LONG ISLAND POWER AUTHORITY

(A Component Unit of the State of New York)

Consolidated Financial Statements
and Required Supplementary Information

December 31, 2018 and 2017

(With Independent Auditors' Report Thereon)

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Consolidated Financial Statements

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KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Auditors' Report

To the Board of Trustees
Long Island Power Authority:

Report on the Financial Statements

We have audited the accompanying consolidated financial statements of the business-type activities and fiduciary funds of the Long Island Power Authority (the Authority) and its blended component unit, collectively component units of the State of New York, as of and for the years ended December 31, 2018 and 2017, and the related notes to the consolidated financial statements, which collectively comprise the Authority's consolidated financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with U.S. generally accepted accounting principles; this includes 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.

Auditors' Responsibility

Our responsibility is to express opinions on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to the financial audits contained in *Government Auditing Standard* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion on the Consolidated Financial Statement

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities and fiduciary funds of the Long Island Power Authority and its blended component as of December 31, 2018 and 2017, and the respective changes in their net position and, where applicable, their cash flows for the year then ended in accordance with U.S. generally accepted accounting principles.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the information in the Management's Discussion and Analysis on pages 3 through 20 and Required Supplementary Information on pages 93 through 95, be presented to supplement the consolidated financial statements. Such information, although not a part of the consolidated financial statements, is required by the *Governmental Accounting Standards* Board who considers it to be an essential part of financial reporting for placing the consolidated financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the consolidated financial statements, and other knowledge we obtained during our audits of the consolidated financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated March 20, 2019 on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control over financial reporting and compliance.

KPMG LLP

New York, New York
March 20, 2019

Introduction

The Long Island Power Authority (the Authority) is a component unit of New York State (State). The Authority became the retail supplier of electric service in the Counties of Nassau and Suffolk (with certain limited exceptions) and a portion of Queens County known as the Rockaways (Service Area), on May 28, 1998 by acquiring the transmission and distribution (T&D) system of the Long Island Lighting Company (LILCO) as a wholly owned subsidiary of the Authority. As part of the acquisition, the Authority also acquired an undivided 18% interest in the Nine Mile Point Unit 2 (NMP2) generating facility, located in upstate New York, which is operated and managed by Exelon Corporation.

Since the acquisition, the Authority has conducted business through its wholly owned subsidiary, LILCO, under the names LIPA and Power Supply Long Island, referred to collectively as the Authority. The Authority provides electric delivery service in the Service Area, which includes approximately 1.1 million customers. The population of the Service Area is approximately 2.9 million.

The Authority has operating agreements to provide the majority of services necessary to provide electric service in the Service Area. The primary operating agreement is the Amended and Restated Operations Services Agreement (OSA) with PSEG Long Island LLC, (PSEG Long Island).

PSEG Long Island commenced operating the Authority's electric T&D system on January 1, 2014 under the PSEG Long Island brand name and provides day-to-day T&D system operating functions as well as certain administrative support functions to LIPA. PSEG Long Island acts as LIPA's agent in performing many of LIPA's obligations and in return receives (a) reimbursement for pass-through operating expenditures, (b) a fixed management fee and (c) an incentive fee contingent on meeting certain performance metrics.

The Authority also has a contract with PSEG Energy Resources and Trade LLC (PSEG ER&T) to provide services related to fuel and power supply management and certain commodity activities. Separately from its contract with PSEG ER&T, the Authority maintains power purchase agreements with various third-party power generators.

The Authority's Board of Trustees (Board) approves the Authority's annual consolidated budget, expenditures and the electric rates. The LIPA Reform Act, codified as Chapter 173, Laws of New York, (Reform Act) established a rate review process that required the Authority and PSEG Long Island to submit for review to the New York State Department of Public Service (DPS) a three-year rate proposal for electric rates for the 2016-2018 period. After the 2016-2018 period, the Authority and PSEG Long Island are only required to submit a proposed rate increase for DPS review and recommendation if it would increase the rates and charges by an amount that would increase the Authority's annual revenues by more than 2.5%. The DPS is required to review and make its recommendations to the Authority's Board within 240 days of such filing. The Authority's Board retains final rate-setting power.

The Reform Act created the Securitization Law that established the Utility Debt Securitization Authority (UDSA). The Securitization Law's purpose was to provide a legislative foundation for the UDSA's issuance of restructuring bonds to allow the Authority to retire a portion of its outstanding indebtedness, providing savings to the Authority's customers on a net present value basis. The restructuring bonds are repaid by an irrevocable, non-bypassable restructuring charge on all the Authority's customers. The UDSA has a governing body separate from that of the Authority and has no commercial operations.

The Securitization Law allowed the UDSA to issue restructuring bonds totaling approximately $4.5 billion, the proceeds of which refunded Authority bonds and generated total net present value debt service savings of $492 million for the Authority's customers.

Overview of the Consolidated Financial Statements

The Authority is engaged in business type activities and follows financial reporting for enterprise funds. The Authority's financial statements are prepared on an accrual basis in accordance with generally accepted accounting principles (GAAP) as prescribed by the Governmental Accounting Standards Board (GASB).

The management's discussion and analysis of the Authority's financial performance provides an overview of the Authority's financial information for the years ended December 31, 2018 and 2017. The discussion and analysis should be read in conjunction with the Consolidated Financial Statements and the accompanying notes, which follow this section. The notes are an integral part of the Authority's Consolidated Financial Statements and provide additional information on certain components of these statements.

(Amounts in thousands, unless otherwise stated)

The Authority's Consolidated Statements of Net Position as of December 31, 2018, 2017 and 2016 are summarized below:

	2018	2017	2016
Assets and deferred outflows of resources:			
Capital assets	$ 8,383,338	8,088,014	7,768,551
Current assets	2,101,253	1,922,648	1,888,172
Regulatory assets	1,090,570	1,329,148	1,299,251
Other noncurrent assets	1,235,843	1,542,921	1,858,009
Deferred outflows of resources	247,313	275,026	286,779
Total assets and deferred outflows of resources	13,058,317	13,157,757	13,100,762
Liabilities and deferred inflows of resources:			
Long-term debt	8,233,016	7,978,731	7,756,751
Current liabilities	1,080,086	1,266,128	1,345,039
Regulatory liabilities	61,556	14,910	12,100
Other noncurrent liabilities	2,668,763	2,884,844	3,013,915
Deferred inflows of resources	520,046	540,956	517,891
Total liabilities and deferred inflows of resources	12,563,467	12,685,569	12,645,696
Total net position	494,850	472,188	455,066
Total liabilities, deferred inflows of resources and net position	$ 13,058,317	13,157,757	13,100,762

Assets and Deferred Outflows of Resources

2018 Compared to 2017

Assets and deferred outflows of resources decreased $99 million compared to 2017 due to decreases of $238 million in regulatory assets, $307 million in noncurrent assets, and $28 million in deferred outflows of resources. These decreases were partially offset by increases of $295 million in capital assets and $179 million in current assets.

Capital assets increased $295 million compared to 2017 primarily due to higher investment in reliability capital projects, as well as certain storm hardening projects. These capital additions were partially offset by asset retirements and annual depreciation expense.

Current assets increased $179 million compared to 2017 primarily due to increased investment account balances and increased accounts receivable resulting from higher revenues from a warmer than normal summer.

Regulatory assets decreased $238 million primarily due to a decrease of $139 million in the OSA–employee retirement benefits regulatory asset resulting from an updated actuarial study, the resolution of outstanding issues with the Authority's prior service provider allowing for a reduction to an existing regulatory asset of $42 million and scheduled annual recovery or amortizations of regulatory assets totaling $77 million. These decreases were partially offset by an increase in the Delivery Service Adjustment (DSA) of $20 million. For a full discussion of the regulatory assets and liabilities, see note 5 to the Authority's Consolidated Financial Statements.

Other noncurrent assets decreased $307 million primarily due to the $172 million decrease in restricted cash and cash equivalents due to expenditures for storm hardening capital projects and $111 million of scheduled amortization of the Acquisition Adjustment.

Deferred outflow of resources decreased $28 million primarily due to the improvement in the mark-to-market valuation of the Authority's effective commodity derivatives.

2017 Compared to 2016

Assets and deferred outflows of resources increased $57 million compared to 2016 due to increases of $320 million in capital assets, $34 million in current assets, and $30 million in regulatory assets, partially offset by decreases of $315 million in noncurrent assets, and $12 million in deferred outflows of resources.

Capital assets increased $320 million compared to 2016 primarily due to higher investment in reliability capital projects as well as certain storm hardening projects. These capital additions were partially offset by asset retirements and annual depreciation expense.

Current assets increased $34 million compared to 2016 primarily due to increased mark-to-market valuations on the Authority's investment accounts.

Regulatory assets increased $30 million primarily due to the increase of $48 million in the DSA and the Power Supply Charge (PSC), partially offset by the scheduled annual recovery or amortizations of regulatory assets totaling $18 million. For a full discussion of the regulatory assets and liabilities, see note 5 to the Authority's Consolidated Financial Statements.

Other noncurrent assets decreased $315 million primarily due to the $195 million decrease in restricted cash and cash equivalents due to expenditures for storm hardening capital projects funded by the Federal Emergency Management Agency (FEMA) and $111 million of scheduled amortization of the Acquisition Adjustment.

Deferred outflow of resources decreased $12 million primarily due to the change in the mark-to-market valuation of the Authority's effective commodity derivatives.

Liabilities and Deferred Inflows of Resources

2018 Compared to 2017

Liabilities and deferred inflows of resources decreased $122 million due to decreases of $186 million in current liabilities, $216 million in noncurrent liabilities, and $21 million in deferred inflows of resources. These decreases were partially offset by increases of $254 million in long-term debt and $47 million in regulatory liabilities.

Long-term debt increased $254 million. The Authority issued $430 million Electric System General Revenue Bonds Series 2018, which together with the $52 million of premium received on the bonds, funded capital projects. These increases were partially offset by the $192 million of current debt maturities classified as current liabilities.

Current liabilities decreased $186 million primarily due to the $126 million decrease in outstanding short-term debt with the remaining decrease due to lower accounts payable and various lower accruals.

Regulatory liabilities increased $47 million due to the Revenue Decoupling Mechanism whereby any revenue variances caused by warmer than normal weather is returned to the customers.

Other noncurrent liabilities decreased $216 million primarily due to the amortization of the capital lease obligations of approximately $141 million, a $22 million improvement in the deferred mark-to-market valuation on the Authority's interest derivatives, and a $62 million decrease in the PSEG Long Island's workforce retirement benefit obligations resulting from an updated actuarial valuation. These decreases were partially offset by the increase in miscellaneous reserves.

Deferred inflows of resources decreased $21 million primarily due to increased mark-to-market valuations on certain investment accounts.

2017 Compared to 2016

Liabilities and deferred inflows of resources increased $40 million due to an increase of $222 million in long-term debt, an increase of $3 million in regulatory liabilities, an increase of $23 million in deferred inflows of resources, partially offset by decreases of $78 million in current liabilities, and $130 million in noncurrent liabilities.

Long-term debt increased $222 million. This increase reflects $369 million of UDSA Restructuring Bonds, Series 2017, which together with $71 million of premium received on the bonds, allowed the Authority to retire approximately $400 million of its existing debt. The refunding generated total net present value debt service savings of $45 million. The Authority also issued $350 million Electric System General Revenue Bonds Series 2017, which together with the $56 million of premium received on the bonds, funded capital projects. These increases were partially offset by the $193 million of current debt maturities classified as current liabilities.

Current liabilities decreased $78 million primarily due to the $45 million decrease in outstanding short-term debt, lower current portion due for capital leases of $19 million, with the remaining decrease due to various lower accruals.

Other noncurrent liabilities decreased $130 million primarily due to the amortization of the capital lease obligations of approximately $177 million, a $21 million decrease in the deferred mark-to-market valuation on the Authority's interest derivatives, and a $25 million decrease in the Authority's other post-employment retirement benefit obligations resulting from the funding of a Section 115 trust. These decreases were partially offset by a $90 million increase in the PSEG Long Island's workforce retirement benefit obligations resulting from an updated actuarial valuation.

Deferred inflows of resources increased $23 million primarily due to increased mark-to-market valuations on certain investment accounts.

(Amounts in thousands, unless otherwise stated)

Results of Operations

The Authority's Consolidated Statements of Revenues, Expenses and Changes in Net position for the years ended December 31, 2018, 2017 and 2016 are summarized as follows:

	2018	2017	2016
Electric revenue	$ 3,576,274	3,481,613	3,399,101
Operating expenses	(3,301,305)	(3,214,117)	(3,163,353)
Interest expense	(352,383)	(336,071)	(349,809)
Total expenses	(3,653,688)	(3,550,188)	(3,513,162)
Revenue less operating and interest expenses	(77,414)	(68,575)	(114,061)
Grant income	43,238	42,058	43,929
Other income	56,838	43,639	43,699
Total other income	100,076	85,697	87,628
Change in net position	22,662	17,122	(26,433)
Net position, beginning of year	472,188	455,066	481,499
Net position, end of year	$ 494,850	472,188	455,066

Operating Revenues

2018 Compared to 2017

Electric operating revenues for 2018 totaled $3.58 billion, an increase of $95 million compared to 2017 due to an increase in base delivery rates totaling $48 million and higher power supply costs totaling $43 million. Other factors, such as the DSA deferral and other miscellaneous revenues, caused the remaining increase in revenues.

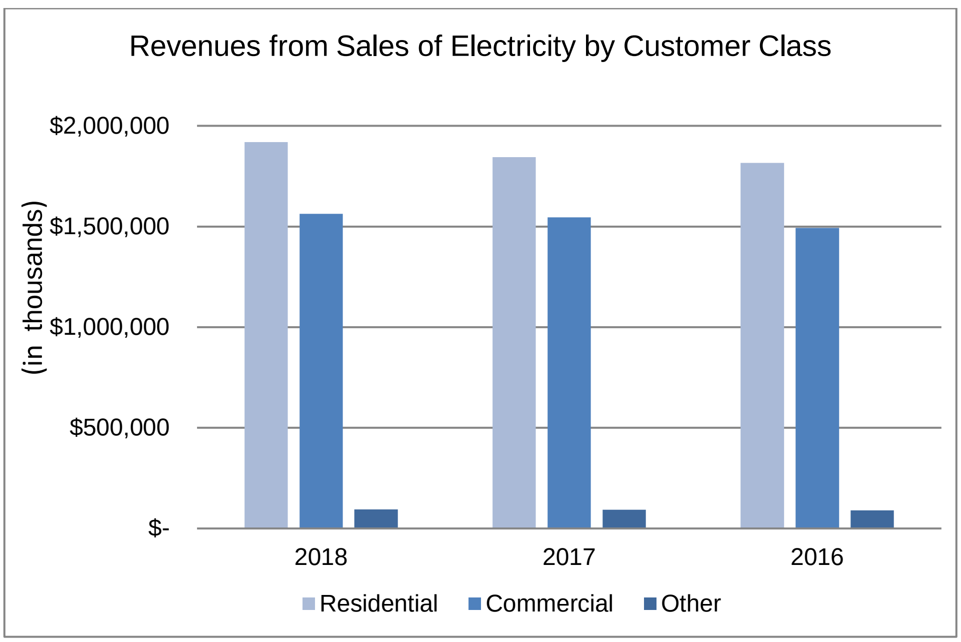
2017 Compared to 2016

Electric operating revenues for 2017 totaled $3.48 billion, an increase of $83 million compared to 2016 due to an increase in base delivery rates totaling $84 million, and higher power supply costs totaling $15 million partially offset by lower DSA deferrals totaling $18 million.

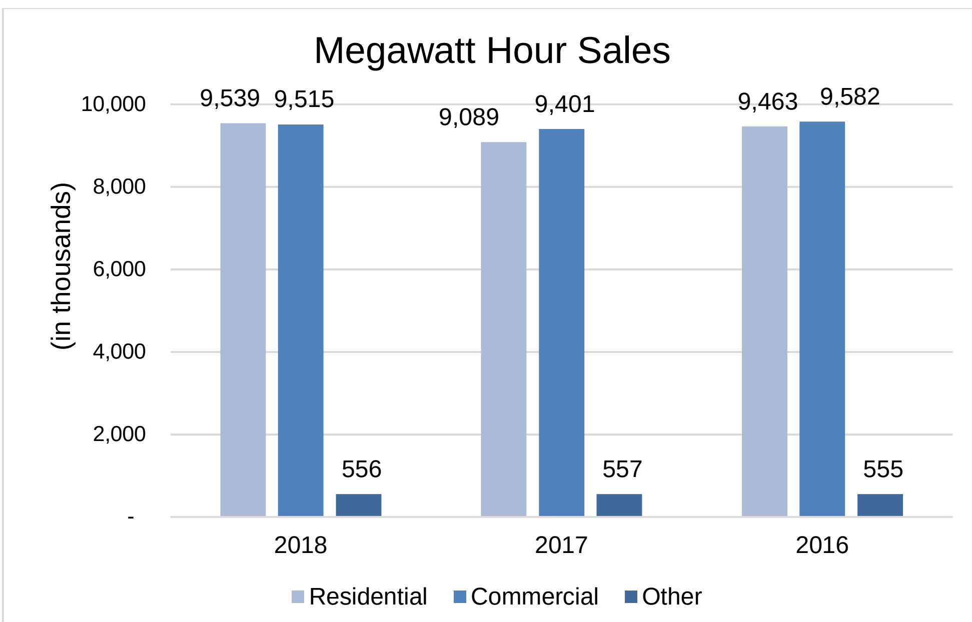
(Amounts in thousands, unless otherwise stated)

The following table and chart represent revenue for the years ended December 31, 2018, 2017 and 2016 by customer class (residential, commercial and other).

Revenues from sales of electricity		2018	2017	2016
Residential	$	1,919,126	1,843,735	1,815,921
Commercial		1,563,010	1,544,607	1,492,815
Other		94,138	93,271	90,365
Total	$	3,576,274	3,481,613	3,399,101



The following chart shows megawatt hour (MWh) sales for the years ended December 31, 2018, 2017 and 2016 by customer class (residential, commercial and other). The largest customer in the Service Area (the Long Island Rail Road) accounted for less than 2% of total sales and less than 2% of revenue, which is included in "Other" sales. In addition, the ten largest customers in the Service Area accounted for approximately 7% of total sales and less than 7% of revenue.

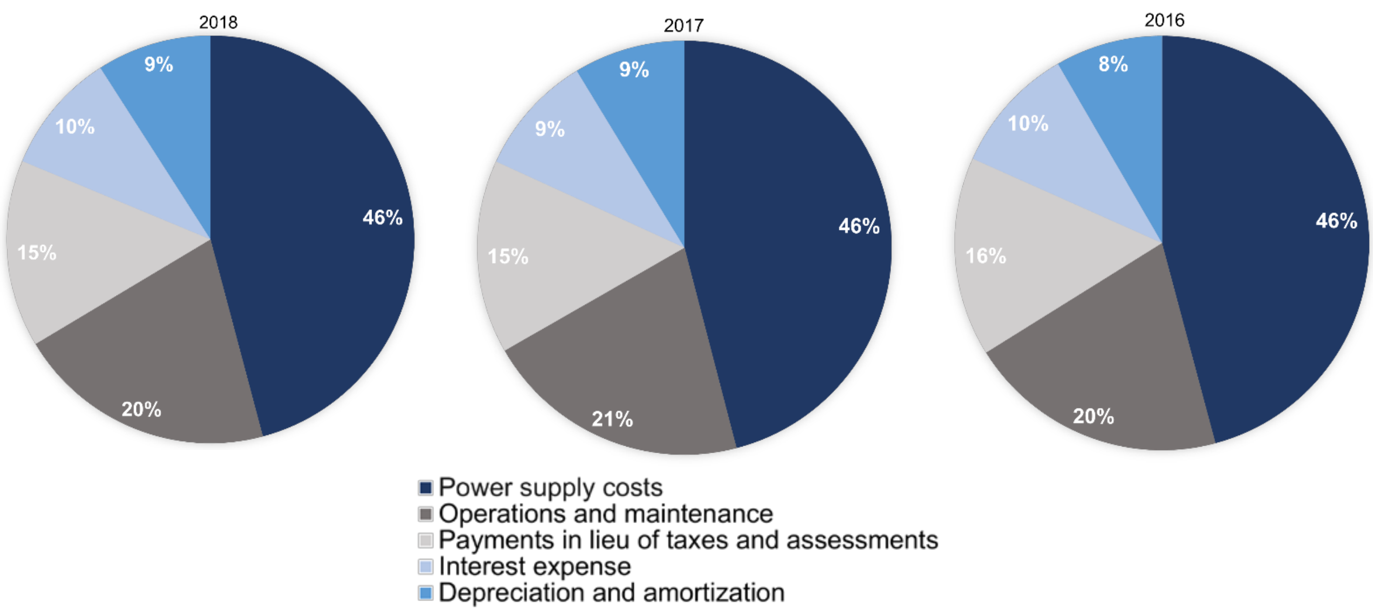


(Amounts in thousands, unless otherwise stated)

Operating and Interest Expenses

For the years ended December 31, 2018, 2017 and 2016, the Authority's expenses were comprised of (i) power supply costs; (ii) operations and maintenance expenses; (iii) payments in lieu of taxes, other taxes and assessments (including property taxes on generating assets under contract); (iv) interest expense; and (v) depreciation and amortization, as shown below:

Operating and Interest Expenses		2018	2017	2016
Power supply costs	$	1,675,640	1,631,475	1,610,604
Operations and maintenance		751,154	737,166	712,633
Payments in lieu of taxes and assessments		542,651	536,721	546,065
Interest expense		352,383	336,071	349,809
Depreciation and amortization		331,860	308,755	294,051
Total	$	3,653,688	3,550,188	3,513,162



2018 Compared to 2017

For the year ended December 31, 2018, operating and interest expenses totaled $3.65 billion, an increase of $103 million compared to 2017. The increase is primarily due to higher: (i) power supply costs of $44 million; (ii) operating and maintenance costs of $14 million primarily attributable to higher storm restoration costs; (iii) payments in lieu of taxes and assessments of $6 million; (iv) interest costs of $16 million; and (v) depreciation expense of $23 million.

2017 Compared to 2016

For the year ended December 31, 2017, operating and interest expenses totaled $3.55 billion, an increase of $37 million compared to 2016. The increase is primarily due to higher: (i) power supply costs of $21 million; (ii) operating and maintenance costs of $24 million; and (iii) depreciation expense of $15 million. Partially offsetting these increased costs were lower (i) payments in lieu of taxes and assessments of $9 million and (ii) interest costs of $14 million.

