supplemental

1 commitments. Should a company's actual
2 employment, power utilization, or capital
3 investment for the year fall below the
4 compliance threshold of 90% of the committed
5 levels, the Authority may reduce the amount of
6 the allocation. However, the contract now
7 gives the customer an opportunity to present a
8 proposed plan with actionable milestones to
9 cure deficiencies.

10 The Authority would continue to provide
11 unforced capacity to meet a Customer's New
12 York Independent System Operator requirements
13 associated with its Extended Allocation, and
14 the customer would pay for this capacity.

15 The contract contains updated provisions
16 to address a number of matters, including
17 customer metering arrangements, delivery of EP
18 and RP by local electric utilities, the
19 provision of substitute energy in the event of
20 hydropower curtailments caused by adverse
21 water conditions, and early outreach
22 concerning future allocation extensions.

23 In order to ensure the customers use the

1 hydropower efficiently, the contract requires
2 customers to perform an energy audit at the
3 facility receiving its Western NY Hydropower
4 allocation at least twice during the term of
5 the Allocation. Customers would have the
6 option to satisfy the audit requirement
7 through either a traditional physical audit,
8 or a virtual audit using the Authority's New
9 York Energy Manager. The New York Energy
10 Manager audit option is expected to provide
11 considerable savings for customers who select
12 it.

13 The contract contains new provisions to
14 clarify the parties' rights regarding the
15 takedown of allocations that are awarded to
16 support new or expanded facilities.

17 The Authority has agreed to periodically
18 communicate with the customer about
19 energy-related projects, programs and services
20 offered by the Authority.

21 The contract incorporates a more developed
22 approach by the Authority to administering the
23 Western NY Hydropower programs in a manner

1 that is consistent with the State Energy Plan
2 and Clean Energy Standard. As part of this,
3 the contract provides for collection of a Zero
4 Emission Credit Charge and a Renewable Energy
5 Credit Charge to allow the Authority to
6 recover costs it would incur relating to its
7 purchase of Zero Emission Credits and
8 Renewable Energy Credits attributable to the
9 customer's load.

10 Service Tariff WNY-2 provides for a
11 minimum monthly charge which helps the
12 Authority cover fixed costs of serving a
13 customer even when the customer does not
14 utilize the allocation in a billing period.
15 However, the Authority would waive the minimum
16 monthly charge for up to one year if a
17 Customer can satisfactorily demonstrate a
18 short-term reduction or interruption of
19 facility operations due to events outside of
20 the Customer's control. This provision would
21 give flexibility to customers who experience
22 short-term operational hardships allowing them
23 to avoid costs when they are not fully able to

1 utilize the power allocation.

2 The base rates for demand and energy would
3 be reduced by 4.0% commencing January 1, 2019.
4 The reduction is taken off the currently
5 effective 2018 rates contained in Service
6 Tariff No. WNY-1, the existing service tariff
7 applicable to EP and RP allocations.

8 Service Tariff WNY-2's annual adjustment
9 factor, of AAF, would be reduced by 50% before
10 applying to determine the effective rate for
11 the 2019 rate year, which is July 1, 2019
12 through June 30, 2020. Thereafter, the AAF
13 would be applied in full.

14 To address non-payment risk that could
15 result from the direct billing arrangement,
16 the contract includes commercially reasonable
17 provisions concerning the Authority's ability
18 to charge late payment fees and to require
19 deposits in the event of a customer's failure
20 to make payment for any two monthly bills.
21 These contract provisions are consistent with
22 other Authority direct sale contracts.

23 Lastly, transmission and delivery service

1 for the allocation will be provided by
2 National Grid or NYSEG, in accordance with the
3 utilities' Public Service Commission approved
4 delivery service tariffs.

5 As Ms. Delince stated earlier, the
6 Authority will accept your comments on the
7 proposed contract extensions until the close
8 of business on Thursday, November 29, 2018. I
9 will now turn the hearing back to
10 Ms. Delince. Thank you very much.

11 MS. DELINCE: Thank you, Mr. Hayes. Is
12 there anyone present at this time wishing to
13 make a statement?

14 Seeing none, we will recess and
15 reconvene as speakers arrive. Thank you.

16
17 (Recess.)

18
19 MS. DELINCE: The November 28, 2018
20 public hearing on the proposed contract form
21 for the sale of hydropower to the Authority's
22 Western New York Hydropower Customers is now
23 officially closed.

1 As I previously stated, the record of the
2 hearing will remain open for additional
3 comments through close of business, Thursday,
4 November 29, 2018. Thank you and good night.

5
6
7 (Hearing closed at 6:00 p.m.)
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

1 STATE OF NEW YORK
2 COUNTY OF ERIE

3 I, Carissa L. Kelsch, Notary Public, in and
4 for the State of New York, do hereby certify:

5 That the witness whose testimony appears
6 hereinbefore was, before the commencement of
7 their testimony, duly sworn to testify the
8 truth, the whole truth and nothing but the
9 truth; that said testimony was taken pursuant
10 to notice at the time and place as herein set
11 forth; that said testimony was taken down by
12 me and thereafter transcribed into
13 typewriting, and I hereby certify the
14 foregoing testimony is a full, true and
15 correct transcription of my shorthand notes so
16 taken.

17 I further certify that I am neither counsel
18 for nor related to any party to said action,
19 nor in any way interested in the outcome
20 thereof.

21 IN WITNESS WHEREOF, I have hereunto
22 subscribed my name and affixed my seal this
23 29th day of November, 2018.



Notary Public
State of New York

Carissa L. Kelsch

	13:22	10:9	9:10	continue (2) 6:19;11:10
\$	along (1) 7:18	avoid (1) 13:23	clarify (1) 12:14	continues (1) 10:20
\$136 (1) 9:17	amount (2) 6:17;11:5	await (1) 8:7	Clean (1) 13:2	contract (27) 3:5;4:6,16,19;5:20; 6:2,5;7:16,17;8:15; 9:15,18,22;10:5,14, 16,20;11:6,15;12:1, 13,21;13:3;14:16,21; 15:7,20
A	amounts (1) 10:22	awarded (1) 12:15	close (3) 5:9;15:7;16:3	contracts (3) 3:11;7:12;14:22
AAF (2) 14:9,12	and/or (1) 8:2	B	closed (2) 15:23;16:7	control (1) 13:20
ability (1) 14:17	annual (4) 9:5,7,18;14:8	back (1) 15:9	collection (1) 13:3	Copies (1) 10:5
able (1) 13:23	appear (1) 5:6	base (1) 14:2	collectively (2) 6:8;9:15	copy (1) 5:3
accept (1) 15:6	appeared (1) 3:21	based (1) 9:9	commence (1) 8:9	Corporate (2) 3:8;5:12
access (2) 4:5,11	applicable (1) 14:7	begin (2) 7:1;9:19	commencing (1) 14:3	corresponding (1) 10:14
accordance (1) 15:2	applied (1) 14:13	begins (1) 10:1	comments (6) 4:17;5:7,9,11;15:6; 16:3	costs (3) 13:6,12,23
actionable (1) 11:8	apply (1) 7:19	below (1) 11:3	commercially (1) 14:16	County (2) 6:19,20
actual (1) 11:1	approach (1) 12:22	billing (3) 10:17;13:14;14:15	Commission (1) 15:3	Courier (1) 4:2
addition (3) 3:21;5:7;7:22	appropriate (1) 9:9	bills (1) 14:20	commitment (2) 9:6,7	cover (1) 13:12
additional (4) 5:9,11,19;16:2	approval (3) 4:21;8:11,14	Board (4) 3:4;6:10;7:15;10:9	commitments (5) 8:22;9:4,12;10:8; 11:1	Credit (2) 13:4,5
address (2) 11:16;14:14	approved (3) 6:10;7:22;15:3	Buffalo (1) 4:1	committed (1) 11:4	Credits (2) 13:7,8
adjustment (1) 14:8	approximately (1) 10:3	business (3) 5:10;15:8;16:3	Committee (2) 3:17,20	cure (1) 11:9
administering (1) 12:22	arrangement (1) 14:15	businesses (4) 6:15,18;7:5;10:7	communicate (1) 12:18	current (3) 7:12;8:23;9:13
advance (1) 7:4	arrangements (1) 11:17	C	company's (1) 11:1	currently (2) 8:6;14:5
adverse (1) 11:20	arrived (1) 15:15	can (1) 13:17	complete (1) 10:6	curtailments (1) 11:20
afternoon (2) 3:1;5:22	Assembly (3) 3:18,18,19	capacity (2) 11:11,14	completed (2) 4:12,18	customer (11) 8:20;9:3,6,11;11:7, 14,17;12:18;13:13, 13,17
agreed (1) 12:17	associated (2) 8:8;11:13	capital (8) 7:10;8:22;9:5,7,13, 17,18;11:2	completion (1) 8:8	Customers (11) 3:6;6:4;7:1;8:4; 9:22;11:23;12:2,5, 11;13:21;15:22
agreeing (2) 8:20;9:6	Assuming (1) 9:23	case (1) 9:3	compliance (3) 9:11;10:21;11:4	customer's (7) 8:8;9:9;10:23; 11:11;13:9,20;14:19
agreement (2) 9:1,14	attributable (1) 13:8	caused (1) 11:20	concerning (2) 11:22;14:17	D
Albany (1) 3:23	audit (5) 12:2,6,7,8,10	certain (1) 3:11	conclusion (2) 8:13;9:20	Daily (1) 4:1
allocate (1) 6:12	Authorities (3) 3:9;6:11;8:17	certainty (1) 7:6	conditioned (1) 8:12	December (3) 6:9;8:2;10:3
allocated (2) 6:18,20	Authority (18) 3:12;6:12,22;7:2, 18;9:2,8;10:21;11:5, 10;12:17,20,22;13:5, 12,15;14:22;15:6	Chair (2) 3:18,20	conditions (2) 7:23;11:21	Decline (1) 5:21
allocation (9) 10:22;11:6,13,22; 12:4,5;13:14;14:1; 15:1	Authority's (11) 3:4,8;4:6,7;5:17; 7:11,14;10:10;12:8; 14:17;15:21	Charge (5) 13:4,5,11,16;14:18	considerable (1) 12:11	
allocations (12) 6:6;7:3,4,20;8:2,3, 6,18;10:1,8;12:15; 14:7	authorized (2) 3:3;7:15	charges (2) 10:17,19	consideration (1) 4:21	
allow (2) 10:21;13:5	available (1)	Chautauqua (2) 6:18,20	consistent (2) 13:1;14:21	
allowing (1)		Chronicle (1) 4:3	contained (2) 8:23;14:5	
		circumstances (1)	contains (2) 11:15;12:13	

deficiencies (1) 11:9 DELINCE (8) 2:3,5;3:1,7;15:5, 10,11,19 delivery (3) 11:17;14:23;15:4 demand (1) 14:2 Democrat (1) 4:3 demonstrate (1) 13:17 deposits (1) 14:19 describe (1) 7:23 designated (1) 7:19 details (1) 5:19 determine (1) 14:10 determines (1) 9:8 developed (1) 12:21 Development (2) 5:18,23 direct (3) 10:16;14:15,22 directly (1) 6:13 discussions (1) 7:1 due (1) 13:19 during (3) 4:8;8:18;12:4	7:9;11:2 encouraged (1) 6:23 encouraging (1) 7:8 energy (9) 11:19;12:2,9,9; 13:1,2,4,8;14:2 energy-related (1) 12:19 ensure (1) 11:23 EP (6) 6:14,17;7:20;8:2; 11:17;14:7 even (1) 13:13 event (2) 11:19;14:19 events (1) 13:19 executing (1) 3:11 execution (1) 9:21 existing (7) 6:4,6;8:1,3,5;9:4; 14:6 expanded (1) 12:16 Expansion (3) 6:7,14;8:9 expected (1) 12:10 experience (1) 13:21 expiration (1) 7:4 expire (1) 7:13 extend (1) 6:6 extended (5) 8:19,20;9:8,23; 11:13 extension (7) 7:2,17,21;8:1,15; 10:5,13 extensions (5) 8:11;9:16,19; 11:22;15:7	11:3 faxed (1) 5:12 fees (1) 14:18 few (1) 10:12 final (1) 4:19 finally (1) 9:10 Finance (1) 3:17 First (1) 3:13 fixed (1) 13:12 flexibility (1) 13:21 following (2) 3:23;10:12 form (9) 3:5;4:6,16,19;5:20; 6:2,5;7:16;15:20 formalized (1) 7:11 forth (2) 3:10;4:14 forwarded (1) 4:20 four (1) 3:22 full (1) 14:13 fully (1) 13:23 future (1) 11:22	hearing (17) 3:2,13,14,22;4:9, 10,11,23;5:6,8;7:16; 8:14;9:21;15:9,20; 16:2,7 held (1) 8:3 helps (1) 13:11 hydropower (18) 3:5,6;6:3,9,23;7:3, 7,12;8:5;9:1,14; 10:17;11:20;12:1,3, 23;15:21,22	
				K
				Karen (1) 3:7 Keith (2) 5:17,22 known (2) 6:14,15
				L
				Lastly (1) 14:23 late (1) 14:18 law (4) 3:2,9;6:11;8:17 Leader (2) 3:17,19 leading (1) 3:22 least (1) 12:4 length (1) 5:5 levels (1) 11:5 light (1) 4:16 list (1) 10:7 load (1) 13:9 local (1) 11:18 located (1) 6:16 long-term (2) 7:6,8
E		G		M
earlier (1) 15:5 early (2) 9:19;11:21 Economic (2) 5:18,23 effective (3) 10:2;14:5,10 efficiently (1) 12:1 either (1) 12:7 electric (1) 11:18 electric* (1) 8:9 emailed (1) 5:12 Emission (2) 13:4,7 employment (2)	facilities (1) 12:16 facility (2) 12:3;13:19 factor (1) 14:9 failure (2) 10:23;14:19 fall (1)	generated (1) 6:3 given (2) 4:5,11 gives (1) 11:7 Good (3) 3:1;5:22;16:4 govern (1) 8:17 Governor (2) 3:15;4:20 Grid (1) 15:2	implemented (1) 6:22 include (2) 9:5;10:20 includes (1) 14:16 including (1) 11:16 incorporates (1) 12:21 increased (1) 7:6 incur (1) 13:6 Independent (2) 10:18;11:12 indicate (1) 4:23 individual (1) 9:22 intended (1) 7:5 interruption (1) 13:18 introduce (1) 5:16 investment (5) 7:8,10;9:5,7;11:3 investments (2) 8:23;9:13	mailed (1) 5:11 Main (1) 5:13 majority (1) 8:5 Manager (2) 12:9,10 manner (1) 12:23 Massena (1) 4:1 matters (1) 11:16 may (3) 5:5;6:12;11:5 Means (1) 3:20 meet (2) 10:23;11:11
	F	H	J	
		hardships (1) 13:22 HAYES (6) 2:4;5:17,20,21,22; 15:11	January (4) 6:19;9:20;10:1; 14:3 jobs (3) 8:22;9:12,16 Journal (1) 4:2 July (1) 14:11 June (2) 7:13;14:12	

metering (1) 11:17 miles (1) 6:16 milestones (1) 11:8 million (1) 9:17 minimum (2) 13:11,15 Minority (2) 3:17,19 moment (1) 8:1 monthly (3) 13:11,16;14:20 more (1) 12:21 most (1) 7:12 much (1) 15:10 MW (3) 6:13,14;8:4	4:15;6:1;9:22 NYPA's (1) 6:10 NYSEG (1) 15:2 O Observer (1) 4:2 October (1) 7:14 off (1) 14:4 offerings (1) 12:20 office (2) 4:8,13 officially (1) 15:23 once (3) 3:21;4:11,18 one (2) 5:3;13:16 open (2) 5:8;16:2 operational (1) 13:22 operations (1) 13:19 Operator (2) 10:18;11:12 opportunity (1) 11:7 option (2) 12:6,10 oral (2) 4:22;5:7 order (1) 11:23 outreach (1) 11:21 outside (1) 13:19 over (2) 9:16,17 P part (1) 13:2 parties' (1) 12:14 pay (1) 11:14 payment (2) 14:18,20 pending (1) 9:20 perform (1) 12:2 period (3) 4:8;6:21;13:14	periodically (1) 12:17 pertinent (1) 10:13 physical (1) 12:7 Plains (3) 4:7,13;5:13 plan (3) 4:22;11:8;13:1 planning (1) 7:8 please (1) 5:3 pm (1) 16:7 point (1) 5:16 Post-Standard (1) 4:4 Poughkeepsie (1) 4:2 Power (9) 3:3;6:3,7,7,14,15, 16;11:2;14:1 practice (2) 6:22;7:5 present (3) 6:1;11:7;15:12 presented (1) 10:9 President (3) 3:16;5:18,23 previously (1) 16:1 prior (2) 3:13;4:8 Pro (1) 3:16 procedures (1) 3:10 process (4) 4:14;7:10;8:14; 9:21 programs (2) 12:19,23 Project (3) 6:4,17;8:9 projects (1) 12:19 proposed (14) 3:4;4:6;5:19;6:2; 7:16,17,20;8:15; 9:15;10:5,13;11:8; 15:7,20 provide (4) 5:3,19;11:10;12:10 provided (4) 3:14;6:17;8:16; 15:1 provides (3) 10:16;13:3,10 provision (2)	11:19;13:20 provisions (6) 10:13,21;11:15; 12:13;14:17,21 public (13) 3:2,9;4:5,10,17; 6:11;7:15;8:14,16; 9:21;10:10;15:3,19 purchase (1) 13:7 purposed (1) 4:16 R rate (2) 14:10,11 rates (2) 14:2,5 reasonable (1) 14:16 received (1) 7:11 receiving (1) 12:3 recently (1) 6:9 recess (2) 15:14,17 reconsider (1) 4:16 reconvene (1) 15:15 record (3) 5:6,8;16:1 recover (1) 13:6 reduce (2) 10:22;11:5 reduced (2) 14:3,9 reduction (2) 13:18;14:4 referred (1) 6:8 regarding (1) 12:14 relating (1) 13:6 remain (2) 5:8;16:2 Renewable (2) 13:4,8 Replacement (2) 6:7,15 reporter (1) 5:4 represent (1) 10:2 require (1) 14:18 required (1) 3:2	requirement (1) 12:6 requirements (1) 11:12 requires (2) 3:13;12:1 respective (1) 10:7 result (1) 14:15 review (1) 4:19 Rich (1) 5:3 right (1) 15:14 rights (1) 12:14 risk (1) 14:14 Rochester (1) 4:3 RP (5) 6:15;7:20;8:2; 11:18;14:7 S sale (7) 3:5;6:2;7:20;8:18; 9:23;14:22;15:21 sale-for-resale (1) 6:13 same (1) 8:21 satisfactorily (1) 13:17 satisfy (1) 12:6 savings (1) 12:11 scheduled (1) 9:19 Secretary (2) 3:8;5:12 secretarysoffice@nypagov (1) 5:15 Section (4) 3:10;4:15;6:11; 8:17 Seeing (1) 15:14 seekers (1) 15:15 select (1) 12:11 sell (1) 6:13 Senate (2) 3:16,17 Senate's (1) 3:16 sent (1)

3:15 service (14) 7:18,19;8:6,10,15; 10:6,14;13:10;14:6,6, 8,23;15:3,4 services (1) 12:19 serving (1) 13:12 set (2) 4:14;7:13 sets (1) 3:10 shall (1) 6:19 sheet (1) 5:1 short-term (2) 13:18,22 sign-in (1) 5:1 similar (1) 8:21 Smith (1) 5:3 Speaker (1) 3:18 SPEAKERS (1) 2:1 spending (2) 9:17,18 staff (1) 9:8 Standard (1) 13:2 State (2) 3:9;13:1 stated (2) 15:5;16:1 statement (3) 4:22;5:2;15:13 statements (1) 5:5 step (1) 4:14 Street (1) 5:13 subject (1) 7:23 Subsection (1) 6:12 substantially (1) 8:21 substitute (1) 11:19 successful (1) 8:13 summary (2) 6:1;10:12 supplemental (5) 8:22;9:4,12;10:8, 23 supply (2)	7:6;10:17 support (2) 9:16;12:16 supporting (1) 7:7 Syracuse (1) 4:3 System (2) 10:18;11:12 T takedown (1) 12:15 tariff (9) 7:18,19;8:15;10:6, 14;13:10;14:6,7,8 tariffs (1) 15:4 taxes (1) 10:19 Temp (1) 3:16 term (6) 6:6;8:19,21;9:8; 10:2;12:4 Thereafter (1) 14:12 thereby (1) 7:7 Therefore (1) 3:15 threshold (1) 11:4 Thursday (3) 5:10;15:8;16:3 Times-Union (1) 4:1 today (1) 6:1 today's (2) 4:9;7:15 total (1) 8:4 traditional (1) 12:7 transcript (1) 4:11 transmission (1) 14:23 Trustees (6) 3:4;4:15,18;7:15, 22;8:11 Trustee's (1) 6:10 turn (1) 15:9 twice (1) 12:4 two (1) 14:20	 U Under (2) 6:11;9:13 unforced (1) 11:11 up (2) 3:22;13:16 updated (1) 11:15 use (1) 11:23 used (2) 6:5;8:7 using (1) 12:8 utilities (1) 11:18 utilities' (1) 15:3 utilization (1) 11:2 utilize (2) 13:14;14:1 V Vice (2) 5:17,23 view (1) 10:10 virtual (1) 12:8 W waive (1) 13:15 water (1) 11:21 Ways (1) 3:19 website (2) 4:7;10:10 week (1) 3:21 weeks (1) 3:22 Western (10) 3:6;6:4,8,23;7:2,9; 9:1;12:3,23;15:21 White (3) 4:7,13;5:13 whose (1) 9:3 wishing (1) 15:12 within (1) 6:16 WNY (3) 7:7,12;9:13 WNY-1 (1)	14:6 WNY-2 (5) 7:19;8:16;10:6,15; 13:10 WNY-2's (1) 14:8 written (2) 5:2,5 wwwnypagov (2) 4:12;10:11 Y year (3) 11:3;13:16;14:11 years (1) 10:3 York (14) 3:3,6,9;5:13;6:5,8, 23;7:3,9;10:18; 11:12;12:9,9;15:22 Z Zero (2) 13:3,7 1 1 (1) 14:11 10 (1) 10:3 1005 (1) 6:11 1009 (3) 3:10;4:15;8:17 10601 (1) 5:14 116 (1) 8:4 11-P (1) 5:13 12 (1) 8:7 123 (1) 5:13 13 (1) 6:12 15 (1) 2:5 1987 (1) 6:19 1st (3) 6:19;10:1;14:3 2 2009-2007* (1) 6:21 2018 (6) 5:10;7:14;14:5; 15:8,19;16:4	2019 (5) 9:20;10:2;14:4,11, 11 2020 (2) 7:13;14:12 2028 (3) 6:9;8:3;10:4 207 (1) 8:6 219 (1) 8:1 250 (1) 6:13 28th (1) 15:19 29th (3) 5:10;15:8;16:4 2nd (1) 7:14 3 3 (1) 2:3 30 (1) 6:16 30,000 (1) 9:16 30-day (1) 4:8 30th (2) 7:13;14:12 31st (3) 6:9;8:2;10:4 390-8040 (1) 5:14 4 4.0% (1) 14:3 445 (1) 6:14 5 5 (1) 2:4 50% (1) 14:9 529.7 (1) 8:4 6 6:00 (1) 16:7 9 90% (1) 11:4 914 (1)

5:14				

JOHN F. KENNEDY AIRPORT LOAD SERVING ENTITY AGREEMENT

This LOAD SERVING ENTITY AGREEMENT ("Agreement") dated as of January 1, 2019 ("Effective Date"), by and between the Power Authority of the State of New York, a corporate municipal instrumentality and political subdivision of the State of New York created by the Legislature of the State by Chapter 772 of the Laws of 1931, as amended ("NYPA"), and The Port Authority of New York and New Jersey ("Port"). NYPA and Port are referred to herein collectively, as the "Parties" and individually, as a "Party".

RECITALS

WHEREAS, pursuant to the Application for Electric Service between NYPA and the Port dated September 22, 1976 ("Application for Electric Service"), NYPA supplies electricity to the Port; and

WHEREAS, Port entered into an agreement with KIAC Partners, a New York general partnership ("KIAC"), on April 28, 1993, as amended, for the construction of a co-generation facility (the "Facility") at the JFK International Airport ("JFK") to supply electricity and thermal energy, which attained commercial operation on January 31, 1995; and

WHEREAS, the Port owns the Facility, which is leased to, and operated and maintained by, KIAC; and

WHEREAS, on March 19, 1993, the Parties entered into an agreement, known as "Service Tariff Rider B", that sets forth duties and responsibilities between NYPA and the Port for the Facility; and

WHEREAS, on January 30, 1995, NYPA, the Port, and KIAC entered into an Operating Agreement (the "Operating Agreement") intended to implement Service Tariff Rider "B"; and

WHEREAS, this Agreement supersedes both Service Tariff Rider "B" and the Operating Agreement for the continued operation of the Facility within the current electricity market structure in New York State as administered by the New York Independent System Operator ("NYISO"); and

WHEREAS, notwithstanding that the JFK Load is supplied by the Facility under a contract between the Port and KIAC, NYPA schedules the JFK Load with the NYISO and arranges for the Facility generation to be assigned to serve that load; and

WHEREAS, this Agreement sets forth the terms under which NYPA will continue to provide services to the Port at JFK, and how NYPA, the Port and KIAC will interface with respect to the Facility;

NOW, THEREFORE, in consideration of the agreements herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, agree as follows:

1. Definitions.

Capitalized terms used in this Agreement and not otherwise defined herein have the respective meanings set forth in Exhibit A, which is incorporated herein as if fully stated.

2. Load Serving Entity Services.

A. NYPA will provide services to the Port as set forth herein. The JFK Load is on an independent and isolated load bus, such that NYISO costs applicable to serving the JFK Load will be separately identified each month apart from those costs assessed under any other agreements or arrangements in place between NYPA and the Port Authority. The Port will be financially responsible to NYPA for costs that NYPA incurs from the NYISO to provide the services under this Agreement.

B. NYPA will forecast and schedule the JFK Load and the capacity of the Facility associated with such load, in accordance with NYPA's obligations under the applicable NYISO Tariffs and Con Edison's Capacity and Energy Reconciliation Guidelines.

C. Solely with regard to the Facility, the Port shall cause KIAC to provide the operational information necessary for NYPA to comply with all applicable NYISO Tariffs, including all applicable NYISO procedures and policies with which NYPA must comply.

D. NYPA will provide Back-Up Power when the Facility is off-line, or when there is a reduction in output from the Facility. Back-up Power may be requested by the Port or KIAC (on the Port's behalf) at any time to meet up to 100 percent of the JFK Load. Requests for scheduled Back-up Power must be made between the hours of 9 AM to 5 PM Monday to Friday, excepting holidays, and must be consistent with NYPA's scheduling practices. NYPA will also provide unscheduled or emergency Back-Up Power in accordance with Section 6.B of this Agreement. As between NYPA and the Port, any and all costs, including NYISO charges relating to Back-up Power, are the responsibility of the Port.

3. Termination.

A. This Agreement shall be effective on the Effective Date, and remains in full force and effect until January 31, 2030 ("Initial Term"), unless terminated as set forth herein.

B. Either Party may terminate this Agreement, in its sole discretion, upon not less than twelve (12) months' prior written notice.

C. Upon termination, the Port will pay to NYPA any and all outstanding Financial Obligations owed by the Port under the transactions performed under this

Agreement, with interest on all overdue amounts accruing at the then-current One-Year U.S. Treasury Bill Interest Rate, by no later than the end of the calendar year following the calendar year during which the termination occurred.

D. This Agreement may be extended beyond the termination date upon mutual written consent of the Parties.

4. Conflicts.

This Agreement contains the entire agreement among the Parties with respect to the transactions contemplated herein. Service Tariff Rider “B” and the Operating Agreement, are each of hereby terminated. This Agreement also may be subject to other applicable tariffs including, but not limited to, the NYISO Tariff or the NYPA Tariff. In the event of any conflicts between the terms of this Agreement and the terms of the NYPA Tariff or NYPA’s Rules and Regulations, this Agreement shall control.

5. Costs.

A. NYPA shall serve as the LSE for the JFK Load. NYPA will schedule energy and capacity provided to the Port at JFK pursuant to a separate agreement between the Port and KIAC. As LSE, NYPA shall pass-through to Port at cost, without mark-up, all NYISO charges and Consolidated Edison Corporation of New York Inc. (“Con Edison”) delivery-related charges it incurs to serve the JFK Load. An illustrative list of NYISO charges currently charged to the Port is attached as Exhibit 1. NYPA shall bill the Port for such charges on its monthly invoice.

B. As of the Effective Date, NYPA will charge a monthly administration fee of \$15,500, with an escalator of three percent per annum to be applied January 1 of each subsequent year of this Agreement. This charge will be reflected on the monthly invoice as a separate line item. Should any additional costs arise not contemplated by NYPA or the Port as of the Effective Date, NYPA will notify the Port and the Parties will meet to promptly resolve how such additional costs shall be handled.

C. Applicable Zero Emission Credits and Renewable Energy Credits will be passed-through to the Port at cost, without mark-up, on the NYPA monthly invoice in an amount and manner consistent with applicable New York State Public Service Commission rulings.

6. Coordination between NYPA and KIAC.

A. The Parties agree that NYPA and the Port will perform (or the Port will cause KIAC to perform or administer on behalf of the Port) the following:

1. The Port will provide information needed by NYPA to meet NYISO scheduling requirements.
2. NYPA will provide to the NYISO energy and power requirements on a daily, weekly or monthly basis, as needed, to meet the JFK Load for each hour and each month.
3. NYPA and the Port will coordinate the submission of monthly (or more frequently if mutually agreed) bilateral schedules of power and energy to the NYISO and to NYPA to meet the JFK Load, subject to NYPA's confirmation.
4. The Port and NYPA will work together to estimate requirements for Back-up Power, as necessary.
5. Upon request by the Port, NYPA will provide after-the-fact hourly details of the JFK Load to the Port as the NYISO makes them available and any relevant billing information that the NYISO provides to NYPA related to service to the JFK Load, including any billing and metering data and notices or communications related thereto.

B. All Back-up Power for planned outages will be procured by NYPA through the market. Back-up Power required for unplanned outages shall also require scheduling from Port to NYPA. Back-up Power required for planned and unplanned outages will be scheduled by NYPA in the Day-Ahead Market ("DAM") by NYPA, so long as notice is provided to NYPA by noon (12:00 PM), two business days in advance of the scheduled target day. NYPA may procure Back-up Power for unplanned outages that are realized after the DAM scheduling deadline in the Hour Ahead Market ("HAM") at NYPA's discretion. Any real-time outages that occur after the NYISO has processed the initial bilateral schedule between NYPA and the Facility will result in real-time market purchases at the Facility's generator bus. NYPA will use reasonable efforts to accommodate the Port's requests, but it shall have the sole right to determine final schedules.

C. Monthly capacity bilaterals will be coordinated between NYPA and KIAC from month-to-month, and will reflect the UCAP obligations for the JFK Load as assessed to NYPA as LSE by Con Edison and the NYISO.

D. If the NYISO Tariff requires new processes or procedures with respect to scheduling electric service for the JFK Load, or if Con Edison changes the load reporting requirements under its "Capacity and Energy Reconciliation Guidelines," the Parties agree to work cooperatively with each other and with KIAC to develop terms mutually acceptable to the Parties.

7. Metering.

A. Metering will conform to Con Edison's and NYPA's Rules and Regulations. The Port is responsible for the cost of installation, operation and maintenance for all metering required by NYPA to monitor the hourly net output of the Facility. NYPA reserves the right to install a check meter.

8. Facility Capacity.

The Facility shall be tested and operated in accordance with all applicable NYISO Tariff requirements. The Port will require KIAC, on its behalf, to send schedules concerning the UCAP requirement needed to meet the JFK Load to NYPA on a monthly basis in accordance with the NYISO requirements. If the Facility's DMNC falls below the level needed to meet the UCAP requirement associated with the JFK Load, (1) the Port or KIAC on behalf of Port shall purchase the necessary capacity to meet the UCAP requirement, and (2) NYPA shall have no responsibility to make any such capacity purchases, and will pass through all costs associated with any balances associated with UCAP deficiencies to the Port.

9. Unaccounted-for Energy.

NYPA shall include forecasted UFE in its monthly load forecasts of power and energy provided to the Facility.

10. Delivery Service Charges.

The Port shall be responsible for any charges billed to NYPA by Con Edison associated with delivery service to JFK. Any such charges shall be passed on to the Port on the monthly invoice, at cost, without mark-up. Upon request, NYPA will provide the Port with any relevant billing information that Con Edison provides to NYPA related to service to the JFK Load, including any billing and metering data and notices or communications related thereto.

11. Sale of Co-generation Facility.

The sale of the Facility shall not affect Port's obligations hereunder, and any purchase of the Facility shall be subject to this Agreement, unless otherwise mutually agreed by Port and NYPA.

12. Limitation of Liability

No commissioner, trustee, director, manager, officer, agent or employee of either party shall be charged personally or held contractually liable by or to the other party or any commissioner, trustee, director, manager, officer, agent or employee thereof, under any term or provision of this Agreement or of any supplement, modification or amendment to this Agreement or because of any breach thereof, or because of its or their execution or attempted execution.

13. Approvals. The execution of this Agreement will be contingent on the approval of the Port Authority Board of Commissioners and the Executive Director of the Port

Authority, whose approval is required for the execution of this Agreement, and by NYPA's Board of Trustees.

14. Notices.

All notices and other communications required or permitted to be given under this Agreement will be in writing and deemed to have been given: (i) one (1) business day after being delivered by hand; (ii) five (5) business days after being mailed first class or certified with postage paid; (iii) one (1) business day after deposit with a nationally recognized overnight courier, specifying next day delivery, with written verification or receipt; (iv) on the date of transmission when sent by electronic mail or facsimile (with receipt of confirmation of transmission), if sent during normal business hours of the recipient, or if not, then on the next business day; or (v) on the date of rejection or refusal of such notice or other communication:

If to NYPA, to:

Power Authority of the State of New York
123 Main Street
Mail Stop 10
White Plains, NY 10601
Attn: Christine Schmitt, Senior Director Market Services & Business Controls

With copies to (at the same address):
General Counsel

If to the Port Authority, to:

Port Authority of New York and New Jersey
4 World Trade Center – 15th Floor
150 Greenwich Street
New York, New York 10007
Attn.: Christine Weydig, Director Office of Environmental & Energy Policy

With copies to (at the same address):
Port Authority of New York and New Jersey
4 World Trade Center – 23rd Floor
150 Greenwich Street
New York, New York 10007
Attn.: Michael Farbiarz, General Counsel

15. Amendments and Waiver.

This Agreement may be amended, supplemented or modified only by a written instrument duly executed by or on behalf of each Party. Any failure of a Party hereto to comply with any obligation, covenant, agreement or condition herein, may be waived by the Party entitled to the benefits thereof only by a written instrument signed by the Party granting such waiver.

16. Further Assurances.
The Parties agree to cooperate fully and execute any and all supplementary documents and take all additional actions which may be necessary or appropriate to give full force and effect to the basic terms and intent of this Agreement upon reasonable request.
17. Assignment; Binding Effect.
Neither this Agreement nor any right, interest or obligation hereunder may be assigned by either Party by merger, operation of law or otherwise without the prior written consent of the other Party.
18. Invalid Provisions.
If any provision of this Agreement is held to be illegal, invalid or unenforceable under any present or future law, provided that the rights or obligations of any Party under this Agreement will not be materially and adversely affected thereby: (a) such provision will be fully deemed severable, and this Agreement will be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part hereof; (b) the remaining provisions of this Agreement will remain in full force and effect and will not be affected by the illegal, invalid or unenforceable provision or by its severance here from; and (c) in lieu of such illegal, invalid or unenforceable provision, the Parties will endeavor to add to this Agreement a legal, valid and enforceable provision as similar in terms to such illegal, invalid or unenforceable provision as may be possible.
19. Governing Law.
This Agreement shall be governed by and construed in accordance with the laws of the State of New York. Any suit to enforce the Agreement shall be commenced exclusively in the courts in and for New York county, New York, and the parties consent to the jurisdiction and venue of such courts.
20. Dispute Resolution.
The Parties shall use good faith efforts to settle all disputes arising under this Agreement. In the event that a dispute cannot be resolved in the normal course of business, there will be a good faith attempt to resolve the dispute by negotiation between representatives who have the authority to settle the controversy. To the extent the dispute is not resolved under this process, the dispute may be submitted by either Party to an expedited, non-binding mediation proceeding before a qualified mediator in accordance with the mediation rules of the American Arbitration Association. Any mediation will be considered an effort to settle the dispute and no written decision will be issued. The Parties reserve the right to seek judicial relief at any time.
21. Counterparts.
This Agreement may be executed in any number of counterparts, each of which will be deemed an original, but all of which together will constitute one and the

same instrument. Signatures conveyed via facsimile or by other electronic means shall have the same force and effect as delivery of a manually executed counterpart of this Agreement.

22. Expenses.

Except as otherwise expressly provided in this Agreement, each Party will pay its own costs and expenses incurred in anticipation of, relating to and in connection with the negotiation and execution of this Agreement and the transactions contemplated hereby.

23. Construction.

This Agreement is the product of negotiation and joint effort between the Parties hereto. Accordingly, the language, terms and conditions of this agreement shall not be construed more strictly against either of the Parties in the event of question of interpretation, construction or meaning should hereafter arise.

IN WITNESS WHEREOF, this Agreement has been duly executed and delivered by the duly authorized officer of each Party as of the date first above written.

**POWER AUTHORITY OF THE
STATE OF NEW YORK**

**PORT AUTHORITY OF NEW YORK AND
NEW JERSEY**

By: _____
Name: Keith Hayes
Title: Vice President Economic

By: _____
Name: Christine Weydig
Title: Director Office of Environmental and Energy Programs

S:\DATA\Client21 18001-18400\18333\NYPA Agreements\NYPA -Port LSE Agreement CW Redline 10-15-18.docx

Exhibit A - Definitions

Back-up Power

Means any supply of energy and/or capacity from NYPA to JFK in replacement of the output of energy and/or capacity from the Facility in the event of outages (full or partial, scheduled or unplanned) of electricity generation service from the Facility.

Con Edison

Means the Consolidated Edison Company of New York, Inc.

DMNC

Represents the Dependable Maximum Net Capability of the generator(s), as defined by the NYISO Tariff, which must be equal to or greater than the UCAP requirement of the JFK Load.

Effective Date

Means January 1, 2018.

Facility

Means the John F. Kennedy International Airport Cogeneration Facility leased by the Port Authority to KIAC and located at JFK, which has a minimum DMNC of 110 MW, and is comprised of two gas turbines and one steam turbine and other associated materials and equipment.

Financial Obligations

Means all payments, costs and expenses arising under this Agreement.

JFK

Means the John F. Kennedy International Airport, located in Queens, NY 11430.

JFK Load

Means the energy and capacity consumed by the Port and its tenants at JFK as it may fluctuate from time to time, including without limitation, the Port's load component attributable to JFK and the "Air Train" (Lite Rail), together with all applicable adjustments to account for UFE, local distribution system losses, and UCAP requirements as calculated by Con Edison in accordance with the NYISO Tariff, or other NYISO rules as may be modified from time to time.

LSE

Means the Load Serving Entity designated by a retail customer to arrange for capacity, energy and ancillary services to serve such customer, as set forth in the NYISO Tariff.

NYPA Tariff

Means NYPA's Service Tariff No. 140 for the provision of electricity service to the Port, as in effect on the Effective Date or as thereafter revised.

NYISO

Means the New York Independent System Operator, the entity that monitors the reliability of the state's power system, and which coordinates the daily operations to distribute electricity supply that flows through New York State or any successor thereof having jurisdiction over supply and delivery of energy and capacity for JFK.

NYISO Tariff

Means the NYISO Market Administration and Control Area Services Tariff or the NYISO Open Access Transmission Tariff, as applicable, as filed with the Federal Energy Regulatory Commission and as the same may be amended from time to time.

Rules and Regulations

Means NYPA's Rules and Regulations for Power Service, 21 NYCRR Part 454, as amended.

UCAP

Means the monthly capacity requirements associated with meeting the JFK Load at the transmission district and its locational requirements, in accordance with formulae set forth by Con Edison as the Transmission Owner and by the NYISO locational reserve requirements and procedures to quantify the extent of their contribution to satisfy the NY Controlled Area Installed Capacity Requirement (as defined in the NYISO Tariff), and which will be used to measure the portion of that NY Controlled Area Installed Capacity Requirement for which each LSE is responsible.

UFE

Means unaccounted-for energy associated with the JFK Load as reported by Con Edison and as required to be supplied under the NYISO Tariff.

Exhibit 1

Illustrative list of NYISO charges

- Black Start Service Charge
- Local Reliability Rule Black Start Service Charge
- Local Reliability Related Uplift
- NTAC Charge
- NYISO Wide Uplift
- Operating Reserve Service Charge
- Ramapo Phase Angle Regulator
- Regulation and Frequency Response Service
- Residual Adjustments
- Rochester Station 80 Capacitor Banks
- PJM Transmission Overuse
- Scheduling, System Control Dispatch Service
- Voltage Support Service
- Purchase Forward Energy
- Purchase Balancing Energy
- Sales Balancing Energy
- Forward Congestion Charge
- Forward Loss Charge
- Demand Curve

Proc Awards

Procurement (Services) and Other Contracts – Awards
(For Description of Contracts See "Discussion")

EXHIBIT "4c i-A"
December 11, 2018

<u>Plant Site</u>	<u>Company Contract #</u>	<u>Start of Contract</u>	<u>Description of Contract</u>	<u>Closing Date</u>	<u>Award Basis¹ Contract Type²</u>	<u>Compensation Limit</u>	<u>Amount Expended To Date</u>	<u>Expected Expenditures For Life Of Contract</u>
COMMERCIAL U.S. DEPARTMENT OF ENERGY / NATIONAL RENEWABLE LABORATORY (NREL) Washington, DC (PO# TBA)		11/15/18	Development and review of solar technical aspects of NYPA projects, programs and services	11/14/21	S/P			\$500,000*
*Note: represents total for up to 3-year term								
UTILITY OPERATIONS – ENGINEERING	Q18-6455JGM; 14 Awards 1. ARCADIS OF NEW YORK, INC. Syracuse, NY (PO# TBA) 2. GOMEZ AND SULLIVAN ENGINEERS, DPC Utica, NY (PO# TBA) 3. GOLDBERG ZOINO ASSOCIATES OF NEW YORK, PC dba GZA GEOENVIRONMENTAL OF NEW YORK New York, NY (PO# TBA) 4. HATCH ASSOCIATES CONSULTANTS, INC. Amherst, NY (PO# TBA) 5. KLEINSCHMIDT ASSOCIATES, PA, PC Pittsfield, ME (PO# TBA)	12/11/18 (on or about)	Provide Energy Efficiency and Civil - Geotechnical Engineering Services	12/10/23	B/P			\$9 million*
*Note: represents total for up to 5-year term The Geotechnical engineering contracts (8 vendors) will receive \$5 million and the civil engineering contracts (6 vendors) will receive \$4 million, total equals \$9 million								

♦ M / WBE: New York State-certified Minority / Women-owned Business Enterprise (indicated by the ♦ symbol after the Company Name)
1 Award Basis: B= Competitive Bid; S= Sole Source; Si= Single Source; C= Competitive Search
2 Contract Type: P= Personal Service; S= (Non-Personal) Service; C= Construction; E= Equipment; N= Non-Procurement; A= Architectural & Engineering Service; L= Legal Service

Procurement (Services) and Other Contracts – Awards
 (For Description of Contracts See "Discussion")

EXHIBIT "4c i-A"
 December 11, 2018

<u>Plant Site</u>	<u>Company Contract #</u>	<u>Start of Contract</u>	<u>Description of Contract</u>	<u>Closing Date</u>	<u>Award Basis¹ Contract Type²</u>	<u>Compensation Limit</u>	<u>Amount Expended To Date</u>	<u>Expected Expenditures For Life Of Contract</u>
	6. MOTT MCDONALD, INC. dba MOTT MCDONALD USA LLC Iselin, NJ (PO# TBA)							
	7. STANTEC CONSULTING SERVICES, INC. New York, NY (PO# TBA)							
	8. WSP USA, INC. New York, NY (PO# TBA)							
	9. CDM SMITH, INC. Boston, MA (PO# TBA)							
	10. EME CONSULTING ENGINEERING GROUP LLC New York, NY (PO# TBA)							
	11. IMPERIA ENGINEERING PARTNERS LLC Bordentown, NJ (PO# TBA)							
	12. LABELLA ASSOCIATES, DPC Rochester, NY (PO# TBA)							
	13. O'BRIEN & GERE ENGINEERS, INC. Syracuse NY (PO# TBA)							

♦ M / WBE: New York State-certified Minority / Women-owned Business Enterprise (indicated by the ♦ symbol after the Company Name)
 1 Award Basis: B= Competitive Bid; S= Sole Source; Si= Single Source; C= Competitive Search
 2 Contract Type: P= Personal Service; S= (Non-Personal) Service; C= Construction; E= Equipment; N= Non-Procurement; A= Architectural & Engineering Service; L= Legal Service

Procurement (Services) and Other Contracts – Awards
(For Description of Contracts See "Discussion")

EXHIBIT "4c i-A"
December 11, 2018

<u>Plant Site</u>	<u>Company Contract #</u>	<u>Start of Contract</u>	<u>Description of Contract</u>	<u>Closing Date</u>	<u>Award Basis¹ Contract Type²</u>	<u>Compensation Limit</u>	<u>Amount Expended To Date</u>	<u>Expected Expenditures For Life Of Contract</u>
	14. RONALD MERHIGE dba RLM ENGINEERING PLLC East Northport, NY (PO# TBA)							
UTILITY OPERATIONS – PROJECT MANAGEMENT	PUBLIC UTILITIES MAINTENANCE, INC. Queens Village, NY (Q18-6469JB; PO# TBA)	12/11/18 (on or about)	Provide painting services for Transmission Towers in the Western and Central regions	12/10/20	B/C			\$4,653,211*
							*Note: represents total for up to 2-year term	
UTILITY OPERATIONS – SENY	TEG ENERGY GROUP, INC. Brooklyn, NY (A18-000900JV; PO# TBA)	01/01/19	Provide Control Systems support for the Small Clean Power Plants (SCPPs)	12/31/24	B/S			\$2 million *
							*Note: represents total for up to 5-year term	
UTILITY OPERATIONS – ST. LAWRENCE	S&S SANITATION & EXCAVATION, INC. Malone, NY (S18-9256LH; PO# TBA)	12/11/18 (on or about)	Provide a septic and holding tank pump service	12/10/21	B/S			\$95,000 *
							*Note: represents total for up to 3-year term	
UTILITY OPERATIONS – ST. LAWRENCE	ROMIE D. CLOTHIER, JR. dba WEST PARISHVILLE METALS LLC Potsdam, NY (S18-5687LH; PO# TBA)	12/11/18 (on or about)	Provide scrap metal and copper disposal	12/10/21	B/S			\$0.00 *
							*Note: Zero dollar contract that represents (STL) total for up to 3-year term	
UTILITY OPERATIONS – TECHNOLOGY & INNOVATION	MPREST SYSTEMS LTD Petah Tikva, Israel (PO# 4500303181)	11/08/18	Provide maintenance of the Transformer Asset Health System	11/07/23	S/P	\$137,150		\$685,750*
							*Note: represents total for up to 5-year term	

♦ **M / WBE:** New York State-certified Minority / Women-owned Business Enterprise (indicated by the ♦ symbol after the Company Name)
1 Award Basis: B= Competitive Bid; S= Sole Source; Si= Single Source; C= Competitive Search
2 Contract Type: P= Personal Service; S= (Non-Personal) Service; C= Construction; E= Equipment; N= Non-Procurement; A= Architectural & Engineering Service; L= Legal Service

Procurement (Services) Contracts – Extensions and/or Additional Funding
(For Description of Contracts See "Discussion")

EXHIBIT "4c i-B"
December 11, 2018

<u>Plant Site/ Bus. Unit</u>	<u>Company Contract #</u>	<u>Start of Contract</u>	<u>Description of Contract</u>	<u>Closing Date</u>	<u>Award Basis¹ Contract Type²</u>	<u>Compensation Limit</u>	<u>Amount Expended To Date</u>	<u>Authorized Expenditures For Life Of Contract</u>
CORPORATE AFFAIRS – SUSTAINABILITY	WESPIRE, INC. Boston, MA (PO# 4500291319)	11/06/17	Continuation of Software as a Service (SaaS) platform, license grant and a Professional Services Success Manager	11/05/21	Si/P		\$20,000	\$93,958*
*Note: represents total for 4-year term, and includes \$73,958 additional funding request and 3-year extension request								
EXECUTIVE OFFICES - DIGITAL TRANSFORMATION OFFICE	7 Extensions:	03/29/16	Provide consulting expertise and experience in the electric utility and energy industries	03/31/21	C/P		\$18,239,898**	\$25 million*
*Note: Includes additional funding request for \$5 million								
**Note: Aggregate total spend among 7 contracts								
	1. CUSTOMER CARE NETWORK, INC. Marietta, GA (4600003141)						\$ 5,979,578	
	2. ERNST & YOUNG LLP New York, NY (4600003157)						\$ 5,781,019	
	3. FIREFLY ENERGY ♦ CONSULTING LLC Dallas, TX (4600003164)						\$ 0	
	4. MCKINSEY & COMPANY, INC. Washington, DC (4600003159)						\$ 3,750,000	
	5. NAVIGANT CONSULTING, INC. Chicago, IL (4600003156)						\$ 1,813,601	

♦ M / WBE: New York State-certified Minority / Women-owned Business Enterprise (indicated by the ♦ symbol after the Company Name)
1 Award Basis: B= Competitive Bid; C= Competitive Search; S= Sole Source; Si = Single Source
2 Contract Type: P= Personal Service; S= (Non-Personal) Service; C= Construction; E= Equipment; N= Non-Procurement; L= Legal Service

Procurement (Services) Contracts – Extensions and/or Additional Funding
(For Description of Contracts See "Discussion")

EXHIBIT "4c i-B"
December 11, 2018

<u>Plant Site/ Bus. Unit</u>	<u>Company Contract #</u>	<u>Start of Contract</u>	<u>Description of Contract</u>	<u>Closing Date</u>	<u>Award Basis¹ Contract Type²</u>	<u>Compensation Limit</u>	<u>Amount Expended To Date</u>	<u>Authorized Expenditures For Life Of Contract</u>
	6. PA CONSULTING GROUP, INC. Arlington, VA (4600003158)						\$ 915,700	
	7. PRICEWATERHOUSECOOPERS ADVISORY SERVICES LLP Chicago, IL (4600003142)						\$ 0	
UTILITY OPERATIONS – ENGINEERING	3 Extensions:						\$ 92,865**	\$392,865*
	1. BARRY KEIM dba KEIM CONSULTING LLC Baton Rouge, LA (PO# 4500294703)	02/16/18	Provide engineering services related to the analysis of the potential impacts of Hurricane Irene on the Site-Specific PMP/PMF for the BG Project	12/31/21	S/P		\$ 43,860	
	2. GEORGE A. HARPER dba GAH CONSULTING LLC Southborough, MA (PO# 4500293855)	01/25/18		12/31/21	S/P		\$ 27,405	
	3. RJ ASSOCIATES LLC Westport Island, ME (PO# 4500293858)	01/25/18		12/31/21	S/P		\$ 21,600	
							*Note: represents the aggregate total for up to 4-year term; additional funding of \$300,000 and 3-year extension	
							**Note: Aggregate total spend among 3 contracts	
UTILITY OPERATIONS – NIAGARA LPGP LEM	MITSUBISHI-HITACHI POWER SYSTEMS AMERICAS, INC. Basking Ridge, NJ (4600002315)	07/30/10	Replace twelve pump turbine runners including equipment overhaul – LPGP LEM	12/31/22	B/C		\$141,379,262	\$174 million*
							*Note: represents total approved value of contract, no additional funding is requested; 20-month extension request only	

♦ M / WBE: New York State-certified Minority / Women-owned Business Enterprise (indicated by the ♦ symbol after the Company Name)
 1 Award Basis: B= Competitive Bid; C= Competitive Search; S= Sole Source; Si = Single Source
 2 Contract Type: P= Personal Service; S= (Non-Personal) Service; C= Construction; E= Equipment; N= Non-Procurement; L= Legal Service

Procurement (Services) Contracts – Extensions and/or Additional Funding
(For Description of Contracts See "Discussion")

EXHIBIT "4c i-B"
December 11, 2018

<u>Plant Site/ Bus. Unit</u>	<u>Company Contract #</u>	<u>Start of Contract</u>	<u>Description of Contract</u>	<u>Closing Date</u>	<u>Award Basis¹ Contract Type²</u>	<u>Compensation Limit</u>	<u>Amount Expended To Date</u>	<u>Authorized Expenditures For Life Of Contract</u>
UTILITY OPERATIONS – NIAGARA LPGP LEM	FERGUSON ELECTRIC CONSTRUCTION CO., INC. Buffalo, NY (4600002788)	04/21/14	Installation of auxiliary equipment for ten unit upgrades – LPGP LEM	12/31/22	B/C		\$12,929,935	\$19,046,700*
						*Note: represents total approved value of contract, no additional funding is requested; 20-month extension request only		
UTILITY OPERATIONS – NIAGARA LPGP LEM	ANDRITZ HYDRO INC. Charlotte, NC (4600002534)	07/02/12	Upgrade of twelve motor generators – LPGP LEM	12/31/22	B/C		\$63,801,692	\$ 91 million*
						*Note: represents total approved value of contract, no additional funding is requested; 27-month extension request only		
UTILITY OPERATIONS – NIAGARA LPGP LEM	NIAGARA COATINGS SERVICES, INC. Niagara Falls, NY (4600002866)	11/13/14	Perform surface preparation and application of high performance coatings – LPGP LEM	12/31/22	B/C		\$1,032,806	\$1,311,119*
						*Note: represents current target value of contract, no additional funding is requested; 26-month extension request only		

♦ M / WBE: New York State-certified Minority / Women-owned Business Enterprise (indicated by the ♦ symbol after the Company Name)
1 Award Basis: B= Competitive Bid; C= Competitive Search; S= Sole Source; Si = Single Source
2 Contract Type: P= Personal Service; S= (Non-Personal) Service; C= Construction; E= Equipment; N= Non-Procurement; L= Legal Service



**NY Power
Authority**

**Canal
Corporation**

CEO Report

Gil Quiniones

President & Chief Executive Officer

December 11, 2018

NYPA Overall Performance - October 2018

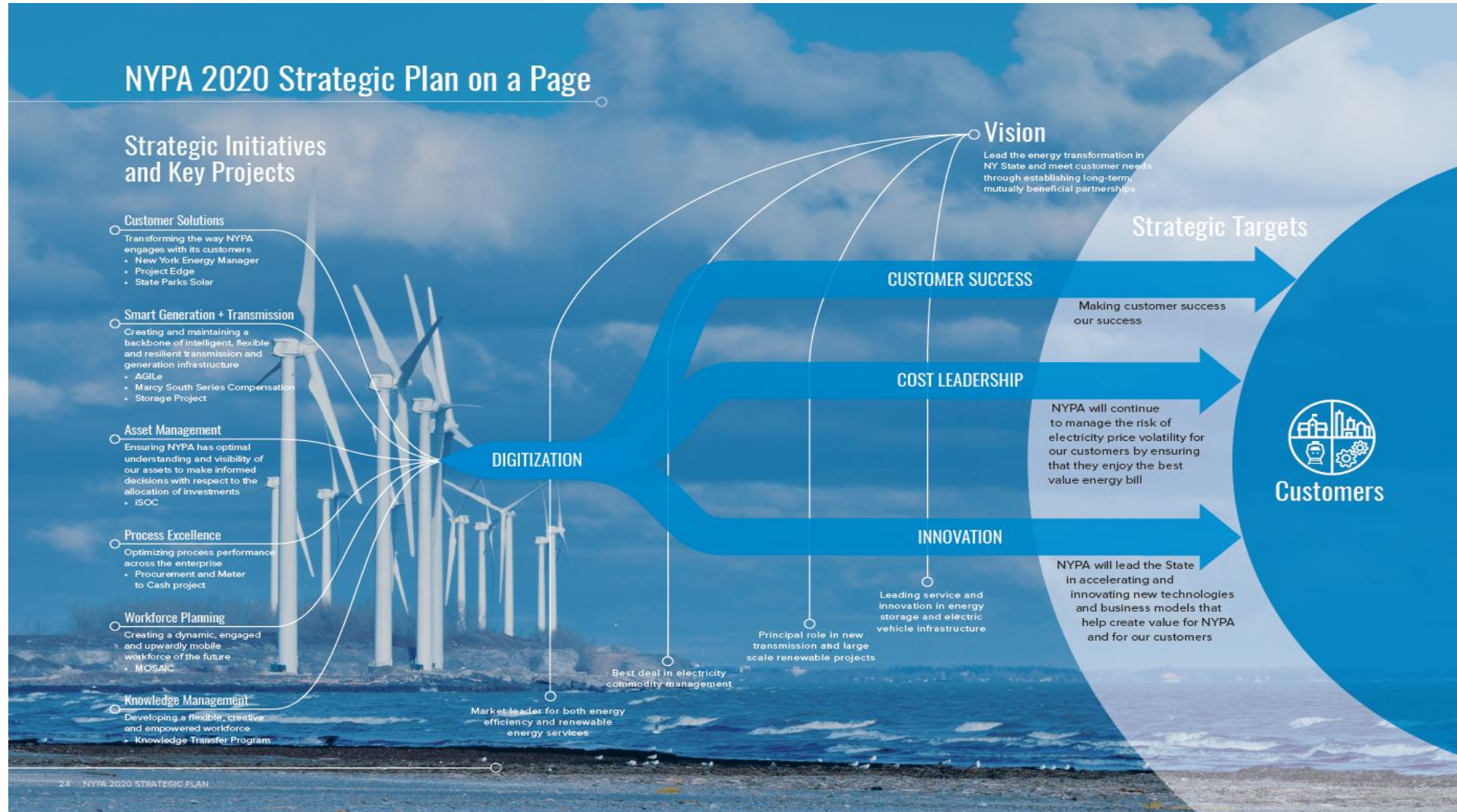
Goal	Measure	Year-To-Date 2018		
		Status	Target	Actual
Maintain Infrastructure	Generation Market Readiness (%)		99.40	99.38
	Transmission System Reliability (%)		95.01	95.12
Financial Management	Debt Coverage (Ratio)		2.50*	4.26
	O&M Budget Performance (\$ Millions)		422.6	396.4
Energy Services	MMBTU's Saved		374.6	511.0
	Energy Efficiency Investment in State Facilities (\$ Millions)		87.5	112.5
Workforce Management	Retention (# of Touchpoints)		955*	994
Safety Leadership	DART Rate (Index)		0.78	0.96
Environmental Responsibility	Environmental Incidents (Units)		23	12

Corporate Performance

Status	
	Meeting or Exceeding Target
	Below Target
	Significantly Below Target

*Quarterly measure

Strategic Plan Implementation – *Preview of 2018 Results*



Smart Generation & Transmission | Asset Management

Communications Backbone - Over 75 miles OPGW installed

Sensors Deployment - Over 30,000 data points by YE

Digital Utility Worker Program - Launched



iSOC* - 504 Digital Twins, 659 Recorded Cases, 150 Actionable Cases

Asset Management - Roll out of new Asset Management Framework

**iSOC- Integrated Smart Operating Center*

Customer Solutions

Acceleration of pipeline and addition of new projects

\$234 million in projects (\$60 million above target)

- \$125 million investments in state facilities
- Energy savings - 528,000 MMBTU (4600 above target)

LED Street lighting and Smart Cities LED Pilots

- 36000 completed/in construction
- 82000 in design

Customer Solutions



BIG DATA

Monitoring energy data for over

20,000 facilities

across New York State –
representing

1,400 organizations

over

22,000 accounts

and more than

25,000 meters

This amounts to over a

HALF BILLION RECORDS

New York Energy Manager (NYEM)

- Selected vendor
- 20,039 buildings added in 8 months
- 1.6 billion data points
- NYEM Sub-metering Pilot

MTA NYCT Tuskegee Airmen Bus Depot

Continued Partnerships

Long Term Power Supply Agreement

- 10 yr. contract with the MTA



Economic Development

- 10 year extension of Western NY Hydro contracts
- 7 year extension of ReCharge NY Power Program customers

Workforce Planning | Process Excellence | Knowledge Management

- **Fostering Innovation**

- Eureka Competition

- **Implement New Tools**

- Organization-wide Succession Planning Tool
- Recruiting and Applicant Tracking System

- **Improving How We Work**

- Design Thinking, Agile & Green Belt training
- Robotic Process Automation project Phase 1 complete

- **Increased Employee Engagement**

- Achieved Forbes Best Mid-Size Employer list for 2018



**NY Power
Authority**

**Canal
Corporation**



**NY Power
Authority**

**Canal
Corporation**

CFO Report

Lee Garza

Senior Vice President, Financial Operations

December 11, 2018



**NY Power
Authority**

**Canal
Corporation**

Release of Funds in Support of the New York State Canal Corporation

December 11, 2018



NEW YORK
STATE OF
OPPORTUNITY™

**NY Power
Authority**

**Canal
Corporation**



NEW YORK
STATE OF
OPPORTUNITY™

**NY Power
Authority**

**Canal
Corporation**



**NY Power
Authority**

**Canal
Corporation**

2019 BUDGET AND FOUR-YEAR FINANCIAL PLAN

December 11, 2018

NYPA's 2019 Budget and Four-Year plan fully funds our core business, strategic growth investments, and Canals

HOW ARE WE INVESTING OUR MONEY

- Core utility business that produces stable cash flows and competitive rates of return
- Strategic Initiatives that support customer success, cost leadership, and innovation

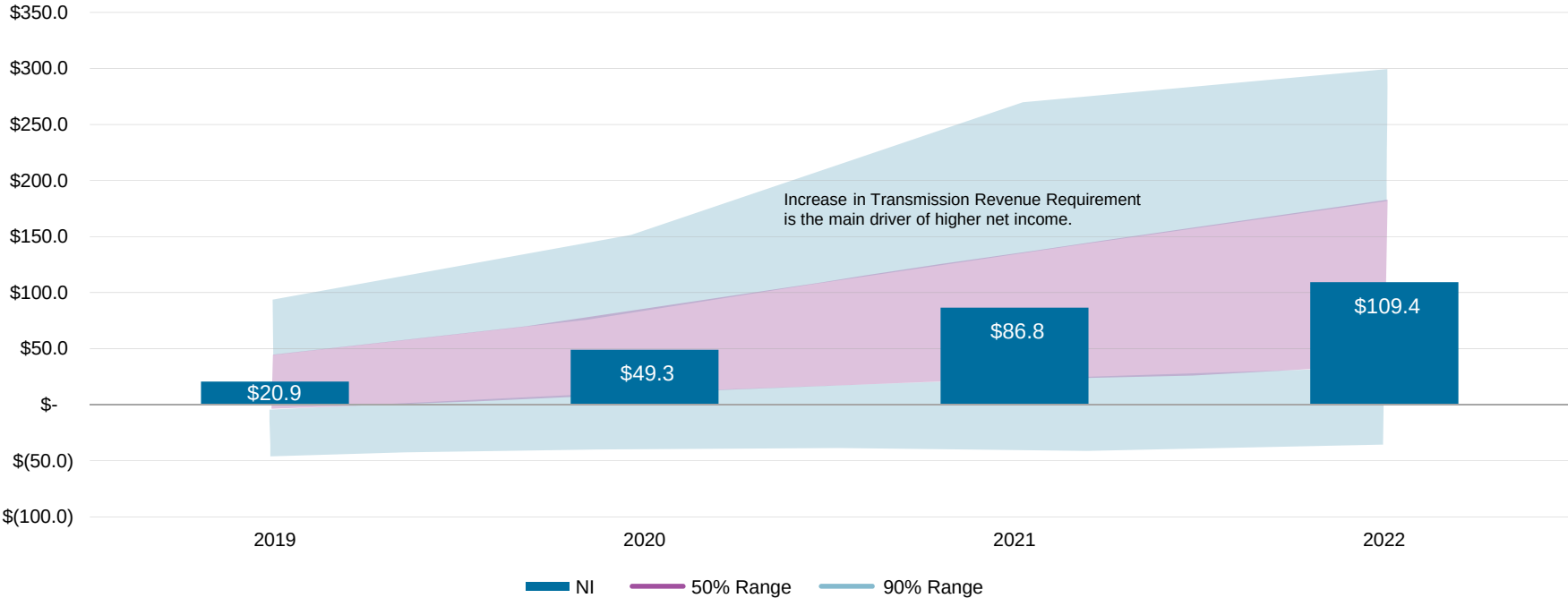
OUR FINANCIAL PRINCIPLES

- Integrated, long-term financial planning to ensure ability to achieve our operational, strategic and policy goals
- Maintain our AA credit profile and preserve access to low cost capital
- Allocate our capital resources efficiently and effectively



NYPA maintains a strong financial profile throughout the forecast period, with Net Income growth driven by investment in our core utility business

2019–2022 NET INCOME¹ WITH VARIANCE RANGES
In \$ Millions



¹Market update October 3, 2018

NYPA’s Financial Plan is designed to fund its 2020 Strategic Plan

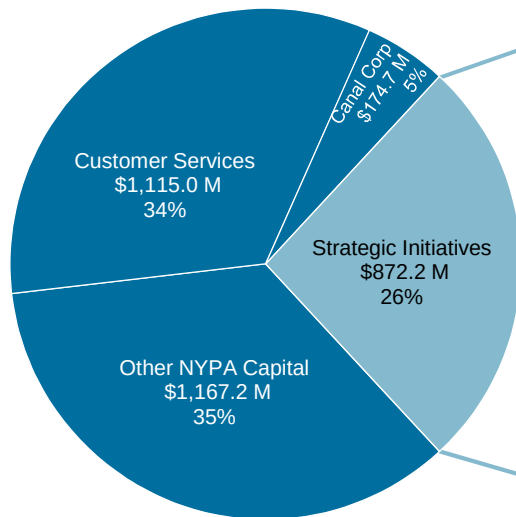
REFRESHED 2020 STRATEGIC PLAN KEY COMPONENTS	FOUR AIMS	PRIORITIES
The diagram illustrates the relationship between Digitization and three key strategic components. On the left, a circular icon with a network of four nodes is labeled "DIGITIZATION". A horizontal line with a T-junction extends from this icon to the right. From this junction, three arrows point vertically to three stacked circular icons on the right. The top icon shows two hands shaking and is labeled "CUSTOMER SUCCESS". The middle icon shows a dollar sign and an upward-trending line graph and is labeled "COST LEADERSHIP". The bottom icon shows a lit lightbulb and is labeled "INNOVATION".	1. Market leader for energy efficiency and renewable energy services 2. Best deal for electricity commodity management for supply customers 3. Leader in energy storage and electric vehicle infrastructure and services 4. Largest market share of new transmission and large scale renewable projects	▪ Be bold in identifying areas for NYPA to have unique impact ▪ Commit to 2–3 priority areas that NYPA will invest in to have impact at scale ▪ Launch early initiatives in 2018–2019 to lay foundation for impact ▪ Build partnerships with public and private sector to catalyze progress towards 2030 REV goals

2019–2022 PLANNED CAPITAL INVESTMENT

With Trustee support and guidance, NYPA continues to execute on our strategy with planned capital investments in our core business and our strategic initiatives, accelerator programs, transmission buildouts and Moonshots (EVolve NY & Large Energy Storage)

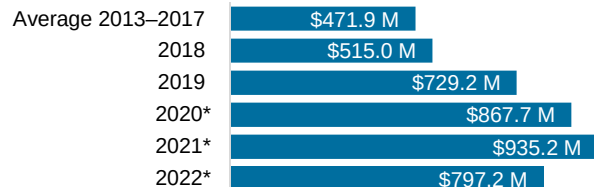
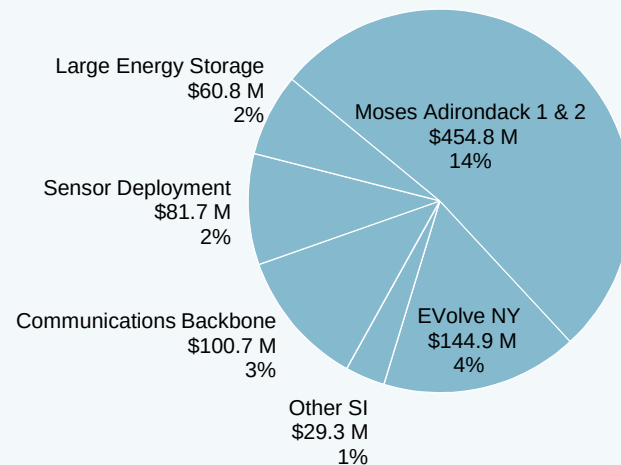
2019–2022 CAPITAL INVESTMENT

\$3.3 B



2019–2022 STRATEGIC INITIATIVES

\$872.2 M



*Canal Corporation capital investment plan for 2020–2022 (\$40.0 M per year) is pending review



**NY Power
Authority**

**Canal
Corporation**

2018 YEAR-END FORECAST

2018 Year-End Forecast is expected to be favorable to our 2018 Budget

In \$ Millions			
BUDGETED YEAR-END NET INCOME	\$ 76.9	VARIANCE TO BUDGET	2018 BUDGET
Margins - Energy	31.4	▲	947.7
Margins - Transmission	(0.6)	▼	149.5
Margins - Non Utility	(9.7)	▼	28.3
O&M Expenses ¹	(3.2)	▼	577.4
Other Operating Expenses/Depreciation	(4.8)	▼	338.4
Interest Expense, Net	4.3	▲	132.8
FORECASTED YEAR-END NET INCOME ²	Low Value \$70.0	Expected Value \$94.3	High Value \$125.0

¹O&M expenses includes \$28.8 M AE II lease and is net of \$11.0 M allocation to capital

²Market update October 3, 2018



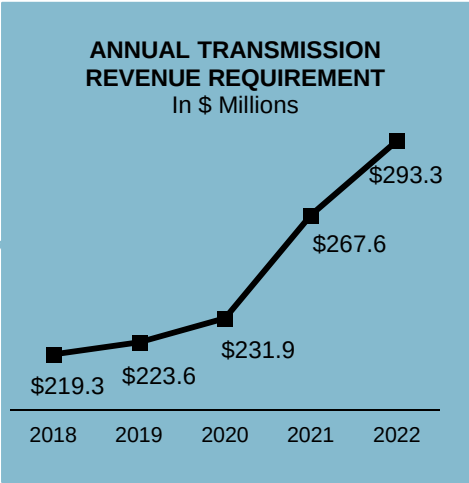
NY Power
Authority

Canal
Corporation

Investments in our transmission business drive revenue growth within the forecast period

CAPITAL INVESTMENT

In \$ Millions	2019	2020	2021	2022
Communications Backbone	\$33.9	\$56.2	\$10.6	-
Sensor Deployment ¹	51.5	28.2	1.0	1.0
MA1 & MA2 Transmission Line	36.7	135.5	205.9	76.7
Large Energy Storage	15.8	30.0	15.0	-
EVolve NY	34.2	36.9	36.9	36.9
Other Strategic Initiatives	11.9	12.8	2.3	2.3
TOTAL STRATEGIC INITIATIVES	184.0	299.6	271.7	116.9
Transmission	78.2	109.1	123.6	141.4
Power Generation	131.5	97.6	139.7	126.8
Energy Efficiency	212.0	263.0	315.0	325.0
Other	68.8	58.4	45.2	47.1
TOTAL ON-GOING OPERATIONS	490.5	528.1	623.5	640.3
TOTAL CANAL CORPORATION²	54.7	40.0	40.0	40.0
GRAND TOTAL	\$729.2	\$867.7	\$935.2	\$797.2



NYPA's improvements and upgrades to transmission facilities are expected to improve reliability and resiliency of the grid, and reduce congestion throughout the state which will lead to lower delivered energy costs for rate payers.

