

# Biennial Report for the Years Ended December 31, 2012 and December 31, 2013



# Long Island Power Authority

Project No. 79570

August 2014



# Biennial Report for the Years Ended December 31, 2012 and December 31, 2013

prepared for

# Long Island Power Authority Uniondale, NY

August 2014

Project No. 79570

prepared by

# Burns & McDonnell Engineering Company, Inc. Kansas City, Missouri

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Burns & McDonnell SINCE 1898

August 29, 2014

Mr. Kenneth Kane Managing Director of Finance and Budgets Long Island Power Authority 333 Earle Ovington Boulevard, Suite 403 Uniondale, New York 11553

Re: Long Island Power Authority Biennial Report for the Years Ended December 31, 2012 and December 31,2013 Project Number 79570

Dear Mr. Kane:

In compliance with the requirements pursuant to the role of Consulting Engineer and Rate Consultant stated in Section 702(b) of the General Bond Resolution (General Resolution) and Section 7.02 of the General Subordinated Resolution (Subordinated Resolution and together with the General Resolution, the Resolutions), Burns & McDonnell (BMcD) submits this Long Island Power Authority Biennial Report for the two years ended December 31, 2013 (the Report). This Report summarizes our review and assessment of the Long Island Power Authority (LIPA or the Authority) electric system. This report documents the examination of the electric system, the system organization and management, and an assessment of the utility's financial condition. Financial, statistical, and operating data utilized in preparing the Report were provided by the Authority.

In the preparation of the Report, Burns & McDonnell completed assessments of the electric generating station and the transmission and distribution system of the Authority. Assessments involved interviews, observations, and review of annual expenditures from 2012 through 2013 and the year 2014 budget. Burns & McDonnell also reviewed the adequacy of the revenues provided by current retail rates in relation to the requirements of the Resolutions.

Based on its reviews and assessments, it is the opinion of Burns & McDonnell that the electric system is being operated and maintained in a manner that is consistent with current electric utility practices. In addition, the current retail rates have provided sufficient revenues to satisfy the debt service coverage requirement in the Resolutions. Further, it is the opinion of Burns & McDonnell that the balances in the various reserve funds maintained by the Authority are sufficient for their intended purposes.

We appreciate the opportunity to work with the Authority and the cooperation and assistance provided by staff in the preparation of this Report. We will be happy to discuss the Report with you at your convenience.

Sincerely, Burns & McDonnell

Ted J. Kelly Principal and Project Manager Business & Technology Services

Paul C. Frauen Project Analyst Business & Technology Services

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# LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
BMcD	Burns & McDonnell
CAIDI	Customer Average Interruption Duration Index
CL&P	Connecticut Light & Power
Constellation	Constellation Energy Nuclear Group, LLC
COO	Chief Operating Officer
CSC	Shoreham to East Shore Cross Shore Cable
CSC Agreement	Cross Sound Cable Purchase Agreement
DOE	Department of Energy
DPS	Department of Public Service
EIA	US Energy Information Administration
ELI	Efficiency Long Island
GCB	Gas circuit breaker
GENCO	National Grid Generation LLC
IRP	Integrated Resource Plan
kV	Kilo-volt
LILCO	Long Island Lighting Company
LIPA/LILCO Merger	LIPA's acquisition of LILCO
MSA	Amended & Restated Management Service Agreement
MW	Megawatt
Neptune Cable	Sayreville to Levittown Cable
NGRID	National Grid
NMP	Nine Mile Point
NMP1	Nine Mile Point Generating Station Unit 1
NMP2	Nine Mile Point Generating Station Unit 2
NNC	Northport to Norwalk Harbor Cable
Northport	Northport Electric Generating Station
NRC	Nuclear Regulatory Commission

Abbreviation	<u>Term/Phrase/Name</u>
NYPA	New York Power Authority
OSA	Amended & Restated Operations Services Agreement
PILOT	Payment in Lieu of Taxes
PJM	Pennsylvania-New Jersey-Maryland Region
PSC	Public Service Commission
PSEG	Public Service Enterprise Group
PSEG-LI	PSEG subsidiary dedicated to Long Island operations
RFP	Request for Proposal
SAIDI	System Average Interruption Duration Index
SAIFI LONG	System Average Interruption Frequency Index for Long interruptions
Service Area	Nassau & Suffolk Counties and the Rockaway Peninsula of Queens County
T&D System	Transmission & Distribution System
The Act	Long Island Power Authority Act
The Authority	Long Island Power Authority
The Report	Long Island Power Authority Biennial Report for Two Years Ending December 31, 2013
The Resolutions	Subordinated Resolution, and together with the General Resolution
Trap bags	Temporary sand barriers
UDSA	Utility Debt Securitization Authority
Y-49	East Garden City to Sprain Brook Interconnection
Y-50	Dunwoodie to Shore Line Cable

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#### STATEMENT OF LIMITATIONS

In preparation of the Long Island Power Authority Electric System Biennial Report for the two years ended December 31, 2013, Burns & McDonnell relied upon information provided by LIPA, and its service provider during the reporting period, National Grid. The information included various analyses, computer-generated information and reports, audited financial statements, and other financial and statistical information, as well as other documents such as operating budgets and current retail electric rate schedules. While Burns & McDonnell has no reason to believe that the information provided, and upon which Burns & McDonnell has relied, is inaccurate or incomplete in any material respect, Burns & McDonnell has not independently verified such information and cannot guarantee its accuracy or completeness.

Estimates and projections prepared by Burns & McDonnell relating to performance and costs are based on Burns & McDonnell's experience, qualifications, and judgment as a professional consultant. Since Burns & McDonnell has no control over weather, cost and availability of labor, material and equipment, labor productivity, contractors' procedures and methods, unavoidable delays, economic conditions, government regulations and laws (including interpretation thereof), competitive bidding, and market conditions or other factors affecting such estimates or projections, Burns & McDonnell does not guarantee the accuracy of its estimates or predictions.

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# 1.0 EXECUTIVE SUMMARY

#### 1.1 Introduction

LIPA owns an electric transmission and distribution system (T&D System) serving most of Nassau and Suffolk Counties and the Rockaway Peninsula of Queens County, including assets, facilities, equipment, and contractual arrangements used to provide the transmission and distribution of electrical capacity and energy to electric customers within the Service Area.

LIPA provides retail electric service to approximately 1.1 million customers. During 2013, the maximum annual peak demand for LIPA reached 5,602 megawatts (MW). Total system revenues were \$3.756 billion, of which approximately \$3.594 billion was from retail electric sales.

Table 1-1 provides summary information on annual retail energy sales and total electric revenues during the 2009 through 2013 period.

	Table 1-1: Historical Sales and Customers				
-	2009	2010	2011	2012	2013
Peak Demand (MW)	5,034	5,719	5,771	5,333	5,602
Energy (MWh)					
Residential	9,211,453	9,971,614	9,848,965	9,735,407	9,536,151
Commercial and Industrial	9,599,501	9,950,557	9,818,456	9,666,106	9,800,324
Other	460,188	453,569	489,362	552,104	594,617
Total Sales	19,271,142	20,375,740	20,156,783	19,953,617	19,931,093
Lost and Unaccounted For	1,456,144	1,293,646	1,203,364	1,358,398	1,414,620
Total Energy Requirements	20,727,286	21,669,386	21,360,147	21,312,015	21,345,713
System Load Factor (Percent)	47.0%	43.3%	42.3%	45.6%	43.5%
Customer					
Residential	995,351	996,790	997,599	997,940	996,442
Commercial and Industrial	115,528	115,565	115,370	115,128	114,692
Other	5,784	5,428	5,446	5,486	5,149
Total Customers	1,116,663	1,117,783	1,118,415	1,118,554	1,116,283
Total Electric Revenues (\$000)	\$3,312,160	\$3,853,056	\$3,684,596	\$3,546,152	\$3,755,832

# 1.2 Biennial Report

In compliance with the requirements pursuant to the role of Consulting Engineer and Rate Consultant within the provisions of the Section 702(b) of the General Bond Resolution and Section 7.02 of the General Subordinated Resolution (Subordinated Resolution, and together with the General Resolution, the Resolutions), LIPA retained Burns & McDonnell (BMcD) to conduct the efforts required to prepare this Biennial Report (the Report) for the two years ended December 31, 2013.

#### **1.3** Organization and Management

#### 1.3.1 Board of Trustees

During the period of this report, the Authority was governed by a fifteen-member Board of Trustees whose members were required under the Act to be residents of the Service Area. The Board of Trustees assumed many committee roles including: finance and audit, governance, transition, personnel and compensation, energy efficiency and environment, and operations committees. The CEO of LIPA reports directly to the Trustees. Figure 1-1 displays the organizational structure of the Board of Trustees and LIPA management during the Study Period. Figure 1-2 displays the organizational structure of the Board of Trustees and LIPA management as of January 1, 2014.