Capital Asset and Financing Activities

The Authority's 2019 budget projects expenditures of approximately $869 million for various capital improvements. The Authority anticipates a portion of these expenditures will be funded using long-term tax-exempt bonds. The Authority's Board established a financial policy that seeks to reduce the portion of the Authority's capital plan funded by debt to 64% or less and over five years raise the Authority's credit ratings to A2 by Moody's Investors Service (Moody's), A by Standard and Poor's Global Ratings (S&P), and A by Fitch Ratings (Fitch). The Authority's debt is currently rated A3 (Positive) by Moody's, A- (Positive) by S&P, and A- (Stable) by Fitch. The Authority cannot predict whether it will meet its credit rating objectives.

During 2018, the Authority had approximately $640 million in capital improvements which were partially funded with the issuance of $430 million of Electric System General Revenue Bonds, Series 2018. During 2017, the Authority had approximately $697 million in capital improvements which were partially funded with the issuance of $350 million Electric System General Revenue Bonds, Series 2017.

Also, during 2017, the UDSA issued $369.5 million of 2017 Restructuring Bonds, exhausting the $4.5 billion statutory authority of bonds allowed under the Securitization Law. The 2017 UDSA refinancing generated $45.4

(Amounts in thousands, unless otherwise stated)

million in net present value debt service savings, resulting in aggregate net present value debt service savings of $492 million for all the UDSA refinancings.

The Authority and UDSA paid scheduled debt maturities totaling $193 million in 2018 and $190 million in 2017.

The table below summarizes the financing activity for the Authority and the UDSA for the years ended December 31, 2018 and 2017:

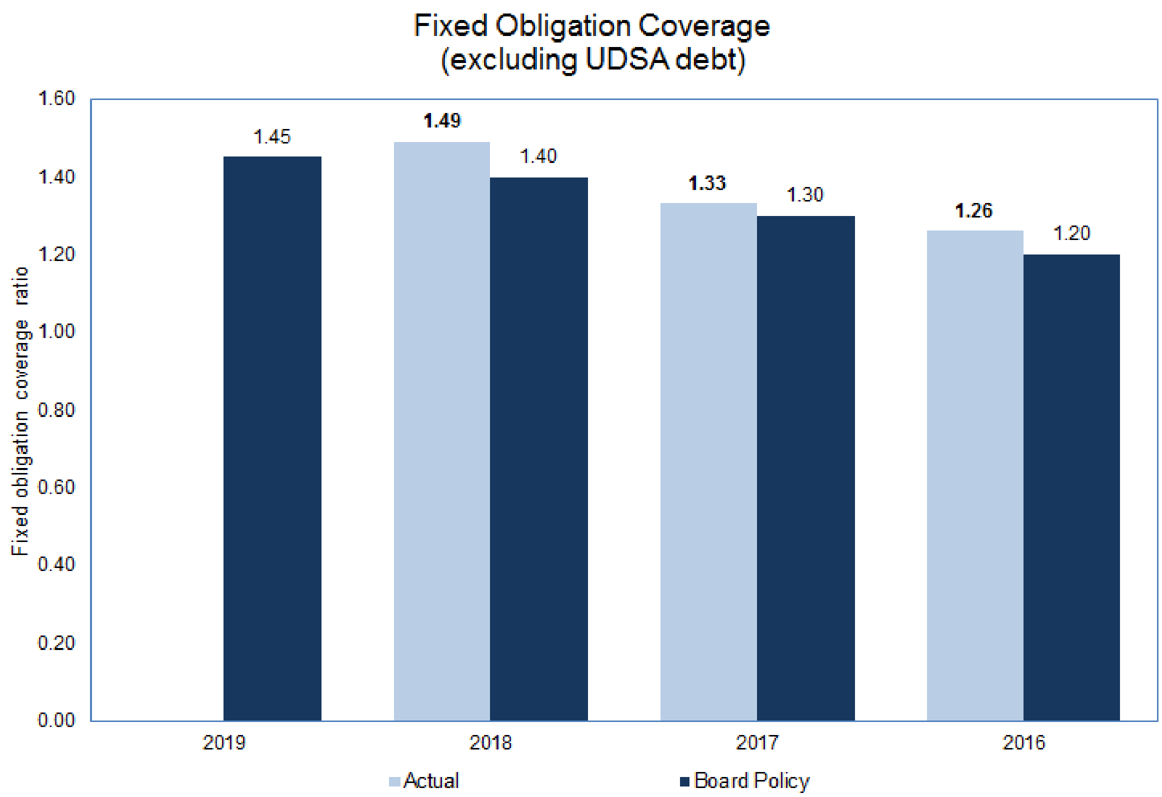
	Bonds to fund capital projects	Refinancing of fixed-rate bonds for savings	Remarketing of variable-rate bonds
2018:			
2018 General Revenue Bonds	$ 430,000	—	—
2014C General Revenue Bonds	—	—	150,000
2015C General Revenue Bonds	—	—	149,000
2017:			
2017 General Revenue Bonds	$ 350,000	—	—
UDSA Restructuring Bonds	—	369,465	—

For a full discussion on the Authority's debt activities, see note 12 to the Consolidated Financial Statements.

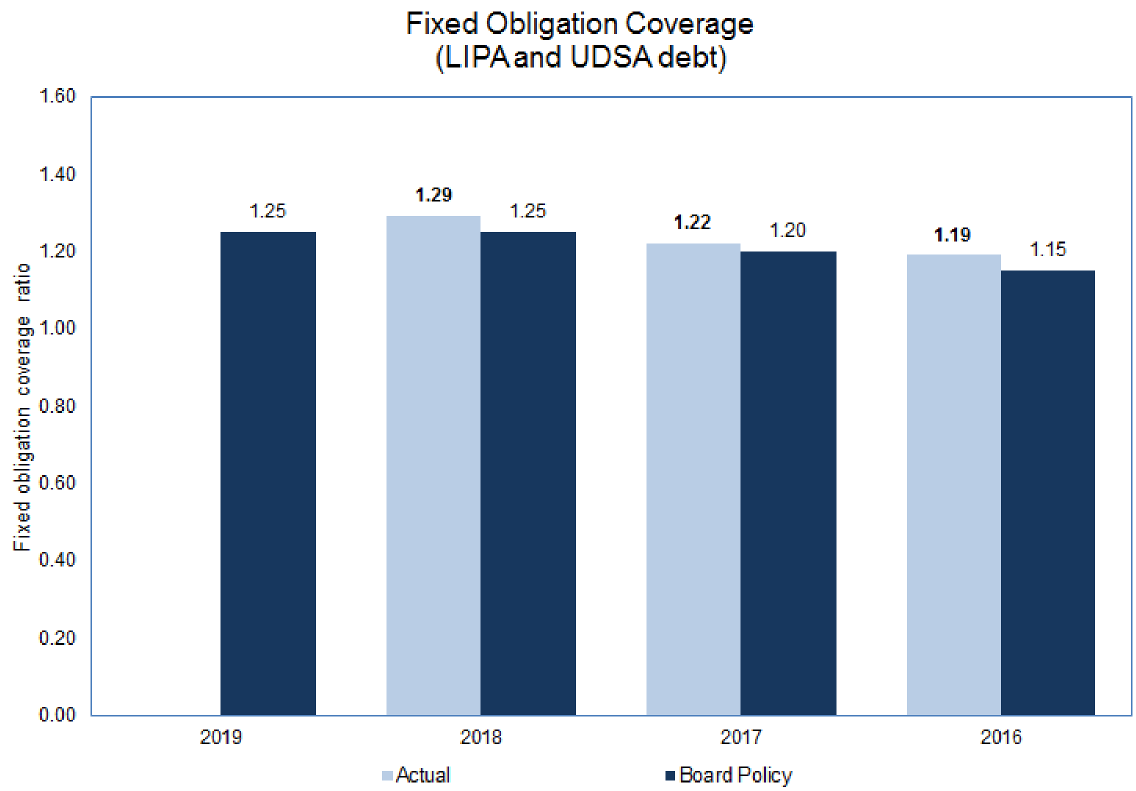
Fixed Obligation Coverage Ratios

The Authority utilizes the "public power model" of budgeting and rate setting, using fixed obligation coverage ratios to determine revenue requirements. The Authority's methodology for calculating its fixed obligation coverage ratios excludes certain specified non-cash items from expenses. The Authority budgeted to achieve fixed obligation coverage targets (including capital leases) on Authority issued debt of a minimum of 1.45x, 1.40x, 1.30x, and 1.20x in 2019, 2018, 2017 and 2016, respectively.

The Authority exceeded its targets for the years ended December 31, 2018, 2017 and 2016 with fixed obligation coverage ratios of 1.49x, 1.33x and 1.26x, respectively.



With the UDSA restructuring bonds included, the Authority's coverage ratio targets were a minimum of 1.25x, 1.25x, 1.20x, and 1.15x in 2019, 2018, 2017, and 2016, respectively. The fixed obligation coverage ratios, inclusive of the UDSA restructuring bonds, for the years ended December 31, 2018, 2017 and 2016 were 1.29x, 1.22x, and 1.19x, respectively.

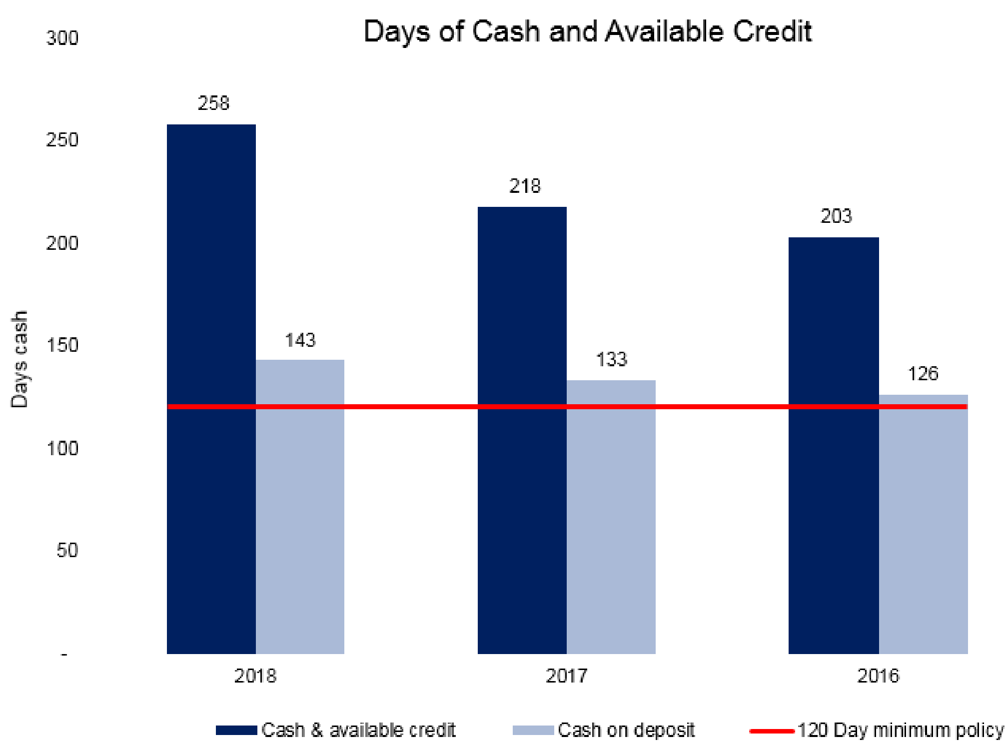


The Authority projects fixed obligation coverage ratios of 1.45x (Authority only) and 1.25x (Authority and UDSA). The Authority cannot predict whether its targets for 2019 or beyond will be realized.

For a full discussion of the fixed obligation coverage ratio calculation, see note 12 to the Consolidated Financial Statements.

Liquidity and Capital Resources

The Authority's Board financial policy is to maintain cash on hand and available credit equivalent of at least 120 days of operating expenses. As of December 31, 2018, 2017 and 2016, the Authority's available sources of liquidity for operating purposes and capital program funding achieved the policy target with 258 days, 218 days and 203 days of cash and available credit, respectively. This represents cash, cash equivalents, investments and available credit totaling approximately $2.10 billion as of December 31, 2018.



(Amounts in thousands, unless otherwise stated)

The table below summarizes the Authority's operating liquidity and available credit capacity:

		2018	2017	2016
Operating liquidity				
Unrestricted cash and cash equivalents	$	679,940	633,531	652,370
OPEB Account cash, cash equivalents & investments		271,879	194,699	128,998
PSEG Long Island Working Capital requirements		198,611	211,972	207,045
Total operating liquidity		1,150,430	1,040,202	988,413
Available credit				
General Revenue Notes - Revolving Credit Facility		345,000	337,180	337,500
General Revenue Notes - Commercial Paper		570,500	277,500	219,375
Subordinated General Revenue Notes - Commercial Paper		-	50,000	50,000
Total available credit		915,500	664,680	606,875
Total cash, cash equivalents, investments & available credit	$	**2,065,930**	**1,704,882**	**1,595,288**
Restricted cash, cash equivalents and investments				
FEMA Grant Proceeds		103,820	275,783	470,972
UDSA		124,597	109,167	88,572
Total restricted cash, cash equivalents and investments	$	228,417	384,950	559,544

Funds included in available cash, cash equivalents and investments

The Authority's available liquidity balances include accounts dedicated to pre-funding PSEG Long Island's working capital needs totaling approximately $199 million, $212 million and $207 million as of December 31, 2018, 2017 and 2016, respectively. This represents approximately 25 days cash as of December 31, 2018. These accounts are owned by the Authority and are available only for the Authority's operating and capital costs. The funds are restricted due to the contractual obligation to pre-fund the accounts from which PSEG Long Island, who acts as agent for the Authority, pays expenses related to operating the Authority's electric system; however, the Authority considers these funds to be part of its working capital as these funds are available to meet LIPA's operating and capital needs.

The Authority's available liquidity balances also includes an unrestricted OPEB Account established to pre-fund certain future post-employment retirement obligations of the PSEG Long Island employees. The balance in the unrestricted OPEB Account is intended to fund the PSEG Long Island employee retiree contractual obligation. However, in the event that revenues are insufficient to pay reasonable and necessary operating expenses, or to make payments on bonds or parity obligations, these funds are available; as such they are considered unrestricted cash, cash equivalents and investments. As of December 31, 2018, 2017 and 2016, the unrestricted OPEB Account had approximately $272 million, $195 million and $129 million on deposit, respectively. This represents approximately 34 days cash as of December 31, 2018.

Available credit

The Authority maintains a short-term borrowing program to provide resources to meet interim working capital needs, fund its capital program between long-term debt offerings, and meet any cash flow requirements from severe weather events. Among other factors, the Authority's operating and capital needs vary during the year given the summer peaking and seasonal nature of its sales. The maximum outstanding balances of total combined short-term borrowings may not exceed $1.0 billion. These borrowing programs are part of the Authority's available credit.

Included in the Authority's short-term borrowing program are: (i) $800 million Senior Lien Series 2015 General Revenue Notes, of which $230 million was outstanding as of December 31, 2018 and (ii) a Revolving Credit Facility Agreement, which has a maximum capacity of $350 million of which approximately $5 million and $13 million was outstanding as of December 31, 2018 and 2017, respectively. In 2019, the Authority plans to reduce the maximum capacity under a new Revolving Credit Facility Agreement from the $350 million to $200 million.

During 2018, the Authority terminated its $300 million Series 2014 Subordinate Revenue Commercial Paper Notes, of which $250 million was outstanding as of December 31, 2017. These notes were replaced by the Senior Lien Series 2015 General Revenue Notes.

The combined outstanding balance of the Authority's short-term borrowings totaled $235 million and $360 million as of December 31, 2018 and 2017, respectively. The short-term borrowing programs are supported by bank agreements with various expiration dates from 2019 through 2022. Management expects to renew or replace these bank agreements as needed prior to their expiration. The Authority believes it will have sufficient liquidity throughout 2019 to meet its planned operating, maintenance and capital programs.

Restricted cash, cash equivalents and investments

The Authority's restricted cash, cash equivalents and investments as of December 31, 2018, 2017 and 2016 was $228 million, $385 million and $560 million, respectively, of which approximately $104 million, $276 million and $471 million, respectively, was advance funding provided by FEMA for storm restoration and storm hardening capital projects. The storm hardening projects are intended to strengthen the Long Island electrical grid against the effects of severe weather.

The remaining balance of restricted cash and cash equivalents is related to UDSA debt service payments and required debt service and operating reserves of $124 million, $109 million and $89 million as of December 31, 2018, 2017 and 2016, respectively. Restricted funds are not included in the days cash calculation.

Risk Management

The Authority has a dedicated Enterprise Risk Management group to identify operating and other risks within each business unit and assist such business units in developing an ongoing risk identification, monitoring and mitigation program.

The Authority also has an Enterprise Risk Management Committee (ERMC) to identify and manage commodity and interest rate risk it is exposed to during the conduct of its operations. As part of risk management, the Authority established a power supply risk management program to mitigate a portion of the exposure to fluctuations in commodity prices on behalf of its customers. The Authority also hedges its interest rate exposure through certain interest rate derivatives that are approved by the ERMC based on the Board policy established for interest rate exchange agreements.

Bond Ratings

The Authority and UDSA bonds are rated by Moody's, S&P, and Fitch as shown below:

	Investment ratings		
	Moody's	**S&P**	**Fitch**
Senior Lien Bonds	A3 (Positive)	A- (Positive)	A- (Stable)
UDSA Restructuring Bonds	Aaa (sf)	AAA (sf)	AAA (sf)

During 2018, Moody's affirmed the Authority's A3 rating with a Positive Outlook, and S&P affirmed an A- rating with a Positive Outlook. Fitch maintains a Stable Outlook on the Authority's bonds.

Certain bonds and notes of the Authority are supported by either a bank letter of credit or are insured against default.

Contacting the Long Island Power Authority

This financial report is designed to provide the Authority's bondholders, customers, and other interested parties with a general overview of the Authority's finances and to demonstrate its accountability for the funds it receives. If you have any questions about this report or need additional information, contact the Authority at 333 Earle Ovington Blvd., Suite 403, Uniondale, New York 11553, or visit the Authority's website at www.lipower.org.

LONG ISLAND POWER AUTHORITY
(A Component Unit of the State of New York)

Consolidated Statements of Net Position

December 31, 2018 and 2017

(Amounts in thousands)

Assets and Deferred Outflows of Resources		**2018**	**2017**
Current assets:			
Cash and cash equivalents	$	327,800	425,472
Restricted cash - working capital requirements		198,611	211,972
Restricted cash		124,597	109,167
Investments		624,019	402,758
Counterparty collateral – posted by the Authority		7,320	19,507
Accounts receivable (less allowance for doubtful accounts of $28,185 and $31,549 at December 31, 2018 and December 31, 2017, respectively)		531,607	463,447
Other receivables		74,625	91,303
Fuel inventory		99,117	94,380
Material and supplies inventory		50,574	52,026
Commodity derivatives		17,282	13,162
Regulatory assets to be recovered within one year		150,517	191,634
Prepayments and other current assets		45,701	39,454
		2,251,770	2,114,282
Noncurrent assets:			
Restricted cash and cash equivalents		11,607	2,970
Restricted investments		92,213	272,813
Utility plant and property and equipment, net		8,383,338	8,088,014
Nuclear decommissioning trust		125,219	132,202
Other long-term receivables		31,089	28,424
Unrealized charges		94,464	114,574
Financial derivatives		3,240	2,552
Regulatory assets for future recovery		940,053	1,137,514
Acquisition Adjustment, net		878,011	989,386
Total noncurrent assets		10,559,234	10,768,449
Deferred outflows of resources:			
Deferred defeasance costs on debt refunding		241,552	273,836
OPEB expense		1,679	—
Pension expense		1,594	1,190
Accumulated decrease in fair value of OPEB Account		2,488	—
Total deferred outflows of resources		247,313	275,026
Total assets and deferred outflows of resources	$	13,058,317	13,157,757

See accompanying notes to consolidated financial statements.

LONG ISLAND POWER AUTHORITY
(A Component Unit of the State of New York)

Consolidated Statements of Net Position

December 31, 2018 and 2017

(Amounts in thousands)

Liabilities, Deferred Inflows of Resources and Net Position	**2018**	**2017**
Current liabilities:		
Short-term debt	$ 234,500	360,320
Current maturities of long-term debt	61,430	69,880
Current maturities of UDSA debt	130,761	122,803
Current portion of capital lease obligation	168,430	177,361
Accounts payable and accrued expenses	376,177	439,717
Regulatory liabilities payable in one year	61,556	14,910
Commodity derivative instruments	—	6,556
Accrued payments in lieu of taxes	10,550	9,570
Accrued interest	48,638	41,254
Unrealized credits	10,250	—
Customer deposits	39,350	38,667
Total current liabilities	1,141,642	1,281,038
Noncurrent liabilities:		
Long-term debt	3,775,406	3,344,223
Long-term UDSA debt	4,457,610	4,634,508
Capital lease obligations	1,702,801	1,843,515
Borrowings	72,256	77,307
OSA - employee retirement benefits	609,176	670,861
Financial derivative instruments	106,058	128,139
Asset retirement obligation	67,483	67,787
Long-term liabilities and unrealized credits	43,142	39,559
Claims and damages	67,847	57,676
Total noncurrent liabilities	10,901,779	10,863,575
Deferred inflows of resources:		
Regulatory credits - grants	498,322	501,404
Accumulated increase in fair value of financial derivatives	3,240	2,552
Accumulated increase in fair value of commodity derivatives	9,124	620
OPEB expense	3,534	5,301
Pension expense	1,609	1,110
Accumulated increase in fair value of NMP2 Trust and OPEB Account	4,217	29,969
Total deferred inflows of resources	520,046	540,956
Net position:		
Net investment in capital assets	77,241	(3,815)
Restricted	116,384	99,524
Unrestricted	301,225	376,479
Total net position	494,850	472,188
Total liabilities, deferred inflows of resources and net position	$ 13,058,317	13,157,757

See accompanying notes to consolidated financial statements.