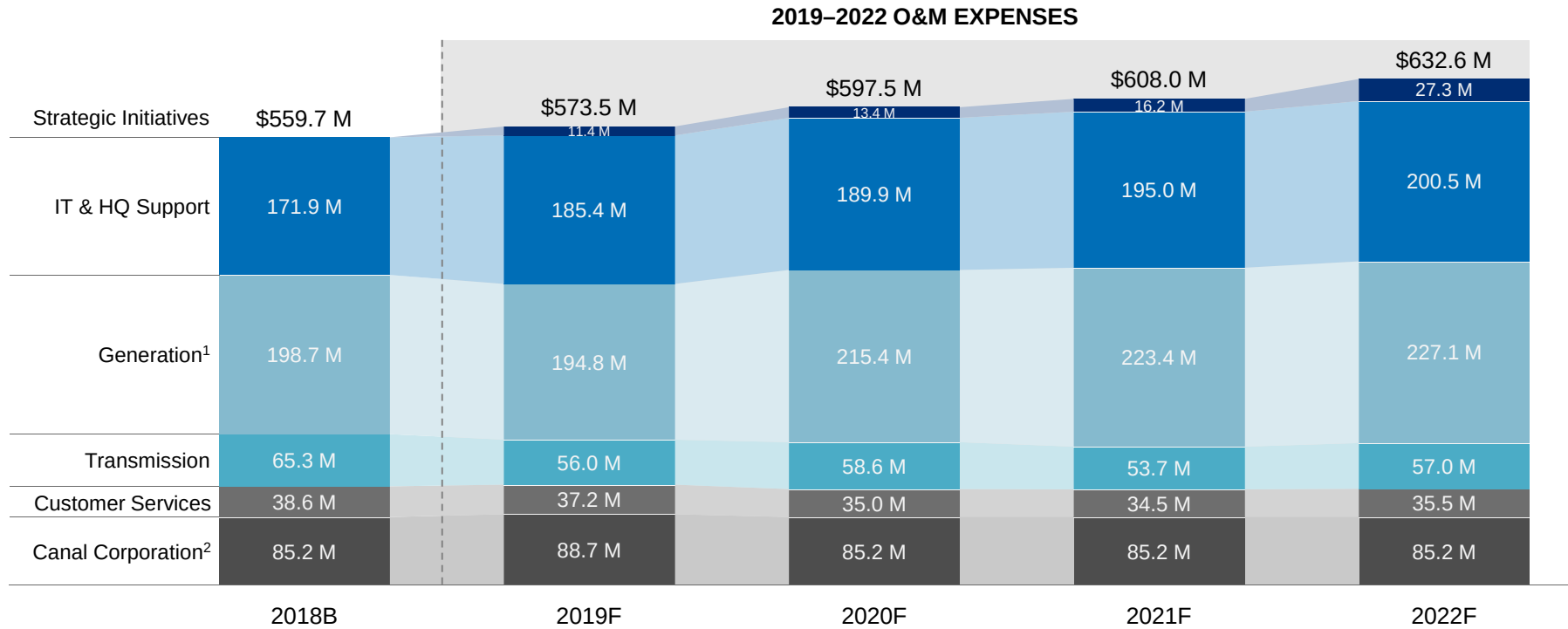
¹Sensor Deployment over FY19-FY22 is comprised of \$54.8M Transmission-related investment and \$26.9 M Power Generation-related investment

²Canals 2020–2022 is under review



O&M EXPENDITURES

Non-inflation adjusted growth in O&M driven by (a) generation related major maintenance and non-recurring work, and (b) HQ support which includes expenses related to strategic initiatives



¹Excludes AEII lease

²Includes Canal Corporation O&M and Canal Development Fund



**NY Power
Authority**

**Canal
Corporation**



2019 O&M Budget (excluding AEII lease) of \$484.8 M

2019 Capital Budget of \$462.5 M

2019 Energy Services Budget of \$212.0 M

2019–2022 Four-Year Financial Plan
(inclusive of Canals)

Posting of the 2019–2022 Four-Year Financial Plan on NYPA's website

Distribution of the 2019–2022 Four-Year Financial Plan for public inspection around the state



2019 O&M Budget of \$ 86.2 M

2019 Capital Budget of \$54.7 M

2019 Canal Development Budget of \$2.5 M
(to be funded by Canal Development Fund Revenue)



**NY Power
Authority**

**Canal
Corporation**



**NY Power
Authority**

**Canal
Corporation**



**NY Power
Authority**

**Canal
Corporation**

REVOLVING CREDIT FACILITY REFINANCING

December 11, 2018

- The Authority maintains a \$600 million Revolving Credit Facility (“RCA”) that will mature on January 18, 2019 and which supports its Commercial Paper Program
- On October 9, 2018, NYPA launched a Request for Proposal (“RFP”) in order to solicit interest from banks for NYPA’s new 2019 RCA
- On October 30, 2018, the Authority received non-binding proposals from multiple banks
- Finance will recommend the final bank syndicate, pricing, and terms of the RCA to the Board for their consideration and approval during the December 11th Board meeting
- In December, NYPA will present the proposed 2019 RCA to the rating Agencies to have the new financing rated
- On January 16th the new 2019 RCA will be effective

TERM	DESCRIPTION
Borrower	Power Authority of the State of New York
Amount	\$600,000,000
Term	Up to 5 years including option(s) to extend at NYPAs discretion
Security	Secured on subordinate basis by a pledge of the Trustee Estate
Undrawn Pricing	TBD
Drawn Pricing	TBD
Use of Funds	Credit support for Commercial Paper Program
Covenants	Maintain short term credit ratings above P-3/A-3/F-3 from Moody's, S&P, and Fitch respectively; other customary non-financial covenants



The Trustees are requested to approve a \$600 million Revolving Credit Agreement (“RCA”) with a syndicate of four banks led by JPMorgan Chase Bank, N.A. (“JPMorgan”) for an initial term extending to no later than February 1, 2022, to replace an expiring agreement that provides liquidity support for the Authority’s Series 1, 2 and 3 Commercial Paper Notes, and to authorize two, one-year extensions of such RCA not to exceed February 1, 2024.



**NY Power
Authority**

**Canal
Corporation**



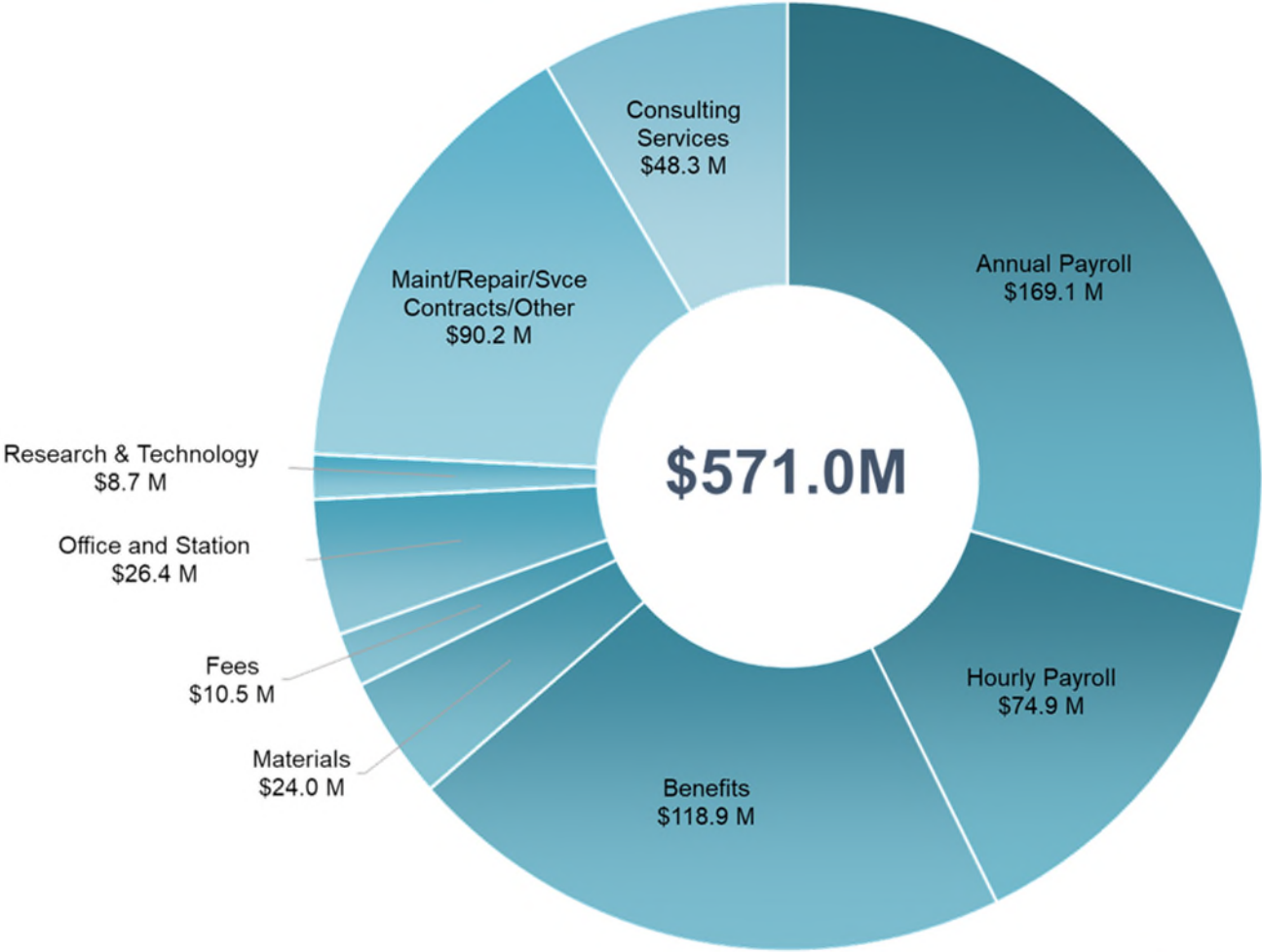
**NY Power
Authority**

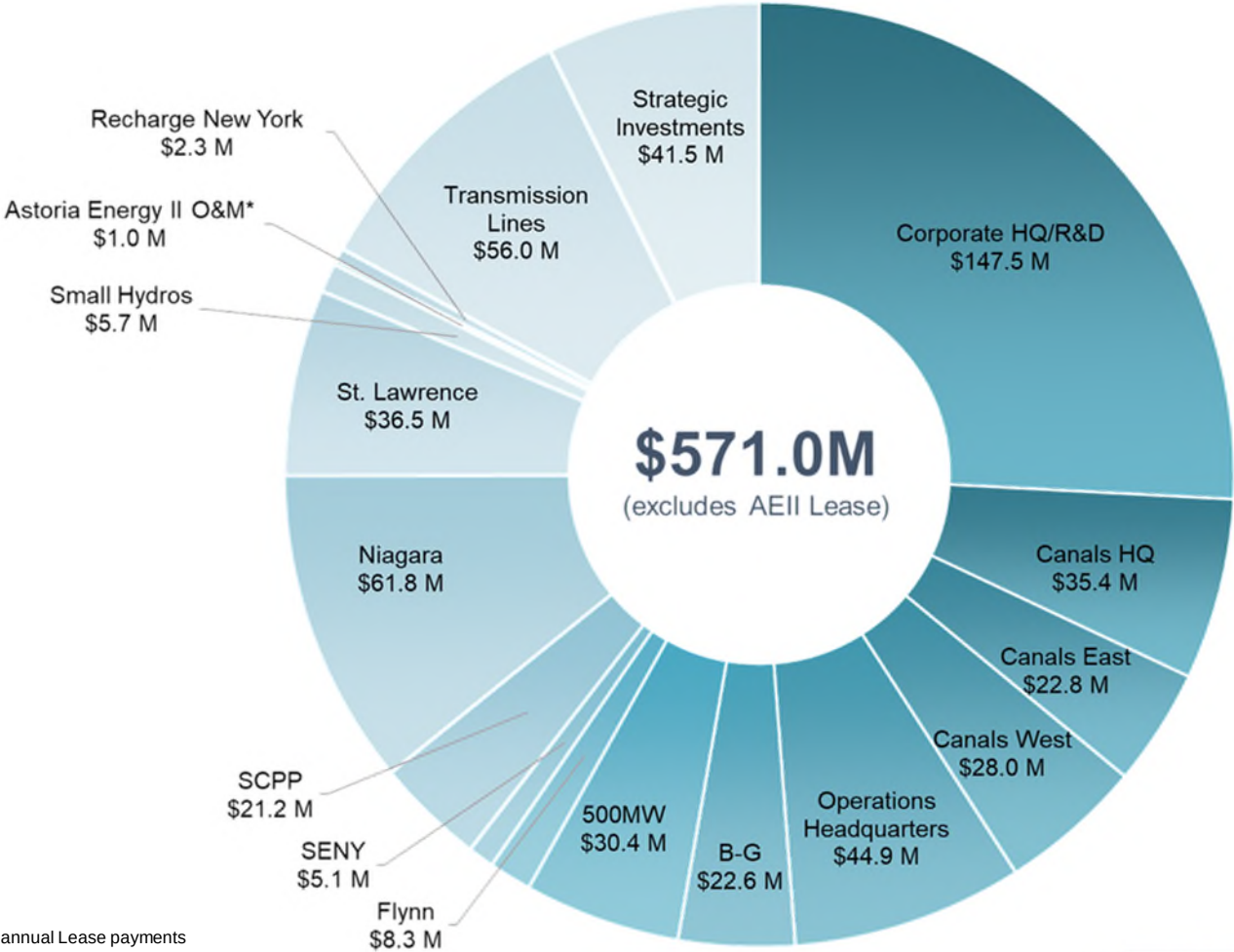
**Canal
Corporation**

O&M: 2019 BUDGET BY ORGANIZATION (000's)

EXHIBIT 5b i-3a-A
1 OF 4

	2018 Budget	2019 Budget	INCREASE/(DECREASE)			2018 Budget	2019 Budget	INCREASE/(DECREASE)	
			\$'s	%				\$'s	%
<u>Executive Offices</u>					<u>Economic Development & Energy Efficiency</u>				
Executive Office	\$1,586.0	\$7,514.8	5,928.8	373.81%	Economic Development	\$327.5	\$323.2	(4.3)	(1.31%)
Law	\$10,374.0	\$11,386.3	1,012.4	9.76%	Market Services & Business Controls	\$15.0	\$525.0	510.0	3400.00%
Internal Audit	\$4,642.8	\$4,687.2	44.4	0.96%	NY Energy Manager	\$0.0	\$0.0	0.0	0.00%
Public & Regulatory Affairs	\$10,767.3	\$11,933.6	1,166.4	10.83%	Business & Market Development	\$0.0	\$0.0	0.0	0.00%
Risk Management	<u>\$5,442.4</u>	<u>\$8,963.3</u>	<u>3,520.9</u>	64.69%	Energy Efficiency	<u>\$300.0</u>	<u>\$0.0</u>	<u>(300.0)</u>	(100.00%)
	\$32,812.5	\$44,485.3	11,672.8			\$642.5	\$848.2	205.7	
<u>Commercial Operations</u>					<u>Operations</u>				
Project & Business Development	\$3,459.9	\$2,874.1	(585.8)	(16.93%)	Operations Headquarters	\$42,850.2	\$44,870.7	2,020.5	4.72%
EVP Commercial Operations	\$943.0	\$889.9	(53.1)	(5.63%)	Blenheim-Gilboa	\$22,473.3	\$22,553.1	79.8	0.35%
Market Issues	\$1,790.7	\$1,476.4	(314.3)	(17.55%)	500MW	\$39,959.7	\$30,418.8	(9,540.9)	(23.88%)
Energy Resource Management	<u>\$0.0</u>	<u>\$658.0</u>	<u>658.0</u>	0.00%	Flynn	\$8,608.4	\$8,328.9	(279.5)	(3.25%)
	\$6,193.6	\$5,898.4	(295.2)		SENY	\$4,734.6	\$5,054.6	320.0	6.76%
<u>Business Services</u>					SCPP	\$19,454.6	\$21,242.5	1,787.9	9.19%
EVP & CFO Business Services	\$646.7	\$522.8	(123.9)	(19.15%)	Niagara	\$57,015.4	\$61,761.8	4,746.4	8.32%
Budgets & Business Controls	\$2,667.4	\$3,063.6	396.1	14.85%	St. Lawrence	\$36,108.1	\$36,504.2	396.1	1.10%
Controller	\$5,346.2	\$5,193.6	(152.7)	(2.86%)	Small Hydros	\$7,013.4	\$5,687.8	(1,325.6)	(18.90%)
Financial Operations	\$0.0	\$1,037.5	1,037.5	0.00%	Transmission Lines	\$65,092.8	\$56,013.9	(9,078.9)	(13.95%)
Finance	\$1,243.7	\$1,450.7	207.0	16.64%	Astoria Energy II O&M	<u>\$1,062.1</u>	<u>\$1,005.8</u>	<u>(56.3)</u>	(5.30%)
Treasury	\$1,923.7	\$1,745.7	(178.0)	(9.25%)	Office Total	\$304,372.7	\$293,442.0	(10,930.6)	(3.59%)
Strategic Management	\$2,146.8	\$1,602.5	(544.3)	(25.36%)					
Strategic Supply Management	<u>\$6,812.5</u>	<u>\$5,690.6</u>	<u>(1,121.8)</u>	(16.47%)	Recharge New York	\$2,253.0	\$2,265.5	12.4	0.55%
	\$20,787.1	\$20,307.0	(480.0)		Research & Development	\$8,704.4	\$8,696.4	(8.0)	(0.09%)
<u>Information Technology</u>					<u>Eliminations & Adjustments</u>				
	\$30,685.2	\$33,381.7	2,696.5	8.79%	Astoria Energy II Lease	\$28,764.0	\$22,692.0	(6,072.0)	(21.11%)
<u>HR & Enterprise Shared Services</u>					Total NYPA	\$503,266.2	\$507,504.4	4,238.2	0.84%
SVP HR & Enterprise Shared Services	\$1,186.7	\$1,045.2	(141.5)	(11.92%)					
VP Enterprise Shared Services	\$475.7	\$498.7	23.0	4.83%	Canal HQ	\$26,075.4	\$21,788.1	(4,287.3)	(16.44%)
Liaison to Governor's Office	\$1,160.4	\$700.8	(459.6)	(39.61%)	Canal East	\$25,426.4	\$22,752.8	(2,673.6)	(10.52%)
Human Resources	\$9,613.3	\$10,854.3	1,241.0	12.91%	Canal West	\$21,595.7	\$28,091.3	6,495.6	30.08%
Digital Warehouse	\$951.0	\$1,881.2	930.2	97.81%	NYPA Direct Charge to Canals	\$3,882.8	\$7,931.7	4,048.9	104.28%
Enterprise Excellence	\$2,505.0	\$3,315.5	810.4	32.35%	NYPA Direct Assess to Canals	<u>\$5,019.7</u>	<u>\$5,646.6</u>	<u>626.9</u>	12.49%
Knowledge Management	\$1,096.8	\$1,903.1	806.3	73.52%	Total Canals	\$82,000.0	\$86,210.5	4,210.5	5.13%
Corporate Support Services	\$9,877.4	\$10,646.0	768.5	7.78%					
Fleet Management	\$1,487.8	\$1,790.0	302.2	20.31%	Grand Total	\$585,266.2	\$593,714.9	\$8,448.7	1.44%
Real Estate	\$593.7	\$441.0	(152.7)	(25.72%)					
Chief Diversity Officer	<u>\$500.1</u>	<u>\$476.9</u>	<u>(23.1)</u>	(4.63%)					
	\$29,447.9	\$33,552.7	4,104.8						



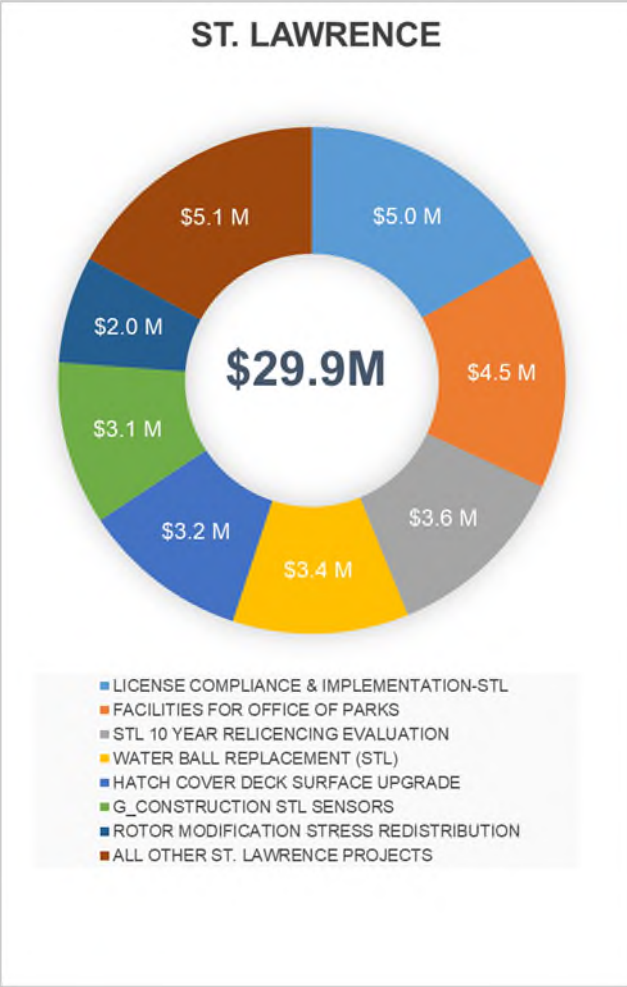
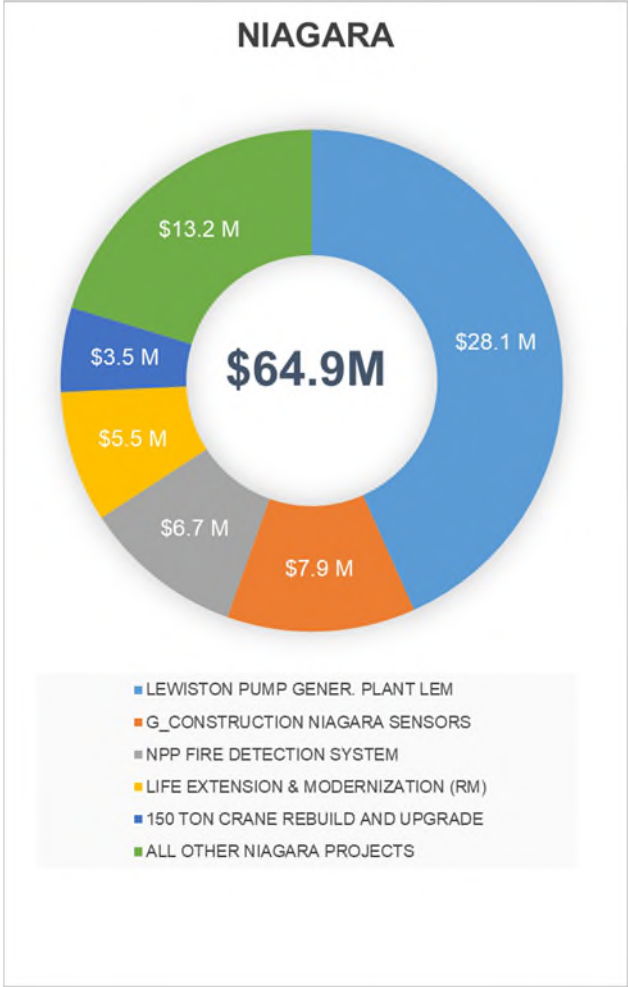


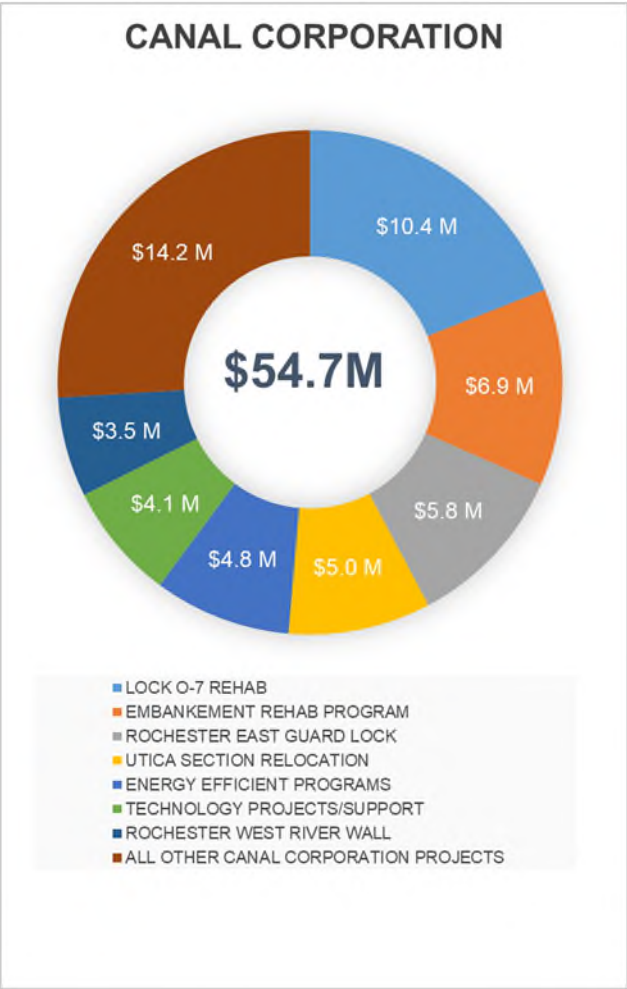
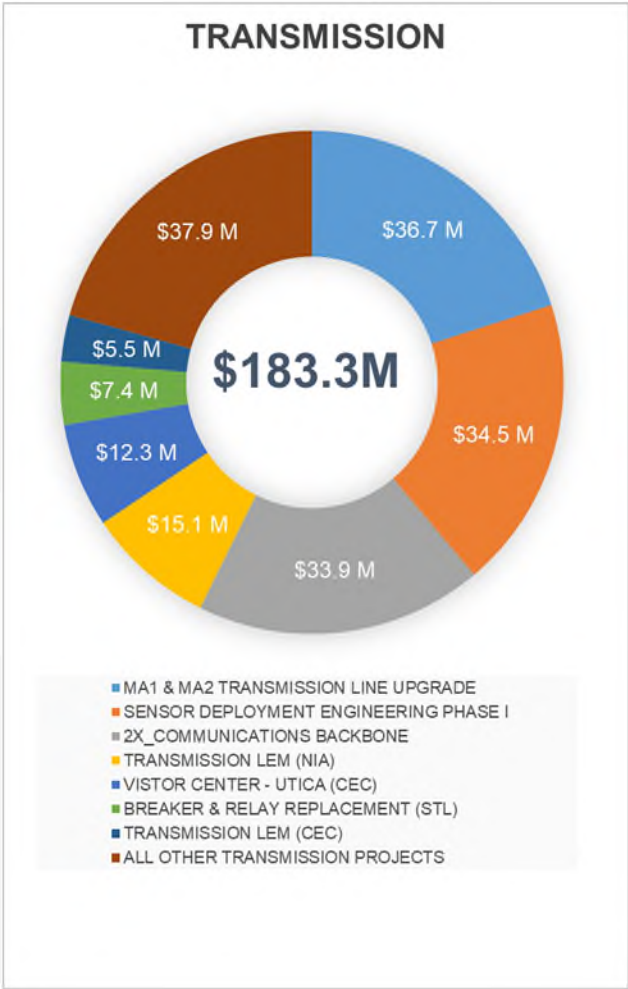
* Astoria does not reflect annual Lease payments

Headquarters Total	864
Executive Offices	167
Commercial Operations	54
Business Services	197
Human Resources & Enterprise Shared Services	137
Information Technology	126
Economic Development & Energy Efficiency	183
Operations Total	1,144
Operations HQ	381
Transmission/Clark	133
Blenheim-Gilboa	102
500MW	61
Small Clean Power Plants	1
R.M. Flynn	20
Niagara	249
St. Lawrence	197
Strategic Additions*	40
NYPA Total	2,048
Canal Corporation Total	482
NYPA and Canal Corporation Total	2,530

* Funded to support strategic growth areas

Operations	2019 Capital Budget
Transmission	183,291
Niagara	64,900
St. Lawrence	29,894
Blenheim-Gilboa	11,363
500MW	10,183
SCPP	4,334
FLYNN	24,140
Small Hydro Plants	3,674
Sub Total Operations	\$331,779
Operations HQ	130,667
Canals Capital	54,712
Total Capital	\$517,158

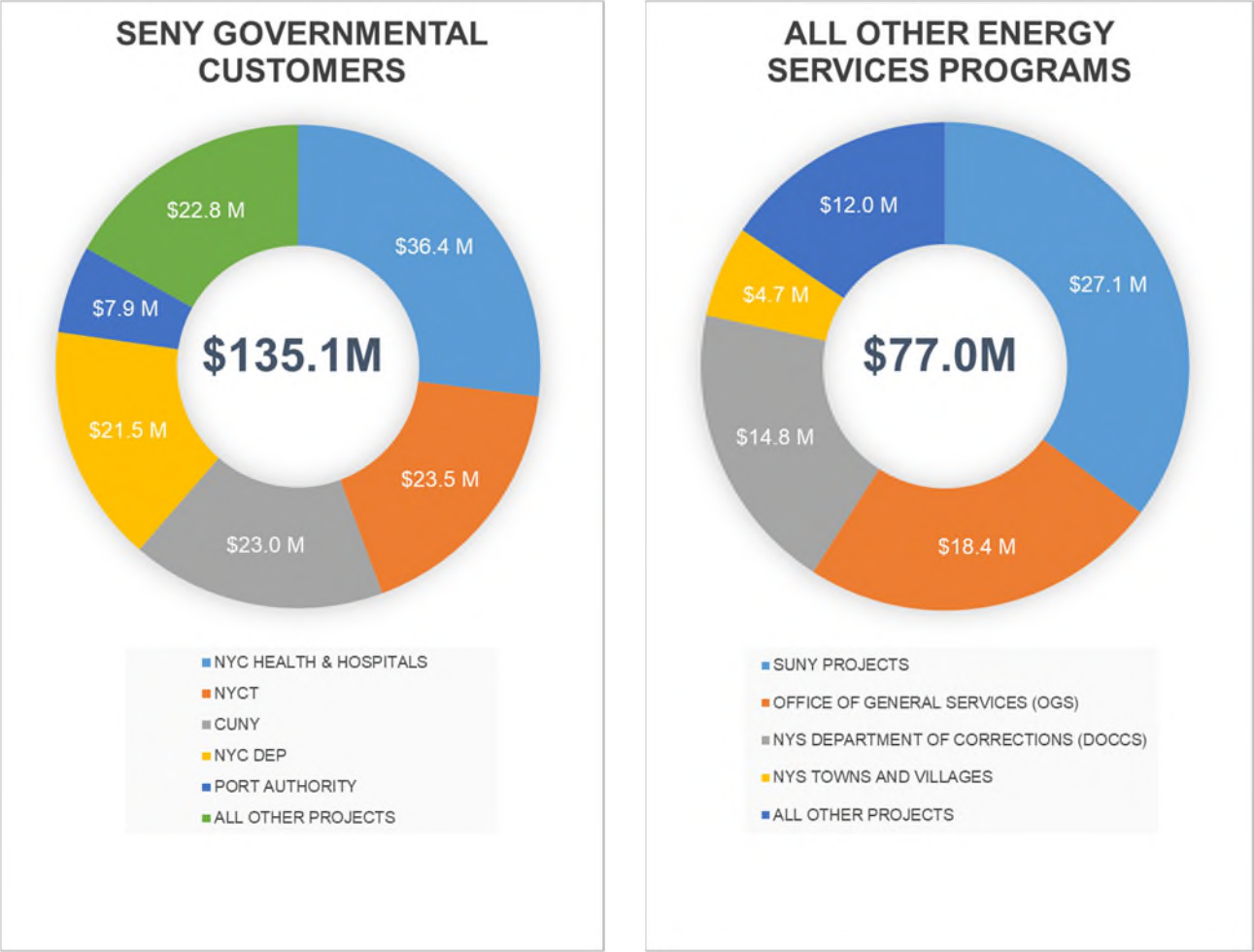




ENERGY EFFICIENCY & TECHNOLOGY		2019
<u>LONG TERM AGREEMENTS</u>		
SENY GOVERNMENTAL SERVICES PROGRAM *		135,072
SUB-TOTAL LONG TERM AGREEMENTS		135,072
<u>OTHER NYPA FUNDED PROGRAMS</u>		
ENERGY EFFICIENCY PROGRAM		75,216
MEUA VEHICLES PROGRAM		500
SUB-TOTAL OTHER NYPA FUNDED PROGRAMS		75,716
<u>POCR PROGRAMS</u>		
POCR REBATE PROGRAM		750
POCR - OTHER		500
SUB-TOTAL POCR		1,250
TOTAL ENERGY EFFICIENCY**:		212,038

* Includes LMS and CASP

** Exhibit C 2 of 2 reflects a total \$212.1 due to rounding of component pieces for representation



2019-2022

Approved Budget and Financial Plan

Background and Mission Statement.....	1
NYPA's Relationship with New York State Government	2
Budget Process.....	2
NYPA's Four-Year Projected Income Statements	3
2019 Budget—Sources and Uses	4
NYPA's Multiyear Statement of Cash Flows.....	5
Budget Assumptions	6
Self-Assessment of Budgetary Risks.....	13
Revised Forecast of 2018 Budget	19
Reconciliation of 2018 Budget and 2018 Revised Forecast	19
Statement of 2017 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
Certificate of Assumptions and Method of Estimation	26

In compliance with 2 NYCRR Part 203



**NY Power
Authority**

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 goal is to maintain a strong financial position in order to have the resources necessary to achieve its mission.

The Authority generates, transmits, purchases and sells electric power and energy as authorized by law. The Authority’s customers include municipal and rural electric cooperatives located throughout New York State, investor-owned utilities, high load factor industries, commercial/industrial and not-for-profit businesses, and 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, St. Lawrence-FDR and Blenheim-Gilboa 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 callable 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, to serve customers’ needs in an increasingly dynamic energy marketplace, and to support the State’s clean energy goals.

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 the responsibility for implementation of: (a) the Governor’s Executive Order No. 88, known as “BuildSmart NY” to improve energy efficiency at State owned and managed buildings; (b) the “Five Cities Energy Efficiency Implementation Plans” (the cities of Albany, Buffalo, Rochester, Syracuse and Yonkers) to reduce overall energy costs and consumption, strengthen the reliability of energy infrastructure, create jobs in local clean energy industries and contribute to a cleaner environment; and (c) the “K-Solar” program to reduce schools’ energy costs through the use of solar power. From January 2013 through September 2018, NYPA has provided approximately \$477.7 million in financing for energy efficiency projects covered by Executive Order 88. Overall financing from January 2013 through September 2018 for energy efficiency projects for all customers (including EO88 facilities) amounts to \$1.199 billion.

To achieve its goal of promoting clean energy and efficiency, NYPA implements energy services for the benefit of its power supply 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 energy efficiency, renewables, resiliency and sustainability. These programs provide funding for, among other things, audits, retro-commissioning, energy master plans, high efficiency lighting technology, high efficiency heating, ventilating and air conditioning systems and controls, boiler and chiller upgrades, steam traps, thermal storage, building envelope upgrades, combined heat and power, microgrids, solar photovoltaics, fuel cells, water/waste water systems, replacement of inefficient refrigerators, distributed generation technologies and emerging energy and utility technologies. The Authority has authorized, as of September 2018, the expenditure of an aggregate of \$5.1 billion on these programs.

Effective January 1, 2017, the New York State Canal Corporation (the “Canal Corporation”) became a subsidiary of the Authority, and the 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”). See “(c) Canal Corporation” for more information.

(a) NYPA’s Relationship with 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 also changing water flows that have a direct effect on hydroelectric generation levels. This 2019-2022 Approved Budget and Financial Plan (“Approved Four-Year Plan”) relies on data and projections developed through the following timeframe:

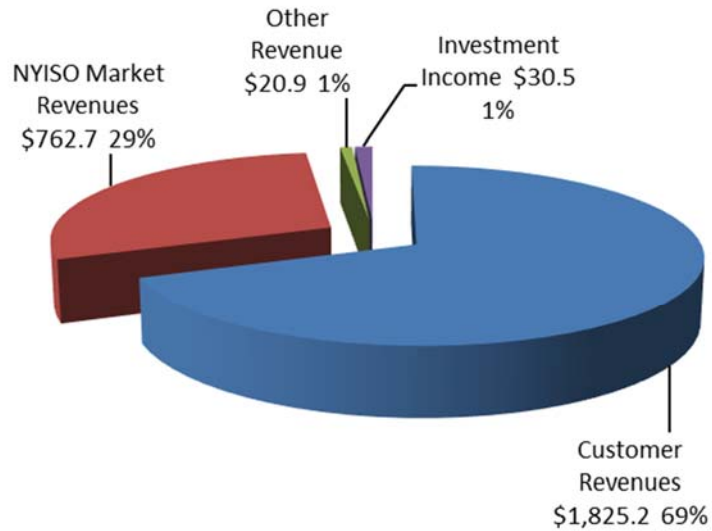
- During July – October 2018, developed preliminary forecasts of electric prices (both energy and capacity), ancillary services revenue and expenses, and fuel expenses; NYPA customer power and energy use; NYPA customer rates; generation levels at NYPA power projects reflecting scheduled outages; and purchased energy & power requirements and sources.
- During July – October 2018, developed preliminary operations and maintenance, and capital expense targets.
- November 2018, posted Proposed Four-Year Plan for public inspection at five convenient locations and on NYPA’s internet website.
- During October – November 2018, updated and finalized all forecasts and cost estimates.
- During November – December 2018, integrated above data to produce the 2019-2022 Final Budget and Financial Plan.
- Seek authorization of NYPA’s Trustees to approve the 2019-2022 Final Budget and Financial Plan at their meeting currently scheduled for December 11, 2018; submit the information to the State Comptroller’s Office; and make the approved document available for public inspection at five convenient locations and on NYPA’s internet website.

NYPA's Four-Year Projected Income Statements

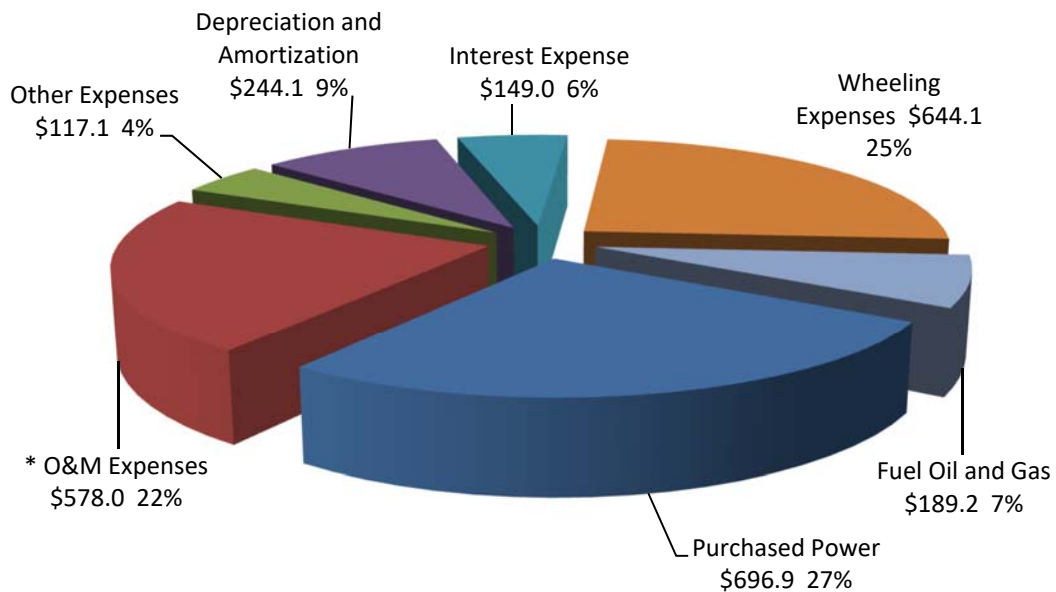
(in Millions)

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
<u>Operating Income:</u>				
Customer Revenues	\$1,825.2	\$1,825.5	\$1,885.4	\$1,915.9
NYISO Market Revenues	762.7	784.5	806.8	911.8
Other Revenue	<u>20.9</u>	<u>30.3</u>	<u>41.1</u>	<u>45.1</u>
Total Operating Income	2,608.8	2,640.3	2,733.3	2,872.8
<u>Operating Expenses:</u>				
Purchased Power	696.9	688.3	721.8	760.2
Fuel	189.2	198.1	186.2	235.8
Wheeling Expenses	644.1	644.7	645.2	646.1
O&M Expenses	596.3	620.7	631.9	657.1
Other Expenses	117.1	112.7	132.6	128.0
Depreciation and Amortization	244.1	251.4	259.2	265.4
Allocation to Capital	<u>(18.3)</u>	<u>(23.2)</u>	<u>(24.0)</u>	<u>(16.4)</u>
Total Operating Expenses	2,469.4	2,492.7	2,552.9	2,676.2
NET OPERATING INCOME	139.4	147.6	180.4	196.6
<u>Other Income:</u>				
Investment Income	30.5	49.5	53.4	59.8
Other Income	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Total Other Income	30.5	49.5	53.4	59.8
<u>Non-Operating Expenses:</u>				
Interest Expense	149.0	147.8	147.0	147.0
Contributions to State	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Total Non-Operating Expenses	149.0	147.8	147.0	147.0
NET INCOME	\$20.9	\$49.3	\$86.8	\$109.4

2019 Budget – Sources
(in Millions)



2019 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>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Sale of Power, Use of Transmission Lines						
Wheeling Charges and other receipts	\$2,503.8	\$2,662.7	\$2,583.3	\$2,621.4	\$2,721.5	\$2,868.8
Earnings on Investments and Time Deposits	<u>17.4</u>	<u>28.9</u>	<u>40.6</u>	<u>49.9</u>	<u>56.8</u>	<u>61.5</u>
Total Revenues	2,521.2	2,691.6	2,623.9	2,671.3	2,778.3	2,930.3

Expenses:

Operation and Maintenance, including Transmission of Electricity by others, Purchased Power and Fuel Purchases						
	(2,167.4)	(2,362.4)	(2,354.3)	(2,376.6)	(2,437.3)	(2,558.6)

Debt Service :

Interest on Bonds and Notes	(51.8)	(60.1)	(63.3)	(67.4)	(72.8)	(76.8)
Bonds and Notes Retired	<u>(58.8)</u>	<u>(33.6)</u>	<u>(34.6)</u>	<u>(37.1)</u>	<u>(23.2)</u>	<u>(60.5)</u>
Total Debt Service	(110.6)	(93.7)	(97.9)	(104.5)	(96.0)	(137.3)

Total Requirements	(2,278.0)	(2,456.1)	(2,452.2)	(2,481.1)	(2,533.3)	(2,695.9)

Net Operations	243.2	235.5	171.7	190.2	245.0	234.4

Capital Receipts :

Sale of Bonds, Promissory Notes & Commercial Paper	108.9	133.9	513.6	196.2	439.7	273.9
Less : Repayments	(114.9)	0.0	0.0	0.0	(5.0)	(29.8)
Earnings on Construction Funds	0.0	0.0	0.0	0.0	0.0	0.0
Energy Efficiency Receipts	161.5	148.7	169.8	391.9	215.7	254.3
Temporary Asset Transfer Return from NYS	43.0	43.0	43.0	43.0	43.0	43.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
Total Capital Receipts	198.5	325.6	726.4	631.1	693.4	541.4

Capital Additions & Refunds :

Additions to Electric Plant in Service and Construction Work in Progress, and Other costs	(473.9)	(515.0)	(729.2)	(867.7)	(935.2)	(797.2)
Construction Funds - Net Transfer	0.0	0.0	0.0	0.0	0.0	0.0
Total Capital Additions & Refunds	(473.9)	(515.0)	(729.2)	(867.7)	(935.2)	(797.2)

Net Capital	(275.4)	(189.4)	(2.8)	(236.6)	(241.8)	(255.8)

Net Increase/(Decrease)	(\$32.2)	\$46.1	168.9	(\$46.4)	\$3.2	(\$21.4)

(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 large 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 Approved Four-Year Plan models Trustee-approved rate changes for customers as well as prospective rate changes.

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 provided for declining levels of discounts through June 30, 2016 when the program terminated. As of June 30, 2018, approximately \$12 million of such discounts have been paid with approximately an additional \$2 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's Trustees have authorized the release of a total \$534 million for the period from August 2011 to December 2018 in support this residential discount program. The Authority supplemented the market revenues used to fund the residential discount program with internal funds, totaling cumulatively \$79 million from August 2011 through June 30, 2018.

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 the Aluminum Company of America ("ALCOA") at its West Plant facilities. This contract with the 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 in 2003 for a period of 50 years will be approximately \$210 million, of which approximately \$199.4 million has already been spent as of June 30, 2018. These total costs could increase in the future as a result of authorities reserved by FERC in the license for the St. Lawrence-FDR Project issued in 2003. 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") administered by the Authority, 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 to review applications seeking NNYED 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 (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 Approved 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. Proceeds from the WNY Fund may be 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 Approved 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.

In 2005, the Authority and its eleven New York City 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.

In 2018, the Authority executed new supplemental long-term electricity supply agreements (2018 LTAs) with ten of its eleven NYC Governmental Customers. The new supplemental agreements with the remaining NYC Governmental Customer is pending board and/or regulatory approvals.

Under the 2018 LTAs, effective January 1, 2018, the NYC Governmental Customers who have signed on have 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 2018 LTAs, fixed costs were set for each customer and are subject to renegotiation after five years. 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.

Blenheim-Gilboa Customers

The remaining NYC Governmental Customer not signed onto the 2018 LTA is still taking a share of the 250 MWs of firm capacity allocated to the entire customer group under the 2005 LTA. The remainder of the plant's capacity can be used to meet the requirements of some of the Authority's other business and governmental customers and/or sold in the NYISO market.

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. 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 the Vernon location, which houses two units, under certain conditions and if the Mayor of New York City directs such cessation. No such cessation has occurred. The plant at the Vernon location is assumed to be operating during the forecast period pursuant to the terms of an agreement entered into at the time of construction.

For this Approved 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 currently 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. Effective July 1, 2018, the Transmission Revenue Requirement is \$226.5 million, including the revenue requirement for the Marcy South Series Compensation project. Annual updates commensurate with projected costs are assumed to continue throughout the forecast period.

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 86 miles of 230 kV transmission line from Massena to the town of Croghan in Lewis County and consists of rebuilding two existing 230kV transmission lines between Moses and Adirondack substations. These transmission lines are over 70 years old. Seventy eight miles of each line are constructed with wood poles which are in poor physical condition. The remaining eight miles are constructed with steel structures which are in good condition. This project will rebuild only the wood pole section of the transmission lines which will be replaced with steel monopole structures. These new structures will be designed to 345kV standards but will be operated at 230kV.

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 filed its application for Article VII approval with the New York Public Service Commission in April 2018. Construction is expected to take four years and begin in 2020. In July 2017, the Authority received authorization under the NYISO tariff to include the costs of this replacement project in its NTAC 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. This Approved Four-Year Plan includes revenues and costs associated with the Moses Adirondack project.

On August 1, 2014, the Public Policy Transmission Planning Process administered by the NYISO invited solicitations to address the AC Transmission Public Policy Need ("AC Proceeding") for new transmission lines to relieve the congested Central East and UPNY/SENY transmission interfaces. NYISO staff issued a report recommending the AC Proceeding proposals submitted by NYPA and our partner LS Power be selected. The projects proposed by NYPA and LS Power include the construction of over 300 miles of new 345kV and 115kV transmission lines and four new substations. These projects will be presented to the NYISO Board of Directors for approval, and are recommended to be placed in service by 2023. Given that approvals are required before the proposals may proceed, this Approved Four-Year Plan does not include revenues and costs associated with the AC Proceeding projects.

Hudson Transmission Project

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 which would have entitled the Authority 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 June 30, 2018, the Authority paid approximately \$336 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 August 2018, the Authority estimated that its under-recovery of costs for the Line could be in the range of approximately \$92

million to \$95 million per year over the next five years. The under-recovery estimates were based on projections of the capacity payment obligations, the costs of interconnection and transmission upgrades, RTEP charges, 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, has been 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 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 transmission rights. The cost allocations shifted approximately \$533 million in RTEP charges for the BLC project that had been previously allocated to Con Edison to HTP. Such costs are in addition to the \$111 million in RTEP charges for the BLC project that had previously been allocated to HTP. RTEP costs relating to the BLC project would be paid over a number of years after construction commenced in 2017. Phase I of the BLC project was completed in June 2016, Phase II was completed in the spring of 2017 and Phase III construction was finalized in July 2018.

From June 2013 through June 2018, the Authority has paid approximately \$90 million in RTEP charges for the Line, including the BLC project. In addition, the Authority expects to pay an additional approximately \$7.3 million through August 2019 for pre-2013 RTEP projects whose allocations were previously challenged at FERC. These RTEP 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 BLC project costs. Settlement efforts commenced in August 2018. 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.

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 this Approved 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 this Approved 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

As part of our Vision 2020 Strategic Plan, the Authority is pursuing six strategic 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.

In 2018, at the direction of the Trustees, NYPA initiated two new key strategic activities – the aim being to identify strategic investment opportunities and build compelling business cases to:

- Multiply the impact and/or shorten the implementation time of our existing six strategic initiatives;
- Support the achievement of the State's clean energy goals, with a focus on:
 - o Building out statewide electric vehicle charging infrastructure: 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. In October 2018, the Authority's Trustees awarded contracts valued at up to \$60 million to several firms that will provide electric vehicle supply equipment, of which \$40 million would be used to support the electric vehicle acceleration initiative
 - o Driving down the cost of Offshore Wind
 - o Building the necessary flexibility in our electricity grid in order to ensure as many low cost, clean, reliable electrons are being consumed when and where they are needed.

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

Canal Corporation

Effective January 1, 2017, the Canal Corporation became a subsidiary of the Authority, and the Authority assumed certain powers and duties relating to the Canal System to be exercised through 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.

Given the age of the Canal System, the Authority expects that significant maintenance and capital investments will be required to assure the Canal System's continuing operation. The Authority's budget and financial plan for 2019-2022 includes Canal-related operating expenditures of approximately \$85 million per year and capital expenditures of approximately \$40 million per year. 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.

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 United States Government.

Operations and Maintenance Expenses

NYPA's O&M plan for 2019-2022 is as follows:

Operations and Maintenance Forecast

(in Millions)

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Payroll	\$ 239.3	\$ 244.3	\$ 250.7	\$ 257.3
Benefits	\$ 127.9	\$ 129.7	\$ 132.6	\$ 135.5
Materials/Supplies	\$ 24.0	\$ 24.8	\$ 25.5	\$ 26.1
Fees	\$ 10.3	\$ 10.5	\$ 10.8	\$ 11.2
Office & Station	\$ 26.2	\$ 26.8	\$ 27.6	\$ 28.4
Maintenance Repair & Service Contracts	\$ 142.0	\$ 155.3	\$ 154.6	\$ 167.6
Consultants	\$ 48.2	\$ 51.7	\$ 53.0	\$ 54.4
Charges to:				
Outside Agencies	\$ (4.4)	\$ (6.1)	\$ (6.2)	\$ (6.3)
Capital Programs	<u>\$ (48.6)</u>	<u>\$ (48.6)</u>	<u>\$ (49.8)</u>	<u>\$ (51.0)</u>
Total Charges	\$ (53.0)	\$ (54.7)	\$ (56.0)	\$ (57.3)
Research & Development	\$ 8.7	\$ 9.0	\$ 9.2	\$ 9.5
Subtotal	\$ 573.6	\$ 597.4	\$ 608.0	\$ 632.7
Astoria Energy II	\$ 22.7	\$ 23.3	\$ 23.9	\$ 24.6
TOTAL NYPA O&M	\$ 596.3	\$ 620.7	\$ 631.9	\$ 657.3

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, 2017 expressed as a percentage of average depreciable capital assets was 2.6%.

Other Expenses

The Other Expenses category largely reflects various accruals and other miscellaneous expenses (e.g., payments to the NNY Fund and WNY Fund), 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 ("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 October 2018, the Authority estimates that it will incur ZEC purchase costs associated with participation in the ZEC program of approximately \$264.8 million in aggregate over the 2019-2022 period, of which approximately \$18.4 million is not expected to be recovered under customer contracts that predate the adoption of the CES Order.

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 the 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 (the "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 of Appeals granted EPA's motion to suspend cases challenging the CPP Rule to give the 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

will take comments on the proposal for 60 days following its publication in the Federal Register and will hold a public hearing. 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.

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 2017, the Authority filed for a formula rate annual TRR consistent with those principles. The formula rate annual TRR is incorporated into the NYISO Open Access Transmission Tariff ("OATT"). This Approved 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 up to the present time, 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 as well. The PFJ Program, which had been extended to June 30, 2012, has ended and was replaced by RNYPP, as discussed above. Cumulatively through December 31, 2012, the Authority made voluntary contributions to the State totaling \$475 million in connection with the ended PFJ Program.

In the past, the Authority has, from time to time, made voluntary contributions or payments to the State or as otherwise authorized by legislation. Cumulative, between January 1, 2008 and December 31, 2016, the Authority has made contributions to the State totaling \$763 million unrelated to the PFJ program. Such payments were authorized by legislation and have been conditional upon the Trustees' determination that such payments are "feasible and advisable". 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. This Approved Four-Year Plan includes the 2018-2019 Enacted State Budget provision. The Authority cannot predict what additional contributions to the State may be authorized in the future. 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. In May 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, among other things, 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, as a result of budget legislation enacted in February 2009, the Authority was requested to make certain 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 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 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. 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.

In lieu of interest payments, the State waived certain future payments from the Authority to the State. The waived payments included the Authority's obligation to pay the State certain governmental costs for central governmental services. The present value of the waivers approximated 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. This Approved Four-Year Plan assumes no such assessments during the 2019-2022 forecast period.

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. As of September 30, 2018, the Authority has received full repayment of \$103 million on Asset A.

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. As of September 30, 2018, the Authority has received installment payments of \$43 million on Asset B.

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 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 21.8 TWH in 2019, 21.9 TWH in 2020, 21.9 TWH in 2021, and 21.9 TWH in 2022. 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 2019-2022 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 (in Millions)	Net Hydroelectric Generation	NYPA Net Income Change (in Millions)
2019	19.4 TWH	(\$59.4)	23.2 TWH	\$35.3
2020	19.5 TWH	(\$54.6)	23.3 TWH	\$32.2
2021	19.5 TWH	(\$59.7)	23.4 TWH	\$35.3
2022	19.5 TWH	(\$64.7)	23.4 TWH	\$38.4

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 able 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. 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.

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 and Risk Management processes, 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. The Authority constantly assesses the nature of the Physical and Cyber Security risks and adjusts its resources to best anticipate and respond to any threats. 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 relating to Emergency Management, Disaster Recovery and Business Continuity. These plans are based on the specific, unique natural threats at each of its generation facilities. The Authority regularly conducts drills and exercises in order to ensure advance preparation for these types of events. The Authority maintains close working relationships with local first responders and government agencies to ensure its ongoing preparedness.

Canal Corporation

The Authority has identified key risk areas relating to the Canal Corporation and continues to employ and assess risk mitigation options across multiple enterprise risk fronts in an effort to manage or reduce potential exposures. As more actual experience, information and data becomes available, the Authority will adjust and allocate resources accordingly.

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, 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 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 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 to trip. As a result of the impact to the cable, dielectric fluid was released into Long Island Sound. The Authority incurred approximately \$34 million in costs arising from this incident and has recovered approximately \$18 million through insurance coverage. The Authority believes that it will be able to recover the full amount of its damages through legal proceedings, insurance coverage 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 2018 Budget
(in Millions)

	Original Budget 2018	Forecast 2018	Variance Favorable/ (Unfavorable) 2018
<u>Operating Revenues:</u>			
Customer Revenues	\$1,832.5	\$1,878.6	\$46.1
NYISO Market Revenues	\$843.9	\$810.0	(\$33.9)
Other Revenue	<u>\$28.3</u>	<u>\$18.6</u>	<u>(\$9.7)</u>
Total Operating Revenues	\$2,704.7	\$2,707.2	\$2.5
<u>Operating Expenses:</u>			
Purchased Power	\$703.3	\$733.6	(\$30.3)
Fuel - Oil and Gas	\$217.6	\$188.3	\$29.3
Wheeling Expenses	\$644.8	\$638.7	\$6.1
O&M Expenses	\$577.4	\$580.6	(\$3.2)
Other Expenses	\$111.7	\$104.5	\$7.2
Depreciation and Amortization	<u>\$240.2</u>	<u>\$238.7</u>	<u>\$1.5</u>
Total Operating Expenses	\$2,495.0	\$2,484.4	\$10.6
NET OPERATING INCOME	\$209.7	\$222.8	\$13.1
<u>Other Income:</u>			
Investment Income	\$18.5	\$14.7	(\$3.8)
Other Income	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total Other Income	\$18.5	\$14.7	(\$3.8)
<u>Non-Operating Expenses:</u>			
Interest & Other Expenses	\$151.3	\$143.2	\$8.1
Contributions to State	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total Non-Operating Expenses	\$151.3	\$143.2	\$8.1
NET INCOME	\$76.9	\$94.3	\$17.4

(f) Reconciliation of 2018 Budget and 2018 Revised Forecast

The 2018 year-end net income forecast is \$94.3 million, which is \$17.4 million above budget. This positive variance is primarily a result of higher generation margins, lower other expenses, and lower interest expense offset by higher O&M expenses and lower investment income. The higher generation margins are primarily due to higher hydro generation, higher energy and capacity prices, and the sale of natural gas into the market, but largely offset by lower than budgeted hedge mark-to-markets. Lower other expenses are due to the timing of programmatic spending. Higher O&M expenses includes post-budget programmatic and strategic expenditures largely offset by lower Pension and other post-retirement benefits costs. Positive Variance in interest expense relates to the postponement of debt issuances to future periods.

(g) Statement of 2017 Financial Performance

**New York Power Authority
Net Income – Actual vs. Budgeted
For the Year ended December 31, 2017
(in millions)**

	<u>Actual</u>	<u>Budget</u>	<u>Variance Favorable/ (Unfavorable)</u>
<u>Operating Revenues:</u>			
Customer Revenues	\$1,774.7	\$1,925.3	(\$150.6)
NYISO Market Revenues	\$777.5	\$827.4	(\$49.9)
Other Revenue	<u>\$20.6</u>	<u>\$23.0</u>	<u>(\$2.4)</u>
Total Operating Revenues	\$2,572.8	\$2,775.7	(\$202.9)
<u>Operating Expenses:</u>			
Purchased Power	\$556.5	\$729.2	\$172.7
Fuel	\$165.0	\$226.6	\$61.6
Wheeling	\$618.2	\$642.3	\$24.1
O&M Expenses	\$563.5	\$587.7	\$24.2
Other Expenses	\$129.4	\$143.5	\$14.1
Depreciation and Amortization	\$241.8	\$260.7	\$18.9
Allocation to Capital	(\$13.2)	(\$17.0)	(\$3.8)
Impairment Loss	<u>\$73.3</u>	<u>\$0.0</u>	<u>(\$73.3)</u>
Total Operating Expenses	\$2,334.5	\$2,573.0	\$238.5
NET OPERATING INCOME	\$238.3	\$202.7	\$35.6
<u>Other Income:</u>			
Investment Income	\$20.6	\$18.6	\$2.0
Other income	<u>\$8.0</u>	<u>\$0.0</u>	<u>\$8.0</u>
Total Other Income	\$28.6	\$18.6	\$10.0
<u>Non-Operating Expenses:</u>			
Contribution to New York State	\$0.0	\$0.0	\$0.0
Interest and Other Expenses	<u>\$148.1</u>	<u>\$144.2</u>	<u>(\$3.9)</u>
Total Non-Operating Expenses	\$148.1	\$144.2	(\$3.9)
NET INCOME	\$118.8	\$77.1	\$41.7

Net Income for the year ended December 31, 2017 was \$118.8 million, which was \$41.7 million higher than budget of \$77.1 million. The increase in net income was primarily attributable to higher margins on energy and transmission sales, lower operating expenses, lower depreciation, higher investment income, and partially offset by the asset impairment charge for the 500-MW plant. The higher margins on energy was primarily due to higher hydro production. The positive transmission variance was primarily due to lower capacity payments resulting from the continuing HTP line outage. Depreciation was lower due to a transmission rate settlement adjustment and less than planned capital spending. The lower than planned operating expenses reflected underspending in O&M expenses due to less than expected spending in maintenance, consulting, and health insurance costs, and less than anticipated programmatic spending in various areas.

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

	<u>2019 Request</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Headquarters	899	899	899	899
Operations	933	933	933	933
Transmission	202	202	202	202
R&D	14	14	14	14
Canal Corp	<u>482</u>	<u>482</u>	<u>482</u>	<u>482</u>
TOTAL	2,530	2,530	2,530	2,530

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

As the Authority is projecting positive net income for the 2019-2022 period, there are no planned gap-closing programs.

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

Except as discussed elsewhere in this report, there are no material non-recurring resources expected in the 2019-2022 period.

