

## CREDIT OPINION

1 October 2024



Send Your Feedback

### Contacts

Scott Solomon +1.212.553.4358  
VP-Sr Credit Officer  
scott.solomon@moody's.com

A. J. Sabatelle +1.212.553.4136  
Associate Managing Director  
angelo.sabatelle@moody's.com

Chris DeSante +1.212.553.0880  
Sr Ratings Associate  
chris.desante@moody's.com

### CLIENT SERVICES

Americas 1-212-553-1653  
Asia Pacific 852-3551-3077  
Japan 81-3-5408-4100  
EMEA 44-20-7772-5454

# New York State Power Authority

## Update to credit analysis following rating upgrade

### Summary

New York State Power Authority's (NYPA or the Authority: Aa1 stable) strong credit profile is driven by its unique position as a provider of reliable, low-cost, primarily hydro-electric power in the State of New York (Aa1, stable) and its role as an engine for business development within the state. The credit profile also reflects sound operating and prudent financial management policies that have resulted in strong financial performance. The growth of incremental transmission-related investments that earn a regulated rate of return and provide a predictable revenue stream provides protection against earnings volatility during low hydrology and low merchant power price environments.

### Credit strengths

- » Ownership of low-cost electric generation
- » Sound operating and financial performance
- » Customer contracts with creditworthy state and governmental owned entities are largely cost-based and allow for recovery of costs
- » Increased revenue diversification associated with growth of transmission investments

### Credit challenges

- » Large capital spending program that requires near-term external financing
- » Earnings volatility associated with hydrology conditions and sale of excess generation
- » Can be requested to make financial contributions or transfers of funds to the State.

### Rating outlook

The stable outlook for NYPA is supported by an expectation for continued strong operating and financial performance including the maintenance of a fixed obligation charge coverage (FOCC) in excess of 3.0x.

### Factors that could lead to an upgrade

- » In light of the recent upgrade, NYPA's rating are not likely to experience upward rating pressure owing to the state of New York's existing Aa1 rating.

### Factors that could lead to a downgrade

- » A downgrade of NYPA's rating is unlikely over the near-term. Failure to maintain a FOCC of 2.5x, an unexpected drop of unrestricted cash below \$1.0 billion or a decline in the credit profile of the State of New York could create rating pressure.

## Key indicators

Exhibit 1

|                                                     | 2019      | 2020      | 2021      | 2022      | 2023      |
|-----------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Net Revenues ('000)                                 | 396,000   | 378,000   | 388,000   | 553,000   | 467,000   |
| Aggregate Annual Debt Service ('000)                | 233,000   | 188,000   | 204,000   | 204,000   | 113,000   |
| Fixed Obligation Charge Coverage (if applicable)(x) | 1.70      | 2.01      | 1.90      | 2.71      | 4.13      |
| Debt Outstanding (\$'000)                           | 2,308,000 | 3,144,000 | 3,090,000 | 2,387,000 | 3,080,000 |
| Total Adjusted Debt (\$000)                         | 3,022,376 | 4,079,063 | 3,803,709 | 2,956,392 | 3,530,488 |
| Adjusted Debt Ratio (%)                             | 46.4      | 54.9      | 49.8      | 40.0      | 43.7      |

Source: Moody's Ratings

## Profile

NYPA is a provider of wholesale power and transmission service in the state of New York. NYPA's primary customers are municipal and investor-owned utilities, rural electric cooperatives, large industrial customers and various public corporations located primarily in the metropolitan area of New York City. It accounts for 22% of energy generated in New York State.

NYPA owns and operates five major generating facilities, seven small natural gas power plants ("SNGPPs"), including four dual units, and four small hydroelectric facilities with a total installed capacity of approximately 6,000 megawatts ("MW"), and approximately 1,550 circuit miles of transmission lines, including major 765 kV and 345 kV transmission facilities. NYPA also owns and operates one utility-scale 20 MW battery energy storage system.