LONG ISLAND POWER AUTHORITY
(A Component Unit of the State of New York)

Consolidated Statements of Revenues, Expenses, and Changes in Net Position

Years ended December 31, 2018 and 2017

(Amounts in thousands)

		2018	2017
Operating revenues – electric sales	$	3,576,274	3,481,613
Operating expenses:			
Operations – power supply charge		1,675,640	1,631,475
Operations – power supply charge - property taxes		209,960	211,112
Operations and maintenance		632,068	638,944
Storm restoration		90,463	66,574
General and administrative		28,623	31,648
Depreciation and amortization		331,860	308,755
Payments in lieu of taxes and assessments		332,691	325,609
Total operating expenses		3,301,305	3,214,117
Operating income		274,969	267,496
Nonoperating revenues and expenses:			
Other income, net:			
Investment income		25,562	13,084
Grant income		43,238	42,058
Carrying charges on regulatory assets		24,078	25,365
Other		7,198	5,190
Total other income, net		100,076	85,697
Interest charges and (credits):			
Interest on long-term debt		361,283	342,552
Other interest		26,953	25,936
Other interest amortizations		(29,978)	(26,513)
Allowance for borrowed funds used during construction		(5,875)	(5,904)
Total interest charges and (credits)		352,383	336,071
Change in net position		22,662	17,122
Net position, beginning of year		472,188	455,066
Net position, end of year	$	494,850	472,188

See accompanying notes to consolidated financial statements.

LONG ISLAND POWER AUTHORITY
(A Component Unit of the State of New York)

Consolidated Statements of Cash Flows

Years ended December 31, 2018 and 2017

(Amounts in thousands)

		2018	2017
Cash flows from operating activities:			
Operating revenues received	$	3,791,800	3,643,767
Paid to suppliers and employees:			
Operations and maintenance		(528,153)	(500,295)
Operations – power supply charge		(1,829,765)	(1,761,518)
Operations – power supply charge - property taxes		(209,960)	(211,112)
Payments in lieu of taxes		(454,529)	(429,998)
Collateral on commodity derivative transactions, net		12,185	(13,925)
PSEG Long Island pension funding		(40,000)	(35,000)
Net cash provided by operating activities		741,578	691,919
Cash flows from investing activities:			
Earnings received on investments		23,010	25,215
Restricted cash		(10,706)	48,241
Sale of restricted investment securities		180,600	121,426
Purchase of investment securities		(144,074)	(63,383)
Purchase of investment securities - OPEB Account		(94,069)	(120,163)
Other		450	(1,000)
Net cash (used in) provided by investing activities		(44,789)	10,336
Cash flows from noncapital financing related activities:			
Grant proceeds		38,458	29,794
Proceeds from credit facility draws and commercial paper program		840,000	130,000
Redemption of credit facility draws and commercial paper program		(965,820)	(175,305)
Net cash used in noncapital related activities		(87,362)	(15,511)
Cash flows from capital and related financing activities:			
Capital expenditures		(639,993)	(697,400)
Proceeds from the issuance of long-term debt		482,317	846,491
Payment to bond escrow agent to refinance bonds		—	(429,873)
Debt issuance costs		(2,777)	(3,507)
Other interest costs		(24,239)	(25,458)
Interest paid - Authority		(127,799)	(131,620)
Redemption of long-term debt - Authority		(69,880)	(117,250)
Interest paid - UDSA		(201,925)	(192,213)
Redemption of long-term debt - UDSA		(122,803)	(72,598)
Net cash used in capital and related financing activities		(707,099)	(823,428)
Net decrease in cash and cash equivalents		(97,672)	(136,684)
Cash and cash equivalents at beginning of year		425,472	562,156
Cash and cash equivalents at end of year	$	327,800	425,472
Reconciliation to net cash provided by operating activities:			
Operating income	$	274,969	267,496
Adjustments to reconcile operating income to net cash provided by operating activities:			
Depreciation and amortization		331,860	308,755
Other post-employment benefit non - cash expense		48,100	41,080
Nuclear fuel burned		10,716	13,646
Shoreham and VBA surcharges		49,289	45,814
Accretion of asset retirement obligation		1,196	3,645
Changes in operating assets and liabilities:			
Accounts receivable, net		(72,021)	43,706
Regulatory assets and liabilities		204,921	(130,435)
Fuel and material and supplies inventory		(3,285)	4,259
Accounts payable, accrued expenses and other		(104,167)	93,953
Net cash provided by operating activities	$	741,578	691,919

See accompanying notes to consolidated financial statements.

LONG ISLAND POWER AUTHORITY OPEB TRUST

Statements of Fiduciary Fund Position

December 31, 2018 and 2017

(Amounts in thousands)

	2018	2017
Assets		
Cash equivalents	$ 18,785	18,651
Total assets	18,785	18,651
Liabilities	—	—
Total liabilities	—	—
Deferred inflows of resources	—	—
Total deferred inflows of resources	—	—
Net position	18,785	18,651
Net position - restricted for OPEB	$ 18,785	18,651

For more information regarding the Authority's OPEB liabilities, see note 14(d) of the consolidated financial statements.

LONG ISLAND POWER AUTHORITY OPEB TRUST

Statements of Changes in Fiduciary Net Position

Years ended December 31, 2018 and 2017

(Amounts in thousands)

	2018	2017
Additions to net position attributed to:		
Contributions:		
Employer	$ 1,845	19,071
Mark-to-market	(1,582)	—
Interest income	603	123
Total additions	866	19,194
Deductions from net position attributed to:		
Retirement benefits	732	543
Administrative expenses	—	—
Total deductions	732	543
Change in net position	134	18,651
Net position restricted for OPEB, beginning of year	18,651	—
Net position restricted for OPEB, end of year	$ 18,785	18,651

(1) Nature of Operations

The Long Island Power Authority (the Authority) is the owner of the electric transmission and distribution (T&D) system located in the Counties of Nassau and Suffolk (with certain limited exceptions) and a portion of Queens County known as the Rockaways (Service Area), and is responsible for supplying electricity to customers within the Service Area. The Authority also owns an undivided 18% interest in the Nine Mile Point Unit 2 (NMP2) generating facility, located in upstate New York, which is operated and managed by Exelon Corporation.

The Authority was established as a corporate municipal instrumentality of the State of New York (State), constituting a political subdivision of the State, created by Chapter 517 of the Laws of 1986 (the LIPA Act). As such, it is a component unit of the State and is included in the State's annual financial statements.

The Authority is also subject to the LIPA Reform Act (Reform Act) which was passed and codified as Chapter 173, Laws of New York on June 21, 2013 by the New York State Assembly and Senate. The Reform Act is divided into two parts, Part A and Part B.

Part A of the Reform Act addressed the reorganization of the Authority and changed its operating responsibilities and the relationship with its service provider, and Part B, referred to as the Securitization Law, created the Utility Debt Securitization Authority (UDSA). The Securitization Law provided a legislative foundation for the UDSA to issue restructuring bonds to allow the Authority to retire a portion of its outstanding indebtedness, providing debt service savings to the Authority's customers on a net present value basis. The restructuring bonds are repaid by irrevocable, non-bypassable restructuring charges on all the Authority's customers. The UDSA has a governing body separate from that of the Authority and has no commercial operations.

For a further discussion on the UDSA, see note 4.

The Authority has operating agreements with service providers to provide the majority of services necessary to serve the Authority's customers and power purchase agreements for the supply of electric energy. Below is a summary of the Authority's primary operating agreements:

Amended and Restated Operations Services Agreement (OSA): Effective January 1, 2014, PSEG Long Island LLC (PSEG Long Island), a wholly owned subsidiary of Public Service Enterprise Group (PSEG), fully dedicated to the Authority's Long Island operations, provides operations, maintenance and related services for the T&D system under the OSA. The OSA expires December 31, 2025 and includes a provision that if PSEG Long Island achieves certain levels of performance during the first 10 years of the 12 year term, the parties will negotiate an eight-year extension on substantially similar terms and conditions. PSEG Long Island is paid a management fee and may earn incentive compensation related to specified performance metrics. During the years ended December 31, 2018 and 2017, PSEG Long Island was paid a management fee totaling approximately $64 million per year. For 2017, PSEG Long Island was paid an incentive fee totaling approximately $9.5 million. For 2018, PSEG Long Island may earn an incentive fee up to approximately $9.7 million, which will be determined by June 2019.

Essentially all costs of operating and maintaining the Authority's T&D system incurred by PSEG Long Island are passed through to and paid for by the Authority.

Amended and Restated Power Supply Agreement (A&R PSA): National Grid provides capacity and energy to the Authority from its oil and gas fired generating plants located on Long Island under the A&R PSA. The A&R PSA provides for the purchase of approximately 3,700 megawatts of capacity (and related energy to the extent needed) from these generating plants. The A&R PSA commenced May 28, 2013 and expires April 30, 2028. For a further discussion on the A&R PSA, see note 15.

In addition, the Authority is party to several power purchase agreements with other third-party generators for approximately 1,800 megawatts of capacity and related products.

Fuel Management Agreement (FMA) and Power Supply Management Agreement (PSM): PSEG Energy Resources and Trade LLC (PSEG ER&T) provides fuel management services for both the National Grid generating facilities and the other units in the Authority's energy supply portfolio. Certain other services related to power supply management and commodity activities are also provided by PSEG ER&T. During the years ended December 31, 2018 and 2017, PSEG ER&T was paid a management fee totaling approximately $17 million. The agreements with PSEG ER&T expire December 31, 2025 and are subject to extension.

(2) Summary of Significant Accounting Policies

(a) Reporting Entity

The Authority complies with all applicable pronouncements of the Governmental Accounting Standards Board (GASB). In accordance with GASB Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements* (GASB Statement No. 62), the operations of the Authority are presented as an enterprise fund following the accrual basis of accounting in order to recognize the flow of economic resources.

The Authority's reporting entity is comprised of itself and (i) its operating subsidiary the Long Island Lighting Company (LILCO), a wholly owned subsidiary of the Authority doing business as LIPA and Power Supply Long Island, and (ii) the UDSA. All significant transactions between the Authority, LIPA and the UDSA have been eliminated. The Authority and its blended component units are referred to collectively as the Authority in the consolidated financial statements.

During 2017, the Authority established a legally separate trust under Section 115 of the Internal Revenue Code known as the Long Island Power Authority OPEB Trust (OPEB Trust) to fund the Authority's Other Post-Employment Benefit Plan (OPEB) that provides health care benefits for the Authority's qualified retired employees. The OPEB Trust is reported as a fiduciary component unit.

(b) Estimates

The accompanying financial statements were prepared in conformity with U.S. generally accepted accounting principles, which require management to make estimates and assumptions that affect the reported amounts of revenues and expenses during the reporting period as well as the reported amounts of assets and liabilities, including disclosure of contingent assets and liabilities, through the date of the financial statements. Actual results could differ from those estimates.

(c) Cash, Cash Equivalents and Investments (including Restricted)

Cash and cash equivalents, and restricted cash and cash equivalents, include all highly liquid financial instruments with a maturity of three months or less when purchased.

Funds held by the Authority are administered in accordance with the Authority's investment policies pursuant to Section 2925 of the New York State Public Authorities Law. These policies comply with the New York State Comptroller's investment guidelines for public authorities. Investments' carrying values are reported at fair market value.

Certain amounts have also been restricted for specific purposes. For a further discussion, see note 11.

(d) Counterparty Collateral

The Authority and certain of its counterparties require collateral posting for mark-to-market valuations that exceed established credit limits. At December 31, 2018 and 2017, the Authority was required to post $7 million and $20 million, respectively, of collateral to various counterparties, which is recorded as a current asset.

(e) Fuel Inventory

The Authority owns the fuel oil used in the generation of electricity at the facilities under contract. Fuel inventory represents the value of low sulfur diesel and other liquid fuels that the Authority had on hand at each year-end. Fuel inventory is valued using the weighted average cost method. At the time of consumption, an expense is recorded at the weighted average cost.

(f) Material and Supplies Inventory

The material and supplies inventory supports the operations and maintenance of the T&D system. The inventory is accounted for on a weighted average cost basis of accounting.

The Authority also owns 18% of the material and supplies inventory needed to support the operation of the NMP2 nuclear power station. As of December 31, 2018 and 2017, the value of the NMP2 inventory totaled approximately $11 million.

(g) Other Receivables and Long-Term Receivables

The current portion of other receivables is comprised primarily of nonelectric billings such as insurance damage claims and mutual aid assistance.

The long-term portion of other receivables is comprised primarily of the net present value of reimbursable costs to construct the interconnection facilities related to the Neptune cable, which is to be paid to the Authority over a 20-year period that commenced in 2007.

(h) Unrealized Charges

Unrealized charges consist primarily of the ineffective balance of interest rate and commodity derivative instruments.

(i) Acquisition Adjustment

The Acquisition Adjustment, an intangible asset, represents the difference between the purchase price paid and the net assets acquired from LILCO. The Acquisition Adjustment is being amortized on a straight-line basis through 2026 totaling approximately $111 million annually.

(j) Capital Lease Obligations

Capital lease obligations represent the net present value of various contracts including capacity and/or energy of certain generation and transmission facilities and certain fleet vehicle leases. Upon satisfying the capitalization criteria, the net present value of the contract payments is included in both Utility Plant and Capital Lease Obligations.

The capacity and energy contracts are recognized in power supply expense in an amount equal to the contract payment of the capital leases, as allowed through the ratemaking process. The value of the asset and the obligation is reduced each month to properly reflect the remaining net present value of the asset and obligation.

For a further discussion on the capitalization of capacity and/or energy contracts, see note 15.

(k) Borrowings

Borrowings represent the unamortized balance of cash premiums received at the time of entering into certain financial derivative instruments. The Authority is amortizing such premiums over the life of the instrument in accordance with GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments* (GASB Statement No. 53).

(l) Commodity and Financial Derivative Instruments

Represents the amount the Authority believes it would receive or be required to pay in order to terminate its commodity and financial derivative instruments which approximates fair value.

(m) Long-Term Liabilities and Unrealized Credits

Long-term liabilities and unrealized credits consists primarily of the impacts of any changes resulting from updated asset retirement studies and deferred ineffective mark-to-market values on derivative transactions.

(n) Claims and Damages

Losses arising from claims including workers' compensation claims, property damage, and general liability claims are partially self-insured. Reserves for these claims and damages are based on, among other things, experience and expected loss.

(Amounts in thousands, unless otherwise stated)

(o) Revenues

Operating revenues are comprised of cycle billings for electric service rendered to customers based on meter reads and the accrual of revenues for electric service rendered to customers not billed at year-end. The Authority accrues unbilled revenues by estimating unbilled consumption at the customer meter. Unbilled revenues totaled $197 million and $191 million as of December 31, 2018 and 2017, respectively.

(p) Depreciation and Amortization

The provisions for depreciation for utility plant result from the application of straight-line rates determined by age life studies of assets in service. The rates are applied to groups of depreciable properties. The average composite depreciation rates were 2.36% and 2.29% for 2018 and 2017, respectively. Property and equipment is being depreciated over its estimated useful life using the straight-line method.

Separately, capital lease assets and leasehold improvements are being amortized over the lesser of the life of the assets or the term of the lease, using the straight-line method.

The following estimated useful lives are used for utility property:

Category	Useful life
Generation – nuclear	46–54 years
Transmission and distribution	40–75 years
Common	5–55 years
Nuclear fuel in process and in reactor	6 years
Generation assets under capital lease	10–25 years

(q) Asset Retirement Obligation

The legal obligation associated with the retirement of a tangible, long lived asset resulting from the acquisition, construction, development and/or normal operation of the asset is referred to as an Asset Retirement Obligation (ARO). The Authority, as an 18% owner of NMP2, has a legal obligation to fund its share of the decommissioning costs of the nuclear power plant. The obligation to perform the asset retirement activity is unconditional even though uncertainty exists about the timing and method of settlement.

The Authority also has an ARO related to certain of its T&D utility assets. Although no legal requirement exists to remove such assets from service, a conditional obligation is present based on the premise that eventually these assets will be removed from service as a result of deterioration. Accordingly, the Authority established a liability for the portion of the costs attributable to this obligation.

The AROs are continually reviewed for adequacy and any necessary changes are updated annually.

(Amounts in thousands, unless otherwise stated)

A summary of the ARO activity of the Authority for the years ended December 31, 2018 and 2017 is included below:

		2018	2017
Asset retirement obligation:			
Beginning balance	$	67,787	66,487
Change due to updates		(3,912)	(2,345)
Accretion expense		3,608	3,645
Balance at December 31	$	67,483	67,787

(r) Long-Lived Assets

Long-lived assets and purchased intangibles subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that there is a significant unexpected decline in the service utility of a capital asset.

(s) Payments-in-Lieu-of-Taxes

The Authority makes payments-in-lieu-of-taxes (PILOTs) for certain taxes previously paid by LILCO, including gross income, property, Metropolitan Transportation Authority, and certain taxes related to fuels used in utility operations. In addition, the Authority has entered into various PILOT arrangements for property it owns, upon which generation and transmission has been built.

(t) Allowance for Borrowed Funds Used During Construction

The allowance for borrowed funds used during construction (AFUDC) is the net cost of borrowed funds used for construction purposes. AFUDC is computed monthly on a portion of construction work in progress, and is shown as a net reduction in interest expense. The AFUDC rates were 4.44% and 4.38% for the years ended December 31, 2018 and 2017, respectively.

(u) Income Taxes

The Authority is a political subdivision of the State and, therefore, is exempt from Federal, state, and local income taxes.

(v) Fair Value Measurements

GASB Statement No. 72, *Fair Value Measurement and Application* (GASB Statement No. 72), establishes general principles for measuring fair value and standards of accounting and financial reporting for assets and liabilities measured at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is a market-based measurement, not an entity-specific measurement. For some assets and liabilities, observable market transactions or market information might be available; for others, it might not be available.

The fair value hierarchy categorizes the inputs to valuation techniques used to measure fair value into three levels as described below:

Level 1 – measurements that use quoted prices (unadjusted) for identical assets or liabilities in active markets that the Authority has the ability to access at the measurement date.

Level 2 – measurements other than quoted prices included within Level 1 that are observable for an asset or liability, either directly or indirectly.

Level 3 – measurements that use unobservable inputs for an asset or liability. In some valuations, the inputs used may fall into different levels of hierarchy. In these cases, the financial instrument's level within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement.

For a further discussion on the fair value hierarchy levels of the Authority's derivatives and investments, see notes 8 and 11.

(w) Recent Accounting Pronouncements

During 2017, the Authority implemented GASB Statement No. 75, *Accounting and Financial Reporting for Post-employment Benefits Other Than Pension Plans* (GASB Statement No. 75) refining GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Post-employment Benefits Other Than Pensions* (GASB Statement No. 45). GASB Statement No. 75 concluded that OPEBs are a form of employee compensation to be recognized in the same period in which the compensated service is provided by the employees. GASB Statement No. 45 provided for an amortization for the unfunded actuarial accrued liabilities (or funding excess) of the plan over a period up to thirty years. GASB Statement No. 75 eliminated this phase in and requires the related expense be recognized in one year. During the adoption of GASB Statement No. 45, the Authority recognized the accrued OPEB liability in one year rather than in phases and therefore, there is no impact to prior periods upon adopting GASB Statement No. 75 and no retroactive application.

GASB Statement No. 84, *Fiduciary Activities,* addresses criteria for identifying fiduciary activities of all state and local governments. The focus of the criteria is generally on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exists. Separate criteria are included to identify fiduciary component units and post-employment benefit arrangements that are fiduciary activities. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018.

GASB Statement No. 87, *Leases,* addresses the recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. It establishes a model for lease accounting based on the principle that leases are financings of the right to use an underlying asset. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019.

GASB Statement No. 88, *Certain Disclosures Related to Debt, including Direct Borrowings and Direct Placements* improves the information that is disclosed in notes to financial statements related to debt, including direct borrowings and direct placements. The requirements of this Statement are effective for reporting periods beginning after June 15, 2018.

GASB Statement No. 89, *Accounting for Interest Cost Incurred before the End of a Construction Period* requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity or enterprise fund. The requirements of this Statement are effective for reporting periods beginning after December 15, 2019.

GASB Statement No. 90**,** *Majority Equity Interests—an amendment of GASB Statements No. 14 and No. 61,* addresses the reporting a government's majority equity interest in a legally separate organization and the relevance of financial statement information for certain component units. The requirements of this Statement are effective for reporting periods beginning after December 15, 2018.

The Authority is currently evaluating the impact of these statements on the accompanying consolidated financial statements.

(3) Rate Matters

The Authority is empowered by the LIPA Act to set rates for electric service in its Service Area without being required to obtain the approval of the New York State Department of Public Service (DPS) or any other State regulatory body. The LIPA Act requires that any bond resolution of the Authority contain a covenant that it will at all times maintain rates, fees, or charges sufficient to pay the costs of: operation and maintenance of facilities owned or operated by the Authority; PILOTs; renewals, replacements, and capital additions; and the principal of, and interest on, any obligations issued pursuant to such resolution as the same become due and payable. In addition, the Authority must establish or maintain reserves or other funds, or accounts required or established by or pursuant to the terms of such resolution.

In 2013, the LIPA Reform Act established a rate review process that required the Authority and PSEG Long Island submit for review to DPS a three-year rate proposal for rates and charges that took effect on January 1, 2016. After the 2016-2018 period, the Authority and PSEG Long Island are only required to submit a proposed rate increase for DPS review if it would increase the rates and charges by an amount that would increase the Authority's annual revenues by more than 2.5%. The Authority's Board of Trustees (Board) retains final rate-setting power.

The Authority has a cost reconciliation mechanism, referred to as the Delivery Service Adjustment (DSA), to reconcile certain specified projected costs to actual costs in each year. The DSA provides cost recovery or refunding for certain items that vary due to external factors, including: debt service (variances in interest rates, capital expenditures and savings derived from the UDSA financings) and storm restoration expenditures (variances from the budget for storm restoration expenses). The DSA is calculated through the end of September each year, which allows for the bill impact to be known in advance of the annual budget approval. Any adjustments are reviewed by DPS and implemented on the following January 1st.

The Authority also has a Revenue Decoupling Mechanism (RDM). All six of the major New York State electric utilities have RDMs within their tariffs for delivery service. Mechanically, RDMs function by comparing actual revenues with authorized revenues and crediting (or collecting) any differences to (or from) customers; it is intended to cover all sources of variances in delivery service revenues including, among other things, any net lost revenues attributable to the implementation of energy efficiency or net metering programs, any revenue variances caused by warmer or cooler than normal weather, and revenue variations that result from changes in economic conditions.

In addition to the items discussed above, the Authority's tariff also includes: (i) a Power Supply Charge to allow for adjustments to customers' bills to reflect changes in the cost of fuel, purchased power and related costs; (ii) a PILOTs recovery rider to allow rate adjustments to accommodate changes in revenue based PILOTs; (iii) a rider providing for the recovery of costs associated with the Shoreham Property Tax Settlement; (iv) a rider for the Authority's distributed energy resources program; (v) a rider providing for the collection of the New York State assessment imposed by the New York State Legislature; and (vi) a visual benefit assessment for certain customers in the Town of Southampton.

