NEW YORK STATE OF OPPORTUNITY. | NY Power Authority

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New York Power Authority 2021 Green Bond Report

2020 Series A & B: $1.2 Billion Par Value Issued May 2020

Green Bond Criteria: Sustainable Electric Transmission Management: Transmission Line Infrastructure Upgrades

Organizational Overview

The New York Power Authority ("NYPA" or the "Authority") is the largest state public power utility in the country with over 80% of power produced being clean and renewable low-cost electricity. Established in 1931, NYPA generates and delivers 25% of NY State's electricity needs and owns 30% of statewide transmission assets. NYPA is committed to providing reliable low-cost renewable power in an eco-friendly sustainable manner. The Authority owns and operates 1,400 miles of high voltage transmission lines being the 765-kV Massena-Marcy line, the 345-kV Marcy-South line, the 345-kV Niagara-to-Edic transmission line, the 345-kV Long Island Sound Cable and the 230-kV lines. In addition, NYPA owns three large hydroelectric facilities, two large gas-fired power plants and various smaller generating assets.

NYPA's Green Bond Framework

In December 2019, NYPA approved its 2020 Capital Budget, which comprised an estimated commitment of approximately $3.45 billion on capital investments for its generation, transmission and other core assets and initiatives over the four-year period 2020-2023. Transmission projects represented approximately 50% of the Budget.

In planning a major debt issuance to fund its Capital Budget, NYPA developed the New York Power Authority Green Bond Framework (the "Framework") under which it would issue green bonds and use the proceeds to finance and/or refinance, in whole or in part, existing and/or future projects that refurbish, upgrade, and modernize its power transmission system. The Framework defines eligible projects in the area of electric transmission infrastructure.

The Green Bond Framework was established to govern the use of the designated portion of bond proceeds for the construction of eligible green projects in a manner consistent with NYPA's sustainable values and to accelerate progress toward New York State's clean energy and climate goals, including the mandate to obtain 70% of the State's

electricity from renewable sources. This mandate was identified in the New York State Climate Leadership and Community Protection Act of 2019 (CLCPA).

2020 Green Bond Issuance

In May 2020, NYPA issued $1.2 billion in bonds, including tax-exempt Series 2020 A Revenue Bonds totaling $1.12 billion and Series 2020 B Revenue Bonds, totaling $114 million, that are federally taxable but exempt from personal income taxes imposed by New York State. The 2020 A Bonds included $791.5 million segregated bonds ($472 million after project replacements in 2022) that were designated as “green” by certification firm Sustainalytics. NYPA’s green bond issuance represents the largest green bond transaction for any public power utility. S&P Global Ratings and Fitch Ratings both rate NYPA AA and Moody’s Investors Service rated the utility Aa2. All three agencies provide a stable outlook.

Source of Proceeds	Bond Amount
Series 2020 A Revenue Bonds (Tax-Exempt) *	$1,120,610,000
Series 2020 B Revenue Bonds (Federally Taxable)	114,020,000
Total Bonds Issued	$1,234,630,000

** Includes Green Bonds totaling $791,520,000, revised to $472,026,336 after replacements*

This historic $1.2 billion issuance represented The Authority’s inaugural green bond issue and its first "certified" green bond with an independent second party sustainability opinion. It was also the largest municipal bond issued by the Authority. The issuance achieved its green certification based upon the identified projects’ use of proceeds, project evaluation process, proposed management of bond proceeds and intended reporting.

Eligible Projects

Environmentally beneficial, long-term transmission upgrade and modernization projects are currently underway through the State and include improvements that will directly assist in meeting the objects of the New York State Climate Leadership and Community Protection Act Chapter 106, as well as their critical importance to ensuring the overall resiliency and flexibility of the NYISO electric grid by optimizing the use of

innovative, eco-friendly technologies that contribute to the economic development of the region.

The Authority's internal process in evaluating and selecting projects was based on the four-year Capital Plan detailed in its 2020 Capital Budget. NYPA's Treasury team selected specific projects from the Plan that are specified within the Framework and that would make the largest impact on advancing its sustainability goals. The majority of the projects financed by NYPA's 2020 green bond are fully or predominantly dedicated to transmitting hydroelectric power, such as transmission line upgrades or improvements to switching facilities. Additionally, one project relates to the installation of advanced monitoring and "smart" sensing equipment. Such transmission assets dedicated to renewable energy and smart grid investments to improve resiliency and efficiency to be eligible green projects without further qualification. Specifically, NYPA defined the following projects to be the focus of investment of the green bond proceeds:

Project Descriptions

1 A life extension and modernization (LEM) project at the Niagara Switchyard to replace Bays 10, 14, 16, 20, 21, 22 and 25 Breakers, MOD's, Manual Disconnects, HVIT's, Tubular Bus Aerial Cable and Autotransformer No. 1. The switchyard and majority of its installed equipment including autotransformers, oil-filled circuit breakers, disconnect switches, potheads, and other related equipment were installed in the early 1960's and are becoming increasingly prone to failures, challenging to maintain and environmental risks.