On January 1, 2014, several structural changes were made to the Trustee's organization as shown in Figure 1-2. There are now a total of nine Trustees; five of these Trustees are appointed by the Governor, with the Speaker of the Assembly and Senate Majority Leader each appointing two Trustee's. Committees operated by the Board of Trustees have changed and now consist of the finance and audit, governance, personnel and compensation, and contract oversight committees.

Additional details pertaining to the Board of Trustees are provided in Section 3 of the Report.



Figure 1-1: Trustee's Organization during Reporting Period





#### 1.3.2 Authority Management

#### 1.3.2.1 Chief Operating Officer

John McMahon was the (Chief Operating Officer) COO of LIPA, and acting President and CEO, during the period of this Report beginning in April 2013. As acting President and CEO, Mr. McMahon performed the duties as stated within the Authority's By-laws and reported directly to the Board of Trustees. As of February 2014, Mr. McMahon was appointed the permanent CEO. Additional Authority management details are provided in Section 3 of this Report.

#### 1.4 Organizational Policies

#### 1.4.1 LIPA Reform Act

The LIPA Reform Act was enacted in response to concerns related to the organizational relationship between the Authority and its new service provider under the Amended and Restated Operations Services Agreement (OSA) contract, PSEG-LI. The LIPA Reform Act was intended to bring accountability and transparency to the delivery of electricity by:

1. Authorizing the reformulation of the relationship between LIPA and PSEG-LI, such that PSEG-LI assumes more responsibility related to operations in the service area; the Authority's role is to oversee the activities of PSEG-LI and to meet its obligations with respect to its bonds and notes and all applicable statutes and contracts.

- 2. Creating a new Long Island based office in the Department of Public Service (DPS), which is the staff arm of the New York Public Service Commission (PSC) to assist with oversight of core utility operations of PSEG-LI.
- Authorize the retirement of a portion of the Authority's outstanding debt from the proceeds of Utility Debt Securitization Authority (UDSA) bonds at lower interest rates than existing indebtedness and capping or eliminating certain categories of payments in lieu of taxes (PILOTs), with savings passed on to ratepayers.

# 1.4.2 Primary Operating Agreement

The Amended and Restated Management Services Agreement (MSA) expired on December 21, 2013, required that National Grid (NGRID) provide operations and maintenance services related to the T&D system. While this agreement was in effect through this Report's identified Study period, it is worth acknowledging that through a competitive procurement process, effective January 1, 2014 a wholly-owned subsidiary of PSEG fully dedicated to the Authority's Long Island operations (PSEG-LI) began providing operations, maintenance and related services for the T&D system under the OSA. The Amended and Restated OSA expires December 31, 2025. Additionally it includes a provision that if PSEG-LI achieves certain levels of performance during the first 10 years, the parties will negotiate an eight year extension on substantially similar terms and conditions. Beginning January 1, 2015, an affiliate of PSEG-LI will assume certain power supply management, fuel procurement and related services that have historically been provided pursuant to separate agreements between the Authority and other service providers.

#### 1.5 Electric System Assessment

#### 1.5.1 Nine Mile Point 2 Generating Station

LIPA holds 18 percent ownership in the Nine Mile Point (NMP) Nuclear Power Station 2, located near Scriba, New York on the south shore of Lake Ontario. NMP has two separate nuclear power stations, designated as NMP1 and NMP2. Constellation Energy Nuclear Group, LLC (Constellation) owns 100 percent of NMP1, and 82 percent of NMP2. NMP2 consists of a boiling water reactor and General Electric turbine generator, and operates under licensing from the Nuclear Regulatory Commission (NRC), set to expire in 2046. In 2012, Excelon Corporation acquired Constellation. LIPA anticipates no material differences in NMP2 operation and for the purposes of this Report the majority owner of NMP is referred to as Constellation. LIPA has entered into an operating agreement with Constellation for NMP2. As a part of the agreement, LIPA and Constellation each has representatives on a management committee, which meet to discuss plant matters. Final budgets are prepared by Constellation and sent to LIPA for annual approval. LIPA is responsible for their ownership portion of operating costs and capital investments associated with NMP2 each year.

# 1.5.2 Transmission System

LIPA's transmission system consists of overhead and underground facilities, vehicles, equipment, land parcels, easements, contractual arrangements, and other assets used to provide the transmission and distribution of electric capacity and energy to and within the Service Area. The T&D System includes seven transmission interconnections that link the T&D System to utilities outside the Service Area. These transmission interconnections are owned in part or under contract to LIPA.

## 1.6 Financial Assessment

## 1.6.1 Operating Results

Total system energy sales ranged from 19.953 GWh in 2012 to 19.931 GWh in 2013. During the period of this Report, total revenue from sales to electric customers was \$3.726 billion for 2012 and \$3.520 billion for 2013. The change was driven primarily by variations in the cost of Fuel and Purchased Power, which is now collected and adjusted monthly beginning in 2012 to help maintain the financial health of LIPA. Total revenue, including non-product sales and miscellaneous other revenue was \$3.756 billion and \$3.546 billion, respectively for the years ending 2012 and 2013.

# 1.6.2 Adequacy of Electric Rates

In order to determine if LIPA has set rates to pay all of its operating costs as they come due, and to meet debt service and rate covenant requirements under the Resolutions, the Authority prepares a Rate Covenant Calculation, which is reviewed by its independent accountants who in turn issues a report thereon which for the years of this Report found that LIPA's rates and charges were set at a level sufficient to meet its Rate Covenant requirements. In 2013, LIPA benefitted from the replacement of General Resolution debt with UDSA Restructuring Bonds at lower interest rates.

#### 1.6.3 Status of Revenue Bonds

At the end of 2013, LIPA had general and subordinated revenue bonds, restructuring bonds, and general revenue notes outstanding. During 2012, debt decreased by \$22 million. During 2013, debt increased

\$358 million compared to 2012 resulting from the issuance of UDSA Restructuring Bonds, totaling \$2.022 billion.

LIPA recently approved the issuance of additional bonds, which is expected to occur by the end of 2014. After the issuance of the 2014 bonds, LIPA will have a total of \$7.763 billion of outstanding debt obligations.

### 1.7 Conclusions

Based on statements and information provided, as well as the observations and reviews performed, it is the opinion of BMcD that:

- The design, construction, operation, and maintenance of the Authority's electric transmission and distribution system and the associated facilities are consistent with current generally accepted electric utility standards. It appears as though the Authority has been proactive in preventative maintenance and expansion of the electric system before problems arise.
- 2. The Nine Mile Point 2 Generating Station partially owned by the Authority is being operated and maintained consistent with accepted electric utility practice in the United States. In general, the performance, operation, maintenance, staff, planning, and training aspects for the stations were found to be above average.
- 3. The projects included in the Authority's four-year capital investment plan and the 2014 operating budget are necessary and should provide improved reliability and power quality for the electric system. BMcD has observed that the Authority has done a good job of making appropriate system upgrades and improvements over time.
- 4. The electric revenues generated by the current electric rates are sufficient to fulfill the debt service coverage requirement defined in the covenants of the Resolutions.
- 5. The Authority is complying with the provisions of the Resolutions, each as amended by subsequent resolutions.

#### 2.0 INTRODUCTION

LIPA is a corporate municipal instrumentality and political subdivision of the State of New York authorized under the Long Island Power Authority Act (the Act). The Authority became retail supplier of electric service in most of Nassau and Suffolk Counties and the Rockaway Peninsula of Queens County (the Service Area) on May 28, 1998 by acquiring the Long Island Lighting Company (LILCO) as wholly owned subsidiary of the Authority through a merger (LIPA/LILCO Merger). Since the LIPA/LILCO Merger, LILCO has done business under the name LIPA. Before the LIPA/LILCO Merger, LILCO was a publicly traded, shareholder-owned corporation that, since the early 1900s, was the sole supplier of both retail electric and gas service in the Service Area. LIPA no longer provides gas service in the Service Area. For the period prior to the LIPA/LILCO Merger, LILCO is referred to herein as LILCO and, for the subsequent period, is referred to herein as LIPA. During the identified study period of this Report of the two years ending December 31, 2013 National Grid provided operations and maintenance services related to the T&D system as stated in the MSA. As of January 1, 2014 through a competitive bidding process a wholly-owned subsidiary of PSEG fully dedicated to the Authority's Long Island operations (PSEG-LI) began providing operations, maintenance and related services for the T&D system under the OSA. Currently the Authority operates under the PSEG-LI brand.