(4) Component Unit – Utility Debt Securitization Authority

The Reform Act created the Securitization Law, which established the UDSA to permit the issuance of restructuring bonds to allow the Authority to retire a portion of its outstanding indebtedness in order to provide debt service savings to the Authority's customers as measured on a net present value basis. The Securitization Law, as amended, allowed for a total issuance of up to $4.5 billion of UDSA restructuring bonds. In 2017, all such authorization was exhausted.

Each issuance of restructuring bonds is separately secured by distinct collateral pursuant to a new financing order. Each such financing order authorizes restructuring bonds to be repaid pursuant to that financing order by an irrevocable contract right to impose, bill, and collect a non-bypassable consumption based Restructuring Charge from all existing and future retail customers taking electric transmission or distribution service within the Service Area from the Authority or any of its successors or assignees.

The Authority's Board adopted Financing Orders, which allowed the UDSA to issue restructuring bonds. All such financing orders are substantively the same, and each financing order permits the UDSA to issue restructuring bonds in an aggregate amount not to exceed the amount authorized by the Securitization Law. The issuance of the 2017 Restructuring Bonds utilized the available capacity of restructuring bonds permitted to be issued by the Securitization Law. Below is a summary of each financing order and amounts issued:

(Amounts in thousands, unless otherwise stated)

Financing Order	Date Issued		Initial Amount Issued	Net Present Value Savings	Restructuring Charge Rate Effective Date
Financing Order No. 1	December 18, 2013	$	2,022,324	131,609	March 1, 2014
Financing Order No. 2	October 27, 2015		1,002,115	127,978	January 1, 2016
Financing Order No. 3	April 7, 2016		636,770	115,238	April 7, 2016
Financing Order No. 4	September 8, 2016		469,320	71,647	September 8, 2016
Financing Order No. 5	November 21, 2017		369,465	45,387	January 1, 2018
		$	4,499,994	491,859	

To pass through the benefits of securitization to customers, the Authority modified its rate structure to create restructuring offset charges, which is an amount equal to and opposite the Restructuring Charges; the net result is that the customer bill is less than it would have been absent the sale of restructuring bonds. The restructuring offset charges are adjusted coincident with changes to the Restructuring Charges to maintain that equality.

As discussed in note 2, UDSA is a component unit of the Authority and all of the activities and balances of the UDSA are blended into and reported as part of the Authority. See note 17 for consolidating condensed combining information.

(Amounts in thousands, unless otherwise stated)

(5) Regulatory Accounting

The Authority's Board has approved various regulatory mechanisms that result in timing differences between the recognition of revenues and expenses for ratemaking purposes and treatment under generally accepted accounting principles for non-regulated entities. These actions result in regulatory assets and liabilities, which are summarized in the table below:

		2018	2017
Regulatory assets to be recovered within one year			
OSA – employee retirement benefits	$	54,006	67,381
Shoreham property tax settlement		46,233	45,274
Delivery service adjustment		28,845	29,424
Employee benefit plan settlement		15,634	21,634
Revenue decoupling mechanism		—	14,811
Power supply charge recoverable		—	4,660
Debt issuance costs		3,209	3,209
New York State assessment		1,681	2,443
Distributed energy resources charges		—	1,850
Southampton visual benefit assessment		909	948
Balance at December 31	$	150,517	191,634
Regulatory assets for future recovery			
OSA – employee retirement benefits		297,206	422,819
Shoreham property tax settlement		376,918	402,589
Employee benefit plan settlement		93,803	151,437
Power supply charge		48,551	53,211
Delivery service adjustment		78,529	58,712
Debt issuance costs		29,591	32,858
Unfunded actuarially determined reserves		8,018	8,018
Southampton visual benefit assessment		7,437	7,870
Balance at December 31	$	940,053	1,137,514
Regulatory liabilities payable within one year			
Revenue decoupling mechanism		47,644	—
Power supply charge refundable		13,378	14,910
Distributed energy resources charges		534	—
Balance at December 31	$	61,556	14,910
Regulatory credits			
Grants		498,322	501,404
Balance at December 31	$	498,322	501,404

(a) OSA – Employee Retirement Benefits

The Authority is responsible for reimbursing PSEG Long Island for retirement benefit costs associated with the PSEG Long Island workforce. The retirement benefit plans are owned, sponsored, and the legal obligation of PSEG Long Island. However, in most cases, PSEG Long Island employee compensation costs are a contractual cost of the Authority under the OSA, including the cost for these retirement benefits (and any required pre-funding of such benefits).

The PSEG Long Island workforce includes both the Authority's former service provider electric-serving employees under the expired Management Services Agreement (MSA) with National Grid (referred to as transitioned employees) and PSEG Long Island employees hired since the beginning of the OSA on January 1, 2014. PSEG Long Island recognizes the assets and liabilities associated with the retirement benefit plans; however, they also recognize a receivable from the Authority for the unfunded portion of any liabilities resulting from the Authority's contractual obligation to fund these employee costs.

The balance of the OSA – Employee Retirement Benefits regulatory asset represents costs and liabilities which have been incurred but not yet collected in electric rates. This amount will be different from the Authority's liability to PSEG Long Island due to differences between funding and recovery levels.

A significant portion of this contractual liability resulted from the transitioned employees being protected against benefit losses from the Authority's change in service providers. The PSEG Long Island retirement plans ensure that transitioned employees earn a retirement benefit that, when combined with their accrued National Grid benefits, are equal to the benefit they would have received had the transitioned employees remained with National Grid. This provision created a prior service cost liability totaling $442 million at the beginning of the OSA on January 1, 2014.

Retirement benefit obligations are future cash outlays that will be incurred as the PSEG Long Island employees receive retirement benefits and are therefore estimates of such costs. Differences between amounts collected from customers and amounts owed to PSEG Long Island for these benefits may arise from changes in asset values, plan amendments, interest rates, and actuarial assumptions, among other factors, which will be reflected in the balance of the regulatory asset.

The Authority contributes to a PSEG Long Island sponsored pension trust on an ongoing basis to pre-fund pension obligations. Additionally, the Authority sets aside funds in an OPEB Account to meet future healthcare and other post-employment benefit obligations. For a further discussion of the OPEB Account, see note 11.

(b) Shoreham Property Tax Settlement (Settlement)

In January 2000, the Authority reached an agreement with Suffolk County, the Town of Brookhaven, the Shoreham-Wading River Central School District, the Wading River Fire District and the Shoreham-Wading River Library District (which was succeeded by the North Shore Library District) (collectively, the Suffolk Taxing Jurisdictions) and Nassau County regarding the over assessment of the Shoreham Nuclear Power Station. Under the terms of the agreement, the Authority issued $457.5 million of rebates and credits to customers over a five-year period. In order to fund such rebates and credits, the Authority used proceeds from its Capital Appreciation Bonds, Series 1998A Electric System General Revenue Bonds totaling $146 million and Series 2000A Electric System General Revenue Bonds totaling $325 million.

As provided under the Settlement, beginning in June 2003, Suffolk County customers' bills include a surcharge (the Suffolk Surcharge) to be collected over the succeeding approximate 25-year period to repay the debt service and issuance costs on the bonds issued by the Authority to fund the Settlement as well as the cost of pre-funding certain rebates and credits.

As rates are established at a level sufficient to recover all such costs identified above, the Authority recorded a regulatory asset. The balance remaining represents rebates and credits issued to customers, costs of administering the program, plus annual debt service costs on the bonds identified above, less surcharges collected since 2003.

(c) Employee Benefit Plan Settlement

The MSA between the Authority and National Grid provided, among other things, that upon termination of the MSA, when a third-party succeeded National Grid as the service provider, the successor would assume the rights and obligations of National Grid regarding certain employee benefit plan liabilities. The OSA with PSEG Long Island, however, did not require PSEG Long Island to assume the employee benefit plan assets and liabilities related to the MSA, which were co-mingled with those of other National Grid employees.

The Authority and National Grid and its affiliates signed an Employee Benefit Plan Settlement resolving the parties' respective employee benefit plan funding obligations for National Grid's electric-serving employees. The Authority's Board approved recovery of such costs from customers over a 10-year period, the remaining term of the OSA, as virtually all former employees of National Grid covered by these plans have been transitioned to PSEG Long Island and continue to serve our customers.

During 2018, the Authority received Board approval to reduce the employee benefit plan settlement regulatory asset by $42 million for the amounts resulting from the final reconciliation of billings from the Authority's former service provider, which were significantly lower than initial estimated amounts.

As of December 31, 2018 and 2017, the employee benefit plan settlement balance totaled $109 million and $173 million, respectively.

(d) Delivery Service Adjustment

The DSA provides cost recovery or refunding for certain items that vary due to external factors, including: debt service (variances in interest rates, capital expenditures and savings derived from the UDSA financings) and storm restoration expenditures (variances from the amounts budgeted for storm restoration expenses). The DSA is calculated through the end of September each year. As of September 30, 2018, a regulatory asset totaling $29 million was incorporated into the 2019 budget and electric rates. As of September 30, 2017, a regulatory asset totaling $29 million was incorporated into the 2018 budget and electric rates.

The remaining DSA recoverable balance is a result of the storm recovery rider component of the DSA. The recovery or refund of any storm restoration costs above or below the annual budgeted amount is amortized over a three year period. The balance carried forward for recovery in future years as of December 31, 2018 totaled approximately $79 million.

(e) Revenue Decoupling Mechanism

The RDM ensures that only approved revenues for delivery service are collected from customers. The RDM compares actual revenues with authorized revenues and credits (or collects) any differences to (or from) customers. It is intended to cover all sources of variances in delivery service revenues including, among other things, any net lost revenues attributable to the implementation of energy efficiency or net metering programs, any revenue variances caused by warmer or cooler than normal weather, and revenue variations that result from changes in economic conditions.

The RDM is applied to delivery rates on a percentage basis and is reset at the beginning of each year to include the prior year surplus or shortfall between actual and authorized revenues for delivery service. In years when a multi-year rate plan is in effect, the RDM also utilizes such realized prior year surplus or shortfall to update delivery rates for the current year so as to minimize future variances between actual and authorized revenues. In no event may the Authority recover an amount that exceeds authorized delivery revenues.

The cumulative balance as of December 31, 2018 was approximately $48 million due to customers and is set to be returned in 2019. The RDM balance as of December 31, 2017 was approximately $15 million due from customers and was collected from customers in 2018.

(f) Debt Issuance Costs

The Authority established a regulatory asset for debt issuance costs incurred prior to 2018. The regulatory asset will be amortized as a component of the Authority’s revenue requirement on a systematic basis over the life of the debt to which they relate.

(g) Power Supply Costs Recoverable or Refundable

The Authority’s tariff includes a Power Supply Charge with a monthly reconciliation of power supply costs. For the year ended December 31, 2018, actual power supply costs were below amounts recovered in the Power Supply Charge, resulting in the recognition of a regulatory liability totaling $13 million, which will be returned to customers in 2019. For the year ended December 31, 2017, actual power supply costs were below amounts recovered in the Power Supply Charge, resulting in the recognition of a regulatory liability totaling $15 million, which was returned to customers in 2018.

Also recoverable through the Power Supply Charge are deferred transition costs associated with the transfer of the power supply management contract to PSEG ER&T. Collection of these costs totaling $19 million are being recovered over an eleven-year period, as approved by the Authority’s Board, commencing January 1, 2015, coincident with the contract beginning January 1, 2015 and expiring December 31, 2025. As of December 31, 2018 and 2017, the remaining balance of such costs totaled $12 million and $14 million, respectively.

Amounts incurred related to various energy projects, the amortization of which is charged to power supply costs over the period of benefit (the life of the power purchase agreement) are also recoverable as a component of the Power Supply Charge. As of December 31, 2018 and 2017, the balance was $28 million and $30 million, respectively.

Unfunded actuarially determined potential costs relating to generation are a deferred component of the Power Supply Charge and total $13 million. Such amounts will not be reflected in the Power Supply charge until settlement costs are paid.

(h) Southampton Visual Benefit Assessment

The Authority has recorded the incremental costs incurred to bury a portion of a transmission cable routed through the Town of Southampton (Town), which are being recovered from certain customers of the Town over a period of 20 years that began in 2009.

(i) Regulatory Credits – Grants

The Authority has received grants for storm restoration and storm hardening. The Authority's Board authorized the deferral of grant income recognition as a regulatory credit for grants related to capital expenditures for storm hardening. This regulatory credit will be deferred to match the depreciable lives of the related capital assets so as to recognize grant income over the same time period as the depreciation expense on the associated capital assets.

(j) Distributed Energy Resources

The Distributed Energy Resources (DER) charge recovers costs of the Authority's energy efficiency and renewable resources programs. The Authority funds significant energy efficiency programs. The costs of such programs are authorized by the Authority's Board annually in its approved budget and billed to customers through the DER charge based on energy usage.

(k) Unfunded Actuarially Determined Reserves

Unfunded actuarially determined reserves are amounts recorded for non-cash reserves that will not be recovered in rates but will remain deferred until settlement costs are paid. Such estimates were calculated by an actuary based on experience and are updated every three years.

(6) Deferred Outflows and Deferred Inflows of Resources

Certain assets and liabilities are reported as deferred outflows of resources (expenses or expenditures) and deferred inflows of resources (revenues) as follows:

(a) Deferred Defeasance Costs on Debt Refunding

Deferred defeasance costs on refunded debt represent the difference between the reacquisition price and the carrying amount of the refunded debt. These deferred costs are amortized as a component of interest expense over the shorter of the life of the old or new debt.

(b) Changes in Fair Value of Derivative Instruments

Under hedge accounting, the accumulated changes in the mark-to-market valuation of a hedging derivative instrument that are deemed effective are reported as deferred inflows or deferred outflows of resources on the Statements of Net Position.

As the Authority follows GASB Statement No. 62, any changes in ineffective investment derivative instruments are reported as unrealized charges, as the Authority's Board has authorized the deferral of these unrealized gains or losses until realized, which corresponds to the period when they are recovered in rates.

(c) Changes in Fair Market Value of NMP2 Decommissioning Trust and OPEB Account

The Authority maintains a Trust for the decommissioning of NMP2. Separately, the Authority maintains an OPEB Account to set aside funds to meet future PSEG Long Island retirement benefit costs. These funds are reported at their fair market value and any unrealized gains or losses are recognized as a component of deferred inflows or deferred outflows of resources in accordance with the Authority's ratemaking process. For a further discussion on the Authority's NMP2 decommissioning obligations see notes 10 and 11. For a further discussion on the Authority's OPEB Account, see note 11.

(d) Pension and OPEB

In accordance with GASB Statement No. 68, *Accounting and Financial Reporting for Pensions—an amendment of GASB Statement No. 27* (GASB Statement No. 68), the Authority reports as deferred inflows of resources or deferred outflows of resources the difference between expected and actual experience, the net difference between projected and actual investment earnings on pension plan investments, differences between the Authority's contributions and the proportionate share of contributions, and changes in the Authority's contributions to the pension system subsequent to the measurement date.

In accordance with GASB Statement No. 75, the Authority reports the changes in the Authority's net OPEB liability that have not been included in OPEB expense as deferred inflows or deferred outflows of resources. Amounts included would result from changes of assumptions, the net difference between projected and actual earnings on the OPEB Trust and the Authority's contributions subsequent to the measurement date.

(7) Federal Emergency Management Agency (FEMA) Grants

In 2012, Superstorm Sandy caused significant damage to the Authority's Service Area resulting in the declaration of a federal major disaster area and making the Authority eligible for FEMA grants. The Authority and FEMA signed a Letter of Undertaking (LOU) that provides for a Public Assistance (PA) grant authorized under Section 428 of the Stafford Act (428 Grant Agreement) for a total eligible reimbursement of $1.29 billion (90% of $1.43 billion contained in the LOU). The Authority also signed a Community Development Block Grant (CDBG) to compensate for the nonfederal match of certain declared weather events including Superstorm Sandy, Hurricane Irene, and Snowstorm Nemo.

The Authority received funding resulting from Superstorm Sandy costs totaling approximately $1.11 billion under the FEMA 428 Grant Agreement, and $90 million under CDBG. A portion of this grant agreement included funding for future storm hardening and mitigation efforts. The Authority maintains a restricted segregated account for any unused portion of the grant proceeds. As of December 31, 2018 and 2017, this segregated grant account totaled approximately $104 million and $276 million, respectively.

(8) Derivative Instruments

Derivative instruments are used by the Authority in its normal course of business to limit some of the volatility associated with interest rate changes and market price fluctuations in the purchase of fuel oil, natural gas and electricity. The Authority does not use derivative instruments for trading or speculative purposes. These contracts are evaluated pursuant to GASB Statement No. 53 to determine whether they meet the definition of derivative instruments, and whether they effectively hedge the expected cash flows associated with interest rate and commodity price risk exposures. The fair values of the Authority's derivatives are reported on the Statements of Net Position as either Commodity Derivative Instruments or Financial Derivative Instruments.

The Authority applies hedge accounting for derivative instruments that are deemed effective under GASB Statement No. 53. Under hedge accounting, changes in the fair value of such hedging derivative instruments are a component of deferred inflows or deferred outflows of resources on the Statements of Net Position until the contract is settled or hedge accounting is terminated. Derivative instruments that do not meet the definition of a hedging derivative instrument are economic hedges, intended to mitigate exposure to fluctuations in interest rates or commodity prices and are referred to as investment derivative instruments. Changes in the fair value of investment derivative instruments are deferred until settled or terminated in accordance with the Authority's ratemaking process.

All settlement payments or receipts for hedging and interest rate derivative instruments are recorded as either power supply expense for commodity derivatives or interest expense for interest rate derivatives on the Statements of Revenues, Expenses and Changes in Net Position in the period settled.

The Authority's interest rate derivative contracts are valued in accordance with GASB Statement No. 72 which establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels: Level 1, Level 2 and Level 3 (as discussed in note 2). The interest rate derivative contracts are based on the present value of cash flows using the income approach. The interest rate derivative contracts are classified as Level 2 (as defined in note 2) as their valuation relies primarily on observable inputs.

The Authority's commodity derivative contracts are transacted both over-the-counter and through clearing exchanges and the valuations are based upon price quotes from exchanges and third-party brokers. The impacts of credit and nonperformance risk by either the Authority or its counterparty were not material to the financial statements as all the Authority's counterparties are highly-rated, as noted in the credit risk discussion below.

(Amounts in thousands, unless otherwise stated)

The Authority's derivative instruments are as follows:

Derivative instrument description		Fair value December 31, 2018	Net change in fair value	Fair value December 31, 2017	Type of hedge	Financial statement classification for changes in fair value
Hedging derivative instruments:						
Financial derivatives:						
Total return swap	$	1,269	195	1,074	Cash flow	Deferred inflows
Total return swap		1,971	493	1,478	Cash flow	Deferred inflows
Total	$	3,240	688	2,552		
Commodity derivatives:						
Purchased power swaps		—	1,595	(1,595)	Cash flow	Deferred inflows/(outflows)
Natural gas basis swaps		9,124	6,909	2,215	Cash flow	Deferred inflows/(outflows)
Total	$	9,124	8,504	620		
Investment derivative instruments:						
Financial derivatives:						
Synthetic fixed-A	$	(167,273)	22,549	(189,822)	N/A	Unrealized charges
Basis swap-A		(5,521)	2,291	(7,812)	N/A	Unrealized charges
Basis swap-B		(2,760)	1,146	(3,906)	N/A	Unrealized charges
Basis swap-C		(2,760)	1,146	(3,906)	N/A	Unrealized charges
Total	$	(178,314)	27,132	(205,446)		
Commodity derivatives:						
Power – financial basis		(1,355)	(805)	(550)	N/A	Unrealized charges
Purchased power swaps		14,333	13,368	965	N/A	Unrealized charges
Natural gas options		—	801	(801)	N/A	Unrealized charges
Natural gas swaps		(4,820)	1,212	(6,032)	N/A	Unrealized charges
Total	$	8,158	14,576	(6,418)		

In accordance with GASB Statement No. 72, the Authority determines the level of fair value hierarchy based on the lowest level input that is significant to the fair value measurement in its entirety. The following table presents the Authority's derivative instruments measured and recorded at fair value on the Statements of Net Position on a recurring basis and their level within the fair value hierarchy:

		2018			2017	
	Level 1	**Level 2**	**Level 3**	**Level 1**	**Level 2**	**Level 3**
Derivative assets:						
Financial derivatives	$ —	3,240	—	—	2,552	—
Commodity derivatives	9,124	—	—	(3,817)	965	—
Derivative liabilities:						
Financial derivatives	—	(178,314)	—	—	(205,446)	—
Commodity derivatives	9,513	(1,355)	—	—	(2,946)	—
	$ 18,637	(176,429)	—	(3,817)	(204,875)	—

The terms of the Authority's commodity derivative instruments outstanding as of December 31, 2018 and 2017 are summarized in the table below:

	Notional amount (in thousands)	Units	Beginning date	Ending date	Authority pays per unit (in dollars)					Authority receives
2018:										
Natural Gas Swaps	171,223	Dthms	1/1/2019	12/1/2023	$	2.47	to	$	3.15	Natural Gas at Henry Hub
Natural Gas Basis Swaps	26,930	Dthms	1/1/2019	3/1/2021	$	2.11	to	$	8.84	Gas Basis between Henry Hub & Transco Z6, NY
Purchased Power Swaps[(1)]	9,407	Mwhs	1/1/2019	12/1/2023	$	22.50	to	$	46.50	Power at PJM West or JCPL
Purchased Power Basis	3,840	Mwhs	1/1/2019	12/1/2021	$	(4.80)	to	$	7.35	Power Basis between PJM West to JCPL
2017:										
Natural Gas Swaps	100,715	Dthms	1/1/2018	12/1/2020	$	2.62	to	$	3.46	Natural Gas at Henry Hub
Natural Gas Basis Swaps	25,720	Dthms	1/1/2018	3/1/2020	$	2.34	to	$	8.13	Gas Basis between Henry Hub & Transco Z6, NY
Natural Gas Options	2,520	Dthms	1/1/2018	12/1/2018	$	3.75	to	$	4.25	Natural Gas at Henry Hub
Purchased Power Swaps[(1)]	5,010	Mwhs	1/1/2018	12/1/2020	$	22.60	to	$	52.50	Power at PJM West or JCPL
Purchased Power Basis	3,052	Mwhs	1/1/2018	12/1/2020	$	(3.00)	to	$	4.50	Power Basis between PJM West to JCPL

(1) Purchased Power Swaps are executed as either a swap or synthetically, as a combination of a Power Heat Rate swap and a Natural Gas Swap

(Amounts in thousands, unless otherwise stated)

The terms of the Authority's interest rate derivative instruments outstanding as of December 31, 2018 are summarized in the table below:

Financial derivative	Effective date	Termination date	Authority pays	Authority receives	Original notional	Upfront cash payment
Synthetic fixed-A	6/1/2003	12/1/2029	5.120 %	69.47% of 1-month LIBOR	$ 587,225	$ 106,400
Basis swap-A	7/1/2004	8/15/2033	SIFMA	70.50% of 1-month LIBOR	502,090	17,500
Basis swap-B	7/1/2004	8/15/2033	SIFMA	70.50% of 1-month LIBOR	251,045	8,750
Basis swap-C	7/1/2004	8/15/2033	SIFMA	70.50% of 1-month LIBOR	251,045	8,750
Total return swap	6/29/2015	6/29/2020	69.4% 1-month LIBOR+.40%	MMD +1.10% [a]	200,000	—
Total return swap	9/15/2016	9/1/2021	69.4% 1-month LIBOR+.30%	MMD +1.05% [a]	175,000	—

[a] Based on lowest long-term rating of the Authority

The Authority has outstanding Electric System General Revenue Bonds, Series 2015A Municipal Market Data (MMD) Floating Rate Notes (FRN) totaling $200 million and Electric System General Revenue Bonds, Series 2016A MMD FRNs totaling $175 million.