Wholly-owned by NYPA, SFP Transmission (SFP: Aa3, stable) was formed in 2022 to finance, operate, and maintain transmission projects that are eligible to collect transmission revenue through the New York Independent System Operator (NYISO). SFP has been structured to be a separate credit from NYPA's general credit with the repayment of SFP debt obligations derived solely from SFP's cash flows and secured by a pledge of revenue earned by the specific transmission projects' assets.

## Detailed credit considerations

### Revenue Generating Base

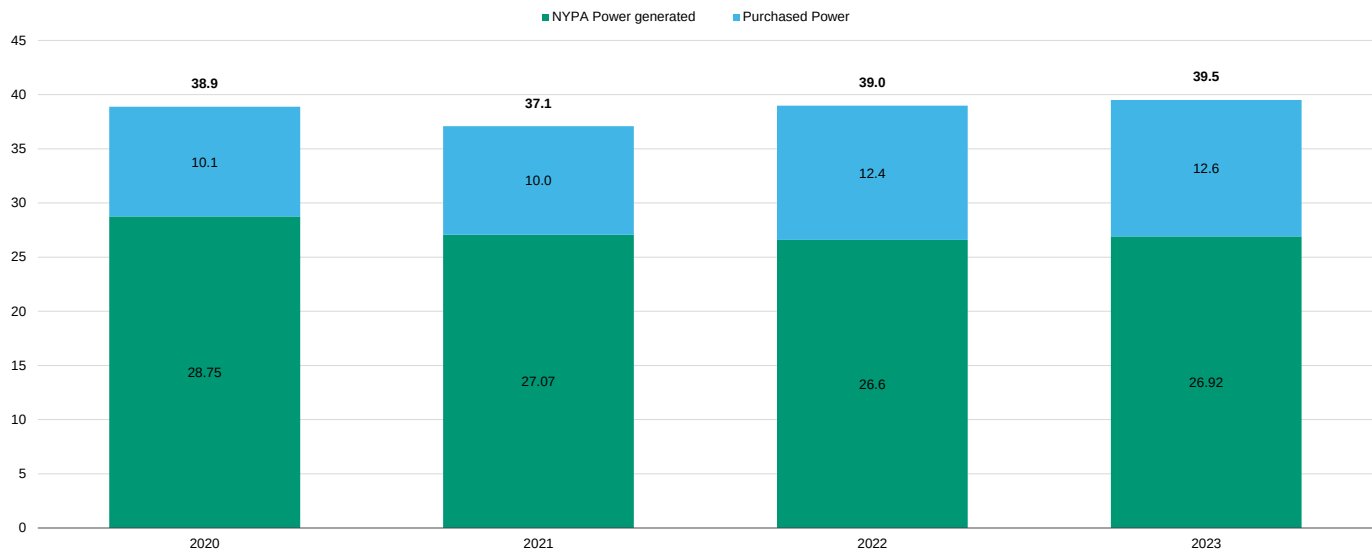
#### Competitive advantage provided by low-cost hydro generation assets

NYPA is uniquely positioned to provide its customers with low cost, dependable electric power primarily through its ownership in two large run-of-the-river hydroelectric facilities (Niagara and St. Lawrence-FDR) totaling approximately 4,200 MW's, a large pumped-storage hydroelectric facility (Blenheim-Gilboa) and various small hydro facilities. Power and energy produced are sold to municipal electric systems, rural electric cooperatives, industrial and other business customers, certain public bodies, investor-owned utilities, out-of-state customers, and into the wholesale market.

At average water flow, NYPA's hydroelectric generation represents about 80% of NYPA's net generation. In fiscal year 2023, approximately 84% or 23.0 terrawatt hours (TWh) of NYPA's full-year generation of 26.9 TWh from owned resources came from its hydro facilities. Considering long-term contracted resources and open-market purchases, NYPA sold 39.5 TWh of electricity in fiscal year 2023. The benefit of the low cost hydro power is passed onto the majority of NYPA's customers in the form of low electric rates. The remainder of NYPA's generating fleet comes from fossil-fired resources, primarily natural gas, including the Richard Flynn Power Plant, the Zeltmann Power Project and Astoria Energy II, an independently owned generating facility that has entered into a 20-year supply agreement with NYPA.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

Exhibit 2

**Total Energy Sold (TWh)**

Source: NYPA's financial statements and presentations

NYPA also owns more than 1,550 circuit miles of transmission and owns The Canal Corporation, which runs the New York State Canal System, whose canals links the Hudson River with the Great Lakes, the Finger Lakes and Lake Champlain.

