2021 Financial Statements

Independent Auditors' Report

The Board of Directors
The New York Independent System Operator, Inc.:

Opinion

We have audited the financial statements of The New York Independent System Operator, Inc. (the Company), which comprise the statements of financial position as of December 31, 2021 and 2020, and the related statements of activities, and cash flows for the years then ended, and the related notes to the financial statements.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Company and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with U.S. generally accepted accounting principles, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for one year after the date that the financial statements are available to be issued.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

KPMG LLP

Albany, New York
March 15, 2022

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Statements of Financial Position

December 31, 2021 and 2020

Assets		2021	2020
Current assets:			
Cash and cash equivalents	$	52,428,301	48,635,201
Restricted cash		435,540,925	322,362,679
Marketable securities (note 8)		3,090,453	2,454,069
Accounts receivable – net (note 2)		5,064,098	49,994,984
Prepaid expenses		8,557,156	7,503,463
Regulatory assets – current portion (note 3)		—	2,161,586
Other current assets		54,362	279,621
Total current assets		504,735,295	433,391,603
Noncurrent assets:			
Regulatory assets (note 3)		24,330,526	28,703,269
Property and equipment – net (note 4)		99,107,009	109,728,989
Other noncurrent assets (note 7)		407,614	1,076,414
Total noncurrent assets		123,845,149	139,508,672
Total	$	628,580,444	572,900,275
Liabilities			
Current liabilities:			
Accounts payable and accrued expenses	$	25,380,525	24,480,764
Market participant settlements		124,689,227	83,081,006
Market participant security deposits		238,081,267	242,246,878
Market participant prepayments		20,784,234	6,114,027
Working capital reserve (note 11)		33,034,551	33,256,332
Long-term debt – current portion (note 6)		22,576,266	34,503,793
Regulatory liabilities – current portion (note 3)		13,089,151	13,039,170
Deferred revenue (note 10)		42,022,799	26,667,806
Other current liabilities (note 8)		3,335,761	1,915,954
Total current liabilities		522,993,781	465,305,730
Noncurrent liabilities:			
Accrued pension liability (note 8)		5,687,702	7,199,808
Accrued postretirement liability (note 8)		6,909,836	8,071,289
Regulatory liabilities (note 3)		28,599,042	21,311,970
Other noncurrent liabilities (notes 7 and 8)		8,278,724	10,609,138
Long-term debt (note 6)		56,111,359	60,402,340
Total noncurrent liabilities		105,586,663	107,594,545
Total liabilities		628,580,444	572,900,275
Net assets without donor restrictions		—	—
Total liabilities and net assets	$	628,580,444	572,900,275

See accompanying notes to financial statements.

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Statements of Activities

Years ended December 31, 2021 and 2020

		2021	2020
Revenues:			
Rate Schedule 1 Budgeted tariff charge	$	167,419,840	168,035,094
Regulatory Adjustments to Rate Schedule 1 budget charge		(10,941,348)	4,167,591
Application of Overcollections		10,113,103	—
Rate Schedule 1 tariff charge, net		166,591,595	172,202,685
Federal Energy Regulatory Commission fees recovery		15,361,866	13,946,886
Planning studies revenue		9,107,411	15,315,932
Fees and services		1,026,763	971,465
Interest income		10,065	218,851
Total revenues		192,097,700	202,655,819
Operating expenses:			
Compensation and related benefits (note 8)		94,258,757	94,814,501
Depreciation (note 4)		25,249,731	22,829,018
Professional fees and consultants		24,157,937	30,966,071
Maintenance, software licenses and facility costs		22,824,114	21,908,612
Federal Energy Regulatory Commission fees		15,361,866	13,946,886
Administrative and other expenses		4,831,924	4,793,116
Insurance expense		3,177,252	3,013,802
Interest expense		2,845,081	3,054,086
Telecommunication expenses		2,649,607	3,019,897
Training, travel, and meeting expenses		318,950	395,901
Northeast Power Coordinating Council fees		168,659	276,666
Change in fair value of marketable securities		(338,265)	(322,438)
Change in fair value of interest rate swaps (note 7)		(3,407,913)	3,959,701
Total operating expenses		192,097,700	202,655,819
Change in net assets without donor restrictions		—	—
Net assets without donor restrictions, beginning of year		—	—
Net assets without donor restrictions, end of year	$	—	—

See accompanying notes to financial statements.

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Statements of Cash Flows

Years ended December 31, 2021 and 2020

		2021	2020
Cash flows from (used in) operating activities:			
Change in net assets without donor restrictions	$	—	—
Adjustments to reconcile change in net assets without donor restrictions to net cash provided by (used in) operating activities:			
Depreciation		25,249,731	22,829,018
Amortization of debt issuance costs		41,432	26,470
Loss on disposition of assets		100,021	—
Change in fair value of interest rate swaps		(3,407,913)	3,959,701
Change in fair value of marketable securities		(338,265)	(322,438)
Change in operating assets and liabilities that provide (use) cash:			
Accounts receivable		44,930,886	2,396,611
Market participant settlements		41,608,221	(63,885,492)
Deferred revenue and other liabilities		17,852,299	(944,582)
Market participant prepayments		14,670,207	(5,632,679)
Regulatory liabilities		7,337,053	1,272,751
Regulatory assets		6,534,329	(4,080,561)
Accounts payable and accrued expenses		1,748,211	412,041
Prepaid expenses and other assets		(159,634)	647,039
Working capital reserve		(221,781)	(1,251,307)
Marketable securities		(298,119)	(297,096)
Pension and postretirement liabilities		(2,673,559)	95,080
Market participant security deposits		(4,165,611)	(22,848,407)
Net cash provided (used in) by operating activities		148,807,508	(67,623,851)
Cash flows from investing activities:			
Acquisition of property and equipment (including capitalized interest)		(15,796,269)	(17,296,723)
Proceeds on disposition of assets		220,047	—
Net cash used in investing activities		(15,576,222)	(17,296,723)
Cash flows from financing activities:			
Proceeds from revolving credit facility loan		10,000,000	18,600,000
Repayment of revolving credit facility loan		(10,000,000)	(18,600,000)
Proceeds from 2019 – 2023 budget facility loan		28,400,000	26,600,000
Repayment of 2019 – 2023 budget facility loan		(26,333,257)	(8,666,743)
Repayment of 2014 – 2018 budget facility loan		(8,443,000)	(8,443,000)
Repayment of 2016 – 2019 EMS/BMS facility loan		(5,588,333)	(5,360,813)
Repayment of 2012 Infrastructure Loan		(2,761,126)	(2,646,316)
Repayment of Mortgage and Renovations loans		(1,534,224)	(1,444,296)
Net cash (used in) provided by by financing activities		(16,259,940)	38,832
Net increase (decrease) in cash, cash equivalents and restricted cash		116,971,346	(84,881,742)
Cash, cash equivalents and restricted cash – beginning of year		370,997,880	455,879,622
Cash, cash equivalents and restricted cash – end of year	$	487,969,226	370,997,880
Supplemental disclosure of cash flow information – cash paid during the year for interest, net of capitalized interest	$	2,870,758	3,052,408
Noncash investing activities:			
Property and equipment additions which were accrued but not paid	$	319,957	1,168,407
Property and equipment additions previously accrued which were paid		1,168,407	1,078,293

See accompanying notes to financial statements.

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Notes to Financial Statements

December 31, 2021 and 2020

(1) Summary of Significant Accounting Policies

(a) Business Description

The New York Independent System Operator, Inc. (NYISO) was formed in April 1997 and commenced operations on December 1, 1999. NYISO is incorporated in the state of New York as a not-for-profit organization. NYISO assumed the responsibilities of its predecessor, the New York Power Pool (NYPP), which had coordinated the reliability of New York State's electric power grid for more than 30 years. The NYISO operates under tariffs and agreements regulated by the Federal Energy Regulatory Commission (FERC). NYISO monitors a network of 11,000 circuit miles of high-voltage transmission lines and serves approximately 400 market participants.

NYISO, in collaboration with its stakeholders, serves the public interest and provide benefit to consumers by maintaining and enhancing regional reliability, operating open, fair and competitive wholesale electricity markets, planning the power system for the future, and providing factual information to policy makers, stakeholders and investors in the power system. The NYISO facilitates fair and open competition in the wholesale electricity markets in which electricity and related services are purchased and sold on the basis of competitive bidding. Billing invoices are issued by NYISO to each market participant to settle transactions occurring in the NYISO markets.