Immediately following direct placement of these FRNs, the Authority entered into five-year basis agreements whereby the counterparty agreed to pay the Authority an amount equal to the floating MMD FRN coupon, and the Authority agreed to pay the counterparty 69.4% of one-month London Interbank Offered Rate (LIBOR) plus basis points as specified in the table above. At the five-year expiration or the early termination of the agreements, the counterparty pays the Authority 90% of any increase in the market value of the MMD FRN and the Authority pays the counterparty 100% of any decrease in the market value of the MMD FRN, provided however, that if the Authority exercises its right to call or remarket the MMD FRN, the value of either agreement will be zero and neither party will have a payment obligation.

The Authority is exposed to the following risks related to derivative instruments as defined by GASB Statement No. 53:

(a) Termination Risk

Termination risk is the risk that a derivative could be terminated by a counterparty prior to its scheduled maturity due to a contractual event with the Authority owing a termination payment. As long as the Authority fulfills its obligations under the contracts, the counterparties do not have the right to terminate these agreements. The Authority believes that termination risk is low because the counterparties may terminate the agreements only upon the occurrence of specific events such as payment defaults, other defaults which remain uncured for 30 days after notice, bankruptcy or insolvency of the Authority (or similar events), or a downgrade of the Authority's and its insurers', if any, credit rating below investment grade. If, at the time of termination, the mark-to-market valuation of the derivative was a liability of the

Authority, the Authority could be required to pay that amount to the counterparty. Termination risk associated with all of the Authority's derivatives is limited to the fair market value.

(b) Basis Risk

The Authority is exposed to basis risk on certain of its interest rate swaps because the variable-rate payments received by the Authority, and those paid either pursuant to the terms of the swap or on the associated variable rate debt, may differ. The terms of the interest rate swap transactions are summarized in the table above.

The Authority is exposed to basis risk on a portion of its commodity swaps when the commodity swap payment received is based upon a reference price in a market (e.g., natural gas priced at Henry Hub) that differs from the market in which the hedged item is expected to be bought (natural gas priced at New York City gate). If the correlation between these market prices should change substantially, the Authority may incur costs as a result of the hedging derivative instrument's inability to offset the price of the related commodity.

(c) Collateral Posting

Under certain conditions, the Authority may be required to post collateral related to its interest rate derivative instruments. Under the terms of its interest rate derivative agreements, collateral may be required if the Authority's credit ratings, and in the case of insured swaps, the credit ratings of any related interest rate swap insurer, fall below minimum levels as provided in each swap agreement, and the Authority fails to provide alternative credit enhancements. Collateral for its financial derivatives, if required, would approximate fair value. The Authority has never been required to post collateral under its interest rate derivative instruments.

The Authority has collateral requirements with commodity derivative counterparties in the Credit Support Annexes (CSA) of International Swap Deal Agreements (ISDA). Collateral is required to be posted with the counterparty when the negative fair value of the commodity derivative instrument exceeds the unsecured line of credit established with each counterparty as listed in the counterparty table below. In the event of collateral being posted, the value will equal the difference between the fair value and the amount of the unsecured line of credit. For exchange broker cleared derivative transactions, there is an initial margin requirement on day one of a trade that is calibrated to cover the expected cost of closing out the position in the event of a default. Collateral postings between the exchange clearing broker and the Authority each day thereafter are based on the fair value of the derivative instrument.

(d) Credit Risk

The risk that the counterparty (or its guarantor) will default on its obligations under the agreement. The Authority has sought to limit counterparty risk by contracting only with highly rated counterparties or requiring guarantees of the counterparty's obligations. The Authority has also made use of exchange cleared transactions for a portion of its commodity derivatives. The exchange uses a central clearing counterparty structure along with risk based margin requirements that limits credit risk exposure. Below is a table with the credit ratings and unsecured line of credit limits of the Authority's counterparties as of December 31, 2018 (amounts in millions):

Counterparty	Moody's	S&P	Counterparty's unsecured line of credit ($M)
Interest Rate Derivative Instruments:			
JPMorgan Chase & Co.[1]	A2	A-	$ —
Citibank, N.A. New York	A1	A+	—
Merrill Lynch Capital Services, Inc. [2]	A3	A-	—
UBS AG, Stamford Branch	Aa3	A+	—
Wells Fargo Bank, N.A.	Aa2	A+	—

1 The original counterparty was Bear Stearns Capital Markets Inc.

2 Ratings reflect the rating of Bank of America Corp.

Counterparty	Moody's	S&P	Counterparty's unsecured line of credit ($M)
Commodity Derivative Instruments:			
Bank of Nova Scotia	A2	A+	25
BP Energy Company	A2	A-	10
Citigroup Energy, Inc.	Baa1	BBB+	10
J. Aron & Company	A3	BBB+	40
JPMorgan Chase Bank, N.A.[1]	Aa2	A+	35
Macquarie Energy LLC	A2	A	10
Merrill Lynch Commodities, Inc.[2]	A3	A-	20
Morgan Stanley Capital Group Inc.	A3	BBB+	10
Next Era Power Marketing	Baa1	A-	5
Pacific Summit Energy LLC[3]	Baa1	A-	10
Societe Generale	A1	A	25

1 Ratings reflect the rating of its parent company, JP Morgan Chase & Co.

2 Ratings reflect the rating of Bank of America Corp.

3 Ratings reflect the rating of its parent company, Sumitomo Corporation of Americas

(9) Utility Plant and Property and Equipment

Additions to and replacements of utility plant are capitalized at original cost, which includes material, labor, indirect costs associated with an addition or replacement, plus an allowance for borrowed funds used during construction. The cost of renewals and betterments relating to units of property is added to utility plant. The cost of property replaced, retired, or otherwise disposed of is deducted from utility plant and, generally, together with dismantling costs less any salvage, is charged to accumulated depreciation. The cost of repairs and minor renewals is charged to maintenance expense. Mass properties (such as poles, meters, and wire) are accounted for on an average unit cost basis by year of installation.

(Amounts in thousands, unless otherwise stated)

The following schedule summarizes the utility plant and property and equipment of the Authority as of December 31, 2018:

		Beginning balances	Additions	Transfers/ Disposals	Ending balances
Utility plant	$	7,621,220	519,977	(96,373)	8,044,824
Utility plant assets under capital lease		30,706	27,844	(248)	58,302
Office equipment, furniture, and leasehold improvements		17,825	358	(16,093)	2,090
Long lived assets – asset retirement cost		15,542			15,542
Accumulated depreciation		(2,055,931)	(201,335)	142,542	(2,114,724)
Total utility plant – net		5,629,362	346,844	29,828	6,006,034
Generation and transmission assets under capital lease		3,488,869	—	(292,486)	3,196,383
Accumulated depreciation		(1,491,528)	(172,676)	292,486	(1,371,718)
Total generation and transmission assets under capital lease – net		1,997,341	(172,676)	—	1,824,665
Construction work in progress		453,839	606,249	(519,977)	540,111
Retirement work in progress		7,472	39,304	(34,248)	12,528
		461,311	645,553	(554,225)	552,639
Totals	$	8,088,014	819,721	(524,397)	8,383,338

(Amounts in thousands, unless otherwise stated)

The following schedule summarizes the utility plant and property and equipment of the Authority as of December 31, 2017:

		Beginning balances	Additions	Transfers/ Disposals	Ending balances
Utility plant	$	7,196,868	537,593	(113,241)	7,621,220
Utility plant assets under capital lease		32,144	—	(1,438)	30,706
Office equipment, furniture, and leasehold improvements		17,792	33	—	17,825
Long lived assets – asset retirement cost		15,542	—	—	15,542
Accumulated depreciation		(2,039,547)	(186,328)	169,944	(2,055,931)
Total utility plant – net		5,222,799	351,298	55,265	5,629,362
Generation and transmission assets under capital lease		3,751,349	—	(262,480)	3,488,869
Accumulated depreciation		(1,563,055)	(190,953)	262,480	(1,491,528)
Total generation and transmission assets under capital lease – net		2,188,294	(190,953)	—	1,997,341
Construction work in progress		352,962	638,470	(537,593)	453,839
Retirement work in progress		4,496	57,784	(54,808)	7,472
		357,458	696,254	(592,401)	461,311
Totals	$	7,768,551	856,599	(537,136)	8,088,014

(10) Nine Mile Point Nuclear Power Station, Unit 2

The Authority owns an undivided 18% interest in NMP2 in Oswego County, New York. The other 82% is owned by Constellation Energy Nuclear Group (CENG), a joint venture of Exelon Corporation (Exelon) and EDF, a large electric-power company headquartered in France. The unit is operated by Exelon.

NMP2 has a rated net capacity of approximately 1,300 megawatts. The Authority is entitled to 18% of the unit's capacity and energy; and is obligated to pay 18% of its operating and maintenance costs, nuclear fuel costs, and costs of capital additions. The Authority's net capital investment in NMP2, excluding nuclear fuel, was approximately $540 million and $545 million as of December 31, 2018 and 2017, respectively.

Nuclear Plant Decommissioning

The operating license for NMP2 expires on October 31, 2046.

As of December 31, 2018, and 2017, the Authority's share of the estimated costs for decommissioning of the unit and restoration of the site is approximately $63 million and $61 million, respectively, and is included in the Statements of Net Position as a component of the ARO. The Authority maintains a nuclear decommissioning trust fund (NDTF) for its share of the decommissioning costs. As of December 31, 2018 and 2017, the NDTF had approximately $125 million and $132 million, respectively. The Authority believes that deposits to the fund, which are based on actuarial estimates, and the assumed investment returns of these funds during the term of the operating license, will be sufficient to meet its obligations.

Liability for Nuclear Accidents

The Federal Price-Anderson Act (Act) currently requires owners of nuclear power plants to pay an annual premium of $450 million in private insurance for offsite liability coverage for each reactor site (not each reactor). Exelon maintains this coverage for the Nine Mile Point site, and the Authority reimburses Exelon for its proportionate share of the cost. The Act further stipulates that in the event offsite damages exceed the amount of private insurance coverage, each reactor licensee is retroactively liable for a prorated share of the excess. This liability is limited to $121.3 million per reactor, payable at no more than $19 million per reactor per incident per year. The Authority's maximum liability under this provision is $21.8 million, payable at $3.4 million per incident per year.

(11) Cash, Cash Equivalents and Investments

The majority of the Authority's cash equivalents and investments are either managed by an external investment manager or invested in mutual funds. The Authority's investment of funds is administered in accordance with the applicable provisions of State law, the Bond Resolution, certain banking agreements and the Authority's investment policy.

(a) Unrestricted cash, cash equivalents and investments

As of December 31, 2018 and 2017, the Authority had unrestricted cash, cash equivalents and investments totaling approximately $952 million and $828 million, respectively. The unrestricted funds primarily consist of the: Operating Fund, Construction Fund, Rate Stabilization Fund, and OPEB Account.

OPEB Account

Deposits made to the Authority's unrestricted OPEB Account are to fund the Authority's contractual obligations to employees of PSEG Long Island for certain post-employment benefits. The Authority has invested such funds, pursuant to the Authority's investment policy, in domestic and international stock mutual funds (65%), as well as inflation protected and bond market institutional mutual funds (35%). The Authority's policy is to periodically conduct an actuarial study to determine the appropriate level of funding to ensure the OPEB Account will be sufficient to meet this contractual obligation. As of December 31, 2018 and 2017, the OPEB Account balance totaled approximately $272 million and $195 million, respectively.

In the event that the Authority determines there are insufficient revenues to pay reasonable and necessary operating expenses or to make payments on bonds or parity obligations, after notifying the

(Amounts in thousands, unless otherwise stated)

Finance and Audit Committee of the Authority's Board, the Authority may release funds from the OPEB Account for such purposes. As such, the OPEB Account is unrestricted.

The following tables summarize the Authority's unrestricted cash, cash equivalents and investments as of December 31, 2018 and 2017. The credit ratings listed are from Moody's, S&P and Fitch and the rating shown is the lowest rated obligation within each investment type.

Deposit/investment type	Credit rating (if applicable)	Percent of portfolio	2018 Fair value	Cash and cash equivalents	Investments
Operating Fund, Construction Fund, Rate Stabilization Fund and Other operating accounts:					
Cash and collateralized deposits		2 %	$ 13,310	13,310	—
Discount notes and bonds:					
Certificates of deposit	A/A-1/A1/P-1/A+/F-1	9	60,784	18,214	42,570
Commercial paper	A-1/P-1/F-1	6	39,268	13,474	25,794
Corporate	BBB+/A-1/Baa1/P-1/BBB+/F-1+	13	95,662	2,307	93,355
Federal agencies	AA+/A-1+/Aaa/P-1	7	47,605	14,343	33,262
Foreign government bonds	AAA/Aaa/AAA	3	19,029	—	19,029
Municipal bonds	AA-/Aa3/AA-	1	3,343	—	3,343
Treasury bills and notes	AA+/A-1+/Aaa/P-1	39	265,064	130,277	134,787
Money-market mutual funds		20	135,875	135,875	—
Subtotal		100 %	679,940	327,800	352,140
OPEB Account:					
Mutual funds – equities		65 %	176,947	—	176,947
Mutual funds – fixed income		35	94,932	—	94,932
Subtotal		100 %	271,879	—	271,879
Total			$ 951,819	327,800	624,019

(Amounts in thousands, unless otherwise stated)

Deposit/investment type	Credit rating (if applicable)	Percent of portfolio	2017 Fair value	Cash and cash equivalents	Investments
Operating Fund, Construction Fund, Rate Stabilization Fund and Other operating accounts:					
Cash and collateralized deposits		5 %	$ 30,481	30,481	—
Discount notes:					
Certificates of deposit		9	58,287	30,775	27,512
Commercial paper	P-1/A-1/F1	9	59,844	59,844	—
Corporate	Baa1/BBB+/A	14	90,274	10,010	80,264
Federal agencies	Aaa/AA+/AAA	4	26,225	—	26,225
Treasury bills and notes		26	167,647	93,582	74,065
Money-market mutual funds		33	200,774	200,774	—
Subtotal		100 %	633,532	425,466	208,066
OPEB Account:					
Mutual funds – equities		66 %	129,251	—	129,251
Mutual funds – fixed income		34	65,441	—	65,441
Money-market funds		—	6	6	—
Subtotal		100 %	194,698	6	194,692
Total			$ 828,230	425,472	402,758

(b) Restricted cash, cash equivalents and investments

The Authority’s restricted cash, cash equivalents and investments consist of: the Working Capital Requirements Account, the FEMA Grant Proceeds Fund, and the UDSA Collection Account.

Restricted Cash for Working Capital Requirements

In accordance with the OSA, the Authority is required to advance fund an account available to PSEG Long Island to pay for operating and capital expenditures that PSEG Long Island incurs as the Authority’s agent in the management of the Authority’s T&D system. The Authority is required to maintain three months of anticipated T&D operating and capital costs in this account in addition to separate storm, tax and power supply funding accounts. These accounts totaled $199 million and $212 million, as of December 31, 2018 and 2017, respectively, and were held in a collateralized deposit account. These funds are determined to be restricted due to the contractual obligation of the Authority to pre-fund the accounts but are considered by the Authority to be part of its working capital.

FEMA Grant Proceeds

The Authority received in advance approximately $502 million from FEMA which is restricted for storm hardening work on certain Authority assets. As of December 31, 2018, approximately $104 million remains as long-term cash, cash equivalent and investments. The Authority funds are expended by PSEG Long Island for approved projects, and the Authority reimburses itself for approved projects as completed. The Authority has segregated FEMA funds for future use as required by the FEMA grant agreement.

UDSA

Restructuring charges are held by the Bond Trustee (Trustee) in the Collection Account to satisfy debt service on the Restructuring Bonds. The Collection Account for the bonds consists of four subaccounts: General Subaccount, Excess Funds Subaccount, Reserve Subaccount, and Upfront Financing Costs Subaccount. The Collection Account (other than the Upfront Financing Costs Subaccount) secures the Restructuring Bonds.

Restricted cash held by the Trustee, as of December 31, 2018 includes $66 million in the General Subaccounts and $58 million in the Reserve Subaccounts. Restricted cash, as of December 31, 2017, included $49 million in the General Subaccounts, and $60 million in the Reserve Subaccounts.

The UDSA has separate investment guidelines that are specifically designed to address its legal and contractual requirements. These guidelines mandate that such investments be matched to meet the obligations of the bond and interest payments.

The following tables summarize the Authority's restricted cash, cash equivalents and investments as of December 31, 2018 and 2017. The credit ratings listed are from Moody's, S&P and Fitch and the ratings shown are the lowest rated obligation within each investment type.

(Amounts in thousands, unless otherwise stated)

Deposit/investment type	Credit rating (if applicable)	Percent of portfolio	2018 Fair value	Cash and cash equivalents	Investments
Restricted Working Capital Account and FEMA Grant Proceeds:					
Cash and collateralized deposits		66 %	$ 198,611	198,611	—
Discount notes and bonds:					
Certificates of depos	A/A-1/A1/P-1/A+/F-1	7	21,593	4,837	16,756
Commercial paper	A-1/P-1/F-1	8	23,849	—	23,849
Corporate	BBB+/A-1/Baa1/P-1/BBB+/F-1+	10	31,617	—	31,617
Treasury notes	AA+/A-1+/Aaa/P-1	9	26,761	6,770	19,991
Total		100 %	$ 302,431	210,218	92,213
UDSA:					
Money-market mutual funds		100 %	$ 124,597	124,597	—

Deposit/investment type	Credit rating (if applicable)	Percent of portfolio	2017 Fair value	Cash and cash equivalents	Investments
Restricted Working Capital Account and FEMA Grant Proceeds:					
Cash and collateralized deposits		43 %	$ 211,972	211,972	—
Discount notes and bonds:					
Certificates of deposit		16	77,457	2,502	74,955
Commercial paper	P-1/A-1/F1	12	58,164	—	58,164
Corporate	Baa1/BBB+/A	17	84,580	—	84,580
Federal agencies	Aaa/AA+/NR	2	10,030	—	10,030
Treasury notes		9	45,084	—	45,084
Money-market mutual funds		1	468	468	—
Total		100 %	$ 487,755	214,942	272,813
UDSA:					
Money-market mutual funds		93 %	$ 101,607	101,607	—
Cash		7	7,560	7,560	—
		100 %	$ 109,167	109,167	—

(c) Risks

The Authority's investment policy places a limit on investments by issuer and security type and addresses various risks described below. The Authority's Board may also specifically authorize, as it deems appropriate, other investments that are consistent with the Authority's investment objective. The Authority regularly reviews its investment policy to ensure continued effectiveness.

The risks associated with the Operating Fund, Rate Stabilization Fund, Construction Fund, Working Capital Requirements Fund, and Grant Proceeds Fund include:

Concentration of Credit Risk: The Authority's investment policies have established limits such that no more than 5% of the investment portfolio may be invested in the securities of any one non-government issuer. Additionally, no more than: (i) 40% of the portfolio may be invested in securities of any one Federal agency; (ii) 10% of the portfolio may be invested in supranationals, (iii) 40% of the portfolio may be invested in agency mortgage backed securities; (iv) 20% of the portfolio may be invested in repurchase agreements; and (v) 25% of the portfolio invested in money-market funds.

Custodial Credit Risk: Custodial credit risk for cash deposits (including demand deposits, time deposits and certificates of deposits issued by a commercial bank) is the risk that in the event of a bank failure, the Authority's deposits may not be recovered by depository insurance, and the deposits are not covered by collateralization. The Authority minimizes this risk by: i) investing in with low risk, highly rated financial institutions; ii) collateralizing its demand deposits and time deposits; and iii) investing in certificates of deposits with minimum short-term or long-term ratings of A-1/P-1, A-/A3, or their equivalent.

As of December 31, 2018 and 2017, the Authority had deposits of $211 million and $242 million, respectively, which are included in both restricted and unrestricted cash and cash equivalents.

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty, the Authority will not be able to recover the value of its investments or collateral securities that are in the possession of the outside party. Investment securities are exposed to custodial credit risk if the securities are not registered in the name of the Authority and are held by the counterparty, the counterparty's trust department or agent.

The Authority manages custodial credit risk by utilizing the services of a third-party custodian who may not otherwise be a party to the transaction and hold securities in a separte account in the name of the Authority.

Interest Rate Risk: The Authority's investment portfolio is structured to ensure that sufficient cash is available to meet the anticipated liquidity needs of the Authority. Investment maturities may not exceed five and a half years from their purchase settlement date with the exception of U.S. government obligations and investment contracts. Additionally, maturities for repurchase agreements may not exceed 90 days, commercial paper may not exceed 270 days, and bankers' acceptances may not exceed 180 days.

In order to meet the OPEB Accounts' objective of funding future retirement benefit obligations while balancing long-term risk and return and providing reasonable diversification, the OPEB Account allocates its assets as follows: (i) domestic equities or mutual funds at 45%; (ii) international equities or mutual funds at 20%; (iii) fixed income investments or mutual funds at 20%; and (iv) fixed income investments – inflation protected securities or mutual funds at 15%.

The risks for the OPEB Account include:

Credit Risk: The Authority's permissible OPEB Account investments and related minimum credit ratings for fixed income investments include (i) U.S. government money-market funds (AAAm or Aaa-mf); (ii) mortgage pass-through obligations, collateralized mortgage obligations, and corporate mortgage obligations (AA or Aa); (iii) commercial paper (A-1 and P-1); (iv) domestic and Yankee certificates of deposits and bankers acceptances of domestic banks (A- or A3) and minimum short-term ratings of (A-1 or P-1); and (v) short-term money-market mutual funds, investment accounts, or sweep accounts that conform to the permissible investments or funds of securities designed to replicate the composition of benchmark market indices.