(k) **Shift in Material Resources**

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

(l) **Debt Service**

New York Power Authority Projected Debt Outstanding (FYE) (in thousands)				
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Revenue Bonds	\$1,029,304	\$993,578	\$1,147,135	\$1,088,102
Subordinated Note	\$42,875	\$41,460	\$40,015	\$38,530
Commercial Paper Notes	\$593,710	\$464,792	\$559,090	\$600,000
<u>Grand Total</u>	<u>\$1,665,889</u>	<u>\$1,499,830</u>	<u>\$1,746,240</u>	<u>\$1,726,632</u>

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

	2019		2020		2021		2022	
	<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	\$78,923	2.99%	\$88,113	3.28%	\$76,501	2.75%	\$116,535	3.97%
Subordinated Debt	\$2,996	0.11%	\$3,000	0.11%	\$2,996	0.11%	\$2,999	0.10%
Commercial Paper Notes	\$15,959	0.60%	\$13,412	0.50%	\$21,537	0.77%	\$17,817	0.61%
<u>Grand Total Debt Service</u>	<u>\$97,878</u>	3.70%	<u>\$104,525</u>	3.89%	<u>\$101,034</u>	3.63%	<u>\$137,351</u>	4.68%

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>
<u>Period January 1, 2019 – December 31, 2019</u>			
Tax Exempt Commercial Paper	\$33,854	2.63%	Energy Efficiency Program
Taxable Commercial Paper	\$7,140	3.47%	Energy Efficiency Program
Tax Exempt Revenue Bonds	\$198,029	4.07%	Transmission
Taxable Revenue Bonds	\$174,709	3.90%	Robert Moses Power Plant/Lewiston Pump Generating Plant
Total Issued 2019	<u>\$413,732</u>		
<u>Period January 1, 2020 – December 31, 2020</u>			
Total Issued 2020	<u>\$0</u>		

**Period January 1, 2021 –
December 31, 2021**

Tax Exempt Commercial Paper	\$93,000	2.87%	Energy Efficiency Program
Taxable Commercial Paper	\$6,298	3.76%	Energy Efficiency Program
Tax Exempt Revenue Bonds	\$99,969	4.17%	Transmission
Taxable Revenue Bonds	\$75,372	3.92%	Robert Moses Power Plant/Lewiston Pump Generating Plant
Total Issued 2021	<u>\$274,639</u>		

**Period January 1, 2022 –
December 31, 2022**

Tax Exempt Commercial Paper	\$35,387	2.91%	Energy Efficiency Program
Taxable Commercial Paper	\$5,524	3.71%	Energy Efficiency Program
Total Issued 2022	<u>\$40,911</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

Outstanding (Issued) Debt

	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2019	\$34,581,788	\$53,783,438	\$88,365,226
2020	\$37,141,239	\$50,636,223	\$87,777,462
2021	\$28,228,276	\$49,192,451	\$77,420,727
2022	\$47,694,275	\$51,960,395	\$99,654,670

Proposed Debt

	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2019	-	\$9,512,106	\$9,512,106
2020	-	\$16,747,948	\$16,747,948
2021	-	\$23,613,768	\$23,613,768
2022	\$12,824,078	\$25,872,720	\$37,696,798

Total Debt

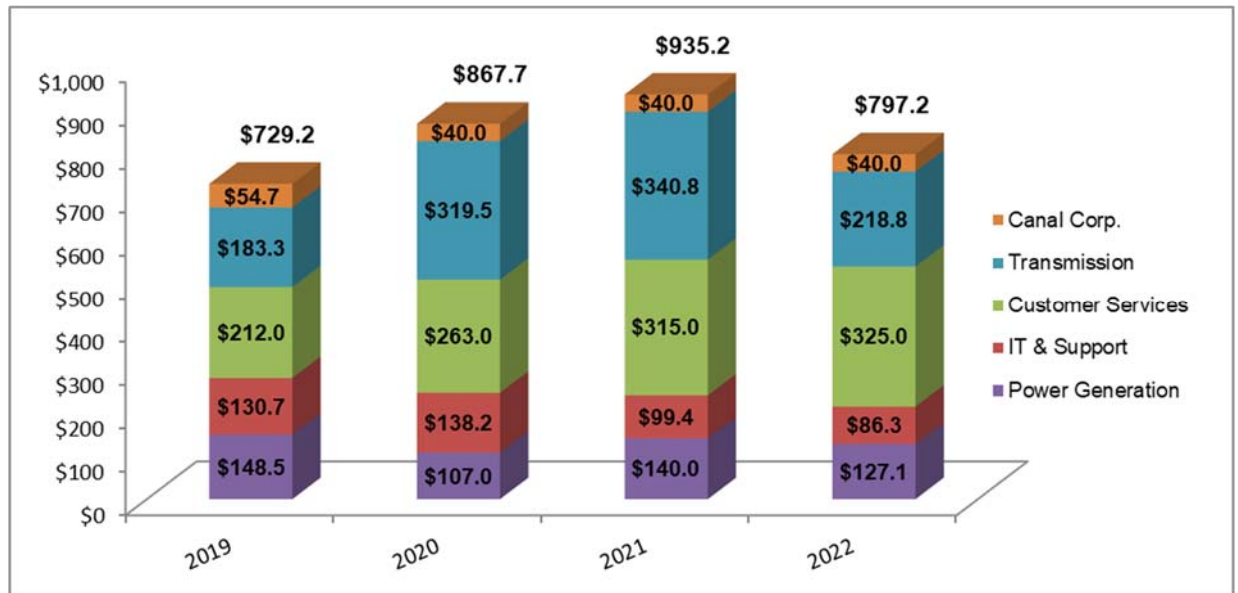
	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
2019	\$34,581,788	\$63,295,544	\$97,877,332
2020	\$37,141,239	\$67,384,171	\$104,525,410
2021	\$28,228,276	\$72,806,219	\$101,034,495
2022	\$60,518,353	\$76,833,115	\$137,351,468

Capital Commitments and Sources of Funding

The Authority's commitments for various capital improvements are approximately \$3.3 billion over the financial period 2019-2022. 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.

(In millions)	2019	2020	2021	2022
Communications Backbone	\$ 33.9	\$ 56.2	\$ 10.6	\$ 0.0
Sensor Deployment	\$51.5	\$28.2	\$1.0	\$1.0
Large Energy Storage (Zones D & K)	\$ 15.8	\$ 30.0	\$15.0	\$ 0.0
Moses Adirondack Transmission Line Replacement	\$36.7	\$135.5	\$205.9	\$76.7
EVolve NY	\$ 34.2	\$ 36.9	\$ 36.9	\$ 36.9
Other Strategic Initiatives	\$11.9	\$12.8	\$2.3	\$2.3
Canal Corporation	\$54.7	\$40.0	\$40.0	\$40.0
Customer Services	\$212.0	\$263.0	\$315.0	\$325.0
Other NYPA Capital	\$278.5	\$265.1	\$308.5	\$315.3
Grand Total	\$729.2	\$867.7	\$935.2	\$797.2

2019-2022 Capital Commitments by Function
(in millions)

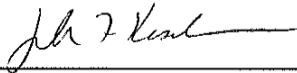


**Certification of Assumptions and Method of Estimation for
Budget and Financial Plan 2019-2022 in accordance with the
Comptroller's Regulation § 203.9 Certification**

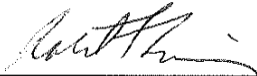
December 11, 2018

To the Board of Trustees
Power Authority of the State of New York

To the best of my knowledge and belief after reasonable inquiry, I, the undersigned, certify that the "Authority's Method of Estimation for Budget and Financial Plan 2019-2022" is based on reasonable assumptions and methods of estimation and that the regulations enumerated in Part 203, "Budget and Financial Plan Format, Supporting Documentation and Monitoring - Public Authorities" have been satisfied.



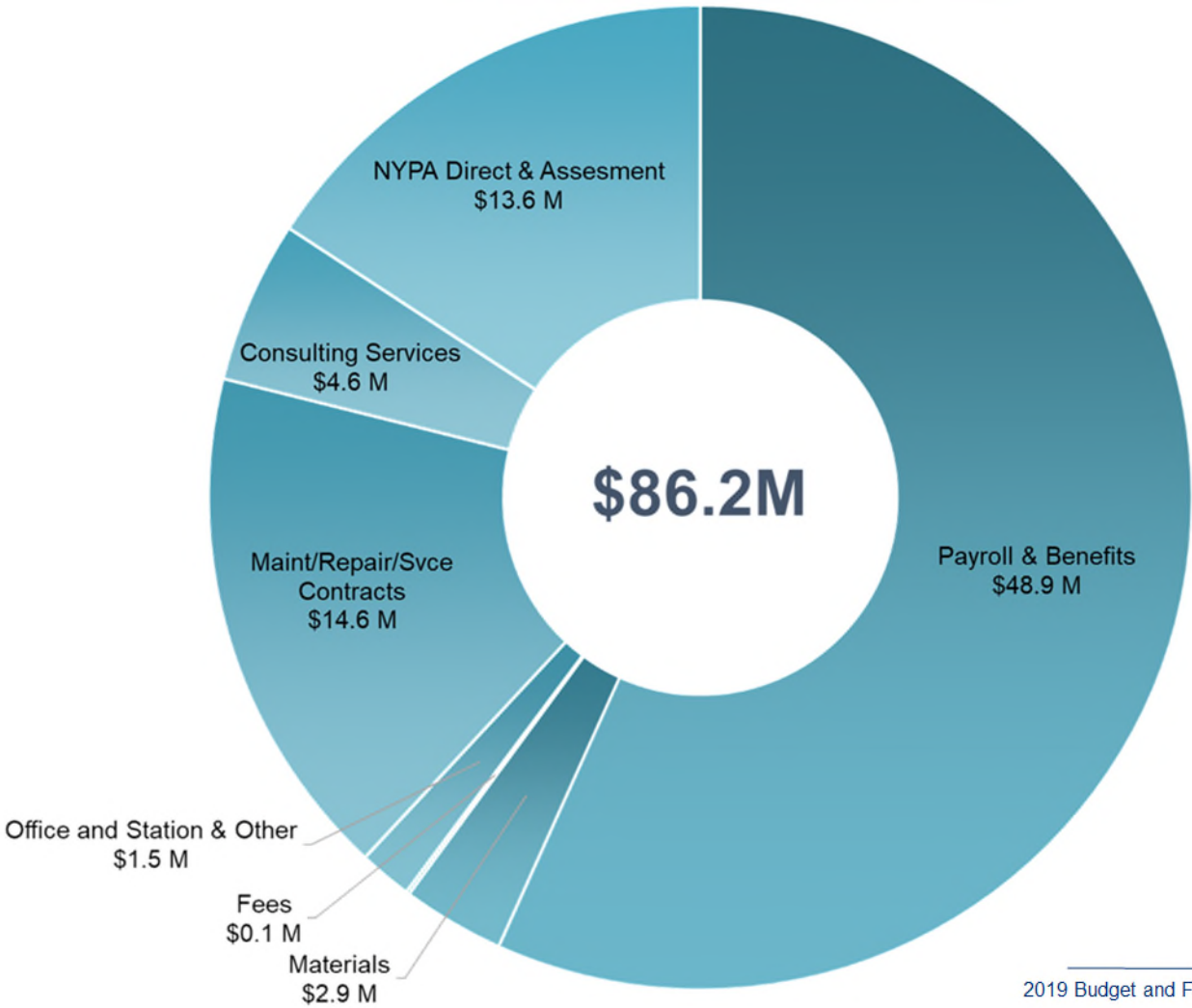
Joseph Kessler
Chief Operating Officer

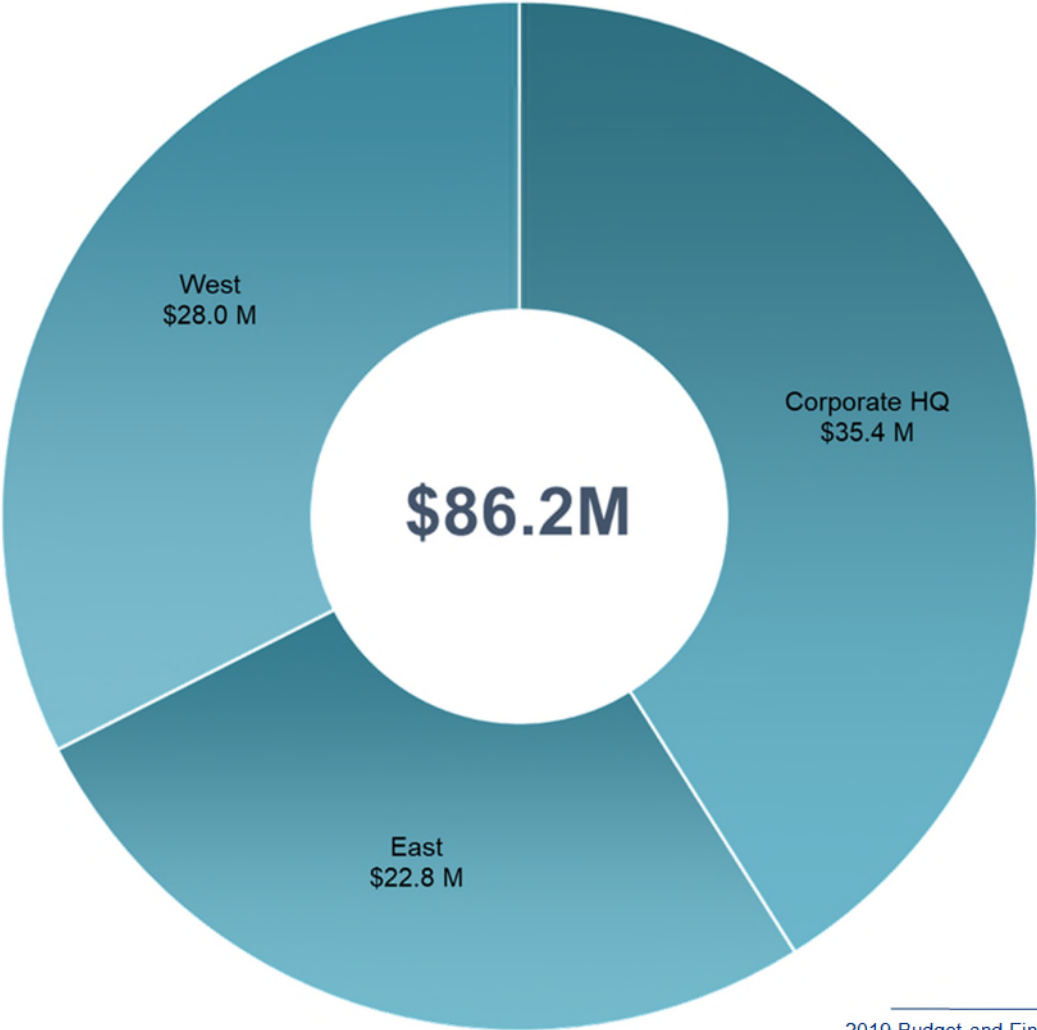


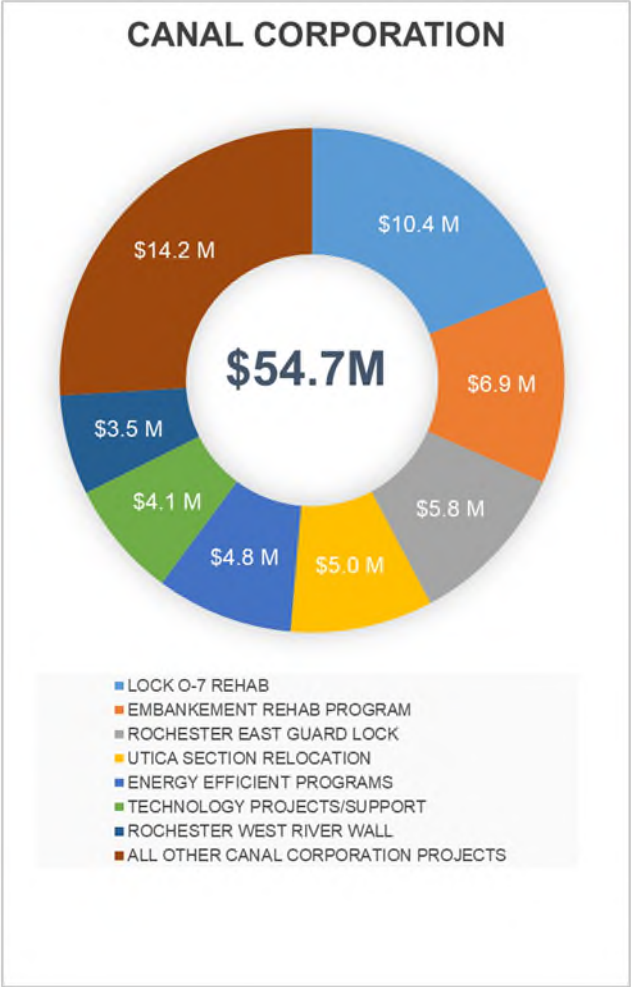
Robert Lurie
Chief Financial Officer

123 Main Street
White Plains, NY 10601-3170
www.nypa.gov











**NY Power
Authority**

**Canal
Corporation**

Board of Trustees Meeting

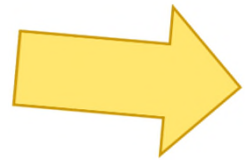
Joseph F. Kessler, P.E.

EVP & Chief Operating Officer

December 11, 2018

Performance Measures – YTD October 2018

Utility Operations



Generation Market Readiness

99.38% vs 99.40%
(YTD actual vs target)



Transmission Reliability

95.12% vs 95.01%
(YTD actual vs target)

NYPA Overall



Environmental Incidents

12 vs 23
(YTD actual vs target)



Dart Rate

0.96 vs 0.78
(YTD actual vs target)

Utility Operations – December 2018 Trustee Items

Capital Funding Authorization – total request of \$74.8 million

- Niagara Fire Alarm & Safety Systems Program
- Asset Performance Management
- Richard M. Flynn Power Plant – Gas Turbine Outage

Procurement (Services) Contracts – total request of \$141.4 million**

- Niagara Fire Alarm & Safety Systems Program
- Moses-Adirondack Smart Path Reliability Project – Pole and Foundation Steel
- Communications Backbone Program – Fiber Electronics

** Excludes Canal Corp. Contracts

Moses-Adirondack Smart Path Reliability Project – Pole and Foundation Steel Contract Award

Background

- Approve five-year contract award to Sabre Industries, Inc. for \$79 million and an additional \$20 million for total authorized amount of \$99 million

Highlights

- Engineer, design, furnish and deliver over 770 steel pole structures and foundation anchor bolt cages
- Sabre was evaluated to be technically capable, experienced, lowest risk, and able to furnish the best value product
- Additional \$20 million requested for fluctuations in metal indices, additional appurtenances to be installed on structures, inflation adjustments, engineering optimization and additional full load structure testing

Communications Backbone Program – Fiber Electronics Contract Award

Background

- Ratify the award of a seven-year, \$14.1 million contract to LightSpeed Technologies Inc. for fiber electronics equipment and installation in support of the Communication Backbone Program

Highlights

- Design, equipment procurement, installation and network management of fiber electronics at several of the Authority's facilities
- Provide the connection from the optical ground wire and dark fiber to the substations' existing network
- Implementation is scheduled for completion in 2020 with maintenance services to continue through 2025
- Interim approval received in November to issue a Notice-to-Proceed

Niagara Fire Alarm and Safety Systems Program – Funding Authorization Request and Contract Award

Background

- Authorize capital expenditures in the amount of \$37.3 million and ratify the award of a five-year, \$28.3 million contract to Johnson Controls, Inc. for the Niagara Fire Alarm and Safety Systems Program

Highlights

- Design, procure, and install new fire alarm, public address, deluge release, emergency lighting and signage systems to create a network for centralized monitoring and notifications
- Total program estimated to cost \$37.6 million with substantial completion expected in 2022
- Interim approval received in September to issue a Notice-to-Proceed

Asset Performance Management – Funding Authorization Request

Background

- Authorize capital expenditures in the amount of \$14.7 million to implement an asset performance management tool

Highlights

- Asset Performance Management platform will enable asset performance and monitoring optimization
- Total project estimated to cost \$16.7 million
- Implementation is expected for completion in 2020

Richard M. Flynn Power Plant - Gas Turbine Outage – Funding Authorization Request

Background

- Authorize capital expenditure in amount of \$22.8 million for replacement and/or upgrade of the Flynn Power Plant's Combustion Turbine critical components

Highlights

- Combustion Turbine Critical components will reach their end of life by late 2019/early 2020
- Engine will have more than 200K EOH (Equivalent Operating Hours)
- Combustion Turbine parts to be replaced:

CATEGORY	TOTAL REQUEST AUTHORIZATION	LEAD TIME (months)
COMBUSTION CHAMBERS	\$4.2 million	15-16
STACKED ROTOR	\$9.8 million	15-16
VANES/DIAPHRAGMS	\$8.6 million	14-15
CONTINGENCY	\$0.2 million	
Total	\$22.8 million	

Utility Operations Requested Trustee Actions – Summary

- **Moses-Adirondack Smart Path Reliability Project – Pole and Foundation Steel**
 - Approve five-year contract award to Sabre Industries, Inc. for \$79 million and an additional \$20 million for a total authorized amount of \$99 million
- **Communication Backbone – Fiber Electronics**
 - Ratify seven-year, \$14.1 million contract award to LightSpeed Technologies Inc.
- **Niagara Fire Alarm and Safety Systems Program**
 - Authorize capital expenditures in the amount of \$37.3 million
 - Ratify five-year, \$28.3 million contract award to Johnson Controls, Inc.
- **Asset Performance Management**
 - Authorize capital expenditures in the amount of \$14.7 million
- **Richard M. Flynn Power Plant – Gas Turbine Outage**
 - Authorize capital expenditures in the amount of \$22.8 million under the existing contract with Siemens

Canal Corporation – December 2018 Trustee Items

Procurement (Services) Contracts – total request of \$67.6 million

- On-Demand Infrastructure Repairs to Canal Facilities
- Dredging of the Syracuse Inner Harbor

On-Demand Infrastructure Repairs to Canal Facilities – Contract Awards (Canal Corp.)

Background

- Approve multiple contracts covering five-year period for the On-Demand Infrastructure Repairs to Canal Facilities for the total amount of \$57.3 million.

Highlights

- Provide standby readiness and perform on-demand repairs as identified for Western, Central and Eastern Canal service areas
- Protect Canal Corporation's infrastructure, public interests, safety and environment
- Avoid prolonged interruptions to navigation while maintaining operations and functionality of NYS Canal System

CONTRACTOR	CONTRACT AWARD
Tioga Construction Co., Inc.	\$18.7 million
D.A. Collins Construction Co., Inc.	\$18.5 million
Hohl Industrial Services, Inc.	\$20.1 million
Total	\$57.3 million

Dredging of the Syracuse Inner Harbor - Contract Award (Canal Corp.)

Background

- Approve a contract to Carver Construction, Inc. in the amount of \$10.3 million for dredging of the Syracuse Inner Harbor in the City of Syracuse, NY.

Highlights

- Bathymetric survey conducted revealed severe filling within the navigation channel
- In some areas, draft is limited to two to three feet
- Contract to perform navigational dredging of the harbor

Canal Corp. Requested Trustee Actions – Summary

- **Demand Infrastructure Repairs to Canal Facilities – Contract Awards**
 - Approve multiple contracts covering five-year period for the On-Demand Infrastructure Repairs to Canal Facilities for the total amount of \$57.3 million.
- **Dredging of the Syracuse Inner Harbor - Contract Award**
 - Approve a contract to Carver Construction, Inc. in the amount of \$10.3 million for dredging of the Syracuse Inner Harbor in the City of Syracuse, NY.



**NY Power
Authority**

**Canal
Corporation**



**NY Power
Authority**

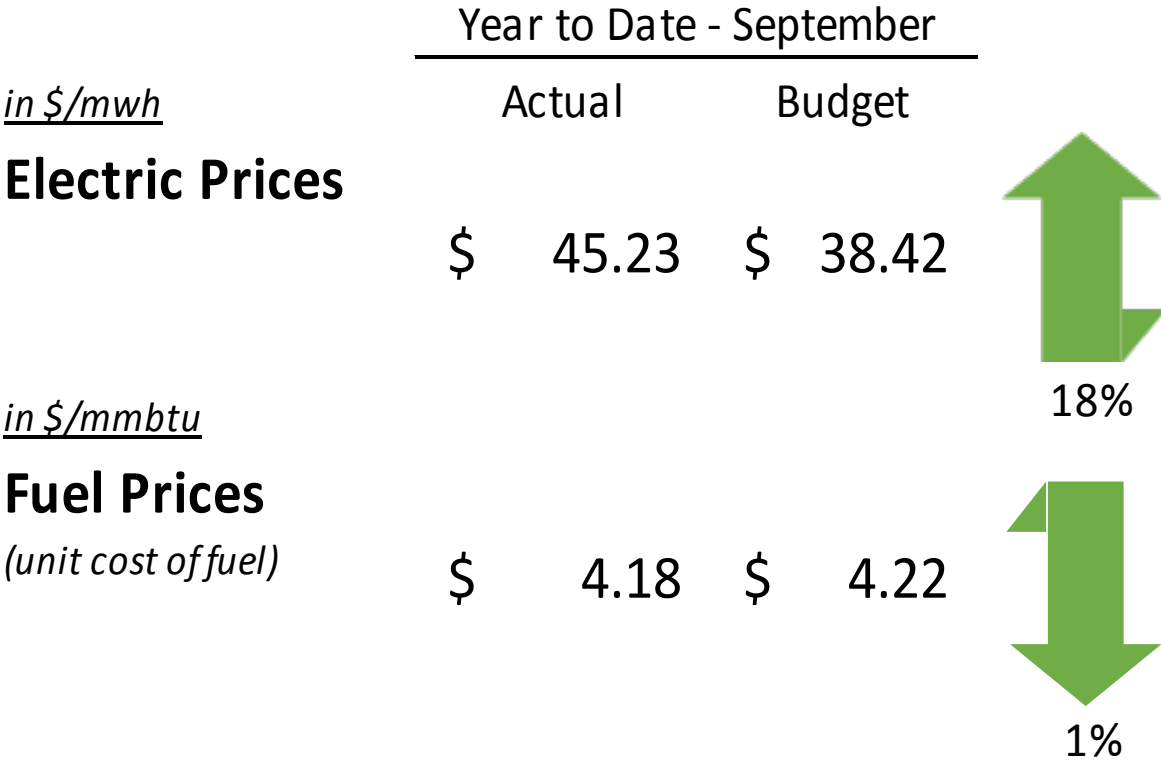
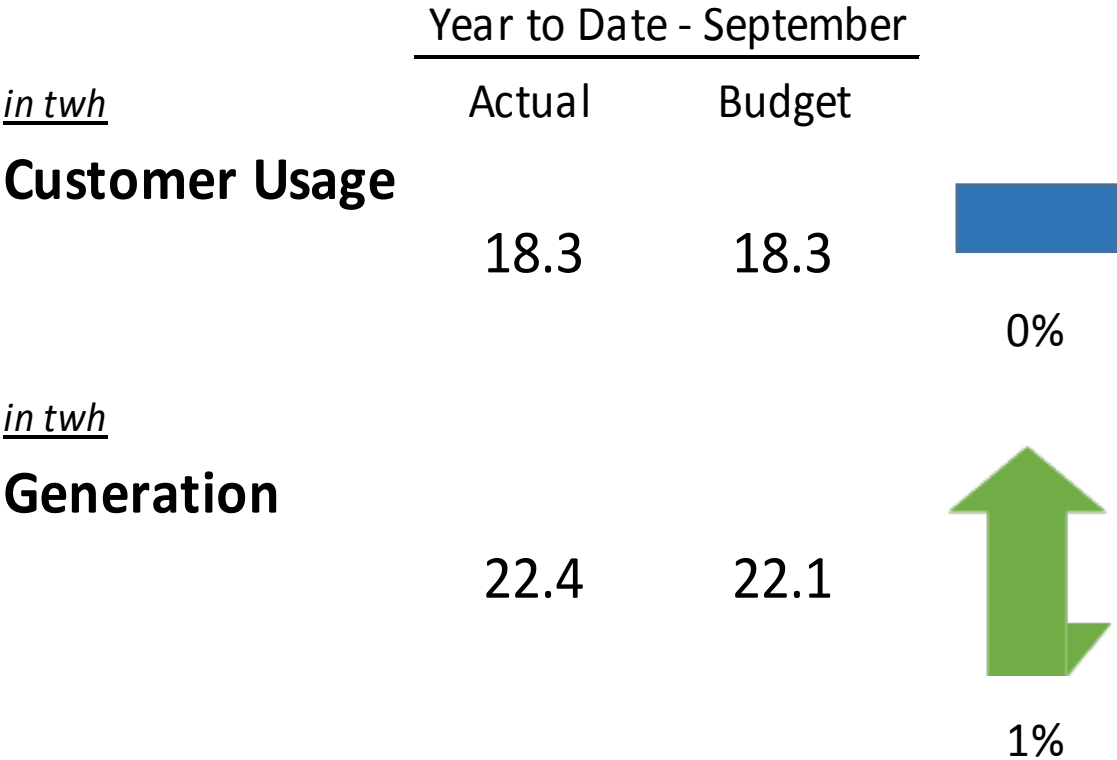
**Canal
Corporation**

Commercial Operations Report

Sarah Salati, EVP Chief Commercial Officer

December 11, 2018

Commercial Ops: Wholesale



Commercial Ops: Economic Development



Economic Development

Recharge NY: 747 MW out of 910 MW allocated

All programs: 395,688 jobs, \$34 Billion capital committed

*data as of October 31, 2018

Commercial Ops: Customer

Year to Date - September

in \$ millions

Customer Investments	Actual 186.8	Budget 135.6



in \$ millions

Non-utility Revenues	14.2	11.4



in \$ millions

Operating Expenses*	20.6	21.1



*Does not include outstanding project claims



Installation of new dewatering centrifuges at NYC DEP's Hunts Point Water Resource Recovery Facility

POWER AUTHORITY
OF THE
STATE OF NEW YORK

30 South Pearl Street
10th Floor
Albany, New York 12207-3425

AGREEMENT FOR THE SALE OF
PRESERVATION POWER AND ENERGY

SERVICE TARIFF NO. 20

<Customer Legal Name>

The POWER AUTHORITY OF THE STATE OF NEW YORK (“Authority”), created pursuant to Chapter 772 of the New York Laws of 1931 and existing under Title I of Article V of the New York Public Authorities Law (“PAL”), having its office and principal place of business at 30 South Pearl Street, 10th Floor, Albany, New York 12207-3425, hereby enters into this Agreement for Sale of Preservation Power and Energy (“Agreement”) with <Customer Legal Name> (“Customer”) having offices at <Customer Address>. The Authority and the Customer are from time to time referred to in this Agreement as “Party” or collectively as “Parties” and agree as follows:

RECITALS

WHEREAS, the Authority is authorized to sell hydroelectric power produced by the St. Lawrence-FDR Power Project known as Preservation Power (or “PP”), as further defined in this Agreement, to qualified businesses in New York State in accordance with PAL § 1005(5) and (13);

WHEREAS, the Customer applied for an allocation of PP or an extension of an existing PP allocation for use at its facilities defined in this Agreement as the “Facility”;

WHEREAS, the Customer has offered to make specific commitments relating to, among other things, the creation and retention of jobs, capital investments, power usage and energy efficiency measures at the Facility, in exchange for an allocation of PP;

WHEREAS, the Authority’s Board of Trustees approved an allocation of PP to the Customer;

WHEREAS, the Authority’s provision of Electric Service under this Agreement is an unbundled service separate from (i) the transmission of the allocation, and (ii) the delivery of the Allocation;

WHEREAS, the Parties have reached an agreement on the terms and conditions applicable for the sale of the Allocation for a term as provided in this Agreement;

WHEREAS, electric service hereunder shall be subject to the rates and other terms and conditions contained in the Service Tariff as further provided in this Agreement; and

WHEREAS, the Authority has complied with requirements of PAL § 1009, and has been authorized to execute the Agreement.

NOW, THEREFORE, in consideration of mutual covenants, terms, and conditions herein, and for other good and valuable consideration, the receipt and adequacy of which the Parties hereby acknowledge, the Parties do hereby mutually covenant and agree as follows:

ARTICLE I **DEFINITIONS**

When used with initial capitalization, whether singular or plural, the following terms, as used in this Agreement, shall have the meanings as set forth below. When used with initial capitalization, whether singular or plural, terms defined in schedules or appendices to this

Agreement shall have the meanings set forth in such schedules or appendices. All other capitalized terms and abbreviations used in this Agreement but not defined in this Section or other provisions of this Agreement or its schedules or appendices shall have the same meaning as set forth in the Service Tariff.

“Adverse Water Condition” means any event or condition, including without limitation a hydrologic or hydraulic condition, that relates to the flow, level, or usage of water at or in the vicinity of the Project and/or its related facilities and structures, and which prevents, threatens to prevent, or causes the Authority to take responsive action that has the effect of preventing, the Project from producing a sufficient amount of energy to supply the full power and energy requirements of firm power and firm energy customers who are served by the Project.

“Agreement” means this Agreement, and unless otherwise indicated herein, includes all schedules, appendices and addenda thereto, as the same may be amended from time to time.

“Allocation” refers to the allocation(s) of PP awarded to the Customer as specified in Schedule A.

“Alternative REC Compliance Program” has the meaning provided in Schedule E.

“Annual Capital Investment Commitment” has the meaning set forth in Schedule B.

“Annual CI Expenditures” has the meaning set forth in Schedule B.

“Base Employment Level” has the meaning set forth in Schedule B.

“Contract Demand” is as defined in applicable Service Tariff.

“Effective Date” means the date that this Agreement is fully executed by the Parties.

“Electric Service” is the Firm Power and Firm Energy associated with the Allocation and sold by the Authority to the Customer in accordance with this Agreement, the Service Tariff and the Rules.

“Energy Services” has the meaning set forth in Article V of this Agreement.

“Expansion Project” has the meaning set forth in Section IV.3.a of this Agreement.

“Expansion Project Capital Investment Commitment” has the meaning set forth in Schedule B.

“Facility” means the Customer’s facilities as described in Schedule A to this Agreement.

“Firm Power” is as defined in the Service Tariff.

“Firm Energy” is as defined in the Service Tariff.

“FERC” means the Federal Energy Regulatory Commission (or any successor organization).

“FERC License” means the first new license issued by FERC to the Authority for the continued operation and maintenance of the Project, pursuant to Section 15 of the Federal Power Act, which became effective September 1, 2007 after expiration of the Project’s original license which became effective in 1957.

“Hydropower Curtailment” means a temporary reduction in Firm Energy to which the Customer is entitled to receive under this Agreement made by the Authority in response to an Adverse Water Condition.

“International Joint Commission” or “IJC” refers to the entity with responsibility to prevent and resolve disputes between the United States of America and Canada under the *1909 Boundary Waters Treaty* and pursues the common good of both countries as an independent and objective advisor to the two governments. The IJC rules upon applications for approval of projects affecting boundary or transboundary waters and may regulate the operation of these projects.

“Load Reduction” has the meaning set forth in Section IX.6 of this Agreement.

“Load Serving Entity” (or “LSE”) means an entity designated by a retail electricity customer (including the Customer) to provide capacity, energy and ancillary services to serve such customer, in compliance with NYISO Tariffs, rules, manuals and procedures.

“Metering Arrangement” has the meaning set forth in Section II.8 of this Agreement.

“NYEM” means the New York Energy Manager, an energy management center owned and operated by the Authority.

“NYEM Agreement” means a written agreement between the Authority and the Customer providing for the Facility’s enrollment and Customer’s participation in NYEM.

“NYEM Participation” has the meaning specified in Schedule B of this Agreement.

“NYISO” means the New York Independent System Operator or any successor organization.

“NYISO Charges” has the meaning set forth in Section VII.3 of this Agreement.

“NYISO Tariffs” means the NYISO’s Open Access Transmission Tariff or the NYISO’s Market Administration and Control Area Services Tariff, as applicable, as such tariffs are modified from time to time, or any successor to such tariffs.

“Physical Energy Audit” or “Audit” means a physical evaluation of the Facility in a manner approved by the Authority that includes at a minimum the following elements: (a) an assessment of the Facility’s energy use, cost and efficiency which produces an energy utilization index for the Facility (such as an Energy Use Intensity or Energy Performance Indicator); (b) a comparison of the Facility’s index to indices for similar buildings/facilities; (c) an analysis of low-cost/no-cost

measures for improving energy efficiency; (d) a listing of potential capital improvements for improving energy consumption; and (e) an initial assessment of potential costs and savings from such measures and improvements.

“Preservation Power” (or “PP”) consists of 490 megawatts (“MW”) of firm hydroelectric power and associated energy produced by the Authority’s St. Lawrence-FDR Power Project.

“Prior Agreement” has the meaning set forth in the recitals to this Agreement.

“Project” means the Authority’s St. Lawrence-FDR Power Project, FERC Project No. 2000.

“Reporting Year” means the yearly interval that the Authority uses for reporting, compliance and other purposes as specified in this Agreement. The Reporting Year for this Agreement is from January 1 through December 31, subject to change by the Authority without notice.

“Rolling Average” has the meaning set forth in Schedule B.

“Rules” are the applicable provisions of Authority’s rules and regulations (Chapter X of Title 21 of the Official Compilation of Codes, Rules and Regulations of the State of New York), as may be modified from time to time by the Authority.

“Service Information” has the meaning set forth in Section II.12 of this Agreement.

“Service Tariff” means the Authority’s Service Tariff No. WNY-20, as may be modified from time to time by the Authority, which contains, among other things, the rate schedule establishing rates and other commercial terms for sale of Electric Service to Customer under this Agreement.

“Schedule A” refers to the Schedule A entitled “Preservation Power Allocations” which is attached to and made part of this Agreement.

“Schedule B” refers to the Schedule B entitled “Supplemental Preservation Power Commitments” which is attached to and made part of this Agreement, including any appendices attached thereto.

“Schedule C” refers to the Schedule C entitled “Takedown Schedule” which is attached to and made part of this Agreement.

“Schedule D” refers to the Schedule D entitled “Zero Emission Credit Charge” which is attached to and made part of this Agreement.

“Schedule E” refers to the Schedule E entitled “Monthly Renewable Energy Credit Charge” which is attached to and made part of this Agreement.

“Substitute Energy” means energy that is provided to the Customer by or through the Authority for the purpose of replacing Firm Energy that is not supplied to the Customer due to a Hydropower Curtailment.

“Takedown” means the portion of the Allocation that Customer requests to be scheduled for a specific period as provided for in Schedule C, if applicable.

“Taxes” is as defined in the Service Tariff.

“Unforced Capacity” (or “UCAP”) means the electric capacity required to be provided by LSEs to serve electric load as defined by the NYISO Tariffs, rules, manuals and procedures.

“Utility Tariff” means the retail tariff(s) of the Customer’s local electric utility filed and approved by the PSC that is applicable to the delivery of PP.

ARTICLE II **ELECTRIC SERVICE**

1. The Authority will make available Electric Service to enable the Customer to receive the Allocation in accordance with this Agreement, the Service Tariff and the Rules. The Customer is not be entitled to receive Electric Service under this Agreement for any PP allocation unless such PP allocation is identified in Schedule A.
2. The Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation specified in Schedule A. If Schedule C specifies a Takedown Schedule for the Allocation, the Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation in accordance with such Takedown Schedule.
3. The Authority shall provide UCAP in amounts necessary to meet the Customer’s NYISO UCAP requirements associated with the Allocation in accordance with the NYISO Tariffs. The Customer shall be responsible to pay the Authority for such UCAP in accordance with the Service Tariff.
4. The provision of Electric Service associated with the Allocation is an unbundled service separate from the transmission and the delivery of the Allocation. The Customer acknowledges and agrees that Customer’s local electric utility, not the Authority, is responsible for the delivery of the Allocation to the Facility in accordance with applicable Utility Tariff(s).
5. The Contract Demand for the Customer’s Allocation may be modified by the Authority if the amount of Firm Power and Firm Energy available for sale as PP from the Project is modified as required to comply with any ruling, order, or decision of any regulatory or judicial body having jurisdiction, including but not limited to FERC. Any such modification will be made on a pro rata basis to all PP customers receiving Electric Service under the Service Tariff, as applicable, based on the terms of such ruling, order, or decision.
6. The Contract Demand may not exceed the Allocation.

7. The Customer's Facility must be metered by the Customer's local electric utility in a manner that is satisfactory to the Authority, or another metering arrangement satisfactory to the Authority must be provided (collectively, "Metering Arrangement"). A Metering Arrangement that is not satisfactory to the Authority shall be grounds, after notice to the Customer, for the Authority to modify, withhold, suspend, or terminate Electric Service to the Customer. If a Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination that it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. After commencement of Electric Service, the Customer shall notify the Authority in writing within thirty (30) days of any alteration to the Facility's Metering Arrangement, and provide any information requested by the Authority (including Facility access) to enable the Authority to determine whether the Metering Arrangement remains satisfactory. If an altered Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. The Authority may, in its discretion, waive any of the requirements provided for in this Section in whole or in part where in the Authority's judgment, another mechanism satisfactory to the Authority can be implemented to enable the Authority to receive pertinent, timely and accurate information relating to the Customer's energy consumption and demand and render bills to the Customer for all fees, assessments and charges that become due in accordance with this Agreement, the Service Tariff, and the Rules.
8. The Customer consents to the exchange of information between the Authority and the Customer's local electric utility pertaining to the Customer that such parties determine is necessary to provide for the allocation, sale and delivery of the Allocation to the Customer at the Facility, the proper and efficient implementation of the PP program, billing related to Electric Service, and/or the performance of such parties' obligations under any contracts or other arrangements between them relating to such matters. In addition, the Customer agrees to complete such forms and consents that the Authority determines are necessary to effectuate such exchanges of information.
9. The provision of Electric Service by the Authority shall be dependent upon the existence of a written agreement between the Authority and the Customer's local electric utility providing for the delivery of the Allocation on terms and conditions that are acceptable to the Authority.
10. The Customer understands and acknowledges that the Authority may from time to time require the Customer to complete forms, execute consents, and provide information (collectively, "Service Information") that the Authority determines is necessary for the provision of Electric Service, the delivery of the Allocation, billing related to Electric Service, the effective administration of the PP program, and/or the performance of contracts or other arrangements between the Authority and the Customer's local electric utility. The Customer's failure to provide Service Information on a timely basis shall be grounds for the Authority in its discretion to modify, withhold, suspend, or terminate Electric Service to the Customer.

ARTICLE III
RATES, TERMS AND CONDITIONS

1. Electric Service shall be sold to the Customer in accordance with the rates, terms and conditions provided for in this Agreement, the Service Tariff and the Rules.
2. The Service Tariff and the Rules may be amended from time to time by the Authority and, if revised, the revised provisions thereof will apply under this Agreement with the same force and effect as if set forth herein. The Authority shall provide at least thirty (30) days prior written notice to the Customer of any proposed change in the Service Tariff or the Rules. No amendment to the Service Tariff or the Rules shall affect the determination of rates for PP to the Customer during the term of the Agreement except insofar as otherwise authorized by this Agreement. This provision shall not limit the Authority's discretion to determine rates applicable to allocations of power and energy awarded to the Customer beyond or in addition to the Allocation.
3. Notwithstanding any provision of this Agreement to the contrary, the power and energy rates for Electric Service shall be subject to increase by Authority at any time upon 30 days prior written notice to Customer if, after consideration by Authority of its legal obligations, the marketability of the output or use of the Project and Authority's competitive position with respect to other suppliers, Authority determines in its discretion that increases in rates obtainable from any other Authority customers will not provide revenues, together with other available Authority funds not needed for operation and maintenance expenses, capital expenses, and reserves, sufficient to meet all requirements specified in Authority's bond and note resolutions and covenants with the holders of its financial obligations. Authority shall use its best efforts to inform Customer at the earliest practicable date of its intent to increase the power and energy rates pursuant to this provision. With respect to any such increase, Authority shall forward to Customer with the notice of increase, an explanation of all reasons for the increase, and shall also identify the sources from which Authority will obtain the total of increased revenues and the bases upon which Authority will allocate the increased revenue requirements among its customers. Any such increase in rates shall remain in effect only so long as Authority determines such increase is necessary to provide revenues for the purposes stated in the preceding sentences.
4. In addition to all other fees, assessments and charges provided for in the Agreement, the Service Tariff and the Rules, the Customer shall be responsible for payment of the Zero Emission Credit Charge and Monthly Renewable Energy Credit Charge provided for in Schedule D and Schedule E, respectively, of this Agreement.

ARTICLE IV
SUPPLEMENTAL COMMITMENTS

1. Supplemental Commitments. Schedule B sets forth the Customer's "Supplemental Preservation Power Commitments" ("Supplemental Commitments"). The Authority's obligation to provide Electric Service under this Agreement is expressly conditioned upon the Customer's timely compliance with the Supplemental Commitments described in Schedule B as further provided in this Agreement. The Customer's Supplemental Commitments are in addition to all other commitments and obligations provided in this Agreement.

2. Special Provisions Relating to a New or Expanded Facility.

a. Proposed New or Expanded Facility; Failure to Complete.

If Schedule B provides for the construction of a new facility or an expansion of an existing facility (collectively, “Expansion Project”), and the Customer fails to complete the Expansion Project by the date specified in Schedule B, the Authority may, in its discretion, (a) cancel the Allocation, or (b) if it believes that the Expansion Project will be completed in a reasonable time, agree with the Customer to extend the time for completion of the Expansion Project.

b. Proposed New or Expanded Facility; Partial Performance.

If the Expansion Project results in a completed Facility that is only partially operational, or is materially different than the Expansion Project agreed to in Schedule B (as measured by such factors as size, capital investment expenditures, capital improvements, employment levels, estimated energy demand and/or other criteria determined by the Authority to be relevant), the Authority may, in its discretion, on its own initiative or at the Customer’s request, make a permanent reduction to the Allocation and Contract Demand to an amount that the Authority determines to fairly correspond to the completed Facility.

c. Notice of Completion; Commencement of Electric Service.

- (i) The Customer shall give the Authority not less than ninety (90) days' advance written notice of the anticipated date of completion of an Expansion Project. The Authority will inspect the Expansion Project for the purpose of verifying the status of the Expansion Project and notify Customer of the results of the inspection. The Authority will thereafter commence Electric Service within a reasonable time subject to the other provisions of this Agreement based on applicable operating procedures of the Authority, Customer’s local electric utility and NYISO.
- (ii) In the event of an Expansion Project being completed in multiple phases, at the Customer’s request the Authority may, in its discretion, allow commencement of part of the Allocation upon completion of any such phase, provided the Authority will similarly inspect the Expansion Project for the purpose of verifying the status of the completed phase of the Expansion Project. Upon such verification by the Authority of any such completed phase, the Authority, in its discretion, will determine an amount of kW that fairly corresponds to the completed phase of the Expansion Project, taking into account relevant criteria such as any capital expenditures, increased employment levels, and/or increased electrical demand associated with the completed phase of the Expansion Project.

d. Other Rights and Remedies Unaffected.

Nothing in this Article is intended to limit the Authority's rights and remedies provided for in the other provisions of this Agreement, including without limitation the provisions in Schedule B of this Agreement.

ARTICLE V
ENERGY-RELATED PROJECTS, PROGRAMS AND SERVICES

The Authority shall periodically communicate with the Customer for the purpose of informing the Customer about energy-related projects, programs and services ("Energy Services") offered by the Authority that in the Authority's view could provide value to the Customer and/or support the State's Clean Energy Standard. The Customer shall review and respond to all such offers in good faith, provided, however, that, except as otherwise provided for in this Agreement, participation in any such Energy Services shall be at the Customer's option, and subject to such terms and conditions agreed to by the Parties in one or more definitive agreements.

ARTICLE VI
SERVICE TARIFF; CONFLICTS

1. A copy of the Service Tariff is attached to this Agreement as Exhibit 1 and shall apply under this Agreement with the same force and effect as if fully set forth herein. The Customer consents to the application of the Service Tariff.
2. In the event of any inconsistencies, conflicts, or differences between the provisions of the Service Tariff and the Rules, the provisions of the Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of this Agreement and the Service Tariff or the Rules, the provisions of this Agreement shall govern.

ARTICLE VII
TRANSMISSION AND DELIVERY

1. The Customer shall be responsible for:
 - a. complying with all requirements of its local electric utility (including any other interconnecting utilities) that are necessary to enable the Customer to receive delivery service for the Allocation. Delivery of the Allocation shall be subject to the Utility Tariff;
 - b. paying its local electric utility for delivery service associated with the Allocation in accordance with the Utility Tariff, and if the Authority incurs any charges associated with such delivery service, reimbursing the Authority for all such charges; and
 - c. obtaining any consents and agreements from any other person that are necessary for the delivery of the Allocation to the Facility, and complying with the requirements of any such person, provided that any such consents, agreements and requirements shall be subject to the Authority's approval.

2. The Customer understands and acknowledges that delivery of the Allocation will be made over transmission facilities under the control of the NYISO. The Authority will act as the LSE with respect to the NYISO, or arrange for another entity to do so on the Authority's behalf. The Customer agrees and understands that it shall be responsible to the Authority for all costs incurred by the Authority with respect to the Allocation for the services established in the NYISO Tariff, or other applicable tariff ("NYISO Charges"), as set forth in the Service Tariff or any successor service tariff, regardless of whether such NYISO Charges are transmission-related.

ARTICLE VIII

BILLING AND BILLING METHODOLOGY

1. The billing methodology for the Allocation shall be determined on a "load factor sharing" basis in a manner consistent with the Utility Tariff and any agreement between the Authority and the Customer's local electric utility. An alternative basis for billing may be used provided the Parties agree in writing and the local electric utility provides its consent if such consent is deemed necessary.
2. Except as otherwise provided in this Agreement, all other provisions with respect to billing are set forth in the Service Tariff and the Rules.
3. The rights and remedies provided to the Authority in this Article are in addition to any and all other rights and remedies available to Authority at law or in equity.

ARTICLE IX

HYDROPOWER CURTAILMENTS AND SUBSTITUTE ENERGY

1. In the event of an Adverse Water Condition, the Authority will have the right in its discretion to implement Hydropower Curtailments. The Authority will implement Hydropower Curtailments on a non-discriminatory basis as to all Authority customers that are served by the Project.
2. In the event of a Hydropower Curtailment, the Authority will provide Substitute Energy to the Customer and the Customer shall pay for such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, Substitute Energy shall be sourced from markets administered by the NYISO.
3. For each kilowatt-hour of Substitute Energy provided by the Authority during a Hydropower Curtailment, the Customer shall pay the Authority directly during the billing month: (1) the difference between the market cost of the Substitute Energy and the charge for firm energy as provided for in this Agreement; and (2) any NYISO charges and taxes the Authority incurs in connection with the provision of such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, billing and payment for Substitute Energy provided for Hydropower Curtailments shall be governed by the provisions of the Service Tariff relating to the rendition and payment of bills for Electric Service.
4. The Authority shall be under no obligation to deliver, and will not deliver, any such curtailed energy to the Customer in later billing periods.

5. The Authority may require the Customer to enter into a separate agreement relating to the provision and sale of Substitute Energy. The provisions of this Agreement will remain in effect notwithstanding the existence of any such separate agreement.

ARTICLE X

EFFECTIVENESS, TERM AND TERMINATION

1. This Agreement shall become effective and legally binding on the Parties on the Effective Date.
2. Once commenced, Electric Service under the Agreement shall continue until the earliest of: (a) termination by the Customer with respect to its Allocation upon ninety (90) days prior written notice to the Authority; (b) termination by the Authority pursuant to this Agreement, the Service Tariff, or the Rules; or (c) expiration of the Allocation by its own term as specified in Schedule A.
3. The Customer may exercise a partial termination of the Allocation upon at least sixty (60) days' prior written notice to the Authority. The Authority will effectuate the partial termination as soon as practicable after receipt of such notice taking account of the Authority's internal procedures and requirements of the Customer's local electric utility.
4. The Authority may cancel service under this Agreement or modify the quantities of Firm Power and Firm Energy associated with the Allocation: (1) if such cancellation or modification is required to comply with any final ruling, order or decision of any regulatory or judicial body of competent jurisdiction (including any licensing or re-licensing order or orders of the FERC or its successor agency); or (2) as otherwise provided in this Agreement, the Service Tariff, or the Rules.

ARTICLE XI

EXTENSIONS OF ALLOCATION; AWARD OF ADDITIONAL ALLOCATIONS

1. The Customer may apply to the Authority for an extension of the term of the Allocation identified in Schedule A:
 - a. during the thirty-six (36) month period immediately preceding the scheduled expiration of the Allocation;
 - b. pursuant to any other process that the Authority establishes; or
 - c. with the Authority's written consent.
2. Upon proper application by the Customer, the Authority may in accordance with applicable law and Authority procedures award additional allocations of PP at such rates and on such terms and conditions as the Authority establishes. If the Customer agrees to purchase Electric Service associated with any such additional allocation, the Authority will (a) incorporate any such additional allocations into Schedule A, or in its discretion will produce a supplemental schedule, to reflect any such additional allocations, and (b) produce a modified Appendix to Schedule B, as the Authority determines to be appropriate. The Authority will furnish the Customer with any such modified Schedule A, supplemental schedule, and/or a modified

Appendix to Schedule B, within a reasonable time after commencement of Electric Service for any such additional allocation.

3. In addition to any requirements imposed by law, the Customer hereby agrees to furnish such documentation and other information as the Authority requests to enable the Authority to evaluate any requests for extension of the Allocation or additional allocations and consider the terms and conditions that should be applicable of any extension or additional allocations.

ARTICLE XII

NOTICES

1. Notices, consents, authorizations, approvals, instructions, waivers or other communications provided in this Agreement shall be in writing and transmitted to the Parties as follows:

To: The Authority

New York Power Authority
123 Main Street
White Plains, New York 10601

Email:

Facsimile: _____

Attention: Manager – Business Power Allocations and Compliance

To: The Customer

<Customer Legal Name>

<Customer Address>

Email:

Facsimile:

Attention:

2. The foregoing notice/notification information pertaining to either Party may be changed by such Party upon notification to the other Party pursuant to Section XII.1.
3. Except where otherwise herein specifically provided, any notice, communication or request required or authorized by this Agreement by either Party to the other shall be deemed properly given: (a) if sent by U.S. First Class mail addressed to the Party at the address set forth above; (b) if sent by a nationally recognized overnight delivery service, two (2) calendar days after being deposited for delivery to the appropriate address set forth above; (c) if delivered by hand, with written confirmation of receipt; (d) if sent by facsimile to the appropriate fax number as set forth above, with written confirmation of receipt; or (e) on the date of transmission if sent by electronic communication to the appropriate address as set forth above, with confirmation of receipt. Either Party may change the addressee and/or address for correspondence sent to it by giving written notice in accordance with the foregoing.

ARTICLE XIII
SUCCESSORS AND ASSIGNS; RESALE OF HYDROPOWER

1. This Agreement shall be binding upon, shall inure to the benefit of, and may be performed by, the legal successors and assigns of either Party hereto, provided that no assignment by either Party or any successor or assignee of such Party of its rights and obligations hereunder shall be made or become effective without the prior written consent of the other Party, which consent shall not be unreasonably withheld or conditioned. Notwithstanding the foregoing sentence, the Authority may require such approvals, and such consents and other agreements from the Customer and other parties, that the Authority determines are necessary in order to effectuate any such assignment.
2. The Customer may not transfer any portion of the Allocation to any other person, or a location different than the Facility, unless: (a) the Authority in its discretion authorizes the transfer Authority; (b) all other requirements applicable to a transfer, including board approvals, are satisfied; and (c) the transfer is effectuated in a form and subject to such terms and conditions approved by the Authority. Any purported transfer that does not comply with the foregoing requirements shall be invalid and constitute grounds for the Authority in its discretion to suspend Electric Service or terminate the Allocation and/or this Agreement.
3. The Customer may not sell any portion of the Allocation to any other person, allow any other person to use any portion of the Allocation, or allow any other person to interconnect to the Facility. Any purported sale shall be invalid and any violation of this provision shall constitute grounds for the Authority in its discretion to suspend Electric Service, or terminate the Allocation and/or this Agreement.

ARTICLE XIV
MISCELLANEOUS

1. Choice of Law

This Agreement shall be governed by and construed in accordance with the laws of the State of New York to the extent that such laws are not inconsistent with the FERC License and the Niagara Redevelopment Act (16 USC §§836, 836a) and rulings by the IJC and without regard to conflicts of law provisions.

2. Venue

The Parties: (a) consent to the exclusive jurisdiction and venue of any state court within or for Albany County, New York, with subject matter jurisdiction for adjudication of any claim, suit, action or any other proceeding in law or equity arising under, or in any way relating to this Agreement; (b) agree to accept service of process; and (c) will not raise any argument of inconvenient forum.

3. Previous Agreements; Modifications; and Interpretation

- a. This Agreement shall constitute the sole and complete agreement of the Parties hereto with respect to the sale of the Allocation and the subject matter of the Agreement, and

supersedes all previous communications and agreements between the Parties, oral or written, with reference to the sale of the Allocation.

- b. No modifications of this Agreement shall be binding upon the Parties hereto or either of them unless such modification is in writing and is signed by a duly authorized officer of each of them.
- c. No provision shall be construed against a Party on the basis that such Party drafted such provision.

4. Waiver

Any waiver at any time by either the Authority or the Customer of their rights with respect to a default or of any other matter arising out of this Agreement shall not be deemed to be a waiver with respect to any other default or matter. No waiver by either Party of any rights with respect to any matter arising in connection with this Agreement shall be effective unless made in writing and signed by the Party making the waiver.

5. Severability and Voidability

If any term or provision of this Agreement shall be invalidated, declared unlawful or ineffective in whole or in part by an order of the FERC or a court of competent jurisdiction, such order shall not be deemed to invalidate the remaining terms or provisions hereof. Notwithstanding the preceding sentence, if any provision of this Agreement is rendered void or unenforceable or otherwise modified by a court or agency of competent jurisdiction, the entire Agreement shall, at the option of either Party and only in such circumstances in which such Party's interests are materially and adversely impacted by any such action, be rendered void and unenforceable by such affected Party.

ARTICLE XV
EXECUTION

To facilitate execution, this Agreement may be executed in as many counterparts as may be required, and it shall not be necessary that the signatures of, or on behalf of, each Party, or that the signatures of all persons required to bind any Party, appear on each counterpart; but it shall be sufficient that the signature of, or on behalf of, each Party, or that the signatures of the persons required to bind any Party, appear on one or more of the counterparts. All counterparts shall collectively constitute a single agreement. It shall not be necessary in making proof of this Agreement to produce or account for more than a number of counterparts containing the respective signatures of, or on behalf of, all of the Parties hereto. The delivery of an executed counterpart of this Agreement as a PDF or similar file type transmitted via electronic mail, cloud based server, e-signature technology or similar electronic means shall be legal and binding and shall have the same full force and effect as if an original executed counterpart of this Agreement had been delivered.

[SIGNATURES FOLLOW ON NEXT PAGE]

AGREED:

<Customer Legal Name>

By: _____

Title: _____

Date: _____

AGREED:

POWER AUTHORITY OF THE STATE OF NEW YORK

By: _____
John R. Koelmel, Chairman

Date: _____

SCHEDULE A
PRESERVATION POWER ALLOCATIONS

Customer: <Customer Legal Name>				
Type of Allocation	Allocation Amount (kW)	Facility and Address	<Trustee Approval Date>	Allocation Expiration Date
Preservation Power	<Allocation Amount>	<Facility Address>, NY <Facility Zipcode>		

SCHEDULE B
SUPPLEMENTAL PRESERVATION POWER COMMITMENTS

ARTICLE I
SPECIFIC SUPPLEMENTAL COMMITMENTS

1. Employment Commitments

- a. The Customer shall create and maintain the employment level set forth in the Appendix to this Schedule B (the “Base Employment Level”). Such Base Employment Level shall be the total number of full-time positions held by: (a) individuals who are employed by the Customer at Customer’s Facility identified in the Appendix to this Schedule, and (b) individuals who are contractors or who are employed by contractors of the Customer and assigned to the Facility identified in such Appendix (collectively, “Base Level Employees”). The number of Base Level Employees shall not include individuals employed on a part-time basis (less than 35 hours per week); provided, however, that two individuals each working 20 hours per week or more at such Facility shall be counted as one Base Level Employee.
- b. The Base Employment Level shall not be created or maintained by transfers of employees from previously held positions with the Customer or its affiliates within the State of New York, except that the Base Employment Level may be filled by employees of the Customer laid off from other Customer facilities for *bona fide* economic or management reasons.
- c. The Authority may consider a request to change the Base Employment Level based on a claim of increased productivity, increased efficiency or adoption of new technologies or for other appropriate reasons as determined by the Authority. Any such change shall be within Authority’s discretion.

2. Capital Investment Commitments

The Customer shall make the capital investments specified in the Appendix to this Schedule B.

3. Power Utilization

For each month the Authority provides Electric Service to the Customer, the Customer shall utilize the entire Allocation, as represented by the Billing Demand (as such term is described in the Service Tariff), provided, however, that if only part of the Allocation is being utilized in accordance with Schedule C, the Customer shall utilize such partial amount of the Allocation.

4. Energy Efficiency and Conservation Program

- a. The Customer shall implement an energy efficiency and conservation program at the Facility through either (a) enrollment of the Facility and participation in NYEM in accordance with a NYEM Agreement, or (b) one or more Physical Energy Audits of the Facility, or (c) a combination of such measures, in accordance with the provisions of this Article.
- b. The Authority shall transmit to the Customer a NYEM Agreement and an election form. The Customer shall elect to either (a) enroll the Facility and participate in NYEM for a three-year term (“NYEM Participation”) in accordance with the NYEM Agreement, or (b) perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority’s communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit within three (3) years of the Effective Date of this Agreement, at its own expense.
- c. The Authority shall, on or before the expiration of the three-year term of the NYEM Agreement, transmit to the Customer a NYEM Agreement specifying the terms and conditions that would apply to NYEM participation for a second term, and an election form. The Customer shall elect either (a) NYEM Participation for a second term, or (b) to perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority’s communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit during the calendar year that begins six years after of the Effective Date of this Agreement, at its own expense.
- d. The Authority may in its discretion waive the requirement for a Physical Energy Audit, or may agree to a limited energy audit of the Facility, where it determines that the Physical Energy Audit is unnecessary based on the age of the Facility, energy efficiency and conservation improvements made at the Facility, the length of the Allocation, or other considerations the Authority determines to be relevant.

ARTICLE II
RECORDKEEPING, REPORTING AND FACILITY ACCESS

1. Employment

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority, of the total number of Base Level Employees who are employed at or assigned to the Customer's Facility identified in the Appendix to this Schedule, as reported to the United States Department of Labor (or as reported in such other record as agreed upon by the Authority and the Customer). Such report shall separately identify the individuals who are employed by the Customer, and the individuals who are contractors or who are employed by contractors of the Customer, and shall be certified to be correct by an officer of the Customer, plant manager or such other person authorized by the Customer to prepare and file such report and shall be provided to the Authority on or before the last day of February following the end of the most recent calendar year. The Authority shall have the right to examine and audit on reasonable advance written notice all non-confidential written and electronic records and data concerning employment levels including, but not limited to, personnel records and summaries held by the Customer and its affiliates relating to employment in New York State.

2. Capital Investments

The Customer shall comply with the recordkeeping, recording and reporting requirements specified in the Appendix to this Schedule B.

3. Power Usage

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority on or before the last day of February following the end of the most recent calendar year, of the maximum demand utilized each month in the Facility receiving the power covered by the Agreement.

4. Energy Efficiency and Conservation Program

Upon the Authority's request, the Customer shall provide the Authority with (a) a copy of the results of any Physical Energy Audit performed at the Facility (or, at the Authority's option, a report describing the results), performed pursuant to this Article; and (b) a description of any energy efficiency or conservation measures that the Customer has implemented at the Facility in response to any Physical Energy Audit or as a result of NYEM Participation.

5. Facility Access

Notwithstanding any other provision of the Agreement, the Customer shall provide the Authority with such access to the Facility, and such documentation, as the

Authority deems necessary to determine the Customer's compliance with the Customer's Supplemental Commitments specified in this Schedule B.

ARTICLE III

COMPLIANCE ACTION BY THE AUTHORITY

1. Employment

If the year-end monthly average number of employees is less than 90% of the Base Employment Level set forth in the Appendix to this Schedule B for the subject calendar year, the Authority may reduce the Contract Demand in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount of reduction will be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average monthly employment during the subject calendar year divided by the Base Employment Level. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, the Agreement shall automatically terminate.

2. Capital Investment Commitment

The Authority may reduce the Contract Demand as provided in the Appendix to this Schedule B if the Customer does not comply with the Capital Investment Commitment.

3. Power Utilization Level

If the average of the Customer's six (6) highest Billing Demands (as such term is described in the Service Tariff) for Preservation Power is less than 90% of the Customer's Contract Demand in such calendar year the Authority may reduce the Contract Demand subject to in accordance with the procedures provide in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average of the six (6) highest Billing Demands for in such calendar year divided by the Contract Demand. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.

4. Additional Compliance Action

In addition to the Authority's other rights and remedies provided in this Agreement, the Service Tariff and the Rules, the Authority may suspend Electric Service to the Customer if the Customer does not comply with any of the requirements in Section I.4 or Article II of this Schedule B.

5. Notice of Intent to Reduce Contract Demand

In the event that the Authority determines that the Contract Demand will be wholly or partially reduced pursuant to Sections III.1, III.2, or III.3 of this Schedule B, the Authority shall provide the Customer with at least thirty (30) days prior written notice of the proposed reduction, specifying the amount and reason for the reduction. Before implementing any reduction, the Authority may consider the Customer's scheduled or unscheduled maintenance, Facility upgrade periods, and the business cycle. If, at the end of the thirty (30) day notice period, the Authority determines that a reduction is warranted, it shall provide the Customer with notice of such determination and provide the Customer with sixty (60) days to present a proposed plan with actionable milestones to cure the deficiency. The Authority shall respond to the Customer concerning the acceptability of any proposed plan that is provided in accordance with this Section III.5 within thirty (30) days of the Authority's receipt of such proposed plan. It shall be within the Authority's discretion whether or not to accept the Customer's proposed plan, require a different plan, or implement the reduction of the Contract Demand.

APPENDIX TO SCHEDULE B

BASE EMPLOYMENT LEVEL

The Customer shall employ at least ____ full-time employees (“Base Employment Level”) at the Customer’s Facility. The Base Employment Level shall be maintained for the term of the Allocation through the Allocation Expiration Date specified in Schedule A in accordance with Article I of Schedule B.