### **NYPA serves as an instrumentality of the state and plays a key role in the state's economic development goals**

NYPA derives its authority from New York's Power Authority Act, which provides NYPA responsibility for providing transmission and generation services to New York customers. One of NYPA's major missions is supporting economic development in upstate New York by providing low-cost energy and capacity to large high load factor industries and employers. NYPA also provides an essential service to downstate governmental and non-profit customers that include the Metropolitan Transportation Authority, NY (MTA, A3 positive); the City of New York (Aa2, stable); the Port Authority of New York and New Jersey (Aa3, stable) and the New York City Housing Authority. Collectively, the City of New York, MTA and New York City Housing Authority, represented approximately 37% of NYPA's total revenue in 2023. In addition to contracted sales, NYPA sells excess power into the electricity market operated by the NYISO at market determined pricing levels.

NYPA is generally insulated from the operational and financial risks of serving downstate customers who are served under a contract where fixed costs have been set for the ten years of the agreement and the variable costs, which include fuel, purchased power and NYISO-related costs, are passed through. Current contracts with downstate governmental customers became effective January 1, 2018 with a maturity of December 31, 2027. Each customers has a right to terminate service with notice. However, in the event of a termination, the customer is responsible for any financial obligations incurred prior to the termination date.

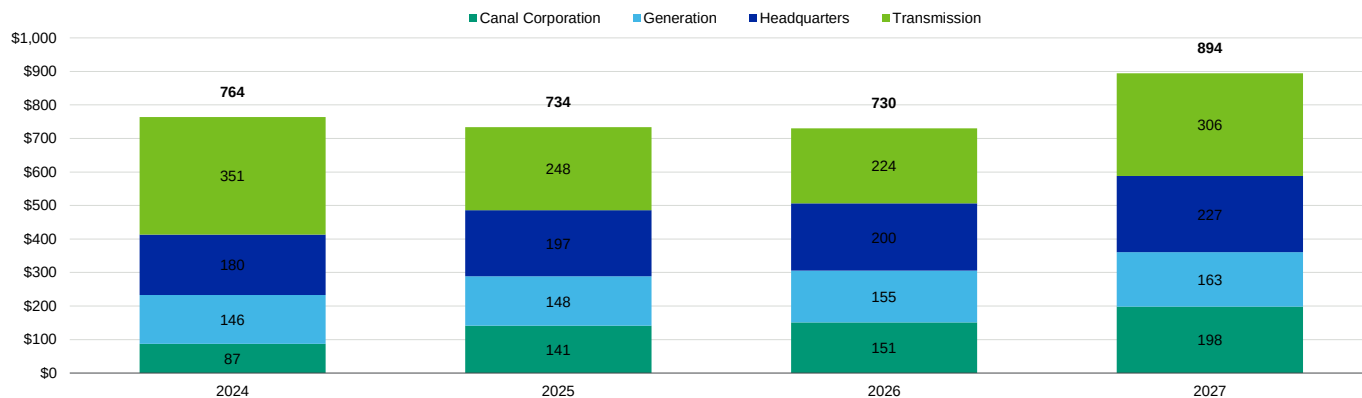
While NYPA is fiscally independent from the State of New York, it may be requested to make financial contributions or transfers to the State from time to time. Rates are set by its Board of Trustees without the need for regulatory approval. NYPA's trustees are appointed by the Governor of the State with the advice and consent of the State Senate. NYPA generally finances construction of new projects through internally generated funds and the sale of bonds and notes to investors, and it pays related debt service with revenues from the generation and transmission of electricity. NYPA has a history of adjusting its rates as necessary to recover the cost of operating and investing in its system while maintaining a strong financial position.