Concentration of Credit Risk: The Authority's OPEB Account investment policy has established limits such that no more than 5% of the fixed income portfolio may be invested in the securities of any one issuer with the exception of U.S. government/agency securities, no more than 25% of the portfolio may be invested in securities of issuers in the same industry with the exception of U.S. government/agency securities, no more than 20% of the portfolio may be invested in municipal securities, no more than 15% of the portfolio may be invested in notes and bonds rated in the BBB category and no more than 30% of the portfolio may be invested in notes or bonds rated in the BBB and A rating categories. The overall rating of the fixed income assets shall be at least in the A category.

(d) Nuclear Decommissioning Trust Fund (NDTF)

The Authority maintains a separate investment policy applicable to the long-term investments in the NDTF which is held to meet the Authority's obligation with respect to the eventual decommissioning of the Authority's 18% interest in the NMP2 nuclear facility. The Authority's policy is to periodically conduct an actuarial study to determine the appropriate level of funding for the NDTF and to maintain an appropriate investment policy so that the value in the trust in 2046 (the year in which decommissioning activities are scheduled to begin), will be sufficient to meet decommissioning obligations.

The fund targets 50% fixed income investments or mutual funds and 50% domestic/international equities or mutual funds. The fixed income investments are managed to track the Barclay's Capital U.S. Float Adjusted Aggregate Bond Market Index or equivalent benchmarking index. The equity allocation is invested in index mutual funds based on widely held benchmark indices with a minimum of 50% allocated to equities of domestic firms.

Credit Risk: The guidelines attempt to minimize risk by limiting permissible fixed income investments to include: obligations of the U.S. government and its agencies; corporate or other obligations with a BBB-/Baa3 or better rating; mortgage obligations rated AA/Aa or better; commercial paper with a rating of A-1/P-1; certificates of deposit; Yankee certificates of deposit and bankers acceptances of domestic banks with a minimum rating of A-/A3 and minimum short-term ratings, if applicable, of A-1/P-1, short term money-market investment accounts that conform to the aforementioned permissible investments.

Concentration of Credit Risk: The investment policy has established limits for fixed income securities such that no more than: (i) 5% of the portfolio may be invested in the securities of any one issuer; (ii) 25% of the portfolio may be invested in securities of issuers in the same industry, with the exception of the U.S. government and its agencies securities; (iii) 20% of the portfolio may be invested in municipal securities; (iv) 15% of the portfolio may be invested in notes and bonds rated in the BBB category; and (v) 30% of the portfolio may be invested in notes and bonds rated in the BBB and A categories. The overall rating of the fixed income assets shall be at least in the A category.

Custodial Credit Risk: The NDTF does not have a separate policy relative to custodial credit risk of its deposits, and defers to the policies of the Authority.

(Amounts in thousands, unless otherwise stated)

Interest Rate Risk: Due to the long-term nature of the NDTF, the fixed income portion of the portfolio is managed to track the Barclays Capital U.S. Float Adjusted Aggregate Bond Market Index. The portfolio's duration is required to fall within a range of 20% below the duration of the index and 10% above the duration of the index.

The NDTF had the following investments as of December 31:

Investment type		2018 Fair value	Percent of portfolio
Discount notes and bonds:			
Corporate	$	17,072	14 %
Federal agencies		17,109	14
Treasury notes and bonds		37,358	30
Mutual funds – domestic equities		52,482	41
Money-market mutual funds		1,198	1
Total	$	125,219	100 %

Investment type		2017 Fair value	Percent of portfolio
Discount notes:			
Corporate	$	24,313	18 %
Federal agencies		16,608	13
Treasury bills, notes and bonds		34,191	26
Mutual funds – domestic equities		55,172	42
Money-market mutual funds		1,918	1
Total	$	132,202	100 %

The overall duration of the NDTF fixed income portfolio averaged 5.8 years and 6.0 years as of December 31, 2018 and 2017, respectively.

(Amounts in thousands, unless otherwise stated)

(e) Fair Value of Investments

The following table presents the Authority's unrestricted and restricted investments and NDTF, measured and recorded at fair value on the Statements of Net Position and their level within the fair value hierarchy (as previously defined in note 2):

Investment type		2018 Fair Value	Level 1	Level 2	Level 3
Unrestricted and restricted investments					
Discount notes:					
Certificates of deposit	$	59,326	—	59,326	—
Commercial paper		49,643	—	49,643	—
Corporate		124,972	—	124,972	—
Federal agencies		33,262	—	33,262	—
Foreign government bonds		19,029	—	19,029	—
Municipal bonds		3,343	—	3,343	—
Treasury bills and notes		154,778	154,778	—	—
Money-market mutual funds		271,879	271,879	—	—
Total	$	716,232	426,657	289,575	—
NDTF:					
Discount notes:					
Corporate	$	17,072	—	17,072	—
Federal agencies		17,109	—	17,109	—
Treasury notes and bonds		37,358	37,358	—	—
Mutual funds - domestic equities		52,481	52,481	—	—
Money-market mutual funds		1,199	1,199	—	—
Total	$	125,219	91,038	34,181	—

(Amounts in thousands, unless otherwise stated)

Investment type		2017 Fair Value	Level 1	Level 2	Level 3
Unrestricted and restricted investments					
Discount notes:					
Certificates of deposit	$	102,467	—	102,467	—
Commercial paper		58,164	—	58,164	—
Corporate		164,844	—	164,844	—
Federal agencies		36,255	—	36,255	—
Treasury bills and notes		119,149	119,149	—	—
Money-market mutual funds		194,692	194,692	—	—
Total	$	675,571	313,841	361,730	—
NDTF:					
Discount notes:					
Corporate	$	24,313	—	24,313	—
Federal agencies		16,608	—	16,608	—
Treasury bills, notes and bonds		34,191	34,191	—	—
Mutual funds - domestic equities		55,172	55,172	—	—
Money-market mutual funds		1,918	1,918	—	—
Total	$	132,202	91,281	40,921	—

(f) OPEB Trust

During 2017, the Authority’s Board approved the creation of a legally separate Section 115 Trust (OPEB Trust) separating its eligible employee and retiree OPEB obligation from the OPEB Account. Based on the funding analysis of an actuarial study, the Authority transferred approximately $19 million from the existing unrestricted OPEB Account to the OPEB Trust, funding approximately 96% of its net OPEB liability. Additionally, during 2018, the Authority funded approximately $2 million in the OPEB Trust, funding approximately 89% of its net OPEB liability.

The OPEB Trust is restricted to funding Authority employee and retiree OPEB obligations and is shown as a separate fiduciary component unit.

(Amounts in thousands, unless otherwise stated)

(12) Long-Term and Short-Term Debt

(a) Electric System General Revenue Bonds and Subordinated Revenue Bonds

The Authority financed the cost of acquiring the T&D system from LILCO with Electric System General Revenue Bonds and Electric System Subordinated Revenue Bonds (collectively, the Bonds). Ongoing capital improvements are funded through the issuance of debt, except where grants or excess cash flow provide the ability to cash fund such expenditures. LIPA and the Authority entered into a Financing Agreement, whereby LIPA transferred to the Authority all of its right, title and interest in and to the revenues generated from the operation of the T&D system, including the right to collect and receive the same.

All of the Authority's bonds are secured by a Trust Estate as pledged under the Authority's Bond Resolution (the Resolution). The Trust Estate consists principally of the revenues generated by the operation of the T&D system and has been pledged to the Authority. The Authority's Revenue Bonds contain a rate covenant to ensure rates and charges are set at a level sufficient to fund annual operating and debt service expenses.

Below is a summary of the Authority's bond transactions completed during the years ended December 31:

2018

Revenue Obligations:	2018 General Revenue Bonds	Par Amount:	$ 430,000
Purpose:	Fund system improvements and pay issuance costs	Date Closed:	October 30, 2018
Revenue Obligations:	2014C General Revenue Bonds	Par Amount:	$ 150,000
Purpose:	Remarket floating rate notes	Date Closed:	September 12, 2018
Revenue Obligations:	2015C General Revenue Bonds	Par Amount:	$ 149,000
Purpose:	Remarket floating rate notes	Date Closed:	September 12, 2018

2017

Revenue Obligations:	2017 General Revenue Bonds	Par Amount:	$ 350,000
Purpose:	Fund system improvements and pay issuance costs	Date Closed:	December 14, 2017

(Amounts in thousands, unless otherwise stated)

(b) Component Unit Bonds – UDSA

The Authority's Board adopted the Financing Orders authorizing the issuance of Restructuring Bonds by the UDSA to allow the Authority to retire a portion of its outstanding indebtedness and to provide savings to the Authority's customers as measured on a net present value basis. The Restructuring Bonds are not obligations of the Authority; however, the UDSA is a component unit of the Authority and consolidated into these financial statements.

Below is a summary of the UDSA bond transactions completed during the year ended December 31, 2017. There were no additional UDSA bond transactions completed in 2018:

	2017			
Revenue Obligations:	2017 Restructuring Bonds	Par Amount:	$	369,465
Purpose:	Retire certain higher cost Authority bonds and pay issuance costs	Date Closed:		November 21, 2017
		NPV Savings:	$	45,387
		Escrow Deposit:	$	433,741
		Deferred Defeasance:	$	30,791

(Amounts in thousands, unless otherwise stated)

The Authority's long-term debt as of December 31, 2018 consisted of the following:

	Beginning balance	Accretion/ additions	Maturities	Repaid/ Refundings	Ending balance	Years of Maturity	Interest Rate (%)	
General revenue bonds/notes:								
Series 1998A	$ 98,010	5,209	11,650	—	91,569	2019-2028	5.28-5.30	(a)
Series 2000A	319,189	17,922	34,460	—	302,651	2019-2029	5.83-5.95	(a)
Series 2003C	36,645	—	—	—	36,645	2029	5.25	
Series 2010B	210,000	—	—	—	210,000	2020-2041	4.85-5.85	(c)
Series 2011A	18,315	—	—	—	18,315	2019-2038	4.00-5.00	(b)
Series 2012A	250,000	—	—	—	250,000	2037-2042	5.00	(b)
Series 2012B	179,035	—	—	—	179,035	2021-2029	5.00	(b)
Series 2014A	413,070	—	—	—	413,070	2034-2044	4.00-5.00	(b)
Series 2014B	164,950	—	18,515	—	146,435	2019-2026	2.76-4.13	(b)
Series 2014C FRN	150,000	—	—	—	150,000	2033	2.39	(b)(d)
Series 2015A1 FRN	51,000	—	—	—	51,000	2033	3.96	(b)(d)
Series 2015A2 FRN	149,000	—	—	—	149,000	2029	3.73	(b)(d)
Series 2015B	117,230	—	—	—	117,230	2019-2045	3.00-5.00	
Series 2015C FRN	149,000	—	—	—	149,000	2033	2.39	(b)(d)
Series 2016A FRN	175,000	—	—	—	175,000	2033	3.96	(b)(d)
Series 2016B	383,770	—	5,255	—	378,515	2020-2046	4.00-5.00	
Series 2017	350,000	—	—	—	350,000	2021-2047	5.00	
Series 2018	—	430,000	—	—	430,000	2022-2039	2.25-5.00	
Subtotal	3,214,214	453,131	69,880	—	3,597,465			
UDSA restructuring bonds:								
Series 2013T	469,786	—	46,433	—	423,353	2019-2023	2.04-3.44	
Series 2013TE	1,374,390	—	—	—	1,374,390	2023-2039	5.00	
Series 2015	1,002,115	—	—	—	1,002,115	2021-2035	3.00-5.00	
Series 2016A	636,770	—	—	—	636,770	2023-2033	5.00	
Series 2016B	409,870	—	76,370	—	333,500	2020-2033	4.00-5.00	
Series 2017	369,465	—	—	—	369,465	2020-2039	5.00	
Subtotal	4,262,396	—	122,803	—	4,139,593			
	7,476,610	453,131	192,683	—	7,737,058			
Plus: Net premium	694,804	52,317	58,972	—	688,149			
Less: Current maturities	(192,683)				(192,191)			
Total Long-term debt	$ 7,978,731				8,233,016			

a) Capital Appreciation Bonds
b) Certain bonds of this series are subject to interest rate exchange agreements
c) Taxable Build America Bonds subject to federal subsidy, rate shown is pre-subsidy level
d) Variable rate (rate presented as of the December 31, 2018)

(Amounts in thousands, unless otherwise stated)

The Authority's long-term debt as of December 31, 2017 consisted of the following:

	Beginning balance	Accretion/ additions	Maturities	Repaid/ Refundings	Ending balance	Years of Maturity	Interest Rate (%)	
General revenue bonds/notes:								
Series 1998A	$ 113,100	5,973	12,970	8,093	98,010	2018-2028	5.28-5.30	(a)
Series 2000A	334,367	18,812	33,990	—	319,189	2018-2029	5.81-5.95	(a)
Series 2003C	36,645	—	—	—	36,645	2029	5.25	
Series 2006F	28,535	—	28,535	—	—	—	—	
Series 2008B	15,060	—	—	15,060	—	—	—	
Series 2009A	191,670	—	10,120	181,550	—	—	—	
Series 2010B	210,000	—	—	—	210,000	2020-2041	4.85-5.85	(c)
Series 2011A	221,635	—	7,730	195,590	18,315	2018-2038	4.00-5.00	(b)
Series 2012A	250,000	—	—	—	250,000	2037-2042	5.00	(b)
Series 2012B	179,035	—	—	—	179,035	2021-2029	5.00	(b)
Series 2014A	413,070	—	—	—	413,070	2034-2044	4.00-5.00	(b)
Series 2014B	164,950	—	—	—	164,950	2018-2026	2.36-4.13	(b)
Series 2014C FRN	150,000	—	—	—	150,000	2033	1.74	(b)(d)
Series 2015A1 FRN	51,000	—	—	—	51,000	2033	3.21	(b)(d)
Series 2015A2 FRN	149,000	—	—	—	149,000	2029	3.37	(b)(d)
Series 2015B	117,230	—	—	—	117,230	2019-2045	3.00-5.00	
Series 2015C FRN	149,000	—	—	—	149,000	2033	1.97	(b)(d)
Series 2016A FRN	175,000	—	—	—	175,000	2033	3.39	(b)(d)
Series 2016B	407,675	—	23,905	—	383,770	2018-2046	4.00-5.00	
Series 2017	—	350,000	—	—	350,000	2021-2047	5.00	
Subtotal	3,356,972	374,785	117,250	400,293	3,214,214			
UDSA restructuring bonds:								
Series 2013T	482,934	—	13,148	—	469,786	2018-2023	2.04-3.44	
Series 2013TE	1,374,390	—	—	—	1,374,390	2023-2039	5.00	
Series 2015	1,002,115	—	—	—	1,002,115	2021-2035	3.00-5.00	
Series 2016A	636,770	—	—	—	636,770	2023-2033	5.00	
Series 2016B	469,320	—	59,450	—	409,870	2018-2033	4.00-5.00	
Series 2017	—	369,465	—	—	369,465	2020-2039	5.00	
Subtotal	3,965,529	369,465	72,598	—	4,262,396			
	7,322,501	744,250	189,848	400,293	7,476,610			
Plus: Net premium	624,098	127,144	56,438	—	694,804			
Less: Current maturities	(189,848)				(192,683)			
Total Long-term debt	$ 7,756,751				7,978,731			

a) Capital Appreciation Bonds
b) Certain bonds of this series are subject to interest rate exchange agreements
c) Taxable Build America Bonds subject to federal subsidy, rate shown is pre-subsidy level
d) Variable rate (rate presented as of the December 31, 2017)

(Amounts in thousands, unless otherwise stated)

The debt service requirements for the Authority's consolidated bonds (excluding short-term debt such as general revenue notes, commercial paper notes, and revolving credit facility but including the UDSA Restructuring Bonds) as of December 31, 2018 are as follows:

Due		Principal*	Interest	Net swap payments (receipts)	Total
2019	$	192,191	338,861	14,113	545,165
2020		225,417	337,735	14,130	577,282
2021		290,879	330,584	14,117	635,580
2022		298,241	320,039	14,113	632,393
2023		319,560	308,433	14,113	642,106
2024–2028		1,799,120	1,333,707	65,036	3,197,863
2029–2033		2,181,075	915,748	(7,747)	3,089,076
2034–2038		1,513,265	489,230	—	2,002,495
2039–2043		870,965	147,206	—	1,018,171
2044–2047		185,730	18,422	—	204,152
Total	$	7,876,443	4,539,965	127,875	12,544,283

* Interest on capital appreciation bonds is included in principal

Future debt service on the variable rate bonds and the floating rate portion of floating-to-fixed rate swaps is calculated using the relevant indices, including applicable spreads, as of December 31, 2018. Such rates, as shown in the long-term debt summary table, are assumed constant through maturity. For bonds subject to floating-to-fixed rate swap agreements, the "net swap payments" represent the fixed rate swap payment net of the assumed variable rate swap receipts for each agreement.

Terms by which interest rates change for variable rate debt are as follows:

The 2014C FRN Bonds bear interest at 70% of one-month LIBOR, plus the per annum spread of 65 basis points. The rate is determined on the second London Banking Day prior to the first business day of each month.

The 2015A-1 FRN Bonds bear interest at the sum of the prevailing 18-year AAA MMD general obligation index and the applicable spread of 100 basis points. The MMD FRN rate resets on the first business day of each month.

The 2015A-2 FRN Bonds bear interest at the sum of the prevailing 14-year AAA MMD general obligation index and the applicable spread of 100 basis points. The MMD FRN rate resets on the first business day of each month.

(Amounts in thousands, unless otherwise stated)

The 2015C FRN Bonds bear interest at 70% of one-month LIBOR, plus the per annum spread of 88 basis points. The rate is determined on the second London Banking Day prior to the first business day of each month.

The 2016A FRN Bonds bear interest at the sum of the prevailing 17-year AAA MMD general obligation index and the applicable spread of 105 basis points. The MMD FRN rate resets on the first business day of each month.

(c) Interest Rate Swap Agreements

The Authority has entered into several interest rate swap agreements with various counterparties to modify the interest rate on outstanding debt. For a further discussion, see note 8.

(d) Short-Term Debt

The Authority's Board authorized the issuance of short-term borrowings in an amount not to exceed $1.0 billion outstanding at any given time. The short-term borrowing program provides the Authority resources to meet interim working capital needs and cash flow requirements from unforeseen circumstances such as severe weather events. Among other factors, the Authority's operating and capital needs vary during the year given the seasonal nature of its sales.

The Authority's short-term borrowing program is supported by various bank agreements expiring from 2019 through 2022 which the Authority expects to renew or replace as needed prior to expiration. For a further discussion, see note 18.

The Authority's short-term debt as of December 31, 2018 consisted of the following instruments:

		Maximum Authorized Par Amount	Beginning Balance	Additions	Payments	Ending Balance	Supporting Letter of Credit Expiration Date
General revenue notes:							
Series 2013A	Revolving Credit Agreement	$ 350,000	12,820	280,000	287,820	5,000	3/22/2019
Series 2015 CP 1AB	Commercial Paper	200,000	67,500	80,000	147,500	—	6/29/2021
Series 2015 CP 2AB	Commercial Paper	100,000	30,000	80,000	110,000	—	3/11/2022
Series 2015 CP 3AB	Commercial Paper	100,000	—	—	—	—	5/01/2020
Series 2015 CP 4AB	Commercial Paper	200,000	—	200,000	50,000	150,000	3/12/2021
Series 2015 CP 5AB	Commercial Paper	100,000	—	100,000	100,000	—	3/12/2021
Series 2015 CP 6AB	Commercial Paper	100,000	—	100,000	20,500	79,500	3/14/2022
Subordinated revenue notes:							
Series 2014 CP 1AB	Commercial Paper	—	150,000	—	150,000	—	NA
Series 2014 CP 2AB	Commercial Paper	—	100,000	—	100,000	—	NA
	Total short-term debt	$ 1,150,000	360,320	840,000	965,820	234,500	

(Amounts in thousands, unless otherwise stated)

The Authority's short-term debt as of December 31, 2017 consisted of the following instruments:

			Maximum Authorized Par Amount	Beginning Balance	Additions	Payments	Ending Balance	Supporting Letter of Credit Expiration Date
General revenue notes:								
Series 2013A	Revolving Credit Agreement	$	350,000	—	130,000	117,180	12,820	3/22/2019
Series 2015GR1A/B CP	Commercial Paper		200,000	85,000	—	17,500	67,500	6/29/2021
Series 2015GR2A/B CP	Commercial Paper		75,000	70,625	—	40,625	30,000	3/29/2018
Series 2015GR3A/B CP	Commercial Paper		100,000	—	—	—	—	3/23/2020
Subordinated revenue notes:								
Series 2014 CP 1AB	Commercial Paper		200,000	150,000	—	—	150,000	3/15/2018
Series 2014 CP 2AB	Commercial Paper		100,000	100,000	—	—	100,000	3/15/2018
	Total short-term debt	$	1,025,000	405,625	130,000	175,305	360,320	

(e) Fixed Obligation Coverage Ratio

The Authority follows the "public power model" of rate-setting which makes use of a fixed obligaiton coverage ratio to determine revenue requirements. The Authority's methodology for calculating the fixed obligation coverage ratio excludes certain specified non-cash items from expenses. Depreciation expense, amortization of the Acquisition Adjustment and other regulatory assets, including the PSEG Long Island accrual expense for future OPEB benefit cost obligations, are excluded from the coverage calculation. The revenue section of this calculation includes revenues received from certain customers used to satisfy regulatory assets that were established when the Authority issued debt to fund these projects. For calculating the coverage ratios, such cash receipts are available to meet the Authority's fixed obligation requirements as they are a component of cash flow, but are excluded from revenues for accrual accounting purposes.

Certain interest related costs, such as interest rate derivative costs, letters of credit and remarketing fees, bond administration costs, and interest related to customer deposits, are treated as ordinary operating expenses without coverage. The Authority and the UDSA principal and interest payments, including interest payments on the Authority's short-term borrowing program and payments on capital leases, are included for coverage.