CAPITAL INVESTMENT COMMITMENTS

1. **Annual Capital Investment Commitment** (if applicable, as specified below)
 - a. Each Reporting Year, the rolling average of the annual capital investments made by the Customer at the Facility (“Rolling Average”) shall total not less than \$_____ (the “Annual Capital Investment Commitment”). For purposes of this provision, “Rolling Average” means the three-year average comprised of (1) the total amount of capital investments (“Annual CI Expenditures”) made by the Customer at the Facility during the current Reporting Year, and (2) the Annual CI Expenditures made by the Customer at the Facility during the two prior Reporting Years.
 - b. Each year, the Customer shall record its Annual CI Expenditures for purposes of enabling the Authority to determine and verify the Rolling Average, which shall be provided to the Authority in a form specified by the Authority on or before the last day of February following the end of the most recent calendar year.
 - c. If the Customer’s Rolling Average as determined by the Authority is less than 90% of its Annual Capital Investment Commitment for the Reporting Year, the Contract Demand may be reduced by the Authority in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the Rolling Average divided by the Annual Capital Investment Commitment. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.
2. **Expansion Project–Capital Investment Commitment** (if applicable, as specified below)
 - a. The Customer shall make a minimum capital investment of \$_____ to construct, furnish and/or expand the Facility (“Expansion Project Capital Investment Commitment”). The Expansion Project Capital Investment Commitment is expected to consist of the following approximate expenditures on the items indicated:

Line Item 1 -	\$ _____
Line Item 2 -	\$ _____
Line Item 3 -	\$ _____

Total Expansion Project Capital Investment Commitment:

- b. The Expansion Project Capital Investment Commitment shall be made, and the Facility shall be completed and fully operational, no later than _____ (*i.e.*, within three (3) years of the date of the Authority's award of the Allocation). Upon request of the Customer, such date may be extended in the discretion of the Authority.

SCHEDULE C
TAKEDOWN SCHEDULE

SCHEDULE D
ZERO EMISSION CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in Service Tariff No. WNY-2, or in the Rules.

“Affected LSEs” has the meaning provided in Section II.2 of this Schedule D.

“CES Order” means the Order issued by the PSC entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“PP Program ZEC Costs” has the meaning provided in Section II.4.b of this Schedule D.

“Government Action” has the meaning provided in Section II.8 of this Schedule D.

“Load Serving Entity” or “LSE” has the meaning provided in the CES Order.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the PP power program as authorized in the Power Authority Act.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“Zero Emission Credit” or “ZEC” has the meaning provided in the CES Order.

“Zero Emission Credit Charge” or “ZEC Charge” means the charge to the Customer established in this Schedule D.

“ZEC Purchase Obligation” has the meaning provided in Section II.2 of this Schedule D.

“ZEC Program Year” has the meaning provided in Section II.2 of this Schedule D.

II. ZEC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of the Service Tariff or the Rules, the Customer shall be subject to a ZEC Charge as provided in this Schedule D. The ZEC Charge shall be in addition to all other charges, fees and assessments provided for in the Agreement, the Service Tariff and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the ZEC Charge.
2. As provided in the CES Order, the Public Service Commission, as part of the CES and Tier 3 of the Renewable Energy Standard, imposed an obligation on Load Serving Entities that are subject to the CES Order (“Affected LSEs”) to purchase Zero Emission Credits from NYSERDA in an amount representing the Affected LSE’s proportional share of ZECs calculated on the basis of the amount of electric load the LSE serves in relation to the total electric load served by all Load Serving Entities in the New York Control area, to support the preservation of existing at risk nuclear zero emissions attributes in the State (the “ZEC Purchase Obligation”). The ZEC Purchase Obligation is implemented on the basis of program years running from April 1 through March 31 of each year (“ZEC Program Year”).
3. The ZEC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of supporting the CES and Tier 3 of the RES and implementing the PP power program in a manner that is consistent with the New York State Energy Plan. The Authority will comply with the CES and Tier 3 of the RES by applying a form of ZEC Purchase Obligation to the end-user load for which the Authority serves as a load serving entity, including the load that the Authority serves under the PP power program.
4. The ZEC Charge, which is intended to recover from the Customer costs that the Authority incurs for purchasing ZECs in quantities that are attributable to the Customer’s PP load served under this Agreement, will be determined and assessed to the Customer as follows:
 - a. The cost of the total ZEC Purchase Obligation for all LSEs in the New York Control Area, including the Authority as a participating load serving entity, will be assessed pursuant to the methodology provided in the CES Order. The Authority will purchase its proportionate share of ZECs from NYSERDA based on the proportion of the forecasted total kilowatt-hours load served by the Authority (i.e., total Authority LSE load) in relation to the forecasted total kilowatt-hours load served by all LSEs in the New York Control Area as

provided in the CES Order. The ZEC Purchase Obligations may be based on initial load forecasts with reconciliations made at the end of each ZEC Program Year by NYSERDA.

- b. The Authority will allocate costs from its ZEC Purchase Obligation between its power programs/load for which it serves as load serving entity, including the PP load that it serves (the “PP Program ZEC Costs”). Such allocation will be based on the forecasted kilowatt-hours load of the PP program to be served by the Authority in relation to the forecasted total kilowatt-hours load served by the Authority (total Authority LSE load) for each ZEC Program Year. In addition, any balance resulting from the ZEC Program Year-end reconciliation of ZEC Purchase Obligations will be allocated to the PP power program based on the proportion of the actual annual kilowatt-hours load served under such programs to total actual annual kilowatt-hours load served by the Authority (total Authority LSE load).
 - c. The Authority will allocate a portion of the PP Program ZEC Costs to the Customer as the ZEC Charge based on the proportion of the Customer’s actual kilowatt-hours load for the PP purchased by the Customer to total kilowatt-hours load served by the Authority under the PP power program (i.e., PP Program level load). In addition, any balance resulting from the ZEC Program Year-end reconciliation of the ZEC Purchase Obligation referenced above will be passed through to the Customer based on the proportion of the Customer’s annual kilowatt-hours load purchased under this Agreement to total annual kilowatt-hours load served under the PP power program by the Authority (PP Program level load). The ZEC Charge assessed to the Customer shall not include any costs resulting from the Authority’s inability to collect a ZEC Charge from any other Authority customer.
5. The Authority may, in its discretion, include the ZEC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the ZEC Charge pursuant to another Authority-established procedure.
6. The Authority may, in its discretion, modify the methodology used for determining the ZEC Charge and the procedures used to implement such ZEC Charge on a nondiscriminatory basis among affected PP customers, upon consideration of such matters as Public Service Commission orders modifying or implementing the CES Order, guidance issued by the New York Department of Public Service, and other information that the Authority reasonably determines to be appropriate to the determination of such methodology. The Authority shall provide Customer with reasonable notice of any modifications to the methodology or procedures used to determine and implement the ZEC Charge.
7. Nothing in this Schedule shall limit or otherwise affect the Authority’s right to charge or collect from the Customer any rate, charge, fee, assessment, or tax

provided for under any other provision of the Agreement, or any provision of the Service Tariff, or the Rules.

8. If the ZEC Purchase Obligation is modified or terminated by the Public Service Commission or other controlling governmental authority (collectively, “Government Action”), the Authority shall modify or terminate the ZEC Charge, and assess any additional charges or provide any credits to the Customer, to the extent that the Authority determines such actions to be appropriate based on such Government Action.

SCHEDULE E
MONTHLY RENEWABLE ENERGY CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in the Service Tariff No, or in the Rules.

“Alternative REC Compliance Program” has the meaning provided in Section III.1 of this Schedule E.

“Annual REC Percentage Target” has the meaning provided in Section II.2 of this Schedule E.

“CES Order” means the Order issued by the Public Service Commission entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“Clean Energy Standard” or “CES” means the Clean Energy Standard adopted by the State in the CES Order.

“Load Serving Entity” has the meaning provided in the CES Order.

“Mandatory Minimum Percentage Proportion” has the meaning provided in the CES Order.

“Monthly Renewable Energy Credit Charge” or “Monthly REC Charge” means the monthly charge to the Customer established in this Schedule E.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Credit” or “REC” refers to a qualifying renewable energy credit as described in the CES Order.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the PP power program as authorized in the Power Authority Act.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“REC Compliance Measures” mean: (1) the Authority’s procurement of RECs from NYSERDA in accordance with NYSERDA procedures and/or the CES Order; (2) the Authority’s procurement of RECs from available REC markets; (3) the Authority’s procurement of RECs from sources other than those identified in items (1) and (2) of this definition, including through a procurement process adopted by the Authority; and/or (4) any other measure that the PCS authorizes a Load Serving Entity to implement for the purpose of meeting the applicable Mandatory Minimum Percentage Proportion.

“Total Monthly PP Load” has the meaning provided in Section II.3.b of this Schedule E

“Total Monthly REC Costs” has the meaning provided in Section II.3.b of this Schedule E.

II. MONTHLY REC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of the Service Tariff, or the Rules, the Customer shall be subject to a Monthly REC Charge as provided in this Schedule E. The Monthly REC Charge is in addition to all other charges, fees and assessments provided in the Agreement, the Service Tariff and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the Monthly REC Charge.
2. The Monthly REC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of complying with the CES and Tier 1 of the RES and implementing the PP power program in a manner that is consistent with the New York State Energy Plan, pursuant to which the Authority will invest in new renewable generation resources to serve its PP customers. Such investments will be made through the procurement of RECs through REC Compliance Measures in quantities that are intended to address the annual Mandatory Minimum Percentage Proportions as applied by the Authority to the total PP load that the Authority will serve each calendar year (the “Annual REC Percentage Target”) for the purpose of ultimately meeting the RES.
3. The Monthly REC Charge, which is intended to recover from the Customer costs that the Authority incurs for implementing REC Compliance Measures that are attributable to the Customer’s PP load served under this Agreement, will be determined and assessed to the Customer as follows:

- a. The Authority shall have the right, for each calendar year to implement such REC Compliance Measures as it determines in its discretion to be appropriate for the purpose of meeting the Annual REC Percentage Target for the total PP load that it will serve during such calendar year.
- b. The Authority will, for each month of each calendar year, calculate the total costs ("Total Monthly REC Costs") that the Authority has incurred or estimates that it will incur from implementing RES Compliance Measures for the purpose of meeting the Annual REC Percentage Target for the total PP kilowatt-hour load for the month ("Total Monthly PP Load"). The Total Monthly REC Costs may be calculated based on forecasts of the Total Monthly PP Load that the Authority expects to serve for the month, or on a lagged basis based on the actual Total Monthly PP Load that the Authority served for the month.
- c. Each month, the Authority will assess to the Customer, as a Monthly REC Charge, which will represent the Customer's share of the Total Monthly REC Costs assessed to the Total Monthly PP Load. The Monthly REC Charge will be assessed as the proportion of the Customer's total kilowatt-hours load served by the Authority for such month to the Total Monthly PP Load served by the Authority for such month, provided, however, that:
 - i. the Monthly REC Charge to the Customer shall not include any costs associated with the Authority's inability to collect the Monthly REC Charge from other Authority customers; and
 - ii. the effective per-MWh rate of the Monthly REC Charge to the Customer averaged over the REC Program Year to which the Annual REC Percentage Target applies shall not exceed the per-MWh rate of a Monthly REC Charge based on NYSERDA's published REC price for the REC Program Year.
4. The Authority may, in its discretion, include the Monthly REC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the Monthly REC Charge pursuant to another Authority-established procedure.
5. The Authority will, at the conclusion of each calendar year in which it assesses a Monthly REC Charge, conduct a reconciliation process based on the actual costs that it incurred for REC Compliance Measures and actual load served for the year, compared with cost or load estimates or forecasts, if any, that the Authority used to calculate the Customer's Monthly REC Charges during the year. The Authority will issue a credit, or an adjusted final charge for the year, as appropriate, based on the results of such reconciliation process. Any such final charge shall be payable within the time frame applicable to the Authority's bills for Electric Service under this Agreement or pursuant to any other procedure established by the Authority pursuant to Section II.4 of this Schedule E.

6. Notwithstanding the provisions of Section II.3 of this Schedule E, if Electric Service for the Allocation is commenced after the Authority has implemented REC Compliance Measures for the year in which such Electric Service is commenced, and as a result the Customer's load cannot be accounted for in such REC Compliance Measures, the Authority may in its discretion implement separate REC Compliance Measures in order to meet the Annual REC Percentage Target for Customer's load for the year, and bill the Customer for the costs associated with such separate REC Compliance Measures.
7. Nothing in this Schedule shall limit or otherwise affect the Authority's right to charge or collect from the Customer, any rate, charge, fee, assessment, or tax provided for under any other provision of the Agreement, or any provision of the Service Tariff, or the Rules.

III. ALTERNATIVE REC COMPLIANCE PROGRAM

1. Nothing in this Schedule E shall be construed as preventing the Parties from entering into other agreements for an alternative arrangement for the Authority to meet the Annual REC Percentage Target with respect to the Customer's Allocation, including but not limited to Customer self-supply of RECs, alternative REC compliance programs and cost allocation mechanisms, in lieu of the Monthly REC Charge provided in this Schedule E (collectively, "Alternative REC Compliance Program").
2. The Authority shall communicate at least biennially with the Customer concerning implementation of the RES Compliance Program and potential Alternative REC Compliance Programs, if any, that the Authority is offering or expects to offer.



POWER AUTHORITY OF THE STATE OF NEW YORK

30 SOUTH PEARL STREET

ALBANY, NY 12207

Schedule of Rates for Sale of Firm Power Service to
Preservation Power Customers
(Local Electric Utility Delivery)

Service Tariff No. 20

Table of Contents

Schedule of Rates for Firm Power Service	Leaf No.
I. Applicability	3
II. Abbreviations and Terms.....	3
III. Monthly Rates and Charges.....	5
A. Preservation Power (PP) Base Rates	5
B. PP Rates No Lower than Rural/Domestic Rate	5
C. Monthly Base Rates Exclude Delivery Service Charges	5
D. Minimum Monthly Charge.....	5
E. Estimated Billing	6
F. Adjustments to Charges	7
G. Billing Period	7
H. Billing Demand	7
I. Billing Energy	7
J. Contract Demand	7
IV. General Provisions	8
A. Character of Service	8
B. Availability of Energy	8
C. Delivery	8
D. Adjustment of Rates	8
E. Billing Methodology and Billing	9
F. Payment by Customer to Authority.....	9
1. Demand and Energy Rates, Taxes	9
2. Transmission Charge	10
3. NYISO Transmission and Related Charges.....	10
4. Taxes Defined	10
5. Substitute Energy	10
6. Other Charges	11
7. Payment Information	11
8. Billing Disputes	11
G. Rendition and Payment of Bills.....	12
H. Adjustment of Charges – Distribution Losses.....	13
I. Conflicts.....	13
V. Annual Adjustment Factor	14

Schedule of Rates for Firm Power Service

I. Applicability

To sales of Preservation Power made directly to a qualified business Customer for firm power service that is delivered by the Customer's local electric utility.

II. Abbreviations and Terms

- kW kilowatt(s)
- kW-mo. kilowatt-month
- kWh kilowatt-hour(s)
- MWh megawatt-hour(s)
- NYISO New York Independent System Operator, Inc. or any successor organization
- PAL New York Public Authorities Law
- OATT Open Access Transmission Tariff issued by the NYISO

Agreement: An executed written agreement between the Authority and the Customer for the sale of Preservation Power to the Customer.

Annual Adjustment Factor or **AAF**: This term shall have the meaning set forth in Section V herein.

Authority: The Power Authority of the State of New York, a corporate municipal instrumentality and a political subdivision of the State of New York created pursuant to Chapter 772 of the New York Laws of 1931 and existing and operating under Title 1 of Article 5 of the PAL, also known as the "New York Power Authority."

Customer: A business entity that (1) has received an Allocation of Preservation Power, (2) purchases such Preservation Power directly from the Authority, and (3) receives delivery of the Preservation Power from a local electric utility.

Electric Service: The power and energy provided to the Customer in accordance with the Agreement, this Service Tariff and the Rules.

Firm Power: Hydropower capacity (kW) that is intended to be always available from the Project subject to the curtailment provisions set forth in the Agreement between the Authority and the Customer and this Service Tariff. Firm Power shall not include peaking power.

Firm Energy: Energy (kWh) associated with Firm Power.

Load Factor Sharing or LFS: A type of billing methodology applicable to a Customer's Allocation which determines how a Customer's total Native System Load is apportioned between the power and energy supplied by the Allocation and the Customer's other source of electricity supply, if any. LFS is used to determine the amount of Firm Energy supplied and billed on the basis of the Customer's actual total Native System Load per the monthly billing cycle as follows:

1. When the Maximum Metered Demand is less than (<) the Contract Demand, then the Customer's entire load will be supplied by Firm Energy.
2. When the Maximum Metered Demand is greater than (>) the Contract Demand, then the Customer's portion of Firm Energy supply will be determined as follows:
 - a. For Hourly Billing: $\sum (\text{Contract Demand} \div \text{Maximum Metered Demand} \times \text{the in-hour demand of Customer's total Native System Load for all hours})$.
 - b. For Monthly Billing: $(\text{Contract Demand} \div \text{Maximum Metered Demand} \times \text{the total consumed energy by the Customer within the bill cycle})$.

Load Serving Entity or LSE: This term shall have the meaning set forth in the Agreement.

Maximum Metered Demand: The highest 15 or 30-minute integrated demand, as determined by the local electric utility, during each Billing Period recorded on the meter that is used by the Customer in accordance with this Service Tariff and the Agreement.

Native System Load: The total consumption of the Customer's electric system, as determined by the Authority's revenue-grade metering equipment, without the offset of Customer's behind the meter generation. It is represented as the sum of all incoming power, plus internal generation behind the system meter, minus power exports to the bulk electric system.

Preservation Power or PP: Firm Power and Firm Energy made available under this Service Tariff by the Authority from the Project for sale to the Customer for business purposes pursuant to PAL § 1005(5) and (13), and that is delivered by the Customer's local electric utility.

Project: The Authority's St. Lawrence-FDR Power Project, FERC Project No. 2000.

Rate Year or RY: The period from July 1 through June 30. For example, RY 2018 refers to July 1, 2018 through June 30, 2019.

Rules: The Authority's rules and regulations set forth in 21 NYCRR § 450 *et seq.*, as they may be amended from time to time.

Service Tariff: This Service Tariff No. 20.

All other capitalized terms and abbreviations used in this Service Tariff but not defined in this Section or other provisions of this Service Tariff shall have the same meaning as set forth in the Agreement.

III. Monthly Rates and Charges

A. Preservation Power (PP) Base Rates

The rates to be charged to the Customer by the Authority shall be as follows:

Rate Year	Billing Period	Demand (\$/kW)	Energy (\$/MWh)
2018	July 2018 – June 2019	7.90	13.50

B. PP Rates No Lower than Rural/Domestic Rate

At all times the applicable PP base rates for demand and energy determined in accordance with Sections III.A and V of this Service Tariff shall be no lower than the rates charged by the Authority for the sale of hydroelectricity for the benefit of rural and domestic customers receiving service in accordance with the Niagara Redevelopment Act, 16 U.S.C. § 836(b)(1) (the "Rural/Domestic Rate"). This provision shall be implemented as follows: if the base rates, as determined in accordance with Sections III.A and V of this Service Tariff, are lower than the Rural/Domestic Rate on an average \$/MWh basis, each set of rates measured at 80% load factor which is generally regarded as representative for PP Customers, then the base rates determined under Sections III.A and V of this Service Tariff will be revised to make them equal to the Rural/Domestic Rate on an average \$/MWh basis. However, the base rates as so revised will have no effect until such time as these base rates are lower than the Rural/Domestic Rate.

C. Monthly Base Rates Exclude Delivery Service Charges

The monthly base rates set forth in this Section III exclude any applicable costs for delivery services provided by the local electric utility.

D. Minimum Monthly Charge

The Minimum Monthly Charge shall equal the product of the demand rate specified in Section III.A and the Contract Demand (as defined herein). Such Minimum Monthly Charge shall be in addition to any NYISO Charges or Taxes (each as defined herein) incurred by the Authority with respect to the Customer's Allocation, and any other charges provided in this Service Tariff, the Agreement or the Rules.

E. Estimated Billing

If the Authority, in its discretion, determines that it lacks reliable data on the Customer's actual demand and/or energy usage for a Billing Period during which the Customer receives Electric Service from the Authority, the Authority shall have the right to render a bill to the Customer for such Billing Period based on estimated demand and estimated usage ("Estimated Bill").

For the purpose of calculating a Billing Demand charge for an Estimated Bill, the demand charge will be calculated based on a load factor sharing billing methodology as follows:

- The estimated demand amount (kW) will be calculated based on an average of the Customer's Billing Demand (kW) values for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated demand amount (kW) for the Estimated Bill will equal the Customer's takedown (kW) amount.

For the purpose of calculating a Billing Energy charge for an Estimated Bill, the energy charge will be calculated based on a load factor sharing billing methodology as follows:

- The estimated energy (kWh) will be based on the average of the Customer's Billing Energy (kWh) values for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated energy amount (kWh) will be equal to the takedown (kW) amount at 70 percent load factor for that Billing Period.

If an alternative billing methodology is applicable to the Customer, the demand charge and energy charge for rendering an Estimated Bill shall be calculated in a manner appropriate to such alternative billing methodology as determined by the Authority.

If data indicating the Customer's actual demand and usage for any Billing Period in which an Estimated Bill was rendered is subsequently provided to the Authority, the Authority will make necessary adjustments to the corresponding Estimated Bill and, as appropriate, render a revised bill (or provide a credit) to the Customer.

The Minimum Monthly Charge provisions of Section III.D shall apply to Estimated Bills.

The Authority's discretion to render Estimated Bills is not intended and shall not be construed to limit the Authority's rights under the Agreement.

F. Adjustments to Charges

In addition to any other adjustments provided for in this Service Tariff, in any Billing Period, the Authority may make appropriate adjustments to billings and charges to address such matters as billing and payment errors, and the receipt of actual, additional, or corrected data concerning Customer energy or demand usage.

G. Billing Period

The Billing Period is any period of approximately thirty (30) days, generally ending with the last day of each calendar month but subject to the billing cycle requirements of the local electric utility in whose service territory the Customer's Facility is located.

H. Billing Demand

Billing Demand shall be determined by applying the applicable billing methodology to total Native System Load meter readings during the Billing Period. See Section IV.E, below.

I. Billing Energy

Billing Energy shall be determined by applying the applicable billing methodology to total Native System Load meter readings during the Billing Period. See Section IV.E, below.

J. Contract Demand

The Contract Demand will be the amount of Preservation Power, not to exceed the Allocation, provided by the Authority to the Customer in accordance with the Agreement.

IV. General Provisions

A. Character of Service

Alternating current; sixty cycles, three-phase.

B. Availability of Energy

1. Subject to Section IV.B.2, the Authority shall provide to the Customer in any Billing Period Firm Energy associated with Firm Power. The offer of Firm Energy for delivery shall fulfill the Authority's obligations for purposes of this provision whether or not the Firm Energy is taken by the Customer.
2. In the event of an Adverse Water Condition, the rights and obligations of the Customer and Authority, including but not limited to such matters as Substitute Energy and responsibility for payment of costs associated therewith, will be governed by the Agreement.

C. Delivery

For the purpose of this Service Tariff, Firm Power and Firm Energy shall be deemed to be offered when the Authority is able to supply Firm Power and Firm Energy to the Authority's designated NYISO load bus. If, despite such offer, there is a failure of delivery caused by the Customer, NYISO or local electric utility, such failure shall not be subject to a billing adjustment pursuant to Section 454.6(d) of the Rules or any successor provision addressing adjustments.

D. Adjustment of Rates

To the extent not inconsistent with the Agreement, the base rates contained in this Service Tariff may be revised from time to time on not less than thirty (30) days written notice to the Customer.

E. Billing Methodology

Unless otherwise specified in the Agreement, the following provisions shall apply:

1. The billing methodology used to determine the amount of Firm Power and Firm Energy to be billed to the Customer related to its Allocation shall be Load Factor Sharing ("LFS") in a manner consistent with the Agreement and any applicable delivery agreement between the Authority and the Customer's local electric utility or both as determined by the Authority. An alternative billing methodology may be used provided the Customer and the Authority agree in writing and the Customer's local electric utility provides its consent if the Authority determines that such consent is necessary.
2. Billing Energy - The LFS methodology will be applied against the Customer's Native System Load during the Billing Period to determine the amount of Firm Energy (kWh) attributable to the Allocation (Billing Energy) to be billed to the Customer and charged at the applicable PP Rate. All energy quantities will be adjusted for losses.
3. Billing Demand – The LFS methodology will be applied against the Customer's Maximum Metered Load during the Billing Period to determine the amount of Firm Power (kW) attributable to the Allocation (Billing Demand) to be billed to the Customer and charged at the applicable PP Rate. Billing Demand may not exceed the amount of the Contract Demand. All demand quantities will be adjusted for losses.

F. Payment by Customer to Authority

1. Demand and Energy Charges, Taxes

The Customer shall pay the Authority for Firm Power and Firm Energy during any Billing Period the higher of either (i) the sum of (a), (b) and (c) below, or (ii) the Minimum Monthly Charge (as defined herein):

- a. The demand rate per kilowatt for Firm Power specified in this Service Tariff or any modification thereof applied to the Customer's Billing Demand (as defined in Section IV.E, above) for the Billing Period; and
- b. The energy rate per MWh for Firm Energy specified in this Service Tariff or any modification thereof applied to the Customer's Billing Energy (as defined in Section IV.E, above) for the Billing Period; and
- c. A charge representing reimbursement to the Authority for all applicable Taxes incurred by the Authority as a result of providing Preservation Power allocated to the Customer.

2. Transmission Charge

The Customer shall compensate the Authority for all transmission costs incurred by the Authority with respect to the Allocation, including such costs that are charged pursuant to the OATT.

3. NYISO Transmission and Related Charges

The Customer shall compensate the Authority for the following NYISO transmission and related charges (collectively, "NYISO Charges") assessed on the Authority for services provided by the NYISO pursuant to its OATT or other tariffs (as the provisions of those tariffs may be amended and in effect from time to time) associated with providing Electric Service to the Customer:

- A. Ancillary Services 1 through 6 and any new ancillary services as may be defined and included in the OATT from time to time;
- B. Marginal losses;
- C. The New York Power Authority Transmission Adjustment Charge ("NTAC");
- D. Congestion costs inclusive of any rents collected or owed due to any associated grandfathered transmission congestion contracts as provided in Attachment K of the OATT;
- E. Any and all other charges, assessments, or other amounts associated with deliveries to Customers or otherwise associated with the Authority's responsibilities as a Load Serving Entity for the Customers that are assessed on the Authority by the NYISO under the provisions of its OATT or under other applicable tariffs; and
- F. Any charges assessed on the Authority with respect to the provision of Electric Service to Customers for facilities needed to maintain reliability and incurred in connection with the NYISO's Comprehensive System Planning Process (or similar reliability-related obligations incurred by the Authority with respect to Electric Service to the Customer), applicable tariffs, or required to be paid by the Authority in accordance with law, regardless of whether such charges are assessed by the NYISO or another party.

The NYISO Charges, if any, incurred by the Authority on behalf of the Customer, are in addition to the Authority production charges that are charged to the Customer in accordance with other provisions of this Service Tariff.

The method of billing NYISO charges to the Customer will be based on Authority's discretion.

4. Taxes Defined

Taxes shall be any adjustment as the Authority deems necessary to recover from the Customer any taxes, assessments or any other charges mandated by federal, state or local agencies or authorities that are levied on the Authority or that the Authority is required to collect from the Customer if and to the extent such taxes, assessments or charges are not recovered by the Authority pursuant to another provision of this Service Tariff.

5. Substitute Energy

The Customer shall pay for Substitute Energy, if applicable, as specified in the Agreement.

6. Other Charges

The Customer shall pay the Authority for all other charges provided for in the Agreement.

7. Payment Information

Bills computed under this Service Tariff are due and payable by electronic wire transfer in accordance with the Rules. Such wire transfer shall be made to J P Morgan Chase NY, NY / ABA021000021 / NYPA A/C # 008-030383, unless otherwise indicated in writing by the Authority. The Authority may in its discretion change the foregoing account and routing information upon notice to the Customer.

8. Billing Disputes

In the event that there is a dispute on any items of a bill rendered by the Authority, the Customer shall pay such bill in full. If necessary, any adjustments will be made thereafter.

DRAFT

G. Rendition and Payment of Bills

1. The Authority will render bills to the Customer for Electric Service on or before the tenth (10th) business day of the month for charges due for the previous Billing Period. Such bills shall include charges for Electric Service, NYISO Charges associated with the Allocation (subject to adjustment consistent with any later NYISO re-billings to the Authority), and all other applicable charges, and are subject to adjustment as provided for in the Agreement, the Service Tariff and the Rules.
2. The Authority will charge and collect from the Customer all Taxes (including local, state and federal taxes) the Authority determines are applicable, unless the Customer furnishes the Authority with proof satisfactory to the Authority that (i) the Customer is exempt from the payment of any such Taxes, and/or (ii) the Authority is not obligated to collect such Taxes from the Customer. If the Authority is not collecting Taxes from the Customer based on the circumstances described in (i) or (ii) above, the Customer shall immediately inform the Authority of any change in circumstances relating to its tax status that would require the Authority to charge and collect such Taxes from the Customer.
3. Unless otherwise agreed to by the Authority and the Customer in writing, the Authority will render bills to the Customer electronically.
4. Payment of bills by the Customer shall be due and payable by the Customer within twenty (20) days of the date the Authority renders the bill.
5. Except as otherwise agreed by the Authority in writing, if the Customer fails to pay any bill when due an interest charge of two percent of the amount unpaid will be added thereto as liquidated damages, and thereafter, as further liquidated damages, an additional interest charge of one and one-half percent of the sum unpaid shall be added on the first day of each succeeding Billing Period until the amount due, including interest, is paid in full.
6. If at any time after commencement of Electric Service the Customer fails to make complete payment of any two (2) bills for Electric Service when such bills become due pursuant to Agreement, the Authority shall have the right to require that the Customer deposit with the Authority a sum of money in an amount equal to all charges that would be due under this Agreement for Electric Service for two (2) consecutive calendar months as estimated by the Authority. Such deposit will be deemed security for the payment of unpaid bills and/or other claims of the Authority against the Customer upon termination of Electric Service. The failure or refusal of the Customer to provide the deposit within thirty (30) days of a request for such deposit will be grounds for the Authority in its discretion to suspend Electric Service to the Customer or terminate the Agreement.

Unless otherwise agreed to by the Authority and the Customer in writing, in the event the Customer disputes any item of any bill rendered by Authority, the Customer shall pay such bill in full within the time provided for by this Agreement, and adjustments, if appropriate, will be made thereafter.

H. Adjustment of Charges – Distribution Losses

The Authority will make appropriate adjustments to compensate for distribution losses of the local electric utility.

I. Conflicts

In the event of any inconsistencies, conflicts, or differences between the provisions of this Service Tariff and the Rules, the provisions of this Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of the Agreement and this Service Tariff or the Rules, the provisions of the Agreement shall govern.

DRAFT

V. Annual Adjustment Factor

A. Adjustment of Rates

1. The AAF will be based upon a weighted average of three indices described below. For each new Rate Year, the index value for the latest available calendar year ("Index Value for the Measuring Year") will be compared to the index value for the calendar year immediately preceding the latest available calendar year (the Index Value for the Measuring Year -1"). The change for each index will then be multiplied by the indicated weights. As described in detail below, these products are then summed, producing the AAF. The AAF will be multiplied by the base rate for the current Rate Year to produce the base rates for the new Rate Year, subject to a maximum adjustment of $\pm 5.0\%$ (" $\pm 5\%$ Collar"). Amounts outside the $\pm 5\%$ Collar shall be referred to as the "Excess."

Index 1, "BLS Industrial Power Price" (35% weight): The average of the monthly Producer Price Index for Industrial Electric Power, commodity code number 0543, not seasonally adjusted, as reported by the U.S. Department of Labor, Bureau of Labor Statistics ("BLS") electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 1, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

Index 2, "EIA Average Industrial Power Price" (40% weight): The average weighted annual price (as measured in cents/kWh) for electric sales to the industrial sector in the ten states of CT, MA, ME, NH, NJ, NY, OH, PA, RI and VT ("Selected States") as reported by Coal and Electric Data and Renewables Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration ("EIA"); U.S. Department of Energy Form EIA-861 Final Data File. For Index 2, the Index Value for the Measuring Year will be the index for the calendar year two years preceding July 1 of the new Rate Year.

Index 3, "BLS Industrial Commodities Price Less Fuel" (25% weight): The monthly average of the Producer Price Index for Industrial Commodities less fuel, commodity code number 03T15M05, not seasonally adjusted, as reported by the U.S. Department of Labor, BLS electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 3, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

2. Annual Adjustment Factor Computation Guide

- Step 1: For each of the three Indices, divide the Index Value for Measuring Year by the Index Value for the Measuring Year-1.
- Step 2: Multiply the ratios determined in Step 1 by percentage weights for each Index. Sum the results to determine the weighted average. This is the AAF.
- Step 3: Commencing RY 2014, modifications to the AAF will be subject to $\pm 5\%$ Collar, as described below.
 - a) When the AAF falls outside the $\pm 5\%$ Collar, the Excess will be carried over to the subsequent RY. If the AAF in the subsequent RY is within the $\pm 5\%$ Collar, the current RY Excess will be added to/subtracted from the subsequent Rate Year's AAF, up to the $\pm 5\%$ Collar.

- b) Excesses will continue to accrue without limit and carry over such that they will be added to/subtracted from the AAF in any year where the AAF is within the $\pm 5\%$ Collar.

Step 4: Multiply the current Rate Year base rate by the AAF calculated in Step 2 to determine the new Rate Year base rate.

The foregoing calculation shall be performed by the Authority consistent with the sample presented in Section V.B below.

3. The Authority shall provide the Customer with notice of any adjustment to the current base rate per the above and with all data and calculations necessary to compute such adjustment by June 15th of each year to be effective on July 1 of such year, commencing in 2014. The values of the latest officially published (electronically or otherwise) versions of the indices and data provided by the BLS and EIA as of June 1 shall be used notwithstanding any subsequent revisions to the indices.
4. If during the term of the Agreement any of the three above indices ceases to be available or ceases to be reflective of the relevant factors or of changes which the indices were intended to reflect, the Customer and the Authority may mutually select a substitute Index. The Customer and the Authority agree to mutually select substitute indices within 90 days, once one of them is notified by the other that the indices are no longer available or no longer reflect the relevant factors or changes which the indices were intended to reflect. Should the 90-day period cover a planned July 1 rate change, the current base rates will remain in effect until substitute indices are selected and the adjusted rates based on the substitute indices will be retroactive to the previous July 1. If the Customer and Authority are unable to reach agreement on substitute indices within the 90-day period, the Customer and the Authority agree to substitute the mathematic average of the PPI—Intermediate Materials, Supplies and Components (BLS Series ID WPUSOP2000) and the PPI-- Finished Goods (BLS Series ID WPUSOP3000) indices for one or more indices that have ceased to be available or reflective of their intended purpose and shall assume the percentage weighting(s) of the one or more discontinued indices as indicated in Section V.A.1.

B. Sample Computation of the AAF (hypothetical values for July 1, 2017 implementation):

STEP 1

Determine the Index Value for the Measuring Year (MY) and Measuring Year - 1 (MY-1) for Each Index

- Index 1 - Producer Price Index, Industrial Power

	Measuring Year <u>(2016)</u>	Measuring Year - 1 <u>(2015)</u>
January	205.3	167.8
February	204.3	167.6
March	204.5	168.2
April	202.4	168.6
May	206.3	171.6
June	220.4	180.1
July	226.2	182.7
August	227.3	179.2
September	228.1	181.8
October	214.9	170.2
November	211.3	168.8
December	211.7	166.6
Average	213.6	223.7
Ratio of MY/MY-1		0.95

- Index 2 – EIA Industrial Rate

<u>State</u>	<u>Revenues</u> ((\$000s))	<u>Sales</u> (MWh)	<u>Avg. Rate</u> (cents/kWh)
<u>Measuring Year (2015)</u>			
CT	444,588	3,432,002	
MA	1,068,927	7,892,165	
ME	290,360	3,208,045	
NH	252,331	1,981,028	
NJ	778,985	7,320,398	
NY	1,140,573	18,079,200	
OH	3,548,736	50,556,675	
PA	3,411,815	47,404,272	
RI	109,866	798,532	
VT	146,022	1,421,601	
TOTAL	11,192,203	142,093,918	7.88

Measuring Year -1 (2014)

CT	453,958	3,514,798	
MA	1,014,262	7,960,941	
ME	300,412	3,357,486	
NH	234,900	1,969,064	
NJ	855,757	7,516,616	
NY	1,184,255	18,002,976	
OH	3,440,919	50,829,251	
PA	3,580,990	48,317,693	
RI	114,111	887,150	
VT	145,111	1,417,994	
TOTAL	11,324,673	143,773,969	7.88

Ratio of MY/MY-1 **1.00**

- Index 3 – Producer Price Index, Industrial Commodities Less Fuel

	Measuring Year (2016)	Measuring Year -1 (2015)
January	191.9	196.0
February	191.8	195.4
March	192.1	195.0
April	192.8	194.8
May	193.4	194.9
June	193.7	195.2
July	193.7	194.9
August	194.0	193.9
September	193.9	193.1
October	194.3	192.9
November	194.9	192.3
December	195.6	191.9
Average	193.5	194.2
Ratio of MY/MY-1		1.00

STEP 2

Determine AAF by Summing the Weighted Indices

<u>Index</u>	<u>Ratio of MY to MY-1</u>	<u>Weight</u>	<u>Weighted Factors</u>
PPI Industrial Power	0.95	0.35	0.334
EIA Industrial Rate	1.00	0.40	0.400
PPI Industrial Commodities less fuel	1.00	0.25	<u>0.249</u>
AAF			0.983

STEP 3

Apply Collar of $\pm 5.0\%$ to Determine the Maximum/Minimum AAF.

$-5.0\% < 1.6\% < 5.0\%$; collar does not apply, assuming no cumulative excess.

STEP 4

Apply AAF to Calculate the New Rate Year Base Rate

	<u>Demand</u> \$/kW-mo.	<u>Energy</u> \$/MWh
Current Rate Year Base Rate	8.03	13.73
New Rate Year Base Rate	7.90	13.50

POWER AUTHORITY
OF THE
STATE OF NEW YORK

30 South Pearl Street
10th Floor
Albany, New York 12207-3425

AGREEMENT FOR THE SALE OF
PRESERVATION POWER AND ENERGY

SERVICE TARIFF NO. 20-A

<CUSTOMER>

The POWER AUTHORITY OF THE STATE OF NEW YORK (“Authority”), created pursuant to Chapter 772 of the New York Laws of 1931 and existing under Title I of Article V of the New York Public Authorities Law (“PAL”), having its office and principal place of business at 30 South Pearl Street, 10th Floor, Albany, New York 12207-3425, hereby enters into this Agreement for Sale of Preservation Power and Energy (“Agreement”) with <Customer>, (“Customer”) having offices at <Customer Address>. The Authority and the Customer are from time to time referred to in this Agreement as “Party” or collectively as “Parties” and agree as follows:

RECITALS

WHEREAS, the Authority is authorized to sell hydroelectric power produced by the St. Lawrence-FDR Power Project known as Preservation Power (or “PP”), as further defined in this Agreement, to qualified businesses in New York State in accordance with PAL § 1005(5) and (13);

WHEREAS, the Customer, which was created in connection with a corporate reorganization by Alcoa Inc. (“Alcoa”), has requested an allocation of PP to support operations that it will undertake as an independent company at facilities defined in this Agreement as the “Facility” which is located on the Alcoa industrial campus in Massena, New York;

WHEREAS, the Customer has offered to make specific commitments relating to, among other things, the creation and retention of jobs, capital investments, power usage and energy efficiency measures at the Facility;

WHEREAS, the Authority’s Board of Trustees approved an allocation of PP to the Customer;

WHEREAS, because the Facility is located within the Authority’s transmission district, the Authority will also supply the Customer with incremental energy and capacity through market supply to serve the Customer’s load in excess of the Contract Demand as provided in this Agreement and the Service Tariff;

WHEREAS, the Parties have reached an agreement on the terms and conditions applicable for the sale of the Allocation and incremental energy and capacity for a term as provided in this Agreement;

WHEREAS, electric service hereunder shall be subject to the rates and other terms and conditions contained in the Service Tariff as further provided in this Agreement; and

WHEREAS, the Authority has complied with requirements of PAL § 1009, and has been authorized to execute the Agreement.

NOW, THEREFORE, in consideration of mutual covenants, terms, and conditions herein, and for other good and valuable consideration, the receipt and adequacy of which the Parties hereby acknowledge, the Parties do hereby mutually covenant and agree as follows:

ARTICLE I

DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Agreement, shall have the meanings as set forth below. When used with initial capitalization, whether singular or plural, terms defined in schedules or appendices to this Agreement shall have the meanings set forth in such schedules or appendices. All other capitalized terms and abbreviations used in this Agreement but not defined in this Section or other provisions of this Agreement or its schedules or appendices shall have the same meaning as set forth in the Service Tariff.

“Adverse Water Condition” means any event or condition, including without limitation a hydrologic or hydraulic condition, that relates to the flow, level, or usage of water at or in the vicinity of the Project and/or its related facilities and structures, and which prevents, threatens to prevent, or causes the Authority to take responsive action that has the effect of preventing, the Project from producing a sufficient amount of energy to supply the full power and energy requirements of firm power and firm energy customers who are served by the Project.

“Agreement” means this Agreement, and unless otherwise indicated herein, includes all schedules, appendices and addenda thereto, as the same may be amended from time to time.

“Allocation” refers to the allocation(s) of PP awarded to the Customer as specified in Schedule A.

“Alternative REC Compliance Program” has the meaning provided in Schedule E.

“Annual Capital Investment Commitment” has the meaning set forth in Schedule B.

“Annual CI Expenditures” has the meaning set forth in Schedule B.

“Base Employment Level” has the meaning set forth in Schedule B.

“Contract Demand” is as defined in applicable Service Tariff.

“Effective Date” means the date that this Agreement is fully executed by the Parties.

“Electric Service” is the Firm Power and Firm Energy associated with the Allocation and sold by the Authority to the Customer in accordance with this Agreement, the Service Tariff and the Rules.

“Energy Services” has the meaning set forth in Article V of this Agreement.

“Expansion Project” has the meaning set forth in Section IV.3.a of this Agreement.

“Expansion Project Capital Investment Commitment” has the meaning set forth in Schedule B.

“Facility” means the Customer’s facilities as described in Schedule A to this Agreement.

“Firm Power” is as defined in the Service Tariff.

“Firm Energy” is as defined in the Service Tariff.

“FERC” means the Federal Energy Regulatory Commission (or any successor organization).

“FERC License” means the first new license issued by FERC to the Authority for the continued operation and maintenance of the Project, pursuant to Section 15 of the Federal Power Act, which became effective September 1, 2007 after expiration of the Project’s original license which became effective in 1957.

“Hydropower Curtailment” means a temporary reduction in Firm Energy to which the Customer is entitled to receive under this Agreement made by the Authority in response to an Adverse Water Condition.

“International Joint Commission” or “IJC” refers to the entity with responsibility to prevent and resolve disputes between the United States of America and Canada under the *1909 Boundary Waters Treaty* and pursues the common good of both countries as an independent and objective advisor to the two governments. The IJC rules upon applications for approval of projects affecting boundary or transboundary waters and may regulate the operation of these projects.

“Load Reduction” has the meaning set forth in Section IX.6 of this Agreement.

“Load Serving Entity” (or “LSE”) means an entity designated by a retail electricity customer (including the Customer) to provide capacity, energy and ancillary services to serve such customer, in compliance with NYISO Tariffs, rules, manuals and procedures.

“Market Supply” is as defined in the Service Tariff.

“Metering Arrangement” has the meaning set forth in Section II.8 of this Agreement.

“NYEM” means the New York Energy Manager, an energy management center owned and operated by the Authority.

“NYEM Agreement” means a written agreement between the Authority and the Customer providing for the Facility’s enrollment and Customer’s participation in NYEM.

“NYEM Participation” has the meaning specified in Schedule B of this Agreement.

“NYISO” means the New York Independent System Operator or any successor organization.

“NYISO Charges” has the meaning set forth in Section VII.3 of this Agreement.

“NYISO Tariffs” means the NYISO’s Open Access Transmission Tariff or the NYISO’s Market Administration and Control Area Services Tariff, as applicable, as such tariffs are modified from time to time, or any successor to such tariffs.

“Physical Energy Audit” or “Audit” means a physical evaluation of the Facility in a manner approved by the Authority that includes at a minimum the following elements: (a) an assessment of the Facility’s energy use, cost and efficiency which produces an energy utilization index for the Facility (such as an Energy Use Intensity or Energy Performance Indicator); (b) a comparison of the Facility’s index to indices for similar buildings/facilities; (c) an analysis of low-cost/no-cost measures for improving energy efficiency; (d) a listing of potential capital improvements for improving energy consumption; and (e) an initial assessment of potential costs and savings from such measures and improvements.

“Preservation Power” (or “PP”) consists of 490 megawatts (“MW”) of firm hydroelectric power and associated energy produced by the Authority’s St. Lawrence-FDR Power Project.

“Prior Agreement” has the meaning set forth in the recitals to this Agreement.

“Project” means the Authority’s St. Lawrence-FDR Power Project, FERC Project No. 2000.

“Reporting Year” means the yearly interval that the Authority uses for reporting, compliance and other purposes as specified in this Agreement. The Reporting Year for this Agreement is from January 1 through December 31, subject to change by the Authority without notice.

“Rolling Average” has the meaning set forth in Schedule B.

“Rules” are the applicable provisions of Authority’s rules and regulations (Chapter X of Title 21 of the Official Compilation of Codes, Rules and Regulations of the State of New York), as may be modified from time to time by the Authority.

“Service Information” has the meaning set forth in Section II.12 of this Agreement.

“Service Tariff” means the Authority’s Service Tariff No. 20-A, as may be modified from time to time by the Authority, which contains, among other things, the rate schedule establishing rates and other commercial terms for sale of Electric Service to Customer under this Agreement.

“Schedule A” refers to the Schedule A entitled “Preservation Power Allocations” which is attached to and made part of this Agreement.

“Schedule B” refers to the Schedule B entitled “Supplemental Preservation Power Commitments” which is attached to and made part of this Agreement, including any appendices attached thereto.

“Schedule C” refers to the Schedule C entitled “Takedown Schedule” which is attached to and made part of this Agreement.

“Schedule D” refers to the Schedule D entitled “Zero Emission Credit Charge” which is attached to and made part of this Agreement.

“Schedule E” refers to the Schedule E entitled “Monthly Renewable Energy Credit Charge” which is attached to and made part of this Agreement.

“Substitute Energy” means energy that is provided to the Customer by or through the Authority for the purpose of replacing Firm Energy that is not supplied to the Customer due to a Hydropower Curtailment.

“Takedown” means the portion of the Allocation that Customer requests to be scheduled for a specific period as provided for in Schedule C, if applicable.

“Taxes” is as defined in the Service Tariff.

“Unforced Capacity” (or “UCAP”) means the electric capacity required to be provided by LSEs to serve electric load as defined by the NYISO Tariffs, rules, manuals and procedures.

ARTICLE II **ELECTRIC SERVICE**

1. The Authority will make available Electric Service to enable the Customer to receive the Allocation in accordance with this Agreement, the Service Tariff and the Rules. The Customer is not be entitled to receive Electric Service under this Agreement for any PP allocation unless such PP allocation is identified in Schedule A.
2. The Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation specified in Schedule A. If Schedule C specifies a Takedown Schedule for the Allocation, the Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation in accordance with such Takedown Schedule.
3. The Authority shall provide UCAP in amounts necessary to meet the Customer’s NYISO UCAP requirements for the Customer’s Native System Load, inclusive of NYISO UCAP requirements associated with the Allocation, in accordance with the NYISO Tariffs. The Customer shall be responsible to pay the Authority for all such UCAP in accordance with the Service Tariff.
4. The Contract Demand for the Customer’s Allocation may be modified by the Authority if the amount of Firm Power and Firm Energy available for sale as PP from the Project is modified as required to comply with any ruling, order, or decision of any regulatory or judicial body having jurisdiction, including but not limited to FERC. Any such modification will be made on a pro rata basis to all PP customers receiving Electric Service under the Service Tariff, as applicable, based on the terms of such ruling, order, or decision.
5. The Contract Demand may not exceed the Allocation.

6. The Customer's Facility must be metered using Authority revenue-grade metering in a manner that is satisfactory to the Authority, or another metering arrangement satisfactory to the Authority must be provided (collectively, "Metering Arrangement"). A Metering Arrangement that is not satisfactory to the Authority shall be grounds, after notice to the Customer, for the Authority to modify, withhold, suspend, or terminate Electric Service to the Customer. If a Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination that it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. After commencement of Electric Service, the Customer shall notify the Authority in writing within thirty (30) days of any alteration to the Facility's Metering Arrangement, and provide any information requested by the Authority (including Facility access) to enable the Authority to determine whether the Metering Arrangement remains satisfactory. If an altered Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. The Authority may, in its discretion, waive any of the requirements provided for in this Section in whole or in part where in the Authority's judgment, another mechanism satisfactory to the Authority can be implemented to enable the Authority to receive pertinent, timely and accurate information relating to the Customer's energy consumption and demand and render bills to the Customer for all fees, assessments and charges that become due in accordance with this Agreement, the Service Tariff, and the Rules.
7. The Customer agrees to provide information to the Authority that the Authority determines is necessary to provide for the sale and delivery of the Allocation to the Customer at the Facility, the proper and efficient implementation of the PP program, billing related to Electric Service, and/or the performance of obligations under any contracts or other arrangements between the Parties relating to such matters (collectively, "Service Information"). In addition, the Customer agrees to complete such forms and consents that the Authority determines are necessary to provide the Service Information. The Customer's failure to provide Service Information on a timely basis shall be grounds for the Authority in its discretion to modify, withhold, suspend, or terminate Electric Service to the Customer.
8. The Customer shall be responsible for (a) obtaining all consents and agreements from any person that are necessary for the Customer to occupy, operate and receive Electric Service at the Facility, and (b) complying with any requirements of any such person that are necessary for the provision of Electric Service to the Facility in the manner provided for in this Agreement. All such agreements, consents and requirements shall be subject to the Authority's review and approval prior to the commencement of Electric Service, and no such agreements, consents or requirements shall be subject to any conditions or subsequently changed in a manner that materially impacts the Authority's rights and obligations under this Agreement.
9. If in any given hour during a Billing Period the Customer's load requirements exceed the Customer's Contract Demand, the Authority will provide sufficient incremental power and energy through Market Supply to meet such load, based on a load factor sharing methodology and settlement principals as provided in the Service Tariff, and the Customer shall pay Authority for any and all costs associated with such provision of incremental power and energy as provided in the Service Tariff. The Market Supply shall be reflected in the Customer's bill including, but not limited to, Incremental Demand Charges, Incremental Energy Charges,

Incremental UCAP and TSCs associated with such Market Supply necessary to satisfy the Customer's load above its Contract Demand.

ARTICLE III

RATES, TERMS AND CONDITIONS

1. Electric Service shall be sold to the Customer in accordance with the rates, terms and conditions provided for in this Agreement, the Service Tariff and the Rules.
2. The Service Tariff and the Rules may be amended from time to time by the Authority and, if revised, the revised provisions thereof will apply under this Agreement with the same force and effect as if set forth herein. The Authority shall provide at least thirty (30) days prior written notice to the Customer of any proposed change in the Service Tariff or the Rules. No amendment to the Service Tariff or the Rules shall affect the determination of rates for PP to the Customer during the term of the Agreement except insofar as otherwise authorized by this Agreement. This provision shall not limit the Authority's discretion to determine rates applicable to allocations of power and energy awarded to the Customer beyond or in addition to the Allocation.
3. Notwithstanding any provision of this Agreement to the contrary, the power and energy rates for Electric Service shall be subject to increase by Authority at any time upon 30 days prior written notice to Customer if, after consideration by Authority of its legal obligations, the marketability of the output or use of the Project and Authority's competitive position with respect to other suppliers, Authority determines in its discretion that increases in rates obtainable from any other Authority customers will not provide revenues, together with other available Authority funds not needed for operation and maintenance expenses, capital expenses, and reserves, sufficient to meet all requirements specified in Authority's bond and note resolutions and covenants with the holders of its financial obligations. Authority shall use its best efforts to inform Customer at the earliest practicable date of its intent to increase the power and energy rates pursuant to this provision. With respect to any such increase, Authority shall forward to Customer with the notice of increase, an explanation of all reasons for the increase, and shall also identify the sources from which Authority will obtain the total of increased revenues and the bases upon which Authority will allocate the increased revenue requirements among its customers. Any such increase in rates shall remain in effect only so long as Authority determines such increase is necessary to provide revenues for the purposes stated in the preceding sentences.
4. In addition to all other fees, assessments and charges provided for in the Agreement, the Service Tariff and the Rules, the Customer shall be responsible for payment of the Zero Emission Credit Charge and Monthly Renewable Energy Credit Charge provided for in Schedule D and Schedule E, respectively, of this Agreement.

ARTICLE IV
SUPPLEMENTAL COMMITMENTS

1. Supplemental Commitments. Schedule B sets forth the Customer's "Supplemental Preservation Power Commitments" ("Supplemental Commitments"). The Authority's obligation to provide Electric Service under this Agreement is expressly conditioned upon the Customer's timely compliance with the Supplemental Commitments described in Schedule B as further provided in this Agreement. The Customer's Supplemental Commitments are in addition to all other commitments and obligations provided in this Agreement.
2. Special Provisions Relating to a New or Expanded Facility.

- a. Proposed New or Expanded Facility; Failure to Complete.

If Schedule B provides for the construction of a new facility or an expansion of an existing facility (collectively, "Expansion Project"), and the Customer fails to complete the Expansion Project by the date specified in Schedule B, the Authority may, in its discretion, (a) cancel the Allocation, or (b) if it believes that the Expansion Project will be completed in a reasonable time, agree with the Customer to extend the time for completion of the Expansion Project.

- b. Proposed New or Expanded Facility; Partial Performance.

If the Expansion Project results in a completed Facility that is only partially operational, or is materially different than the Expansion Project agreed to in Schedule B (as measured by such factors as size, capital investment expenditures, capital improvements, employment levels, estimated energy demand and/or other criteria determined by the Authority to be relevant), the Authority may, in its discretion, on its own initiative or at the Customer's request, make a permanent reduction to the Allocation and Contract Demand to an amount that the Authority determines to fairly correspond to the completed Facility.

- c. Notice of Completion; Commencement of Electric Service.

- (i) The Customer shall give the Authority not less than ninety (90) days' advance written notice of the anticipated date of completion of an Expansion Project. The Authority will inspect the Expansion Project for the purpose of verifying the status of the Expansion Project and notify Customer of the results of the inspection. The Authority will thereafter commence Electric Service within a reasonable time subject to the other provisions of this Agreement based on applicable operating procedures of the Authority, Customer's local electric utility and NYISO.
- (ii) In the event of an Expansion Project being completed in multiple phases, at the Customer's request the Authority may, in its discretion, allow commencement of part of the Allocation upon completion of any such phase, provided the Authority will similarly inspect the Expansion Project for the purpose of verifying the status

of the completed phase of the Expansion Project. Upon such verification by the Authority of any such completed phase, the Authority, in its discretion, will determine an amount of kW that fairly corresponds to the completed phase of the Expansion Project, taking into account relevant criteria such as any capital expenditures, increased employment levels, and/or increased electrical demand associated with the completed phase of the Expansion Project.

d. Other Rights and Remedies Unaffected.

Nothing in this Article is intended to limit the Authority's rights and remedies provided for in the other provisions of this Agreement, including without limitation the provisions in Schedule B of this Agreement.

ARTICLE V
ENERGY-RELATED PROJECTS, PROGRAMS AND SERVICES

The Authority shall periodically communicate with the Customer for the purpose of informing the Customer about energy-related projects, programs and services ("Energy Services") offered by the Authority that in the Authority's view could provide value to the Customer and/or support the State's Clean Energy Standard. The Customer shall review and respond to all such offers in good faith, provided, however, that, except as otherwise provided for in this Agreement, participation in any such Energy Services shall be at the Customer's option, and subject to such terms and conditions agreed to by the Parties in one or more definitive agreements.

ARTICLE VI
SERVICE TARIFF; CONFLICTS

1. A copy of the Service Tariff is attached to this Agreement as Exhibit 1 and shall apply under this Agreement with the same force and effect as if fully set forth herein. The Customer consents to the application of the Service Tariff.
2. In the event of any inconsistencies, conflicts, or differences between the provisions of the Service Tariff and the Rules, the provisions of the Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of this Agreement and the Service Tariff or the Rules, the provisions of this Agreement shall govern.

ARTICLE VII
TRANSMISSION AND DELIVERY

1. In addition to paying the Authority for transmission and delivery services as provided in this Agreement, the Service Tariff and the Rules, the Customer shall be responsible for:
 - a. complying with the requirements of any utility or other person that are necessary to enable the Customer to receive delivery of the Allocation and Market Supply;
 - b. complying with the requirements of any utility or other person that are necessary for the installation of any Metering Arrangement and related infrastructure; and

- c. paying any utility or other person for delivery and transmission service associated with the Allocation and Market Supply, and installation of any Metering Arrangement and related infrastructure that such utility or other person requires, and if the Authority incurs any charges associated with such matters, reimbursing the Authority for all such charges.
2. The Customer understands and acknowledges that delivery of the Allocation and Market Supply will be made over transmission facilities under the control of the NYISO. The Authority will act as the LSE with respect to the NYISO, or arrange for another entity to do so on the Authority's behalf. The Customer agrees and understands that it shall be responsible to the Authority for all costs incurred by the Authority with respect to the Allocation and Market Supply for the services established in the NYISO Tariff, or other applicable tariff ("NYISO Charges"), as set forth in the Service Tariff or any successor service tariff, regardless of whether such NYISO Charges are transmission-related.

ARTICLE VIII

BILLING AND BILLING METHODOLOGY

1. The billing methodology for the Allocation and Market Supply shall be determined on a "load factor sharing" basis in accordance with the Service Tariff. An alternative basis for billing may be used provided the Parties agree in writing and the local electric utility provides its consent if such consent is deemed necessary. Except as otherwise provided in this Agreement, all other provisions with respect to billing are set forth in the Service Tariff and the Rules.
2. The rights and remedies provided to the Authority in this Article are in addition to any and all other rights and remedies available to Authority at law or in equity.

ARTICLE IX

HYDROPOWER CURTAILMENTS AND SUBSTITUTE ENERGY

1. In the event of an Adverse Water Condition, the Authority will have the right in its discretion to implement Hydropower Curtailments. The Authority will implement Hydropower Curtailments on a non-discriminatory basis as to all Authority customers that are served by the Project.
2. In the event of a Hydropower Curtailment, the Authority will provide Substitute Energy to the Customer and the Customer shall pay for such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, Substitute Energy shall be sourced from markets administered by the NYISO.
3. For each kilowatt-hour of Substitute Energy provided by the Authority during a Hydropower Curtailment, the Customer shall pay the Authority directly during the billing month: (1) the difference between the market cost of the Substitute Energy and the charge for firm energy as provided for in this Agreement; and (2) any NYISO charges and taxes the Authority incurs in connection with the provision of such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, billing and payment for Substitute Energy provided for Hydropower Curtailments shall be governed by the provisions of the Service Tariff relating to the rendition and payment of bills for Electric Service.

4. The Authority shall be under no obligation to deliver, and will not deliver, any such curtailed energy to the Customer in later billing periods.
5. The Authority may require the Customer to enter into a separate agreement relating to the provision and sale of Substitute Energy. The provisions of this Agreement will remain in effect notwithstanding the existence of any such separate agreement.

ARTICLE X

EFFECTIVENESS, TERM AND TERMINATION

1. This Agreement shall become effective and legally binding on the Parties on the Effective Date.
2. Once commenced, Electric Service under the Agreement shall continue until the earliest of: (a) termination by the Customer with respect to its Allocation upon ninety (90) days prior written notice to the Authority; (b) termination by the Authority pursuant to this Agreement, the Service Tariff, or the Rules; or (c) expiration of the Allocation by its own term as specified in Schedule A.
3. Once commenced, the provision of incremental energy and power supply shall continue until the earliest of: (a) termination of Electric Service in accordance with Section X.2 of this Agreement; (b) termination by the Customer of incremental energy and power supply service upon ninety (90) days prior written notice to the Authority; or (c) termination by the Authority of incremental energy and power supply service pursuant to this Agreement, the Service Tariff, or the Rules. Termination in whole or in part of incremental energy and power in accordance with this provision shall not affect the provision of Electric Service for the Allocation.
4. The Customer may exercise a partial termination of the Allocation upon at least sixty (60) days' prior written notice to the Authority. The Authority will effectuate the partial termination as soon as practicable after receipt of such notice taking account of the Authority's internal procedures and requirements of the Customer's local electric utility.
5. The Authority may cancel service under this Agreement or modify the quantities of Firm Power and Firm Energy associated with the Allocation: (1) if such cancellation or modification is required to comply with any final ruling, order or decision of any regulatory or judicial body of competent jurisdiction (including any licensing or re-licensing order or orders of the FERC or its successor agency); or (2) as otherwise provided in this Agreement, the Service Tariff, or the Rules.

ARTICLE XI

EXTENSIONS OF ALLOCATION; AWARD OF ADDITIONAL ALLOCATIONS

1. The Customer may apply to the Authority for an extension of the term of the Allocation identified in Schedule A:
 - a. during the thirty-six (36) month period immediately preceding the scheduled expiration of the Allocation;
 - b. pursuant to any other process that the Authority establishes; or

- c. with the Authority's written consent.
2. Upon proper application by the Customer, the Authority may in accordance with applicable law and Authority procedures award additional allocations of PP at such rates and on such terms and conditions as the Authority establishes. If the Customer agrees to purchase Electric Service associated with any such additional allocation, the Authority will (a) incorporate any such additional allocations into Schedule A, or in its discretion will produce a supplemental schedule, to reflect any such additional allocations, and (b) produce a modified Appendix to Schedule B, as the Authority determines to be appropriate. The Authority will furnish the Customer with any such modified Schedule A, supplemental schedule, and/or a modified Appendix to Schedule B, within a reasonable time after commencement of Electric Service for any such additional allocation.
 3. In addition to any requirements imposed by law, the Customer hereby agrees to furnish such documentation and other information as the Authority requests to enable the Authority to evaluate any requests for extension of the Allocation or additional allocations and consider the terms and conditions that should be applicable of any extension or additional allocations.

ARTICLE XII

NOTICES

1. Notices, consents, authorizations, approvals, instructions, waivers or other communications provided in this Agreement shall be in writing and transmitted to the Parties as follows:

To: The Authority

New York Power Authority
123 Main Street
White Plains, New York 10601

Email: _____

Facsimile: _____

Attention: Manager – Business Power Allocations and Compliance

To: The Customer

<Customer>

[Contract Address]

Email: _____

Facsimile: _____

Attention: _____

2. The foregoing notice/notification information pertaining to either Party may be changed by such Party upon notification to the other Party pursuant to Section XII.1.
3. Except where otherwise herein specifically provided, any notice, communication or request required or authorized by this Agreement by either Party to the other shall be deemed properly given: (a) if sent by U.S. First Class mail addressed to the Party at the address set forth above; (b) if sent by a nationally recognized overnight delivery service, two (2) calendar days after

being deposited for delivery to the appropriate address set forth above; (c) if delivered by hand, with written confirmation of receipt; (d) if sent by facsimile to the appropriate fax number as set forth above, with written confirmation of receipt; or (e) on the date of transmission if sent by electronic communication to the appropriate address as set forth above, with confirmation of receipt. Either Party may change the addressee and/or address for correspondence sent to it by giving written notice in accordance with the foregoing.

ARTICLE XIII

SUCCESSORS AND ASSIGNS; RESALE OF HYDROPOWER

1. This Agreement shall be binding upon, shall inure to the benefit of, and may be performed by, the legal successors and assigns of either Party hereto, provided that no assignment by either Party or any successor or assignee of such Party of its rights and obligations hereunder shall be made or become effective without the prior written consent of the other Party, which consent shall not be unreasonably withheld or conditioned. Notwithstanding the foregoing sentence, the Authority may require such approvals, and such consents and other agreements from the Customer and other parties, that the Authority determines are necessary in order to effectuate any such assignment.
2. The Customer may not transfer any portion of the Allocation to any other person, or a location different than the Facility, unless: (a) the Authority in its discretion authorizes the transfer Authority; (b) all other requirements applicable to a transfer, including board approvals, are satisfied; and (c) the transfer is effectuated in a form and subject to such terms and conditions approved by the Authority. Any purported transfer that does not comply with the foregoing requirements shall be invalid and constitute grounds for the Authority in its discretion to suspend Electric Service or terminate the Allocation and/or this Agreement.
3. The Customer may not sell any portion of the Allocation to any other person, allow any other person to use any portion of the Allocation, or allow any other person to interconnect to the Facility. Any purported sale shall be invalid, and any violation of this provision shall constitute grounds for the Authority in its discretion to suspend Electric Service, or terminate the Allocation and/or this Agreement.
4. The Customer shall not itself or allow any other person to distribute or inject electricity from a non-Authority source into the Facility or over any wires, metering, or utility infrastructure owned or operated by the Authority without the Authority's written consent.

ARTICLE XIV

MISCELLANEOUS

1. Choice of Law

This Agreement shall be governed by and construed in accordance with the laws of the State of New York to the extent that such laws are not inconsistent with the FERC License and the Niagara Redevelopment Act (16 USC §§836, 836a) and rulings by the IJC and without regard to conflicts of law provisions.

2. Venue

The Parties: (a) consent to the exclusive jurisdiction and venue of any state court within or for Albany County, New York, with subject matter jurisdiction for adjudication of any claim, suit, action or any other proceeding in law or equity arising under, or in any way relating to this Agreement; (b) agree to accept service of process; and (c) will not raise any argument of inconvenient forum.

3. Previous Agreements; Modifications; and Interpretation

- a. This Agreement shall constitute the sole and complete agreement of the Parties hereto with respect to the sale of the Allocation and the subject matter of the Agreement, and supersedes all previous communications and agreements between the Parties, oral or written, with reference to the sale of the Allocation.
- b. No modifications of this Agreement shall be binding upon the Parties hereto or either of them unless such modification is in writing and is signed by a duly authorized officer of each of them.
- c. No provision shall be construed against a Party on the basis that such Party drafted such provision.

4. Waiver

Any waiver at any time by either the Authority or the Customer of their rights with respect to a default or of any other matter arising out of this Agreement shall not be deemed to be a waiver with respect to any other default or matter. No waiver by either Party of any rights with respect to any matter arising in connection with this Agreement shall be effective unless made in writing and signed by the Party making the waiver.

5. Severability and Voidability

If any term or provision of this Agreement shall be invalidated, declared unlawful or ineffective in whole or in part by an order of the FERC or a court of competent jurisdiction, such order shall not be deemed to invalidate the remaining terms or provisions hereof. Notwithstanding the preceding sentence, if any provision of this Agreement is rendered void or unenforceable or otherwise modified by a court or agency of competent jurisdiction, the entire Agreement shall, at the option of either Party and only in such circumstances in which such Party's interests are materially and adversely impacted by any such action, be rendered void and unenforceable by such affected Party.