NYISO is governed by an independent board of directors, as well as a committee structure consisting of market participant representatives. In addition to FERC oversight, NYISO is also subject to regulation in certain aspects by the New York State Department of Public Service Commission.

(b) Effects of COVID-19 Pandemic

Since the emergence of a novel strain of coronavirus (COVID-19) in December 2019, the pandemic has continued to spread globally and has led governments and other authorities around the world to impose varying degrees of measures intended to reduce its spread and address the resurgences of the COVID-19 variants as they arise. Depending on the jurisdiction, these measures have become more or less restrictive based on the changing conditions, such as the emergence of new variants, the infection and hospitalization trends, as well as the public vaccination status.

Such government enacted measures, including social distancing, travel restrictions, voluntary isolation, and other measures, are have created significant challenges affecting the economy. The propagation of COVID-19 may extend into the future and could affect, either directly or indirectly, the NYISO's operations as well as its suppliers and customers.

The NYISO continued to provide essential services during the pandemic and communicates regularly with federal and state authorities, as well as industry resources to ensure a coordinated response in maintaining its operations without disruption. Additionally, the NYISO regularly communicates with its customers to help them stay informed during this public health crisis.

COVID-19 did not have a significant impact on the annual financial statements as of December 31, 2021 and 2020. The NYISO is continually monitoring the evolution of the situation and contributing to the collective effort to fight the spread of COVID-19.

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(c) Basis of Accounting and Presentation

The accompanying financial statements have been prepared on an accrual basis of accounting in accordance with U.S. generally accepted accounting principles and Financial Accounting Standards Board Accounting Standards Codification (FASB ASC) Topic 980, *Regulated Operations,* and FASB ASC 958, *Not-for-Profit Entities*.

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant items subject to such estimates and assumptions include the useful lives of fixed assets, recoverability of regulatory assets, the valuation of derivative instruments, and assumptions utilized in the accounting for employee benefit obligations such as discount rates, return on assets, fair value of investments and other contingencies.

(d) Regulatory Accounting

NYISO's financial statements are prepared in accordance with generally accepted accounting principles for rate-regulated entities. As such, regulators may permit specific incurred costs, typically treated as expenses by unregulated entities, to be deferred and expensed in future periods when it is probable that such costs will be recovered in customer rates. Incurred costs are deferred as regulatory assets when NYISO concludes that it is probable future revenues will be provided to permit recovery of the previously incurred cost. A regulatory liability is recorded when amounts that have been recorded by NYISO are likely to be refunded to customers through the rate-setting process.

(e) Revenue Recognition

Settlements of market participants' energy transactions are not reflected in NYISO's Statements of Activities since they do not represent revenues or expenses of NYISO, as NYISO acts solely as an intermediary in the settlement process. In this role, NYISO receives and disburses funds from and to market participants for each settlement period.

Effective July 1, 2012, NYISO's two FERC-approved tariffs, the Open Access Transmission Tariff (OATT) and the Market Administration and Control Area Services Tariff (Services Tariff), were amended to clarify NYISO's role as the single counterparty to market participant transactions in the NYISO markets. For all market participant transactions in the NYISO markets, flash title passes through NYISO immediately prior to passing to the ultimate buyer and seller of the product. This arrangement reinforces NYISO's authority to continue to net a market participant's offsetting financial positions in NYISO markets for credit and billing purposes; provides clarity in NYISO's legal standing to pursue collection from a bankrupt market participant; and, also complies with the FERC directives on credit policy requirements for competitive wholesale electricity markets.

NYISO's tariffs allow recovery of NYISO's capital requirements, operating expenses and debt service costs through a surcharge assessed to market participants. The revenue from this surcharge, Rate

Schedule 1, is earned when energy is scheduled and dispatched. Market participants are then billed for such charges in the subsequent settlement period's invoice.

NYISO's Rate Schedule 1 includes a timing mechanism that effectively meets the requirements of an alternative revenue program set forth in FASB ASC Topic 980, *Regulated Operations*, Subtopic 602, *Revenue Recognition*. Accordingly, revenue is recognized for net financing obligations and capital costs incurred during the reporting period, funding for pension and postretirement benefits, and other rate schedule adjustments, as appropriate, based on the revenue requirement formula in the tariffs.

NYISO also recognizes revenue and an offsetting expense for the annual FERC Assessment Fee (the Assessment Fee). The FERC generally invoices transmission providers in June of each year and payment is due in August. NYISO bills the Assessment Fee based on an estimated rate per megawatt hour applied to each individual transmission customer's actual megawatt hours of transmission usage for the month. Once the FERC invoice is received, NYISO calculates a true up and recovers (or refunds) this true up amount over a six month period following receipt of the invoice. NYISO recognizes the revenue and an offsetting expense each month as the Assessment Fee is billed.

Revenues recorded as planning studies revenues arise from billing and collection services in the study service agreement process performed by NYISO. These revenues are offset by the corresponding study expenses, recorded in operating expenses, which were incurred in performing such studies. A portion of the deposits related to planning studies are nonrefundable and recorded as revenue when received.

(f) Cash and Cash Equivalents

NYISO considers short-term marketable securities with original maturities of three months or less to be cash equivalents. The cash equivalents at December 31, 2021 and 2020 were held in money market accounts invested primarily in short-term U.S. government obligations. NYISO's cash and cash equivalents consist primarily of funds accumulated for the working capital reserve, for general operating purposes, and amounts for funding certain employee benefit plans.

(g) Restricted Cash

Restricted cash consists primarily of market participant security deposits held in escrow accounts, amounts prepaid by market participants in advance of settlement billing dates, amounts collected on settlement invoices, amounts collected for Transmission Congestion Contract (TCC) auctions, amounts deposited for planning studies, amounts collected for the estimated annual FERC fee and amounts collected for voltage support services. Market participant security deposits are invested at the market participant's choice in taxable money market funds.

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Notes to Financial Statements

December 31, 2021 and 2020

The following table details the ending balances for Cash, Cash Equivalents and Restricted Cash amounts as reported on the Statements of Cash Flows:

		2021	2020
Cash and cash equivalents	$	52,428,301	48,635,201
Restricted cash		435,540,925	322,362,679
Cash, cash equivalents and restricted cash end of year	$	487,969,226	370,997,880

(h) Property and Equipment

Property and equipment are recorded at cost. NYISO capitalizes property and equipment additions in excess of $5,000 with a useful life greater than one year. Depreciation is computed on the straight-line method over the assets' estimated useful lives of three to five years, except for building and building improvements, which are depreciated on a straight-line basis over 20 years. When assets are retired or otherwise disposed of, the cost and related depreciation are removed, and any resulting gain or loss is reflected in expense for the period. Repairs and maintenance costs are charged to expense when incurred.

The NYISO capitalizes the cost of payroll and payroll-related costs, third-party consulting fees, overhead and interest incurred in the direct development or enhancement of solutions as internal-use software. Development costs incurred during the preliminary project stage and costs incurred for requirements gathering, data conversion activities, training, maintenance and minor enhancements are expensed as incurred. Development costs incurred for the coding, configuration, interfacing, automation and testing of new functionality after the preliminary project stage is complete are capitalized. Capitalized software costs are amortized on a straight-line basis over three years, based on the nature and estimated useful life of the applicable asset. Amortization of capitalized software costs is included in depreciation and amortization expense within the Statements of Activities.

Long-lived assets are recorded at cost and are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amounts of the assets may not be recoverable. Management is not aware of any events or changes in circumstances that would necessitate a review of any long-lived assets as of the years ended December 31, 2021 and 2020.

(i) Working Capital Reserve

In order to maintain the liquidity and stability of NYISO's markets, NYISO has accumulated a working capital reserve through amounts charged to market participants under the Rate Schedule 1. Any change to NYISO's working capital needs would be billed to market participants in future Rate Schedule 1 charges. Market participants are entitled to interest on their principal contributions to the working capital reserve. Each market participant is allocated interest based on the respective ratio share of each market participant's principal contributions to the total working capital reserve. Accumulated interest on the working capital reserve is distributed annually to market participants.

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(j) Market Participant Prepayments

To reduce certain energy and ancillary services credit requirements, Market Participants may choose to prepay to the NYISO, in advance of settlement billing dates, their energy and ancillary services financial obligations. Moreover, certain market participants choose to make advance payments to the NYISO to be applied to future settlement invoices. Market participant prepayments are presented within restricted cash and current liabilities on the accompanying Statements of Financial Position.