2 Part of NYPA's Smart Generation & Transmission (Smart G&T) Strategic Initiative, focus is on the installation of smart sensors to improve the transmission grid by continuously monitoring assets. Sensors are planned to be installed on transformers, breakers, battery banks, exciters, reactors, regulators, cables, and capacitors, for increased reliability and enhanced decision-making.

3 A project to perform life extension and modernization (LEM) actions at the Plattsburgh, Sarana and Willis substations in northern NY. This program is a multiyear project aimed at maintaining availability, increasing reliability and ensuring regulatory compliance. This project will replace the substations' circuit breakers, disconnect switches, instrument transformers, station service equipment, relaying and provide an updated control rooms.

4 The STL Robert Moses Breaker and Relay Replacement Program is a multiyear program with the goal of selectively upgrading components of NYPA's existing transmission system. The switchyard 115kV busses support Alcoa (MAL4, 5, 6), Alcoa East (MAE1,2; previously MRG 1,2), Med Grasse River (MED4, 5), and Reynolds (MAE3, previously MR3) transmission line operations. The 230kV busses support Massena (MMS1, 2), Ontario Hydro's St. Lawrence Transformer Station (L33P, L34P), (MA1, 2) and Willis (MW1, 2) transmission line operations. To ensure continued reliability and regulatory compliance the following equipment is scheduled to be replaced: Bay 1500 & 1400 Breakers and Relays and Capacitor Bank Installation. Transmission Life Extension and Modernization (T-LEM) is a multiyear program that will upgrade NYPA's existing transmission system to maintain availability, increase reliability, and ensure regulatory compliance. The project at Massena Substation includes the replacement or upgrade of 765kV SF6 Breakers, CCVTs, VTs along with 13.8kV switchgear, station service equipment and insulators and all pieces of equipment that have reached their end of life, require excessive costs to maintain and pose reliability threats to the system.

5 PV-20 is a single circuit 115kV transmission line running from Plattsburgh substation to Cumberland Head substation. It is approximately 7.5 miles long. The submarine cable portion consists of four (4) original 500 kcmil cables installed in 1958 (one spare), and three (3) additional 1000 kcmil cables installed in 1970.

6 The Marcy Switchyard (located at Clark Energy Center) Life Extension and Modernization Program is a multiyear program with the goal of selectively upgrading components of NYPA's existing transmission system. The Clark Energy Center 765 kV busses support Massena (MSU1) and auto transformers 1, 2 and spare 1-2X which in turn service the Marcy 345 kV yard. The Clark Energy Center 345 kV yard supports the Marcy FACT system, and Coopers Corner (UCC2-41 and New Scotland (UNS-18) transmission line operations. The Marcy 345 kV Switchyard has been in service over 30 years and a majority of the original equipment is still in service. The following equipment will be replaced as part of the Marcy Switchyard LEM Program to ensure continued reliability and regulatory compliance: 765kV Breakers 7402, 7414, & 7302 and 345kV Circuit Breakers 3308 & 3302.

Replacement Projects Overview

In early 2022, the Authority made plans to issue new debt related to green transmission, in adherence to The Framework, as a Separately Financed Project ("SFP") and issuance. The MA1 and MA2 and Marcy to New Scotland projects, which were initially

included in the 2020 revenue bond issuance, were instead selected for the SFP because of their ability to be backed solely by project revenues, allowing NYPA to account for and finance these transmission investments separately from its general operations. The Authority will instead replace a portion of the "green-designated" assets selected from the 2020 issuance for the SFP issuance with the following projects:

1 The Y-49 Life Extension and Modernization project is a prospective capital improvement, refurbishment and repairs to the facilities associated with the Y-49 circuit. Work scope includes HPFF Cable reconductoring of the Nassau segment of the circuit (Conductor size to 3000kcmil, addition of 9 manholes), GIS refurbishment of East Garden City and South Transition Station, refurbishment of HPFF and SCFF Pump houses, upgrade of existing Leak Detection System\UPRATE Dynamic Rating System, repair\replacement of Primary and Secondary relay communications fiber bundles, East Garden City shunt reactor replacement, completion of electromechanical to microprocessor protection upgrade and installation of a protective enclosure above East Garden City and South Transition Station GIS.

2 The L33P and L34P Phase Shifter project is the jointly funded engineering, purchase, and installation of a new Phase-shifter with integrated voltage regulator associated with the L33P and L34P 230 kV transmission lines. The L33P & L34P Overhead Re-Conductoring, also a partnership with HydroOne (Ontario Canada Transmission Owner and Interconnect with NY), will re-conductor the L33P (Energized 09/20/58) and L34P and overhead ground wire associated with Project 2155 for the replacement of the respective Phase Shifters.