### **Further expansion of transmission segment is credit positive**

NYPA has a sizeable near-term capital spending program, estimated at approximately \$3.1 billion during the period 2024-2027 with investments in generation, transmission, its headquarters and Canal Corporation. A significant portion of the capital expenditure

program is transmission-related and will be financed by SFP Transmission Bonds (SFP: Aa3, stable). The investments are 100% recoverable plus a weighted average cost of capital (WACC) return.

Exhibit 3

**2024-2027 Capital Investment Plan**

Source: NYPA's financial statements and presentations

SFP's investments have focused on allowing renewable generation from the northern New York region to be transmitted to higher load areas, improving energy consumption and the efficiency of energy pricing throughout the State. The Smart Path Reliability Transmission Project (Smart Path) entered service in May 2023 and the Central East Energy Connect Project (CEEC) entered service in late 2023.

Annual combined revenue from Smart Path and CEEC are approximately \$100 million in 2023, compared to less than \$40 million in 2022 when the assets were under construction and are expected to double from approximately \$100 million in 2023 to approximately \$200 million in 2026 with the completion of SFP's third transmission project, Smart Path Connect Project.

NYPA's standalone credit profile benefits from these residual transmission related cash flows. Smart Path and CEEC are long-lived assets that will continue to earn regulated revenue and returns through 2060, a positive credit consideration.

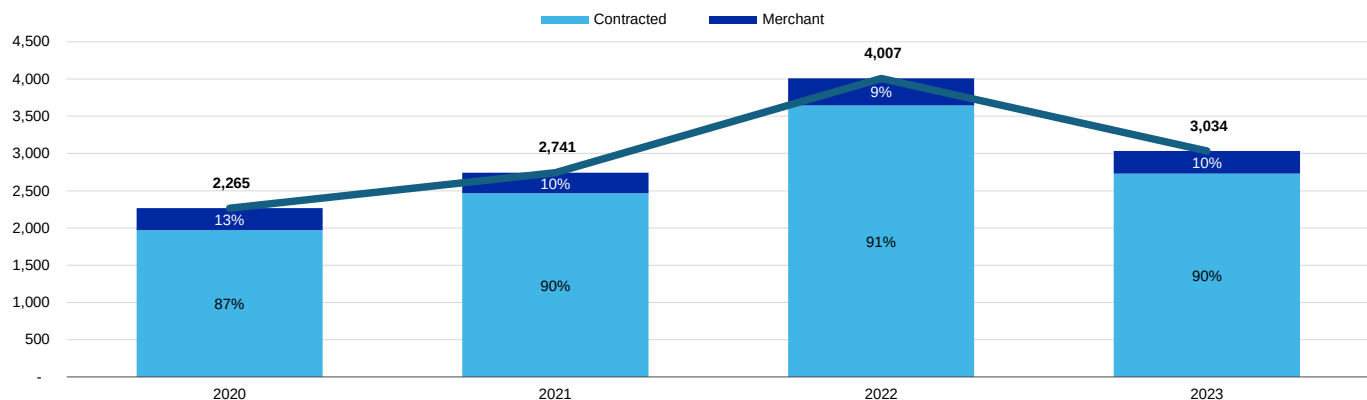
SFP along with a unaffiliated third-party have undertaken a new project, Smart Path Connect, which involves rebuilding approximately 100 linear miles of existing 230 kV transmission lines in northern and central New York to 345 kV, along with associated substation construction and upgrades. The capital structure for Smart Path Connect is based on NYPA's capital structure, from a regulatory perspective, and has been deemed to be 50% debt/50% equity with an allowed return on equity of 9.95%. Anticipated completion of Smart Path Connect is Q4 2025.

On the generation front, NYPA is focused on the growth of its clean energy business to meet target of receiving over 80% of its energy as clean energy.

### High degree of revenue predictability and strong credit metrics

A large majority of NYPA's revenues are contract which provide great visibility into future cash flows and revenue concentration from its generating facilities are low, with the largest customer representing only 3% of total revenues.