(Amounts in thousands, unless otherwise stated)

The Authority's calculation of its fixed obligation coverage ratio, for the years ended December 31, 2018 and 2017, is shown below for informational purposes:

		2018	2017	
Operating revenues	$	3,576,274	3,481,613	(1)
Other income		75,998	60,332	(1)
Shoreham Settlement & VBA regulatory asset receipts		49,289	45,814	(2)
Total revenues and income		3,701,561	3,587,759	
Operating expenses		(3,301,305)	(3,214,117)	(1)
Add non cash expenses/(deduct cash funding):				
Depreciation and amortizations		331,860	308,755	(1)
Capital lease allowance		281,081	308,276	(3)
OPEB accrual expense		48,100	41,080	(2) (4)
Other interest expense		(24,239)	(25,458)	(2)
Total expenses		(2,664,503)	(2,581,464)	
Funds available for fixed obligations	**$**	**1,037,058**	**1,006,295**	
Principal – Authority		69,880	117,250	(2)
Interest – Authority		127,799	131,620	(2)
Principal – UDSA		122,803	72,598	(2)
Interest – UDSA		201,925	192,213	(2)
Capital lease obligations		281,081	308,276	(3)
Total fixed obligation payments	**$**	**803,488**	**821,957**	
Fixed Obligation Coverage Ratios:				
Excluding UDSA		1.49	1.33	(5)
Including UDSA		1.29	1.22	
Board Approved Coverage Targets:				
Excluding UDSA		**1.40**	**1.30**	
Including UDSA		**1.25**	**1.20**	

Notes:

(1) See Statements of Revenues, Expenses and Changes in Net Position

(2) See Statements of Cash Flows

(3) See note 12 (f) (below)

(4) The public power model, adopted by the Authority's Board, adds back the PSEG Long Island OPEB accrual operating expense as cash available to pay debt service. There are no mandatory pre-funding requirements for these OPEB expenses. The Authority voluntarily sets aside funds for OPEB obligations in an OPEB Account after payment of all operating expenses and debt service each year. See note 10 for more detail.

(5) Excluding UDSA equal to ($1,037,058 less ($324,728))/($803,488 less ($324,728))

(Amounts in thousands, unless otherwise stated)

(f) Changes in noncurrent liabilities

The Authority's other long-term liabilities as of December 31, 2018 were comprised of the following:

		Beginning Balance	Increases	Decreases	Ending Balance
Long-term liabilities and unrealized credits	$	39,559	13,333	(9,750)	43,142
Borrowings		77,307	—	(5,051)	72,256
Claims and damages		57,676	18,261	(8,090)	67,847
Capital lease obligations		1,843,515	140,367	(281,081)	1,702,801
Total other long-term liabilities	$	2,018,057	171,961	(303,972)	1,886,046

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The Authority's other long-term liabilities as of December 31, 2017 were comprised of the following:

		Beginning Balance	Increases	Decreases	Ending Balance
Long-term liabilities and unrealized credits	$	69,933	8,306	(38,680)	39,559
Borrowings		82,241	—	(4,934)	77,307
Claims and damages		41,430	49,591	(33,345)	57,676
Capital lease obligations		2,021,284	130,507	(308,276)	1,843,515
Total other long-term liabilities	$	2,214,888	188,404	(385,235)	2,018,057

(13) OSA – Employee Retirement Benefits Obligations

The cost to employ PSEG Long Island's workforce, including employee pension and other post-employment benefits, are a "pass through expenditure" and contractual liability of the Authority. PSEG Long Island employee pension and OPEB obligations are legal obligations of PSEG Long Island, and the employees covered by these plans are PSEG Long Island employees.

When transitioning National Grid employees to PSEG Long Island, to ensure the National Grid workforce serving the Authority was protected against benefit losses from the transition, the PSEG Long Island benefit plans credited National Grid transitioned employees for service prior to the OSA for purposes such as eligibility, participation, vesting, company match levels, subsidies (including any type of early retirement subsidy) and attainment of retirement dates. In addition, those employees who immediately prior to the OSA effective date could have become eligible to participate in the National Grid post-employment health and life insurance benefit plans, are entitled to receive substantially equivalent post-employment health and life insurance benefits from PSEG Long Island. This arrangement created a prior service cost obligation totaling $126 million for pensions and $316 million for OPEBs as of January 1, 2014. The following table provides a rollforward of the changes to the benefit obligations and the fair value of the plan assets during each of the years ended December 31, 2018 and 2017.

(Amounts in thousands, unless otherwise stated)

The table also provides the funded status of the PSEG Long Island plans and the amounts recognized as the long-term contractual liability on the Statements of Net Position at the end of both years.

		Pension benefits		Post-employment benefits	
		2018	**2017**	**2018**	**2017**
Benefit obligation at beginning of year	$	320,522	262,462	541,558	452,406
Service cost		29,856	26,845	18,628	14,618
Interest cost		11,754	10,942	19,906	19,016
Actuarial loss (gain)		(38,001)	21,726	(73,755)	59,758
Benefits paid		(2,631)	(1,453)	(5,985)	(4,240)
Plan amendment		—	—	—	—
Benefit obligation at end of year		321,500	320,522	500,352	541,558
Fair value of assets at beginning of year		191,219	134,148	—	—
Actual return on plan assets		(15,912)	23,524	—	—
Employer contribution		40,000	35,000	5,985	4,240
Gross benefits paid		(2,631)	(1,453)	(5,985)	(4,240)
Fair value of assets at end of year		212,676	191,219	—	—
Authority unfunded obligation	$	(108,824)	(129,303)	(500,352)	(541,558)

The table does not reflect the balance of the Authority's OPEB Account, which was established to prefund the contractual liability for such post-employment benefits.

The Authority's Board authorized the creation of an OPEB Account to allow the Authority to segregate funds to meet future OPEB obligations for PSEG Long Island employees. As of December 31, 2018 and 2017, the Authority had on deposit in the OPEB Account approximately $272 million and $195 million, respectively. For a further discussion, see note 11.

The contractual liability related to pension and post-employment benefits decreased during 2018 due to the update of certain assumptions regarding the census data, claims costs, excise taxes, and the discount rate. These changes resulted in a net actuarial gain of $38 million for pension benefits and $74 million for post-employment benefits as follows:

(Amounts in thousands, unless otherwise stated)

		Pension benefits	Post-employment benefits
Updated census data	$	6.9	3.1
Updated assumptions		(1.4)	8.7
Updated medical trend		N/A	(7.1)
Impact of adopting granular method		1.0	1.9
Discount rate changes (see table below)		(44.5)	(80.4)
Total (gain)/loss	$	(38.0)	(73.8)

The actuarial valuations related to pension and post-employment benefits involve estimates and assumptions regarding the probability of events in the future. Below are the weighted average assumptions used to calculate actuarial present values of benefit obligations as of December 31, 2018 and 2017:

	Pension benefits		Post-employment benefits	
	2018	2017	2018	2017
Discount rate	4.60 %	3.90 %	4.67 %	3.96 %
Rate of compensation increase	3.25 %	3.25 %	3.25 %	3.25 %

Pension Plan Assets

During 2018 and 2017, the Authority provided $40 million and $35 million, respectively, to PSEG Long Island for deposit in its pension plan trust fund. The trust is sponsored, overseen and managed by the PSEG Thrift & Pension Investment Committee. The benefit plan assets are maintained separately and are not commingled with other PSEG plans. The benefit plan assets are not assets of the Authority and, therefore, are not reflected on the Statements of Net Position. These assets, however, reduce the Authority's contractual obligation to PSEG Long Island for the benefit obligations of the PSEG Long Island employees. The following table outlines the PSEG Long Island pension assets as of December 31, 2018 and 2017:

		2018		2017	
Investment type		Amount	Allocation	Amount	Allocation
Equity	$	140,700	66.2%	137,228	71.8%
Fixed income		71,428	33.6	53,599	28.0
Other		548	0.2	392	0.2
	$	212,676	100.0%	191,219	100.0%

(14) Authority Employee Benefits

All full-time Authority employees must participate in one of two employee retirement plans offered by the Authority, either: (i) the New York State and Local Retirement System (the Retirement System); or (ii) the New York State Voluntary Defined Contribution Plan (VDC).

(a) Pension Plans

(i) Plan Description

The Retirement System is a cost-sharing multiple-employer defined benefit retirement system. The net position of the Retirement System is held in the New York State Common Retirement Fund (the Fund), which was established to hold all net assets and record changes in fiduciary net position allocated to the Retirement System. The Comptroller of the State of New York serves as the trustee of the Fund and is the administrative head of the Retirement System. Retirement System benefits are established under the provisions of the New York State Retirement and Social Security Law (NYSRSSL). Once a public employer elects to participate in the Retirement System, the election is irrevocable. The New York State Constitution provides that pension membership is a contractual relationship and plan benefits cannot be diminished or impaired. Benefits can be changed for future members only by enactment of a State statute. The Retirement System is included in the State's financial report as a pension trust fund. That report, including information with regard to benefits provided, may be found at www.osc.state.ny.us/retire/publications/index.php or obtained by writing to the New York State and Local Retirement System, 110 State Street, Albany, NY 12244.

The Retirement System uses a tier concept to distinguish membership classes (i.e. tiers 1 through 6) with tier membership based on the date an employee joins the Retirement System. The Retirement System is noncontributory for tier 1 and 2 employees who joined on or prior to July 27, 1976. Tiers 3 and 4 employees, who joined between July 28, 1976 and December 31, 2009 and have less than ten years of service, contribute 3% of their salary. Employees who joined the Retirement System after January 1, 2010 are Tier 5 employees and contribute 3% of their salary during their entire length of service. Employees who joined the Retirement System on or after April 1, 2012, are Tier 6 employees and must contribute for their entire length of service. Tier 6 contribution rates vary based on annual compensation. From April 1, 2012 through March 31, 2013, Tier 6 employees contributed 3% of their salary. After March 31, 2013, during the first three years of membership, the Tier 6 employee contribution rate is based on the employee's annual wage. After this three-year period, the employee's contribution rate will be based on what was actually earned two years prior. Beginning April 1, 2013, the contributions rate for tier 6 employees varies between 3% and 6% depending on an employee's actual salary.

Members become vested in the pension plan after ten years of service and generally are eligible to receive benefits at age 55. The benefit is generally 1.66% of final average salary (FAS), times the number of years of service, for members who retire with less than 20 years of service, and 2% of FAS for members who retiree with 20 or more years of service. The Retirement System provides an annual automatic cost of living adjustment to members or surviving spouses based on certain eligibility criteria.

(ii) Ordinary Disability Benefits

Generally, ordinary disability benefits, usually one-third of salary, are provided to eligible members after ten years of service; in some cases, they are provided after five years of service.

(iii) Accidental Disability Benefits

For all eligible Tier 1 and Tier 2 members, the accidental disability benefit is a pension of 75% of final average salary, with an offset for any Workers' Compensation benefits received. The benefit for eligible Tier 3, 4, 5 and 6 members is the ordinary disability benefit with the years-of-service eligibility requirement dropped.

(iv) Ordinary Death Benefits

Death benefits are payable upon the death, before retirement, of a member who meets eligibility requirements. The first $50,000 of an ordinary death benefit is paid in the form of group term life insurance. The benefit is generally three times the member's annual salary. For most members, there is also a reduced post-employment ordinary death benefit available.

(v) Post-employment Benefit Increases

A cost-of-living adjustment is provided annually to: (i) all pensioners who have attained age 62 and have been retired for five years; (ii) all pensioners who have attained age 55 and have been retired for ten years; (iii) all disability pensioners, regardless of age, who have been retired for five years; (iv) Retirement System recipients of an accidental death benefit, regardless of age, who have been receiving such benefit for five years; and (v) the spouse of a deceased retiree receiving a lifetime benefit under an option elected by the retiree at retirement. An eligible spouse is entitled to one-half the cost-of-living adjustment amount that would have been paid to the retiree when the retiree would have met the eligibility criteria.

(vi) Contributions

The Retirement System is non-contributory for employees who joined before July 27, 1976. Later employees contribute 3% of their salary for the first ten years of membership, and employees who joined on or after January 1, 2010 generally contribute between 3% to 6% of their salary for their entire length of service. Under the authority of the NYSRSSL, the Comptroller annually certifies the actuarially determined rates expressly used in computing the employers' contributions based on salaries paid during the Retirement Systems' fiscal year ending March 31. The Authority's contributions for the year ended December 31, 2018, 2017 and 2016, were equal to 100% of the contributions required, and were $0.61 million, $0.56 million, and $0.2 million respectively.

(vii) Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At December 31, 2018 and 2017, the Authority reported a liability of $0.31 million and $1.0 million, respectively, for its proportionate share of the Retirement System net pension liability. The net pension liability was measured as of April 1, 2018 and 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of April 1, 2017 with update procedures used to rollforward the total pension liability to March 31, 2018. The Authority's proportionate share of the net pension liability was based on a projection of the Authority's long-term share of contributions to the pension plan relative to the projected contributions of all participating members, actuarially determined.

(Amounts in thousands, unless otherwise stated)

At December 31, 2018 and 2017, the Authority's proportionate share was 0.01% of the Retirement System net pension liability.

For the year ended December 31, 2018 and 2017, the Authority recognized pension expense of $0.76 million and $0.20 million, respectively. As of December 31, 2018 and 2017, the Authority reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	2018		2017	
	Deferred Outflows of Resources	**Deferred Inflows of Resources**	**Deferred Outflows of Resources**	**Deferred Inflows of Resources**
Difference between expected and actual expense	$ 111	91	24	142
Net difference between projected and actual earnings on investments	450	889	187	—
Changes in assumptions	206	—	321	—
Net difference between the Authority's contributions and proportionate share of contributions	218	629	99	968
The Authority's contributions subsequent to the measurement date	609	—	559	—
	$ 1,594	1,609	1,190	1,110

The net amount of the Authority's balances of deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Plan years ended December 31:	
2019	$ (233)
2020	(145)
2021	(175)
2022	(73)
2023	—
Thereafter	—
	$ (626)

(Amounts in thousands, unless otherwise stated)

(viii) Actuarial Assumptions

The total pension liability as of the measurement date was determined by using an actuarial valuation as of April 1, 2017, with update procedures used to rollforward the total pension liability to the measurement date. The actuarial valuation used the following assumptions:

Measurement date:	March 31, 2018
Actuarial valuation date:	April 1, 2017
Actuarial cost method:	Aggregate Cost Method
Inflation:	2.50 %
Salary scale:	3.80 %
Investment rate of return, including inflation (compounded annually, net of expenses):	7.00 %
Cost of living adjustments, annually:	1.30 %
Decrement tables:	April 1, 2010 – March 31, 2015 Retirement System's Experience
Mortality improvement:	Society of Actuaries Scale MP-2014

The long-term expected rate of return on pension plan investments was determined in accordance with Actuarial Standard of Practice (ASOP) No. 27, Selection of Economic Assumptions for Measuring Pension Obligations. ASOP No. 27 provides guidance on the selection of an appropriate assumed investment rate of return. Consideration was given to expected future real rates of return (expected returns, net of pension plan investment expense and inflation) for equities and fixed income as well as historical investment data and pension plan performance.

(Amounts in thousands, unless otherwise stated)

Best estimates of arithmetic real rates of return for each major asset class are summarized below:

Asset class	Long-term expected real rate of return (%)
Domestic equity	4.55
International equity	6.35
Private equity	7.50
Real estate	5.55
Absolute return strategies	3.75
Opportunistic portfolio	5.68
Real assets	5.29
Bonds and mortgages	1.31
Cash	(0.25)
Inflation-indexed bonds	1.25

(ix) Discount Rate

The discount rate used to calculate the total pension liability was 7.0%. The projection of cash flows used to determine the discount rate assumes that contributions from pension plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially determined. Based upon those assumptions, the Retirement System's fiduciary net position was projected to be available to make all projected future benefit payments of current pension plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

(x) Sensitivity of the Net Pension Liability to the Discount Rate Assumption

The following represents the current-period net pension liability of the Authority's proportionate share of the net pension liability calculated using the current-period discount rate assumption of 7.0%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.0%) or 1-percentage-point higher (8.0%) than the current assumption:

	1% Decrease (6.0%)	Current assumption (7.0%)	1% Increase (8.0%)
Authority's proportionate share of the net pension liability (asset)	$ 2.3 million	0.3 million	(1.4) million

(b) Deferred Compensation and Savings Plans

The Authority offers certain full-time employees participation in a VDC, which is an alternative to the State's defined benefit retirement system. The VDC option is available to all unrepresented State, New York City, and local public employees who are hired on or after July 1, 2013 and are paid at a rate of $75,000 or more on an annual basis. For those employees choosing this option, the Authority is required to contribute 8% of their gross salary and the employee contributes between 3% and 6% depending on salary.

(c) Deferred Savings Plans

The Authority also offers employees a deferred compensation plan created in accordance with the Internal Revenue Code, Section 457. This plan permits participants to defer a portion of their salaries until future years. Amounts deferred under the plan are not available to employees or beneficiaries until termination, retirement, death or an unforeseeable emergency. An independent trustee is also responsible for the administration of this plan.

(d) Other Post-employment Benefits

(i) Plan Description

The Authority is a participating employer in the New York State Health Insurance Program (NYSHIP), which is an agent multiple-employer plan administered by the New York State Department of Civil Service. Through NYSHIP, the Authority provides certain health care for eligible retired employees and their dependents. Article XI of the New York State Civil Service Law assigns the authority to NYSHIP to establish and amend the benefit provisions of the plans and to establish maximum obligations of the plan members to contribute to the plan. The Authority's Board is authorized to establish the contribution rates of its employees and retirees below those set by Civil Service Law. Participation in the NYSHIP program provides for employees and/or their dependents to continue eligibility for these benefits in retirement if the employee had at least one year of full-time service with the Authority, and satisfied the requirements for retiring as a member of the Retirement System or is enrolled in the VDC. Eligible retirees contribute 10% of the cost of single coverage and 25% of the cost of dependent coverage for health insurance benefits. Each employee may accumulate up to 1,500 hours of unused sick time and apply the value of this to fund their required contribution. NYSHIP does not issue a stand-alone financial report and NYSHIP's agent activities are included within the financial statements of the State.

The following employees were covered by the benefit terms (amounts not in thousands):

Inactive employees or beneficiaries currently receiving benefit payments	62
Active employees	38
	100

During 2017, the Authority's Board approved the creation of a legally separate Section 115 trust to accumulate resources for its OPEB obligation to eligible Authority employees and retirees. Contributions to the OPEB Trust are based on an actuarial valuation. The Authority contributed approximately $2 million and $19 million to the OPEB Trust during 2018 and 2017, respectively.

Also, during 2017, the Authority implemented GASB Statement No. 75, which refines reporting guidance established under GASB Statement No. 45. GASB Statement No. 75 concluded that OPEBs are a form of employee compensation and should be recognized in the same period in which the compensated service is provided by the employees. OPEB includes post-employment healthcare benefits (including medical, dental, vision, hearing and other health-related benefits) and other forms of post-employment benefits (including life insurance, disability and long-term care).

The Authority used the following facts, actuarial methods and assumptions in determination of the net OPEB liability. Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events in the future. Examples include assumptions about employment mortality and the healthcare cost trend. Amounts determined regarding the annual OPEB expense are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

ii. Net OPEB Liability

The Authority's net OPEB liability was measured as of January 1, 2017, projected to a measurement date of December 31, 2018, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of that date.

(Amounts in thousands, unless otherwise stated)

The following table shows the components of the Authority's changes in its total OPEB liability, the OPEB Trust fiduciary net position, and the net OPEB liability during the measurement period ending December 31, 2018 and 2017:

	2018			2017		
	Total OPEB Liability	**Plan Fiduciary Net Position**	**Net OPEB Liability**	**Total OPEB Liability**	**Plan Fiduciary Net Position**	**Net OPEB Liability**
Balances at beginning of year	$ 19,854	18,651	1,203	25,343	—	25,343
Service cost	743	—	743	1,152	—	1,152
Interest cost	1,191	—	1,191	969	—	969
Benefit changes	—	—	—	—	—	—
Differences between expected and actual experience	—	—	—	—	—	—
Changes in assumptions	—	—	—	(7,067)	—	(7,067)
Employer contributions	—	1,845	(1,845)	—	19,071	(19,071)
Net investment income	—	(979)	979	—	123	(123)
Benefit payments	(732)	(732)	—	(543)	(543)	—
Administrative expense	—	—	—	—	—	—
Net changes	1,202	134	1,068	(5,489)	18,651	(24,140)
Balances at end of year	$ 21,056	18,785	2,271	19,854	18,651	1,203

During the measurement year, the net OPEB liability increased approximately $1 million due to the loss on investments. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and plan members) and include the types of benefits provided at the time of each valuation. In developing the projection of cash flows used to determine the discount rate, the employer contributions will continue to follow the contribution policy. The total Authority contribution rate is the sum of the normal cost rate plus an amortization of the plan's unfunded actuarial liability plus a provision for expenses. The normal cost rate is determined under the entry age actuarial cost method while the unfunded actuarial liability rate is that necessary to pay down the unfunded actuarial liability over an open one-year level percent of pay. The January 1, 2017 liability was rolled forward using update procedures from standard actuarial principles to December 31, 2017.

There were no changes in the benefits during 2018 and 2017. There was a discount rate change between December 31, 2016 and December 31, 2017 from 3.5% to 6.0% due to the OPEB Trust funding policy adopted during 2017. This created an assumption gain of $7 million, which will be amortized over the average expected remaining life of all active and inactive members of the plan.

(Amounts in thousands, unless otherwise stated)

Based on these assumptions, the fiduciary net position was projected to be available to make all projected future benefit payments for current members. Consequently, the single equivalent rate used to determine the total OPEB liability as of December 31, 2018 and 2017 is 6.0%, the long-term expected rate of return on OPEB Trust assets.

(iii) Actuarial assumptions

Measurement date:	December 31, 2018
Actuarial valuation date:	January 1, 2017
Actuarial cost method:	Entry Age Normal Cost Method
Asset valuation method:	Market Value
Amortization method:	20-Year Closed Amortization, level percentage of payroll
Discount rate:	6.00 %
Salary increases:	3.50 %
Mortality:	Mortality: RP 2014 Standard Table, projected Fully Generational using scale MP-2014

The actuarial assumptions used in the December 31, 2017 valuation and the rollforward to December 31, 2018, were based on results of an actuarial experience study for the period from April 1, 2010 through March 31, 2015.

(iv) Discount Rate

The discount rate used to calculate the total OPEB liability was 6.0%, the long-term rate of return on the OPEB Trust assets. The discount rate was based on a long-term assumption comprised of 65% equity investments and 35% fixed income investments. Changes in the discount rate affect the measurement of the total OPEB liability. Lower discount rates produce a higher liability; and higher discount rates produce a lower liabiilty. The table below shows the sensitivity of the total OPEB liability to the discount rate.