(k) Deferred Revenue

Advance payments from developers for planning studies and governance participation fees are reflected as deferred revenue.

Planning study revenue is recognized as earned when costs are incurred and billed to developers to complete such studies. Fees for participation in NYISO's governance process are billed to market participants in advance of the year for which they apply and are amortized over the related governance period. All such unamortized amounts are included in deferred revenue.

(l) Income Taxes

NYISO has been recognized by the Internal Revenue Service as an organization described in Internal Revenue Code (The Code) Section 501(c)(3) and is generally exempt from income taxes under Section 501(a) of the Code. During the calendar years 2021 and 2020, no material unrelated business taxable income was generated by NYISO, and therefore no disclosure is made for federal or state income taxes.

The NYISO has determined prior to recording any benefit in the financial statements that it is more likely than not that the tax position will be sustained upon examination by the appropriate taxing authorities, as required by the Accounting for Uncertainty in Income Taxes Topic within FASB ASC 740, *Income Taxes*. A tax position is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon settlement.

(m) Fair Value

NYISO utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible. Fair value is determined based on assumptions that market participants would use in pricing an asset or liability in the principal or most advantageous market. When considering market participant assumptions in fair value measurements, the following fair value hierarchy distinguishes between the observable and unobservable inputs, which are categorized in one of the following levels:

Level 1: Quoted prices (unadjusted) in active markets for identical assets as of the measurement date. An active market is one in which transactions occur with sufficient frequency and volume to provide pricing information on an ongoing basis. Market price data is generally obtained from exchanges or dealer markets.

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Level 2: Pricing inputs from other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the same term of assets. Inputs are obtained from various sources including market participants, dealers and brokers.

Level 3: Pricing inputs are unobservable and include little, if any, market activity for the investments.

The level in the fair value hierarchy within which a fair value measurement in its entirety falls is based on the lowest-level input that is available for that particular financial instrument.

NYISO's financial instruments consist primarily of cash and cash equivalents, restricted cash, marketable securities, accounts receivable, prepaid expenses, accounts payable and accrued expenses, short-term and long-term debt, and benefit plan assets such that carrying value approximates fair value. The fair value of derivative instruments and benefit plan assets is discussed in notes 7 and 8, respectively.

(n) Pension and Other Postretirement Benefit Plans

NYISO has a defined benefit pension plan covering certain employees upon their retirement. The benefits are based on years of service and employee's compensation during the five years before retirement. NYISO also sponsors a defined postretirement benefit medical plan for retired employees and their dependents. NYISO records annual amounts relating to its pension and postretirement plans based on calculations that incorporate various actuarial and related assumptions, including discount rates, mortality, assumed rates of return, turnover rates, and healthcare costs and trend rates. These actuarial and related assumptions are reviewed on an annual basis and modifications are made to the assumptions based on current rates and trends. The effect of modifications made to those assumptions are reasonable based on actual experience and market conditions.

The net periodic costs are recognized as employees render the services necessary to earn the pension and postretirement benefits. Unamortized amounts expected to be recognized in rates in future years are recorded as a regulatory asset or liability.

(o) Concentration of Credit Risk

Financial instruments that subject NYISO to credit risk consist primarily of market settlement invoices and Rate Schedule 1 revenue due from market participants. As provided in the OATT and Services Tariff, NYISO reviews the creditworthiness of market participants, who are required to either

- maintain certain financial statement criteria and/or approved credit ratings;
- to post with NYISO specified financial security in an amount sufficient to cover their outstanding liability to NYISO; or
- to prepay their obligations in advance of settlement billing dates.

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NYISO's tariffs establish specific periods for the adjustment of settlement invoices and for market participant challenges to amounts billed for a particular service period. The first settlement invoice issued for a given month occurs on the fifth business day of the following month. Adjustments may occur and be included on the four-month re-settlement invoice. Market Participants have a five-month period from the initial invoice to review and challenge their settlements from these invoices. The NYISO posts an advisory Final Bill Close-out within two months of the review and challenge period. Market Participants then have approximately one month to review the advisory Final Bill Close-out invoice. The Final Bill Close-out invoice is issued eight months from the initial invoice service period.

As a result, NYISO is exposed to credit risk until all settlement adjustments and final invoices for each service period are finalized and liquidated. As of December 31, 2021, the adjustments and true-ups of all settlement invoices through March 2021 were completed. However, in the event of a market participant default and bad debt loss, Rate Schedule 1 of the OATT allows NYISO to recover bad debt losses from all remaining market participants on future invoices.

(p) Derivative Instruments

NYISO recognizes all derivative instruments as either assets or liabilities in the Statement of Financial Position at their respective fair value. The fair values of NYISO's derivative instruments are quoted by external sources. The changes in the fair value of these derivatives are recorded as a change in fair value of interest rate swaps in the Statement of Activities. Due to NYISO's regulated rates, any changes in fair value of these derivative instruments are recorded as either a Regulatory Asset or Regulatory Liability, as appropriate, and ultimately deferred for recognition due to regulatory recovery of interest costs. Payments on these derivative instruments are recorded and classified as interest expense.

NYISO uses derivative instruments to hedge the effects of fluctuations in interest rates. NYISO is exposed to credit loss in the event of nonperformance by the commercial banks under the interest rate swap agreements. The credit risk related to hedge agreements is limited to the cost to NYISO to replace the aforementioned hedge arrangements with like instruments. NYISO monitors the credit standing of the counterparties and anticipates that the counterparties will be able to fully satisfy their obligations under the hedge arrangements.

The fair value of NYISO's interest rate swaps are determined using pricing models developed based on the LIBOR swap rate and other observable market data (Level 2 inputs).

(q) Debt Issuance Costs

Debt issuance costs are included as a direct deduction to the corresponding debt liability and have been deferred. Debt issuance costs are amortized using the effective interest method over the period of the outstanding debt obligation.

(r) Accounting Pronouncements Recently Adopted

In August 2018, FASB issued ASU 2018-15, *Intangibles – Goodwill and Other – Internal Use Software (Subtopic 350-40)*. The new standard aligns the requirements for capitalizing implementation costs

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December 31, 2021 and 2020

incurred in a hosting arrangement that is not a service contract with those requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The NYISO adopted FASB ASU 2018-15 in 2021 and the effect on asset capitalization is $1,386,461 as of December 31, 2021.

(2) Accounts Receivable

NYISO's accounts receivable at December 31, 2021 and 2020 consisted of the following:

		2021	2020
Billed:			
Miscellaneous billed receivables	$	528,487	501,719
Past-due settlement invoices		10,300	25,912
Current-due settlement invoices		—	45,560,039
		538,787	46,087,670
Unbilled:			
Rate Schedule 1 revenue for December		3,608,392	3,166,234
Miscellaneous unbilled receivables		916,919	741,080
		4,525,311	3,907,314
Total	$	5,064,098	49,994,984

NYISO invoices market participants weekly for settlement charges and Rate Schedule 1 revenue. As of December 31, 2020, current-due settlement invoices represented amounts invoiced on December 30, 2020 and were collected on January 4, 2021.

Past due settlement invoices as of December 31, 2021 are expected to be recovered in 2022. Rate Schedule 1 of the OATT allows NYISO to recover bad debt losses from market participants and provides guidance on the provisions of such recoveries.

Miscellaneous billed and unbilled receivables are for planning study services provided by the NYISO in accordance with the NYISO OATT. These revenues offset the corresponding planning study expenses, which are incurred in performing such studies.

NYISO recovers its Rate Schedule 1 revenue in the invoice following the period of service. Therefore, a portion of unbilled Rate Schedule 1 revenues for December are billed and recovered in January of the subsequent year.

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(3) Regulatory Assets and Liabilities

At December 31, 2021 and 2020, regulatory assets and liabilities consisted of the following:

		2021	2020
Regulatory assets:			
Funding for pension benefits	$	10,617,703	12,340,587
Funding for postretirement deferred charges		10,517,686	9,820,112
Derivative contracts		3,195,137	6,603,049
Rate Schedule 1 transactional volume undercollections		—	2,101,107
Total regulatory assets		24,330,526	30,864,855
Less current portion		—	(2,161,586)
Noncurrent regulatory assets	$	24,330,526	28,703,269
Regulatory liabilities			
Net Financing and Capital rate timing	$	20,223,861	14,585,911
Rate Schedule 1 transactional volume overcollections		7,944,350	697,307
Funding for pension deferred charges		4,767,331	4,978,109
Funding for postretirement benefits		3,607,850	1,747,950
Rate Schedule 1 underspending		2,802,973	11,516,903
Voltage support service (reactive power) market		2,341,828	824,960
Total regulatory liabilities		41,688,193	34,351,140
Less current portion		(13,089,151)	(13,039,170)
Noncurrent regulatory liabilities	$	28,599,042	21,311,970

(a) Funding for Pension and Postretirement Benefits

The pension and postretirement funding regulatory assets and liabilities reflect the unrecognized pension and postretirement benefit costs that under GAAP for rate-regulated entities are recorded as deferred noncurrent regulatory assets or liabilities. These amounts are expected to be included in future rates.