LIPA owns an electric transmission and distribution system serving the Service Area, including assets, facilities, equipment, and contractual arrangements used to provide the transmission and distribution of electrical capacity and energy to electric customers within the Service Area.



Figure 2-1: Electric System Service Territory

## 2.1 System Description

The Service Area consists of the bulk of Long Island in New York State, and is comprised of Nassau and Suffok counties and the Rockaway Peninsula of Queens County, an area of approximately 1,230 square miles, excluding areas served by three municipal utilites: the villages of Freeport, Greenport, and Rockville Centre. Suffolk County is the easternmost county within the Service Area and covers an area of approximately 911 square miles, followed by Nassau County with a 287 square mile area, and the Rockaway Peninsula with an area of approximately 32 square miles. The Service Area is bounded by the Atlantic Ocean on the south and east, by the Long Island Sound on the north, and by portions of New York City on the west. LIPA estimates the population of the Service Area was approximately 3.0 million people as of December 31, 2013. Figure 2-1 displays the Service Area for LIPA.

As of December 31, 2013, LIPA served approximately 1.1 million retail electric customers, of whom approximately 89 percent were residential users. During the year ending December 31, 2013, residential customers provided approximately 54 percent of LIPA's annual retail electric revenues and commercial customers provided approximately 45 percent of annual retail electric revenues. The remaining balance is revenue from retail sales of public lighting and other public authorities.

Although commercial customers provide a significant portion of annual electric sales revenues, these customers account for only 10 percent of the retail electric customers served by LIPA. In general, individual commercial customers are relatively small. The Service Area contains little traditional

"industrial" loads, and customers served under this rate classification are primarily large commercial customers. The single largest customer in the Service Area (the Long Island Rail Road) accounted for less than two percent of total electric sales during the period of this report and less than two percent of total retail electric revenues during the same period.

Table 2-1 provides summary information on annual retail energy sales and retail electric revenues within the Service Area during the 2009 through 2013 period.

	Table 2-1: Historical Sales and Customers				
-	2009	2010	2011	2012	2013
Peak Demand (MW)	5,034	5,719	5,771	5,333	5,602
Energy (MWh)					
Residential	9,211,453	9,971,614	9,848,965	9,735,407	9,536,151
Commercial and Industrial	9,599,501	9,950,557	9,818,456	9,666,106	9,800,324
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System Load Factor (Percent)	47.0%	43.3%	42.3%	45.6%	43.5%
Customer					
Residential	995,351	996,790	997,599	997,940	996,442
Commercial and Industrial	115,528	115,565	115,370	115,128	114,692
Other	5,784	5,428	5,446	5,486	5,149
Total Customers	1,116,663	1,117,783	1,118,415	1,118,554	1,116,283
Total Electric Revenues (\$000)	\$3,312,160	\$3,853,056	\$3,684,596	\$3,546,152	\$3,755,832

# 2.2 Biennial Report

In compliance with the requirements pursuant to the role of Consulting Engineer and Rate Consultant within the provisions of the Section 702(b) of the General Resolution and Section 7.02 of the Subordinated Resolution, LIPA retained BMcD to conduct the efforts required to prepare this Report for the two years ended December 31, 2013.

# 2.3 Report Covenant

Pursuant to the General Resolution, the Report is to set forth the following:

- i. "The Consulting Engineer's advice and recommendations as to the proper operation, maintenance, and repair of the System during the ensuing years, and an estimate of the amounts of money necessary for such purposes;
- ii. The Consulting Engineer's advice and recommendations as to improvements which should be made during the ensuing two years, and an estimate of the amounts of money necessary for such

purposes, showing the amount projected to be expended during such years from the proceeds of Bonds and Subordinated Indebtedness issued under or pursuant to the Resolution;

- The Rate Consultant's recommendation as to any necessary or advisable revisions of rates, fees, rents, charges and surcharges and such other advice and recommendation as it may deem desirable; and
- iv. The Consulting Engineer's findings as to whether the System has been maintained in good repair and sound operating condition, and its estimate of the amount, if any, required to be expended to place such properties is such condition and the details of such expenditures and the approximate time required therefore."

#### 2.4 Project Approach

This Report summarizes the reviews and assessments of LIPA. This Report documents BMcD's examination of the electric system organization and management and an assessment of the utility's financial condition. The source of the financial, statistical, and operating data utilized in preparing the Report is LIPA's annual financial statements and accounting records, various operations reports, as well as, Authority staff.

In the preparation of this Report, BMcD completed assessments of the electric generating stations under contract to LIPA and the transmission and distribution system owned by LIPA. Assessments involved interviews, observations, and review of annual expenditures from 2012 through 2013 and 2014 and 2015 budgets. The adequacy of the revenues provided by the current retail rates in relation to the requirements of the Resolutions was also reviewed.

Each section of the Report summarizes specific efforts completed while conducting the study. The Report is arranged in the following sections:

- 1.0 Executive Summary
- 2.0 Introduction
- 3.0 Organization and Management
- 4.0 Electric System and Service
- 5.0 Financial Assessment
- 6.0 Conclusions

#### 3.0 ORGANIZATION AND MANAGEMENT

#### 3.1 Authority Structure

Operations, performance, and costs are managed by the Authority. The management team includes engineering, legal, financial, accounting, and management professionals. The organization of this management team is described below. The Amended and Restated Management Service Agreement with National Grid expired on December 31, 2013. Through a competitive procurement process, the Authority selected Public Service Electric Group (PSEG) to operate LIPA's T&D System under a twelve-year OSA beginning January 1, 2014. This section will address the transition between operating entities.

#### 3.1.1 Board of Trustees

During the period of this Report, the Authority was governed by a fifteen-member Board of Trustees whose members were required under the Act to be residents of the Service Area. The Governor appointed nine of the Trustees. Of the six remaining, three were appointed by the Majority Leader of the New York State Senate, and three were appointed by the Speaker of the New York Assembly. The Chairman of the Trustees was also appointed by the Governor. Each Trustee served for a staggered term of four years. A Trustee whose term expired continued to serve until his or her successor was appointed. Trustees do not receive compensation, but are entitled to reimbursement for reasonable expenses in the performance of their duties. The Board of Trustees assumed many committee roles including: finance and audit, governance, transition, personnel and compensation, energy efficiency and environment, and operations committees. Figure 3-1 displays the organizational structure of the Board of Trustees and LIPA management during the Study Period.

As of January 1, 2014, several structural changes have been made to the Trustee's organization as shown in Figure 3-2. There are now a total of nine Trustees; five of these Trustees are appointed by the Governor, with the Speaker of the Assembly and Senate Majority Leader each appointing two Trustee's. Committees operated by the Board of Trustees have changed and now consist of the finance and audit, governance, personnel and compensation, and contract oversight committees.



Figure 3-1: Trustee's Organization during Reporting Period



#### President & CEO





#### 3.1.2 Authority Management

#### 3.1.2.1 Chief Operating Officer

John McMahon was the COO of LIPA, and acting President and CEO, during the period of this Report beginning in April 2013. As acting President and CEO, Mr. McMahon performed the duties as stated within the Authority's By-laws and reported directly to the Board of Trustees. As COO, Mr. McMahon directly oversaw the following positions: General Counsel & Secretary to the Board of Trustees, Chief Financial Officer, and Vice President of T&D Operations, Vice President of Environmental Affairs, and Vice President of Power Markets. As of February 2014, Mr. McMahon was appointed the permanent CEO. The positions of Vice President of T&D Operations, Vice President of Environmental Affairs, and Vice President of Power Markets no longer exist and have been replaced with Managing Director of Contract Oversight, Director of Communications and Clean Energy Program Oversight (reporting to the Managing Director of Contract Oversight), and Managing Director of Power Supply Long Island (a position that will be transitioned to PSEG-LI by January 1, 2015), as depicted in Figure 3-4 below.



#### Figure 3-3: LIPA Management Organization during Reporting Period

Jim Parmelee [3]

Rick Shansky [2]



Controller

Donna Mongiardo

Bobbi O'Conner [1]

Figure 3-4: LIPA Management Organization as of January 1, 2014

[1] Bobbi O'Conner was not General Counsel on January 1, 2014, but currently holds the position.

Tom Falcone

[2] Rick Shansky held the role Power Supply LI on January 1, 2014, but currently holds position as Contract Oversight [3] Jim Parmelee did not hold the position of Power Supply LI on January 1, 2014, but currently holds the position.