Exhibit 4  
Contracted vs Merchant Revenues as % of Total Revenues (US\$ millions) 4



Source: NYPA's financial statements and presentation

In fiscal year 2023, NYPA recorded revenues of \$3,034 million, \$973 million lower than in fiscal year 2022 due to lower market energy prices, and lower pass-through transmission revenues partially offset by higher hydro production. Although fuel and purchased power prices were significantly lower in fiscal year 2023, operating income declined to \$116 million as compared to \$227 million in the previous year. However, NYPA maintained strong credit metrics, its fixed obligation charge coverage (FOCC) increased to approximately 4.0x in fiscal year 2023 compared to approximately 3.0x in fiscal year 2022 while its adjusted debt ratio has increased to approximately 44% from 40% during these the same time frame. The 3-year average FOCC and adjusted debt ratio for fiscal years 2021-2023 are 2.9x and 45%, respectively, which positions NYPA on the Aa-AAA rating category for these factors. As described in greater detail below under Debt Structure, a large driver of this year-over-year improvement in financial performance relate to the 2022 decision to remove an existing PPA with Astoria Energy as indebtedness as it no longer met the definition of a lease under accounting rule GASB No. 87.

NYPA has been prudent in its debt management, in May 2024 the Authority completed a defeasance of the outstanding amounts on the Series 2003A, Series 2007B and Subordinated bonds, totaling \$259 million.

NYPA's FOCC and consolidated debt ratio are expected to remain at similar levels over the next few years due to continued sound operating performance and increasing contributions from transmission investments.

### Liquidity

NYPA's internal liquidity position as of June 30, 2024 remains strong. Unrestricted cash as of June 30, 2024 totaled \$1,401 million compared to \$1,590 million at year-end 2023. In year end 2023, the liquidity included \$175 million operating reserve for working capital and emergency repairs and \$90 million for debt service reserve to pay debt service on General Bond Resolution obligations. While NYPA is not legally obligated to maintain a debt service reserve under the General Bond Resolution, it has maintained an internal policy by Board Resolution to earmark funds for this purpose.

NYPA's external liquidity sources includes various commercial paper programs with an aggregate issuance amount of \$950 million. These programs are backstopped by a \$700 million syndicated revolving credit facility due January 2026 and a revolving credit agreement and note purchase agreement with JP Morgan due April 2026 that provides NYPA the ability to borrow up to \$250 million. There was \$477 million and \$227 million of outstanding commercial paper as of June 30, 2024 and December 31, 2023, respectively.

NYPA can also issue up to \$200 million under an Extendible Municipal Commercial Paper (EMCP) program. Under this program, any commercial paper not repaid on its specified repayment date automatically becomes due 270 days later and, as such, the EMCP program does not have revolver backing. There was no outstanding amount under the EMCP program as of June 30, 2024 and December 31, 2023.

### Debt Structure

NYPA's long debt outstanding as of June 30, 2024, and December 31, 2023 consisted of four series of revenue bonds totaling \$1,250 million and \$1,474 million, and two series of subordinated bonds totaling \$1.6 million and \$37.0 million, respectively. Separately, SFP

had \$1,342 million of Transmission Revenue Bonds outstanding in both June 30, 2024 and December 31, 2023. Moody's calculates NYPA's adjusted debt ratio at approximately 44% at year-end 2023 down from approximately 50% at year-end 2021.

A material contributor to NYPA's improved debt ratio was a decision in 2022 that an existing PPA with Astoria Energy II no longer met the definition of a lease under accounting rule GASB No. 87. As a result, the PPA, which previously had been recorded as a lease asset and liability (approximately \$984 million capitalized lease obligation in 2021) is no longer reflected as an asset and liability on NYPA's financials. Importantly, the change in lease accounting did not change the purpose or economic value of the PPA. Power is indirectly provided to NYPA's New York City Governmental customers under the PPA who reimburse NYPA for all related-costs associated with the PPA. There is no economic benefit to NYPA associated with the PPA.