(b) Funding for Deferred Charges

The NYISO recovers its annual employer cash contributions for both the pension and postretirement benefit plans via Rate Schedule 1. The amounts in funding for deferred charges represents the pension and postretirement benefit costs net of cash contributions.

(c) Rate Schedule 1 Underspending

To the extent that NYISO's spending does not exceed the annual Rate Schedule 1 revenue requirement, a regulatory liability is established for the underspending amount. The regulatory liability

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as of December 31, 2020 represents underspending amounts of $5,715,702 for 2019 and $5,801,201 for 2020.

(d) Rate Schedule 1 Transactional Volume Collections

NYISO recovers its costs through a surcharge assessed to market participants via Rate Schedule 1 of the OATT and Services Tariff. To the extent that transactional volumes billed under Rate Schedule 1 fall short of the amount expected when the Rate Schedule 1 surcharge is established, NYISO reflects a regulatory asset for the undercollection amounts. To the extent that transactional volumes billed under Rate Schedule 1 exceed the amount expected when the Rate Schedule 1 surcharge is established, NYISO reflects a regulatory liability for the overcollection amounts.

The regulatory liability as of December 31, 2020 represents Rate Schedule 1 transactional volume overcollections for 2019.

(e) Voltage Support Service

In order to maintain acceptable transmission voltages on the New York State transmission system, certain market participants within the New York Control Area produce or absorb voltage support service (reactive power). Payments to market participants supplying voltage support service and recoveries from other market participants are assessed via Rate Schedule 2 of the OATT and Services Tariff. Differences between the timing of recoveries and payments for voltage support service that result in undercollections or overcollections are reflected as regulatory assets or liabilities.

(f) Derivative Contracts

NYISO's Rate Schedule 1 tariff does not include the fair value of derivative contracts. Any changes in fair value of these derivative instruments are ultimately deferred for recognition due to regulatory recovery of interest costs. Future payments on these derivative instruments are recorded and classified as interest expense.

(g) Net Financing and Capital Rate Timing

NYISO's Rate Schedule 1 includes a timing mechanism for net financing obligations and capital costs incurred during the reporting period based on the revenue requirement formula in the tariffs. In connection with this rate-making mechanism these amounts are expected to be included in future rates.

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(4) Property and Equipment

As of December 31, 2021 and 2020, property and equipment consisted of the following:

		2021	2020
Software developed for internal use	$	226,808,066	223,685,311
Building, building improvements, and leasehold improvements		106,946,904	106,894,068
Computer hardware and software		56,870,741	60,871,399
Machinery and equipment		8,431,452	8,928,274
Land and land improvements		3,361,818	3,361,818
Furniture and fixtures		2,440,022	2,440,022
		404,859,003	406,180,892
Accumulated depreciation		(321,663,392)	(303,339,640)
Property and equipment – net		83,195,611	102,841,252
Work in progress		15,911,398	6,887,737
Total Property and equipment – net	$	99,107,009	109,728,989

Property and equipment includes interest of $106,338 and $227,367, capitalized during 2021 and 2020, respectively. Total capitalized labor for the years ended December 31, 2021 and 2020 was $4,995,015 and $5,873,554, respectively.

Depreciation expense for the years ended December 31, 2021 and 2020 was $25,249,731 and $22,829,018, respectively.

Costs represented in Work in progress primarily include the Distributed Energy Resources Participation Model, the Customer Settlements Data Mart upgrade, and additional Operational Enhancements for the Energy Management System/Business Management System.

(5) Revolving Credit Facility

On December 14, 2018 NYISO entered into a $30.0 million Revolving Credit Facility with an effective date of January 1, 2019 through December 31, 2023. The proceeds from this Revolving Credit Facility are to be used for working capital purposes. Interest on borrowings under this Revolving Credit Facility is based on NYISO's option of varying rates of interest tied to either the prime rate or the London Interbank Offered Rate (LIBOR). On May 15, 2020, NYISO exercised the Accordion Feature of the Revolving Credit Facility and increased the amount to $50.0 million. At December 31, 2021 and 2020, there were no amounts outstanding on the Revolving Credit Facility. During 2021 $10.0 million in borrowings were made under the Revolving Credit Facility, at an average interest rate of 0.814%. During 2020 $18.6 million in borrowings were made at an average interest rate of 0.891%.

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(6) Long-Term Debt

At December 31, 2021, the following amounts were outstanding on NYISO's long-term debt:

	2019-2023 Budget facility loan (ii)	Mortgage (iv)	Renovations (iv)	2012 Infrastructure loan (v)	Total
Total outstanding:					
Maturities	$ 46,000,000	3,871,094	3,766,333	25,245,721	78,883,148
Unamortized debt issuance costs	(74,849)	(4,061)	(4,113)	(112,500)	(195,523)
Total debt, net	$ 45,925,151	3,867,033	3,762,220	25,133,221	78,687,625
Current portion:					
Maturities	$ 18,333,333	974,739	653,132	2,646,316	22,607,520
Less unamortized debt issuance costs	(17,456)	(1,133)	(823)	(11,842)	(31,254)
Total current portion	$ 18,315,877	973,606	652,309	2,634,474	22,576,266
Long term portion:					
Maturities	$ 27,666,667	2,896,355	3,113,201	22,599,405	56,275,628
Less unamortized debt issuance costs	(57,393)	(2,928)	(3,290)	(100,658)	(164,269)
Total long term portion	$ 27,609,274	2,893,427	3,109,911	22,498,747	56,111,359

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At December 31, 2020, the following amounts were outstanding on NYISO's long-term debt:

		2014–2018 Budget facility loan (i)	2019–2023 Budget facility loan (ii)	2016–2019 EMS/BMS facility loan (iii)	Mortgage (iv)	Renovations (iv)	2012 Infrastructure loan (v)	Total
Total outstanding:								
Maturities	$	8,443,000	43,933,257	5,588,333	4,790,392	4,381,259	28,006,847	95,143,088
Unamortized debt issuance costs		(3,957)	(92,305)	(7,913)	(5,063)	(3,375)	(124,342)	(236,955)
Total debt, net	$	8,439,043	43,840,952	5,580,420	4,785,329	4,377,884	27,882,505	94,906,133
Current portion:								
Maturities	$	8,443,000	17,533,297	4,390,000	919,297	614,926	2,646,316	34,546,836
Less unamortized debt issuance costs		(3,957)	(17,456)	(7,913)	(1,125)	(750)	(11,842)	(43,043)
Total current portion	$	8,439,043	17,515,841	4,382,087	918,172	614,176	2,634,474	34,503,793
Long term portion:								
Maturities	$	—	26,399,960	1,198,333	3,871,095	3,766,333	25,360,531	60,596,252
Less unamortized debt issuance costs		—	(74,849)	—	(3,938)	(2,625)	(112,500)	(193,912)
Total long term portion	$	—	26,325,111	1,198,333	3,867,157	3,763,708	25,248,031	60,402,340

(i) On October 22, 2013, NYISO entered into an unsecured $100.0 million line of credit facility (2014–2017 Budget Facility), the proceeds of which could be drawn between January 1, 2014 through December 31, 2017 to fund capital purchases and the development of significant projects during 2014–2017. Interest on borrowings under this facility is based on NYISO's option of varying rates of interest tied to LIBOR plus 95 basis points for borrowings, or the prime rate. Interest payments on borrowings are due monthly. On March 18, 2016, NYISO amended and restated its unsecured $100.0 million line of credit facility to increase the unsecured amount to $125.0 million and allow the proceeds to be drawn through December 31, 2018 (2014–2018 Budget Facility). NYISO must convert each year's annual borrowings to term loans, with principal and interest payments payable over three years.