3.2 Organizational Policies

#### 3.2.1 LIPA Reform Act

Finance & Budgeting

Kenneth Kane

In October 2012, Superstorm Sandy struck the Authority's service area causing extensive damage to the Authority's T&D system, resulting in widespread power outages, mandatory evacuations and the destruction of a significant number of homes and businesses. Total damage to the Authority is approximated at \$700 million. Following Superstorm Sandy, Governor Cuomo established a Moreland Act Commission on Utility Preparedness and Storm Response to review and make recommendations with respect to all New York utilities, including LIPA, and their response to emergency weather events.

The LIPA Reform Act was enacted in response to concerns related to organizational relationship between the Authority and its new service provider under the OSA contract PSEG-LI. The LIPA Reform Act was intended to bring accountability and transparency to the delivery of electricity by:

- Authorizing the reformulation of the relationship between LIPA and PSEG-LI, such that PSEG-LI assumes more responsibility related to operations in the service area; the Authority's role is to oversee the activities of PSEG-LI and to meet its obligations with respect to its bonds and notes and all applicable statutes and contracts.
- 2. Creating a new Long Island based office in the Department of Public Service, which is the staff arm of the New York Public Service Commission to assist with oversight of core utility operations of PSEG-LI.

3. Authorize the retirement of a portion of the Authority's outstanding debt from the proceeds of the UDSA bonds at lower interest rates than existing indebtedness and capping or eliminating certain categories of payments in lieu of taxes, with savings passed on to ratepayers.

#### 3.2.2 Budgeting

On an annual basis during the two years ending December 31, 2013, LIPA staff worked to prepare operating and capital budget estimates for the upcoming year and prepared projections for each of the subsequent three years. Under the new OSA, PSEG-LI will prepare annual budgets for its costs and submit such budgets to LIPA and DPS for review. LIPA will continue to prepare budgets for its own costs, which will also be submitted to DPS. The budgeting process takes into consideration historical revenue and expense levels and projects revenues and expenses to be incurred. Estimates are prepared for each department and compiled into a singular document to be voted on by the Board of Trustees for approval. The 2014 Approved Operating Budget was reviewed in conducting the investigations pertaining to this report. According to the estimates, the electric revenues generated by the current electric rates are sufficient to fulfill the debt service coverage requirement defined in the General Resolution, which states:

"The Authority shall establish and maintain System fees, rates, rents, charges and surcharges sufficient in each Fiscal Year so that Revenues reasonably expected to be produced in such Fiscal Year, will be at least equal to the sum of (i) 120% (except, after the Authority shall have retired, other than from proceeds of Bonds or Subordinated Indebtedness, an amount equal to 25% of the Acquisition Debt net of the then outstanding balance of the Promissory Notes, 100%) of Debt Service, and amounts under all Parity Contract Obligations, payable by the Authority in such Fiscal Year, (ii) 100% of the Operating Expenses payable in such Fiscal Year, (iii) 100% of the amount necessary to pay all PILOTs payable in such Fiscal Year, and (iv) 100% of the amount necessary to pay other Required Deposits, all other payments required pursuant to the Resolution and the Financing Agreement, and all other payments required for the System, for such Fiscal Year; ..."

#### 3.2.3 Audited Financial Statements

In compliance with the requirements pursuant to the General Resolution, LIPA retains an independent accountant, on an annual basis, to audit the Financial Statements prepared by staff. The General Resolution requires the following:

"The Authority shall keep or cause to be kept proper books of record and account (separate from all other records and accounts) in which complete and correct entries shall be made of its transactions under the Resolution and which, together with all other books and papers of the Authority, shall at all

reasonable times be subject to the inspection of the Trustee or the representative, duly authorized in writing, of the Holder or Holders of not less than 25% in principal amount of the Bonds then Outstanding. Such books of account are to be audited at least annually by independent certified public accountants experienced in public finance and electric utility accounting selected by the Authority. A copy of each audit report, annual balance sheet and income and expense statement shall be filed with the Trustee and sent to any Owner filing with the Authority a written request therefor."

LIPA has been successful at meeting its auditing requirements for the period.

## 3.2.4 Rate Studies

The Authority is empowered to set rates for electric service in the service area without being required by law to obtain approval of the PSC, DPS or any other State regulatory body. However, the Authority agreed in connection with the approval of the LIPA/LILCO Merger by the PACB in 1997 that it would not impose any permanent increase, nor extend or reestablish any portion of a temporary rate increase, in average customer rates over a 12-month period in excess of 2.5 percent without approval of the PSC, following a full evidentiary hearing. Under the LIPA Reform Act, that PACB condition has been superseded by the rate-setting process which provides for DPS review of the 2016-2018 rate proposal, as well as any future rate proposal that leads to aggregate revenues of the Authority to increase by more than 2.5 percent on an annual basis. LIPA's utility rate schedule is structured with fixed customer charges for all customer classes, seasonal energy rates for all customer classes. Several rate changes took effect during the Study period. Effective March 1, 2011, the Board of Trustees approved a 0.5 percent increase to the Energy Efficiency and Renewable Resource Charge, as well as an approximate base rate delivery charge increase of 1.9-2.2 percent. A second base rate delivery charge increase was implemented April 1, 2012, increasing average residential bills by approximately 1.8 percent.

# 3.2.5 Primary Operating Agreement

The MSA expired on December 21, 2013, which required that National Grid provide operations and maintenance services related to the T&D system. While this agreement was in effect through this Report's identified Study period, it is worth acknowledging that through a competitive bidding process, effective January 1, 2014 a wholly-owned subsidiary of PSEG fully dedicated to the Authority's Long Island operations began providing operations, maintenance and related services for the T&D system under the OSA. The OSA expires December 31, 2025. Additionally it includes a provision that if PSEG-LI achieves certain levels of performance based on criteria during the first 10 years, the parties will negotiate an eight year extension on substantially similar terms and conditions. Beginning January 1, 2015, an affiliate of

PSEG-LI will assume certain power supply management, fuel procurement and related services that have historically been provided pursuant to separate agreements between the Authority and other service providers. PSEG-LI organization is shown below in Figure 3-5.





#### 4.0 ELECTRIC SYSTEM AND SERVICE

LIPA's electric system primarily consists of transmission and distribution assets and an 18 percent partial ownership in the Nine Mile Point 2 Nuclear Power Station. Additionally, the Authority has various power supply contracts, which are described below.

#### 4.1 Nine Mile Point 2 Generating Station

LIPA holds 18 percent ownership in the Nine Mile Point Nuclear Power Station 2 (NMP2), located near Scriba, New York on the south shore of Lake Ontario. NMP has two separate nuclear power stations, designated as NMP1 and NMP2. Constellation owns 100 percent of NMP1, and 82 percent of NMP2. NMP2 consists of a boiling water reactor and General Electric turbine generator, and operates under licensing from the Nuclear Regulatory Commission, set to expire in 2046. In 2012, Excelon Corporation acquired Constellation. LIPA anticipates no material differences NMP2 operation and for the purposes of this Report the majority owner of NMP will be referred to as Constellation.

LIPA has entered into an operating agreement with Constellation for NMP2. As a part of the agreement, LIPA and Constellation each has representatives on a management committee, which meets to discuss plant matters. Final budgets are prepared by Constellation, and sent to LIPA for annual approval. LIPA is responsible for their ownership portion of operating costs and capital investments associated with NMP2 each year.

#### 4.1.1 NMP2 Capital Improvement Program

NMP2 operated at an annual mean capacity of 1,148 MW through June of 2012. Capital investment into the plant during the refueling outage provided increased capacity by 150 MW to NMP2's power rating, bringing current capacity to approximately 1,298 MW. This capital expenditure was shared proportionately between Constellation and LIPA and is reflected in LIPAs utility plant records.

Constellation has contracted with the Department of Energy (DOE) for disposal of high level radioactive waste (spent fuel), and despite a court order reaffirming DOE's obligation, the DOE has not forecasted the start of operations of spent fuel repository. NMP reached capacity on total spent fuel storage it could currently hold in May of 2012. For this reason, Constellation built a new dry fuel storage facility to accommodate spent fuel for both NMP1 and NMP2. LIPA's 18 percent share of capital expenditures for NMP2 during the study period averaged approximately \$13 million during the study period for plant modifications. Nuclear fuel purchases were \$1.0 million in 2012 and 26 million for 2013.