ARTICLE XV
EXECUTION

To facilitate execution, this Agreement may be executed in as many counterparts as may be required, and it shall not be necessary that the signatures of, or on behalf of, each Party, or that the signatures of all persons required to bind any Party, appear on each counterpart; but it shall be sufficient that the signature of, or on behalf of, each Party, or that the signatures of the persons required to bind any Party, appear on one or more of the counterparts. All counterparts shall collectively constitute a single agreement. It shall not be necessary in making proof of this Agreement to produce or account for more than a number of counterparts containing the respective signatures of, or on behalf of, all of the Parties hereto. The delivery of an executed counterpart of this Agreement as a PDF or similar file type transmitted via electronic mail, cloud based server, e-signature technology or similar electronic means shall be legal and binding and shall have the same full force and effect as if an original executed counterpart of this Agreement had been delivered.

[SIGNATURES FOLLOW ON NEXT PAGE]

AGREED:

<Customer>

By: _____

Title: _____

Date: _____

AGREED:

POWER AUTHORITY OF THE STATE OF NEW YORK

By: _____
John R. Koelmel, Chairman

Date: _____

SCHEDULE A
PRESERVATION POWER ALLOCATIONS

Customer: <Customer>	Allocation Amount (kW)	Facility and Address	Trustee Approval Date	Allocation Expiration Date
Type of Allocation				
Preservation Power		<Facility Address>		

SCHEDULE B
SUPPLEMENTAL PRESERVATION POWER COMMITMENTS

ARTICLE I
SPECIFIC SUPPLEMENTAL COMMITMENTS

1. Employment Commitments

- a. The Customer shall create and maintain the employment level set forth in the Appendix to this Schedule B (the “Base Employment Level”). Such Base Employment Level shall be the total number of full-time positions held by: (a) individuals who are employed by the Customer at Customer’s Facility identified in the Appendix to this Schedule, and (b) individuals who are contractors or who are employed by contractors of the Customer and assigned to the Facility identified in such Appendix (collectively, “Base Level Employees”). The number of Base Level Employees shall not include individuals employed on a part-time basis (less than 35 hours per week); provided, however, that two individuals each working 20 hours per week or more at such Facility shall be counted as one Base Level Employee.
- b. The Base Employment Level shall not be created or maintained by transfers of employees from previously held positions with the Customer or its affiliates within the State of New York, except that the Base Employment Level may be filled by employees of the Customer laid off from other Customer facilities for *bona fide* economic or management reasons.
- c. The Authority may consider a request to change the Base Employment Level based on a claim of increased productivity, increased efficiency or adoption of new technologies or for other appropriate reasons as determined by the Authority. Any such change shall be within Authority’s discretion.

2. Capital Investment Commitments

The Customer shall make the capital investments specified in the Appendix to this Schedule B.

3. Power Utilization

For each month the Authority provides Electric Service to the Customer, the Customer shall utilize the entire Allocation, as represented by the Billing Demand (as such term is described in the Service Tariff), provided, however, that if only part of the Allocation is being utilized in accordance with Schedule C, the Customer shall utilize such partial amount of the Allocation.

4. Energy Efficiency and Conservation Program

- a. The Customer shall implement an energy efficiency and conservation program at the Facility through either (a) enrollment of the Facility and participation in NYEM in accordance with a NYEM Agreement, or (b) one or more Physical Energy Audits of the Facility, or (c) a combination of such measures, in accordance with the provisions of this Article.
- b. The Authority shall transmit to the Customer a NYEM Agreement and an election form. The Customer shall elect to either (a) enroll the Facility and participate in NYEM for a three-year term ("NYEM Participation") in accordance with the NYEM Agreement, or (b) perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority's communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit within three (3) years of the Effective Date of this Agreement, at its own expense.
- c. The Authority shall, on or before the expiration of the three-year term of the NYEM Agreement, transmit to the Customer a NYEM Agreement specifying the terms and conditions that would apply to NYEM participation for a second term, and an election form. The Customer shall elect either (a) NYEM Participation for a second term, or (b) to perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority's communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit during the calendar year that begins six years after of the Effective Date of this Agreement, at its own expense.
- d. The Authority may in its discretion waive the requirement for a Physical Energy Audit, or may agree to a limited energy audit of the Facility, where it determines that the Physical Energy Audit is unnecessary based on the age of the Facility, energy efficiency and conservation improvements made at the Facility, the length of the Allocation, or other considerations the Authority determines to be relevant.

ARTICLE II
RECORDKEEPING, REPORTING AND FACILITY ACCESS

1. Employment

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority, of the total number of Base Level Employees who are employed at or assigned to the Customer's Facility identified in the Appendix to this Schedule, as reported to the United States Department of Labor (or as reported in such other record as agreed upon by the Authority and the Customer). Such report shall separately identify the individuals who are employed by the Customer, and the individuals who are contractors or who are employed by contractors of the Customer, and shall be certified to be correct by an officer of the Customer, plant manager or such other person authorized by the Customer to prepare and file such report and shall be provided to the Authority on or before the last day of February following the end of the most recent calendar year. The Authority shall have the right to examine and audit on reasonable advance written notice all non-confidential written and electronic records and data concerning employment levels including, but not limited to, personnel records and summaries held by the Customer and its affiliates relating to employment in New York State.

2. Capital Investments

The Customer shall comply with the recordkeeping, recording and reporting requirements specified in the Appendix to this Schedule B.

3. Power Usage

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority on or before the last day of February following the end of the most recent calendar year, of the maximum demand utilized each month in the Facility receiving the power covered by the Agreement.

4. Energy Efficiency and Conservation Program

Upon the Authority's request, the Customer shall provide the Authority with (a) a copy of the results of any Physical Energy Audit performed at the Facility (or, at the Authority's option, a report describing the results), performed pursuant to this Article; and (b) a description of any energy efficiency or conservation measures that the Customer has implemented at the Facility in response to any Physical Energy Audit or as a result of NYEM Participation.

5. Facility Access

Notwithstanding any other provision of the Agreement, the Customer shall provide the Authority with such access to the Facility, and such documentation, as the

Authority deems necessary to determine the Customer's compliance with the Customer's Supplemental Commitments specified in this Schedule B.

ARTICLE III
COMPLIANCE ACTION BY THE AUTHORITY

1. Employment

If the year-end monthly average number of employees is less than 90% of the Base Employment Level set forth in the Appendix to this Schedule B for the subject calendar year, the Authority may reduce the Contract Demand in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount of reduction will be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average monthly employment during the subject calendar year divided by the Base Employment Level. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, the Agreement shall automatically terminate.

2. Capital Investment Commitment

The Authority may reduce the Contract Demand as provided in the Appendix to this Schedule B if the Customer does not comply with the Capital Investment Commitment.

3. Power Utilization Level

If the average of the Customer's six (6) highest Billing Demands (as such term is described in the Service Tariff) for Preservation Power is less than 90% of the Customer's Contract Demand in such calendar year the Authority may reduce the Contract Demand subject to in accordance with the procedures provide in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average of the six (6) highest Billing Demands for in such calendar year divided by the Contract Demand. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.

4. Additional Compliance Action

In addition to the Authority's other rights and remedies provided in this Agreement, the Service Tariff and the Rules, the Authority may suspend Electric Service to the Customer if the Customer does not comply with any of the requirements in Section I.4 or Article II of this Schedule B.

5. Notice of Intent to Reduce Contract Demand

In the event that the Authority determines that the Contract Demand will be wholly or partially reduced pursuant to Sections III.1, III.2, or III.3 of this Schedule B, the Authority shall provide the Customer with at least thirty (30) days prior written notice of the proposed reduction, specifying the amount and reason for the reduction. Before implementing any reduction, the Authority may consider the Customer's scheduled or unscheduled maintenance, Facility upgrade periods, and the business cycle. If, at the end of the thirty (30) day notice period, the Authority determines that a reduction is warranted, it shall provide the Customer with notice of such determination and provide the Customer with sixty (60) days to present a proposed plan with actionable milestones to cure the deficiency. The Authority shall respond to the Customer concerning the acceptability of any proposed plan that is provided in accordance with this Section III.5 within thirty (30) days of the Authority's receipt of such proposed plan. It shall be within the Authority's discretion whether or not to accept the Customer's proposed plan, require a different plan, or implement the reduction of the Contract Demand.

APPENDIX TO SCHEDULE B

BASE EMPLOYMENT LEVEL

The Customer shall employ at least full-time employees (“Base Employment Level”) at the Customer’s Facility. The Base Employment Level shall be maintained for the term of the Allocation through the Allocation Expiration Date specified in Schedule A in accordance with Article I of Schedule B.

CAPITAL INVESTMENT COMMITMENTS

1. **Annual Capital Investment Commitment** (if applicable, as specified below)
 - a. Each Reporting Year, the rolling average of the annual capital investments made by the Customer at the Facility (“Rolling Average”) shall total not less than \$_____ (the “Annual Capital Investment Commitment”). For purposes of this provision, “Rolling Average” means the three-year average comprised of (1) the total amount of capital investments (“Annual CI Expenditures”) made by the Customer at the Facility during the current Reporting Year, and (2) the Annual CI Expenditures made by the Customer at the Facility during the two prior Reporting Years.
 - b. Each year, the Customer shall record its Annual CI Expenditures for purposes of enabling the Authority to determine and verify the Rolling Average, which shall be provided to the Authority in a form specified by the Authority on or before the last day of February following the end of the most recent calendar year.
 - c. If the Customer’s Rolling Average as determined by the Authority is less than 90% of its Annual Capital Investment Commitment for the Reporting Year, the Contract Demand may be reduced by the Authority in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the Rolling Average divided by the Annual Capital Investment Commitment. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.
2. **Expansion Project–Capital Investment Commitment** (if applicable, as specified below)
 - a. The Customer shall make a minimum capital investment of \$_____ to construct, furnish and/or expand the Facility (“Expansion Project Capital Investment Commitment”). The Expansion Project Capital Investment Commitment is expected to consist of the following approximate expenditures on the items indicated:

Line Item 1 -	\$ _____
Line Item 2 -	\$ _____
Line Item 3 -	\$ _____

Total Expansion Project Capital Investment Commitment:

- b. The Expansion Project Capital Investment Commitment shall be made, and the Facility shall be completed and fully operational, no later than _____ (*i.e.*, within three (3) years of the date of the Authority's award of the Allocation). Upon request of the Customer, such date may be extended in the discretion of the Authority.

SCHEDULE C
TAKEDOWN SCHEDULE

SCHEDULE D
ZERO EMISSION CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in Service Tariff No. WNY-2, or in the Rules.

“Affected LSEs” has the meaning provided in Section II.2 of this Schedule D.

“CES Order” means the Order issued by the PSC entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“PP Program ZEC Costs” has the meaning provided in Section II.4.b of this Schedule D.

“Government Action” has the meaning provided in Section II.8 of this Schedule D.

“Load Serving Entity” or “LSE” has the meaning provided in the CES Order.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the PP power program as authorized in the Power Authority Act.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“Zero Emission Credit” or “ZEC” has the meaning provided in the CES Order.

“Zero Emission Credit Charge” or “ZEC Charge” means the charge to the Customer established in this Schedule D.

“ZEC Purchase Obligation” has the meaning provided in Section II.2 of this Schedule D.

“ZEC Program Year” has the meaning provided in Section II.2 of this Schedule D.

II. ZEC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of the Service Tariff or the Rules, the Customer shall be subject to a ZEC Charge as provided in this Schedule D. The ZEC Charge shall be in addition to all other charges, fees and assessments provided for in the Agreement, the Service Tariff and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the ZEC Charge.
2. As provided in the CES Order, the Public Service Commission, as part of the CES and Tier 3 of the Renewable Energy Standard, imposed an obligation on Load Serving Entities that are subject to the CES Order (“Affected LSEs”) to purchase Zero Emission Credits from NYSERDA in an amount representing the Affected LSE’s proportional share of ZECs calculated on the basis of the amount of electric load the LSE serves in relation to the total electric load served by all Load Serving Entities in the New York Control area, to support the preservation of existing at risk nuclear zero emissions attributes in the State (the “ZEC Purchase Obligation”). The ZEC Purchase Obligation is implemented on the basis of program years running from April 1 through March 31 of each year (“ZEC Program Year”).
3. The ZEC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of supporting the CES and Tier 3 of the RES and implementing the PP power program in a manner that is consistent with the New York State Energy Plan. The Authority will comply with the CES and Tier 3 of the RES by applying a form of ZEC Purchase Obligation to the end-user load for which the Authority serves as a load serving entity, including the load that the Authority serves under the PP power program.
4. The ZEC Charge, which is intended to recover from the Customer costs that the Authority incurs for purchasing ZECs in quantities that are attributable to the Customer’s PP load served under this Agreement, will be determined and assessed to the Customer as follows:
 - a. The cost of the total ZEC Purchase Obligation for all LSEs in the New York Control Area, including the Authority as a participating load serving entity, will be assessed pursuant to the methodology provided in the CES Order. The Authority will purchase its proportionate share of ZECs from NYSERDA based on the proportion of the forecasted total kilowatt-hours load served by the Authority (i.e., total Authority LSE load) in relation to the forecasted total kilowatt-hours load served by all LSEs in the New York Control Area as

provided in the CES Order. The ZEC Purchase Obligations may be based on initial load forecasts with reconciliations made at the end of each ZEC Program Year by NYSERDA.

- b. The Authority will allocate costs from its ZEC Purchase Obligation between its power programs/load for which it serves as load serving entity, including the PP load that it serves (the “PP Program ZEC Costs”). Such allocation will be based on the forecasted kilowatt-hours load of the PP program to be served by the Authority in relation to the forecasted total kilowatt-hours load served by the Authority (total Authority LSE load) for each ZEC Program Year. In addition, any balance resulting from the ZEC Program Year-end reconciliation of ZEC Purchase Obligations will be allocated to the PP power program based on the proportion of the actual annual kilowatt-hours load served under such programs to total actual annual kilowatt-hours load served by the Authority (total Authority LSE load).
 - c. The Authority will allocate a portion of the PP Program ZEC Costs to the Customer as the ZEC Charge based on the proportion of the Customer’s actual kilowatt-hours load for the PP purchased by the Customer to total kilowatt-hours load served by the Authority under the PP power program (i.e., PP Program level load). In addition, any balance resulting from the ZEC Program Year-end reconciliation of the ZEC Purchase Obligation referenced above will be passed through to the Customer based on the proportion of the Customer’s annual kilowatt-hours load purchased under this Agreement to total annual kilowatt-hours load served under the PP power program by the Authority (PP Program level load). The ZEC Charge assessed to the Customer shall not include any costs resulting from the Authority’s inability to collect a ZEC Charge from any other Authority customer.
5. The Authority may, in its discretion, include the ZEC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the ZEC Charge pursuant to another Authority-established procedure.
6. The Authority may, in its discretion, modify the methodology used for determining the ZEC Charge and the procedures used to implement such ZEC Charge on a nondiscriminatory basis among affected PP customers, upon consideration of such matters as Public Service Commission orders modifying or implementing the CES Order, guidance issued by the New York Department of Public Service, and other information that the Authority reasonably determines to be appropriate to the determination of such methodology. The Authority shall provide Customer with reasonable notice of any modifications to the methodology or procedures used to determine and implement the ZEC Charge.
7. Nothing in this Schedule shall limit or otherwise affect the Authority’s right to charge or collect from the Customer any rate, charge, fee, assessment, or tax

provided for under any other provision of the Agreement, or any provision of the Service Tariff, or the Rules.

8. If the ZEC Purchase Obligation is modified or terminated by the Public Service Commission or other controlling governmental authority (collectively, “Government Action”), the Authority shall modify or terminate the ZEC Charge, and assess any additional charges or provide any credits to the Customer, to the extent that the Authority determines such actions to be appropriate based on such Government Action.

SCHEDULE E
MONTHLY RENEWABLE ENERGY CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in the Service Tariff No, or in the Rules.

“Alternative REC Compliance Program” has the meaning provided in Section III.1 of this Schedule E.

“Annual REC Percentage Target” has the meaning provided in Section II.2 of this Schedule E.

“CES Order” means the Order issued by the Public Service Commission entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“Clean Energy Standard” or “CES” means the Clean Energy Standard adopted by the State in the CES Order.

“Load Serving Entity” has the meaning provided in the CES Order.

“Mandatory Minimum Percentage Proportion” has the meaning provided in the CES Order.

“Monthly Renewable Energy Credit Charge” or “Monthly REC Charge” means the monthly charge to the Customer established in this Schedule E.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Credit” or “REC” refers to a qualifying renewable energy credit as described in the CES Order.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the PP power program as authorized in the Power Authority Act.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“REC Compliance Measures” mean: (1) the Authority’s procurement of RECs from NYSERDA in accordance with NYSERDA procedures and/or the CES Order; (2) the Authority’s procurement of RECs from available REC markets; (3) the Authority’s procurement of RECs from sources other than those identified in items (1) and (2) of this definition, including through a procurement process adopted by the Authority; and/or (4) any other measure that the PCS authorizes a Load Serving Entity to implement for the purpose of meeting the applicable Mandatory Minimum Percentage Proportion.

“Total Monthly PP Load” has the meaning provided in Section II.3.b of this Schedule E

“Total Monthly REC Costs” has the meaning provided in Section II.3.b of this Schedule E.

II. MONTHLY REC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of the Service Tariff, or the Rules, the Customer shall be subject to a Monthly REC Charge as provided in this Schedule E. The Monthly REC Charge is in addition to all other charges, fees and assessments provided in the Agreement, the Service Tariff and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the Monthly REC Charge.
2. The Monthly REC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of complying with the CES and Tier 1 of the RES and implementing the PP power program in a manner that is consistent with the New York State Energy Plan, pursuant to which the Authority will invest in new renewable generation resources to serve its PP customers. Such investments will be made through the procurement of RECs through REC Compliance Measures in quantities that are intended to address the annual Mandatory Minimum Percentage Proportions as applied by the Authority to the total PP load that the Authority will serve each calendar year (the “Annual REC Percentage Target”) for the purpose of ultimately meeting the RES.
3. The Monthly REC Charge, which is intended to recover from the Customer costs that the Authority incurs for implementing REC Compliance Measures that are attributable to the Customer’s PP load served under this Agreement, will be determined and assessed to the Customer as follows:

- a. The Authority shall have the right, for each calendar year to implement such REC Compliance Measures as it determines in its discretion to be appropriate for the purpose of meeting the Annual REC Percentage Target for the total PP load that it will serve during such calendar year.
- b. The Authority will, for each month of each calendar year, calculate the total costs (“Total Monthly REC Costs”) that the Authority has incurred or estimates that it will incur from implementing RES Compliance Measures for the purpose of meeting the Annual REC Percentage Target for the total PP kilowatt-hour load for the month (“Total Monthly PP Load”). The Total Monthly REC Costs may be calculated based on forecasts of the Total Monthly PP Load that the Authority expects to serve for the month, or on a lagged basis based on the actual Total Monthly PP Load that the Authority served for the month.
- c. Each month, the Authority will assess to the Customer, as a Monthly REC Charge, which will represent the Customer’s share of the Total Monthly REC Costs assessed to the Total Monthly PP Load. The Monthly REC Charge will be assessed as the proportion of the Customer’s total kilowatt-hours load served by the Authority for such month to the Total Monthly PP Load served by the Authority for such month, provided, however, that:
 - i. the Monthly REC Charge to the Customer shall not include any costs associated with the Authority’s inability to collect the Monthly REC Charge from other Authority customers; and
 - ii. the effective per-MWh rate of the Monthly REC Charge to the Customer averaged over the REC Program Year to which the Annual REC Percentage Target applies shall not exceed the per-MWh rate of a Monthly REC Charge based on NYSERDA’s published REC price for the REC Program Year.
4. The Authority may, in its discretion, include the Monthly REC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the Monthly REC Charge pursuant to another Authority-established procedure.
5. The Authority will, at the conclusion of each calendar year in which it assesses a Monthly REC Charge, conduct a reconciliation process based on the actual costs that it incurred for REC Compliance Measures and actual load served for the year, compared with cost or load estimates or forecasts, if any, that the Authority used to calculate the Customer’s Monthly REC Charges during the year. The Authority will issue a credit, or an adjusted final charge for the year, as appropriate, based on the results of such reconciliation process. Any such final charge shall be payable within the time frame applicable to the Authority’s bills for Electric Service under this Agreement or pursuant to any other procedure established by the Authority pursuant to Section II.4 of this Schedule E.

6. Notwithstanding the provisions of Section II.3 of this Schedule E, if Electric Service for the Allocation is commenced after the Authority has implemented REC Compliance Measures for the year in which such Electric Service is commenced, and as a result the Customer's load cannot be accounted for in such REC Compliance Measures, the Authority may in its discretion implement separate REC Compliance Measures in order to meet the Annual REC Percentage Target for Customer's load for the year, and bill the Customer for the costs associated with such separate REC Compliance Measures.
7. Nothing in this Schedule shall limit or otherwise affect the Authority's right to charge or collect from the Customer, any rate, charge, fee, assessment, or tax provided for under any other provision of the Agreement, or any provision of the Service Tariff, or the Rules.

III. ALTERNATIVE REC COMPLIANCE PROGRAM

1. Nothing in this Schedule E shall be construed as preventing the Parties from entering into other agreements for an alternative arrangement for the Authority to meet the Annual REC Percentage Target with respect to the Customer's Allocation, including but not limited to Customer self-supply of RECs, alternative REC compliance programs and cost allocation mechanisms, in lieu of the Monthly REC Charge provided in this Schedule E (collectively, "Alternative REC Compliance Program").
2. The Authority shall communicate at least biennially with the Customer concerning implementation of the RES Compliance Program and potential Alternative REC Compliance Programs, if any, that the Authority is offering or expects to offer.



POWER AUTHORITY OF THE STATE OF NEW YORK

30 SOUTH PEARL STREET

ALBANY, NY 12207

Schedule of Rates for Sale of Firm Power Service to
Preservation Power Customers
(Authority Delivery Service)

Service Tariff No. 20-A

Table of Contents

Schedule of Rates for Firm Power Service	Leaf No.
I. Applicability	3
II. Abbreviations and Terms.....	3
III. Monthly Rates and Charges.....	6
A. Preservation Power (PP) Base Rates	6
B. PP Rates No Lower than Rural/Domestic Rate	6
C. Minimum Monthly Charge	6
D. Transmission Charges	6
E. Incremental Electricity Supply	6
F. Metering	7
G. Estimated Billing.....	8
H. Adjustment to Charges	9
I. Billing Period	9
J. Billing Demand.....	9
K. Billing Energy	9
L. Contract Demand	9
IV. General Provisions	10
A. Character of Service	10
B. Availability of Energy	10
C. Delivery	10
D. Adjustment of Rates	10
E. Billing Methodology and Billing	11
F. Payment by Customer to Authority.....	11
1. Demand and Energy Rates, Taxes	11
2. Transmission Charge	12
3. NYISO Transmission and Related Charges.....	12
4. Taxes Defined	13
5. Substitute Energy	13
6. Other Charges	13
7. Payment Information	13
8. Billing Disputes	13
G. Rendition and Payment of Bills.....	14
H. Adjustment of Charges – Distribution Losses.....	15
I. Conflicts	15
V. Annual Adjustment Factor	16

Schedule of Rates for Firm Power Service

I. Applicability

To sales of Preservation Power made directly to a qualified business Customer for firm power service that is delivered by the Authority.

II. Abbreviations and Terms

- kW kilowatt(s)
- kW-mo. kilowatt-month
- kWh kilowatt-hour(s)
- MWh megawatt-hour(s)
- NYISO New York Independent System Operator, Inc. or any successor organization
- PAL New York Public Authorities Law
- OATT Open Access Transmission Tariff issued by the NYISO

Agreement: An executed written agreement between the Authority and the Customer for the sale of Preservation Power to the Customer.

Annual Adjustment Factor or **AAF**: This term shall have the meaning set forth in Section V herein.

Authority: The Power Authority of the State of New York, a corporate municipal instrumentality and a political subdivision of the State of New York created pursuant to Chapter 772 of the New York Laws of 1931 and existing and operating under Title 1 of Article 5 of the PAL, also known as the “New York Power Authority.”

Capacity Tag: An amount of capacity (kW) expressed by the NYISO as the UCAP obligation of a Customer’s load for a capability period. The UCAP obligation is inclusive of any adjustments necessary to meet the NYISO requirement.

Customer: A business entity that (1) has received an Allocation of Preservation Power, (2) purchases such Preservation Power directly from the Authority, and (3) receives delivery of the Preservation Power from the Authority.

Electric Service: The power and energy provided to the Customer in accordance with the Agreement, this Service Tariff and the Rules.

Firm Power: Hydropower capacity (kW) that is intended to be always available from the Project subject to the curtailment provisions set forth in the Agreement between the Authority and the Customer and this Service Tariff. Firm Power shall not include peaking power.

Firm Energy: Energy (kWh) associated with Firm Power.

Incremental Demand Charge: A charge applicable when the Customer's maximum hourly metered load value recorded in a given Billing Period exceeds the Contract Demand.

Incremental Energy: The amount of energy (kwh) that would be necessary to supply the Customer's load in excess of the Firm Energy calculated using the LFS methodology. The Authority will calculate the value of Incremental Energy using the NYISO Day-Ahead Market and/or the Real-Time Market LBMP prices at the applicable NYISO Zone in which the Customer receives deliveries. All costs associated with the provision of Incremental Energy will be passed through to Customer.

Incremental UCAP: Capacity (kW) that is necessary to meet the Customer's UCAP requirement in excess of the Contract Demand. The Authority will supply Customer's NYISO-required Incremental UCAP, if any, and use the Portfolio Weighted Average Price to assess Incremental UCAP charges. All Incremental UCAP charges will be passed through to the Customer. Incremental UCAP charges only apply when a Customer's Capacity Tag inclusive of the NYISO installed reserve margin is in excess of the Contract Demand.

Load Factor Sharing or LFS: A type of billing methodology applicable to a Customer's Allocation which determines how a Customer's total Native System Load is apportioned between the power and energy supplied by the Allocation and the Customer's other source of electricity supply, if any, including Market Supply. LFS is used to determine the amount of Firm Energy supplied and billed on the basis of the Customer's actual total Native System Load per the monthly billing cycle as follows:

1. When the Maximum Metered Demand is less than ($<$) the Contract Demand, then the Customer's entire load will be supplied by Firm Energy.
2. When the Maximum Metered Demand is greater than ($>$) the Contract Demand, then the Customer's portion of Firm Energy supply will be determined as follows:
 - a. For Hourly Billing: $\sum (\text{Contract Demand} \div \text{Maximum Metered Demand} \times \text{the in-hour demand of Customer's total Native System Load for all hours})$.
 - b. For Monthly Billing: $(\text{Contract Demand} \div \text{Maximum Metered Demand} \times \text{the total consumed energy by the Customer within the bill cycle})$.

Load Serving Entity or LSE: This term shall have the meaning set forth in the Agreement.

Locational Based Marginal Pricing or LBMP: This term shall have the meaning set forth in the NYISO Tariffs, as such definition may be modified from time to time.

Maximum Metered Demand: The highest 15 or 30-minute integrated demand, as determined by the Authority, during each Billing Period recorded on the meter that is used by the Customer in accordance with this Service Tariff and the Agreement.

Native System Load: The total consumption of the Customer's electric system, as determined by the Authority's revenue-grade metering equipment, without the offset of Customer's behind the meter generation. It is represented as the sum of all incoming power, plus internal generation behind the system meter, minus power exports to the bulk electric system.

Portfolio Weighted Average Price: The rate that is applied to Incremental UCAP determined by NYPA using an average weighting of NYPA's costs in procuring UCAP as a result of all applicable NYISO capacity auctions and forward purchases.

Preservation Power or PP: Firm Power and Firm Energy made available under this Service Tariff by the Authority from the Project for sale to the Customer for business purposes pursuant to PAL § 1005(5) and (13), and that is delivered by the Authority.

Project: The Authority's St. Lawrence-FDR Power Project, FERC Project No. 2000.

Rate Year or RY: The period from July 1 through June 30. For example, RY 2018 refers to July 1, 2018 through June 30, 2019.

Rules: The Authority's rules and regulations set forth in 21 NYCRR § 450 *et seq.*, as they may be amended from time to time.

Service Tariff: This Service Tariff No. 20A.

Transmission Service Charge or TSC: The Authority's Transmission Service Charge as provided for and defined in the NYISO OATT.

All other capitalized terms and abbreviations used in this Service Tariff but not defined in this Section or other provisions of this Service Tariff shall have the same meaning as set forth in the Agreement.

III. Monthly Rates and Charges

A. Preservation Power (PP) Base Rates

The rates to be charged to the Customer by the Authority shall be as follows:

Rate Year	Billing Period	Demand (\$/kW)	Energy (\$/MWh)
2018	July 2018 – June 2019	7.90	13.50

B. PP Rates No Lower than Rural/Domestic Rate

At all times the applicable PP base rates for demand and energy determined in accordance with Sections III.A and V of this Service Tariff shall be no lower than the rates charged by the Authority for the sale of hydroelectricity for the benefit of rural and domestic customers receiving service in accordance with the Niagara Redevelopment Act, 16 U.S.C. § 836(b)(1) (the "Rural/Domestic Rate"). This provision shall be implemented as follows: if the base rates, as determined in accordance with Sections III.A and V of this Service Tariff, are lower than the Rural/Domestic Rate on an average \$/MWh basis, each set of rates measured at 80% load factor which is generally regarded as representative for PP Customers, then the base rates determined under Sections III.A and V of this Service Tariff will be revised to make them equal to the Rural/Domestic Rate on an average \$/MWh basis. However, the base rates as so revised will have no effect until such time as these base rates are lower than the Rural/Domestic Rate.

C. Minimum Monthly Charge

The Minimum Monthly Charge shall equal the product of the demand rate specified in Section III.A and the Contract Demand (as defined herein). Such Minimum Monthly Charge shall be in addition to any NYISO Charges or Taxes (each as defined herein) incurred by the Authority with respect to the Customer's Allocation, and any other charges provided in this Service Tariff, the Agreement or the Rules.

D. Transmission Charges

The base rates set forth in this Section III exclude any applicable costs for transmission and delivery services provided by the Authority. The Customer shall compensate the Authority for all transmission and delivery costs incurred by the Authority with respect to the Allocation and Market Supply, including such costs that are charged pursuant to the NYISO Tariffs.

E. Incremental Electricity Supply

If in any given hour during a Billing Period the Customer's load requirements exceed the Customer's Contract Demand, the Authority will provide the required incremental power and

energy ("Market Supply") and the Customer shall pay Authority for any and all costs associated with such provision of Market Supply. The Market Supply shall be reflected in the Customer's bill including, but not limited to, Incremental Demand Charges, Incremental Energy Charges, Incremental UCAP, TSC charges, and any administrative fees associated with such Market Supply necessary to satisfy the Customer's load above its Contract Demand.

F. Metering

The Authority shall furnish and Customer shall pay for any and all metering and related equipment, including revenue-grade metering and installation costs, that is necessary to measure the Customer's Native System Load as determined by the Authority.

DRAFT

G. Estimated Billing

If the Authority, in its discretion, determines that it lacks reliable data on the Customer's actual demand and/or energy usage for a Billing Period during which the Customer receives Electric Service from the Authority, the Authority shall have the right to render a bill to the Customer for such Billing Period based on estimated demand and estimated usage ("Estimated Bill").

For the purpose of calculating a Billing Demand charge for an Estimated Bill, the demand charge will be calculated using an estimated demand amount (kW) based on an average of the Customer's Billing Demand (kW) values plus Incremental Demand quantities (kW), if any, for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated demand amount (kW) for the Estimated Bill will equal the Customer's takedown (kW) amount.

For the purpose of calculating a Billing Energy charge for an Estimated Bill, the energy charge will be calculated using an estimated energy amount (kWh) based on the average of the Customer's Billing Energy (kWh) values plus Incremental Energy quantities (kWh), if any, for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated energy amount (kWh) will be equal to the takedown (kW) amount at 70 percent load factor for that Billing Period.

If an alternative billing methodology is applicable to the Customer, the demand charge and energy charge for rendering an Estimated Bill shall be calculated in a manner appropriate to such alternative billing methodology as determined by the Authority.

If data indicating the Customer's actual demand and usage for any Billing Period in which an Estimated Bill was rendered is subsequently provided to the Authority, the Authority will make necessary adjustments to the corresponding Estimated Bill and, as appropriate, render a revised bill (or provide a credit) to the Customer.

The Minimum Monthly Charge provisions of Section III.D shall apply to Estimated Bills.

The Authority's discretion to render Estimated Bills is not intended and shall not be construed to limit the Authority's rights under the Agreement.

H. Adjustments to Charges

In addition to any other adjustments provided for in this Service Tariff, in any Billing Period, the Authority may make appropriate adjustments to billings and charges to address such matters as billing and payment errors, and the receipt of actual, additional, or corrected data concerning Customer energy or demand usage.

I. Billing Period

The Billing Period is any period of approximately thirty (30) days, generally ending with the last day of each calendar month.

J. Billing Demand

Billing Demand shall be determined by applying the applicable billing methodology to total Native System Load meter readings during the Billing Period. See Section IV.E, below.

K. Billing Energy

Billing Energy shall be determined by applying the applicable billing methodology to total Native System Load meter readings during the Billing Period. See Section IV.E, below.

L. Contract Demand

The Contract Demand will be the amount of Preservation Power, not to exceed the Allocation, provided by the Authority to the Customer in accordance with the Agreement.

IV. General Provisions

A. Character of Service

Alternating current; sixty cycles, three-phase.

B. Availability of Energy

1. Subject to Section IV.B.2, the Authority shall provide to the Customer in any Billing Period Firm Energy associated with Firm Power. The offer of Firm Energy for delivery shall fulfill the Authority's obligations for purposes of this provision whether or not the Firm Energy is taken by the Customer.
2. In the event of an Adverse Water Condition, the rights and obligations of the Customer and Authority, including but not limited to such matters as Substitute Energy and responsibility for payment of costs associated therewith, will be governed by the Agreement.

C. Delivery

For the purpose of this Service Tariff, Firm Power and Firm Energy shall be deemed to be offered when the Authority is able to supply Firm Power and Firm Energy to the Authority's designated NYISO load bus. If, despite such offer, there is a failure of delivery caused by the Customer, NYISO or the Authority, such failure shall not be subject to a billing adjustment pursuant to Section 454.6(d) of the Rules or any successor provision addressing adjustments.

D. Adjustment of Rates

To the extent not inconsistent with the Agreement, the base rates contained in this Service Tariff may be revised from time to time on not less than thirty (30) days written notice to the Customer.

E. Billing Methodology

Unless otherwise specified in the Agreement, the following provisions shall apply:

1. The billing methodology used to determine the amount of Firm Power and Firm Energy to be billed to the Customer related to its Allocation shall be Load Factor Sharing ("LFS") in a manner consistent with the Agreement. An alternative billing methodology may be used provided the Customer and the Authority agree in writing.
2. Billing Energy - The LFS methodology will be applied against the Customer's Native System Load during the Billing Period to determine the amount of Firm Energy (kWh) attributable to the Allocation (Billing Energy) to be billed to the Customer and charged at the applicable PP Rate. Incremental Energy will be quantified as the difference between the Firm Energy amount and the Native System Load and charged at a rate equivalent to the market LBMP in which such Incremental Energy was procured. All energy quantities will be adjusted for losses.
3. Billing Demand – The LFS methodology will be applied against the Customer's Maximum Metered Load during the Billing Period to determine the amount of Firm Power (kW) attributable to the Allocation (Billing Demand) to be billed to the Customer and charged at the applicable PP Rate. If the Maximum Metered Load exceeds the Contract Demand, an Incremental Demand amount will be quantified as the difference between the Maximum Metered Load amount and the Contract Demand and charged applying a rate using the Portfolio Weighted Average Price method. All demand quantities will be adjusted for losses.
4. Billing for Market Supply - The Customer shall pay the Authority for any and all costs associated with the Authority's provision of Market Supply to satisfy the Customer's load that exceed the Customer's Contract Demand during the Billing Period including but not limited to Incremental Demand Charges, Incremental Energy Charges, and Incremental UCAP.

F. Payment by Customer to Authority

1. Demand and Energy Charges, Taxes

The Customer shall pay the Authority for Firm Power, Firm Energy, and Market Supply during any Billing Period the higher of either (i) the sum of (a), (b) and (c) below, or (ii) the Minimum Monthly Charge (as defined herein):

- a. The demand rate per kilowatt for Firm Power specified in this Service Tariff or any modification thereof applied to the Customer's Billing Demand (as defined in Section IV.E, above) for the Billing Period; and
- b. The energy rate per MWh for Firm Energy specified in this Service Tariff or any modification thereof applied to the Customer's Billing Energy (as defined in Section IV.E, above) for the Billing Period; and
- c. Any and all charges associated with the provision of Market Supply as provided for in this Service Tariff and the Agreement; and

- d. A charge representing reimbursement to the Authority for all applicable Taxes incurred by the Authority as a result of providing Preservation Power allocated to the Customer.

2. Transmission Charge

The Customer shall compensate the Authority for all transmission costs incurred by the Authority with respect to the Allocation, including such costs that are charged pursuant to the OATT.

3. NYISO Transmission and Related Charges

The Customer shall compensate the Authority for the following NYISO transmission and related charges (collectively, "NYISO Charges") assessed on the Authority for services provided by the NYISO pursuant to its OATT or other tariffs (as the provisions of those tariffs may be amended and in effect from time to time) associated with providing Electric Service to the Customer:

- A. Ancillary Services 1 through 6 and any new ancillary services as may be defined and included in the OATT from time to time;
- B. Marginal losses;
- C. The New York Power Authority Transmission Adjustment Charge ("NTAC");
- D. Congestion costs inclusive of any rents collected or owed due to any associated grandfathered transmission congestion contracts as provided in Attachment K of the OATT;
- E. Any and all other charges, assessments, or other amounts associated with deliveries to Customers or otherwise associated with the Authority's responsibilities as a Load Serving Entity for the Customers that are assessed on the Authority by the NYISO under the provisions of its OATT or under other applicable tariffs; and
- F. Any charges assessed on the Authority with respect to the provision of Electric Service to Customers for facilities needed to maintain reliability and incurred in connection with the NYISO's Comprehensive System Planning Process (or similar reliability-related obligations incurred by the Authority with respect to Electric Service to the Customer), applicable tariffs, or required to be paid by the Authority in accordance with law, regardless of whether such charges are assessed by the NYISO or another party.

The NYISO Charges, if any, incurred by the Authority on behalf of the Customer, are in addition to the Authority production charges that are charged to the Customer in accordance with other provisions of this Service Tariff.

The method of billing NYISO charges to the Customer will be based on Authority's discretion.

4. Taxes Defined

Taxes shall be any adjustment as the Authority deems necessary to recover from the Customer any taxes, assessments or any other charges mandated by federal, state or local agencies or authorities that are levied on the Authority or that the Authority is required to collect from the Customer if and to the extent such taxes, assessments or charges are not recovered by the Authority pursuant to another provision of this Service Tariff.

5. Substitute Energy

The Customer shall pay for Substitute Energy, if applicable, as specified in the Agreement.

6. Other Charges

The Customer shall pay the Authority for all other charges provided for in the Agreement.

7. Payment Information

Bills computed under this Service Tariff are due and payable by electronic wire transfer in accordance with the Rules. Such wire transfer shall be made to J P Morgan Chase NY, NY / ABA021000021 / NYPA A/C # 008-030383, unless otherwise indicated in writing by the Authority. The Authority may in its discretion change the foregoing account and routing information upon notice to the Customer.

8. Billing Disputes

In the event that there is a dispute on any items of a bill rendered by the Authority, the Customer shall pay such bill in full. If necessary, any adjustments will be made thereafter.

G. Rendition and Payment of Bills

1. The Authority will render bills to the Customer for Electric Service on or before the tenth (10th) business day of the month for charges due for the previous Billing Period. Such bills shall include charges for Electric Service, NYISO Charges associated with the Allocation (subject to adjustment consistent with any later NYISO re-billings to the Authority), and all other applicable charges, and are subject to adjustment as provided for in the Agreement, the Service Tariff and the Rules.
2. The Authority will charge and collect from the Customer all Taxes (including local, state and federal taxes) the Authority determines are applicable, unless the Customer furnishes the Authority with proof satisfactory to the Authority that (i) the Customer is exempt from the payment of any such Taxes, and/or (ii) the Authority is not obligated to collect such Taxes from the Customer. If the Authority is not collecting Taxes from the Customer based on the circumstances described in (i) or (ii) above, the Customer shall immediately inform the Authority of any change in circumstances relating to its tax status that would require the Authority to charge and collect such Taxes from the Customer.
3. Unless otherwise agreed to by the Authority and the Customer in writing, the Authority will render bills to the Customer electronically.
4. Payment of bills by the Customer shall be due and payable by the Customer within twenty (20) days of the date the Authority renders the bill.
5. Except as otherwise agreed by the Authority in writing, if the Customer fails to pay any bill when due an interest charge of two percent of the amount unpaid will be added thereto as liquidated damages, and thereafter, as further liquidated damages, an additional interest charge of one and one-half percent of the sum unpaid shall be added on the first day of each succeeding Billing Period until the amount due, including interest, is paid in full.
6. If at any time after commencement of Electric Service the Customer fails to make complete payment of any two (2) bills for Electric Service when such bills become due pursuant to Agreement, the Authority shall have the right to require that the Customer deposit with the Authority a sum of money in an amount equal to all charges that would be due under this Agreement for Electric Service for two (2) consecutive calendar months as estimated by the Authority. Such deposit will be deemed security for the payment of unpaid bills and/or other claims of the Authority against the Customer upon termination of Electric Service. The failure or refusal of the Customer to provide the deposit within thirty (30) days of a request for such deposit will be grounds for the Authority in its discretion to suspend Electric Service to the Customer or terminate the Agreement.

Unless otherwise agreed to by the Authority and the Customer in writing, in the event the Customer disputes any item of any bill rendered by Authority, the Customer shall pay such bill in full within the time provided for by this Agreement, and adjustments, if appropriate, will be made thereafter.

H. Adjustment of Charges – Distribution Losses

The Authority will make appropriate adjustments to compensate for distribution losses of the Authority.

I. Conflicts

In the event of any inconsistencies, conflicts, or differences between the provisions of this Service Tariff and the Rules, the provisions of this Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of the Agreement and this Service Tariff or the Rules, the provisions of the Agreement shall govern.

V. Annual Adjustment Factor

A. Adjustment of Rates

1. The AAF will be based upon a weighted average of three indices described below. For each new Rate Year, the index value for the latest available calendar year ("Index Value for the Measuring Year") will be compared to the index value for the calendar year immediately preceding the latest available calendar year (the Index Value for the Measuring Year -1"). The change for each index will then be multiplied by the indicated weights. As described in detail below, these products are then summed, producing the AAF. The AAF will be multiplied by the base rate for the current Rate Year to produce the base rates for the new Rate Year, subject to a maximum adjustment of $\pm 5.0\%$ (" $\pm 5\%$ Collar"). Amounts outside the $\pm 5\%$ Collar shall be referred to as the "Excess."

Index 1, "BLS Industrial Power Price" (35% weight): The average of the monthly Producer Price Index for Industrial Electric Power, commodity code number 0543, not seasonally adjusted, as reported by the U.S. Department of Labor, Bureau of Labor Statistics ("BLS") electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 1, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

Index 2, "EIA Average Industrial Power Price" (40% weight): The average weighted annual price (as measured in cents/kWh) for electric sales to the industrial sector in the ten states of CT, MA, ME, NH, NJ, NY, OH, PA, RI and VT ("Selected States") as reported by Coal and Electric Data and Renewables Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration ("EIA"); U.S. Department of Energy Form EIA-861 Final Data File. For Index 2, the Index Value for the Measuring Year will be the index for the calendar year two years preceding July 1 of the new Rate Year.

Index 3, "BLS Industrial Commodities Price Less Fuel" (25% weight): The monthly average of the Producer Price Index for Industrial Commodities less fuel, commodity code number 03T15M05, not seasonally adjusted, as reported by the U.S. Department of Labor, BLS electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 3, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

2. Annual Adjustment Factor Computation Guide

- Step 1: For each of the three Indices, divide the Index Value for Measuring Year by the Index Value for the Measuring Year-1.
- Step 2: Multiply the ratios determined in Step 1 by percentage weights for each Index. Sum the results to determine the weighted average. This is the AAF.
- Step 3: Commencing RY 2014, modifications to the AAF will be subject to $\pm 5\%$ Collar, as described below.
- a) When the AAF falls outside the $\pm 5\%$ Collar, the Excess will be carried over to the subsequent RY. If the AAF in the subsequent RY is within the $\pm 5\%$ Collar, the current RY Excess will be added to/subtracted from the subsequent Rate Year's AAF, up to the $\pm 5\%$ Collar.

- b) Excesses will continue to accrue without limit and carry over such that they will be added to/subtracted from the AAF in any year where the AAF is within the $\pm 5\%$ Collar.

Step 4: Multiply the current Rate Year base rate by the AAF calculated in Step 2 to determine the new Rate Year base rate.

The foregoing calculation shall be performed by the Authority consistent with the sample presented in Section V.B below.

3. The Authority shall provide the Customer with notice of any adjustment to the current base rate per the above and with all data and calculations necessary to compute such adjustment by June 15th of each year to be effective on July 1 of such year, commencing in 2014. The values of the latest officially published (electronically or otherwise) versions of the indices and data provided by the BLS and EIA as of June 1 shall be used notwithstanding any subsequent revisions to the indices.
4. If during the term of the Agreement any of the three above indices ceases to be available or ceases to be reflective of the relevant factors or of changes which the indices were intended to reflect, the Customer and the Authority may mutually select a substitute Index. The Customer and the Authority agree to mutually select substitute indices within 90 days, once one of them is notified by the other that the indices are no longer available or no longer reflect the relevant factors or changes which the indices were intended to reflect. Should the 90-day period cover a planned July 1 rate change, the current base rates will remain in effect until substitute indices are selected and the adjusted rates based on the substitute indices will be retroactive to the previous July 1. If the Customer and Authority are unable to reach agreement on substitute indices within the 90-day period, the Customer and the Authority agree to substitute the mathematic average of the PPI—Intermediate Materials, Supplies and Components (BLS Series ID WPUSOP2000) and the PPI-- Finished Goods (BLS Series ID WPUSOP3000) indices for one or more indices that have ceased to be available or reflective of their intended purpose and shall assume the percentage weighting(s) of the one or more discontinued indices as indicated in Section V.A.1.

B. Sample Computation of the AAF (hypothetical values for July 1, 2017 implementation):

STEP 1

Determine the Index Value for the Measuring Year (MY) and Measuring Year - 1 (MY-1) for Each Index

- Index 1 - Producer Price Index, Industrial Power

	Measuring Year (2016)	Measuring Year - 1 (2015)
January	205.3	167.8
February	204.3	167.6
March	204.5	168.2
April	202.4	168.6
May	206.3	171.6
June	220.4	180.1
July	226.2	182.7
August	227.3	179.2
September	228.1	181.8
October	214.9	170.2
November	211.3	168.8
December	211.7	166.6
Average	213.6	223.7
Ratio of MY/MY-1		0.95

- Index 2 – EIA Industrial Rate

<u>State</u>	<u>Revenues</u> (\$000s)	<u>Sales</u> (MWh)	<u>Avg. Rate</u> (cents/kWh)
<u>Measuring Year (2015)</u>			
CT	444,588	3,432,002	
MA	1,068,927	7,892,165	
ME	290,360	3,208,045	
NH	252,331	1,981,028	
NJ	778,985	7,320,398	
NY	1,140,573	18,079,200	
OH	3,548,736	50,556,675	
PA	3,411,815	47,404,272	
RI	109,866	798,532	
VT	146,022	1,421,601	
TOTAL	11,192,203	142,093,918	7.88
<u>Measuring Year -1 (2014)</u>			
CT	453,958	3,514,798	
MA	1,014,262	7,960,941	
ME	300,412	3,357,486	
NH	234,900	1,969,064	
NJ	855,757	7,516,616	
NY	1,184,255	18,002,976	
OH	3,440,919	50,829,251	
PA	3,580,990	48,317,693	
RI	114,111	887,150	
VT	145,111	1,417,994	
TOTAL	11,324,673	143,773,969	7.88
Ratio of MY/MY-1			1.00

- Index 3 – Producer Price Index, Industrial Commodities Less Fuel

	Measuring Year (2016)	Measuring Year -1 (2015)
January	191.9	196.0
February	191.8	195.4
March	192.1	195.0
April	192.8	194.8
May	193.4	194.9
June	193.7	195.2
July	193.7	194.9
August	194.0	193.9
September	193.9	193.1
October	194.3	192.9
November	194.9	192.3
December	195.6	191.9
Average	193.5	194.2
Ratio of MY/MY-1		1.00

STEP 2

Determine AAF by Summing the Weighted Indices

<u>Index</u>	<u>Ratio of MY to MY-1</u>	<u>Weight</u>	<u>Weighted Factors</u>
PPI Industrial Power	0.95	0.35	0.334
EIA Industrial Rate	1.00	0.40	0.400
PPI Industrial Commodities less fuel	1.00	0.25	<u>0.249</u>
AAF			0.983

STEP 3

Apply Collar of $\pm 5.0\%$ to Determine the Maximum/Minimum AAF.

$-5.0\% < 1.6\% < 5.0\%$; collar does not apply, assuming no cumulative excess.

STEP 4

Apply AAF to Calculate the New Rate Year Base Rate

	<u>Demand</u> \$/kW-mo.	<u>Energy</u> \$/MWh
Current Rate Year Base Rate	8.03	13.73
New Rate Year Base Rate	7.90	13.50

Date of Issue: TBD

Date Effective: April 1, 2019

Issued by Keith T. Hayes, Vice President
Power Authority of the State of New York
30 South Pearl Street, Albany, NY 12207

APPLICATION SUMMARY
Preservation Power ("PP")

Company:	North American Forest Group Inc. ("NAFG")
Location:	Town of Oswegatchie
County:	St. Lawrence County
IOU:	National Grid
Business Activity:	Producer of lumber products sawmill operator.
Project Description:	NAFG is planning to purchase and renovate a vacant, 144,000-square-foot manufacturing facility to establish a sawmill operation.
Existing Allocation(s):	None
Power Request:	3,000 kilowatts ("kW") of PP
Power Recommended:	1,000 kW
Job Commitment:	
Base:	0
New:	At least 21 jobs
New Jobs/Power Ratio:	21 jobs/megawatt ("MW")
New Jobs - Avg. Wage and Benefits:	\$43,285
Capital Investment:	At least \$2 million
Capital Investment/MW:	\$2 million/MW
Other ED Incentives:	Empire State Development Capital grant: \$350,000; St. Lawrence County IDA Local Development Corp.: \$400,000 loan and LDC administered funds (\$100,000); Development Authority of the North Country ("DANC"): \$200,000 loan, \$200,000 grant; North Country Economic Development Loan Fund: \$500,000 loan; Ogdensburg Growth Fund: \$300,000.
Summary:	With support from local and regional economic development agencies, NAFG is looking to commence and eventually expand logging and lumber sawmill operations in the North Country. Currently, most of the processing/finished product of logs and wood products harvested in the North Country takes place in Quebec. A low cost power allocation would help both the short-term and long-term plans of the business owner, which employs nearly 100 area residents at other companies in the Massena area.

APPLICATION SUMMARY
Preservation Power ("PP")

Company:	Arconic Inc. ("Arconic")
Location:	Town of Massena (Alcoa West Plant)
County:	St. Lawrence County
IOU:	N/A
Business Activity:	Manufacturer of specialized lightweight metals, including aluminum, titanium and nickel; which are used worldwide in the aerospace, automotive and commercial transportation industries.
Project Description:	N/A
Existing Allocation(s):	Prior to the formation of Arconic, this business operation has been supported with an allocation of PP to Alcoa Inc. under an existing Alcoa power purchase agreement with the Authority.
Power Request:	5,000 kilowatt ("kW")
Power Recommended:	5,000 kW
Job Commitment:	
Base:	145
New Jobs/Power Ratio:	29 jobs/megawatt
New Jobs - Avg. Wage and Benefits:	N/A
Capital Investment:	N/A
Capital Investment/MW:	N/A
Other ED Incentives:	None
Summary:	Due to a corporate reorganization by Alcoa Inc., Arconic was formed to conduct the business activity described above as a separate company. In support of the new business structure, Arconic has expressed the need for a PP allocation under its own contract when the Alcoa agreement expires on March 31, 2019. Arconic will agree to retain 145 jobs and make annual capital investments in the facilities at which it operates.

POWER AUTHORITY
OF THE
STATE OF NEW YORK

30 South Pearl Street
10th Floor
Albany, New York 12207-3425

AGREEMENT FOR THE SALE OF
PRESERVATION POWER AND ENERGY

SERVICE TARIFF NO. 20

North American Forest Group Inc.

The POWER AUTHORITY OF THE STATE OF NEW YORK (“Authority”), created pursuant to Chapter 772 of the New York Laws of 1931 and existing under Title I of Article V of the New York Public Authorities Law (“PAL”), having its office and principal place of business at 30 South Pearl Street, 10th Floor, Albany, New York 12207-3425, hereby enters into this Agreement for Sale of Preservation Power and Energy (“Agreement”) with North American Forest Group Inc. (“Customer”) having offices at 263 Acco Drive, Ogdensburg, NY 13669. The Authority and the Customer are from time to time referred to in this Agreement as “Party” or collectively as “Parties” and agree as follows:

RECITALS

WHEREAS, the Authority is authorized to sell hydroelectric power produced by the St. Lawrence-FDR Power Project known as Preservation Power (or “PP”), as further defined in this Agreement, to qualified businesses in New York State in accordance with PAL § 1005(5) and (13);

WHEREAS, the Customer applied for an allocation of PP or an extension of an existing PP allocation for use at its facilities defined in this Agreement as the “Facility”;

WHEREAS, the Customer has offered to make specific commitments relating to, among other things, the creation and retention of jobs, capital investments, power usage and energy efficiency measures at the Facility, in exchange for an allocation of PP;

WHEREAS, the Authority’s Board of Trustees approved an allocation of PP to the Customer;

WHEREAS, the Authority’s provision of Electric Service under this Agreement is an unbundled service separate from (i) the transmission of the allocation, and (ii) the delivery of the Allocation;

WHEREAS, the Parties have reached an agreement on the terms and conditions applicable for the sale of the Allocation for a term as provided in this Agreement;

WHEREAS, electric service hereunder shall be subject to the rates and other terms and conditions contained in the Service Tariff as further provided in this Agreement; and

WHEREAS, the Authority has complied with requirements of PAL § 1009, and has been authorized to execute the Agreement.

NOW, THEREFORE, in consideration of mutual covenants, terms, and conditions herein, and for other good and valuable consideration, the receipt and adequacy of which the Parties hereby acknowledge, the Parties do hereby mutually covenant and agree as follows:

ARTICLE I **DEFINITIONS**

When used with initial capitalization, whether singular or plural, the following terms, as used in this Agreement, shall have the meanings as set forth below. When used with initial capitalization, whether singular or plural, terms defined in schedules or appendices to this

Agreement shall have the meanings set forth in such schedules or appendices. All other capitalized terms and abbreviations used in this Agreement but not defined in this Section or other provisions of this Agreement or its schedules or appendices shall have the same meaning as set forth in the Service Tariff.

“Adverse Water Condition” means any event or condition, including without limitation a hydrologic or hydraulic condition, that relates to the flow, level, or usage of water at or in the vicinity of the Project and/or its related facilities and structures, and which prevents, threatens to prevent, or causes the Authority to take responsive action that has the effect of preventing, the Project from producing a sufficient amount of energy to supply the full power and energy requirements of firm power and firm energy customers who are served by the Project.

“Agreement” means this Agreement, and unless otherwise indicated herein, includes all schedules, appendices and addenda thereto, as the same may be amended from time to time.

“Allocation” refers to the allocation(s) of PP awarded to the Customer as specified in Schedule A.

“Alternative REC Compliance Program” has the meaning provided in Schedule E.

“Annual Capital Investment Commitment” has the meaning set forth in Schedule B.

“Annual CI Expenditures” has the meaning set forth in Schedule B.

“Base Employment Level” has the meaning set forth in Schedule B.

“Contract Demand” is as defined in applicable Service Tariff.

“Effective Date” means the date that this Agreement is fully executed by the Parties.

“Electric Service” is the Firm Power and Firm Energy associated with the Allocation and sold by the Authority to the Customer in accordance with this Agreement, the Service Tariff and the Rules.

“Energy Services” has the meaning set forth in Article V of this Agreement.

“Expansion Project” has the meaning set forth in Section IV.3.a of this Agreement.

“Expansion Project Capital Investment Commitment” has the meaning set forth in Schedule B.

“Facility” means the Customer’s facilities as described in Schedule A to this Agreement.

“Firm Power” is as defined in the Service Tariff.

“Firm Energy” is as defined in the Service Tariff.

“FERC” means the Federal Energy Regulatory Commission (or any successor organization).

“FERC License” means the first new license issued by FERC to the Authority for the continued operation and maintenance of the Project, pursuant to Section 15 of the Federal Power Act, which became effective September 1, 2007 after expiration of the Project’s original license which became effective in 1957.

“Hydropower Curtailment” means a temporary reduction in Firm Energy to which the Customer is entitled to receive under this Agreement made by the Authority in response to an Adverse Water Condition.

“International Joint Commission” or “IJC” refers to the entity with responsibility to prevent and resolve disputes between the United States of America and Canada under the *1909 Boundary Waters Treaty* and pursues the common good of both countries as an independent and objective advisor to the two governments. The IJC rules upon applications for approval of projects affecting boundary or transboundary waters and may regulate the operation of these projects.

“Load Reduction” has the meaning set forth in Section IX.6 of this Agreement.

“Load Serving Entity” (or “LSE”) means an entity designated by a retail electricity customer (including the Customer) to provide capacity, energy and ancillary services to serve such customer, in compliance with NYISO Tariffs, rules, manuals and procedures.

“Metering Arrangement” has the meaning set forth in Section II.8 of this Agreement.

“NYEM” means the New York Energy Manager, an energy management center owned and operated by the Authority.

“NYEM Agreement” means a written agreement between the Authority and the Customer providing for the Facility’s enrollment and Customer’s participation in NYEM.

“NYEM Participation” has the meaning specified in Schedule B of this Agreement.

“NYISO” means the New York Independent System Operator or any successor organization.

“NYISO Charges” has the meaning set forth in Section VII.3 of this Agreement.

“NYISO Tariffs” means the NYISO’s Open Access Transmission Tariff or the NYISO’s Market Administration and Control Area Services Tariff, as applicable, as such tariffs are modified from time to time, or any successor to such tariffs.

“Physical Energy Audit” or “Audit” means a physical evaluation of the Facility in a manner approved by the Authority that includes at a minimum the following elements: (a) an assessment of the Facility’s energy use, cost and efficiency which produces an energy utilization index for the Facility (such as an Energy Use Intensity or Energy Performance Indicator); (b) a comparison of the Facility’s index to indices for similar buildings/facilities; (c) an analysis of low-cost/no-cost

measures for improving energy efficiency; (d) a listing of potential capital improvements for improving energy consumption; and (e) an initial assessment of potential costs and savings from such measures and improvements.

“Preservation Power” (or “PP”) consists of 490 megawatts (“MW”) of firm hydroelectric power and associated energy produced by the Authority’s St. Lawrence-FDR Power Project.

“Prior Agreement” has the meaning set forth in the recitals to this Agreement.

“Project” means the Authority’s St. Lawrence-FDR Power Project, FERC Project No. 2000.

“Reporting Year” means the yearly interval that the Authority uses for reporting, compliance and other purposes as specified in this Agreement. The Reporting Year for this Agreement is from January 1 through December 31, subject to change by the Authority without notice.

“Rolling Average” has the meaning set forth in Schedule B.

“Rules” are the applicable provisions of Authority’s rules and regulations (Chapter X of Title 21 of the Official Compilation of Codes, Rules and Regulations of the State of New York), as may be modified from time to time by the Authority.

“Service Information” has the meaning set forth in Section II.12 of this Agreement.

“Service Tariff” means the Authority’s Service Tariff No. WNY-20, as may be modified from time to time by the Authority, which contains, among other things, the rate schedule establishing rates and other commercial terms for sale of Electric Service to Customer under this Agreement.

“Schedule A” refers to the Schedule A entitled “Preservation Power Allocations” which is attached to and made part of this Agreement.

“Schedule B” refers to the Schedule B entitled “Supplemental Preservation Power Commitments” which is attached to and made part of this Agreement, including any appendices attached thereto.

“Schedule C” refers to the Schedule C entitled “Takedown Schedule” which is attached to and made part of this Agreement.

“Schedule D” refers to the Schedule D entitled “Zero Emission Credit Charge” which is attached to and made part of this Agreement.

“Schedule E” refers to the Schedule E entitled “Monthly Renewable Energy Credit Charge” which is attached to and made part of this Agreement.

“Substitute Energy” means energy that is provided to the Customer by or through the Authority for the purpose of replacing Firm Energy that is not supplied to the Customer due to a Hydropower Curtailment.

“Takedown” means the portion of the Allocation that Customer requests to be scheduled for a specific period as provided for in Schedule C, if applicable.

“Taxes” is as defined in the Service Tariff.

“Unforced Capacity” (or “UCAP”) means the electric capacity required to be provided by LSEs to serve electric load as defined by the NYISO Tariffs, rules, manuals and procedures.

“Utility Tariff” means the retail tariff(s) of the Customer’s local electric utility filed and approved by the PSC that is applicable to the delivery of PP.

ARTICLE II **ELECTRIC SERVICE**

1. The Authority will make available Electric Service to enable the Customer to receive the Allocation in accordance with this Agreement, the Service Tariff and the Rules. The Customer is not be entitled to receive Electric Service under this Agreement for any PP allocation unless such PP allocation is identified in Schedule A.
2. The Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation specified in Schedule A. If Schedule C specifies a Takedown Schedule for the Allocation, the Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation in accordance with such Takedown Schedule.
3. The Authority shall provide UCAP in amounts necessary to meet the Customer’s NYISO UCAP requirements associated with the Allocation in accordance with the NYISO Tariffs. The Customer shall be responsible to pay the Authority for such UCAP in accordance with the Service Tariff.
4. The provision of Electric Service associated with the Allocation is an unbundled service separate from the transmission and the delivery of the Allocation. The Customer acknowledges and agrees that Customer’s local electric utility, not the Authority, is responsible for the delivery of the Allocation to the Facility in accordance with applicable Utility Tariff(s).
5. The Contract Demand for the Customer’s Allocation may be modified by the Authority if the amount of Firm Power and Firm Energy available for sale as PP from the Project is modified as required to comply with any ruling, order, or decision of any regulatory or judicial body having jurisdiction, including but not limited to FERC. Any such modification will be made on a pro rata basis to all PP customers receiving Electric Service under the Service Tariff, as applicable, based on the terms of such ruling, order, or decision.
6. The Contract Demand may not exceed the Allocation.

7. The Customer's Facility must be metered by the Customer's local electric utility in a manner that is satisfactory to the Authority, or another metering arrangement satisfactory to the Authority must be provided (collectively, "Metering Arrangement"). A Metering Arrangement that is not satisfactory to the Authority shall be grounds, after notice to the Customer, for the Authority to modify, withhold, suspend, or terminate Electric Service to the Customer. If a Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination that it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. After commencement of Electric Service, the Customer shall notify the Authority in writing within thirty (30) days of any alteration to the Facility's Metering Arrangement, and provide any information requested by the Authority (including Facility access) to enable the Authority to determine whether the Metering Arrangement remains satisfactory. If an altered Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. The Authority may, in its discretion, waive any of the requirements provided for in this Section in whole or in part where in the Authority's judgment, another mechanism satisfactory to the Authority can be implemented to enable the Authority to receive pertinent, timely and accurate information relating to the Customer's energy consumption and demand and render bills to the Customer for all fees, assessments and charges that become due in accordance with this Agreement, the Service Tariff, and the Rules.
8. The Customer consents to the exchange of information between the Authority and the Customer's local electric utility pertaining to the Customer that such parties determine is necessary to provide for the allocation, sale and delivery of the Allocation to the Customer at the Facility, the proper and efficient implementation of the PP program, billing related to Electric Service, and/or the performance of such parties' obligations under any contracts or other arrangements between them relating to such matters. In addition, the Customer agrees to complete such forms and consents that the Authority determines are necessary to effectuate such exchanges of information.
9. The provision of Electric Service by the Authority shall be dependent upon the existence of a written agreement between the Authority and the Customer's local electric utility providing for the delivery of the Allocation on terms and conditions that are acceptable to the Authority.
10. The Customer understands and acknowledges that the Authority may from time to time require the Customer to complete forms, execute consents, and provide information (collectively, "Service Information") that the Authority determines is necessary for the provision of Electric Service, the delivery of the Allocation, billing related to Electric Service, the effective administration of the PP program, and/or the performance of contracts or other arrangements between the Authority and the Customer's local electric utility. The Customer's failure to provide Service Information on a timely basis shall be grounds for the Authority in its discretion to modify, withhold, suspend, or terminate Electric Service to the Customer.

ARTICLE III
RATES, TERMS AND CONDITIONS

1. Electric Service shall be sold to the Customer in accordance with the rates, terms and conditions provided for in this Agreement, the Service Tariff and the Rules.
2. The Service Tariff and the Rules may be amended from time to time by the Authority and, if revised, the revised provisions thereof will apply under this Agreement with the same force and effect as if set forth herein. The Authority shall provide at least thirty (30) days prior written notice to the Customer of any proposed change in the Service Tariff or the Rules. No amendment to the Service Tariff or the Rules shall affect the determination of rates for PP to the Customer during the term of the Agreement except insofar as otherwise authorized by this Agreement. This provision shall not limit the Authority's discretion to determine rates applicable to allocations of power and energy awarded to the Customer beyond or in addition to the Allocation.
3. Notwithstanding any provision of this Agreement to the contrary, the power and energy rates for Electric Service shall be subject to increase by Authority at any time upon 30 days prior written notice to Customer if, after consideration by Authority of its legal obligations, the marketability of the output or use of the Project and Authority's competitive position with respect to other suppliers, Authority determines in its discretion that increases in rates obtainable from any other Authority customers will not provide revenues, together with other available Authority funds not needed for operation and maintenance expenses, capital expenses, and reserves, sufficient to meet all requirements specified in Authority's bond and note resolutions and covenants with the holders of its financial obligations. Authority shall use its best efforts to inform Customer at the earliest practicable date of its intent to increase the power and energy rates pursuant to this provision. With respect to any such increase, Authority shall forward to Customer with the notice of increase, an explanation of all reasons for the increase, and shall also identify the sources from which Authority will obtain the total of increased revenues and the bases upon which Authority will allocate the increased revenue requirements among its customers. Any such increase in rates shall remain in effect only so long as Authority determines such increase is necessary to provide revenues for the purposes stated in the preceding sentences.
4. In addition to all other fees, assessments and charges provided for in the Agreement, the Service Tariff and the Rules, the Customer shall be responsible for payment of the Zero Emission Credit Charge and Monthly Renewable Energy Credit Charge provided for in Schedule D and Schedule E, respectively, of this Agreement.