**Legal security**

NYPA's revenue bonds are payable and secured by a pledge of the Trust Estate including all revenues derived from the operation of any of NYPA's facilities. SFP's revenue bonds are payable solely from the net revenue of the designated transmission projects and supported by dedicated SFP liquidity and operating reserves. They are legally separate from NYPA with no access to NYPA's liquidity and a SFP default would not cross-default to NYPA's revenue bonds. In the event that NYPA were to default, SFP bondholders would not have acceleration rights. Instead, NYPA has covenanted to make all of the SFP books and accounts available to the Trustee for the benefit of the SFP bondholders, and to pay the Trustee all of the SFP revenues, keeping the two pledges separate.

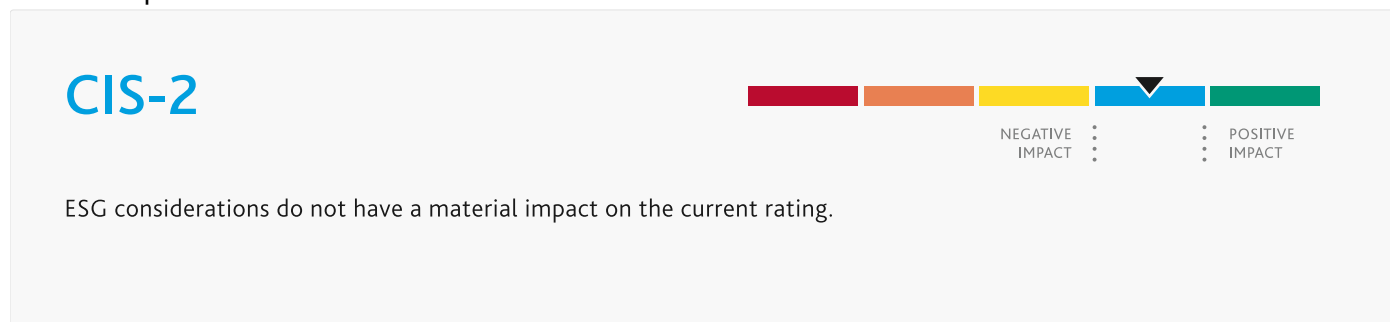
**Pensions Plan**

Substantially all of NYPA's employees participate in the New York State and Local Employees' Retirement System (NYSLERS) and the Public Employees' Group Life Insurance Plan. NYPA's Pensions contributions for 2023 was \$32 million, or 100% of the actuarially required contribution, similar to previous years. For the year ended December 31, 2023, the Authority recognized a pension expense of \$62 million. At of December 31, 2023, the Authority reported a liability of \$175 million for its proportionate share of the net pension liability based on the NYSLERS actuarial discount rate of 5.9%. Moody's calculates NYPA's pension obligation using a lower discount rate and calculates a net pension liability (ANPL) of approximately \$451.5 million in fiscal year 2023.

## ESG considerations

Exhibit 5

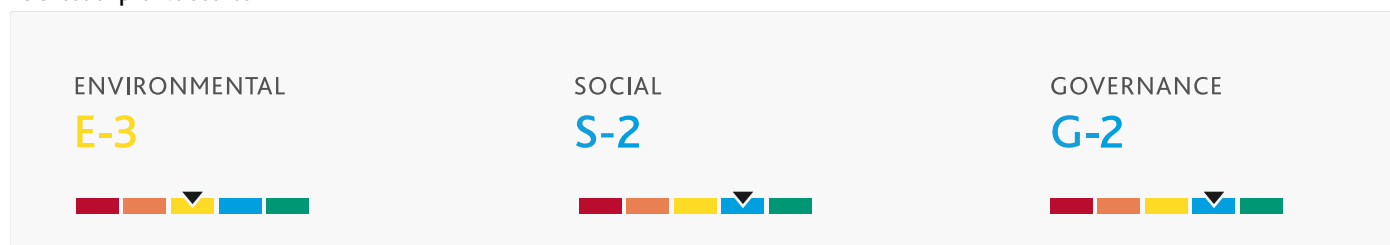
### ESG credit impact score



Source: Moody's Ratings

Exhibit 6

### ESG issuer profile scores



Source: Moody's Ratings

### Environmental

NYPA's **E-3** considers the concentration of the utility's assets across New York State and the related exposure to physical risk resulting from material and extreme weather events, including volatility associated with hydrology conditions. Assets include fossil-fueled generating assets concentrated in New York City and Long Island and transmission assets throughout the state. This risk is offset in part by the utility's low carbon transition risk, which considers that 80% of NYPA's generating capacity is from non-carbon emitting hydroelectric facilities and ranks among the cleanest US electric power producers. NYPA has set a goal to decarbonize its natural gas plants by 2030 and is exploring renewable energy and energy storage solutions.