#### 4.1.2 Plant Performance of NMP2

Plant capacity increased during the Study period from 1,148 MW to 1,298 MW during the June 2012 refueling outage. NMP2 performs at favorable capacity factors when compared to industry nuclear averages. Table 4-1 displays comparative capacity factors for years 2009-2013. Generation values within Table 4-1 only reflect 18 percent of total generation from NMP2, capturing only LIPA's 18 percent, partial ownership. Decreased generation and capacity factor in 2012 is attributable to increased down time to complete capacity upgrades during the refueling outage. Performance measurements returned to expected values during 2013, once upgrades were complete.

<u>Year</u>	Annual Net Generation (MWh)	Annual Net Capacity Factor	Three Year Average Net Capacity Factor	Industry Average Net Capacity Factor
2009	1,785,945	99.2	93.8	90.5
2010	1,610,096	89.3	92.9	91.1
2011	1,716,753	92.9	94.6	89.1
2012	1,470,928	81.3	89.6	85.5
2013	1,954,492	95.5	93.2	90.9

#### Table 4-1: NMP2 Plant Performance

#### 4.2 Transmission System

LIPA's transmission system consists of overhead and underground facilities, vehicles, equipment, land parcels, easements, contractual arrangements, and other assets used to provide the transmission and distribution of electric capacity and energy to and within the Service Area. The T&D System includes seven transmission interconnections that are owned in part or under contract to LIPA that link the T&D System to utilities outside the Service Area. These transmission interconnections enable delivery of:

- 1. Capacity and energy produced by NMP2,
- 2. Additional off-system capacity resources needed to meet the peak demands of the electric customers,
- 3. Favorably priced energy to supplement or displace generation from on-island generating resources, and
- 4. Excess generation from on-island generating facilities to off-island purchasers, when conditions merit.

Table 4-2 provides summary information on the transmission interconnections.

Off System Terminal Location	Interconnecting Utility	Voltage Level (kV)	AC/DC
Westchester County, NY	Con Edison	345	AC
Westchester County, NY	NYPA	345	AC
Norwalk, CT	CL&P	138	AC
New Haven, CT	UI	138	DC
Queens, NY	Con Edison	138	AC
Queens, NY	Con Edison	138	AC
Sayreville, NJ	JCP&L	345	DC
	Off System Terminal Location Westchester County, NY Westchester County, NY Norwalk, CT New Haven, CT Queens, NY Queens, NY Sayreville, NJ	Off SystemInterconnectingTerminal LocationUtilityWestchester County, NYCon EdisonWestchester County, NYNYPANorwalk, CTCL&PNew Haven, CTUIQueens, NYCon EdisonQueens, NYCon EdisonSayreville, NJJCP&L	Off SystemInterconnecting UtilityVoltage Level (kV)Westchester County, NYCon Edison345Westchester County, NYNYPA345Norwalk, CTCL&P138New Haven, CTUI138Queens, NYCon Edison138Queens, NYCon Edison138Sayreville, NJJCP&L345

#### Table 4-2: LIPA Interconnections

Four submarine cables installed under Long Island Sound form part of the interconnection between the T&D System and other utility systems in upstate New York and Connecticut:

- 1. Dunwoodie to Shore Road
- 2. East Garden City to Sprain Brook
- 3. Northport to Norwalk Harbor
- 4. Shoreham to East Shore

A fifth submarine cable (Sayreville to Levittown) connects LIPA's service area with New Jersey and allows for the purchase of energy and capacity from resources in the Pennsylvania-New Jersey-Maryland region (PJM).

The Dunwoodie to Shore Road line, designated as the (Y-50) line and placed in operation in August 1978, is an 18-mile 345-kilovolt (kV) cable jointly owned with Con Edison. This cable is of pipe-type construction in which dielectric fluid is circulated to cool the conductors and maintain the electrical insulation. The cable operates at full capacity with a 653 MW normal rating and a 914 MW emergency rating. Power is wheeled over this cable to the two 138 kV cables to Jamaica for delivery to LIPA.

The East Garden City to Sprain Brook 345 kV interconnection (Y-49) was installed in 1991 and is approximately 23 miles long. This cable is comprised of a submarine portion and a land-based portion. The submarine portion is constructed of self-contained dielectric fluid-filled cables that operate under high pressure, while the land-based portion is of conventional pipe-type construction. This line is owned entirely by New York Power Authority (NYPA) and is used by LIPA under the terms of a contract with NYPA. Over its life, the Y-49 cable has generally performed well with only a few instances of outages due to terminal equipment failures and one interruption due to an anchor dragging across the submerged portion of the cable.

The Northport to Norwalk Harbor cable (NNC) is a double circuit 138 kV submarine cable installed in 2008 to replace an older cable. This line extends approximately 12 miles under the Long Island Sound from the Northport Electric Generating Station (Northport) in Suffolk County, New York to Norwalk Harbor, Connecticut. LIPA owns that portion of the line from Northport to the New York-Connecticut state boundary, at which point ownership is held by Connecticut Light and Power (CL&P), a wholly-owned subsidiary of Northeast Utilities. The circuit has a normal rating of 450 MW, but, due to constraints in southwest Connecticut, is operated at the prior cable's rating of 286 MW. One of the three new cables failed on May 20, 2009. The cost of repairs was covered by warranty and the damaged cable was back on line April 26, 2011.

The Shoreham to East Shore line (the Cross Sound Cable or CSC) is a 24-mile, +/- 150 kV bi-directional high voltage direct current system utilizing voltage source converter technology with a capability of 330 MW. The Cross Sound Cable is connected between the converter stations installed adjacent to United Illuminating's 345 kV East Shore substation in Connecticut and LIPA's Shoreham 138 kV substation. Construction of this line began in 2000 pursuant to a firm transmission capacity purchase agreement (the CSC Agreement) entered into between LIPA and Cross Sound Cable Company, LLC pursuant to which LIPA agreed to purchase up to 330 MW of transmission capacity. The CSC Agreement, as amended, expires in 2032. The Cross Sound Cable became operational in June 2004.

The Sayreville to Levittown cable allows LIPA to import power from New Jersey over an undersea highvoltage direct current transmission cable (the Neptune Cable). The Neptune Cable was constructed, and is owned, by Neptune Regional Transmission System, LLC. The Neptune Cable is capable of carrying 660 MW of electricity and runs from Sayreville, New Jersey, under the Atlantic Ocean and connects with LIPA at its Newbridge Road substation in Levittown. The Neptune Cable became operational in July 2007.

The two remaining Service Area transmission interconnections (the Jamaica to Lake Success and the Jamaica to Valley Stream cables) are linked to the Con Edison transmission system in Queens County, New York. LIPA owns these facilities to the border of Nassau and Queens Counties, at which point ownership transfers to Con Edison. These ties are employed primarily or the delivery of power to Con Edison from its portion of energy flowing across Y-50.

The transmission facilities provide for the delivery of capacity and energy from the transmission interconnections and the on-island generating stations to LIPA's electric distribution system. As of December 31, 2013, LIPA reported the transmission system consisted of approximately 1,350 miles of

overhead and underground lines, with voltage levels ranging from 23 kV to 345 kV. This transmission system has been constructed following standards similar to those employed by other major electric utilities in the Northeast and includes wood poles, steel poles, and lattice steel towers. Many of the existing transmission structures support distribution circuits and/or connections for telephone, cable television, or fiber optics.

The transmission system includes transformation equipment at 20 generating sites that is used to step up the generation voltage to transmission voltage levels. With the exception of certain facilities at generating facilities previously owned by LILCO and now under contract to LIPA, transformation equipment at the sites is owned by LIPA.

#### 4.2.2 Substation Descriptions

BMcD inspected 21 substations in both Nassau and Suffolk counties. Inspections were guided by PSEG-LI. The substations visited included:

5M New Bridge	5R Belmore	2WB Barett	2A Park Place
2AR Arverne	2K Valley Stream	2M Long Beach	5H Oyster Bay
4G Shore Rd.	4RH Orchard	4XH Glenwood	6U Ruland
6UL Green Lawn	6RL Elwood	6P Pulaski	6DL Pilgrim
7DM Central Islip	8ED Edwards Ave.	8KD DRSS	8KW West Bus

#### 9A Riverhead

The inspected sample represented a variety of T&D substations with different voltage levels, age, and levels of damage as a result of Superstorm Sandy. Overall, substations were clean and in good operating condition. Based on the substation inspections, BMcD has general recommendations regarding substation operating and maintenance:

 According to PSEG-LI operators, substations have experienced theft of copper, or copper substitutes. LIPA should consider urban grounding for all steel structures and above ground grounding connections. Urban areas grounding is a practice used in the substations located in urban areas where theft is more likely. It is achieved by covering all copper wire with a "U" shaped steel channel all the way from the point of grounding of the structure or the equipment up to the point where the ground wire enters the ground. (Note: This practice has been adopted by PSEG New Jersey for use in their substations.)