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As of December 31, 2021 and 2020, the loan details on the 2014–2018 Budget Facility consisted of the following:

Draw year		2018
Draw amount	$	25,329,000
Converted to term loan		January 2019
Term period		36 months
Maturity date		12/01/2021
As of 12/31/21		
Outstanding balance at fixed interest rate	$	—
Variable interest rate		N/A
Outstanding balance at variable interest rate	$	—
Variable interest rate		N/A
As of 12/31/20		
Outstanding balance at fixed interest rate	$	6,666,667
Fixed interest rate		2.250%
Outstanding balance at variable interest rate	$	1,776,333
Variable interest rate		1.105%

(ii) On December 14, 2018, NYISO entered into a $90.0 million Revolving Term Loan Credit Facility (2019–2023 Budget Facility) with an effective date of January 1, 2019 through December 31, 2023. The proceeds from this Term Loan Credit Facility are to be used for capital purchases and significant projects during 2019–2023. Interest on borrowings under this Term Loan Credit Facility is based on NYISO's option of varying rates of interest tied to either the prime rate or LIBOR plus 67.5 basis points.

The 2019-2023 Budget Facility allows for a maximum of $140.0 million to be drawn over the five-year period, with no more than $90.0 million outstanding at any time. Under the revolving structure, loan amortization in proceeding years restores funds availability sufficient to cover draws totaling $140.0 million through 2023. NYISO must convert each year's annual borrowings to term loans, with the principal and interest payments payable over three years.

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As of December 31, 2021 and 2020, the loan details on the 2019-2023 Budget Facility consisted of the following:

Draw year		2019	2020	2021
Draw amount	$	26,000,000	26,600,000	28,400,000
Converted to term loan		January 2020	January 2021	January 2022
Term period		36 months	36 months	36 months
Maturity date		12/01/2022	12/01/2023	12/1/2024
As of 12/31/21				
Outstanding balance at fixed interest rate	$	—	17,600,000	28,400,000
Fixed interest rate		N/A	2.900%	2.900%
Outstanding balance at variable interest rate		—	—	—
Variable interest rate		N/A	0.774%	0.774%
As of 12/31/20				
Outstanding balance at fixed interest rate	$	15,333,333	23,000,000	—
Fixed interest rate		2.900%	2.900%	N/A
Outstanding balance at variable interest rat	$	1,999,923	3,600,000	—
Variable interest rate		0.830%	0.830%	N/A

(iii) On March 18, 2016, NYISO entered into a new unsecured $30.0 million delayed-draw term loan (EMS/BMS Facility Loan) to fund the replacement of NYISO's Energy Management and Business Management Systems (EMS/BMS). In accordance with the loan agreement, the proceeds can be drawn beginning March 18, 2016 through December 31, 2018. NYISO must convert each year's annual borrowings to term loans, with principal and interest payments payable over three years. Interest on borrowings under this facility is based on NYISO's option of varying rates of interest tied to LIBOR plus 95 basis points for borrowings, or the prime rate. Interest payments on borrowings are due monthly.

On December 12, 2018, NYISO amended its EMS/BMS Facility Loan to allow proceeds to be drawn through December 31, 2019.

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As of December 31, 2021 and 2020, the loan details on the EMS/BMS Facility Loan consisted of the following:

Draw year		2018	2019
Draw amount	$	9,575,000	3,595,000
Converted to term loan		January 2019	January 2020
Term period		36 months	36 months
Maturity date		12/01/2021	12/01/2022
As of December 31, 2021			
Outstanding balance at fixed interest rate	$	—	—
Fixed interest rate		N/A	N/A
Outstanding balance at variable interest rate	$	—	—
Variable interest rate		N/A	N/A
As of December 31, 2020			
Outstanding balance at fixed interest rate	$	1,766,667	—
Fixed interest rate		2.070%	N/A
Outstanding balance at variable interest rate	$	1,425,000	2,396,667
Variable interest rate		1.105%	1.105%

(iv) On July 8, 2005, NYISO entered into two financing agreements to purchase and renovate a 140,000-square foot office building in Rensselaer, NY. The first agreement is a $14.7 million mortgage to finance the building purchase (Mortgage), and the second agreement represents a $10.0 million line of credit for renovations during an 18-month period, beginning in July 2005 (Renovations Loan). Both agreements are secured by liens on the building and subsequent capitalized renovations. Interest on borrowings under both facilities is due monthly and is based on varying rates of interest tied to LIBOR plus 100 basis points.

Effective November 1, 2021, NYISO refinanced these two financing agreements. The first refinanced agreement is a $4.0 million mortgage for the building purchase (Mortgage), and the second agreement represents a $3.9 million loan for renovations (Renovations Loan). The liens related to the original agreements were released upon refinancing. Interest on borrowings under both facilities is due monthly and is based on varying rates of interest tied to LIBOR plus 67.5 basis points.

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As of December 31, 2021 and 2020, the loan details on the Mortgage and Renovation Loans consisted of the following:

Refinanced Loan		Mortgage	Renovation
Draw amount	$	4,027,498	3,871,294
Converted to term loan		November 2021	November 2021
Term period		3 Years 9 Months	5 Years 2 Months
Maturity date		8/1/2025	1/1/2027
As of December 31, 2021			
Outstanding balance at fixed interest rate	$	3,871,094	3,766,333
Fixed interest rate		5.465%	5.635%
As of December 31, 2020			
Outstanding balance at fixed interest rate	$	—	—
Fixed interest rate		N/A	N/A

Original Loan		Mortgage	Renovation
Draw amount	$	14,708,750	10,000,000
Converted to term loan		September 2005	January 2007
Term period		20 Years	20 Years
Maturity date		7/1/2025	12/1/2026
As of December 31, 2021			
Outstanding balance at fixed interest rate	$	—	—
Fixed interest rate		N/A	N/A
As of December 31, 2020			
Outstanding balance at fixed interest rate	$	4,790,392	4,381,259
Fixed interest rate		5.790%	5.960%

(v) On July 18, 2012, NYISO entered into the 2012 Infrastructure Loan to renovate its facilities in Guilderland, NY and to perform construction at its facility in Rensselaer, NY. The agreement permitted borrowings of up to $45.0 million through July 18, 2014, at which point the full $45.0 million was converted to a term loan. The NYISO is required to make interest only payments for up to 24 months, followed by 17 years of principal and interest payments. Interest on borrowings under the 2012 Infrastructure Loan is due monthly and is based on varying rates of interest tied to LIBOR plus 225 basis points.

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As of December 31, 2021 and 2020, the loan details on the 2012 Infrastructure Loan consisted of the following:

	December 31 2021	December 31 2020
Outstanding balance at fixed interest rate	$ 22,549,020	24,901,961
Fixed interest rate	4.149%	4.149%
Outstanding balance at variable interest rate	2,696,701	3,104,887
Variable interest rate	2.349%	2.405%

At December 31, 2021, scheduled maturities of NYISO's long-term debt was as follows:

	2019–2023 Budget facility loan	Mortgage	Renovations	2012 Infrastructure loan	Total
2022	$ 18,333,333	974,739	653,131	2,646,316	22,607,519
2023	18,200,001	1,033,526	693,710	2,646,316	22,573,553
2024	9,466,666	1,095,574	736,412	2,646,316	13,944,968
2025	—	767,255	782,563	2,646,316	4,196,134
2026	—	—	831,183	2,646,316	3,477,499
Thereafter	—	—	69,334	12,014,141	12,083,475
	$ 46,000,000	3,871,094	3,766,333	25,245,721	78,883,148

On March 5, 2021, the Financial Conduct Authority ("FCA"), the regulatory supervisor of USD LIBOR's administrator ("IBA"), announced the future cessation or loss of representativeness of overnight/Spot Next, 1-month, 3-month, 6-month and 12-month USD LIBOR tenor settings. This is set to occur on the earliest of (i) July 1, 2023, (ii) the date that all Available Tenors of USD LIBOR have either permanently or indefinitely ceased to be provided by IBA or have been announced by the FCA pursuant to public statement or publication of information to be no longer representative and (iii) the Early Opt-in Effective Date.

(7) Derivatives and Hedging Activities

NYISO's derivative instruments are economic hedges used to manage its exposure related to changes in interest rates related to long-term debt. By using derivative instruments to hedge exposure to changes in interest rates, NYISO is exposed to credit and market risk. Credit risk is the failure of the counterparty to perform under the terms of the derivative contract. When the fair value of a derivative contract is positive, the counterparty owes the NYISO, which creates credit risk. When the fair value is negative, the NYISO owes the counterparty and, therefore, the NYISO is not exposed to the counterparty's credit risk in those circumstances. NYISO minimizes counterparty credit risk in derivative instruments by entering into

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transactions with high-quality counterparties. Market risk is the adverse effect on the value of a derivative instrument that results from a change in interest rates.