ARTICLE IV
SUPPLEMENTAL COMMITMENTS

1. Supplemental Commitments. Schedule B sets forth the Customer's "Supplemental Preservation Power Commitments" ("Supplemental Commitments"). The Authority's obligation to provide Electric Service under this Agreement is expressly conditioned upon the Customer's timely compliance with the Supplemental Commitments described in Schedule B as further provided in this Agreement. The Customer's Supplemental Commitments are in addition to all other commitments and obligations provided in this Agreement.

2. Special Provisions Relating to a New or Expanded Facility.

a. Proposed New or Expanded Facility; Failure to Complete.

If Schedule B provides for the construction of a new facility or an expansion of an existing facility (collectively, “Expansion Project”), and the Customer fails to complete the Expansion Project by the date specified in Schedule B, the Authority may, in its discretion, (a) cancel the Allocation, or (b) if it believes that the Expansion Project will be completed in a reasonable time, agree with the Customer to extend the time for completion of the Expansion Project.

b. Proposed New or Expanded Facility; Partial Performance.

If the Expansion Project results in a completed Facility that is only partially operational, or is materially different than the Expansion Project agreed to in Schedule B (as measured by such factors as size, capital investment expenditures, capital improvements, employment levels, estimated energy demand and/or other criteria determined by the Authority to be relevant), the Authority may, in its discretion, on its own initiative or at the Customer’s request, make a permanent reduction to the Allocation and Contract Demand to an amount that the Authority determines to fairly correspond to the completed Facility.

c. Notice of Completion; Commencement of Electric Service.

- (i) The Customer shall give the Authority not less than ninety (90) days' advance written notice of the anticipated date of completion of an Expansion Project. The Authority will inspect the Expansion Project for the purpose of verifying the status of the Expansion Project and notify Customer of the results of the inspection. The Authority will thereafter commence Electric Service within a reasonable time subject to the other provisions of this Agreement based on applicable operating procedures of the Authority, Customer’s local electric utility and NYISO.
- (ii) In the event of an Expansion Project being completed in multiple phases, at the Customer’s request the Authority may, in its discretion, allow commencement of part of the Allocation upon completion of any such phase, provided the Authority will similarly inspect the Expansion Project for the purpose of verifying the status of the completed phase of the Expansion Project. Upon such verification by the Authority of any such completed phase, the Authority, in its discretion, will determine an amount of kW that fairly corresponds to the completed phase of the Expansion Project, taking into account relevant criteria such as any capital expenditures, increased employment levels, and/or increased electrical demand associated with the completed phase of the Expansion Project.

d. Other Rights and Remedies Unaffected.

Nothing in this Article is intended to limit the Authority's rights and remedies provided for in the other provisions of this Agreement, including without limitation the provisions in Schedule B of this Agreement.

ARTICLE V
ENERGY-RELATED PROJECTS, PROGRAMS AND SERVICES

The Authority shall periodically communicate with the Customer for the purpose of informing the Customer about energy-related projects, programs and services ("Energy Services") offered by the Authority that in the Authority's view could provide value to the Customer and/or support the State's Clean Energy Standard. The Customer shall review and respond to all such offers in good faith, provided, however, that, except as otherwise provided for in this Agreement, participation in any such Energy Services shall be at the Customer's option, and subject to such terms and conditions agreed to by the Parties in one or more definitive agreements.

ARTICLE VI
SERVICE TARIFF; CONFLICTS

1. A copy of the Service Tariff is attached to this Agreement as Exhibit 1 and shall apply under this Agreement with the same force and effect as if fully set forth herein. The Customer consents to the application of the Service Tariff.
2. In the event of any inconsistencies, conflicts, or differences between the provisions of the Service Tariff and the Rules, the provisions of the Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of this Agreement and the Service Tariff or the Rules, the provisions of this Agreement shall govern.

ARTICLE VII
TRANSMISSION AND DELIVERY

1. The Customer shall be responsible for:
 - a. complying with all requirements of its local electric utility (including any other interconnecting utilities) that are necessary to enable the Customer to receive delivery service for the Allocation. Delivery of the Allocation shall be subject to the Utility Tariff;
 - b. paying its local electric utility for delivery service associated with the Allocation in accordance with the Utility Tariff, and if the Authority incurs any charges associated with such delivery service, reimbursing the Authority for all such charges; and
 - c. obtaining any consents and agreements from any other person that are necessary for the delivery of the Allocation to the Facility, and complying with the requirements of any such person, provided that any such consents, agreements and requirements shall be subject to the Authority's approval.

2. The Customer understands and acknowledges that delivery of the Allocation will be made over transmission facilities under the control of the NYISO. The Authority will act as the LSE with respect to the NYISO, or arrange for another entity to do so on the Authority's behalf. The Customer agrees and understands that it shall be responsible to the Authority for all costs incurred by the Authority with respect to the Allocation for the services established in the NYISO Tariff, or other applicable tariff ("NYISO Charges"), as set forth in the Service Tariff or any successor service tariff, regardless of whether such NYISO Charges are transmission-related.

ARTICLE VIII

BILLING AND BILLING METHODOLOGY

1. The billing methodology for the Allocation shall be determined on a "load factor sharing" basis in a manner consistent with the Utility Tariff and any agreement between the Authority and the Customer's local electric utility. An alternative basis for billing may be used provided the Parties agree in writing and the local electric utility provides its consent if such consent is deemed necessary.
2. Except as otherwise provided in this Agreement, all other provisions with respect to billing are set forth in the Service Tariff and the Rules.
3. The rights and remedies provided to the Authority in this Article are in addition to any and all other rights and remedies available to Authority at law or in equity.

ARTICLE IX

HYDROPOWER CURTAILMENTS AND SUBSTITUTE ENERGY

1. In the event of an Adverse Water Condition, the Authority will have the right in its discretion to implement Hydropower Curtailments. The Authority will implement Hydropower Curtailments on a non-discriminatory basis as to all Authority customers that are served by the Project.
2. In the event of a Hydropower Curtailment, the Authority will provide Substitute Energy to the Customer and the Customer shall pay for such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, Substitute Energy shall be sourced from markets administered by the NYISO.
3. For each kilowatt-hour of Substitute Energy provided by the Authority during a Hydropower Curtailment, the Customer shall pay the Authority directly during the billing month: (1) the difference between the market cost of the Substitute Energy and the charge for firm energy as provided for in this Agreement; and (2) any NYISO charges and taxes the Authority incurs in connection with the provision of such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, billing and payment for Substitute Energy provided for Hydropower Curtailments shall be governed by the provisions of the Service Tariff relating to the rendition and payment of bills for Electric Service.
4. The Authority shall be under no obligation to deliver, and will not deliver, any such curtailed energy to the Customer in later billing periods.

5. The Authority may require the Customer to enter into a separate agreement relating to the provision and sale of Substitute Energy. The provisions of this Agreement will remain in effect notwithstanding the existence of any such separate agreement.

ARTICLE X

EFFECTIVENESS, TERM AND TERMINATION

1. This Agreement shall become effective and legally binding on the Parties on the Effective Date.
2. Once commenced, Electric Service under the Agreement shall continue until the earliest of: (a) termination by the Customer with respect to its Allocation upon ninety (90) days prior written notice to the Authority; (b) termination by the Authority pursuant to this Agreement, the Service Tariff, or the Rules; or (c) expiration of the Allocation by its own term as specified in Schedule A.
3. The Customer may exercise a partial termination of the Allocation upon at least sixty (60) days' prior written notice to the Authority. The Authority will effectuate the partial termination as soon as practicable after receipt of such notice taking account of the Authority's internal procedures and requirements of the Customer's local electric utility.
4. The Authority may cancel service under this Agreement or modify the quantities of Firm Power and Firm Energy associated with the Allocation: (1) if such cancellation or modification is required to comply with any final ruling, order or decision of any regulatory or judicial body of competent jurisdiction (including any licensing or re-licensing order or orders of the FERC or its successor agency); or (2) as otherwise provided in this Agreement, the Service Tariff, or the Rules.

ARTICLE XI

EXTENSIONS OF ALLOCATION; AWARD OF ADDITIONAL ALLOCATIONS

1. The Customer may apply to the Authority for an extension of the term of the Allocation identified in Schedule A:
 - a. during the thirty-six (36) month period immediately preceding the scheduled expiration of the Allocation;
 - b. pursuant to any other process that the Authority establishes; or
 - c. with the Authority's written consent.
2. Upon proper application by the Customer, the Authority may in accordance with applicable law and Authority procedures award additional allocations of PP at such rates and on such terms and conditions as the Authority establishes. If the Customer agrees to purchase Electric Service associated with any such additional allocation, the Authority will (a) incorporate any such additional allocations into Schedule A, or in its discretion will produce a supplemental schedule, to reflect any such additional allocations, and (b) produce a modified Appendix to Schedule B, as the Authority determines to be appropriate. The Authority will furnish the Customer with any such modified Schedule A, supplemental schedule, and/or a modified

Appendix to Schedule B, within a reasonable time after commencement of Electric Service for any such additional allocation.

3. In addition to any requirements imposed by law, the Customer hereby agrees to furnish such documentation and other information as the Authority requests to enable the Authority to evaluate any requests for extension of the Allocation or additional allocations and consider the terms and conditions that should be applicable of any extension or additional allocations.

ARTICLE XII

NOTICES

1. Notices, consents, authorizations, approvals, instructions, waivers or other communications provided in this Agreement shall be in writing and transmitted to the Parties as follows:

To: The Authority

New York Power Authority
123 Main Street
White Plains, New York 10601

Email:

Facsimile: _____

Attention: Manager – Business Power Allocations and Compliance

To: The Customer

North American Forest Group Inc.
263 Acco Drive
Ogdensburg, NY 13669

Email:

Facsimile:

Attention:

2. The foregoing notice/notification information pertaining to either Party may be changed by such Party upon notification to the other Party pursuant to Section XII.1.
3. Except where otherwise herein specifically provided, any notice, communication or request required or authorized by this Agreement by either Party to the other shall be deemed properly given: (a) if sent by U.S. First Class mail addressed to the Party at the address set forth above; (b) if sent by a nationally recognized overnight delivery service, two (2) calendar days after being deposited for delivery to the appropriate address set forth above; (c) if delivered by hand, with written confirmation of receipt; (d) if sent by facsimile to the appropriate fax number as set forth above, with written confirmation of receipt; or (e) on the date of transmission if sent by electronic communication to the appropriate address as set forth above, with confirmation of receipt. Either Party may change the addressee and/or address for correspondence sent to it by giving written notice in accordance with the foregoing.

ARTICLE XIII
SUCCESSORS AND ASSIGNS; RESALE OF HYDROPOWER

1. This Agreement shall be binding upon, shall inure to the benefit of, and may be performed by, the legal successors and assigns of either Party hereto, provided that no assignment by either Party or any successor or assignee of such Party of its rights and obligations hereunder shall be made or become effective without the prior written consent of the other Party, which consent shall not be unreasonably withheld or conditioned. Notwithstanding the foregoing sentence, the Authority may require such approvals, and such consents and other agreements from the Customer and other parties, that the Authority determines are necessary in order to effectuate any such assignment.
2. The Customer may not transfer any portion of the Allocation to any other person, or a location different than the Facility, unless: (a) the Authority in its discretion authorizes the transfer Authority; (b) all other requirements applicable to a transfer, including board approvals, are satisfied; and (c) the transfer is effectuated in a form and subject to such terms and conditions approved by the Authority. Any purported transfer that does not comply with the foregoing requirements shall be invalid and constitute grounds for the Authority in its discretion to suspend Electric Service or terminate the Allocation and/or this Agreement.
3. The Customer may not sell any portion of the Allocation to any other person, allow any other person to use any portion of the Allocation, or allow any other person to interconnect to the Facility. Any purported sale shall be invalid and any violation of this provision shall constitute grounds for the Authority in its discretion to suspend Electric Service, or terminate the Allocation and/or this Agreement.

ARTICLE XIV
MISCELLANEOUS

1. Choice of Law

This Agreement shall be governed by and construed in accordance with the laws of the State of New York to the extent that such laws are not inconsistent with the FERC License and the Niagara Redevelopment Act (16 USC §§836, 836a) and rulings by the IJC and without regard to conflicts of law provisions.

2. Venue

The Parties: (a) consent to the exclusive jurisdiction and venue of any state court within or for Albany County, New York, with subject matter jurisdiction for adjudication of any claim, suit, action or any other proceeding in law or equity arising under, or in any way relating to this Agreement; (b) agree to accept service of process; and (c) will not raise any argument of inconvenient forum.

3. Previous Agreements; Modifications; and Interpretation

- a. This Agreement shall constitute the sole and complete agreement of the Parties hereto with respect to the sale of the Allocation and the subject matter of the Agreement, and

supersedes all previous communications and agreements between the Parties, oral or written, with reference to the sale of the Allocation.

- b. No modifications of this Agreement shall be binding upon the Parties hereto or either of them unless such modification is in writing and is signed by a duly authorized officer of each of them.
- c. No provision shall be construed against a Party on the basis that such Party drafted such provision.

4. Waiver

Any waiver at any time by either the Authority or the Customer of their rights with respect to a default or of any other matter arising out of this Agreement shall not be deemed to be a waiver with respect to any other default or matter. No waiver by either Party of any rights with respect to any matter arising in connection with this Agreement shall be effective unless made in writing and signed by the Party making the waiver.

5. Severability and Voidability

If any term or provision of this Agreement shall be invalidated, declared unlawful or ineffective in whole or in part by an order of the FERC or a court of competent jurisdiction, such order shall not be deemed to invalidate the remaining terms or provisions hereof. Notwithstanding the preceding sentence, if any provision of this Agreement is rendered void or unenforceable or otherwise modified by a court or agency of competent jurisdiction, the entire Agreement shall, at the option of either Party and only in such circumstances in which such Party's interests are materially and adversely impacted by any such action, be rendered void and unenforceable by such affected Party.

ARTICLE XV
EXECUTION

To facilitate execution, this Agreement may be executed in as many counterparts as may be required, and it shall not be necessary that the signatures of, or on behalf of, each Party, or that the signatures of all persons required to bind any Party, appear on each counterpart; but it shall be sufficient that the signature of, or on behalf of, each Party, or that the signatures of the persons required to bind any Party, appear on one or more of the counterparts. All counterparts shall collectively constitute a single agreement. It shall not be necessary in making proof of this Agreement to produce or account for more than a number of counterparts containing the respective signatures of, or on behalf of, all of the Parties hereto. The delivery of an executed counterpart of this Agreement as a PDF or similar file type transmitted via electronic mail, cloud based server, e-signature technology or similar electronic means shall be legal and binding and shall have the same full force and effect as if an original executed counterpart of this Agreement had been delivered.

[SIGNATURES FOLLOW ON NEXT PAGE]

AGREED:

North American Forest Group Inc.

By: _____

Title: _____

Date: _____

AGREED:

POWER AUTHORITY OF THE STATE OF NEW YORK

By: _____
John R. Koelmel, Chairman

Date: _____

SCHEDULE A
PRESERVATION POWER ALLOCATIONS

Customer: North American Forest Group Inc.				
Type of Allocation	Allocation Amount (kW)	Facility and Address	Trustee Approval Date	Allocation Expiration Date
Preservation Power	1,000	263 Acco Drive Ogdensburg, NY 13669	12/11/2018	

SCHEDULE B
SUPPLEMENTAL PRESERVATION POWER COMMITMENTS

ARTICLE I
SPECIFIC SUPPLEMENTAL COMMITMENTS

1. Employment Commitments

- a. The Customer shall create and maintain the employment level set forth in the Appendix to this Schedule B (the “Base Employment Level”). Such Base Employment Level shall be the total number of full-time positions held by: (a) individuals who are employed by the Customer at Customer’s Facility identified in the Appendix to this Schedule, and (b) individuals who are contractors or who are employed by contractors of the Customer and assigned to the Facility identified in such Appendix (collectively, “Base Level Employees”). The number of Base Level Employees shall not include individuals employed on a part-time basis (less than 35 hours per week); provided, however, that two individuals each working 20 hours per week or more at such Facility shall be counted as one Base Level Employee.
- b. The Base Employment Level shall not be created or maintained by transfers of employees from previously held positions with the Customer or its affiliates within the State of New York, except that the Base Employment Level may be filled by employees of the Customer laid off from other Customer facilities for *bona fide* economic or management reasons.
- c. The Authority may consider a request to change the Base Employment Level based on a claim of increased productivity, increased efficiency or adoption of new technologies or for other appropriate reasons as determined by the Authority. Any such change shall be within Authority’s discretion.

2. Capital Investment Commitments

The Customer shall make the capital investments specified in the Appendix to this Schedule B.

3. Power Utilization

For each month the Authority provides Electric Service to the Customer, the Customer shall utilize the entire Allocation, as represented by the Billing Demand (as such term is described in the Service Tariff), provided, however, that if only part of the Allocation is being utilized in accordance with Schedule C, the Customer shall utilize such partial amount of the Allocation.

4. Energy Efficiency and Conservation Program

- a. The Customer shall implement an energy efficiency and conservation program at the Facility through either (a) enrollment of the Facility and participation in NYEM in accordance with a NYEM Agreement, or (b) one or more Physical Energy Audits of the Facility, or (c) a combination of such measures, in accordance with the provisions of this Article.
- b. The Authority shall transmit to the Customer a NYEM Agreement and an election form. The Customer shall elect to either (a) enroll the Facility and participate in NYEM for a three-year term ("NYEM Participation") in accordance with the NYEM Agreement, or (b) perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority's communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit within three (3) years of the Effective Date of this Agreement, at its own expense.
- c. The Authority shall, on or before the expiration of the three-year term of the NYEM Agreement, transmit to the Customer a NYEM Agreement specifying the terms and conditions that would apply to NYEM participation for a second term, and an election form. The Customer shall elect either (a) NYEM Participation for a second term, or (b) to perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority's communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit during the calendar year that begins six years after of the Effective Date of this Agreement, at its own expense.
- d. The Authority may in its discretion waive the requirement for a Physical Energy Audit, or may agree to a limited energy audit of the Facility, where it determines that the Physical Energy Audit is unnecessary based on the age of the Facility, energy efficiency and conservation improvements made at the Facility, the length of the Allocation, or other considerations the Authority determines to be relevant.

ARTICLE II
RECORDKEEPING, REPORTING AND FACILITY ACCESS

1. Employment

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority, of the total number of Base Level Employees who are employed at or assigned to the Customer's Facility identified in the Appendix to this Schedule, as reported to the United States Department of Labor (or as reported in such other record as agreed upon by the Authority and the Customer). Such report shall separately identify the individuals who are employed by the Customer, and the individuals who are contractors or who are employed by contractors of the Customer, and shall be certified to be correct by an officer of the Customer, plant manager or such other person authorized by the Customer to prepare and file such report and shall be provided to the Authority on or before the last day of February following the end of the most recent calendar year. The Authority shall have the right to examine and audit on reasonable advance written notice all non-confidential written and electronic records and data concerning employment levels including, but not limited to, personnel records and summaries held by the Customer and its affiliates relating to employment in New York State.

2. Capital Investments

The Customer shall comply with the recordkeeping, recording and reporting requirements specified in the Appendix to this Schedule B.

3. Power Usage

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority on or before the last day of February following the end of the most recent calendar year, of the maximum demand utilized each month in the Facility receiving the power covered by the Agreement.

4. Energy Efficiency and Conservation Program

Upon the Authority's request, the Customer shall provide the Authority with (a) a copy of the results of any Physical Energy Audit performed at the Facility (or, at the Authority's option, a report describing the results), performed pursuant to this Article; and (b) a description of any energy efficiency or conservation measures that the Customer has implemented at the Facility in response to any Physical Energy Audit or as a result of NYEM Participation.

5. Facility Access

Notwithstanding any other provision of the Agreement, the Customer shall provide the Authority with such access to the Facility, and such documentation, as the

Authority deems necessary to determine the Customer's compliance with the Customer's Supplemental Commitments specified in this Schedule B.

ARTICLE III
COMPLIANCE ACTION BY THE AUTHORITY

1. Employment

If the year-end monthly average number of employees is less than 90% of the Base Employment Level set forth in the Appendix to this Schedule B for the subject calendar year, the Authority may reduce the Contract Demand in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount of reduction will be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average monthly employment during the subject calendar year divided by the Base Employment Level. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, the Agreement shall automatically terminate.

2. Capital Investment Commitment

The Authority may reduce the Contract Demand as provided in the Appendix to this Schedule B if the Customer does not comply with the Capital Investment Commitment.

3. Power Utilization Level

If the average of the Customer's six (6) highest Billing Demands (as such term is described in the Service Tariff) for Preservation Power is less than 90% of the Customer's Contract Demand in such calendar year the Authority may reduce the Contract Demand subject to in accordance with the procedures provide in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average of the six (6) highest Billing Demands for in such calendar year divided by the Contract Demand. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.

4. Additional Compliance Action

In addition to the Authority's other rights and remedies provided in this Agreement, the Service Tariff and the Rules, the Authority may suspend Electric Service to the Customer if the Customer does not comply with any of the requirements in Section I.4 or Article II of this Schedule B.

5. Notice of Intent to Reduce Contract Demand

In the event that the Authority determines that the Contract Demand will be wholly or partially reduced pursuant to Sections III.1, III.2, or III.3 of this Schedule B, the Authority shall provide the Customer with at least thirty (30) days prior written notice of the proposed reduction, specifying the amount and reason for the reduction. Before implementing any reduction, the Authority may consider the Customer's scheduled or unscheduled maintenance, Facility upgrade periods, and the business cycle. If, at the end of the thirty (30) day notice period, the Authority determines that a reduction is warranted, it shall provide the Customer with notice of such determination and provide the Customer with sixty (60) days to present a proposed plan with actionable milestones to cure the deficiency. The Authority shall respond to the Customer concerning the acceptability of any proposed plan that is provided in accordance with this Section III.5 within thirty (30) days of the Authority's receipt of such proposed plan. It shall be within the Authority's discretion whether or not to accept the Customer's proposed plan, require a different plan, or implement the reduction of the Contract Demand.

APPENDIX TO SCHEDULE B

BASE EMPLOYMENT LEVEL

The Customer shall employ at least 21 full-time employees (“Base Employment Level”) at the Customer’s Facility within three (3) years of commencement of Electric Service. The Base Employment Level shall be maintained thereafter for the term of the Allocation through the Allocation Expiration Date specified in Schedule A in accordance with Article I of Schedule B.

CAPITAL INVESTMENT COMMITMENTS

1. **Annual Capital Investment Commitment** (if applicable, as specified below)
 - a. Each Reporting Year, the rolling average of the annual capital investments made by the Customer at the Facility (“Rolling Average”) shall total not less than \$ N/A (the “Annual Capital Investment Commitment”). For purposes of this provision, “Rolling Average” means the three-year average comprised of (1) the total amount of capital investments (“Annual CI Expenditures”) made by the Customer at the Facility during the current Reporting Year, and (2) the Annual CI Expenditures made by the Customer at the Facility during the two prior Reporting Years.
 - b. Each year, the Customer shall record its Annual CI Expenditures for purposes of enabling the Authority to determine and verify the Rolling Average, which shall be provided to the Authority in a form specified by the Authority on or before the last day of February following the end of the most recent calendar year.
 - c. If the Customer’s Rolling Average as determined by the Authority is less than 90% of its Annual Capital Investment Commitment for the Reporting Year, the Contract Demand may be reduced by the Authority in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the Rolling Average divided by the Annual Capital Investment Commitment. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.
2. **Expansion Project–Capital Investment Commitment** (if applicable, as specified below)
 - a. The Customer shall make a minimum capital investment of \$2,000,000 to construct, furnish and/or expand the Facility (“Expansion Project Capital Investment Commitment”). The Expansion Project Capital Investment Commitment is expected to consist of the following approximate expenditures on the items indicated:

\$600,000 – Purchase of building
\$300,000 – Renovations/Rehab of building
\$200,000 – Lot/Site improvement work
\$300,000 – Sawmill
\$100,000 – Kiln Planer Room
\$150,000 – Electrical for lighting, furnace, fans
\$300,000 – Other equipment
\$ 50,000 - Miscellaneous

\$2,000,000 Total Expansion Project Capital Investment Commitment

- b. The Expansion Project Capital Investment Commitment shall be made, and the Facility shall be completed and fully operational, no later than December 11, 2021 (*i.e.*, within three (3) years of the date of the Authority's award of the Allocation). Upon request of the Customer, such date may be extended in the discretion of the Authority.

SCHEDULE C
TAKEDOWN SCHEDULE

SCHEDULE D
ZERO EMISSION CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in Service Tariff No. WNY-2, or in the Rules.

“Affected LSEs” has the meaning provided in Section II.2 of this Schedule D.

“CES Order” means the Order issued by the PSC entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“PP Program ZEC Costs” has the meaning provided in Section II.4.b of this Schedule D.

“Government Action” has the meaning provided in Section II.8 of this Schedule D.

“Load Serving Entity” or “LSE” has the meaning provided in the CES Order.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the PP power program as authorized in the Power Authority Act.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“Zero Emission Credit” or “ZEC” has the meaning provided in the CES Order.

“Zero Emission Credit Charge” or “ZEC Charge” means the charge to the Customer established in this Schedule D.

“ZEC Purchase Obligation” has the meaning provided in Section II.2 of this Schedule D.

“ZEC Program Year” has the meaning provided in Section II.2 of this Schedule D.

II. ZEC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of the Service Tariff or the Rules, the Customer shall be subject to a ZEC Charge as provided in this Schedule D. The ZEC Charge shall be in addition to all other charges, fees and assessments provided for in the Agreement, the Service Tariff and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the ZEC Charge.
2. As provided in the CES Order, the Public Service Commission, as part of the CES and Tier 3 of the Renewable Energy Standard, imposed an obligation on Load Serving Entities that are subject to the CES Order (“Affected LSEs”) to purchase Zero Emission Credits from NYSERDA in an amount representing the Affected LSE’s proportional share of ZECs calculated on the basis of the amount of electric load the LSE serves in relation to the total electric load served by all Load Serving Entities in the New York Control area, to support the preservation of existing at risk nuclear zero emissions attributes in the State (the “ZEC Purchase Obligation”). The ZEC Purchase Obligation is implemented on the basis of program years running from April 1 through March 31 of each year (“ZEC Program Year”).
3. The ZEC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of supporting the CES and Tier 3 of the RES and implementing the PP power program in a manner that is consistent with the New York State Energy Plan. The Authority will comply with the CES and Tier 3 of the RES by applying a form of ZEC Purchase Obligation to the end-user load for which the Authority serves as a load serving entity, including the load that the Authority serves under the PP power program.
4. The ZEC Charge, which is intended to recover from the Customer costs that the Authority incurs for purchasing ZECs in quantities that are attributable to the Customer’s PP load served under this Agreement, will be determined and assessed to the Customer as follows:
 - a. The cost of the total ZEC Purchase Obligation for all LSEs in the New York Control Area, including the Authority as a participating load serving entity, will be assessed pursuant to the methodology provided in the CES Order. The Authority will purchase its proportionate share of ZECs from NYSERDA based on the proportion of the forecasted total kilowatt-hours load served by the Authority (i.e., total Authority LSE load) in relation to the forecasted total kilowatt-hours load served by all LSEs in the New York Control Area as

provided in the CES Order. The ZEC Purchase Obligations may be based on initial load forecasts with reconciliations made at the end of each ZEC Program Year by NYSERDA.

- b. The Authority will allocate costs from its ZEC Purchase Obligation between its power programs/load for which it serves as load serving entity, including the PP load that it serves (the “PP Program ZEC Costs”). Such allocation will be based on the forecasted kilowatt-hours load of the PP program to be served by the Authority in relation to the forecasted total kilowatt-hours load served by the Authority (total Authority LSE load) for each ZEC Program Year. In addition, any balance resulting from the ZEC Program Year-end reconciliation of ZEC Purchase Obligations will be allocated to the PP power program based on the proportion of the actual annual kilowatt-hours load served under such programs to total actual annual kilowatt-hours load served by the Authority (total Authority LSE load).
 - c. The Authority will allocate a portion of the PP Program ZEC Costs to the Customer as the ZEC Charge based on the proportion of the Customer’s actual kilowatt-hours load for the PP purchased by the Customer to total kilowatt-hours load served by the Authority under the PP power program (i.e., PP Program level load). In addition, any balance resulting from the ZEC Program Year-end reconciliation of the ZEC Purchase Obligation referenced above will be passed through to the Customer based on the proportion of the Customer’s annual kilowatt-hours load purchased under this Agreement to total annual kilowatt-hours load served under the PP power program by the Authority (PP Program level load). The ZEC Charge assessed to the Customer shall not include any costs resulting from the Authority’s inability to collect a ZEC Charge from any other Authority customer.
5. The Authority may, in its discretion, include the ZEC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the ZEC Charge pursuant to another Authority-established procedure.
6. The Authority may, in its discretion, modify the methodology used for determining the ZEC Charge and the procedures used to implement such ZEC Charge on a nondiscriminatory basis among affected PP customers, upon consideration of such matters as Public Service Commission orders modifying or implementing the CES Order, guidance issued by the New York Department of Public Service, and other information that the Authority reasonably determines to be appropriate to the determination of such methodology. The Authority shall provide Customer with reasonable notice of any modifications to the methodology or procedures used to determine and implement the ZEC Charge.
7. Nothing in this Schedule shall limit or otherwise affect the Authority’s right to charge or collect from the Customer any rate, charge, fee, assessment, or tax

provided for under any other provision of the Agreement, or any provision of the Service Tariff, or the Rules.

8. If the ZEC Purchase Obligation is modified or terminated by the Public Service Commission or other controlling governmental authority (collectively, “Government Action”), the Authority shall modify or terminate the ZEC Charge, and assess any additional charges or provide any credits to the Customer, to the extent that the Authority determines such actions to be appropriate based on such Government Action.

SCHEDULE E
MONTHLY RENEWABLE ENERGY CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in the Service Tariff No, or in the Rules.

“Alternative REC Compliance Program” has the meaning provided in Section III.1 of this Schedule E.

“Annual REC Percentage Target” has the meaning provided in Section II.2 of this Schedule E.

“CES Order” means the Order issued by the Public Service Commission entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“Clean Energy Standard” or “CES” means the Clean Energy Standard adopted by the State in the CES Order.

“Load Serving Entity” has the meaning provided in the CES Order.

“Mandatory Minimum Percentage Proportion” has the meaning provided in the CES Order.

“Monthly Renewable Energy Credit Charge” or “Monthly REC Charge” means the monthly charge to the Customer established in this Schedule E.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Credit” or “REC” refers to a qualifying renewable energy credit as described in the CES Order.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the PP power program as authorized in the Power Authority Act.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“REC Compliance Measures” mean: (1) the Authority’s procurement of RECs from NYSEERDA in accordance with NYSEERDA procedures and/or the CES Order; (2) the Authority’s procurement of RECs from available REC markets; (3) the Authority’s procurement of RECs from sources other than those identified in items (1) and (2) of this definition, including through a procurement process adopted by the Authority; and/or (4) any other measure that the PCS authorizes a Load Serving Entity to implement for the purpose of meeting the applicable Mandatory Minimum Percentage Proportion.

“Total Monthly PP Load” has the meaning provided in Section II.3.b of this Schedule E

“Total Monthly REC Costs” has the meaning provided in Section II.3.b of this Schedule E.

II. MONTHLY REC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of the Service Tariff, or the Rules, the Customer shall be subject to a Monthly REC Charge as provided in this Schedule E. The Monthly REC Charge is in addition to all other charges, fees and assessments provided in the Agreement, the Service Tariff and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the Monthly REC Charge.
2. The Monthly REC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of complying with the CES and Tier 1 of the RES and implementing the PP power program in a manner that is consistent with the New York State Energy Plan, pursuant to which the Authority will invest in new renewable generation resources to serve its PP customers. Such investments will be made through the procurement of RECs through REC Compliance Measures in quantities that are intended to address the annual Mandatory Minimum Percentage Proportions as applied by the Authority to the total PP load that the Authority will serve each calendar year (the “Annual REC Percentage Target”) for the purpose of ultimately meeting the RES.
3. The Monthly REC Charge, which is intended to recover from the Customer costs that the Authority incurs for implementing REC Compliance Measures that are attributable to the Customer’s PP load served under this Agreement, will be determined and assessed to the Customer as follows:

- a. The Authority shall have the right, for each calendar year to implement such REC Compliance Measures as it determines in its discretion to be appropriate for the purpose of meeting the Annual REC Percentage Target for the total PP load that it will serve during such calendar year.
- b. The Authority will, for each month of each calendar year, calculate the total costs (“Total Monthly REC Costs”) that the Authority has incurred or estimates that it will incur from implementing RES Compliance Measures for the purpose of meeting the Annual REC Percentage Target for the total PP kilowatt-hour load for the month (“Total Monthly PP Load”). The Total Monthly REC Costs may be calculated based on forecasts of the Total Monthly PP Load that the Authority expects to serve for the month, or on a lagged basis based on the actual Total Monthly PP Load that the Authority served for the month.
- c. Each month, the Authority will assess to the Customer, as a Monthly REC Charge, which will represent the Customer’s share of the Total Monthly REC Costs assessed to the Total Monthly PP Load. The Monthly REC Charge will be assessed as the proportion of the Customer’s total kilowatt-hours load served by the Authority for such month to the Total Monthly PP Load served by the Authority for such month, provided, however, that:
 - i. the Monthly REC Charge to the Customer shall not include any costs associated with the Authority’s inability to collect the Monthly REC Charge from other Authority customers; and
 - ii. the effective per-MWh rate of the Monthly REC Charge to the Customer averaged over the REC Program Year to which the Annual REC Percentage Target applies shall not exceed the per-MWh rate of a Monthly REC Charge based on NYSERDA’s published REC price for the REC Program Year.
4. The Authority may, in its discretion, include the Monthly REC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the Monthly REC Charge pursuant to another Authority-established procedure.
5. The Authority will, at the conclusion of each calendar year in which it assesses a Monthly REC Charge, conduct a reconciliation process based on the actual costs that it incurred for REC Compliance Measures and actual load served for the year, compared with cost or load estimates or forecasts, if any, that the Authority used to calculate the Customer’s Monthly REC Charges during the year. The Authority will issue a credit, or an adjusted final charge for the year, as appropriate, based on the results of such reconciliation process. Any such final charge shall be payable within the time frame applicable to the Authority’s bills for Electric Service under this Agreement or pursuant to any other procedure established by the Authority pursuant to Section II.4 of this Schedule E.

6. Notwithstanding the provisions of Section II.3 of this Schedule E, if Electric Service for the Allocation is commenced after the Authority has implemented REC Compliance Measures for the year in which such Electric Service is commenced, and as a result the Customer's load cannot be accounted for in such REC Compliance Measures, the Authority may in its discretion implement separate REC Compliance Measures in order to meet the Annual REC Percentage Target for Customer's load for the year, and bill the Customer for the costs associated with such separate REC Compliance Measures.
7. Nothing in this Schedule shall limit or otherwise affect the Authority's right to charge or collect from the Customer, any rate, charge, fee, assessment, or tax provided for under any other provision of the Agreement, or any provision of the Service Tariff, or the Rules.

III. ALTERNATIVE REC COMPLIANCE PROGRAM

1. Nothing in this Schedule E shall be construed as preventing the Parties from entering into other agreements for an alternative arrangement for the Authority to meet the Annual REC Percentage Target with respect to the Customer's Allocation, including but not limited to Customer self-supply of RECs, alternative REC compliance programs and cost allocation mechanisms, in lieu of the Monthly REC Charge provided in this Schedule E (collectively, "Alternative REC Compliance Program").
2. The Authority shall communicate at least biennially with the Customer concerning implementation of the RES Compliance Program and potential Alternative REC Compliance Programs, if any, that the Authority is offering or expects to offer.



POWER AUTHORITY OF THE STATE OF NEW YORK
30 SOUTH PEARL STREET
ALBANY, NY 12207

Schedule of Rates for Sale of Firm Power Service to
Preservation Power Customers
(Local Electric Utility Delivery)

Service Tariff No. 20

Table of Contents

Schedule of Rates for Firm Power Service	Leaf No.
I. Applicability	3
II. Abbreviations and Terms.....	3
III. Monthly Rates and Charges.....	5
A. Preservation Power (PP) Base Rates	5
B. PP Rates No Lower than Rural/Domestic Rate	5
C. Monthly Base Rates Exclude Delivery Service Charges	5
D. Minimum Monthly Charge.....	5
E. Estimated Billing	6
F. Adjustments to Charges	7
G. Billing Period	7
H. Billing Demand	7
I. Billing Energy	7
J. Contract Demand	7
IV. General Provisions	8
A. Character of Service	8
B. Availability of Energy	8
C. Delivery	8
D. Adjustment of Rates	8
E. Billing Methodology and Billing	9
F. Payment by Customer to Authority.....	9
1. Demand and Energy Rates, Taxes	9
2. Transmission Charge	10
3. NYISO Transmission and Related Charges.....	10
4. Taxes Defined	10
5. Substitute Energy	10
6. Other Charges	11
7. Payment Information	11
8. Billing Disputes	11
G. Rendition and Payment of Bills.....	12
H. Adjustment of Charges – Distribution Losses.....	13
I. Conflicts.....	13
V. Annual Adjustment Factor	14

Schedule of Rates for Firm Power Service

I. Applicability

To sales of Preservation Power made directly to a qualified business Customer for firm power service that is delivered by the Customer's local electric utility.

II. Abbreviations and Terms

- kW kilowatt(s)
- kW-mo. kilowatt-month
- kWh kilowatt-hour(s)
- MWh megawatt-hour(s)
- NYISO New York Independent System Operator, Inc. or any successor organization
- PAL New York Public Authorities Law
- OATT Open Access Transmission Tariff issued by the NYISO

Agreement: An executed written agreement between the Authority and the Customer for the sale of Preservation Power to the Customer.

Annual Adjustment Factor or **AAF**: This term shall have the meaning set forth in Section V herein.

Authority: The Power Authority of the State of New York, a corporate municipal instrumentality and a political subdivision of the State of New York created pursuant to Chapter 772 of the New York Laws of 1931 and existing and operating under Title 1 of Article 5 of the PAL, also known as the "New York Power Authority."

Customer: A business entity that (1) has received an Allocation of Preservation Power, (2) purchases such Preservation Power directly from the Authority, and (3) receives delivery of the Preservation Power from a local electric utility.

Electric Service: The power and energy provided to the Customer in accordance with the Agreement, this Service Tariff and the Rules.

Firm Power: Hydropower capacity (kW) that is intended to be always available from the Project subject to the curtailment provisions set forth in the Agreement between the Authority and the Customer and this Service Tariff. Firm Power shall not include peaking power.

Firm Energy: Energy (kWh) associated with Firm Power.

Load Factor Sharing or LFS: A type of billing methodology applicable to a Customer's Allocation which determines how a Customer's total Native System Load is apportioned between the power and energy supplied by the Allocation and the Customer's other source of electricity supply, if any. LFS is used to determine the amount of Firm Energy supplied and billed on the basis of the Customer's actual total Native System Load per the monthly billing cycle as follows:

1. When the Maximum Metered Demand is less than (<) the Contract Demand, then the Customer's entire load will be supplied by Firm Energy.
2. When the Maximum Metered Demand is greater than (>) the Contract Demand, then the Customer's portion of Firm Energy supply will be determined as follows:
 - a. For Hourly Billing: $\sum (\text{Contract Demand} \div \text{Maximum Metered Demand} \times \text{the in-hour demand of Customer's total Native System Load for all hours})$.
 - b. For Monthly Billing: $(\text{Contract Demand} \div \text{Maximum Metered Demand} \times \text{the total consumed energy by the Customer within the bill cycle})$.

Load Serving Entity or LSE: This term shall have the meaning set forth in the Agreement.

Maximum Metered Demand: The highest 15 or 30-minute integrated demand, as determined by the local electric utility, during each Billing Period recorded on the meter that is used by the Customer in accordance with this Service Tariff and the Agreement.

Native System Load: The total consumption of the Customer's electric system, as determined by the Authority's revenue-grade metering equipment, without the offset of Customer's behind the meter generation. It is represented as the sum of all incoming power, plus internal generation behind the system meter, minus power exports to the bulk electric system.

Preservation Power or PP: Firm Power and Firm Energy made available under this Service Tariff by the Authority from the Project for sale to the Customer for business purposes pursuant to PAL § 1005(5) and (13), and that is delivered by the Customer's local electric utility.

Project: The Authority's St. Lawrence-FDR Power Project, FERC Project No. 2000.

Rate Year or RY: The period from July 1 through June 30. For example, RY 2018 refers to July 1, 2018 through June 30, 2019.

Rules: The Authority's rules and regulations set forth in 21 NYCRR § 450 *et seq.*, as they may be amended from time to time.

Service Tariff: This Service Tariff No. 20.

All other capitalized terms and abbreviations used in this Service Tariff but not defined in this Section or other provisions of this Service Tariff shall have the same meaning as set forth in the Agreement.

III. Monthly Rates and Charges

A. Preservation Power (PP) Base Rates

The rates to be charged to the Customer by the Authority shall be as follows:

Rate Year	Billing Period	Demand (\$/kW)	Energy (\$/MWh)
2018	July 2018 – June 2019	7.90	13.50

B. PP Rates No Lower than Rural/Domestic Rate

At all times the applicable PP base rates for demand and energy determined in accordance with Sections III.A and V of this Service Tariff shall be no lower than the rates charged by the Authority for the sale of hydroelectricity for the benefit of rural and domestic customers receiving service in accordance with the Niagara Redevelopment Act, 16 U.S.C. § 836(b)(1) (the "Rural/Domestic Rate"). This provision shall be implemented as follows: if the base rates, as determined in accordance with Sections III.A and V of this Service Tariff, are lower than the Rural/Domestic Rate on an average \$/MWh basis, each set of rates measured at 80% load factor which is generally regarded as representative for PP Customers, then the base rates determined under Sections III.A and V of this Service Tariff will be revised to make them equal to the Rural/Domestic Rate on an average \$/MWh basis. However, the base rates as so revised will have no effect until such time as these base rates are lower than the Rural/Domestic Rate.

C. Monthly Base Rates Exclude Delivery Service Charges

The monthly base rates set forth in this Section III exclude any applicable costs for delivery services provided by the local electric utility.

D. Minimum Monthly Charge

The Minimum Monthly Charge shall equal the product of the demand rate specified in Section III.A and the Contract Demand (as defined herein). Such Minimum Monthly Charge shall be in addition to any NYISO Charges or Taxes (each as defined herein) incurred by the Authority with respect to the Customer's Allocation, and any other charges provided in this Service Tariff, the Agreement or the Rules.

E. Estimated Billing

If the Authority, in its discretion, determines that it lacks reliable data on the Customer's actual demand and/or energy usage for a Billing Period during which the Customer receives Electric Service from the Authority, the Authority shall have the right to render a bill to the Customer for such Billing Period based on estimated demand and estimated usage ("Estimated Bill").

For the purpose of calculating a Billing Demand charge for an Estimated Bill, the demand charge will be calculated based on a load factor sharing billing methodology as follows:

- The estimated demand amount (kW) will be calculated based on an average of the Customer's Billing Demand (kW) values for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated demand amount (kW) for the Estimated Bill will equal the Customer's takedown (kW) amount.

For the purpose of calculating a Billing Energy charge for an Estimated Bill, the energy charge will be calculated based on a load factor sharing billing methodology as follows:

- The estimated energy (kWh) will be based on the average of the Customer's Billing Energy (kWh) values for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated energy amount (kWh) will be equal to the takedown (kW) amount at 70 percent load factor for that Billing Period.

If an alternative billing methodology is applicable to the Customer, the demand charge and energy charge for rendering an Estimated Bill shall be calculated in a manner appropriate to such alternative billing methodology as determined by the Authority.

If data indicating the Customer's actual demand and usage for any Billing Period in which an Estimated Bill was rendered is subsequently provided to the Authority, the Authority will make necessary adjustments to the corresponding Estimated Bill and, as appropriate, render a revised bill (or provide a credit) to the Customer.

The Minimum Monthly Charge provisions of Section III.D shall apply to Estimated Bills.

The Authority's discretion to render Estimated Bills is not intended and shall not be construed to limit the Authority's rights under the Agreement.

F. Adjustments to Charges

In addition to any other adjustments provided for in this Service Tariff, in any Billing Period, the Authority may make appropriate adjustments to billings and charges to address such matters as billing and payment errors, and the receipt of actual, additional, or corrected data concerning Customer energy or demand usage.

G. Billing Period

The Billing Period is any period of approximately thirty (30) days, generally ending with the last day of each calendar month but subject to the billing cycle requirements of the local electric utility in whose service territory the Customer's Facility is located.

H. Billing Demand

Billing Demand shall be determined by applying the applicable billing methodology to total Native System Load meter readings during the Billing Period. See Section IV.E, below.

I. Billing Energy

Billing Energy shall be determined by applying the applicable billing methodology to total Native System Load meter readings during the Billing Period. See Section IV.E, below.

J. Contract Demand

The Contract Demand will be the amount of Preservation Power, not to exceed the Allocation, provided by the Authority to the Customer in accordance with the Agreement.

IV. General Provisions

A. Character of Service

Alternating current; sixty cycles, three-phase.

B. Availability of Energy

1. Subject to Section IV.B.2, the Authority shall provide to the Customer in any Billing Period Firm Energy associated with Firm Power. The offer of Firm Energy for delivery shall fulfill the Authority's obligations for purposes of this provision whether or not the Firm Energy is taken by the Customer.
2. In the event of an Adverse Water Condition, the rights and obligations of the Customer and Authority, including but not limited to such matters as Substitute Energy and responsibility for payment of costs associated therewith, will be governed by the Agreement.

C. Delivery

For the purpose of this Service Tariff, Firm Power and Firm Energy shall be deemed to be offered when the Authority is able to supply Firm Power and Firm Energy to the Authority's designated NYISO load bus. If, despite such offer, there is a failure of delivery caused by the Customer, NYISO or local electric utility, such failure shall not be subject to a billing adjustment pursuant to Section 454.6(d) of the Rules or any successor provision addressing adjustments.

D. Adjustment of Rates

To the extent not inconsistent with the Agreement, the base rates contained in this Service Tariff may be revised from time to time on not less than thirty (30) days written notice to the Customer.

E. Billing Methodology

Unless otherwise specified in the Agreement, the following provisions shall apply:

1. The billing methodology used to determine the amount of Firm Power and Firm Energy to be billed to the Customer related to its Allocation shall be Load Factor Sharing ("LFS") in a manner consistent with the Agreement and any applicable delivery agreement between the Authority and the Customer's local electric utility or both as determined by the Authority. An alternative billing methodology may be used provided the Customer and the Authority agree in writing and the Customer's local electric utility provides its consent if the Authority determines that such consent is necessary.
2. Billing Energy - The LFS methodology will be applied against the Customer's Native System Load during the Billing Period to determine the amount of Firm Energy (kWh) attributable to the Allocation (Billing Energy) to be billed to the Customer and charged at the applicable PP Rate. All energy quantities will be adjusted for losses.
3. Billing Demand – The LFS methodology will be applied against the Customer's Maximum Metered Load during the Billing Period to determine the amount of Firm Power (kW) attributable to the Allocation (Billing Demand) to be billed to the Customer and charged at the applicable PP Rate. Billing Demand may not exceed the amount of the Contract Demand. All demand quantities will be adjusted for losses.

F. Payment by Customer to Authority

1. Demand and Energy Charges, Taxes

The Customer shall pay the Authority for Firm Power and Firm Energy during any Billing Period the higher of either (i) the sum of (a), (b) and (c) below, or (ii) the Minimum Monthly Charge (as defined herein):

- a. The demand rate per kilowatt for Firm Power specified in this Service Tariff or any modification thereof applied to the Customer's Billing Demand (as defined in Section IV.E, above) for the Billing Period; and
- b. The energy rate per MWh for Firm Energy specified in this Service Tariff or any modification thereof applied to the Customer's Billing Energy (as defined in Section IV.E, above) for the Billing Period; and
- c. A charge representing reimbursement to the Authority for all applicable Taxes incurred by the Authority as a result of providing Preservation Power allocated to the Customer.

2. Transmission Charge

The Customer shall compensate the Authority for all transmission costs incurred by the Authority with respect to the Allocation, including such costs that are charged pursuant to the OATT.

3. NYISO Transmission and Related Charges

The Customer shall compensate the Authority for the following NYISO transmission and related charges (collectively, "NYISO Charges") assessed on the Authority for services provided by the NYISO pursuant to its OATT or other tariffs (as the provisions of those tariffs may be amended and in effect from time to time) associated with providing Electric Service to the Customer:

- A. Ancillary Services 1 through 6 and any new ancillary services as may be defined and included in the OATT from time to time;
- B. Marginal losses;
- C. The New York Power Authority Transmission Adjustment Charge ("NTAC");
- D. Congestion costs inclusive of any rents collected or owed due to any associated grandfathered transmission congestion contracts as provided in Attachment K of the OATT;
- E. Any and all other charges, assessments, or other amounts associated with deliveries to Customers or otherwise associated with the Authority's responsibilities as a Load Serving Entity for the Customers that are assessed on the Authority by the NYISO under the provisions of its OATT or under other applicable tariffs; and
- F. Any charges assessed on the Authority with respect to the provision of Electric Service to Customers for facilities needed to maintain reliability and incurred in connection with the NYISO's Comprehensive System Planning Process (or similar reliability-related obligations incurred by the Authority with respect to Electric Service to the Customer), applicable tariffs, or required to be paid by the Authority in accordance with law, regardless of whether such charges are assessed by the NYISO or another party.

The NYISO Charges, if any, incurred by the Authority on behalf of the Customer, are in addition to the Authority production charges that are charged to the Customer in accordance with other provisions of this Service Tariff.

The method of billing NYISO charges to the Customer will be based on Authority's discretion.

4. Taxes Defined

Taxes shall be any adjustment as the Authority deems necessary to recover from the Customer any taxes, assessments or any other charges mandated by federal, state or local agencies or authorities that are levied on the Authority or that the Authority is required to collect from the Customer if and to the extent such taxes, assessments or charges are not recovered by the Authority pursuant to another provision of this Service Tariff.

5. Substitute Energy

The Customer shall pay for Substitute Energy, if applicable, as specified in the Agreement.

6. Other Charges

The Customer shall pay the Authority for all other charges provided for in the Agreement.

7. Payment Information

Bills computed under this Service Tariff are due and payable by electronic wire transfer in accordance with the Rules. Such wire transfer shall be made to J P Morgan Chase NY, NY / ABA021000021 / NYPA A/C # 008-030383, unless otherwise indicated in writing by the Authority. The Authority may in its discretion change the foregoing account and routing information upon notice to the Customer.

8. Billing Disputes

In the event that there is a dispute on any items of a bill rendered by the Authority, the Customer shall pay such bill in full. If necessary, any adjustments will be made thereafter.

DRAFT

G. Rendition and Payment of Bills

1. The Authority will render bills to the Customer for Electric Service on or before the tenth (10th) business day of the month for charges due for the previous Billing Period. Such bills shall include charges for Electric Service, NYISO Charges associated with the Allocation (subject to adjustment consistent with any later NYISO re-billings to the Authority), and all other applicable charges, and are subject to adjustment as provided for in the Agreement, the Service Tariff and the Rules.
2. The Authority will charge and collect from the Customer all Taxes (including local, state and federal taxes) the Authority determines are applicable, unless the Customer furnishes the Authority with proof satisfactory to the Authority that (i) the Customer is exempt from the payment of any such Taxes, and/or (ii) the Authority is not obligated to collect such Taxes from the Customer. If the Authority is not collecting Taxes from the Customer based on the circumstances described in (i) or (ii) above, the Customer shall immediately inform the Authority of any change in circumstances relating to its tax status that would require the Authority to charge and collect such Taxes from the Customer.
3. Unless otherwise agreed to by the Authority and the Customer in writing, the Authority will render bills to the Customer electronically.
4. Payment of bills by the Customer shall be due and payable by the Customer within twenty (20) days of the date the Authority renders the bill.
5. Except as otherwise agreed by the Authority in writing, if the Customer fails to pay any bill when due an interest charge of two percent of the amount unpaid will be added thereto as liquidated damages, and thereafter, as further liquidated damages, an additional interest charge of one and one-half percent of the sum unpaid shall be added on the first day of each succeeding Billing Period until the amount due, including interest, is paid in full.
6. If at any time after commencement of Electric Service the Customer fails to make complete payment of any two (2) bills for Electric Service when such bills become due pursuant to Agreement, the Authority shall have the right to require that the Customer deposit with the Authority a sum of money in an amount equal to all charges that would be due under this Agreement for Electric Service for two (2) consecutive calendar months as estimated by the Authority. Such deposit will be deemed security for the payment of unpaid bills and/or other claims of the Authority against the Customer upon termination of Electric Service. The failure or refusal of the Customer to provide the deposit within thirty (30) days of a request for such deposit will be grounds for the Authority in its discretion to suspend Electric Service to the Customer or terminate the Agreement.

Unless otherwise agreed to by the Authority and the Customer in writing, in the event the Customer disputes any item of any bill rendered by Authority, the Customer shall pay such bill in full within the time provided for by this Agreement, and adjustments, if appropriate, will be made thereafter.

H. Adjustment of Charges – Distribution Losses

The Authority will make appropriate adjustments to compensate for distribution losses of the local electric utility.

I. Conflicts

In the event of any inconsistencies, conflicts, or differences between the provisions of this Service Tariff and the Rules, the provisions of this Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of the Agreement and this Service Tariff or the Rules, the provisions of the Agreement shall govern.

DRAFT

V. Annual Adjustment Factor

A. Adjustment of Rates

1. The AAF will be based upon a weighted average of three indices described below. For each new Rate Year, the index value for the latest available calendar year ("Index Value for the Measuring Year") will be compared to the index value for the calendar year immediately preceding the latest available calendar year (the Index Value for the Measuring Year -1"). The change for each index will then be multiplied by the indicated weights. As described in detail below, these products are then summed, producing the AAF. The AAF will be multiplied by the base rate for the current Rate Year to produce the base rates for the new Rate Year, subject to a maximum adjustment of $\pm 5.0\%$ (" $\pm 5\%$ Collar"). Amounts outside the $\pm 5\%$ Collar shall be referred to as the "Excess."

Index 1, "BLS Industrial Power Price" (35% weight): The average of the monthly Producer Price Index for Industrial Electric Power, commodity code number 0543, not seasonally adjusted, as reported by the U.S. Department of Labor, Bureau of Labor Statistics ("BLS") electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 1, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

Index 2, "EIA Average Industrial Power Price" (40% weight): The average weighted annual price (as measured in cents/kWh) for electric sales to the industrial sector in the ten states of CT, MA, ME, NH, NJ, NY, OH, PA, RI and VT ("Selected States") as reported by Coal and Electric Data and Renewables Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration ("EIA"); U.S. Department of Energy Form EIA-861 Final Data File. For Index 2, the Index Value for the Measuring Year will be the index for the calendar year two years preceding July 1 of the new Rate Year.

Index 3, "BLS Industrial Commodities Price Less Fuel" (25% weight): The monthly average of the Producer Price Index for Industrial Commodities less fuel, commodity code number 03T15M05, not seasonally adjusted, as reported by the U.S. Department of Labor, BLS electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 3, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

2. Annual Adjustment Factor Computation Guide

- Step 1: For each of the three Indices, divide the Index Value for Measuring Year by the Index Value for the Measuring Year-1.
- Step 2: Multiply the ratios determined in Step 1 by percentage weights for each Index. Sum the results to determine the weighted average. This is the AAF.
- Step 3: Commencing RY 2014, modifications to the AAF will be subject to $\pm 5\%$ Collar, as described below.
 - a) When the AAF falls outside the $\pm 5\%$ Collar, the Excess will be carried over to the subsequent RY. If the AAF in the subsequent RY is within the $\pm 5\%$ Collar, the current RY Excess will be added to/subtracted from the subsequent Rate Year's AAF, up to the $\pm 5\%$ Collar.

- b) Excesses will continue to accrue without limit and carry over such that they will be added to/subtracted from the AAF in any year where the AAF is within the $\pm 5\%$ Collar.

Step 4: Multiply the current Rate Year base rate by the AAF calculated in Step 2 to determine the new Rate Year base rate.

The foregoing calculation shall be performed by the Authority consistent with the sample presented in Section V.B below.

3. The Authority shall provide the Customer with notice of any adjustment to the current base rate per the above and with all data and calculations necessary to compute such adjustment by June 15th of each year to be effective on July 1 of such year, commencing in 2014. The values of the latest officially published (electronically or otherwise) versions of the indices and data provided by the BLS and EIA as of June 1 shall be used notwithstanding any subsequent revisions to the indices.
4. If during the term of the Agreement any of the three above indices ceases to be available or ceases to be reflective of the relevant factors or of changes which the indices were intended to reflect, the Customer and the Authority may mutually select a substitute Index. The Customer and the Authority agree to mutually select substitute indices within 90 days, once one of them is notified by the other that the indices are no longer available or no longer reflect the relevant factors or changes which the indices were intended to reflect. Should the 90-day period cover a planned July 1 rate change, the current base rates will remain in effect until substitute indices are selected and the adjusted rates based on the substitute indices will be retroactive to the previous July 1. If the Customer and Authority are unable to reach agreement on substitute indices within the 90-day period, the Customer and the Authority agree to substitute the mathematic average of the PPI—Intermediate Materials, Supplies and Components (BLS Series ID WPUSOP2000) and the PPI-- Finished Goods (BLS Series ID WPUSOP3000) indices for one or more indices that have ceased to be available or reflective of their intended purpose and shall assume the percentage weighting(s) of the one or more discontinued indices as indicated in Section V.A.1.

B. Sample Computation of the AAF (hypothetical values for July 1, 2017 implementation):

STEP 1

Determine the Index Value for the Measuring Year (MY) and Measuring Year - 1 (MY-1) for Each Index

- Index 1 - Producer Price Index, Industrial Power

	Measuring Year <u>(2016)</u>	Measuring Year - 1 <u>(2015)</u>
January	205.3	167.8
February	204.3	167.6
March	204.5	168.2
April	202.4	168.6
May	206.3	171.6
June	220.4	180.1
July	226.2	182.7
August	227.3	179.2
September	228.1	181.8
October	214.9	170.2
November	211.3	168.8
December	211.7	166.6
Average	213.6	223.7
Ratio of MY/MY-1		0.95

- Index 2 – EIA Industrial Rate

<u>State</u>	<u>Revenues</u> ((\$000s))	<u>Sales</u> (MWh)	<u>Avg. Rate</u> (cents/kWh)
<u>Measuring Year (2015)</u>			
CT	444,588	3,432,002	
MA	1,068,927	7,892,165	
ME	290,360	3,208,045	
NH	252,331	1,981,028	
NJ	778,985	7,320,398	
NY	1,140,573	18,079,200	
OH	3,548,736	50,556,675	
PA	3,411,815	47,404,272	
RI	109,866	798,532	
VT	146,022	1,421,601	
TOTAL	11,192,203	142,093,918	7.88

Measuring Year -1 (2014)

CT	453,958	3,514,798	
MA	1,014,262	7,960,941	
ME	300,412	3,357,486	
NH	234,900	1,969,064	
NJ	855,757	7,516,616	
NY	1,184,255	18,002,976	
OH	3,440,919	50,829,251	
PA	3,580,990	48,317,693	
RI	114,111	887,150	
VT	145,111	1,417,994	
TOTAL	11,324,673	143,773,969	7.88

Ratio of MY/MY-1 **1.00**

- Index 3 – Producer Price Index, Industrial Commodities Less Fuel

	Measuring Year (2016)	Measuring Year -1 (2015)
January	191.9	196.0
February	191.8	195.4
March	192.1	195.0
April	192.8	194.8
May	193.4	194.9
June	193.7	195.2
July	193.7	194.9
August	194.0	193.9
September	193.9	193.1
October	194.3	192.9
November	194.9	192.3
December	195.6	191.9
Average	193.5	194.2
Ratio of MY/MY-1		1.00

STEP 2

Determine AAF by Summing the Weighted Indices

<u>Index</u>	<u>Ratio of MY to MY-1</u>	<u>Weight</u>	<u>Weighted Factors</u>
PPI Industrial Power	0.95	0.35	0.334
EIA Industrial Rate	1.00	0.40	0.400
PPI Industrial Commodities less fuel	1.00	0.25	<u>0.249</u>
AAF			0.983

STEP 3

Apply Collar of $\pm 5.0\%$ to Determine the Maximum/Minimum AAF.

$-5.0\% < 1.6\% < 5.0\%$; collar does not apply, assuming no cumulative excess.

STEP 4

Apply AAF to Calculate the New Rate Year Base Rate

	<u>Demand</u> \$/kW-mo.	<u>Energy</u> \$/MWh
Current Rate Year Base Rate	8.03	13.73
New Rate Year Base Rate	7.90	13.50

POWER AUTHORITY
OF THE
STATE OF NEW YORK

30 South Pearl Street
10th Floor
Albany, New York 12207-3425

AGREEMENT FOR THE SALE OF
PRESERVATION POWER AND ENERGY

SERVICE TARIFF NO. 20-A

ARCONIC INC.

The POWER AUTHORITY OF THE STATE OF NEW YORK (“Authority”), created pursuant to Chapter 772 of the New York Laws of 1931 and existing under Title I of Article V of the New York Public Authorities Law (“PAL”), having its office and principal place of business at 30 South Pearl Street, 10th Floor, Albany, New York 12207-3425, hereby enters into this Agreement for Sale of Preservation Power and Energy (“Agreement”) with Arconic Inc., (“Customer”) having offices at 1814 State Highway 131, Massena, NY 13662. The Authority and the Customer are from time to time referred to in this Agreement as “Party” or collectively as “Parties” and agree as follows:

RECITALS

WHEREAS, the Authority is authorized to sell hydroelectric power produced by the St. Lawrence-FDR Power Project known as Preservation Power (or “PP”), as further defined in this Agreement, to qualified businesses in New York State in accordance with PAL § 1005(5) and (13);

WHEREAS, the Customer, which was created in connection with a corporate reorganization by Alcoa Inc. (“Alcoa”), has requested an allocation of PP to support operations that it will undertake as an independent company at facilities defined in this Agreement as the “Facility” which is located on the Alcoa industrial campus in Massena, New York;

WHEREAS, the Customer has offered to make specific commitments relating to, among other things, the creation and retention of jobs, capital investments, power usage and energy efficiency measures at the Facility;

WHEREAS, the Authority’s Board of Trustees approved an allocation of PP to the Customer;

WHEREAS, because the Facility is located within the Authority’s transmission district, the Authority will also supply the Customer with incremental energy and capacity through market supply to serve the Customer’s load in excess of the Contract Demand as provided in this Agreement and the Service Tariff;

WHEREAS, the Parties have reached an agreement on the terms and conditions applicable for the sale of the Allocation and incremental energy and capacity for a term as provided in this Agreement;

WHEREAS, electric service hereunder shall be subject to the rates and other terms and conditions contained in the Service Tariff as further provided in this Agreement; and

WHEREAS, the Authority has complied with requirements of PAL § 1009, and has been authorized to execute the Agreement.

NOW, THEREFORE, in consideration of mutual covenants, terms, and conditions herein, and for other good and valuable consideration, the receipt and adequacy of which the Parties hereby acknowledge, the Parties do hereby mutually covenant and agree as follows:

ARTICLE I

DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Agreement, shall have the meanings as set forth below. When used with initial capitalization, whether singular or plural, terms defined in schedules or appendices to this Agreement shall have the meanings set forth in such schedules or appendices. All other capitalized terms and abbreviations used in this Agreement but not defined in this Section or other provisions of this Agreement or its schedules or appendices shall have the same meaning as set forth in the Service Tariff.

“Adverse Water Condition” means any event or condition, including without limitation a hydrologic or hydraulic condition, that relates to the flow, level, or usage of water at or in the vicinity of the Project and/or its related facilities and structures, and which prevents, threatens to prevent, or causes the Authority to take responsive action that has the effect of preventing, the Project from producing a sufficient amount of energy to supply the full power and energy requirements of firm power and firm energy customers who are served by the Project.

“Agreement” means this Agreement, and unless otherwise indicated herein, includes all schedules, appendices and addenda thereto, as the same may be amended from time to time.

“Allocation” refers to the allocation(s) of PP awarded to the Customer as specified in Schedule A.

“Alternative REC Compliance Program” has the meaning provided in Schedule E.

“Annual Capital Investment Commitment” has the meaning set forth in Schedule B.

“Annual CI Expenditures” has the meaning set forth in Schedule B.

“Base Employment Level” has the meaning set forth in Schedule B.

“Contract Demand” is as defined in applicable Service Tariff.

“Effective Date” means the date that this Agreement is fully executed by the Parties.

“Electric Service” is the Firm Power and Firm Energy associated with the Allocation and sold by the Authority to the Customer in accordance with this Agreement, the Service Tariff and the Rules.

“Energy Services” has the meaning set forth in Article V of this Agreement.

“Expansion Project” has the meaning set forth in Section IV.3.a of this Agreement.

“Expansion Project Capital Investment Commitment” has the meaning set forth in Schedule B.

“Facility” means the Customer’s facilities as described in Schedule A to this Agreement.

“Firm Power” is as defined in the Service Tariff.

“Firm Energy” is as defined in the Service Tariff.

“FERC” means the Federal Energy Regulatory Commission (or any successor organization).

“FERC License” means the first new license issued by FERC to the Authority for the continued operation and maintenance of the Project, pursuant to Section 15 of the Federal Power Act, which became effective September 1, 2007 after expiration of the Project’s original license which became effective in 1957.

“Hydropower Curtailment” means a temporary reduction in Firm Energy to which the Customer is entitled to receive under this Agreement made by the Authority in response to an Adverse Water Condition.

“International Joint Commission” or “IJC” refers to the entity with responsibility to prevent and resolve disputes between the United States of America and Canada under the *1909 Boundary Waters Treaty* and pursues the common good of both countries as an independent and objective advisor to the two governments. The IJC rules upon applications for approval of projects affecting boundary or transboundary waters and may regulate the operation of these projects.

“Load Reduction” has the meaning set forth in Section IX.6 of this Agreement.

“Load Serving Entity” (or “LSE”) means an entity designated by a retail electricity customer (including the Customer) to provide capacity, energy and ancillary services to serve such customer, in compliance with NYISO Tariffs, rules, manuals and procedures.