- 2. PSEG-LI determines suitability for transformer containment foundations by considering proximity to navigable water channels and other environmentally sensitive areas, as directed by their environmental engineering group. Where applicable, either full containment foundations or perimeter curbing containment measures have and will continue to be applied. There are still a large number of transformers with no form of oil containment. Any serious leak or fire for those transformers would cause environmental hazard. Due to the lack of oil containment pits in some substations, BMcD recommends PSEG-LI address the way leak reports are handled. Currently, leak reports are a part of the monthly substation reports and give a priority of 1 through 4, with 1 being the highest priority and needs to be addressed within a week. While this is acceptable for minor leaks, it is recommended that PSEG-LI/LIPA administer a formalized leak reporting plan for more severe transformer oil leaks moving forward.
- 3. Due to Superstorm Sandy, the impacted substations and substations in flood zones were raised and some were fenced with temporary sand barriers (trap bags). Some trap bags have begun showing signs of weathering, and dirt has broken out of the bags. It is recommended to use more reliable methods to protect the substations from floods due to increase in extreme weather patterns. In speaking with PSEG-LI staff, BMcD was informed that trap bags are temporary, and work continues on elevating substations through the end of 2016 whereby all trap bags will be replaced. Future consideration for eliminating bags at Oyster Bay, Barrett 138 kV control house is still in development.
- 4. Many of the LIPA control houses are not air conditioned. For control houses with microprocessors as opposed to electromechanical relays, this poses an operational threat during times of extreme heat. In speaking with PSEG-LI staff, BMcD was informed that the harden microprocessors utilized in control houses have allowable operating temperatures ranging from 40 degrees Fahrenheit to 185 degrees Fahrenheit, making the need for cooling obsolete. It is BMcD's recommendation that PSEG-LI remain diligent in verifying equipment installed in non-air conditioned control houses meet the specifications of enduring extreme temperatures.

#### 4.2.2.1 6DL Pilgrim

The 6DL Pilgrim substation is in overall good condition; the site was clean and well maintained. PSEG-LI has begun the process of replacing oil circuit breakers with gas circuit breakers (GCB) at this site. In doing so, PSEG-LI has left decommissioned oil circuit breakers within the substation as shown in Figure 4-1. In speaking with PSEG-LI staff, BMcD was informed that the equipment was left within the substation in case parts were needed to repair oil circuit breakers still in operation, and to provide ready access to insurance adjusters who have performed numerous site visits since Superstorm Sandy. BMcD would recommend a more formal storage and inventory of decommissioned equipment with storage off-site of the substation.



Figure 4-1: 6DL Pilgrim Decommissioned Equipment

# 4.2.2.2 5H Oyster Bay

The 5H Oyster Bay substation was heavily damaged substation during Superstorm Sandy. The substation has two ABB transformers receiving 69 kV transmission. Subsequent to Superstorm Sandy, new barriers were built to protect the equipment within the substation from flooding as shown in Figure 4-2. As shown in the figure, the barriers are temporary, and a more permanent, reliable method of flood prevention should be installed in the future. During renovations of the 5H Oyster Bay substation, LIPA took the opportunity to add oil containment to the transformers. It is recommended that LIPA continue to add oil containment foundations when the opportunity arises.



Figure 4-2: 5H Oyster Bay Substation Renovation

#### 4.2.2.3 6UL Greenlawn

The 6UL Greenlawn substation is in overall good condition and the site was clean. This substation had an older 69/23 kV side and a newer 138 kV side within the footprint. As a part of the newer 138 kV portion of the substation, LIPA has added a new control house. This control house has microprocessor relays and the space is air conditioned. While the site overall was clean, it is recommended that tree trimming take place at his site as some of the branches have begun hanging over the fence line near equipment.

#### 4.3 Distribution Plant

LIPA reports the distribution system included approximately 14,000 primary circuit miles of overhead and underground line (9,000 miles of overhead line and 5,000 miles of underground line) as of December 31, 2013. As of December 31, 2013, there were 168 substations providing service to load via distribution transformers connected to the 138 kV and 69 kV buses. Approximately 43.5 percent of the poles on which LIPA's distribution facilities have been installed are owned by Verizon and used by LIPA pursuant to a joint-use agreement.

#### 4.4 Major Maintenance and Capital Improvements

Capital expenditures including Nine Mile Point 2 expenditures for 2013 were approximately \$360 million, and averaged approximately \$332 million over the study period. Such expenditures included reliability enhancements, capability expansion, new customer connections, facility replacements and public works. Capital expenditures for 2014 in the approved budget are approximately \$438 million. LIPA experienced a substantial increase in 2013 over prior year's average spending primarily due to

expenditures related to the transition to the new operating services business model effective January 1, 2014. The continued increase in 2014 over years prior to 2013 results primarily from information technology projects related to the transition to the new operating services business model, as well as additional reliability project expenditures, particularly substation equipment improvements. In addition, the 2014 capital expenditure program provides for a continuation of the historical programs to maintain reliability and quality of electric service, as well as expenditures for capability expansion, new customer connections, facility replacements, reliability enhancements and public work projects that were comparable to historical levels.

## 4.5 Power Supply and Electric Load

LIPA receives power supply from National Grid Generation LLC (GENCO) facilities, the NMP2 facility, and Independent Power Producers on Long Island and elsewhere. Table 4-3 displays the capacity and energy breakdown between power supplies for LIPA over the previous 5 years. On average, LIPA receives 8 percent of its energy through their proportionate share of NMP2 generation, 25 percent GENCO power, and 67 percent through other Independent Power Producers.

	2009	2010	2011	2012	2013		
Peak Demand (MW)	5,034	5,719	5,771	5,333	5,602		
Capacity							
Nuclear	206	206	225	224	225		
Purchased Capacity							
GENCO	4,078	4,074	4,010	3,667	3,679		
Other Purchased	1,618	2,055	2,092	2,104	2,111		
Total Capacity	5,902	6,335	6,327	5,995	6,015		
Reserve Margin							
MW	868	616	556	662	413		
Percent	17.2%	10.8%	9.6%	12.4%	7.4%		
Energy (MWh)							
Nuclear	1,785,593	1,590,821	1,707,140	1,470,928	1,954,492		
Purchased Energy							
GENCO	5,092,999	6,117,349	5,661,914	5,258,881	4,823,499		
Other Purchased	13,848,694	14,098,658	14,214,372	14,582,206	14,567,722		
Total Energy	20,727,286	21,806,828	21,583,426	21,312,015	21,345,713		

#### Table 4-3: Historical Power Supply

In 2009, LIPA initiated a \$924 million, 10 year energy efficiency program, Efficiency Long Island (ELI), which plans to reduce demand by 500 MW. In addition, the Authority has put in place renewable energy programs. Since installment, the renewable energy programs in combination with the ELI have provided a cumulative demand reduction of 222 MW through December 31, 2013.

To accommodate anticipated increase in demand capacity, the Authority issued a request for proposal (RFP) in August 2010 to provide LIPA with capacity, energy, and ancillary services of up to 2,500 MW from new generation and/or transmission resources to be installed between 2016 and 2018. Originally, the selected proposal for increased capacity from Independent Power Producers was Caithness II, a 716 MW combined cycle plant to be located next to the Caithness Long Island Energy Center, and was intended to be operational by May 2018. At the August 2014 board meeting, LIPA announced that it would not be going forward as planned with the Caithness II contract by December 2014. Instead PSEG-LI will complete a new integrated resource plan (IRP) in 2015 and evaluate Caithness II and other alternatives as part of that IRP. In addition, the Authority recently issued an RFP in October 2013 for 280 MW of renewable energy. Proposals included solar, wind, and fuel cell projects and are currently being vetted by the selection committee. Project selection is slated for December 2014.

#### 4.6 Power Quality

LIPA is committed to providing reliable and economical electric service. Three common measurements used to track reliability of power quality are the Customer Average Interruption Duration Index (CAIDI), System Average Interruption Duration Index (SAIDI), and the System Average Interruption Frequency Index for Long Interruptions (SAIFI LONG). CAIDI is measured by dividing the sum of all customer interruption duration in minutes by the total number of customer interruptions. SAIDI is similar to the CAIDI measurement, but the interruption duration is divided by total number of customers served by the system. SAIFI LONG provides an estimate for expected ratio of customers to be interrupted annually and is calculated by dividing the total number of customers interrupted by the total number of customers served. Over the past 14 years, LIPA's investments in the transmission and distribution system have resulted in LIPA being the most reliable overhead electric utility in New York State based on SAIDI, SAIFI LONG, and CAIDI measurements. Results for these metrics over the previous three years are displayed in Table 4-4. For both years, 2012 and 2013, LIPA's SAIDI measurement finished 21 minutes (47 percent) better than the second ranked utility, and 24 minutes (30 percent) better than the second ranked utility in CAIDI measurements.