		1% Decrease (5.0%)	Current assumption (6.0%)	1% Increase (7.0%)
Total OPEB liability	$	23,956	21,056	18,677
Plan fiduciary net position		18,785	18,785	18,785
Net OPEB liability	$	5,171	2,271	(108)
Plan fiduciary net position as a percentage of the total OPEB liability		78.4%	89.2%	100.6%

(Amounts in thousands, unless otherwise stated)

(v) Sensitivity of the Net OPEB Liability to the changes in Healthcare Cost Trend Rates

Changes in the healthcare trends affect the measurement of the total OPEB liability. The table below shows the sensitivity of the net OPEB liability to the changes in the healthcare trends.

		1% Decrease	Healthcare Trend	1% Increase
Total OPEB liability	$	18,228	21,056	24,534
Plan fiduciary net position		18,785	18,785	18,785
Net OPEB liability	$	(557)	2,271	5,749
Plan fiduciary net position as a percentage of the total OPEB liability		103.1%	89.2%	76.6%

The non-Medicare medical trend assumption begins at 6.25% and decreases to a 4.50% long-term trend rate after eight years. The Medicare medical trend assumption begins at 5.20% and decreases to a 4.50% long-term trend rate after eight years. The drug trend assumption begins at 9.50% and decreases to a 4.50% long-term trend rate after eight years. The Medicare Part B trend assumption begins at 5.20% and decreases to a 4.50% long-term trend rate after eight years.

(15) Commitments and Contingencies

(a) Power Purchase Agreements

Amended and Restated Power Supply Agreement

The A&R PSA, which became effective on May 28, 2013, is the successor agreement to the original PSA between National Grid and the Authority. The A&R PSA provides for the sale to the Authority by National Grid of all the capacity, energy and, ancillary services from the oil and gas fired generating plants on Long Island formerly owned by LILCO. Sales are at cost, based on wholesale rates regulated by the Federal Energy Regulatory Commission (FERC). The rates may be modified in accordance with the terms of the A&R PSA for: (i) agreed upon labor and expense indices applied to the base year; (ii) a return of and return on net capital additions, which require approval by the Authority; and (iii) certain reasonably incurred expenses that are outside of the control of National Grid. The annual capacity charge in 2018 and 2017 was approximately $443 million and $450 million, respectively. The variable charge under both the PSA and A&R PSA is constant at $0.90 per megawatt hour of electric energy generated by the plants.

The A&R PSA has provisions for penalties in the event that annual guarantees for heat rate and unforced capacity are not met. No penalties were assessed in either 2018 or 2017.

The capacity charge of the A&R PSA is adjusted each year for the actuarially required contributions for the pension and OPEB (P&OPEB) benefits of the employees that work at these National Grid power plants. The actuarially required contributions are reflected in annual filings by National Grid with FERC. As of the most recent estimate provided by National Grid's actuary dated March 2018, the P&OPEB obligations are underfunded by approximately $28 million. This underfunding is a component in the development of the actuarially required contributions in each year. The Authority does not expect to have a material liability for P&OPEB obligations under the A&R PSA upon termination of the contract.

The A&R PSA does not meet the criteria for capitalization and is accounted for as an operating lease.

Other Power Purchase and Transmission Agreements

The Authority has entered into power purchase agreements (PPAs) with several private companies to develop and operate generating units at sites throughout Long Island. Generally, the PPAs provide for the Authority to purchase 100% of the capacity (and associated energy and ancillary services as needed), for the term of each contract, which vary in duration for up to 30 years from commercial operation date. Additionally, the Authority has entered into PPAs with several private companies for capacity and/or energy from facilities via undersea cables under long-term firm transmission capacity purchase agreements. The Authority also has several agreements to purchase renewable energy from on and off Long Island sources.

Certain of these facilities have been accounted for as capital lease obligations on the Statements of Net Position and those facilities that do not meet the criteria for capitalization are being accounted for as operating leases.

Battery Storage Projects

During 2017, the Authority entered into two 20-year contracts for 5 megawatt storage batteries, which are expected to store energy for use primarily to meet daily and seasonal peak loads on the South Fork of Long Island. One contract became commercially operational in December 2018 and met the criteria for capitalization and is accounted for as a capital lease.

The other contract became commercially operational in February 2019 and is included in the table below as a capital lease commitment.

(Amounts in thousands, unless otherwise stated)

The following table presents the approximate minimum obligations for the power purchase agreement commitments discussed above:

		Capital leases	Operating leases
Minimum lease payments:			
2019	$	261,690	618,133
2020		256,449	621,919
2021		247,902	563,295
2022		249,140	549,275
2023		250,417	555,914
2024 through 2028		955,731	1,814,429
2029 through 2033		220,208	124,829
2034 through 2038		23,962	37,470
2039 through 2042		—	23,970
Total	$	2,465,499	4,909,234

As provided by the Authority's tariff, the cost of all the facilities noted above are includable and recoverable through the Power Supply Charge.

(Amounts in thousands, unless otherwise stated)

Deepwater Wind Project

During 2017, the Authority's Board approved a 20-year power purchase agreement for a 90 megawatt offshore wind farm to be installed off the coast of Long Island that is expected to be commercially operational by 2022. During 2018, the Authority's Board approved an amendment to the offshore wind farm contract to provide for 40 megawatts of additional capacity.

The Authority will only pay for energy when delivered without taking construction risk and has no financial commitment until the wind farm is commercially operational.

(b) Other Leasing Agreements

PSEG Long Island, as the Authority's agent, has entered into long-term leases for financing the purchase of certain fleet vehicles. Such leases are classified as capital leases for accounting purposes and are recorded at the present value of the future minimum lease payments at the inception of the lease.

PSEG Long Island also entered into several operating leases for office space with expiration terms ranging from 2023 to 2028. The Authority has an office operating lease which expires April 30, 2024.

The following table presents the approximate minimum obligations for the vehicle and office leasing obligations:

		Vehicle Leases	Office Leases
Minimum lease payments:			
2019	$	5,261	12,592
2020		4,543	12,207
2021		3,698	11,785
2022		2,678	11,343
2023		1,976	10,856
2024 through 2028		2,823	31,269
Total	$	20,979	90,052

(c) Insurance Programs

The Authority's insurance program is comprised of a combination of policies, from major insurance companies, self-insurance, and contractual transfer of liability, including naming the Authority as an additional named insured and indemnification.

The Authority has purchased Workers' Compensation insurance from the New York State Insurance Fund to provide coverage for claims arising from employee accidents or injuries. In addition, the Authority carries Employment Practices Liability Insurance from a major insurance company and the Authority's office property and liability coverage is administered by the New York State Office of General Services Bureau of Risk & Insurance Management through a master policy the State procures for various State entities, including the Authority. Liability related to construction projects and similar risks is transferred through contractual indemnification and compliance with Authority insurance requirements. The Authority also has insurance coverage on its interest in NMP2 as disclosed in note 10.

The Authority has commercially available excess general liability, property and cyber insurance for claims above its self-insurance provisions. For general liability, including automobile liability, the Authority is self-insured up to $3.0 million per occurrence. For property damage and extra expense combined, the Authority is self-insured up to $1.5 million per occurrence. For property damage or loss due to a named windstorm and flood, 2% of the value at risk is self-insured per occurrence with a minimum of $1.5 million and up to a maximum self-insured level of $7.5 million. For cyber related events, including an event relating to the Authority's information technology system, the Authority is self-insured for up to $10,000 per event. Similiarly, the Authority's Service Provider also maintains cyber insurance covering events related to information technology and operating systems where the Authority is an additional named insured.

The Authority has no general property insurance for damage to its poles and wires and is self-insured.

(16) Legal Proceedings

(a) PSEG Long Island

In accordance with the OSA, other than for loss and expense attributable to PSEG Long Island's gross negligence or willful misconduct for which there is no limitation on PSEG Long Island's liability, PSEG Long Island's liability for third-party claims in performing its obligations to operate and maintain the Authority's T&D system is generally limited to the aggregate loss and expense between $2.5 million and $5 million in any contract year. PSEG Long Island is not responsible for any liabilities that occurred prior to January 1, 2014.

(b) Superstorm Sandy

Four purported class action suits were filed against the Authority and National Grid related to Superstorm Sandy that contain common allegations of wrongdoing and/or gross negligence relating to the Authority's and National Grid's preparedness for, and response to the storm. These actions seek monetary damages, fees and other relief. Twelve more individual actions have been filed on behalf of the owners of approximately 100 properties in the Breezy Point, Belle Harbor and Rockaway Park neighborhoods of the Rockaway Peninsula, in the Queens portion of the Service Area. These suits allege generally that the failure to de-energize the electrical system in the Rockaways in advance of the tidal surges experienced during the storm resulted in fires that caused various types of property damage, ranging from all or partial loss of plaintiffs' customers' homes. In February 2018, the Court of Appeals, New York State's highest court, affirmed lower court rulings that the Authority is not entitled at this point to dismissal of the fire cases. In June 2018, the court in the class action litigation granted plaintiffs' motion to certify a class consisting of residential customers who lost power for more than three days and who did not require an electrical inspection before service could be restored. The Authority has appealed that ruling. The class action cases and the fire cases are being defended, and although the amounts sought in damages are material, the outcome of these matters cannot be predicted with certainty at this time. The Authority does not believe that they will have a material impact on the operating results or financial condition of the Authority.

(c) Environmental

National Grid and the Authority are parties to Liabilities Undertaking and Indemnification Agreements which, when taken together, provide, generally, that environmental liabilities will be divided between National Grid and the Authority on the basis of whether they relate to assets transferred to National Grid or retained by the Authority as part of the 1998 LIPA/LILCO Merger (Merger). In addition, to clarify and supplement these agreements, National Grid and the Authority also entered into an agreement to allocate between them certain liabilities, including environmental liabilities, arising from events occurring prior to the Merger and relating to the business and operations to be conducted by the Authority after the Merger (the Retained Business) and to the business and operations to be conducted by National Grid after the Merger (the Transferred Business).

National Grid is responsible for all liabilities arising from all manufactured gas plant operations on Long Island (MGP Sites), including those currently or formerly operated by National Grid or any of its predecessors, whether or not such MGP Sites were related to the Transferred Business or the Retained Business. In addition, National Grid is responsible for all environmental liabilities traceable to the Transferred Business and certain scheduled environmental liabilities. Environmental liabilities that arise from the non-nuclear generating business (a Transferred Business) may be recoverable by National Grid as part of the capacity charge under the A&R PSA. The Authority is responsible for all environmental liabilities traceable to the Retained Business and certain scheduled environmental liabilities.

Environmental liabilities, other than those related to MGP sites that existed as of the date of the Merger that are untraceable, including untraceable liabilities that arise out of common and/or shared services, have been allocated to the Authority and National Grid, as provided for in the Merger.

The A&R PSA addresses the terms by which the Authority will continue to purchase electricity from certain National Grid facilities. Generally, National Grid's liabilities under this contract are limited to losses due to gross negligence or willful misconduct or violations of environmental laws not consistent with prudent utility practices.

(d) Environmental Matters Retained by the Authority

Superfund Sites – Under Section 107(a) of the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, also commonly referred to as Superfund), parties that generated or arranged for disposal of hazardous substances are liable for costs incurred by the Environmental Protection Agency (EPA) or others that are responding to a release or threat of release of hazardous substances.

Metal Bank – Cottman Avenue is a National Priorities List site with PCB contamination on the Delaware River in Philadelphia, Pennsylvania. EPA sued a number of potentially responsible parties (PRPs) and subsequently settled with all defendants, among them a number of utility companies – including LILCO – alleged to have sent used transformers to the site during the 1960s and 1970s. The remediation has been completed and monitoring at the site continues. The Authority's contribution toward the settlement and monitoring costs has not been material. One feature of the long-term remedy began to fail within two years of construction, and EPA required the PRP group to repair it. The repair costs were not material to the Authority. In December 2016, the PRP group filed suit against the remedial design consultant that designed the remedy and approved changes to its design during construction. The results of the litigation and any recovery that may be secured by the PRP Group are uncertain.

The U.S. Department of Interior, the National Oceanic and Atmospheric Administration and the Pennsylvania Fish and Boat Commission and Departments of Environmental Protection and Conservation and Natural Resources notified the PRP group that they have claims for damages to natural resources allegedly impacted by releases of hazardous substances to and from the Cottman site. While disputing the liability, the PRP group engaged in settlement discussions with these agencies and, at the end of 2018, reached a tentative agreement to resolve their claims. The Authority believes that the potential settlement would not have a material impact on the operating results or financial condition of the Authority.

(e) Asbestos Proceedings

Litigation is pending in New York State Court against the Authority, LILCO, National Grid and various other defendants, involving thousands of plaintiffs seeking damages for personal injuries or wrongful death allegedly caused by exposure to asbestos. The cases for which the Authority may have financial responsibility involve employees of various contractors and subcontractors engaged in the construction or renovation of certain power plants formerly owned by LILCO. These cases include extraordinarily large damage claims, which have historically proven to be excessive. The actual aggregate amount paid to plaintiffs alleging exposure to asbestos at these power plants over the years has not been material to the Authority. Due to the nature of how these cases are litigated, it is difficult to determine how many of the remaining cases that have been filed (or of those that will be filed in the future) involve plaintiffs who were exposed to asbestos at any of these power plants. Based upon experience, it does not appear that currently pending or future claims involving plaintiffs who allege exposure to asbestos at any of these power plants will have a material impact on the operating results or financial condition of the Authority.

(17) Component Unit Condensed Consolidating Statements

UDSA is a component unit of the Authority and all of the activities and balances of the UDSA are blended into and reported as part of the Authority. The condensed combining information for December 31, 2018 and 2017 are below:

(Amounts in thousands, unless otherwise stated)

Consolidating Condensed Statement of Net Position
December 31, 2018

		Authority	UDSA	Eliminations	Consolidated
Assets and deferred outflows of resources:					
Current assets	$	2,077,975	173,837	(42)	2,251,770
Utility plant and property and equipment, net		8,383,338	—	—	8,383,338
Noncurrent assets		2,153,715	4,523,469	(4,501,288)	2,175,896
Deferred outflows of resources		247,313	—	—	247,313
Total assets and deferred outflows of resources		12,862,341	4,697,306	(4,501,330)	13,058,317
Liabilities, deferred inflows of resources and net position:					
Current liabilities		1,002,184	139,500	(42)	1,141,642
Long-term debt		3,775,406	4,457,610	—	8,233,016
Noncurrent liabilities		7,170,051	—	(4,501,288)	2,668,763
Deferred inflows of resources		520,046	—	—	520,046
Net position		394,654	100,196	—	494,850
Total liabilities, deferred inflows of resources and net position	$	12,862,341	4,697,306	(4,501,330)	13,058,317

Consolidating Condensed Statement of Revenues, Expenses and Changes in Net Position
For the year ended December 31, 2018

		Authority	UDSA	Eliminations	Consolidated
Operating revenues	$	3,239,952	339,072	(2,750)	3,576,274
Operating expenses		3,127,954	176,101	(2,750)	3,301,305
Operating income		111,998	162,971	—	274,969
Nonoperating revenue and expenses		97,124	2,952	—	100,076
Interest charges and (credits):					
Interest on long-term debt		160,788	200,495	—	361,283
Other interest and amortizations		34,434	(43,334)	—	(8,900)
Total interest charges and (credits)		195,222	157,161	—	352,383
Change in net position		13,900	8,762	—	22,662
Beginning net position		380,754	91,434	—	472,188
Ending net position	$	394,654	100,196	—	494,850

Consolidating Condensed Statement of Cash Flows
For the year ended December 31, 2018

		Authority	UDSA	Eliminations	Consolidated
Net cash provided by operating activities	$	404,087	337,491	—	741,578
Net cash provided by investing activities		(47,741)	2,952	—	(44,789)
Net cash used in noncapital related activities		(87,362)	—	—	(87,362)
Net cash used in capital and related financing activities		(382,086)	(325,013)	—	(707,099)
Net (decrease) increase in cash and cash equivalents		(113,102)	15,430	—	(97,672)
Cash and cash equivalents at beginning of year		316,305	109,167	—	425,472
Cash and cash equivalents at end of year	$	203,203	124,597	—	327,800

(Amounts in thousands, unless otherwise stated)

Consolidating Condensed Statement of Net Position
December 31, 2017

		Authority	UDSA	Eliminations	Consolidated
Assets and deferred outflows of resources:					
Current assets	$	1,954,435	162,360	(2,513)	2,114,282
Utility plant and property and equipment, net		8,088,014	—	—	8,088,014
Noncurrent assets		2,655,736	4,696,155	(4,671,456)	2,680,435
Deferred outflows of resources		275,026	—	—	275,026
Total assets and deferred outflows of resources		12,973,211	4,858,515	(4,673,969)	13,157,757
Liabilities, deferred inflows of resources and net position:					
Current liabilities		1,150,978	132,573	(2,513)	1,281,038
Long-term debt		3,344,223	4,634,508	—	7,978,731
Noncurrent liabilities		7,556,300	—	(4,671,456)	2,884,844
Deferred inflows of resources		540,956	—	—	540,956
Net position		380,754	91,434	—	472,188
Total liabilities, deferred inflows of resources and net position	$	12,973,211	4,858,515	(4,673,969)	13,157,757

Consolidating Condensed Statement of Revenues, Expenses and Changes in Net Position
For the year ended December 31, 2017

		Authority	UDSA	Eliminations	Consolidated
Operating revenues	$	3,186,447	297,679	(2,513)	3,481,613
Operating expenses		3,094,432	122,198	(2,513)	3,214,117
Operating income		92,015	175,481	—	267,496
Nonoperating revenue and expenses		84,708	989	—	85,697
Interest charges and (credits):					
Interest on long-term debt		155,389	187,163	—	342,552
Other interest and amortizations		34,471	(40,952)	—	(6,481)
Total interest charges and (credits)		189,860	146,211	—	336,071
Change in net position		(13,137)	30,259	—	17,122
Beginning net position		393,891	61,175	—	455,066
Ending net position	$	380,754	91,434	—	472,188

Consolidating Condensed Statement of Cash Flows
For the year ended December 31, 2017

		Authority	UDSA	Eliminations	Consolidated
Net cash provided by operating activities	$	415,070	276,849	—	691,919
Net cash provided by investing activities		10,336	—	—	10,336
Net cash used in noncapital related activities		(15,511)	—	—	(15,511)
Net cash used in capital and related financing activities		(567,174)	(256,254)	—	(823,428)
Net (decrease) increase in cash and cash equivalents		(157,279)	20,595	—	(136,684)
Cash and cash equivalents at beginning of year		473,584	88,572	—	562,156
Cash and cash equivalents at end of year	$	316,305	109,167	—	425,472

(18) Subsequent Events

The Authority's revolving credit facility agreement will expire on March 22, 2019. The Authority's Board has approved the renewal of the agreement with a new authorization limit of $200 million. The Authority expects to receive the statutorily required approvals prior to the expiration of this agreement.

LONG ISLAND POWER AUTHORITY
Required Supplementary Information

SCHEDULE OF THE AUTHORITY'S PROPORTIONATE SHARE OF THE NET PENSION LIABILITY

NYSLRS Pension Plan
Last 10 Fiscal Years*

	2018	2017	2016	2015	2014
The Authority's proportion of the net pension liability	0.0096075%	0.0099883%	0.0106679%	0.0280362%	0.0280362%
The Authority's proportionate share of the net pension liability	$ 310,076	$ 938,526	$ 1,712,234	$ 947,131	$ 1,266,916
The Authority's covered-employee payrol	$ 3,903,750	$ 4,019,750	$ 4,138,358	$ 4,787,173	$ 5,472,436
The Authority's proportionate share of the net pension liability as a percentage of its covered-employee payrol	7.94%	23.35%	41.37%	19.78%	23.15%
Plan fiduciary net position as a percentage of the total pension liability	98.24%	94.70%	90.70%	97.95%	97.20%

*The amounts presented for each fiscal year were determined as of the measurement date of the plans

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the Authority has presented information for those years for which information is available.

LONG ISLAND POWER AUTHORITY
Required Supplementary Information

SCHEDULE OF CHANGES IN THE AUTHORITY'S NET OPEB LIABILITY AND RELATED RATIOS

(Amounts in thousands)

		2018	2017
Total OPEB liability			
Service cost	$	743	1,152
Interest		1,191	969
Change of benefit terms		—	—
Differences between expected and actual experience		—	—
Change of assumptions		—	(7,067)
Benefit payments		(732)	(543)
Net change in total OPEB liability		1,202	(5,489)
Total OPEB liability-beginning		19,854	25,343
Total OPEB liability-ending	$	21,056	19,854
Plan fiduciary net position			
Contributions - employer		1,845	19,071
Contributions - member		—	—
Net investment income		(979)	123
Benefit payments		(732)	(543)
Administrative expense		—	—
Net change in plan fiduciary net position		134	18,651
Plan fiduciary net position - beginning		18,651	—
Plan fiduciary net position - ending	$	18,785	18,651
Net OPEB liabiity - ending	$	2,271	1,203
Plan fiduciary net position as a percentage of the total OPEB liability		89.21%	93.94%
Covered-employee payroll	$	5,465	5,306
Total OPEB liability as a percentage of covered-employee payroll		41.56%	22.67%

Notes to Schedule:
Discount rate assumed is 6.00%

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the Authority has presented information for those years for which information is available.

SCHEDULE OF ACTUARIALLY DETERMINED CONTRIBUTIONS AND BENEFIT PAYMENTS

(Amounts in thousands)

	2018	2017
Actuarially determined contribution (ADC)	$ 821	19,071
Actual Contribution related to ADC	1,845	19,071
Covered-employee payroll	5,465	5,306
Actuarially determined contribution as a percentage of covered-employee payroll	33.76%	359.42%
Benefit payments	$ 732	543

Notes to Schedule:

Actuarial Cost Method:	Entry Age Normal Cost Method
Asset Valuation Method:	Market Value
Amortization Method:	20 - Year Closed Amortization, level percentage of payroll
Discount Rate:	6.00 %
Salary Increases:	3.50 %
Mortality:	Mortality: RP 2014 Standard Table, projected fully generational using scale MP-2014

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the Authority has presented information for those years for which information is available.

KPMG LLP
345 Park Avenue
New York, NY 10154-0102

Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

The Board of Trustees
Long Island Power Authority:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the consolidated financial statements of the business-type activities and fiduciary funds of the Long Island Power Authority (the Authority) and its blended component unit, collectively component units of the State of New York, as of and for the years ended December 31, 2018 and 2017, and the related notes to the consolidated financial statements, which collectively comprise the Authority's consolidated financial statements as listed in the table of content, and have issued our report thereon dated March 20, 2019.

Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements as of and for the year ended December 31, 2018, we considered the Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the consolidated financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of consolidated financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

New York, New York
March 20, 2019