“Market Supply” is as defined in the Service Tariff.

“Metering Arrangement” has the meaning set forth in Section II.8 of this Agreement.

“NYEM” means the New York Energy Manager, an energy management center owned and operated by the Authority.

“NYEM Agreement” means a written agreement between the Authority and the Customer providing for the Facility’s enrollment and Customer’s participation in NYEM.

“NYEM Participation” has the meaning specified in Schedule B of this Agreement.

“NYISO” means the New York Independent System Operator or any successor organization.

“NYISO Charges” has the meaning set forth in Section VII.3 of this Agreement.

“NYISO Tariffs” means the NYISO’s Open Access Transmission Tariff or the NYISO’s Market Administration and Control Area Services Tariff, as applicable, as such tariffs are modified from time to time, or any successor to such tariffs.

“Physical Energy Audit” or “Audit” means a physical evaluation of the Facility in a manner approved by the Authority that includes at a minimum the following elements: (a) an assessment of the Facility’s energy use, cost and efficiency which produces an energy utilization index for the Facility (such as an Energy Use Intensity or Energy Performance Indicator); (b) a comparison of the Facility’s index to indices for similar buildings/facilities; (c) an analysis of low-cost/no-cost measures for improving energy efficiency; (d) a listing of potential capital improvements for improving energy consumption; and (e) an initial assessment of potential costs and savings from such measures and improvements.

“Preservation Power” (or “PP”) consists of 490 megawatts (“MW”) of firm hydroelectric power and associated energy produced by the Authority’s St. Lawrence-FDR Power Project.

“Prior Agreement” has the meaning set forth in the recitals to this Agreement.

“Project” means the Authority’s St. Lawrence-FDR Power Project, FERC Project No. 2000.

“Reporting Year” means the yearly interval that the Authority uses for reporting, compliance and other purposes as specified in this Agreement. The Reporting Year for this Agreement is from January 1 through December 31, subject to change by the Authority without notice.

“Rolling Average” has the meaning set forth in Schedule B.

“Rules” are the applicable provisions of Authority’s rules and regulations (Chapter X of Title 21 of the Official Compilation of Codes, Rules and Regulations of the State of New York), as may be modified from time to time by the Authority.

“Service Information” has the meaning set forth in Section II.12 of this Agreement.

“Service Tariff” means the Authority’s Service Tariff No. 20-A, as may be modified from time to time by the Authority, which contains, among other things, the rate schedule establishing rates and other commercial terms for sale of Electric Service to Customer under this Agreement.

“Schedule A” refers to the Schedule A entitled “Preservation Power Allocations” which is attached to and made part of this Agreement.

“Schedule B” refers to the Schedule B entitled “Supplemental Preservation Power Commitments” which is attached to and made part of this Agreement, including any appendices attached thereto.

“Schedule C” refers to the Schedule C entitled “Takedown Schedule” which is attached to and made part of this Agreement.

“Schedule D” refers to the Schedule D entitled “Zero Emission Credit Charge” which is attached to and made part of this Agreement.

“Schedule E” refers to the Schedule E entitled “Monthly Renewable Energy Credit Charge” which is attached to and made part of this Agreement.

“Substitute Energy” means energy that is provided to the Customer by or through the Authority for the purpose of replacing Firm Energy that is not supplied to the Customer due to a Hydropower Curtailment.

“Takedown” means the portion of the Allocation that Customer requests to be scheduled for a specific period as provided for in Schedule C, if applicable.

“Taxes” is as defined in the Service Tariff.

“Unforced Capacity” (or “UCAP”) means the electric capacity required to be provided by LSEs to serve electric load as defined by the NYISO Tariffs, rules, manuals and procedures.

ARTICLE II **ELECTRIC SERVICE**

1. The Authority will make available Electric Service to enable the Customer to receive the Allocation in accordance with this Agreement, the Service Tariff and the Rules. The Customer is not be entitled to receive Electric Service under this Agreement for any PP allocation unless such PP allocation is identified in Schedule A.
2. The Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation specified in Schedule A. If Schedule C specifies a Takedown Schedule for the Allocation, the Authority will provide, and the Customer shall accept and pay for, Electric Service with respect to the Allocation in accordance with such Takedown Schedule.
3. The Authority shall provide UCAP in amounts necessary to meet the Customer’s NYISO UCAP requirements for the Customer’s Native System Load, inclusive of NYISO UCAP requirements associated with the Allocation, in accordance with the NYISO Tariffs. The Customer shall be responsible to pay the Authority for all such UCAP in accordance with the Service Tariff.
4. The Contract Demand for the Customer’s Allocation may be modified by the Authority if the amount of Firm Power and Firm Energy available for sale as PP from the Project is modified as required to comply with any ruling, order, or decision of any regulatory or judicial body having jurisdiction, including but not limited to FERC. Any such modification will be made on a pro rata basis to all PP customers receiving Electric Service under the Service Tariff, as applicable, based on the terms of such ruling, order, or decision.
5. The Contract Demand may not exceed the Allocation.

6. The Customer's Facility must be metered using Authority revenue-grade metering in a manner that is satisfactory to the Authority, or another metering arrangement satisfactory to the Authority must be provided (collectively, "Metering Arrangement"). A Metering Arrangement that is not satisfactory to the Authority shall be grounds, after notice to the Customer, for the Authority to modify, withhold, suspend, or terminate Electric Service to the Customer. If a Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination that it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. After commencement of Electric Service, the Customer shall notify the Authority in writing within thirty (30) days of any alteration to the Facility's Metering Arrangement, and provide any information requested by the Authority (including Facility access) to enable the Authority to determine whether the Metering Arrangement remains satisfactory. If an altered Metering Arrangement is not made to conform to the Authority's requirements within thirty (30) days of a determination it is unsatisfactory, the Authority may modify, withhold, suspend, or terminate Electric Service on at least ten (10) days' prior written notice to the Customer. The Authority may, in its discretion, waive any of the requirements provided for in this Section in whole or in part where in the Authority's judgment, another mechanism satisfactory to the Authority can be implemented to enable the Authority to receive pertinent, timely and accurate information relating to the Customer's energy consumption and demand and render bills to the Customer for all fees, assessments and charges that become due in accordance with this Agreement, the Service Tariff, and the Rules.
7. The Customer agrees to provide information to the Authority that the Authority determines is necessary to provide for the sale and delivery of the Allocation to the Customer at the Facility, the proper and efficient implementation of the PP program, billing related to Electric Service, and/or the performance of obligations under any contracts or other arrangements between the Parties relating to such matters (collectively, "Service Information"). In addition, the Customer agrees to complete such forms and consents that the Authority determines are necessary to provide the Service Information. The Customer's failure to provide Service Information on a timely basis shall be grounds for the Authority in its discretion to modify, withhold, suspend, or terminate Electric Service to the Customer.
8. The Customer shall be responsible for (a) obtaining all consents and agreements from any person that are necessary for the Customer to occupy, operate and receive Electric Service at the Facility, and (b) complying with any requirements of any such person that are necessary for the provision of Electric Service to the Facility in the manner provided for in this Agreement. All such agreements, consents and requirements shall be subject to the Authority's review and approval prior to the commencement of Electric Service, and no such agreements, consents or requirements shall be subject to any conditions or subsequently changed in a manner that materially impacts the Authority's rights and obligations under this Agreement.
9. If in any given hour during a Billing Period the Customer's load requirements exceed the Customer's Contract Demand, the Authority will provide sufficient incremental power and energy through Market Supply to meet such load, based on a load factor sharing methodology and settlement principals as provided in the Service Tariff, and the Customer shall pay Authority for any and all costs associated with such provision of incremental power and energy as provided in the Service Tariff. The Market Supply shall be reflected in the Customer's bill including, but not limited to, Incremental Demand Charges, Incremental Energy Charges,

Incremental UCAP and TSCs associated with such Market Supply necessary to satisfy the Customer's load above its Contract Demand.

ARTICLE III

RATES, TERMS AND CONDITIONS

1. Electric Service shall be sold to the Customer in accordance with the rates, terms and conditions provided for in this Agreement, the Service Tariff and the Rules.
2. The Service Tariff and the Rules may be amended from time to time by the Authority and, if revised, the revised provisions thereof will apply under this Agreement with the same force and effect as if set forth herein. The Authority shall provide at least thirty (30) days prior written notice to the Customer of any proposed change in the Service Tariff or the Rules. No amendment to the Service Tariff or the Rules shall affect the determination of rates for PP to the Customer during the term of the Agreement except insofar as otherwise authorized by this Agreement. This provision shall not limit the Authority's discretion to determine rates applicable to allocations of power and energy awarded to the Customer beyond or in addition to the Allocation.
3. Notwithstanding any provision of this Agreement to the contrary, the power and energy rates for Electric Service shall be subject to increase by Authority at any time upon 30 days prior written notice to Customer if, after consideration by Authority of its legal obligations, the marketability of the output or use of the Project and Authority's competitive position with respect to other suppliers, Authority determines in its discretion that increases in rates obtainable from any other Authority customers will not provide revenues, together with other available Authority funds not needed for operation and maintenance expenses, capital expenses, and reserves, sufficient to meet all requirements specified in Authority's bond and note resolutions and covenants with the holders of its financial obligations. Authority shall use its best efforts to inform Customer at the earliest practicable date of its intent to increase the power and energy rates pursuant to this provision. With respect to any such increase, Authority shall forward to Customer with the notice of increase, an explanation of all reasons for the increase, and shall also identify the sources from which Authority will obtain the total of increased revenues and the bases upon which Authority will allocate the increased revenue requirements among its customers. Any such increase in rates shall remain in effect only so long as Authority determines such increase is necessary to provide revenues for the purposes stated in the preceding sentences.
4. In addition to all other fees, assessments and charges provided for in the Agreement, the Service Tariff and the Rules, the Customer shall be responsible for payment of the Zero Emission Credit Charge and Monthly Renewable Energy Credit Charge provided for in Schedule D and Schedule E, respectively, of this Agreement.

ARTICLE IV
SUPPLEMENTAL COMMITMENTS

1. Supplemental Commitments. Schedule B sets forth the Customer's "Supplemental Preservation Power Commitments" ("Supplemental Commitments"). The Authority's obligation to provide Electric Service under this Agreement is expressly conditioned upon the Customer's timely compliance with the Supplemental Commitments described in Schedule B as further provided in this Agreement. The Customer's Supplemental Commitments are in addition to all other commitments and obligations provided in this Agreement.
2. Special Provisions Relating to a New or Expanded Facility.

- a. Proposed New or Expanded Facility; Failure to Complete.

If Schedule B provides for the construction of a new facility or an expansion of an existing facility (collectively, "Expansion Project"), and the Customer fails to complete the Expansion Project by the date specified in Schedule B, the Authority may, in its discretion, (a) cancel the Allocation, or (b) if it believes that the Expansion Project will be completed in a reasonable time, agree with the Customer to extend the time for completion of the Expansion Project.

- b. Proposed New or Expanded Facility; Partial Performance.

If the Expansion Project results in a completed Facility that is only partially operational, or is materially different than the Expansion Project agreed to in Schedule B (as measured by such factors as size, capital investment expenditures, capital improvements, employment levels, estimated energy demand and/or other criteria determined by the Authority to be relevant), the Authority may, in its discretion, on its own initiative or at the Customer's request, make a permanent reduction to the Allocation and Contract Demand to an amount that the Authority determines to fairly correspond to the completed Facility.

- c. Notice of Completion; Commencement of Electric Service.

- (i) The Customer shall give the Authority not less than ninety (90) days' advance written notice of the anticipated date of completion of an Expansion Project. The Authority will inspect the Expansion Project for the purpose of verifying the status of the Expansion Project and notify Customer of the results of the inspection. The Authority will thereafter commence Electric Service within a reasonable time subject to the other provisions of this Agreement based on applicable operating procedures of the Authority, Customer's local electric utility and NYISO.
- (ii) In the event of an Expansion Project being completed in multiple phases, at the Customer's request the Authority may, in its discretion, allow commencement of part of the Allocation upon completion of any such phase, provided the Authority will similarly inspect the Expansion Project for the purpose of verifying the status

of the completed phase of the Expansion Project. Upon such verification by the Authority of any such completed phase, the Authority, in its discretion, will determine an amount of kW that fairly corresponds to the completed phase of the Expansion Project, taking into account relevant criteria such as any capital expenditures, increased employment levels, and/or increased electrical demand associated with the completed phase of the Expansion Project.

d. Other Rights and Remedies Unaffected.

Nothing in this Article is intended to limit the Authority's rights and remedies provided for in the other provisions of this Agreement, including without limitation the provisions in Schedule B of this Agreement.

ARTICLE V
ENERGY-RELATED PROJECTS, PROGRAMS AND SERVICES

The Authority shall periodically communicate with the Customer for the purpose of informing the Customer about energy-related projects, programs and services ("Energy Services") offered by the Authority that in the Authority's view could provide value to the Customer and/or support the State's Clean Energy Standard. The Customer shall review and respond to all such offers in good faith, provided, however, that, except as otherwise provided for in this Agreement, participation in any such Energy Services shall be at the Customer's option, and subject to such terms and conditions agreed to by the Parties in one or more definitive agreements.

ARTICLE VI
SERVICE TARIFF; CONFLICTS

1. A copy of the Service Tariff is attached to this Agreement as Exhibit 1 and shall apply under this Agreement with the same force and effect as if fully set forth herein. The Customer consents to the application of the Service Tariff.
2. In the event of any inconsistencies, conflicts, or differences between the provisions of the Service Tariff and the Rules, the provisions of the Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of this Agreement and the Service Tariff or the Rules, the provisions of this Agreement shall govern.

ARTICLE VII
TRANSMISSION AND DELIVERY

1. In addition to paying the Authority for transmission and delivery services as provided in this Agreement, the Service Tariff and the Rules, the Customer shall be responsible for:
 - a. complying with the requirements of any utility or other person that are necessary to enable the Customer to receive delivery of the Allocation and Market Supply;
 - b. complying with the requirements of any utility or other person that are necessary for the installation of any Metering Arrangement and related infrastructure; and

- c. paying any utility or other person for delivery and transmission service associated with the Allocation and Market Supply, and installation of any Metering Arrangement and related infrastructure that such utility or other person requires, and if the Authority incurs any charges associated with such matters, reimbursing the Authority for all such charges.
2. The Customer understands and acknowledges that delivery of the Allocation and Market Supply will be made over transmission facilities under the control of the NYISO. The Authority will act as the LSE with respect to the NYISO, or arrange for another entity to do so on the Authority's behalf. The Customer agrees and understands that it shall be responsible to the Authority for all costs incurred by the Authority with respect to the Allocation and Market Supply for the services established in the NYISO Tariff, or other applicable tariff ("NYISO Charges"), as set forth in the Service Tariff or any successor service tariff, regardless of whether such NYISO Charges are transmission-related.

ARTICLE VIII

BILLING AND BILLING METHODOLOGY

1. The billing methodology for the Allocation and Market Supply shall be determined on a "load factor sharing" basis in accordance with the Service Tariff. An alternative basis for billing may be used provided the Parties agree in writing and the local electric utility provides its consent if such consent is deemed necessary. Except as otherwise provided in this Agreement, all other provisions with respect to billing are set forth in the Service Tariff and the Rules.
2. The rights and remedies provided to the Authority in this Article are in addition to any and all other rights and remedies available to Authority at law or in equity.

ARTICLE IX

HYDROPOWER CURTAILMENTS AND SUBSTITUTE ENERGY

1. In the event of an Adverse Water Condition, the Authority will have the right in its discretion to implement Hydropower Curtailments. The Authority will implement Hydropower Curtailments on a non-discriminatory basis as to all Authority customers that are served by the Project.
2. In the event of a Hydropower Curtailment, the Authority will provide Substitute Energy to the Customer and the Customer shall pay for such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, Substitute Energy shall be sourced from markets administered by the NYISO.
3. For each kilowatt-hour of Substitute Energy provided by the Authority during a Hydropower Curtailment, the Customer shall pay the Authority directly during the billing month: (1) the difference between the market cost of the Substitute Energy and the charge for firm energy as provided for in this Agreement; and (2) any NYISO charges and taxes the Authority incurs in connection with the provision of such Substitute Energy. Unless otherwise agreed upon by the Parties in writing, billing and payment for Substitute Energy provided for Hydropower Curtailments shall be governed by the provisions of the Service Tariff relating to the rendition and payment of bills for Electric Service.

4. The Authority shall be under no obligation to deliver, and will not deliver, any such curtailed energy to the Customer in later billing periods.
5. The Authority may require the Customer to enter into a separate agreement relating to the provision and sale of Substitute Energy. The provisions of this Agreement will remain in effect notwithstanding the existence of any such separate agreement.

ARTICLE X

EFFECTIVENESS, TERM AND TERMINATION

1. This Agreement shall become effective and legally binding on the Parties on the Effective Date.
2. Once commenced, Electric Service under the Agreement shall continue until the earliest of: (a) termination by the Customer with respect to its Allocation upon ninety (90) days prior written notice to the Authority; (b) termination by the Authority pursuant to this Agreement, the Service Tariff, or the Rules; or (c) expiration of the Allocation by its own term as specified in Schedule A.
3. Once commenced, the provision of incremental energy and power supply shall continue until the earliest of: (a) termination of Electric Service in accordance with Section X.2 of this Agreement; (b) termination by the Customer of incremental energy and power supply service upon ninety (90) days prior written notice to the Authority; or (c) termination by the Authority of incremental energy and power supply service pursuant to this Agreement, the Service Tariff, or the Rules. Termination in whole or in part of incremental energy and power in accordance with this provision shall not affect the provision of Electric Service for the Allocation.
4. The Customer may exercise a partial termination of the Allocation upon at least sixty (60) days' prior written notice to the Authority. The Authority will effectuate the partial termination as soon as practicable after receipt of such notice taking account of the Authority's internal procedures and requirements of the Customer's local electric utility.
5. The Authority may cancel service under this Agreement or modify the quantities of Firm Power and Firm Energy associated with the Allocation: (1) if such cancellation or modification is required to comply with any final ruling, order or decision of any regulatory or judicial body of competent jurisdiction (including any licensing or re-licensing order or orders of the FERC or its successor agency); or (2) as otherwise provided in this Agreement, the Service Tariff, or the Rules.

ARTICLE XI

EXTENSIONS OF ALLOCATION; AWARD OF ADDITIONAL ALLOCATIONS

1. The Customer may apply to the Authority for an extension of the term of the Allocation identified in Schedule A:
 - a. during the thirty-six (36) month period immediately preceding the scheduled expiration of the Allocation;
 - b. pursuant to any other process that the Authority establishes; or

- c. with the Authority's written consent.
2. Upon proper application by the Customer, the Authority may in accordance with applicable law and Authority procedures award additional allocations of PP at such rates and on such terms and conditions as the Authority establishes. If the Customer agrees to purchase Electric Service associated with any such additional allocation, the Authority will (a) incorporate any such additional allocations into Schedule A, or in its discretion will produce a supplemental schedule, to reflect any such additional allocations, and (b) produce a modified Appendix to Schedule B, as the Authority determines to be appropriate. The Authority will furnish the Customer with any such modified Schedule A, supplemental schedule, and/or a modified Appendix to Schedule B, within a reasonable time after commencement of Electric Service for any such additional allocation.
3. In addition to any requirements imposed by law, the Customer hereby agrees to furnish such documentation and other information as the Authority requests to enable the Authority to evaluate any requests for extension of the Allocation or additional allocations and consider the terms and conditions that should be applicable of any extension or additional allocations.

ARTICLE XII

NOTICES

1. Notices, consents, authorizations, approvals, instructions, waivers or other communications provided in this Agreement shall be in writing and transmitted to the Parties as follows:

To: The Authority

New York Power Authority
123 Main Street
White Plains, New York 10601

Email:

Facsimile: _____

Attention: Manager – Business Power Allocations and Compliance

To: The Customer

Arconic Inc.

[Contract Address]

Email: _____

Facsimile: _____

Attention: _____

2. The foregoing notice/notification information pertaining to either Party may be changed by such Party upon notification to the other Party pursuant to Section XII.1.
3. Except where otherwise herein specifically provided, any notice, communication or request required or authorized by this Agreement by either Party to the other shall be deemed properly given: (a) if sent by U.S. First Class mail addressed to the Party at the address set forth above; (b) if sent by a nationally recognized overnight delivery service, two (2) calendar days after

being deposited for delivery to the appropriate address set forth above; (c) if delivered by hand, with written confirmation of receipt; (d) if sent by facsimile to the appropriate fax number as set forth above, with written confirmation of receipt; or (e) on the date of transmission if sent by electronic communication to the appropriate address as set forth above, with confirmation of receipt. Either Party may change the addressee and/or address for correspondence sent to it by giving written notice in accordance with the foregoing.

ARTICLE XIII

SUCCESSORS AND ASSIGNS; RESALE OF HYDROPOWER

1. This Agreement shall be binding upon, shall inure to the benefit of, and may be performed by, the legal successors and assigns of either Party hereto, provided that no assignment by either Party or any successor or assignee of such Party of its rights and obligations hereunder shall be made or become effective without the prior written consent of the other Party, which consent shall not be unreasonably withheld or conditioned. Notwithstanding the foregoing sentence, the Authority may require such approvals, and such consents and other agreements from the Customer and other parties, that the Authority determines are necessary in order to effectuate any such assignment.
2. The Customer may not transfer any portion of the Allocation to any other person, or a location different than the Facility, unless: (a) the Authority in its discretion authorizes the transfer Authority; (b) all other requirements applicable to a transfer, including board approvals, are satisfied; and (c) the transfer is effectuated in a form and subject to such terms and conditions approved by the Authority. Any purported transfer that does not comply with the foregoing requirements shall be invalid and constitute grounds for the Authority in its discretion to suspend Electric Service or terminate the Allocation and/or this Agreement.
3. The Customer may not sell any portion of the Allocation to any other person, allow any other person to use any portion of the Allocation, or allow any other person to interconnect to the Facility. Any purported sale shall be invalid, and any violation of this provision shall constitute grounds for the Authority in its discretion to suspend Electric Service, or terminate the Allocation and/or this Agreement.
4. The Customer shall not itself or allow any other person to distribute or inject electricity from a non-Authority source into the Facility or over any wires, metering, or utility infrastructure owned or operated by the Authority without the Authority's written consent.

ARTICLE XIV

MISCELLANEOUS

1. Choice of Law

This Agreement shall be governed by and construed in accordance with the laws of the State of New York to the extent that such laws are not inconsistent with the FERC License and the Niagara Redevelopment Act (16 USC §§836, 836a) and rulings by the IJC and without regard to conflicts of law provisions.

2. Venue

The Parties: (a) consent to the exclusive jurisdiction and venue of any state court within or for Albany County, New York, with subject matter jurisdiction for adjudication of any claim, suit, action or any other proceeding in law or equity arising under, or in any way relating to this Agreement; (b) agree to accept service of process; and (c) will not raise any argument of inconvenient forum.

3. Previous Agreements; Modifications; and Interpretation

- a. This Agreement shall constitute the sole and complete agreement of the Parties hereto with respect to the sale of the Allocation and the subject matter of the Agreement, and supersedes all previous communications and agreements between the Parties, oral or written, with reference to the sale of the Allocation.
- b. No modifications of this Agreement shall be binding upon the Parties hereto or either of them unless such modification is in writing and is signed by a duly authorized officer of each of them.
- c. No provision shall be construed against a Party on the basis that such Party drafted such provision.

4. Waiver

Any waiver at any time by either the Authority or the Customer of their rights with respect to a default or of any other matter arising out of this Agreement shall not be deemed to be a waiver with respect to any other default or matter. No waiver by either Party of any rights with respect to any matter arising in connection with this Agreement shall be effective unless made in writing and signed by the Party making the waiver.

5. Severability and Voidability

If any term or provision of this Agreement shall be invalidated, declared unlawful or ineffective in whole or in part by an order of the FERC or a court of competent jurisdiction, such order shall not be deemed to invalidate the remaining terms or provisions hereof. Notwithstanding the preceding sentence, if any provision of this Agreement is rendered void or unenforceable or otherwise modified by a court or agency of competent jurisdiction, the entire Agreement shall, at the option of either Party and only in such circumstances in which such Party's interests are materially and adversely impacted by any such action, be rendered void and unenforceable by such affected Party.

ARTICLE XV
EXECUTION

To facilitate execution, this Agreement may be executed in as many counterparts as may be required, and it shall not be necessary that the signatures of, or on behalf of, each Party, or that the signatures of all persons required to bind any Party, appear on each counterpart; but it shall be sufficient that the signature of, or on behalf of, each Party, or that the signatures of the persons required to bind any Party, appear on one or more of the counterparts. All counterparts shall collectively constitute a single agreement. It shall not be necessary in making proof of this Agreement to produce or account for more than a number of counterparts containing the respective signatures of, or on behalf of, all of the Parties hereto. The delivery of an executed counterpart of this Agreement as a PDF or similar file type transmitted via electronic mail, cloud based server, e-signature technology or similar electronic means shall be legal and binding and shall have the same full force and effect as if an original executed counterpart of this Agreement had been delivered.

[SIGNATURES FOLLOW ON NEXT PAGE]

AGREED:

Arconic Inc.

By: _____

Title: _____

Date: _____

AGREED:

POWER AUTHORITY OF THE STATE OF NEW YORK

By: _____
John R. Koelmel, Chairman

Date: _____

SCHEDULE A
PRESERVATION POWER ALLOCATIONS

Customer: Arconic Inc.	Allocation Amount (kW)	Facility and Address	Trustee Approval Date	Allocation Expiration Date
Type of Allocation				
Preservation Power	5,000	1814 State Highway 131 Massena, NY 13662	December 11, 2018	December 31, 2028

SCHEDULE B
SUPPLEMENTAL PRESERVATION POWER COMMITMENTS

ARTICLE I
SPECIFIC SUPPLEMENTAL COMMITMENTS

1. Employment Commitments

- a. The Customer shall create and maintain the employment level set forth in the Appendix to this Schedule B (the “Base Employment Level”). Such Base Employment Level shall be the total number of full-time positions held by: (a) individuals who are employed by the Customer at Customer’s Facility identified in the Appendix to this Schedule, and (b) individuals who are contractors or who are employed by contractors of the Customer and assigned to the Facility identified in such Appendix (collectively, “Base Level Employees”). The number of Base Level Employees shall not include individuals employed on a part-time basis (less than 35 hours per week); provided, however, that two individuals each working 20 hours per week or more at such Facility shall be counted as one Base Level Employee.
- b. The Base Employment Level shall not be created or maintained by transfers of employees from previously held positions with the Customer or its affiliates within the State of New York, except that the Base Employment Level may be filled by employees of the Customer laid off from other Customer facilities for *bona fide* economic or management reasons.
- c. The Authority may consider a request to change the Base Employment Level based on a claim of increased productivity, increased efficiency or adoption of new technologies or for other appropriate reasons as determined by the Authority. Any such change shall be within Authority’s discretion.

2. Capital Investment Commitments

The Customer shall make the capital investments specified in the Appendix to this Schedule B.

3. Power Utilization

For each month the Authority provides Electric Service to the Customer, the Customer shall utilize the entire Allocation, as represented by the Billing Demand (as such term is described in the Service Tariff), provided, however, that if only part of the Allocation is being utilized in accordance with Schedule C, the Customer shall utilize such partial amount of the Allocation.

4. Energy Efficiency and Conservation Program

- a. The Customer shall implement an energy efficiency and conservation program at the Facility through either (a) enrollment of the Facility and participation in NYEM in accordance with a NYEM Agreement, or (b) one or more Physical Energy Audits of the Facility, or (c) a combination of such measures, in accordance with the provisions of this Article.
- b. The Authority shall transmit to the Customer a NYEM Agreement and an election form. The Customer shall elect to either (a) enroll the Facility and participate in NYEM for a three-year term ("NYEM Participation") in accordance with the NYEM Agreement, or (b) perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority's communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit within three (3) years of the Effective Date of this Agreement, at its own expense.
- c. The Authority shall, on or before the expiration of the three-year term of the NYEM Agreement, transmit to the Customer a NYEM Agreement specifying the terms and conditions that would apply to NYEM participation for a second term, and an election form. The Customer shall elect either (a) NYEM Participation for a second term, or (b) to perform a Physical Energy Audit of the Facility. The Customer shall make the election within sixty (60) days of its receipt of the Authority's communication. If the Customer elects NYEM Participation, it shall execute and return the NYEM Agreement to the Authority with the election form, abide by the NYEM Agreement, and participate in NYEM at its own expense at the rate provided in the NYEM Agreement. If the Customer elects to perform a Physical Energy Audit, it shall perform the Physical Energy Audit during the calendar year that begins six years after of the Effective Date of this Agreement, at its own expense.
- d. The Authority may in its discretion waive the requirement for a Physical Energy Audit, or may agree to a limited energy audit of the Facility, where it determines that the Physical Energy Audit is unnecessary based on the age of the Facility, energy efficiency and conservation improvements made at the Facility, the length of the Allocation, or other considerations the Authority determines to be relevant.

ARTICLE II
RECORDKEEPING, REPORTING AND FACILITY ACCESS

1. Employment

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority, of the total number of Base Level Employees who are employed at or assigned to the Customer's Facility identified in the Appendix to this Schedule, as reported to the United States Department of Labor (or as reported in such other record as agreed upon by the Authority and the Customer). Such report shall separately identify the individuals who are employed by the Customer, and the individuals who are contractors or who are employed by contractors of the Customer, and shall be certified to be correct by an officer of the Customer, plant manager or such other person authorized by the Customer to prepare and file such report and shall be provided to the Authority on or before the last day of February following the end of the most recent calendar year. The Authority shall have the right to examine and audit on reasonable advance written notice all non-confidential written and electronic records and data concerning employment levels including, but not limited to, personnel records and summaries held by the Customer and its affiliates relating to employment in New York State.

2. Capital Investments

The Customer shall comply with the recordkeeping, recording and reporting requirements specified in the Appendix to this Schedule B.

3. Power Usage

A record shall be kept monthly by the Customer, and provided on a calendar year basis to the Authority on or before the last day of February following the end of the most recent calendar year, of the maximum demand utilized each month in the Facility receiving the power covered by the Agreement.

4. Energy Efficiency and Conservation Program

Upon the Authority's request, the Customer shall provide the Authority with (a) a copy of the results of any Physical Energy Audit performed at the Facility (or, at the Authority's option, a report describing the results), performed pursuant to this Article; and (b) a description of any energy efficiency or conservation measures that the Customer has implemented at the Facility in response to any Physical Energy Audit or as a result of NYEM Participation.

5. Facility Access

Notwithstanding any other provision of the Agreement, the Customer shall provide the Authority with such access to the Facility, and such documentation, as the

Authority deems necessary to determine the Customer's compliance with the Customer's Supplemental Commitments specified in this Schedule B.

ARTICLE III

COMPLIANCE ACTION BY THE AUTHORITY

1. Employment

If the year-end monthly average number of employees is less than 90% of the Base Employment Level set forth in the Appendix to this Schedule B for the subject calendar year, the Authority may reduce the Contract Demand in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount of reduction will be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average monthly employment during the subject calendar year divided by the Base Employment Level. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, the Agreement shall automatically terminate.

2. Capital Investment Commitment

The Authority may reduce the Contract Demand as provided in the Appendix to this Schedule B if the Customer does not comply with the Capital Investment Commitment.

3. Power Utilization Level

If the average of the Customer's six (6) highest Billing Demands (as such term is described in the Service Tariff) for Preservation Power is less than 90% of the Customer's Contract Demand in such calendar year the Authority may reduce the Contract Demand subject to in accordance with the procedures provide in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the average of the six (6) highest Billing Demands for in such calendar year divided by the Contract Demand. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.

4. Additional Compliance Action

In addition to the Authority's other rights and remedies provided in this Agreement, the Service Tariff and the Rules, the Authority may suspend Electric Service to the Customer if the Customer does not comply with any of the requirements in Section I.4 or Article II of this Schedule B.

5. Notice of Intent to Reduce Contract Demand

In the event that the Authority determines that the Contract Demand will be wholly or partially reduced pursuant to Sections III.1, III.2, or III.3 of this Schedule B, the Authority shall provide the Customer with at least thirty (30) days prior written notice of the proposed reduction, specifying the amount and reason for the reduction. Before implementing any reduction, the Authority may consider the Customer's scheduled or unscheduled maintenance, Facility upgrade periods, and the business cycle. If, at the end of the thirty (30) day notice period, the Authority determines that a reduction is warranted, it shall provide the Customer with notice of such determination and provide the Customer with sixty (60) days to present a proposed plan with actionable milestones to cure the deficiency. The Authority shall respond to the Customer concerning the acceptability of any proposed plan that is provided in accordance with this Section III.5 within thirty (30) days of the Authority's receipt of such proposed plan. It shall be within the Authority's discretion whether or not to accept the Customer's proposed plan, require a different plan, or implement the reduction of the Contract Demand.

APPENDIX TO SCHEDULE B

BASE EMPLOYMENT LEVEL

The Customer shall employ at least 145 full-time employees (“Base Employment Level”) at the Customer’s Facility. The Base Employment Level shall be maintained for the term of the Allocation through the Allocation Expiration Date specified in Schedule A in accordance with Article I of Schedule B.

CAPITAL INVESTMENT COMMITMENTS

1. **Annual Capital Investment Commitment** (if applicable, as specified below)
 - a. Each Reporting Year, the rolling average of the annual capital investments made by the Customer at the Facility (“Rolling Average”) shall total not less than \$_____ (the “Annual Capital Investment Commitment”). For purposes of this provision, “Rolling Average” means the three-year average comprised of (1) the total amount of capital investments (“Annual CI Expenditures”) made by the Customer at the Facility during the current Reporting Year, and (2) the Annual CI Expenditures made by the Customer at the Facility during the two prior Reporting Years.
 - b. Each year, the Customer shall record its Annual CI Expenditures for purposes of enabling the Authority to determine and verify the Rolling Average, which shall be provided to the Authority in a form specified by the Authority on or before the last day of February following the end of the most recent calendar year.
 - c. If the Customer’s Rolling Average as determined by the Authority is less than 90% of its Annual Capital Investment Commitment for the Reporting Year, the Contract Demand may be reduced by the Authority in accordance with the procedures provided in Section III.5 of this Schedule. The maximum amount by which the Authority may reduce the Contract Demand shall be determined by multiplying the Contract Demand by the quantity one minus the quotient of the Rolling Average divided by the Annual Capital Investment Commitment. Any such reduction shall be rounded to the nearest ten (10) kW. In the event of a reduction of the Contract Demand to zero, this Agreement shall automatically terminate.
2. **Expansion Project–Capital Investment Commitment** (if applicable, as specified below)
 - a. The Customer shall make a minimum capital investment of \$_____ to construct, furnish and/or expand the Facility (“Expansion Project Capital Investment Commitment”). The Expansion Project Capital Investment Commitment is expected to consist of the following approximate expenditures on the items indicated:

Line Item 1 -	\$ _____
Line Item 2 -	\$ _____
Line Item 3 -	\$ _____

Total Expansion Project Capital Investment Commitment:

- b. The Expansion Project Capital Investment Commitment shall be made, and the Facility shall be completed and fully operational, no later than _____ (*i.e.*, within three (3) years of the date of the Authority's award of the Allocation). Upon request of the Customer, such date may be extended in the discretion of the Authority.

SCHEDULE C
TAKEDOWN SCHEDULE

SCHEDULE D
ZERO EMISSION CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in Service Tariff No. WNY-2, or in the Rules.

“Affected LSEs” has the meaning provided in Section II.2 of this Schedule D.

“CES Order” means the Order issued by the PSC entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“PP Program ZEC Costs” has the meaning provided in Section II.4.b of this Schedule D.

“Government Action” has the meaning provided in Section II.8 of this Schedule D.

“Load Serving Entity” or “LSE” has the meaning provided in the CES Order.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the PP power program as authorized in the Power Authority Act.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“Zero Emission Credit” or “ZEC” has the meaning provided in the CES Order.

“Zero Emission Credit Charge” or “ZEC Charge” means the charge to the Customer established in this Schedule D.

“ZEC Purchase Obligation” has the meaning provided in Section II.2 of this Schedule D.

“ZEC Program Year” has the meaning provided in Section II.2 of this Schedule D.

II. ZEC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of the Service Tariff or the Rules, the Customer shall be subject to a ZEC Charge as provided in this Schedule D. The ZEC Charge shall be in addition to all other charges, fees and assessments provided for in the Agreement, the Service Tariff and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the ZEC Charge.
2. As provided in the CES Order, the Public Service Commission, as part of the CES and Tier 3 of the Renewable Energy Standard, imposed an obligation on Load Serving Entities that are subject to the CES Order (“Affected LSEs”) to purchase Zero Emission Credits from NYSERDA in an amount representing the Affected LSE’s proportional share of ZECs calculated on the basis of the amount of electric load the LSE serves in relation to the total electric load served by all Load Serving Entities in the New York Control area, to support the preservation of existing at risk nuclear zero emissions attributes in the State (the “ZEC Purchase Obligation”). The ZEC Purchase Obligation is implemented on the basis of program years running from April 1 through March 31 of each year (“ZEC Program Year”).
3. The ZEC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of supporting the CES and Tier 3 of the RES and implementing the PP power program in a manner that is consistent with the New York State Energy Plan. The Authority will comply with the CES and Tier 3 of the RES by applying a form of ZEC Purchase Obligation to the end-user load for which the Authority serves as a load serving entity, including the load that the Authority serves under the PP power program.
4. The ZEC Charge, which is intended to recover from the Customer costs that the Authority incurs for purchasing ZECs in quantities that are attributable to the Customer’s PP load served under this Agreement, will be determined and assessed to the Customer as follows:
 - a. The cost of the total ZEC Purchase Obligation for all LSEs in the New York Control Area, including the Authority as a participating load serving entity, will be assessed pursuant to the methodology provided in the CES Order. The Authority will purchase its proportionate share of ZECs from NYSERDA based on the proportion of the forecasted total kilowatt-hours load served by the Authority (i.e., total Authority LSE load) in relation to the forecasted total kilowatt-hours load served by all LSEs in the New York Control Area as

provided in the CES Order. The ZEC Purchase Obligations may be based on initial load forecasts with reconciliations made at the end of each ZEC Program Year by NYSERDA.

- b. The Authority will allocate costs from its ZEC Purchase Obligation between its power programs/load for which it serves as load serving entity, including the PP load that it serves (the “PP Program ZEC Costs”). Such allocation will be based on the forecasted kilowatt-hours load of the PP program to be served by the Authority in relation to the forecasted total kilowatt-hours load served by the Authority (total Authority LSE load) for each ZEC Program Year. In addition, any balance resulting from the ZEC Program Year-end reconciliation of ZEC Purchase Obligations will be allocated to the PP power program based on the proportion of the actual annual kilowatt-hours load served under such programs to total actual annual kilowatt-hours load served by the Authority (total Authority LSE load).
 - c. The Authority will allocate a portion of the PP Program ZEC Costs to the Customer as the ZEC Charge based on the proportion of the Customer’s actual kilowatt-hours load for the PP purchased by the Customer to total kilowatt-hours load served by the Authority under the PP power program (i.e., PP Program level load). In addition, any balance resulting from the ZEC Program Year-end reconciliation of the ZEC Purchase Obligation referenced above will be passed through to the Customer based on the proportion of the Customer’s annual kilowatt-hours load purchased under this Agreement to total annual kilowatt-hours load served under the PP power program by the Authority (PP Program level load). The ZEC Charge assessed to the Customer shall not include any costs resulting from the Authority’s inability to collect a ZEC Charge from any other Authority customer.
5. The Authority may, in its discretion, include the ZEC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the ZEC Charge pursuant to another Authority-established procedure.
6. The Authority may, in its discretion, modify the methodology used for determining the ZEC Charge and the procedures used to implement such ZEC Charge on a nondiscriminatory basis among affected PP customers, upon consideration of such matters as Public Service Commission orders modifying or implementing the CES Order, guidance issued by the New York Department of Public Service, and other information that the Authority reasonably determines to be appropriate to the determination of such methodology. The Authority shall provide Customer with reasonable notice of any modifications to the methodology or procedures used to determine and implement the ZEC Charge.
7. Nothing in this Schedule shall limit or otherwise affect the Authority’s right to charge or collect from the Customer any rate, charge, fee, assessment, or tax

provided for under any other provision of the Agreement, or any provision of the Service Tariff, or the Rules.

8. If the ZEC Purchase Obligation is modified or terminated by the Public Service Commission or other controlling governmental authority (collectively, “Government Action”), the Authority shall modify or terminate the ZEC Charge, and assess any additional charges or provide any credits to the Customer, to the extent that the Authority determines such actions to be appropriate based on such Government Action.

SCHEDULE E
MONTHLY RENEWABLE ENERGY CREDIT CHARGE

I. DEFINITIONS

When used with initial capitalization, whether singular or plural, the following terms, as used in this Schedule, shall have the meanings as set forth below. Capitalized terms not defined in this Schedule shall have the meaning ascribed to them elsewhere in the Agreement, in the Service Tariff No, or in the Rules.

“Alternative REC Compliance Program” has the meaning provided in Section III.1 of this Schedule E.

“Annual REC Percentage Target” has the meaning provided in Section II.2 of this Schedule E.

“CES Order” means the Order issued by the Public Service Commission entitled “Order Adopting a Clean Energy Standard, issued on August 1, 2016, in Case Nos. 15-E-0302 and 16-E-0270, and includes all subsequent orders amending, clarifying and/or implementing such Order or the RES.

“Clean Energy Standard” or “CES” means the Clean Energy Standard adopted by the State in the CES Order.

“Load Serving Entity” has the meaning provided in the CES Order.

“Mandatory Minimum Percentage Proportion” has the meaning provided in the CES Order.

“Monthly Renewable Energy Credit Charge” or “Monthly REC Charge” means the monthly charge to the Customer established in this Schedule E.

“NYSERDA” means the New York State Energy Research and Development Authority.

“Public Service Commission” means the New York State Public Service Commission.

“Renewable Energy Credit” or “REC” refers to a qualifying renewable energy credit as described in the CES Order.

“State Energy Plan” means the 2015 New York State Energy Plan as amended from time to time.

“RES Compliance Program” means a program or initiative that the Authority has adopted for the purpose of meeting the RES for the load that the Authority serves under the PP power program as authorized in the Power Authority Act.

“Renewable Energy Standard” or “RES” means the Renewable Energy Standard adopted by the State in the CES Order.

“REC Compliance Measures” mean: (1) the Authority’s procurement of RECs from NYSERDA in accordance with NYSERDA procedures and/or the CES Order; (2) the Authority’s procurement of RECs from available REC markets; (3) the Authority’s procurement of RECs from sources other than those identified in items (1) and (2) of this definition, including through a procurement process adopted by the Authority; and/or (4) any other measure that the PCS authorizes a Load Serving Entity to implement for the purpose of meeting the applicable Mandatory Minimum Percentage Proportion.

“Total Monthly PP Load” has the meaning provided in Section II.3.b of this Schedule E

“Total Monthly REC Costs” has the meaning provided in Section II.3.b of this Schedule E.

II. MONTHLY REC CHARGE

1. Notwithstanding any other provision of the Agreement, or any provision of the Service Tariff, or the Rules, the Customer shall be subject to a Monthly REC Charge as provided in this Schedule E. The Monthly REC Charge is in addition to all other charges, fees and assessments provided in the Agreement, the Service Tariff and the Rules. By accepting Electric Service under the Agreement, the Customer agrees to pay the Monthly REC Charge.
2. The Monthly REC Charge is part of a RES Compliance Program that the Authority has adopted for the purpose of complying with the CES and Tier 1 of the RES and implementing the PP power program in a manner that is consistent with the New York State Energy Plan, pursuant to which the Authority will invest in new renewable generation resources to serve its PP customers. Such investments will be made through the procurement of RECs through REC Compliance Measures in quantities that are intended to address the annual Mandatory Minimum Percentage Proportions as applied by the Authority to the total PP load that the Authority will serve each calendar year (the “Annual REC Percentage Target”) for the purpose of ultimately meeting the RES.
3. The Monthly REC Charge, which is intended to recover from the Customer costs that the Authority incurs for implementing REC Compliance Measures that are attributable to the Customer’s PP load served under this Agreement, will be determined and assessed to the Customer as follows:

- a. The Authority shall have the right, for each calendar year to implement such REC Compliance Measures as it determines in its discretion to be appropriate for the purpose of meeting the Annual REC Percentage Target for the total PP load that it will serve during such calendar year.
- b. The Authority will, for each month of each calendar year, calculate the total costs ("Total Monthly REC Costs") that the Authority has incurred or estimates that it will incur from implementing RES Compliance Measures for the purpose of meeting the Annual REC Percentage Target for the total PP kilowatt-hour load for the month ("Total Monthly PP Load"). The Total Monthly REC Costs may be calculated based on forecasts of the Total Monthly PP Load that the Authority expects to serve for the month, or on a lagged basis based on the actual Total Monthly PP Load that the Authority served for the month.
- c. Each month, the Authority will assess to the Customer, as a Monthly REC Charge, which will represent the Customer's share of the Total Monthly REC Costs assessed to the Total Monthly PP Load. The Monthly REC Charge will be assessed as the proportion of the Customer's total kilowatt-hours load served by the Authority for such month to the Total Monthly PP Load served by the Authority for such month, provided, however, that:
 - i. the Monthly REC Charge to the Customer shall not include any costs associated with the Authority's inability to collect the Monthly REC Charge from other Authority customers; and
 - ii. the effective per-MWh rate of the Monthly REC Charge to the Customer averaged over the REC Program Year to which the Annual REC Percentage Target applies shall not exceed the per-MWh rate of a Monthly REC Charge based on NYSERDA's published REC price for the REC Program Year.
4. The Authority may, in its discretion, include the Monthly REC Charge as part of the monthly bills for Electric Service as provided for in the Agreement, or bill the Customer for the Monthly REC Charge pursuant to another Authority-established procedure.
5. The Authority will, at the conclusion of each calendar year in which it assesses a Monthly REC Charge, conduct a reconciliation process based on the actual costs that it incurred for REC Compliance Measures and actual load served for the year, compared with cost or load estimates or forecasts, if any, that the Authority used to calculate the Customer's Monthly REC Charges during the year. The Authority will issue a credit, or an adjusted final charge for the year, as appropriate, based on the results of such reconciliation process. Any such final charge shall be payable within the time frame applicable to the Authority's bills for Electric Service under this Agreement or pursuant to any other procedure established by the Authority pursuant to Section II.4 of this Schedule E.

6. Notwithstanding the provisions of Section II.3 of this Schedule E, if Electric Service for the Allocation is commenced after the Authority has implemented REC Compliance Measures for the year in which such Electric Service is commenced, and as a result the Customer's load cannot be accounted for in such REC Compliance Measures, the Authority may in its discretion implement separate REC Compliance Measures in order to meet the Annual REC Percentage Target for Customer's load for the year, and bill the Customer for the costs associated with such separate REC Compliance Measures.
7. Nothing in this Schedule shall limit or otherwise affect the Authority's right to charge or collect from the Customer, any rate, charge, fee, assessment, or tax provided for under any other provision of the Agreement, or any provision of the Service Tariff, or the Rules.

III. ALTERNATIVE REC COMPLIANCE PROGRAM

1. Nothing in this Schedule E shall be construed as preventing the Parties from entering into other agreements for an alternative arrangement for the Authority to meet the Annual REC Percentage Target with respect to the Customer's Allocation, including but not limited to Customer self-supply of RECs, alternative REC compliance programs and cost allocation mechanisms, in lieu of the Monthly REC Charge provided in this Schedule E (collectively, "Alternative REC Compliance Program").
2. The Authority shall communicate at least biennially with the Customer concerning implementation of the RES Compliance Program and potential Alternative REC Compliance Programs, if any, that the Authority is offering or expects to offer.



POWER AUTHORITY OF THE STATE OF NEW YORK
30 SOUTH PEARL STREET
ALBANY, NY 12207

Schedule of Rates for Sale of Firm Power Service to
Preservation Power Customers
(Authority Delivery Service)

Service Tariff No. 20-A

Table of Contents

Schedule of Rates for Firm Power Service	Leaf No.
I. Applicability	3
II. Abbreviations and Terms.....	3
III. Monthly Rates and Charges.....	6
A. Preservation Power (PP) Base Rates	6
B. PP Rates No Lower than Rural/Domestic Rate	6
C. Minimum Monthly Charge	6
D. Transmission Charges	6
E. Incremental Electricity Supply	6
F. Metering	7
G. Estimated Billing.....	8
H. Adjustment to Charges	9
I. Billing Period	9
J. Billing Demand.....	9
K. Billing Energy	9
L. Contract Demand	9
IV. General Provisions	10
A. Character of Service	10
B. Availability of Energy	10
C. Delivery	10
D. Adjustment of Rates	10
E. Billing Methodology and Billing	11
F. Payment by Customer to Authority.....	11
1. Demand and Energy Rates, Taxes	11
2. Transmission Charge	12
3. NYISO Transmission and Related Charges.....	12
4. Taxes Defined	13
5. Substitute Energy	13
6. Other Charges	13
7. Payment Information	13
8. Billing Disputes	13
G. Rendition and Payment of Bills.....	14
H. Adjustment of Charges – Distribution Losses.....	15
I. Conflicts	15
V. Annual Adjustment Factor	16

Schedule of Rates for Firm Power Service

I. Applicability

To sales of Preservation Power made directly to a qualified business Customer for firm power service that is delivered by the Authority.

II. Abbreviations and Terms

- kW kilowatt(s)
- kW-mo. kilowatt-month
- kWh kilowatt-hour(s)
- MWh megawatt-hour(s)
- NYISO New York Independent System Operator, Inc. or any successor organization
- PAL New York Public Authorities Law
- OATT Open Access Transmission Tariff issued by the NYISO

Agreement: An executed written agreement between the Authority and the Customer for the sale of Preservation Power to the Customer.

Annual Adjustment Factor or **AAF**: This term shall have the meaning set forth in Section V herein.

Authority: The Power Authority of the State of New York, a corporate municipal instrumentality and a political subdivision of the State of New York created pursuant to Chapter 772 of the New York Laws of 1931 and existing and operating under Title 1 of Article 5 of the PAL, also known as the “New York Power Authority.”

Capacity Tag: An amount of capacity (kW) expressed by the NYISO as the UCAP obligation of a Customer’s load for a capability period. The UCAP obligation is inclusive of any adjustments necessary to meet the NYISO requirement.

Customer: A business entity that (1) has received an Allocation of Preservation Power, (2) purchases such Preservation Power directly from the Authority, and (3) receives delivery of the Preservation Power from the Authority.

Electric Service: The power and energy provided to the Customer in accordance with the Agreement, this Service Tariff and the Rules.

Firm Power: Hydropower capacity (kW) that is intended to be always available from the Project subject to the curtailment provisions set forth in the Agreement between the Authority and the Customer and this Service Tariff. Firm Power shall not include peaking power.

Firm Energy: Energy (kWh) associated with Firm Power.

Incremental Demand Charge: A charge applicable when the Customer's maximum hourly metered load value recorded in a given Billing Period exceeds the Contract Demand.

Incremental Energy: The amount of energy (kwh) that would be necessary to supply the Customer's load in excess of the Firm Energy calculated using the LFS methodology. The Authority will calculate the value of Incremental Energy using the NYISO Day-Ahead Market and/or the Real-Time Market LBMP prices at the applicable NYISO Zone in which the Customer receives deliveries. All costs associated with the provision of Incremental Energy will be passed through to Customer.

Incremental UCAP: Capacity (kW) that is necessary to meet the Customer's UCAP requirement in excess of the Contract Demand. The Authority will supply Customer's NYISO-required Incremental UCAP, if any, and use the Portfolio Weighted Average Price to assess Incremental UCAP charges. All Incremental UCAP charges will be passed through to the Customer. Incremental UCAP charges only apply when a Customer's Capacity Tag inclusive of the NYISO installed reserve margin is in excess of the Contract Demand.

Load Factor Sharing or LFS: A type of billing methodology applicable to a Customer's Allocation which determines how a Customer's total Native System Load is apportioned between the power and energy supplied by the Allocation and the Customer's other source of electricity supply, if any, including Market Supply. LFS is used to determine the amount of Firm Energy supplied and billed on the basis of the Customer's actual total Native System Load per the monthly billing cycle as follows:

1. When the Maximum Metered Demand is less than ($<$) the Contract Demand, then the Customer's entire load will be supplied by Firm Energy.
2. When the Maximum Metered Demand is greater than ($>$) the Contract Demand, then the Customer's portion of Firm Energy supply will be determined as follows:
 - a. For Hourly Billing: $\sum (\text{Contract Demand} \div \text{Maximum Metered Demand} \times \text{the in-hour demand of Customer's total Native System Load for all hours})$.
 - b. For Monthly Billing: $(\text{Contract Demand} \div \text{Maximum Metered Demand} \times \text{the total consumed energy by the Customer within the bill cycle})$.

Load Serving Entity or LSE: This term shall have the meaning set forth in the Agreement.

Locational Based Marginal Pricing or LBMP: This term shall have the meaning set forth in the NYISO Tariffs, as such definition may be modified from time to time.

Maximum Metered Demand: The highest 15 or 30-minute integrated demand, as determined by the Authority, during each Billing Period recorded on the meter that is used by the Customer in accordance with this Service Tariff and the Agreement.

Native System Load: The total consumption of the Customer's electric system, as determined by the Authority's revenue-grade metering equipment, without the offset of Customer's behind the meter generation. It is represented as the sum of all incoming power, plus internal generation behind the system meter, minus power exports to the bulk electric system.

Portfolio Weighted Average Price: The rate that is applied to Incremental UCAP determined by NYPA using an average weighting of NYPA's costs in procuring UCAP as a result of all applicable NYISO capacity auctions and forward purchases.

Preservation Power or **PP:** Firm Power and Firm Energy made available under this Service Tariff by the Authority from the Project for sale to the Customer for business purposes pursuant to PAL § 1005(5) and (13), and that is delivered by the Authority.

Project: The Authority's St. Lawrence-FDR Power Project, FERC Project No. 2000.

Rate Year or **RY:** The period from July 1 through June 30. For example, RY 2018 refers to July 1, 2018 through June 30, 2019.

Rules: The Authority's rules and regulations set forth in 21 NYCRR § 450 *et seq.*, as they may be amended from time to time.

Service Tariff: This Service Tariff No. 20A.

Transmission Service Charge or **TSC:** The Authority's Transmission Service Charge as provided for and defined in the NYISO OATT.

All other capitalized terms and abbreviations used in this Service Tariff but not defined in this Section or other provisions of this Service Tariff shall have the same meaning as set forth in the Agreement.

III. Monthly Rates and Charges

A. Preservation Power (PP) Base Rates

The rates to be charged to the Customer by the Authority shall be as follows:

Rate Year	Billing Period	Demand (\$/kW)	Energy (\$/MWh)
2018	July 2018 – June 2019	7.90	13.50

B. PP Rates No Lower than Rural/Domestic Rate

At all times the applicable PP base rates for demand and energy determined in accordance with Sections III.A and V of this Service Tariff shall be no lower than the rates charged by the Authority for the sale of hydroelectricity for the benefit of rural and domestic customers receiving service in accordance with the Niagara Redevelopment Act, 16 U.S.C. § 836(b)(1) (the "Rural/Domestic Rate"). This provision shall be implemented as follows: if the base rates, as determined in accordance with Sections III.A and V of this Service Tariff, are lower than the Rural/Domestic Rate on an average \$/MWh basis, each set of rates measured at 80% load factor which is generally regarded as representative for PP Customers, then the base rates determined under Sections III.A and V of this Service Tariff will be revised to make them equal to the Rural/Domestic Rate on an average \$/MWh basis. However, the base rates as so revised will have no effect until such time as these base rates are lower than the Rural/Domestic Rate.

C. Minimum Monthly Charge

The Minimum Monthly Charge shall equal the product of the demand rate specified in Section III.A and the Contract Demand (as defined herein). Such Minimum Monthly Charge shall be in addition to any NYISO Charges or Taxes (each as defined herein) incurred by the Authority with respect to the Customer's Allocation, and any other charges provided in this Service Tariff, the Agreement or the Rules.

D. Transmission Charges

The base rates set forth in this Section III exclude any applicable costs for transmission and delivery services provided by the Authority. The Customer shall compensate the Authority for all transmission and delivery costs incurred by the Authority with respect to the Allocation and Market Supply, including such costs that are charged pursuant to the NYISO Tariffs.

E. Incremental Electricity Supply

If in any given hour during a Billing Period the Customer's load requirements exceed the Customer's Contract Demand, the Authority will provide the required incremental power and

energy ("Market Supply") and the Customer shall pay Authority for any and all costs associated with such provision of Market Supply. The Market Supply shall be reflected in the Customer's bill including, but not limited to, Incremental Demand Charges, Incremental Energy Charges, Incremental UCAP, TSC charges, and any administrative fees associated with such Market Supply necessary to satisfy the Customer's load above its Contract Demand.

F. Metering

The Authority shall furnish and Customer shall pay for any and all metering and related equipment, including revenue-grade metering and installation costs, that is necessary to measure the Customer's Native System Load as determined by the Authority.

DRAFT

G. Estimated Billing

If the Authority, in its discretion, determines that it lacks reliable data on the Customer's actual demand and/or energy usage for a Billing Period during which the Customer receives Electric Service from the Authority, the Authority shall have the right to render a bill to the Customer for such Billing Period based on estimated demand and estimated usage ("Estimated Bill").

For the purpose of calculating a Billing Demand charge for an Estimated Bill, the demand charge will be calculated using an estimated demand amount (kW) based on an average of the Customer's Billing Demand (kW) values plus Incremental Demand quantities (kW), if any, for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated demand amount (kW) for the Estimated Bill will equal the Customer's takedown (kW) amount.

For the purpose of calculating a Billing Energy charge for an Estimated Bill, the energy charge will be calculated using an estimated energy amount (kWh) based on the average of the Customer's Billing Energy (kWh) values plus Incremental Energy quantities (kWh), if any, for the previous three (3) consecutive Billing Periods. If such historical data is not available, then the estimated energy amount (kWh) will be equal to the takedown (kW) amount at 70 percent load factor for that Billing Period.

If an alternative billing methodology is applicable to the Customer, the demand charge and energy charge for rendering an Estimated Bill shall be calculated in a manner appropriate to such alternative billing methodology as determined by the Authority.

If data indicating the Customer's actual demand and usage for any Billing Period in which an Estimated Bill was rendered is subsequently provided to the Authority, the Authority will make necessary adjustments to the corresponding Estimated Bill and, as appropriate, render a revised bill (or provide a credit) to the Customer.

The Minimum Monthly Charge provisions of Section III.D shall apply to Estimated Bills.

The Authority's discretion to render Estimated Bills is not intended and shall not be construed to limit the Authority's rights under the Agreement.

H. Adjustments to Charges

In addition to any other adjustments provided for in this Service Tariff, in any Billing Period, the Authority may make appropriate adjustments to billings and charges to address such matters as billing and payment errors, and the receipt of actual, additional, or corrected data concerning Customer energy or demand usage.

I. Billing Period

The Billing Period is any period of approximately thirty (30) days, generally ending with the last day of each calendar month.

J. Billing Demand

Billing Demand shall be determined by applying the applicable billing methodology to total Native System Load meter readings during the Billing Period. See Section IV.E, below.

K. Billing Energy

Billing Energy shall be determined by applying the applicable billing methodology to total Native System Load meter readings during the Billing Period. See Section IV.E, below.

L. Contract Demand

The Contract Demand will be the amount of Preservation Power, not to exceed the Allocation, provided by the Authority to the Customer in accordance with the Agreement.

IV. General Provisions

A. Character of Service

Alternating current; sixty cycles, three-phase.

B. Availability of Energy

1. Subject to Section IV.B.2, the Authority shall provide to the Customer in any Billing Period Firm Energy associated with Firm Power. The offer of Firm Energy for delivery shall fulfill the Authority's obligations for purposes of this provision whether or not the Firm Energy is taken by the Customer.
2. In the event of an Adverse Water Condition, the rights and obligations of the Customer and Authority, including but not limited to such matters as Substitute Energy and responsibility for payment of costs associated therewith, will be governed by the Agreement.

C. Delivery

For the purpose of this Service Tariff, Firm Power and Firm Energy shall be deemed to be offered when the Authority is able to supply Firm Power and Firm Energy to the Authority's designated NYISO load bus. If, despite such offer, there is a failure of delivery caused by the Customer, NYISO or the Authority, such failure shall not be subject to a billing adjustment pursuant to Section 454.6(d) of the Rules or any successor provision addressing adjustments.

D. Adjustment of Rates

To the extent not inconsistent with the Agreement, the base rates contained in this Service Tariff may be revised from time to time on not less than thirty (30) days written notice to the Customer.

E. Billing Methodology

Unless otherwise specified in the Agreement, the following provisions shall apply:

1. The billing methodology used to determine the amount of Firm Power and Firm Energy to be billed to the Customer related to its Allocation shall be Load Factor Sharing ("LFS") in a manner consistent with the Agreement. An alternative billing methodology may be used provided the Customer and the Authority agree in writing.
2. Billing Energy - The LFS methodology will be applied against the Customer's Native System Load during the Billing Period to determine the amount of Firm Energy (kWh) attributable to the Allocation (Billing Energy) to be billed to the Customer and charged at the applicable PP Rate. Incremental Energy will be quantified as the difference between the Firm Energy amount and the Native System Load and charged at a rate equivalent to the market LBMP in which such Incremental Energy was procured. All energy quantities will be adjusted for losses.
3. Billing Demand – The LFS methodology will be applied against the Customer's Maximum Metered Load during the Billing Period to determine the amount of Firm Power (kW) attributable to the Allocation (Billing Demand) to be billed to the Customer and charged at the applicable PP Rate. If the Maximum Metered Load exceeds the Contract Demand, an Incremental Demand amount will be quantified as the difference between the Maximum Metered Load amount and the Contract Demand and charged applying a rate using the Portfolio Weighted Average Price method. All demand quantities will be adjusted for losses.
4. Billing for Market Supply - The Customer shall pay the Authority for any and all costs associated with the Authority's provision of Market Supply to satisfy the Customer's load that exceed the Customer's Contract Demand during the Billing Period including but not limited to Incremental Demand Charges, Incremental Energy Charges, and Incremental UCAP.

F. Payment by Customer to Authority

1. Demand and Energy Charges, Taxes

The Customer shall pay the Authority for Firm Power, Firm Energy, and Market Supply during any Billing Period the higher of either (i) the sum of (a), (b) and (c) below, or (ii) the Minimum Monthly Charge (as defined herein):

- a. The demand rate per kilowatt for Firm Power specified in this Service Tariff or any modification thereof applied to the Customer's Billing Demand (as defined in Section IV.E, above) for the Billing Period; and
- b. The energy rate per MWh for Firm Energy specified in this Service Tariff or any modification thereof applied to the Customer's Billing Energy (as defined in Section IV.E, above) for the Billing Period; and
- c. Any and all charges associated with the provision of Market Supply as provided for in this Service Tariff and the Agreement; and

- d. A charge representing reimbursement to the Authority for all applicable Taxes incurred by the Authority as a result of providing Preservation Power allocated to the Customer.

2. Transmission Charge

The Customer shall compensate the Authority for all transmission costs incurred by the Authority with respect to the Allocation, including such costs that are charged pursuant to the OATT.

3. NYISO Transmission and Related Charges

The Customer shall compensate the Authority for the following NYISO transmission and related charges (collectively, "NYISO Charges") assessed on the Authority for services provided by the NYISO pursuant to its OATT or other tariffs (as the provisions of those tariffs may be amended and in effect from time to time) associated with providing Electric Service to the Customer:

- A. Ancillary Services 1 through 6 and any new ancillary services as may be defined and included in the OATT from time to time;
- B. Marginal losses;
- C. The New York Power Authority Transmission Adjustment Charge ("NTAC");
- D. Congestion costs inclusive of any rents collected or owed due to any associated grandfathered transmission congestion contracts as provided in Attachment K of the OATT;
- E. Any and all other charges, assessments, or other amounts associated with deliveries to Customers or otherwise associated with the Authority's responsibilities as a Load Serving Entity for the Customers that are assessed on the Authority by the NYISO under the provisions of its OATT or under other applicable tariffs; and
- F. Any charges assessed on the Authority with respect to the provision of Electric Service to Customers for facilities needed to maintain reliability and incurred in connection with the NYISO's Comprehensive System Planning Process (or similar reliability-related obligations incurred by the Authority with respect to Electric Service to the Customer), applicable tariffs, or required to be paid by the Authority in accordance with law, regardless of whether such charges are assessed by the NYISO or another party.

The NYISO Charges, if any, incurred by the Authority on behalf of the Customer, are in addition to the Authority production charges that are charged to the Customer in accordance with other provisions of this Service Tariff.

The method of billing NYISO charges to the Customer will be based on Authority's discretion.

4. Taxes Defined

Taxes shall be any adjustment as the Authority deems necessary to recover from the Customer any taxes, assessments or any other charges mandated by federal, state or local agencies or authorities that are levied on the Authority or that the Authority is required to collect from the Customer if and to the extent such taxes, assessments or charges are not recovered by the Authority pursuant to another provision of this Service Tariff.

5. Substitute Energy

The Customer shall pay for Substitute Energy, if applicable, as specified in the Agreement.

6. Other Charges

The Customer shall pay the Authority for all other charges provided for in the Agreement.

7. Payment Information

Bills computed under this Service Tariff are due and payable by electronic wire transfer in accordance with the Rules. Such wire transfer shall be made to J P Morgan Chase NY, NY / ABA021000021 / NYPA A/C # 008-030383, unless otherwise indicated in writing by the Authority. The Authority may in its discretion change the foregoing account and routing information upon notice to the Customer.

8. Billing Disputes

In the event that there is a dispute on any items of a bill rendered by the Authority, the Customer shall pay such bill in full. If necessary, any adjustments will be made thereafter.