	2011	2012	2013	5-Year Average
SAIDI (Minutes)	51.7	50.6	47.9	54.2
SAIFI LONG (Interruptions/Year)	0.754	0.678	0.709	0.766
CAIDI (Minutes)	68.5	74.7	67.6	66.6

#### Table 4-4: Power Quality Measurements

# 5.0 FINANCIAL ASSESSMENT

The financial results of the electric system for the two-year period ended December 31, 2013 are provided herein.

#### 5.1 Electric Rates

#### 5.1.1 Rates Covenant

Provisions of Electric System General Revenue Bond Resolution, adopted May 13, 1998, as supplemented and amended from time to time, mandates LIPA establish service rates and collect fees sufficient to pay all expenses associated with utility operations including maintaining the appropriate level of reserves as well as maintaining an annual minimum debt service coverage of 100 percent. The debt service coverage minimum has been reduced from 120 to 100 percent, because LIPA has retired, other than from proceeds of Bonds or Subordinated Indebtedness, an amount equal to 25 percent of the Acquisition Debt net of the then outstanding balance of the Promissory Notes. The Rate Covenant provisions of the General Resolution states the following:

"The Authority shall review, or cause the Subsidiary to review, the adequacy of System fees, rates, rents, charges and surcharges at least annually. If such annual or more frequent review, or the report of the Rate Consultant pursuant to Section 702, indicates that the rates, fees, rents, charges and surcharges are, or will be, insufficient to meet the requirements of this Section 701, the Authority shall promptly take, or cause the Subsidiary to take, the necessary action to cure or avoid any such deficiency except as otherwise may be provided by subsection (d) of this Section."

#### 5.1.2 Regulation

The Authority is operated under the direction of the Board of Trustees. The Authority has the power to determine and alter rates charged without needing approval of the PSC, DPS or any other State regulatory body. The Authority agreed that it would not impose any permanent increase, nor extend or reestablish any portion of a temporary rate increase, in average customer rates over a 12 month period in excess of 2.5 percent without approval of the PSC, following a full evidentiary hearing. Under the LIPA Reform Act, that PACB condition has been superseded by the rate-setting process which provides for DPS review of the 2016-2018 rate proposals, as well as any future rate proposal that leads to aggregate revenues of the Authority to increase by more than 2.5 percent on an annual basis. Table 5-1 summarizes the current base electric rates by class.

#### 5.2 Financial Results

The total revenue of LIPA for the two-year period ended December 31, 2013 included revenue from charges for electric service, wholesale services, as well as miscellaneous revenues from items such as rents, late payment charges, reconnection fees, etc. LIPA's auditors perform an annual review of the Rate Covenant to determine compliance with the requirement of the General Resolution. The evaluation process of Rate Covenant compliance completed by LIPA's independent auditor include a comparison of all line item amounts presented for the Rate Covenant Calculation, recalculation of mathematical accuracy for both Rate Covenant Calculations and coverage calculations, and a comparison of reported Rate Stabilization Fund balances to accompanying bank statements. For the periods of this review, LIPA calculations of the Rate Covenant, as reviewed by its independent accounting firm, shows that LIPA has complied with its financial obligations under the Resolution.

LIPA customers are billed for electric service based on rate schedules, tariffs, or contracts that reflect the costs to the utility of providing that service. For purposes of designing electric rates, customers with similar load and service characteristics should be placed in the same rate classification. LIPA currently provides electric service to thirteen residential retail service classes and eleven commercial retail service classes. Table 5-1 presents the monthly rates billed to the major Residential (Residential, General Use) and Commercial (Commercial, Large, General Use) rate classes.

of

#### Table 5-1: Existing Rates

	20 <sup>.</sup>	2014					
	<u>June 1-Sept. 30</u>	<u>Oct. 1-May 31</u>					
Service Charge (\$/Day)							
Residential [1]	0.3600	0.3600					
Commercial [2]	0.3600	0.3600					
Energy Charge (\$/kWh)							
Residential							
First 250 kWh	0.0904	0.0904					
Excess 250 kWh	0.1022	0.0834					
Commercial	0.1099	0.0910					
Ratcheted Demand Char	<u>ge (\$/kW)</u>						
Residential	-	-					
Commercial	10.84	9.6300					
Power Supply Charge (\$	<u>/kWh)</u>						
Residential	Power Supply ( monthly basis in o	Power Supply Charges fluctuate on a monthly basis in order to reflect the cost					
Commercial	electricity ir	the marketplace.					
[1] Residential rates are app customers (Schedule 180)	licable to Residential, Ger	neral Use					
[2] Commercial rates are app	plicable to Commercial, La	arge, General Use					

customers (Schedule 281)

#### 5.2.1 Operating Results

Table 5-2 presents a summary of the energy sales, the number of customers, and the average energy usage per customer by class for 2012 and 2013. Total system energy sales ranged from 19.953 GWh in 2012 to 19.931 GWh in 2013.

	2012	2013
Energy Sales (MWh)		
Residential	9,735,407	9,536,151
Commercial and Industrial	9,666,106	9,800,325
Other	552,104	594,617
Total Sales	19,953,617	19,931,093
Customer		
Residential	997,940	996,442
Commercial and Industrial	115,128	114,692
Other	5,486	5,149
Total Customers	1,118,554	1,116,283
Energy per Customer (MWh/Customer)		
Residential	9.8	9.6
Commercial and Industrial	84.0	85.4
Other	100.6	115.5
Total Sales	17.8	17.9

#### Table 5-2: Energy Sales and Customer by Class

Annual revenues from sales, revenue per kWh ratios, and average revenue per customer ratios for each customer classification are presented in Table 5-3. During the period of this report, total revenue from sales to electric customers was \$3.52 billion in 2012 and \$3.73 billion in 2013. The change was driven primarily by variations in the cost of Fuel and Purchased Power, which has been collected and adjusted monthly since 2012 to help maintain the financial health of LIPA.

	2012	2013
Revenue (\$000)		
Residential	1,848,238	1,954,884
Commercial and Industrial	1,498,625	1,602,308
Other	<u>173,875</u>	169,292
Total Revenue	3,520,738	3,726,484
Energy (MWh)		
Residential	9,735,407	9,536,151
Commercial and Industrial	9,666,106	9,800,324
Other	552,104	594,617
Total Sales	19,953,617	19,931,093
Customer		
Residential	997 940	996 442
Commercial and Industrial	115 128	114 692
Other	5 486	5 149
Total Customers	1,118,554	1,116,283
Povonuo/k/M/h		
Revenue/KWII Residential	0 1000	0 2050
Residential	0.1090	0.2050
	0.1550	0.1033
Other	0.3149	0.2847
Total Energy Sales	0.1764	0.1870
Revenue/Customer		
Residential	1,852	1,962
Commercial and Industrial	13,017	13,970
Other	31,692	32,877
Total Energy Sales	46,561	48,809

#### Table 5-3: Revenues and Sales Ratios by Class

For 2013 the average rate revenue per kWh for residential customers was 20.5 cents and the total average revenue was 18.7 cents per kWh. The January 2013 through December 2013 national average monthly utility-level retail sales of electricity and associated revenue per kWh, as published by the US Energy Information Administration (EIA), was 12.12 cents for residential customers and 10.08 cents per kWh across all sectors. For a state-wide comparison, the EIA summarized the New York January 2013 through December 2013 average monthly utility-level retail sales of electricity and associated revenue per kWh to be 18.84 cents per kWh for residential customers and 15.62 cents per kWh across all sectors. LIPA's average rates tend to be higher than the national and state-wide average due to the increased cost of living, as well as LIPA's mandate to receive power from low and low-sulfur fueled generation.

LIPA's largest cost in providing electric service to its customers for each year of the period was the fossil fuels and the wholesale cost of power. LIPA purchased power from a number of different entities during the time of the study. Their largest supplier of power for both 2012 and 2013 was from National Grid, specifically the Northport steam turbines 1-4. For the two-year period, the net cost of non-generated power fluctuated each year. The two-year high in annual purchased power cost occurred in 2013 when costs totaled \$1.75 billion. In 2012 the annual purchased power cost totaled \$1.55 billion.