A summary of the derivative instruments notional amount, fair value, and gain (loss) are represented in the following table:

Loan		Swap Notional amount at inception	Swap Notional amount at December 31, 2021	Swap Fair Value at December 31, 2020	Swap Fair Value at December 31, 2021		2021 Gain (loss) on fair value
2019-2023 Budget Facility (v)	$	115,000,000	46,000,000	(3,574,796)	(1,746,718)		1,828,078
2012 Infrastructure Loan (ii)		40,000,000	22,549,020	(1,774,674)	(715,381)		1,059,293
Renovations (i)		3,871,294	3,766,333	(660,037)	(419,995)		240,042
Mortgage (i)		4,027,498	3,871,094	(533,064)	(313,042)		220,022
2014-2018 Budget Facility (iii)		100,000,000	—	(49,404)	—		49,404
EMS/BMS Facility Loan (iv)		15,000,000	—	(11,074)	—		11,074
Total						$	3,407,913

(i) In February 2005, NYISO entered into two interest rate swap agreements with a commercial bank to fix interest rate payments on the financing of a new office building purchase. The notional amount of debt on the swap agreement for the Mortgage was $14,708,750. NYISO pays a fixed interest rate of 5.79% on the outstanding principal amount of this financing on payments from August 2005 through August 2025.

The notional amount of debt on the swap agreement for the Renovations Loan was $10,000,000, and NYISO pays a fixed interest rate of 5.96% on payments from January 2007 through January 2027. As of December 31, 2020, the fair value of these interest rate swap agreements were $(533,064) for the Mortgage and $(660,037) for the Renovations Loan, recorded in Other Noncurrent Liabilities. For the year ended December 31, 2020, NYISO recorded a fair value loss of $49,378 related to these two swap agreements.

In 2021, the NYISO refinanced the Mortgage and Renovation loans. The notional amount of debt on the swap agreement for the Mortgage was $4,027,498. NYISO pays a fixed interest rate of 5.79% on the outstanding principal amount of this financing on payments from November 2021 through August 2025. The notional amount of debt on the swap agreement for the Renovations Loan was $3,871,294, and NYISO pays a fixed interest rate of 5.96% on payments from November 2021 through January 2027. As of December 31, 2021, the fair value of these interest rate swap agreements was $(313,042) for the Mortgage and $(419,995) for the Renovations Loan, recorded in Other Noncurrent Liabilities. For the year ended December 31, 2021, NYISO recorded a fair value gain of $(460,064) related to these two swap agreements.

(ii) In July 2012, NYISO entered into an interest rate swap agreement with a commercial bank to fix interest rate payments on the 2012 Infrastructure Loan. The notional amount of debt on the swap

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agreements was $40,000,000. NYISO pays a fixed interest rate of 4.149% through July 2031. As of December 31, 2021 and 2020, the fair value of this interest rate swap agreement was $(715,381) and $(1,774,674), respectively, recorded in Other Noncurrent Liabilities. For the years ended December 31, 2021 and 2020, NYISO recorded a fair value (gain) loss of $(1,059,293) and $1,455,607, respectively, related to this swap agreement.

(iii) In October 2013, NYISO entered into four interest rate swap agreements with a commercial bank to fix interest rate payments on the 2014–2017 Budget Facility. The notional amount of the debt on the swap agreements was $80,000,000. In May 2016, NYISO entered into a fifth interest rate swap agreement with a commercial bank to fix interest rate payments on the 2014–2018 Budget Facility. The notional amount of the debt on the swap agreement was $20,000,000. NYISO paid fixed interest rates ranging from 1.780% to 4.076% through December 2021 on the swap agreements. As of December 31, 2021 the swap had ended. As of December 31, 2020, the fair value of the interest rate swap agreements was $(49,404), recorded in Other Current Liabilities. For the years ended December 31, 2021 and 2020, NYISO recorded a fair value (gain) loss of $(49,404) and $94,823, respectively, related to these swap agreements.

(iv) In October 2016, NYISO entered into an interest rate swap agreement with a commercial bank to fix interest rate payments on the EMS/BMS Facility loan. The notional amount of the debt on the swap agreement was $15,000,000. NYISO paid a fixed interest rate of 2.07% through December 2021. As of December 31, 2021 the swap ended. As of December 31, 2020, the fair value of this interest rate swap agreement was $(11,074), recorded in Other Current Liabilities. For the years ended December 31, 2021 and 2020, NYISO recorded a fair value (gain) loss of $(11,074) and $38,016, respectively, related to this swap agreement.

(v) In April 2019, NYISO entered into an interest rate swap agreement with a commercial bank to fix interest rate payments on the 2019 -2023 Budget Facility loan. The notional amount of the debt on the swap agreement was $115.0 million. NYISO pays a fixed interest rates of 2.9% through December 2026. As of December 31, 2021 and 2020, the fair value of this interest rate swap agreement was $(1,746,718) and $(3,574,796), respectively, recorded in Other Noncurrent Liabilities. For the years ended December 31, 2021 and 2020 NYISO recorded a fair value (gain) loss of $(1,828,078) and $2,321,877, respectively, related to this swap agreement.

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The following table presents the carrying amounts and estimated fair values of NYISO's interest rate swaps at December 31, 2021 and 2020:

		2021		2020	
		Carrying amount	Fair value	Carrying amount	Fair value
Financial assets:					
Interest rate swaps	$	—	—	—	—
Financial liabilities:					
Interest rate swaps		3,195,136	3,195,136	6,603,049	6,603,049

(8) Employee Benefit Plans

(a) Defined Benefit Pension and Postretirement Plans

NYISO has a defined benefit pension plan covering certain employees upon their retirement. Plan benefits are based on employee compensation levels and years of service, including service for certain employees previously employed by NYPP member companies. There were $0 and $800,000 in NYISO cash contributions made during 2021 and 2020, respectively, to the defined benefit pension plan. Effective December 1, 2009, NYISO adopted changes to its pension plan to end the accrual of future benefits for most employees and replaced this benefit with equivalent contributions to employee 401(k) plan accounts after December 1, 2009.

NYISO sponsors a defined benefit postretirement plan to provide medical benefits for eligible retirees and their dependents. NYISO employees who retire on or after age 55 become eligible for these benefits provided they have been credited with at least ten years of NYISO service (5 years of NYISO service for those employees hired before January 1, 2005). The benefits are contributory based upon years of service, with NYISO paying up to 50% of costs for retired employees and up to 25% for their dependents (subject to specified dollar limits). Medical coverage becomes secondary upon Medicare eligibility.

Pursuant to resolutions adopted by NYISO's Board of Directors, NYISO's Retirement Board is responsible for administration of NYISO's pension and postretirement plans, including recommending investment policy to the Board of Directors, and monitoring investment performance. The Retirement Board reports to NYISO's Board of Directors and currently consists of NYISO's Chief Financial Officer, Director of Human Resources, General Counsel, Controller and Assistant Treasurer and one Nonexecutive employee. The Retirement Board provides reports to the Commerce and Compensation Committee of the Board of Directors on at least an annual basis.

NYISO records the overfunded or underfunded position of a defined benefit pension and postretirement plan as an asset or liability, with any unrecognized prior service costs, transition obligations, or gains/losses reported as recoverable under FASB ASC Topic 980 and recorded as a regulatory asset or liability.

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For payment of benefits under the postretirement plan, as noted above, the NYISO established a Voluntary Employee Benefit Association (VEBA) trust in January 2010. The assets held in the VEBA trust reduce the accumulated postretirement benefit obligation as reported on the NYISO's Statements of Financial Position. The VEBA trust held assets of $6,947,551 and $6,163,838 as of December 31, 2021 and 2020, respectively. As noted in the following table, current obligations are assumed to be paid out of the trust assets, with the remaining unfunded obligation to be reflected as a noncurrent liability.

The schedules that follow show the benefit obligations, the plan assets, and the funded status as of December 31, 2021 and 2020, and the change in benefit obligations for NYISO's pension and postretirement plans for the years ended December 31, 2021 and 2020.