### Social

NYPA's **S-2** reflects sound customer relations and health and safety measures. Access and affordability through low rates and responsible production, in the form high electric reliability are other positive social considerations given NYPA plays a key part in New York state's economic development goals. NYPA has created a workplace safety culture rooted in best safety practices and has robust workforce development programs.

### Governance

NYPA's **G-2** acknowledges the utility being fiscally independent from the State of New York. Rates are set by NYPA's board of trustees without the need for state regulatory approval and has a history of adjusting its rates as necessary to maintain a strong financial position. Based on our assessment of past performance, risks associated with financial strategy, management credibility, organizational structure and compliance and reporting are neutral-to-low. Board structure, however, is moderately negative due to the potential for political influence as all board of trustees are appointed by the governor albeit with the advice and consent of the State Senate.

### Rating methodology and scorecard factors

Moody's evaluates NYPA's rating under the US Public Power Electric Utilities with Generation Ownership Exposure methodology, and the grid indicated outcome is Aa1, the same as the assigned rating.

The methodology scorecard is a reference tool that can be used to approximate credit profiles in the US public power industry in most cases. However, the scorecard is a summary that does not include every rating consideration. Please see U.S. Public Power Electric Utilities with Generation Ownership Exposure on [www.moody's.com](http://www.moody's.com) for more information about the limitations inherent to grids.

Exhibit 7

| Factor                                                                   | Subfactor                                                                                                                  | Score        | Metric |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------|--------|
| 1. Cost Recovery Framework Within Service Territory                      | Monopoly with unregulated rate setting. Service area characteristics- GO rating. Customer base stability                   | Aaa          |        |
| 2. Willingness and Ability to Recover Costs with Sound Financial Metrics | Rate setting record. Timeliness of recovery. Political risk. Local Government Supportiveness. General fund transfer policy | Aa           |        |
| 3. Generation and Power Procurement Risk Exposure                        | Diversity of Supply. Reliability and cost of supply & distribution                                                         | Aa           |        |
| 4. Competitiveness                                                       | Rate Competitiveness (compared to state average)                                                                           | Aaa          |        |
| 5. Financial Strength and Liquidity                                      | a) Adjusted days liquidity on hand (3-year avg) (days)                                                                     | Aa           | 186    |
|                                                                          | b) Adjusted Debt ratio (3-year avg) (%)                                                                                    | Aa           | 45.0%  |
|                                                                          | c) Adjusted Debt Service Coverage or Fixed Obligation Charge Coverage (3-year avg) (x)                                     | Aaa          | 2.9    |
| <b>Preliminary Grid Indicated Outcome from Grid factors 1-5</b>          |                                                                                                                            | <b>Aa1</b>   |        |
|                                                                          |                                                                                                                            | <b>Notch</b> |        |
| 6. Operational Considerations                                            | Construction risk, whether the utility is a vital service provider                                                         | 0.0          |        |
| 7. Debt Structure and Reserves                                           | Debt service reserves, special borrowing arrangements and debt structure                                                   | 0.0          |        |
| 8. Revenue Stability and Diversity                                       | Exposure to wholesale power markets, customer concentration, diversity from combined utility operations                    | 0.0          |        |
| <b>Grid Indicated Outcome:</b>                                           |                                                                                                                            | <b>Aa1</b>   |        |

Source: Moody's Ratings

© 2024 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved. CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Materials.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at [www.moody's.com](http://www.moody's.com) under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Clasificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

## CLIENT SERVICES

|              |                 |
|--------------|-----------------|
| Americas     | 1-212-553-1653  |
| Asia Pacific | 852-3551-3077   |
| Japan        | 81-3-5408-4100  |
| EMEA         | 44-20-7772-5454 |