The significance of annual power supply cost and purchased power plus production is illustrated in Table 5-4. The top portion of the table shows net operating revenue as the difference between total revenues generated by the delivery rates and the recovery of power supply costs. The ratios of power supply cost to sales revenues were calculated for 2012 and 2013. As illustrated, LIPA's sales revenue as a percentage of power supply costs ranged from 44 percent in 2012 to 47 percent in 2013.

#### Table 5-4: Net Revenue Margins and Unaccounted for Energy

(\$000)

	 2012	 2013
Net Revenue Margins		
Sales Revenues	\$ 3,546,152	\$ 3,755,832
Power Supply	\$ 1,553,769	\$ 1,749,892
Net Revenue Margin	\$ 1,992,383	\$ 2,005,940
Power Supply to Sales Ratio	44%	47%
Unaccounted for Energy (MWh)		
Power Supply	21,312,015	21,345,713
Energy Sales	19,953,617	19,931,093
Unaccounted for Energy Losses	1,358,398	1,414,620
Percentage	6.4%	6.6%

Table 5-4 also illustrates the ratio of the amount of energy purchased and delivered to the electric system to total energy sales. This relationship identifies the level of unaccounted for energy in the system. This unaccounted for energy is primarily attributable to transmission and local system line/transformer losses, and to a much lesser extent may include unmetered or inaccurately metered sales, or even theft, etc. The bottom portion of Table 5-4 presents these comparisons for LIPA for 2012 and 2013. As shown, the percentage ratio of the unaccounted for energy to the total energy purchased was 6.4 percent for 2012 and 6.6 percent for 2013.

Table 5-5 presents a re-creation of LIPA's Statement of Revenues, Expenses, and Changes in Net Assets for 2012 and 2013. As illustrated, the change in net assets generated by LIPA in 2012 was a loss of \$65.3 million. In 2013, LIPA generated income of \$47.4 million. The primary factor contributing to the loss (negative change in net assets) in 2012 can be attributed to high operation and maintenance costs associated with restoration efforts due to Superstorm Sandy. Many of these costs are anticipated to be recovered through additional grants to be received in 2014.

		(* )						
	Actual			Estimated				
		2012		2013		2014		2015
Retail Sales of Electricity (MWh)								
Electric Revenues	\$	3,546,152	\$	3,755,832	\$	3,525,675	\$	3,570,493
Operating Expenses								
Fuel and Purchased Power Costs	\$	1,553,769	\$	1,749,892	\$	1,524,067	\$	1,547,990
Operations and Maintenance		1,734,316		1,025,590		1,138,717		1,099,492
General and Administrative		44,712		37,775		33,510		29,668
Revenue Taxes		60,820		65,113		37,631		38,488
Payments In-Lieu of Taxes		260,312		277,019		299,242		305,239
Depreciation and Amortization		272,017		279,584		293,470		309,251
Total Operating Expenses	\$	3,925,946	\$	3,434,973	\$	3,326,637	\$	3,330,128
Operating Income	\$	(379,794)	\$	320,859	\$	199,038	\$	240,365
Other Income and Deductions, Net		648,317		61,449		228,695		191,889
Excess of Revenues Over Expenses Before Interest Expense	\$	268,523	\$	382,308	\$	427,733	\$	432,254
Interest Expense								
Debt Service Interest Expense		335,575		333,820		342,059		346,442
Other Interest Expense and Fees		6,318		9,136		10,674		10,812
Subtotal Interest Expense		341,893		342,956		352,733		357,254
Promissory Notes Receipts		(8,075)		(8,075)		-		-
Net Interest Expense		333,818		334,881		352,733		357,254
Excess of Revenues Over Expenses	\$	(65,295)	\$	47,427	\$	75,000	\$	75,000
Net Assets, Beginning of Year	\$	395,970	\$	330,675	\$	378,102	<u>\$</u>	453,102
Net Assets, End of Year	\$	330,675	\$	378,102	\$	453,102	\$	528,102

# Table 5-5: Historical and Estimated Operating Results (\$000)

# 5.2.2 Adequacy of Electric Rates

In order to determine if LIPA meets this requirement on an annual basis, the operating revenue shown in Figure 5-1 represents operating revenue and the determination of the revenues available for debt service for 2012 through 2013. As Figure 5-1 illustrates, LIPA maintained a debt service coverage ratio each year that exceeded the required 100 percent. Therefore, the revenues generated by the current electric rates have been sufficient to meet the applicable covenants of the General Resolution.

#### Figure 5-1: Adequacy of Electric Rates

(\$000)

	Actual		
-	2012	2013	
Rate Covenant Calculation			
Senior Lien Debt Service	576,992	387,002	
Rate Covenant on Senior Lien Debt Service	1.80	3.17	
Senior Lien and Subordinate Debt Service	588,117	402,056	
Rate Covenant on Senior Lien and Subordinate Debt Service	1.77	3.05	
Total Debt Service	596,192	410,131	
Rate Covenant on Total Debt Service	1.74	2.99	

#### 5.3 Status of Revenue Bonds

At the end of 2013, LIPA had general and subordinated revenue bonds, restructuring bonds, and general revenue notes outstanding that were issued pursuant to the General Resolution. Table 5-6 displays these outstanding debts during the Study period. During 2012, debt decreased by \$22 million. During 2013, debt increased \$358 million compared to 2012 resulting from the issuance of UDSA Restructuring Bonds, totaling \$2.022 billion.

# Table 5-6: Outstanding Debt, Balance as of Dec. 31, 2013 (2000)

	(4000)		
	 2011	 2012	 2013
General Revenue Bonds	\$ 6,013,987	\$ 6,166,540	\$ 4,594,248
Subordinated Revenue Bonds	525,000	350,000	350,000
Commercial Paper Notes	200,000	200,000	-
NYSERDA Notes	155,420	155,420	-
Restructuring Bonds	-	-	2,022,324
General Revenue Notes (Revolver)	 -	 -	 188,083
	\$ 6,894,407	\$ 6,871,960	\$ 7,154,655

Table 5-7 illustrates the debt service schedule for the outstanding bonds and notes. The principal and interest and the annual total are shown. LIPA recently approved the issuance of up to \$675 million of additional bonds, which are expected to be sold in the fourth quarter of 2014. After the issuance of the 2014 bonds, LIPA will have a total of \$7.763 billion of outstanding debt obligations.

	(\$	6000)			
			Net Swap		
Due	Principal	Interest	Payments	Total	
0014	470.000	004.005	07 400	404 075	
2014	170,020	294,825	27,130	491,975	
2015	179,505	294,415	21,747	495,667	
2016	260,515	296,763	13,183	570,461	
2017	221,298	287,906	12,449	521,653	
2018	233,288	279,400	12,449	525,137	
2019-2023	1,314,223	1,275,659	62,246	2,652,128	
2024-2028	1,531,355	1,008,103	58,316	2,597,774	
2029-2033	1,904,070	623,191	4,374	2,531,635	
2034-2038	954,205	267,723	-	1,221,928	
2039-2044	465,365	41,588	<u> </u>	506,953	
	7,233,844	4,669,573	211,894	12,115,311	
Unamortized discounts/premiums Unaccreted interest on	188,083	-	-	188,083	
capital appreciation bonds	(267,272)			(267,272)	
Total	7,154,655	4,669,573	211,894	12,036,122	

#### Table 5-7: Debt Service Schedule

#### 6.0 CONCLUSIONS

In the preparation of this Report, BMcD completed assessments of the electric generating stations and the transmission and distribution system of the Authority. The investigations included interviews, observations, and reviews of 2012 through 2013 expenditures and 2014 budgets. In addition, a review of the adequacy of the revenues generated by the current electric rates in relation to the requirements of the bond covenants was completed.

Based on statements and information provided, as well as the observations and reviews performed, it is the opinion of BMcD that:

- The design, construction, operation, and maintenance of the Authority's electric transmission and distribution system and the associated facilities are consistent with current generally accepted electric utility standards. It appears as though the Authority has been proactive in preventative maintenance and expansion of the electric system before problems arise.
- 2. The Nine Mile Point 2 Generating Station partially owned by the Authority is being operated and maintained consistent with accepted electric utility practice in the United States. In general, the performance, operation, maintenance, staff, planning, and training aspects for the stations were found to be above average.
- 3. The projects included in the Authority's four-year capital investment plan and the 2014 operating budget are necessary and should provide improved reliability and power quality for the electric system. BMcD has observed that the Authority has done a good job of making appropriate system upgrades and improvements.
- 4. The electric revenues generated by the current electric rates are sufficient to fulfill the debt service coverage requirement defined in the covenants of the Resolutions.
- 5. The Authority is complying with the provisions of the Resolutions, each as amended by subsequent resolutions.





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