		Pension Plan		Postretirement Plan	
		2021	2020	2021	2020
Change in benefit obligation:					
Benefit obligation - beginning of year	$	33,241,538	32,422,456	14,235,127	13,128,888
Service cost		—	—	847,431	750,026
Interest cost		662,838	757,482	332,311	382,511
Actuarial (gain)/loss		(1,293,505)	2,393,484	(1,468,671)	321,041
Participant contributions		—	—	250,484	164,439
Settlements		(872,867)	(1,436,272)	—	—
Benefits paid		(942,915)	(895,612)	(339,295)	(511,778)
Benefit obligation - end of year		30,795,089	33,241,538	13,857,387	14,235,127
Change in plan assets:					
Fair value of plan assets - beginning of year		26,041,730	25,834,320	6,163,838	5,868,289
Actual return on plan assets		1,058,723	1,881,281	886,812	666,398
Employer contributions		—	800,000	—	—
Participant contributions		—	—	250,484	164,439
Settlements		(872,867)	(1,436,272)	—	—
Benefits paid		(942,915)	(895,612)	(339,295)	(511,778)
Expenses paid		(177,284)	(141,987)	(14,288)	(23,510)
Fair value of plan - assets - end of year		25,107,387	26,041,730	6,947,551	6,163,838
Funded Status	$	(5,687,702)	(7,199,808)	(6,909,836)	(8,071,289)

The NYISO has determined that the pension and post retirement net actuarial (gain) loss is probable of recovery through the Tariff and has recorded a regulatory asset related to the pension plan and a regulatory liability related to the postretirement plan as of December 31, 2021 and 2020 in the accompanying Statements of Financial Position.

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Notes to Financial Statements

December 31, 2021 and 2020

Amounts recognized in the 2021 and 2020 Statements of Financial Position consist of the following:

		Pension Plan		Postretirement Plan	
		2021	2020	2021	2020
Net actuarial (gain)/loss recognized in regulatory assets (liabilities)	$	10,617,703	12,340,587	(3,607,850)	(1,747,950)
Projected benefit obligation		(30,795,089)	(33,241,538)	(13,857,387)	(14,235,127)
Accumulated benefit obligation		(30,795,089)	(33,241,538)	—	—
Fair value of assets		25,107,387	26,041,730	6,947,551	6,163,838
Unfunded projected benefit obligation	$	(5,687,702)	(7,199,808)	(6,909,836)	(8,071,289)

Net periodic pension expense and postretirement benefit costs include the following components:

		Pension Plan		Postretirement Plan	
		2021	2020	2021	2020
Service cost	$	—	—	847,431	750,026
Interest cost		662,838	757,482	332,311	382,511
Expected return on plan asset		(1,054,246)	(947,153)	(385,332)	(295,065)
Amortization of unrecognized (gain)/loss		306,268	310,155	(95,963)	(180,486)
Amortization of unrecognized prior service cost		—	672	—	—
Realized (gain)/loss due to settlements		295,918	550,040	—	—
Total	$	210,778	671,196	698,447	656,986

NYISO uses a December 31 measurement date for its pension and postretirement benefit plans.

During 2021 and 2020, the sum of all lump-sum pension benefits paid during the year exceeded the sum of the service and interest cost components of the Pension Plan net periodic benefit cost for the year, resulting in the recognition of a net settlement loss of $295,918 and $550,040 in 2021 and 2020, respectively.

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Notes to Financial Statements

December 31, 2021 and 2020

The following table as of December 31, 2021 and 2020 shows the assumptions used to calculate the pension and postretirement benefit obligations and net periodic cost or credit:

	Pension Plan		Postretirement Plan	
	2021	2020	2021	2020
Benefit obligations:				
Discount rate	2.50%	2.00%	2.90%	2.50%
Net periodic cost or credit:				
Discount rate	2.00%	2.95%	2.50%	3.35%
Expected return on plan assets	4.55%	4.30%	6.38%	5.15%

NYISO measured benefit obligations using the Pri-2012 mortality tables and MP-2021 mortality improvement scale in selecting mortality assumptions as of December 31, 2021.

In 2021, the NYISO adopted the provisions of the American Rescue Plan Act of 2021 by electing to (i) implement the 15-year amortization provisions of the Act in plan year 2019, and (ii) adopt the new stabilized segment rates in the Act effective with the 2020 plan year. The result of the election is the plan's funding balance was increased from $1,198,839 to $1,601,054.

In 2021, the assumed postretirement plan healthcare cost trend rates for participants pre-65 are 7.25% for 2022 to 2023 decreasing to 4.5% in 2033, and the participants post-65 are 5.5% going from 2022 to 2023 decreasing to 4.5% in 2026. In 2020, the assumed postretirement plan healthcare cost trend rates for participants pre-65 were 6.5% for 2021 to 2022 decreasing to 4.5% in 2029, and the participants post-65 were 5.75% going from 2021 to 2022 decreasing to 4.5% in 2026.

The following is a gain/loss transaction reflected in the measurement of the benefit obligation for the pension plan, as of December 31, 2021:

- The discount rate changed from 2.00% to 2.50%. This change had the impact of decreasing the projected benefit obligation by approximately $1.4 million.

The following are gains/loss transactions reflected in the measurement of the benefit obligation for the post retirement plan, as of December 31, 2021:

- The discount rate changed from 2.50% to 2.90%. This change had the impact of decreasing benefit obligations by approximately $1.0 million.
- Per capita costs reflect the new plan rates in 2021. Among these changes is a move to a single post-65 plan. This change decreased the benefit obligation by approximately $1.0 million.

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The following benefit payments, which reflect expected future service, are expected to be paid:

		Pension plan	Postretirement plan
2022	$	2,601,989	324,818
2023		3,173,083	369,736
2024		2,721,925	433,551
2025		2,340,489	523,831
2026-2030		11,665,482	4,878,314

NYISO's expected rate of return on plan assets reflects anticipated returns on the pension and postretirement plans' current and future assets. To determine this rate, NYISO considers historical returns for equity and debt securities, as well as current capital market conditions and projected future conditions. The long-term investment objective for NYISO's pension plan is to maximize the total return on plan assets while limiting risk, reflected in volatility of returns, to prudent levels. To that end, NYISO's Retirement Board has appointed and regularly meets with an investment advisor to review asset performance, compliance with target asset allocation guidelines, and appropriate levels of asset diversification. NYISO's investment advisor operates under written guidelines provided by NYISO, which cover such areas as investment objectives, performance measurement, permissible investments, investment restrictions, and communication and reporting requirements.

NYISO's pension and postretirement plan investments are composed of common stocks, mutual funds and commingled trust funds that are redeemable at net asset value (NAV) on a daily basis. Redemption of such investments generally requires 1 to 2 days' notice prior to redemption.

The targeted allocation and actual investment mix of the pension plan's assets are as follows at December 31:

	2021		2020	
Asset category	Target	Actual	Target	Actual
Fixed income	70%	70%	70%	65%
International and emerging equities	15	14	15	18
Large cap equities	8	8	8	9
Mid cap equities	5	6	5	5
Small cap equities	2	2	2	3
	100%	100%	100%	100%

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Notes to Financial Statements

December 31, 2021 and 2020

The actual rate of return for the pension plan's assets as of December 31, 2021 and 2020 is as follows:

Asset category	Annual returns December 31 2021	2020
Small cap equities	29.9 %	3.4 %
Large cap equities	29.4	18.4
Mid cap equities	23.9	17.9
International and emerging equities	0.7	58.6
Fixed income	(0.7)	3.3
Total portfolio weighted average	3.6 %	15.8 %

The fair values of the pension plan assets at December 31, 2021 and 2020 are presented below:

		2021 Fair value			
		Level 1	Level 2	Level 3	Total
Domestic investments:					
Equities:					
Small cap	$	618,945	—	—	618,945
Mid cap		1,146,301	—	—	1,146,301
Large cap		2,083,323	—	—	2,083,323
Total		3,848,569	—	—	3,848,569
Fixed income		—	17,691,303	—	17,691,303
Total		—	17,691,303	—	17,691,303
International and emerging equities		3,606,768	—	—	3,606,768
Total		3,606,768	—	—	3,606,768
Cash and cash equivalents		(39,253)	—	—	(39,253)
	$	7,416,084	17,691,303	—	25,107,387

NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Notes to Financial Statements