3 Fraser SVC Control and Relay Upgrade: The Fraser SVC Control system needs to be upgraded to a Mach 3.0 and the relay protection schemes need to be upgraded to current technology relays. The cooling skid also needs upgrading to current standards. The new system will be NERC/CIP compliant.

4 The Plattsburgh AT 1 Replacement is for Auto #1 replacement that failed. To date, an internal inspection has been performed revealing the magnitude of the damage that occurred internal to the transformer during the failure.

5 TLEM Tower Coating Upgrades WNY & CNY upgrades the coating systems on the electrical towers system-wide to protect the galvanized steel surfaces from corrosion. For the Niagara region (WNY), a yearly maintenance program has been established to systematically repaint/recoat the roughly 3,200 towers spanning circuits UCC2-41, EF24-40, EF/UCC, CE-1, CE-2, PC-1, PC-2, RP-1, RP-2, NR,-2, SR-1, NS-1 and PA-27.

The TLEM Tower Coating Upgrades CNY is a project for the STL Region Tower Painting and will provide for a yearly maintenance program of systematic repainting/recoating of the towers of circuits EF/UCC, GF-5, UCC2-41, CCRT34-42 and RFK-305. The program will be supported by yearly flyover and O&M inspections and involves 663 towers in the Marcy South Region.

6 RMPD AT 2 Replacement is due to RMPD Auto #2 failure. During a 13.8KV fault, Auto #2 took a significant amount of damage internally as well as to the bushings while in the process of feeding fault current. RMPD AT1 Replacement project are the replacement and associated station upgrades surrounding the replacement of Moses Autotransformer 1.

7 Power/Control Tunnel Water Mitigation will remediate and prevent further sitewide water infiltration into the control and power tunnels, which would increase the rate of deterioration, aging, corrosion, and risk of failure with extended unplanned outages.

Governance

For the duration of NYPA's Green Bonds issuance program, NYPA will monitor and track (i) its use of proceeds (project type, capacity and location) for each green bond issued, (ii) the current allocated and outstanding amounts and contractual maturity dates and (iii) that the use of proceeds of the Green Bonds are in alignment with NYPA's Green Bond Framework.

Management of Proceeds

Upon receipt of the green bond proceeds, NYPA transferred approximately $353 million into the Operating Fund to reimburse expenditures for the identified green projects that occurred from June 2017 to May 11, 2020.

The Authority deposited the remaining proceeds of its green bonds in separate accounts and manages the allocation process using its existing internal tracking system until proceeds are allocated to the spending requirements identified. Pending allocation, proceeds are held in liquid instruments including cash, money market funds and/or government securities as permitted by the company's investment policy. This is in line with market practice.

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Use of Proceeds, 1/1/21 to 12/31/21

Series 2020 A Green Bond (2021 Spend)			
	Project		**Amount**
1	**Transmission LEM (NIA)**		25,774,570.08
2	**Sensor Deployment Transmission**		11,433,822.16
3	**TLEM STL Remote Substations**		1,752,324.48
4	**Breaker & Relay Replacement**		4,252,919.74
5	**PV20 Cable Replacement**		(1,482,266.82)
6	**Transmission LEM (CEC)**		3,954,352.83
	Replacement Projects		
1	**Y-49 LEM**		979,675.02
2	**L33P & L34P Phase Shifter & Overhead Re-Conductoring**		21,111,103.00
3	**Fraser SVC Control and Relay Upgrade**		3,688,527.59
4	**Replacement of Plattsburg Auto #1**		3,954,711.18
5	**TLEM Tower Coating Upgrades WNY & CNY**		2,963,247.19
6	**RMPD AT1 Replacement & Auto #2**		3,246,615.57
7	**Power/Control Tunnel Water Mitigation**		Project not yet started
	2021 GRAND TOTAL	**$**	**81,629,602.02**

Reporting

In accordance with our pre-issuance Green Bond Framework, this report is being posted to the Electronic Municipal Market Access (EMMA) website of the Municipal Securities Rulemaking Board, accessible at **www.emma.msrb.org** along with other of the Authority's fiscal year ending December 31, 2021 filings. Fiscal year-end filings include the Authority's audited financial statements. These are published annually and available on NYPA's website (www.nypa.gov).

The Authority received a second-party Opinion (from Sustainalytics) on its bond issuance in May 2020 and a second party Assurance Letter, also from Sustainalytics, on its assertion of the use of funds and adherence to The Framework, in April 2021. The Authority expects a second party Assurance Letter on its assertion of the use of funds in CY 2021 and adherence to The Framework, in April 2022.

New York Power Authority shall disclose allocation and impact information such as allocated amounts, project location, and project capacity, as well as broader reporting about its alignment to State environmental objectives. Reporting is considered to be one of the core components of the green bond market and NYPA prioritizes these actions.