G. Rendition and Payment of Bills

1. The Authority will render bills to the Customer for Electric Service on or before the tenth (10th) business day of the month for charges due for the previous Billing Period. Such bills shall include charges for Electric Service, NYISO Charges associated with the Allocation (subject to adjustment consistent with any later NYISO re-billings to the Authority), and all other applicable charges, and are subject to adjustment as provided for in the Agreement, the Service Tariff and the Rules.
2. The Authority will charge and collect from the Customer all Taxes (including local, state and federal taxes) the Authority determines are applicable, unless the Customer furnishes the Authority with proof satisfactory to the Authority that (i) the Customer is exempt from the payment of any such Taxes, and/or (ii) the Authority is not obligated to collect such Taxes from the Customer. If the Authority is not collecting Taxes from the Customer based on the circumstances described in (i) or (ii) above, the Customer shall immediately inform the Authority of any change in circumstances relating to its tax status that would require the Authority to charge and collect such Taxes from the Customer.
3. Unless otherwise agreed to by the Authority and the Customer in writing, the Authority will render bills to the Customer electronically.
4. Payment of bills by the Customer shall be due and payable by the Customer within twenty (20) days of the date the Authority renders the bill.
5. Except as otherwise agreed by the Authority in writing, if the Customer fails to pay any bill when due an interest charge of two percent of the amount unpaid will be added thereto as liquidated damages, and thereafter, as further liquidated damages, an additional interest charge of one and one-half percent of the sum unpaid shall be added on the first day of each succeeding Billing Period until the amount due, including interest, is paid in full.
6. If at any time after commencement of Electric Service the Customer fails to make complete payment of any two (2) bills for Electric Service when such bills become due pursuant to Agreement, the Authority shall have the right to require that the Customer deposit with the Authority a sum of money in an amount equal to all charges that would be due under this Agreement for Electric Service for two (2) consecutive calendar months as estimated by the Authority. Such deposit will be deemed security for the payment of unpaid bills and/or other claims of the Authority against the Customer upon termination of Electric Service. The failure or refusal of the Customer to provide the deposit within thirty (30) days of a request for such deposit will be grounds for the Authority in its discretion to suspend Electric Service to the Customer or terminate the Agreement.

Unless otherwise agreed to by the Authority and the Customer in writing, in the event the Customer disputes any item of any bill rendered by Authority, the Customer shall pay such bill in full within the time provided for by this Agreement, and adjustments, if appropriate, will be made thereafter.

H. Adjustment of Charges – Distribution Losses

The Authority will make appropriate adjustments to compensate for distribution losses of the Authority.

I. Conflicts

In the event of any inconsistencies, conflicts, or differences between the provisions of this Service Tariff and the Rules, the provisions of this Service Tariff shall govern. In the event of any inconsistencies, conflicts or differences between the provisions of the Agreement and this Service Tariff or the Rules, the provisions of the Agreement shall govern.

V. Annual Adjustment Factor

A. Adjustment of Rates

1. The AAF will be based upon a weighted average of three indices described below. For each new Rate Year, the index value for the latest available calendar year ("Index Value for the Measuring Year") will be compared to the index value for the calendar year immediately preceding the latest available calendar year (the Index Value for the Measuring Year -1"). The change for each index will then be multiplied by the indicated weights. As described in detail below, these products are then summed, producing the AAF. The AAF will be multiplied by the base rate for the current Rate Year to produce the base rates for the new Rate Year, subject to a maximum adjustment of $\pm 5.0\%$ (" $\pm 5\%$ Collar"). Amounts outside the $\pm 5\%$ Collar shall be referred to as the "Excess."

Index 1, "BLS Industrial Power Price" (35% weight): The average of the monthly Producer Price Index for Industrial Electric Power, commodity code number 0543, not seasonally adjusted, as reported by the U.S. Department of Labor, Bureau of Labor Statistics ("BLS") electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 1, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

Index 2, "EIA Average Industrial Power Price" (40% weight): The average weighted annual price (as measured in cents/kWh) for electric sales to the industrial sector in the ten states of CT, MA, ME, NH, NJ, NY, OH, PA, RI and VT ("Selected States") as reported by Coal and Electric Data and Renewables Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration ("EIA"); U.S. Department of Energy Form EIA-861 Final Data File. For Index 2, the Index Value for the Measuring Year will be the index for the calendar year two years preceding July 1 of the new Rate Year.

Index 3, "BLS Industrial Commodities Price Less Fuel" (25% weight): The monthly average of the Producer Price Index for Industrial Commodities less fuel, commodity code number 03T15M05, not seasonally adjusted, as reported by the U.S. Department of Labor, BLS electronically on its internet site and consistent with its printed publication, "Producer Price Index Detailed Report". For Index 3, the Index Value for the Measuring Year will be the index for the calendar year immediately preceding July 1 of the new Rate Year.

2. Annual Adjustment Factor Computation Guide

- Step 1: For each of the three Indices, divide the Index Value for Measuring Year by the Index Value for the Measuring Year-1.
- Step 2: Multiply the ratios determined in Step 1 by percentage weights for each Index. Sum the results to determine the weighted average. This is the AAF.
- Step 3: Commencing RY 2014, modifications to the AAF will be subject to $\pm 5\%$ Collar, as described below.
- a) When the AAF falls outside the $\pm 5\%$ Collar, the Excess will be carried over to the subsequent RY. If the AAF in the subsequent RY is within the $\pm 5\%$ Collar, the current RY Excess will be added to/subtracted from the subsequent Rate Year's AAF, up to the $\pm 5\%$ Collar.

- b) Excesses will continue to accrue without limit and carry over such that they will be added to/subtracted from the AAF in any year where the AAF is within the $\pm 5\%$ Collar.

Step 4: Multiply the current Rate Year base rate by the AAF calculated in Step 2 to determine the new Rate Year base rate.

The foregoing calculation shall be performed by the Authority consistent with the sample presented in Section V.B below.

3. The Authority shall provide the Customer with notice of any adjustment to the current base rate per the above and with all data and calculations necessary to compute such adjustment by June 15th of each year to be effective on July 1 of such year, commencing in 2014. The values of the latest officially published (electronically or otherwise) versions of the indices and data provided by the BLS and EIA as of June 1 shall be used notwithstanding any subsequent revisions to the indices.
4. If during the term of the Agreement any of the three above indices ceases to be available or ceases to be reflective of the relevant factors or of changes which the indices were intended to reflect, the Customer and the Authority may mutually select a substitute Index. The Customer and the Authority agree to mutually select substitute indices within 90 days, once one of them is notified by the other that the indices are no longer available or no longer reflect the relevant factors or changes which the indices were intended to reflect. Should the 90-day period cover a planned July 1 rate change, the current base rates will remain in effect until substitute indices are selected and the adjusted rates based on the substitute indices will be retroactive to the previous July 1. If the Customer and Authority are unable to reach agreement on substitute indices within the 90-day period, the Customer and the Authority agree to substitute the mathematic average of the PPI—Intermediate Materials, Supplies and Components (BLS Series ID WPUSOP2000) and the PPI-- Finished Goods (BLS Series ID WPUSOP3000) indices for one or more indices that have ceased to be available or reflective of their intended purpose and shall assume the percentage weighting(s) of the one or more discontinued indices as indicated in Section V.A.1.

B. Sample Computation of the AAF (hypothetical values for July 1, 2017 implementation):

STEP 1

Determine the Index Value for the Measuring Year (MY) and Measuring Year - 1 (MY-1) for Each Index

- Index 1 - Producer Price Index, Industrial Power

	Measuring Year (2016)	Measuring Year - 1 (2015)
January	205.3	167.8
February	204.3	167.6
March	204.5	168.2
April	202.4	168.6
May	206.3	171.6
June	220.4	180.1
July	226.2	182.7
August	227.3	179.2
September	228.1	181.8
October	214.9	170.2
November	211.3	168.8
December	211.7	166.6
Average	213.6	223.7
Ratio of MY/MY-1		0.95

- Index 2 – EIA Industrial Rate

<u>State</u>	<u>Revenues</u> (\$000s)	<u>Sales</u> (MWh)	<u>Avg. Rate</u> (cents/kWh)
<u>Measuring Year (2015)</u>			
CT	444,588	3,432,002	
MA	1,068,927	7,892,165	
ME	290,360	3,208,045	
NH	252,331	1,981,028	
NJ	778,985	7,320,398	
NY	1,140,573	18,079,200	
OH	3,548,736	50,556,675	
PA	3,411,815	47,404,272	
RI	109,866	798,532	
VT	146,022	1,421,601	
TOTAL	11,192,203	142,093,918	7.88
<u>Measuring Year -1 (2014)</u>			
CT	453,958	3,514,798	
MA	1,014,262	7,960,941	
ME	300,412	3,357,486	
NH	234,900	1,969,064	
NJ	855,757	7,516,616	
NY	1,184,255	18,002,976	
OH	3,440,919	50,829,251	
PA	3,580,990	48,317,693	
RI	114,111	887,150	
VT	145,111	1,417,994	
TOTAL	11,324,673	143,773,969	7.88
Ratio of MY/MY-1			1.00

- Index 3 – Producer Price Index, Industrial Commodities Less Fuel

	Measuring Year (2016)	Measuring Year -1 (2015)
January	191.9	196.0
February	191.8	195.4
March	192.1	195.0
April	192.8	194.8
May	193.4	194.9
June	193.7	195.2
July	193.7	194.9
August	194.0	193.9
September	193.9	193.1
October	194.3	192.9
November	194.9	192.3
December	195.6	191.9
Average	193.5	194.2
Ratio of MY/MY-1		1.00

STEP 2

Determine AAF by Summing the Weighted Indices

<u>Index</u>	<u>Ratio of MY to MY-1</u>	<u>Weight</u>	<u>Weighted Factors</u>
PPI Industrial Power	0.95	0.35	0.334
EIA Industrial Rate	1.00	0.40	0.400
PPI Industrial Commodities less fuel	1.00	0.25	<u>0.249</u>
AAF			0.983

STEP 3

Apply Collar of $\pm 5.0\%$ to Determine the Maximum/Minimum AAF.

$-5.0\% < 1.6\% < 5.0\%$; collar does not apply, assuming no cumulative excess.

STEP 4

Apply AAF to Calculate the New Rate Year Base Rate

	<u>Demand</u> \$/kW-mo.	<u>Energy</u> \$/MWh
Current Rate Year Base Rate	8.03	13.73
New Rate Year Base Rate	7.90	13.50

Date of Issue: TBD

Date Effective: April 1, 2019

Issued by Keith T. Hayes, Vice President
Power Authority of the State of New York
30 South Pearl Street, Albany, NY 12207

Line	Company	City	County	Economic Development Region	IOU	Description	kW Request	kW Recommendation	Jobs Retained	Jobs Created	Total Job Commitment	Capital Investment (\$)	Contract Term (years)
1	Akoustis, Inc.	Canandaigua	Ontario	Finger Lakes	RGE	Manufacturer of bulk acoustic filters	1,446	720	40	0	40	\$3,000,000	(1) 7
	Finger Lakes Region Sub-totals:							720	40	0	40	\$3,000,000	
2	Ascent Pharmaceuticals Inc.	Central Islip	Suffolk	Long Island	LIPA	Manufacturer of generic drugs	1,790	896	215	0	215	\$500,000	(1) 7
3	Posillico Materials, LLC	Farmingdale	Suffolk	Long Island	LIPA	Manufacturer of construction materials	508	250	24	0	24	\$2,000,000	(1) 7
4	Positive Promotions, Inc.	Hauppauge	Suffolk	Long Island	LIPA	Manufacturer of specialty print products	560	280	400	0	400	\$2,000,000	(1) 7
5	The Nature's Bounty Co.	Bohemia	Suffolk	Long Island	LIPA	Manufacturer of vitamins & supplements	6,000	2,996	1,924	0	1,924	\$33,000,000	(2) 7
6	WestRock - Southern Container, LLC	Deer Park	Suffolk	Long Island	LIPA	Manufacturer of corrugated sheets & boxes	692	346	143	0	143	\$1,000,000	7
	Long Island Region Sub-totals:							4,768	782	0	782	\$38,500,000	
7	Losurdo Foods, Inc.	Heuvelton	St. Lawrence	North Country	NGRID	Manufacturer of mozzarella & ricotta products	538	266	60	0	60	\$750,000	7
	North Country Region Sub-totals:							266	60	0	60	\$750,000	

Totals

5,754	882	0	882	\$42,250,000

- (1) These companies are also recommended for expansion-related allocations of RNY for separate and distinct job creation and capital investment commitments associated with proposed business expansions.
- (2) The applicant currently receives RNY Power allocations at multiple facilities. Rather than apply for contract extensions for each site, the company has opted to apply for a new RNY allocation as a combined campus setting. The appropriate "Jobs Retained" are removed from the total as these jobs are already counted in prior RNY allocation recommendations.

Line	Company	City	County	Economic Development Region	IOU	Description	kW Request	kW Recommendation ⁽¹⁾	Base Employment ⁽³⁾	Job Creation Commitment	Project Capital Investment (\$)		Contract Term (years)
1	Akoustis, Inc.	Canandaigua	Ontario	Finger Lakes	RGE	Manufacturer of bulk acoustic filters	527	366	40	40	\$50,000,000	⁽²⁾	7
2	Creative Food Ingredients, Inc.	Perry	Wyoming	Finger Lakes	NYSEG	Commercial bakery & cookie production	175	120	180	22	\$4,000,000	⁽⁴⁾	7
	Finger Lakes Region Sub-totals:							486	50	58	\$54,000,000		
3	Ascent Pharmaceuticals Inc.	Central Islip	Suffolk	Long Island	LIPA	Manufacturer of generic drugs	300	210	215	90	\$4,500,000	⁽²⁾	7
4	Posillico Materials, LLC	Farmingdale	Suffolk	Long Island	LIPA	Manufacturer of construction materials	1,140	796	24	12	\$20,000,000	⁽²⁾	
5	Positive Promotions, Inc.	Hauppauge	Suffolk	Long Island	LIPA	Manufacturer of specialty print products	100	70	400	1	\$175,000	⁽²⁾	
6	United Baking Co., Inc.	Islip	Suffolk	Long Island	LIPA	Manufacturer & distributor of cookie products	360	250	110	4	\$3,000,000	⁽⁴⁾	
	Long Island Sub-totals:							1,326	25	107	\$27,675,000		
7	Hocho Recycle Co., Limited	Horseheads	Chemung	Southern Tier		Tire recycling & reclaimed rubber production	5,500	3,000	0	30	\$9,000,000	⁽²⁾	7
	Southern Tier Region Sub-totals:							3,000	0	30	\$9,000,000		

Totals

4,812	75	195	\$90,675,000

- (1) All expansion-based RNY Power allocations are recommended to be "up to" the amount indicated pending the applicant's compliance with contractual commitments, including commitments relating to job creation, capital investment spending and power utilization.
- (2) These companies are also being recommended for retention-based RNY Power allocations associated with separate and distinct contractual commitments relating to such matters as job retention, capital investment spending, and power utilization associated with an existing business.
- (3) The number of new jobs committed will be above a base employment level specified in the power sale contract with the applicant.
- (4) This applicant was previously approved for a retention-based RNY Power allocation. The base employment level refers to the applicant's retained jobs, most of which are already associated with an existing power allocation.

New York Power Authority
Recommendations - RNY Power Allocations for Retention and Expansion Purposes (Small Business and/or NFP Corporations)

Exhibit "5d i-1b-C"
December 11, 2018

Retention-Based Allocations

Line	Company	City	County	Economic Development Region	IOU	Description	kW Request	kW Recommendation	Jobs Retained	Jobs Created	Capital Investment (\$)		Contract Term (years)
1	Blading Services Unlimited, LLC	Canastota	Madison	Central New York	NGRID	Manufacturer of turbine blades	58	26	10	0	\$150,000	(1)	7
2	Cortland Company, Inc.	Cortland	Cortland	Central New York	NGRID	Manufacturer of synthetic ropes & cables	188	90	88	0	\$200,000		7
	Central New York Sub-totals:							116	98	0	350,000		
3	Central Suffolk Hospital	Riverhead	Suffolk	Long Island	LIPA	Hospital & healthcare services	392	130	1,072	0	\$2,000,000	(1)	7
4	Enzo Biochem, Inc.	Farmingdale	Nassau	Long Island	LIPA	Life sciences & biotechnology company	108	50	380	0	\$7,500,000	(1)	7
5	Nassau Candy Distributors, Inc.	Hicksville	Nassau	Long Island	LIPA	Manufacturer of confectionary products	191	96	393	0	\$2,450,000		7
6	Parrish Art Museum	Water Mill	Suffolk	Long Island	LIPA	Art museum & cultural center	228	76	44	6	\$125,000		7
7	Little Bird Chocolates Inc.	Plainview	Nassau	Long Island	LIPA	Manufacturer of specialty confections	53	26	6	0	\$400,000		7
8	Roman Stone Construction Company	Bay Shore	Suffolk	Long Island	LIPA	Manufacturer of precast concrete products	174	86	40	0	\$1,500,000		7
	Long Island Region Sub-totals:							464	1,935	6	13,975,000		
9	Northern Westchester Hospital Association	Mount Kisco	Westchester	Mid-Hudson	CONED	Hospital & healthcare services	2,411	800	1,405	0	\$85,000,000	(1)	7
10	Phelps Memorial Hospital Association	Sleepy Hollow	Westchester	Mid-Hudson	CONED	Hospital & healthcare services	1,391	460	1,520	0	\$50,000,000		7
11	Unlimited Tomorrow, Inc.	Rhinebeck	Dutchess	Mid-Hudson	CHUD	Manufacturer of prosthetic appliances	43	20	4	0	\$100,000	(1)	7
	Mid-Hudson Region Sub-totals:							1,280	2,929	0	135,100,000		
12	A. D. Bowman & Son Lumber Co., Inc.	Castle Creek	Broome	Southern Tier	NYSEG	Manufacturer of lumber products	26	10	37	0	\$750,000	(1)	7
13	Hanehan Family Dairy, L.L.C.	Mount Upton	Chenango	Southern Tier	NYSEG	Milk production	245	120	23	0	\$1,250,000	(1)	7
	Southern Tier Region Sub-totals:							130	60	0	2,000,000		
14	Western New York Public Broadcasting Association	Buffalo	Erie	Western New York	NGRID	Public television & radio broadcasting	357	116	80	0	\$1,500,000		7
	Western New York Region Sub-totals:							116	80	0	1,500,000		

Retention-Based Totals

2,106	5,102	6	\$152,925,000

Expansion-Based Allocations

Line	Company	City	County	Economic Development Region	IOU	Description	kW Request	kW Recommendation (3)	Base Employment	Job Creation Commitment	Project Capital Investment (\$)		Contract Term (years)
15	Blading Services Unlimited, LLC	Canastota	Madison	Central New York	NGRID	Manufacturer of turbine blades	120	60	10	5	\$1,570,000	(1), (2)	7
16	Cortland Company, Inc.	Cortland	Cortland	Central New York	NGRID	Manufacturer of synthetic ropes & cables	200	100	0	51	\$5,327,000		7
	Central New York Region Sub-totals:							160	0	56	6,897,000		
17	Central Suffolk Hospital	Riverhead	Suffolk	Long Island	LIPA	Hospital & healthcare services	958	316	1,072	27	\$68,000,000	(1), (2)	7
18	Enzo Biochem, Inc.	Farmingdale	Nassau	Long Island	LIPA	Life sciences & biotechnology company	100	50	380	60	\$6,000,000	(1), (2)	7
	Long Island Region Sub-totals:							366	0	87	74,000,000		
19	GoPal Farm LLC	New Paltz	Ulster	Mid-Hudson	CHUD	Producer of organic dairy products	150	76	0	73	\$5,765,000		7
20	Northern Westchester Hospital Association	Mount Kisco	Westchester	Mid-Hudson	CONED	Hospital & healthcare services	480	160	1,405	17	\$15,000,000	(1), (2)	7
21	Regent Hospitality Linen Services, LLC	Mount Vernon	Westchester	Mid-Hudson	CONED	Provider of linen cleaning services for hotels	300	150	0	25	\$7,000,000		7
22	Unlimited Tomorrow, Inc.	Rhinebeck	Dutchess	Mid-Hudson	CHUD	Manufacturer of prosthetic appliances	35	16	4	15	\$255,000	(1), (2)	7
	Mid-Hudson Region Sub-totals:							402	0	130	28,020,000		
23	Smart Phases Inc.	Plattsburgh	Clinton	North Country	NYSEG	Manufacturer of energy storage technologies	150	76	0	32	\$1,500,000		7
	North Country Region Sub-totals:							76	0	32	1,500,000		
24	A. D. Bowman & Son Lumber Co., Inc.	Castle Creek	Broome	Southern Tier	NYSEG	Manufacturer of lumber products	520	260	37	5	\$1,700,000	(1), (2)	7
25	Hanehan Family Dairy, L.L.C.	Mount Upton	Chenango	Southern Tier	NYSEG	Milk production	210	106	23	11	\$4,997,445	(1), (2)	7
	Southern Tier Region Sub-totals:							366	0	16	6,697,445		

Expansion-Based Totals

1,370	0	321	\$117,114,445

Retention & Expansion-Based Totals

3,476	5,102	327	\$270,039,445

- (1) These applicants are being recommended for both RNY retention and expansion-based allocations.
- (2) The number of new jobs committed will be above a base employment level specified in the applicant's retention-based allocation recommendation.
- (3) All expansion-based RNY Power allocations are recommended to be "up to" the amount indicated pending the applicant's compliance with contractual commitments, including commitments relating to job creation, capital investment spending and power utilization.

New York Power Authority
ReCharge New York Power Program
Informational Item - Applicants Not Eligible

Exhibit "5d i-1b-D"
December 11, 2018

Line	Company	City	County	Economic Development Region	IOU	Description	Reason
1	Great Performances/Artists as Waitresses, Inc.	Bronx	Bronx	New York City	CONED	Community kitchen training school	The applicant's business falls within EDPAB's definition of a retail business. Specifically, the applicant operates a business that is primarily used in making retail sales of goods or services to customers who personally visit such facilities to obtain goods or services.
2	SUNY Maritime College	Bronx	Bronx	New York City	CONED	Institution of higher education	The applicant is a public entity and is therefore ineligible for an RNY Power allocation.
3	SUNY Maritime College	Bronx	Bronx	New York City	CONED	Institution of higher education	The applicant is a public entity and is therefore ineligible for an RNY Power allocation.

New York Power Authority
ReCharge New York Power Program
Informational Item - Applicants/Applications Not Recommended for RNY Power Allocation

Exhibit "5d i-1b-E"
December 11, 2018

Line	Company	City	County	Economic Development Region	IOU	Description	Reason ⁽¹⁾
1	669 River Street LLC	Troy	Rensselaer	Capital District	NGRID	Incubator office space for new businesses	Specific entities within the facility that would use and receive the benefit of an RNY allocation would not have a utility account or utility grade demand meter, and therefore it would not be possible for the utility to collect demand and usage data from specific users of RNY Power.
2	Manna Fish Farms, Inc.	Hampton Bays	Suffolk	Long Island	LIPA	Open ocean aquaculture farm	The facility lacks demand metering preventing RNY Power delivery and billing.

(1) Given the disposition of these applications, EDPAB has not considered the eligibility of these applicants for an RNY Power allocation.

New York Power Authority
ReCharge New York Power Program
Informational Item - Terminate Application/Review Process

Exhibit "5d i-1b-F"
December 11, 2018

Line	Company	City	County	Economic Development Region	IOU	Description	Reason
1	Courier Packaging Enterprises Inc.	Brooklyn	Kings	New York City	CONED	Manufacturer of plastic bags	Applicant has been unresponsive to requests by staff for additional information, preventing a complete analysis of the application.
2	Materion Advanced Materials Technologies and Services Inc.	Buffalo	Erie	Western New York	NGRID	Manufacturer of high-tech targets & chemicals	Applicant has been unresponsive to requests by staff for additional information, preventing a complete analysis of the application.
3	Tessy Plastics Corp.	Baldwinsville	Onondaga	Central New York	NGRID	Manufacturer of injection molded plastics	Applicant has been unresponsive to requests by staff for additional information, preventing a complete analysis of the application.

New York Power Authority
Extension Recommendations - RNY Power Allocations for Retention Purposes (Large Businesses, Small Business, and/or NFP Corporations)

Exhibit "5d i-1c-A"

December 11, 2018

Retention-Based Allocations

Line	Company	City	County	Economic Development Region	IOU	Description	Current kW Amount	kW Recommendation	Job Commitments	Capital Investment Commitment (\$)	Contract Term (years)
1	499 Syracuse City Centre, LLC	Syracuse	Onondaga	Central New York	NGRID	Restoring and renovating buildings	30	30	2	\$250,000	7
2	Ametek Thermal Systems, Inc.	Garden City	Nassau	Long Island	LIPA	Manufactures heat exchangers for aircrafts	420	420	165	\$2,500,000	7
3	Angiodynamics, Inc.	Glens Falls	Warren	Capital District	NGRID	Manufactures medical devices	690	690	536	\$250,000	7
4	Anoplate Corporation	Syracuse	Onondaga	Central New York	NGRID	Provides metal plating services	416	416	229	\$5,000,000	7
5	B. H. Aircraft Company, Inc.	Ronkonkoma	Suffolk	Long Island	LIPA	Manufactures aviation noise suppressors	640	640	69	\$2,000,000	7
6	Bartell Machinery Systems, L.L.C.	Rome	Oneida	Mohawk Valley	NGRID	Manufacturer of industrial equipment	186	186	149	\$4,260,000	7
7	Burton Industries Incorporated	North Babylon	Suffolk	Long Island	LIPA	Provides metal heat-treating services	260	260	30	\$250,000	7
8	Cascades USA Inc.	Waterford	Saratoga	Capital District	NGRID	Manufactures large industrial towels	510	510	137	\$400,000	7
9	CBS Broadcasting Inc.	New York	New York	New York City	CONED	Broadcasts radio and television	7,350	7,350	3,479	\$200,000,000	7
10	Claxton-Hepburn Medical Center	Ogdensburg	St. Lawrence	North Country	NGRID	Hospital	166	166	500	\$2,500,000	7
11	Clinton's Ditch Co-operative Company, Inc.	Cicero	Onondaga	Central New York	NGRID	Soft drink producer	840	840	190	\$4,000,000	7
12	Cold Spring Harbor Laboratory Association, Inc.	Cold Spring Harbor	Nassau	Long Island	LIPA	Research facility	1,200	1,200	985	\$45,000,000	7
13	Crescent Duck Farm, Inc.	Aquebogue	Suffolk	Long Island	LIPA	Farm	396	396	75	\$2,500,000	7
14	Crystal Window & Door Systems, Ltd.	Flushing	Queens	New York City	CONED	Manufactures windows and doors	356	356	300	\$2,500,000	7
15	Dab-O-Matic Corp.	Mount Vernon	Westchester	Mid-Hudson	CONED	Manufactures applicators	130	130	75	\$50,000	7
16	Garlock Sealing Technologies LLC	Palmyra	Wayne	Finger Lakes	NYSEG	Manufactures fluid sealing products	1,950	1,950	519	\$10,000,000	7
17	General Electric Company	Schenectady	Schenectady	Capital District	NGRID	Manufactures turbine components	10,000	10,000	3,531	\$18,000,000	7
18	Give And Go Prepared Foods (U.S.A.) Corp.	Shirley	Suffolk	Long Island	LIPA	Manufacturer of baked goods	900	900	160	\$5,000,000	7
19	GKN Aerospace Monitor, Inc.	Amityville	Suffolk	Long Island	LIPA	Commercial components for aerospace industry	1,250	1,250	312	\$9,000,000	7
20	GlobalFoundries U.S. 2 LLC	Hopewell Junction	Dutchess	Mid-Hudson	CHUD	Manufactures semiconductors	10,000	10,000	1,483	\$250,000	7
21	H.H. Dobbins, Inc.	Lyndonville	Orleans	Finger Lakes	NGRID	Produces and packages fruits and vegetables	140	140	49	\$400,000	7
22	Hall Street Storage, LLC	Brooklyn	Kings	New York City	CONED	Cold storage facility	86	86	20	\$50,000	7

New York Power Authority
Extension Recommendations - RNY Power Allocations for Retention Purposes (Large Businesses, Small Business, and/or NFP Corporations)

Exhibit "A"
December 11, 2018

Retention-Based Allocations

Line	Company	City	County	Economic Development Region	IOU	Description	Current kW Amount	kW Recommendation	Job Commitments	Capital Investment Commitment (\$)	Contract Term (years)
23	Harmac Medical Products, Inc.	Buffalo	Erie	Western New York	NGRID	Manufactures and designs medical products	350	350	235	\$1,100,000	7
24	Huntington Hospital Association	Huntington	Suffolk	Long Island	LIPA	Hospital	330	330	1,845	\$30,532,000	7
25	International Business Machines Corporation	Yorktown Heights	Westchester	Mid-Hudson	CONED	Manufactures supercomputers	6,036	6,036	1,555	\$140,000,000	7
26	International Business Machines Corporation	Poughkeepsie	Dutchess	Mid-Hudson	CHUD	Manufactures supercomputers	10,000	10,000	1,042	\$50,000,000	7
27	Jaquith Industries Inc.	Syracuse	Onondaga	Central New York	NGRID	Steel Fabrication	176	176	50	\$750,000	7
28	Lenox Hill Hospital	New York	New York	New York City	CONED	Hospital	666	666	3,976	\$117,170,000	7
29	Linde Merchant Production LLC	Fulton	Oswego	Central New York	NGRID	Produces atmospheric gases	1,876	1,876	6	\$125,000	7
30	Long Island Jewish Medical Center	New Hyde Park	Queens	New York City	CONED	Medical center	1,786	1,786	7,682	\$122,258,000	7
31	Magellan Aerospace, New York, Inc.	West Babylon	Suffolk	Long Island	LIPA	Manufactures aircraft components	330	330	136	\$3,000,000	7
32	Magellan Aerospace, New York, Inc.	Bohemia	Suffolk	Long Island	LIPA	Manufactures aircraft components	1,200	1,200	114	\$6,100,000	7
33	Magellan Aerospace, New York, Inc.	Corona	Queens	New York City	CONED	Manufactures aircraft components	330	330	167	\$3,100,000	7
34	Matt Brewing Co., Inc.	Utica	Oneida	Mohawk Valley	NGRID	Family-owned brewery for beer and soft drinks	560	560	120	\$10,000,000	7
35	Memorial Sloan-Kettering Cancer Center	New York	New York	New York City	CONED	Medical center	5,000	5,000	16,481	\$602,552,700	7
36	Morton Salt, Inc.	Silver Springs	Wyoming	Finger Lakes	NYSEG	Salt production	1,186	1,186	155	\$150,000,000	7
37	Mount St. Mary's Hospital of Niagara Falls	Lewiston	Niagara	Western New York	NGRID	Hospital	330	330	688	\$3,500,000	7
38	NBCUniversal Media, LLC	New York	New York	New York City	CONED	Multinational media company	4,676	4,676	4,000	\$350,000,000	7
39	NewYork-Presbyterian/Queens	Flushing	Queens	New York City	CONED	Hospital	666	666	3,887	\$242,416,540	7
40	North Shore University Hospital	Manhasset	Nassau	Long Island	LIPA	Hospital	3,060	3,060	7,805	\$394,878,000	7
41	Ohel Children's Home and Family Services, Inc.	Brooklyn	Kings	New York City	CONED	Social and community services	266	266	625	\$10,000	7
42	Omniafiltra, LLC	Beaver Falls	Lewis	North Country	NGRID	Manufactures paper	710	710	30	\$500,000	7
43	Oneida Health Systems, Inc.	Oneida	Madison	Central New York	NGRID	Health services	260	260	758	\$6,000,000	7
44	Oneida Molded Plastics, LLC	Oneida	Madison	Central New York	NGRID	Custom injection molding	380	380	150	\$750,000	7

New York Power Authority
Extension Recommendations - RNY Power Allocations for Retention Purposes (Large Businesses, Small Business, and/or NFP Corporations)

Exhibit "A"
December 11, 2018

Retention-Based Allocations

Line	Company	City	County	Economic Development Region	IOU	Description	Current kW Amount	kW Recommendation	Job Commitments	Capital Investment Commitment (\$)	Contract Term (years)
45	PCB Piezotronics, Inc.	Depew	Erie	Western New York	NYSEG	Manufactures sensors	260	260	447	\$1,000,000	7
46	Power Pallet, Inc.	Amsterdam	Montgomery	Mohawk Valley	NGRID	Manufactures wood pallets	116	116	134	\$1,000,000	7
47	Rebekah Rehab Assisted Living Program, Inc.	Bronx	Bronx	New York City	CONED	Health services	140	140	170	\$500,000	7
48	Reisdorf Bros., Inc.	North Java	Wyoming	Finger Lakes	NYSEG	Manufactures and supplies farm feed	390	390	42	\$1,500,000	7
49	Renzi Bros., Inc.	Watertown	Jefferson	North Country	NGRID	Wholesale foodservice distributor	226	226	195	\$2,500,000	7
50	Revere Copper Products, Inc.	Rome	Oneida	Mohawk Valley	NGRID	Manufactures copper and brass products	6,600	6,600	320	\$24,200,000	7
51	Sealing Devices Inc.	Lancaster	Erie	Western New York	NYSEG	Manufactures gaskets and seals	110	110	165	\$3,000,000	7
52	Southside Hospital	Bay Shore	Suffolk	Long Island	LIPA	Hospital	330	330	2,734	\$334,394,000	7
53	Staten Island University Hospital	Staten Island	Richmond	New York City	CONED	Hospital	330	330	5,534	\$98,500,000	7
54	The Fountainhead Group, Inc.	New York Mills	Oneida	Mohawk Valley	NGRID	Manufactures air and gas compressors	300	300	175	\$5,000,000	7
55	The Mount Sinai Hospital	New York	New York	New York City	CONED	Hospital	2,050	2,050	21,336	\$950,000,000	7
56	UltrePET, LLC	Albany	Albany	Capital District	NGRID	Recycling business	880	880	61	\$2,000,000	7
57	Upstate Niagara Cooperative, Inc.	West Seneca	Erie	Western New York	NYSEG	Produces dairy products	190	190	176	\$15,000,000	7
58	Upstate Niagara Cooperative, Inc.	Buffalo	Erie	Western New York	NYSEG	Produces dairy products	800	800	183	\$5,000,000	7
59	Upstate Niagara Cooperative, Inc.	Rochester	Genesee	Finger Lakes	RGE	Produces dairy products	670	670	175	\$4,000,000	7
60	Veeco Instruments Inc.	Plainview	Suffolk	Long Island	LIPA	Manufactures technological equipment	476	476	172	\$800,000	7
61	Vicks Lithograph & Printing Corp.	Yorkville	Oneida	Mohawk Valley	NGRID	Book printing	490	490	75	\$1,000,000	7
62	Welch Allyn, Inc.	Skaneateles Falls	Onondaga	Central New York	NGRID	Manufactures medical and diagnostic devices	1,416	1,416	900	\$5,000,000	7

Totals

93,864	93,864	97,496	\$4,003,296,240

(Statutory Criteria – RNY Power Program)

- the significance of the cost of electricity to the applicant's overall cost of doing business, and the impact that a Recharge New York power allocation will have on the applicant's operating costs;
- the extent to which a Recharge New York power allocation will result in new capital investment in the state by the applicant;
- the extent to which a Recharge New York power allocation is consistent with any regional economic development council strategies and priorities;
- the type and cost of buildings, equipment and facilities to be constructed, enlarged or installed if the applicant were to receive an allocation;
- the applicant's payroll, salaries, benefits and number of jobs at the facility for which a Recharge New York power allocation is requested;
- the number of jobs that will be created or retained within the state in relation to the requested Recharge New York power allocation, and the extent to which the applicant will agree to commit to creating or retaining such jobs as a condition to receiving a Recharge New York power allocation;
- whether the applicant, due to the cost of electricity, is at risk of closing or curtailing facilities or operations in the state, relocating facilities or operations out of the state, or losing a significant number of jobs in the state, in the absence of a Recharge New York power allocation;
- the significance of the applicant's facility that would receive the Recharge New York power allocation to the economy of the area in which such facility is located;
- the extent to which the applicant has invested in energy efficiency measures, will agree to participate in or perform energy audits of its facilities, will agree to participate in energy efficiency programs of the authority, or will commit to implement or otherwise make tangible investments in energy efficiency measures as a condition to receiving a Recharge New York power allocation;
- whether the applicant receives a hydroelectric power allocation or benefits supported by the sale of hydroelectric power under another program administered in whole or in part by the New York Power Authority;
- the extent to which a Recharge New York power allocation will result in an advantage for an applicant in relation to the applicant's competitors within the state; and
- in addition to the foregoing criteria, in the case of a not-for-profit corporation, whether the applicant provides critical services or substantial benefits to the local community in which the facility for which the Recharge New York power allocation is requested is located.

Applicants Recommended for an Award of Fund Benefits by the NNY Proceeds Allocation Board

Line	Business	City	County	Economic Development Region	Project Description	Project Type	Recommended Award Amount	Total Project Cost	Jobs Retained	Jobs Created
1	Queenaire Technologies, Inc.	Ogdensburg	SLC	North Country	Expand manufacturing facility/product line	Business Investment	\$59,600	\$298,000	-	6
2	St. Lawrence County Chamber of Commerce	Canton	SLC	North Country	Create Tourism and Events Division	Tourism	\$220,305	\$1,115,505	-	-
Total:							\$279,905	\$1,413,505	-	6

Total Jobs Created & Retained: 6



Northern NY Power Proceeds Allocation Board

Northern New York Economic Development Fund Recommendation Memo

EXHIBIT 5d i-1d-A-1

Applicant Name:	Queenair Technologies, Inc. ("Queenair")	REDC Region:	North Country
Project Type:	Business Investment	County:	St. Lawrence
Industry:	Ozone Cleaning Machine Manufacturing	Locality:	Ogdensburg
Amount Requested:	\$59,600	Start Date:	11/1/18
		Finish Date:	10/31/19
RECOMMENDED OFFER			
Recommended Total Award:		\$59,600	
Total Project Cost:		\$298,000	
% of Project Cost Recommended:		20%	
PROJECT BUDGET (Proposed by Applicant)			
Use of funds	Amount	Source of Funds	Amount
Machinery & Equipment	\$112,000	NNY EDF	\$59,600
Building Expansion	\$100,000	Bank Loan	\$100,000
Employee Training	\$25,000	SLCIDA ILDC	\$88,400
Patent/Attorney Fees	\$25,000	Company Equity	\$50,000
Prototypes	\$18,000		
Furniture & Fixtures	\$18,000		
Total:	\$298,000	Total:	\$298,000
REGIONAL IMPACT MEASUREMENTS			
Job Commitments:	Applicant would create 6 full time positions at the project location over three years.		
Average Salary of Jobs:	\$35,000		
Indirect Jobs Created	n/a		
Other Impact			
PROJECT DESCRIPTION (Adapted from Application)			
Queenair was organized as a Florida S-corp in January, 2001 and relocated to New York in 2007 where it constructed a production/warehouse facility in 2008. The Company produces ozone based cleaning machines, which it sells to wholesalers, commercial concerns and governments in the US, United Kingdom, South Korea, Japan, Australia, Canada and Mexico. The Company is expanding its product offering by adding a line of portable cleaning units designed to use ozone injected cold tap water to clean surfaces and fabrics without the use of chemicals. Queenair seeks funding to address costs related to expanding its existing warehouse space by 2,800 square feet, completing related research and development and IP processes, purchasing tooling, providing training to its assembly and customer service/sales staff, and creating 6 new jobs over the next 3 years.			



Northern NY Power Proceeds Allocation Board

Northern New York Economic Development Fund Recommendation Memo

EXHIBIT 5d i-1d-A-1

OTHER ECONOMIC DEVELOPMENT BENEFITS RECEIVED		
SLCIDA ILDC Loan	\$88,400	
PREVIOUS STATE ASSISTANCE OFFERED OR PROVIDED		
TYPE	AMOUNT	STATUS
N/A	\$	
BASIS FOR RECOMMENDATION		
Supporting the project would help the applicant grow by facilitating the addition of a new portable product line that would be sold domestically and globally. Export activities are widely valued for their ability to drive economic growth. The Applicant intends to create spinoff value by using local labor and building materials for construction of the addition; sourcing production from NYS located vendors; and creating six full time positions over the next three years. The project also aligns well with NCREDC strategies and priorities, which in part include energizing communities by building on growth in manufacturing industries and leveraging gateways to Canada.		
ANTICIPATED DISBURSEMENT TERMS		
Fund Benefits would be used to reimburse the applicant for a portion of costs associated with the project. It is anticipated that funds will be disbursed in arrears upon project completion. Payment will be made upon presentation to NYPA of invoices and such other documentation acceptable to NYPA verifying the applicant has incurred eligible expenses of approximately \$298,000.		



Northern NY Power Proceeds Allocation Board

Northern New York Economic Development Fund Recommendation Memo

EXHIBIT 5d i-1d-A-2

Applicant Name:	St. Lawrence County Chamber of Commerce, Inc. ("SLC Chamber")	REDC Region:	North Country
Project Type:	Tourism	County:	St. Lawrence
Industry:	Business and Tourism Support Services	Locality:	Canton
Amount Requested:	\$220,305	Start Date:	1/1/19
		Finish Date:	12/31/21
RECOMMENDED OFFER			
Recommended Total Award:		\$220,305	
Total Project Cost:		\$1,115,505	
% of Project Cost Recommended:		20%	
PROJECT BUDGET (Proposed by Applicant)			
Use of funds	Amount	Source of Funds	Amount
Event Productions	\$300,000	NNY EDF	\$220,305
Salaries & Wages	\$279,180	ESD (Market NY)	\$381,000
Tournament Productions	\$270,000	Sponsors	\$270,000
Soft Costs (Marketing/Promotion)	\$159,825	St. Lawrence County	\$234,000
Operations	\$45,000	SLC Chamber of Commerce	\$10,200
Office Rent/Lease	\$16,500		
Feasibility Study	\$15,000		
Annual Tourism Event	\$12,000		
Travel & Meals	\$9,000		
Supplies & Materials	\$6,000		
Fishing Org. Memberships	\$3,000		
Total:	\$1,115,505	Total:	\$1,115,505
REGIONAL IMPACT MEASUREMENTS			
Job Commitments:	The Funding Track under which the application was submitted does not require job-related commitments.		
Average Salary of Jobs:	n/a		
Indirect Jobs Created	n/a		
Other Impact			
PROJECT DESCRIPTION (Adapted from Application)			
The Applicant proposes to establish a Tourism and Events Division that would apply a coordinated tourism and marketing strategy to maximize attendance at existing events and leverage the area's reputation as a fishing destination to create new events that focus on other year round recreational prospects offered by the area's natural resources in order to increase tourism activity and encourage tourism related business development. A multi-year program is proposed, which is substantially comprised of soft costs that will support the hiring of a coordinator, marketing, and tournament and event productions. Officials of the Bassmaster sport fishing organization regard the St. Lawrence area to be among the top 5 fishing destinations in the world and have not previously awarded its fishing			



Northern NY Power Proceeds Allocation Board

Northern New York Economic Development Fund Recommendation Memo

EXHIBIT 5d i-1d-A-2

tournament to one region for consecutive years. The Applicant sees this as an opportunity to coordinate the St. Lawrence County's tourism approach and grow tourism by creating events centered on outdoor activities like hunting, hiking, cycling, paddling and others that would accelerate the development of tourism-related assets such as lodging, attractions, restaurants, transportation, safety and security, which would help create a sustainable program.

OTHER ECONOMIC DEVELOPMENT BENEFITS RECEIVED

ESD Market NY	\$881,000		

PREVIOUS STATE ASSISTANCE OFFERED OR PROVIDED

TYPE	AMOUNT	STATUS
N/A	\$	

BASIS FOR RECOMMENDATION

By establishing a Tourism and Events Division the Applicant seeks to increase the amount of time visitors spend in the region, thereby multiplying quantifiable economic impact that and would attract and justify lodging and other related business development (transportation, safety and security, lodging, attractions, restaurants, and amenities) that support tourism. The Division would initially seek to leverage the current Bassmaster Elite Series fishing tournament to attract other outdoor tourism events and related business development. In the longer term, it would work closely with organizers throughout St. Lawrence County to ensure that new and existing events are coordinated with the annual destination marketing plan that has been approved by the Regional Economic Development Council and Empire State Development (I LOVE NY). Tourism is considered an export as it brings outside dollars into a destination. Canadian tourists are expected to spend more money in St. Lawrence County and provide a source for international event and business development. According to Empire State Development, tourism is the state's fourth-largest employer and New York's tourism businesses are economic drivers with direct tourism spending reaching a record high \$64.8B in 2016. Increasing visitor time spent in the region would lead to increased occupancy tax that would in turn be used to sustain this initiative.

ANTICIPATED DISBURSEMENT TERMS

Fund Benefits would be used to reimburse the applicant for a portion of costs associated with completing the project. It is anticipated that funds will be disbursed in arrears and payment will be made upon presentation to NYPA of invoices and such other documentation acceptable to NYPA verifying the applicant has incurred eligible expenses of approximately \$371,835 annually (\$1,115,505 total over the three year project). Fund Benefits for the second and third years would not be released until such time as the awardee verified that project funding from other sources for these years is in place.



Northern NY Power Proceeds Allocation Board

“EXHIBIT 5d i-1d-B”

Criteria adapted from the “Board Procedures, and Board Policies Relating to the Review of Applications for Fund Benefits”, adopted by the Northern New York Power Proceeds Allocation Board

1. The extent to which an award of Fund Benefits would be consistent with the strategies and priorities of the North Country Regional Economic Development Council (“NCREDC”). Such strategies and priorities include the following:
 - Energize our communities by building on growth in the aerospace, transit equipment, defense, biotech, energy, and manufacturing industries
 - Leverage our gateway to Canada, the nation’s largest trading partner, to lead the State in global investment
 - Attract and nurture entrepreneurs through innovation to catalyze the highest per capita rate of small business start-ups and expansions in the state
 - Invest in community development infrastructure that expands opportunities and capacity
 - Innovate effective rural healthcare and education delivery networks
 - Elevate global recognition of the region as one of the special places on the planet to visit, live, work and study
 - Activate tourism as a driver to diversify our economies by creating demand to accelerate private investment
 - Invest in agriculture as we help feed the region and the world
 - Create the greenest energy economy in the state
2. Whether the eligible project would occur in the absence of an award of Fund Benefits.
3. The extent to which an award of Fund Benefits will result in new capital investment in the State by the eligible applicant and the extent of such investment.
4. Other assistance the eligible applicant may receive to support the eligible project.
5. The type and cost of buildings, equipment and facilities to be constructed, enlarged or installed if the eligible applicant were to receive an award of Fund Benefits.
6. The eligible applicant's payroll, salaries, benefits and number of jobs at the eligible project for which an award of Fund Benefits is requested.
7. Where applicable, the number of jobs that will be created or retained within St. Lawrence County and any other parts of the State in relation to the requested award of Fund Benefits, and the extent to which the eligible applicant will agree to commit to creating or retaining such jobs as a condition to receiving an award of Fund Benefits.
8. Whether the eligible applicant is at risk of closing or curtailing facilities or operations in St. Lawrence County and other parts of the State, relocating facilities or operations out of St. Lawrence County and other parts of the State, or losing a significant number of jobs in



Northern NY Power Proceeds Allocation Board

“EXHIBIT 5d i-1d-B”

St. Lawrence County and other parts of the State, in the absence of an award of Fund Benefits.¹

9. The significance of the eligible project that would receive an award of Fund Benefits to the economy of the area in which such eligible project is located.
10. For new, expanded and/or rehabilitated facilities, the extent to which the eligible applicant will commit to implement or otherwise make tangible investments in energy efficiency measures as a condition to receiving an award of Fund Benefits.²

¹ Job creation and retention are key indicators of economic activity. However, the Allocation Board recognizes that certain investments may increase productivity and revitalize areas without immediately increasing permanent employment. Therefore, job creation/retention commitments will be emphasized primarily in the Business Investment Track. While job creation and retention may not be a significant factor for other Tracks, demonstration of economic development benefits to the Region will generally be considered favorably when assessing applications under all Tracks.

² As provided for in Economic development Law § 197-c(4), many of the criteria are adapted from criteria used in determining eligibility for Expansion Power, Replacement Power and Preservation Power under Public Authorities Law (“PAL”) § 1005(13). Certain criteria identified in PAL § 1005(13) are relevant to power allocations under these programs and do not have any logical application to the allocation of Fund Benefits. Therefore, the Board does not expect to use these criteria to evaluate applications for Fund Benefits.



**NY Power
Authority**

**Canal
Corporation**

Flexibility Moonshot

Doug McMahon

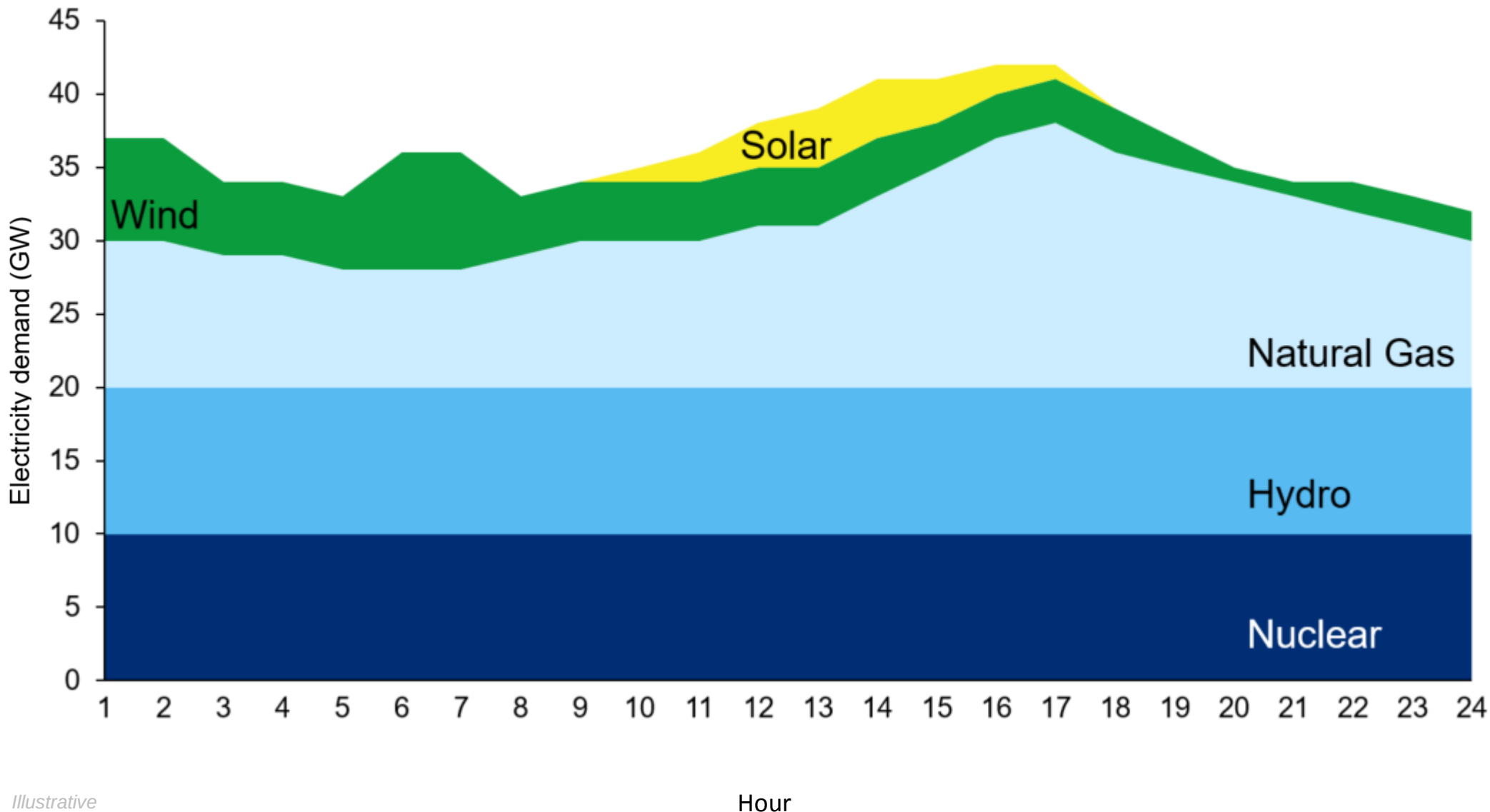
Vice President, Strategy

December 11, 2018

Flexibility in the energy grid can take many forms.



As we move towards a more intermittent renewable generation future, new grid system efficiency challenges will emerge.



A more flexible grid will therefore play a critical role in achieving the State's energy goals.

30%

**Solar and wind in
the generation mix
by 2030**

50% renewables by 2030

38%

**of 2014 GHG
emissions from
electric power
generation**

40% GHG reduction by 2030

55%

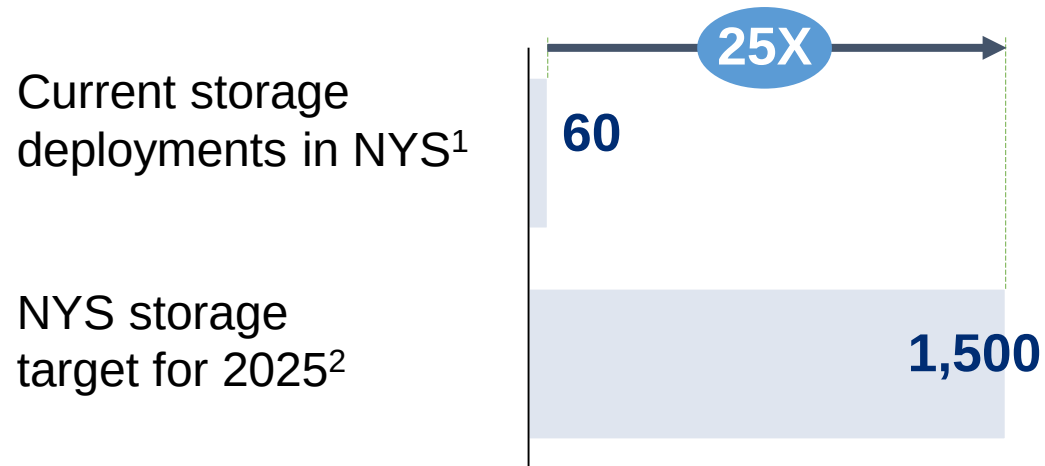
**Current NY
electricity system
efficiency**

REV system efficiency

A view shared by both NYSERDA and analysis of potential market size.

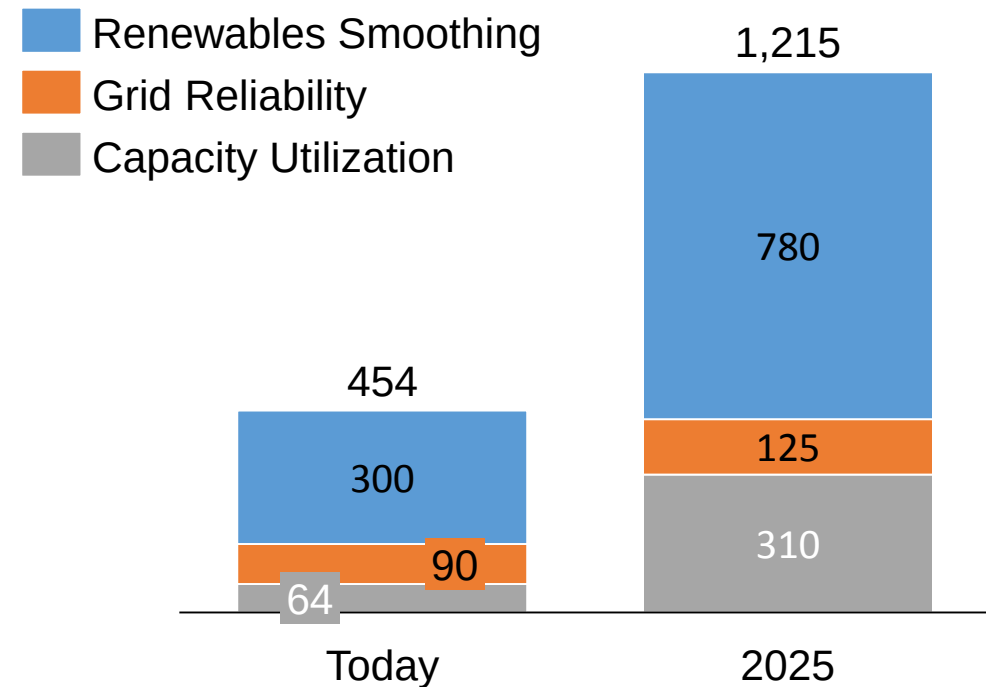
NYSERDA has outlined a roadmap to get to 1500MW of storage by 2025

New York Storage Gap MW



The carbon free flexibility market in 2025

Estimated Flexibility Market Size in NY³ \$ Million / year

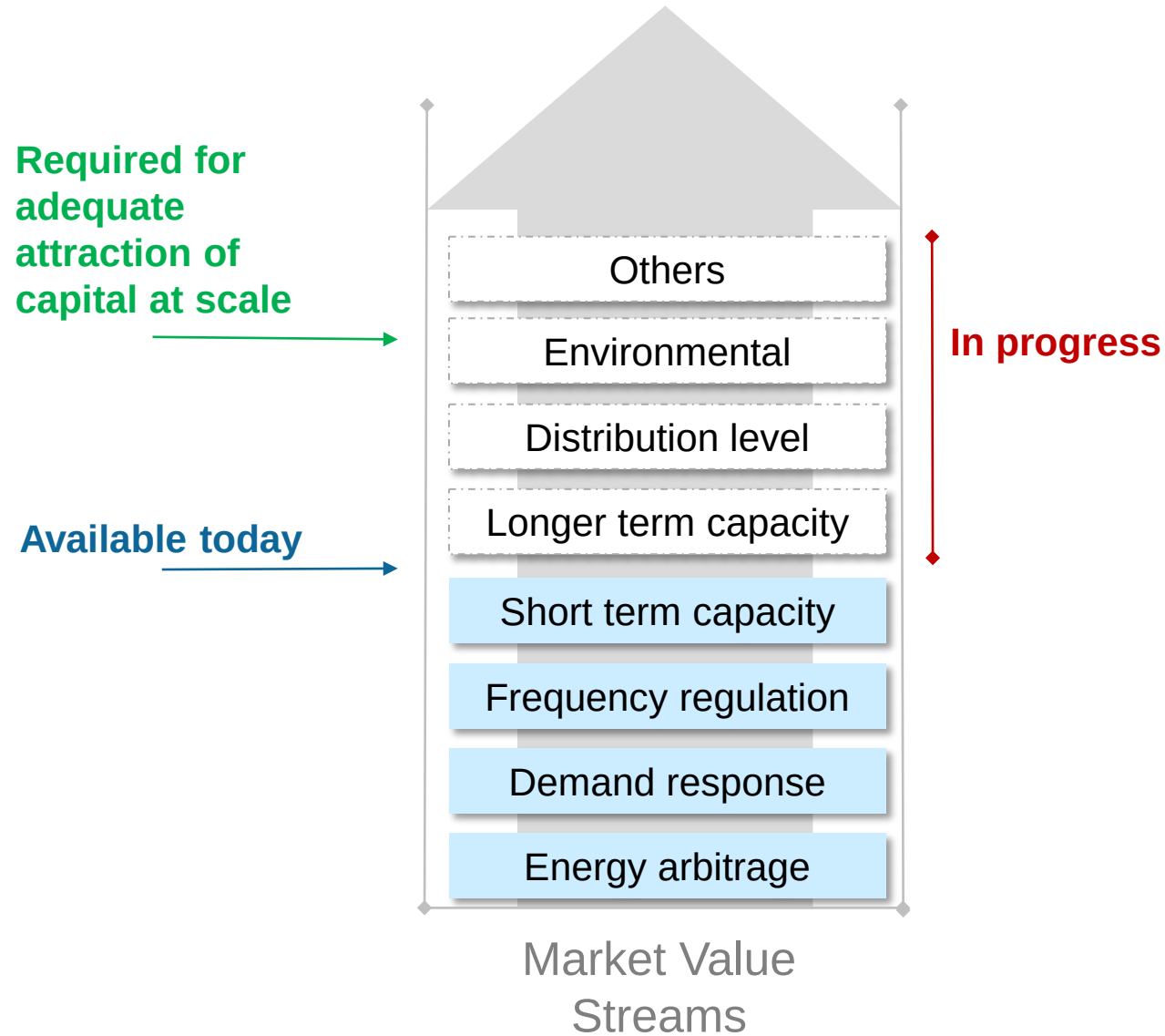


¹ Includes batteries, flywheel technology, thermal storage deployed at 2017 end-of-year. 90% of projects in developments are lithium ion batteries

² Target announced by Governor Cuomo in 2018 State of State

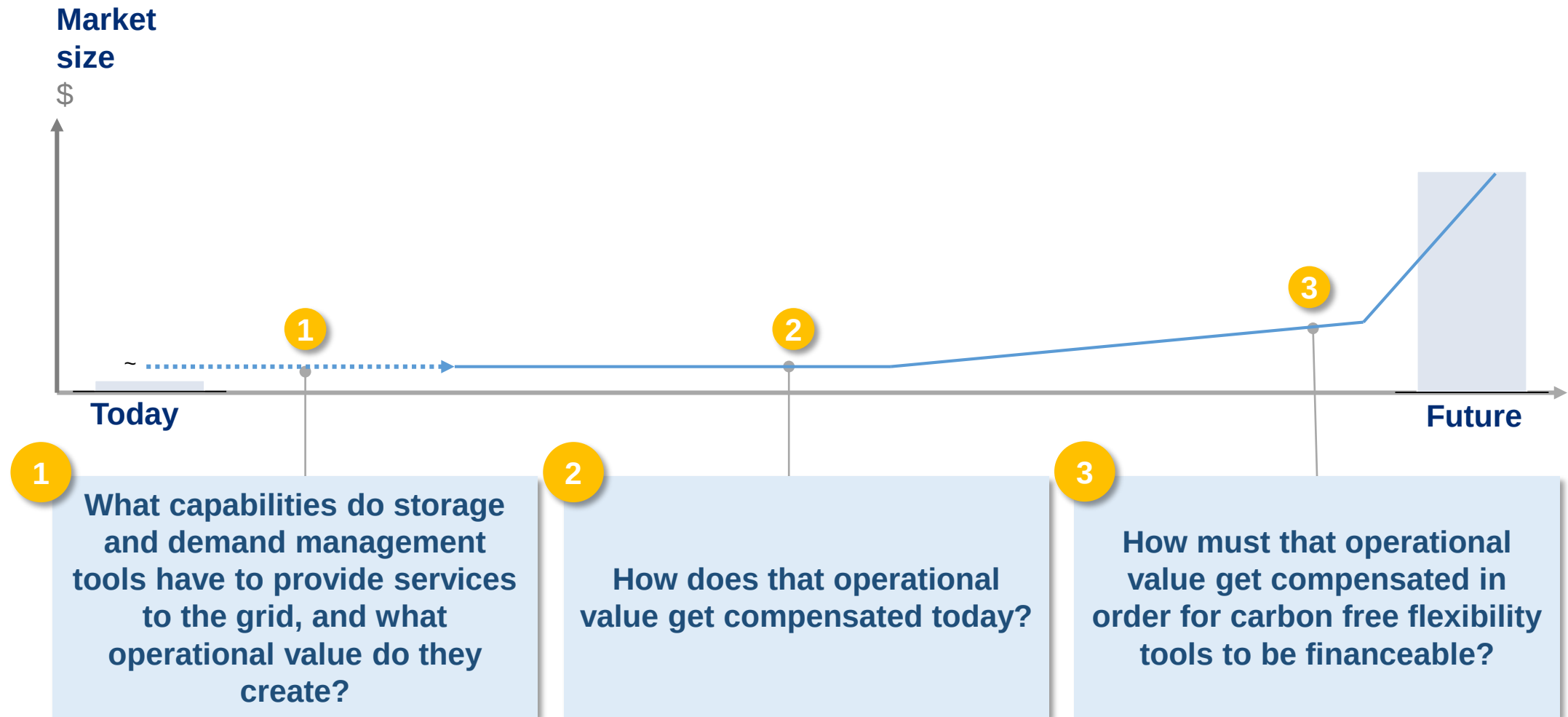
³ Based on McKinsey analysis

However, there are many barriers preventing market acceleration for carbon free flexibility.



- Complex path to compensation
- Many technologies and services still unproven and costly
- Value stacking
- Degree of renewables penetration

Through the carbon free flexibility moonshot, we will seek to accelerate market for storage and demand management by answering three questions for the industry.



We believe there are three key areas of the grid where NYPA can play a impactful role in accelerating the deployment of storage and demand flexibility.

Grid investment deferral



- Areas of **localized** transmission or distribution **congestion**
- **Retiring or planned** generation
- Both NYPA and wider NY State grid

Grid monetization of DER's



- Customers with **multiple resources** or **highly flexible load**
- **Aggregate and simplify** integration into the markets
- Role of **software, data** and **automated** controls

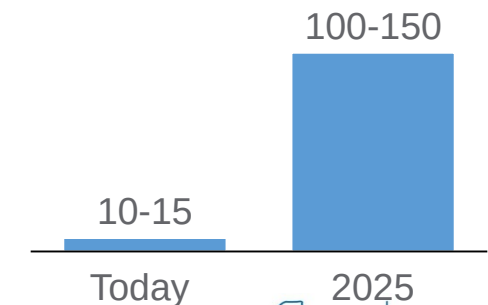
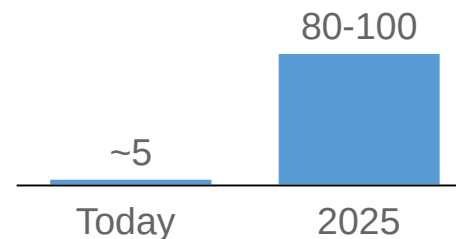
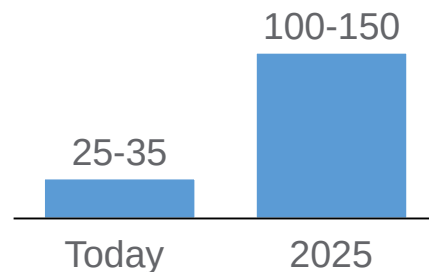
Renewables smoothing and firming



- Areas of **increasing renewable penetration**
- Medium to longer term **intermittency** (stretching out to days and weeks)

Each of the these propositions will be applied to opportunities at both the bulk grid and distribution grid levels.

Market Size



NY Power
Authority

Canal
Corporation

NYPA will work in the following ways to accelerate the market.



Open Innovation

- 7 New York distribution utilities
- 51 Municipal Utilities and Cooperatives
- NYISO



Lead By Example

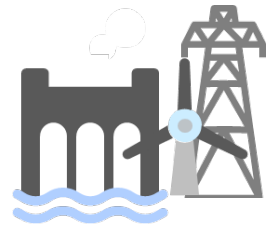
NYSERDA



Partnership & Collaboration

Third party technology and service providers

As part of an overall five year commitment of \$250M to accelerate storage and demand flexibility, we are seeking initial investment today of \$65M.



Generation &
Transmission



Distribution



Customer



Total

Phase 1 Moonshot

\$40M

\$15M

\$10M

\$65M

Future

\$85M

\$40M

\$60M

\$185M

Total

\$125M

\$55M

\$70M

\$250M

Next steps

- Successfully launch Phase 1 Flexibility projects, and evaluate progress
- Mobilize a cross functional Flexibility team
- Finalize business cases and identify initial locations for first set of projects
- Continue focused collaboration discussions with utilities and other public and private sector entities



**NY Power
Authority**

**Canal
Corporation**