December 31, 2021 and 2020

	2020 Fair value			
	Level 1	Level 2	Level 3	Total
Domestic investments:				
Equities:				
Small cap	$ 676,153	—	—	676,153
Mid cap	1,272,434	—	—	1,272,434
Large cap	2,257,764	—	—	2,257,764
Total	4,206,351	—	—	4,206,351
Fixed income	—	17,042,699	—	17,042,699
Total	—	17,042,699	—	17,042,699
International and emerging equities	4,823,400	—	—	4,823,400
Total	4,823,400	—	—	4,823,400
Cash and cash equivalents	(30,721)	—	—	(30,721)
	$ 8,999,030	17,042,699	—	26,041,729

The targeted allocation and actual investment mix of the VEBA Trust (postretirement) plan's assets are as follows at December 31:

	2021		2020	
	Target	Actual	Target	Actual
Domestic equities	50%	51%	50%	56%
Fixed income	35	35	35	30
International and emerging equities	15	14	15	14
	100%	100%	100%	100%

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The actual rate of return for the VEBA Trust (postretirement) plan's assets as of December 31, 2021 and 2020 is as follows:

Asset category	Annual returns December 31 2021	2020
Domestic equities	27.1 %	13.7 %
International and emerging equities	5.5	75.8
Fixed income	(1.1)	8.7
Total portfolio weighted average	10.9 %	20.9 %

The fair values of VEBA Trust (postretirement) plan's assets at December 31, 2021 and 2020 are presented below:

	2021 Fair value			
	Level 1	Level 2	Level 3	Total
Domestic equities	$ 3,543,695	—	—	3,543,695
Fixed income	2,299,491	—	—	2,299,491
International and emerging equities	1,005,824	—	—	1,005,824
Total	6,849,010	—	—	6,849,010
Cash and cash equivalents	98,541	—	—	98,541
	$ 6,947,551	—	—	6,947,551

	2020 Fair value			
	Level 1	Level 2	Level 3	Total
Domestic equities	$ 1,020,376	—	—	1,020,376
Fixed income	1,828,435	—	—	1,828,435
International and emerging equities	3,255,070	—	—	3,255,070
Total	6,103,881	—	—	6,103,881
Cash and cash equivalents	53,696	—	—	53,696
	$ 6,157,577	—	—	6,157,577

(b) 401(k) Plan

NYISO has a 401(k) Retirement and Savings Plan open to all non-temporary employees. This plan provides for employee contributions up to specified limits. NYISO matches 100% of the first 3% of employee contributions, and 50% of the next 2% of employee contributions. Beginning December 1, 2009, NYISO also contributes funds to employee 401(k) plan accounts equivalent to defined benefit accruals formerly earned in the pension plan.

Employees are immediately vested in NYISO's matching contributions and become vested in other employer contributions after three years of credited service. The total NYISO contributions to the 401(k) plan were $6,899,082 and $7,180,034 for 2021 and 2020, respectively.

(c) Long-Term Incentive Plan

NYISO's Long Term Incentive Plan provides certain members of senior management with deferred compensation benefits. Benefits are based upon the achievement of three-year performance goals established by the Board of Directors, with participants becoming fully vested and distributions payable for these deferred amounts after the completion of the audited financial statements for the third year. Benefits are paid out in equal installments over three years following the end of the three-year cycle. Accrued Long Term Incentive Plan benefits included in Other Noncurrent Liabilities at December 31, 2021 and 2020 were $5,034,420 and $4,066,567, respectively. The short-term portion of such liability, included in Other Current Liabilities, at December 31, 2021 and 2020, was $3,136,302 and $1,649,619, respectively.

(d) 457(b) Plan – Eligible Deferred Compensation Plan

NYISO's 457(b) Plan provides for certain members of senior management to defer a portion of their current compensation and have it credited under a supplemental unfunded savings program. This Plan is intended to satisfy the requirements of an eligible deferred compensation plan maintained by NYISO as a nongovernment tax-exempt entity under Code section 457(1)(B). Plan participants have the ability to invest these funds in the same investments offered by the NYISO 401(k) plan at their discretion. The investment balance at December 31, 2021 and 2020 was $3,090,453 and $2,454,069, respectively, recorded as marketable securities, and the corresponding deferred compensation liability is recorded in Accounts Payable and Accrued Expenses in the accompanying Statements of Financial Position.

(9) Other Commitments and Contingencies

On July 8, 2005, NYISO purchased an office building to relocate NYISO's alternate control center and to consolidate employees located in leased facilities. In connection with the purchase, management entered into a Payment in Lieu of Taxes (PILOT) Agreement with the Rensselaer County Industrial Development Agency (RCIDA) to achieve certain benefits. Under the terms of this agreement, NYISO was required to make annual payments of approximately $195,000 for the first 10 years. Effective January 1, 2016, this PILOT Agreement was amended to add three additional parcels of land purchased in 2014 and 2015, and to extend the term of the PILOT an additional 10 years. Under the terms of the amendment, NYISO is required to make annual payments of approximately $309,000, over the next 4 years through 2025. The agreement is cancelable at the discretion of NYISO.

NYISO is routinely involved in regulatory actions. In the opinion of management, none of these matters will have a material adverse effect on the financial position, results of operations, or liquidity of NYISO.

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Notes to Financial Statements

December 31, 2021 and 2020

(10) Deferred Revenue

Deferred revenue at December 31, 2021 and 2020 consisted of the following:

		2021	2020
Advance payments received on planning studies	$	41,533,816	26,225,569
Governance participation fees and other		488,983	442,237
Total	$	42,022,799	26,667,806

(11) Liquidity and Working Capital Reserve

At December 31, 2021 and 2020, financial assets and liquidity resources available within one year for general expenditures, including operating expenses, scheduled principal payments on borrowings, and capital expenditures not financed with debt, include the cash and cash equivalents, accounts receivable and a revolving line of credit.

NYISO's cash flows have variations during the year attributable to fluctuation in Rate Schedule 1 recoveries. To manage liquidity, NYISO operates with a balanced budget on a cash flow basis in accordance with policies approved by the Board of Directors. In addition to the liquidity resources stated above, NYISO also has a Working Capital Reserve available to offset temporary imbalances in cash flows and to ensure liquidity and stability of the markets administered by the NYISO.

At December 31, 2021 and 2020, the working capital reserve consisted of the following:

		2021	2020
Market participant contributions through Rate Schedule 1	$	33,000,000	33,000,000
Interest on market participant contributions		34,551	256,332
Total	$	33,034,551	33,256,332

(12) Functional Classification of Expenses

NYISO's primary mission is serve the public interest and provide benefits to consumers by maintaining and enhancing regional reliability; operating open, fair, and competitive wholesale electric markets; planning the power system for the future; and providing factual information to policy makers, stakeholders, and investors in the power system. NYISO's departments are specifically designed to support these functions. Those departmental costs are deemed directly identifiable to program services as summarized in the tables below. Other departments that are solely for supporting NYISO, such as administrative and support, are categorized as management and general as summarized in the tables below. For any department that is providing both program services and management and general services, an analysis was performed to allocate the costs based on estimates of the time spent supporting program services or supporting management and general activities and are categorized accordingly.

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Operating expenses presented by both natural and functional classifications are as follows for the years ended December 31, 2021 and 2020:

		Year ended December 31, 2021		
		Program Services	Management & General	Total
Compensation and related benefits	$	55,544,707	38,714,050	94,258,757
Professional fees and consultants		23,118,564	1,039,373	24,157,937
Depreciation		25,249,731	—	25,249,731
Maintenance, software licenses and facility costs		20,799,598	2,024,516	22,824,114
Federal Energy Regulation Commission fees		15,361,866	—	15,361,866
Administrative and other expenses		3,140,982	7,104,313	10,245,295
Total	$	143,215,448	48,882,252	192,097,700

		Year ended December 31, 2020		
		Program Services	Management & General	Total
Compensation and related benefits	$	58,699,016	36,115,485	94,814,501
Professional fees and consultants		29,916,989	1,049,082	30,966,071
Depreciation		22,829,018	—	22,829,018
Maintenance, software licenses and facility costs		19,966,360	1,942,252	21,908,612
Federal Energy Regulation Commission fees		13,946,886	—	13,946,886
Administrative and other expenses		11,022,524	7,168,207	18,190,731
Total	$	156,380,793	46,275,026	202,655,819

(13) Subsequent Events

NYISO considers events and transactions that occur after the balance sheet date, but before the financial statements are issued, to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure.

Effective January 31, 2022, the NYISO refinanced the 2012 Infrastructure Loan, modifying the interest rate spread from 225 basis points to 175 basis points.

These financial statements were available to be issued on March 15, 2022 and subsequent events have been evaluated through that date.