

PSEG LONG ISLAND

**Annual Report to LIPA Board of Trustees
on Resource Planning and Renewable
Energy**

JULY 22, 2020

Background

The LIPA Board of Trustees Resource Planning and Renewable Energy policy requires annual reporting on:

- Compliance with applicable regulatory and environmental standards and the State's Clean Energy Standard
- Performance of generating units
- Procurement activities of generation, renewable and distributed energy resources
- Activities representing interests of Long Island electric customers at State, regional and Federal levels
- Resource adequacy of the power supply portfolio

Climate Leadership and Community Protection Act (CLCPA)

GREEN NEW DEAL

- Changed 2030 electric energy target from 50% renewable to 70% renewable

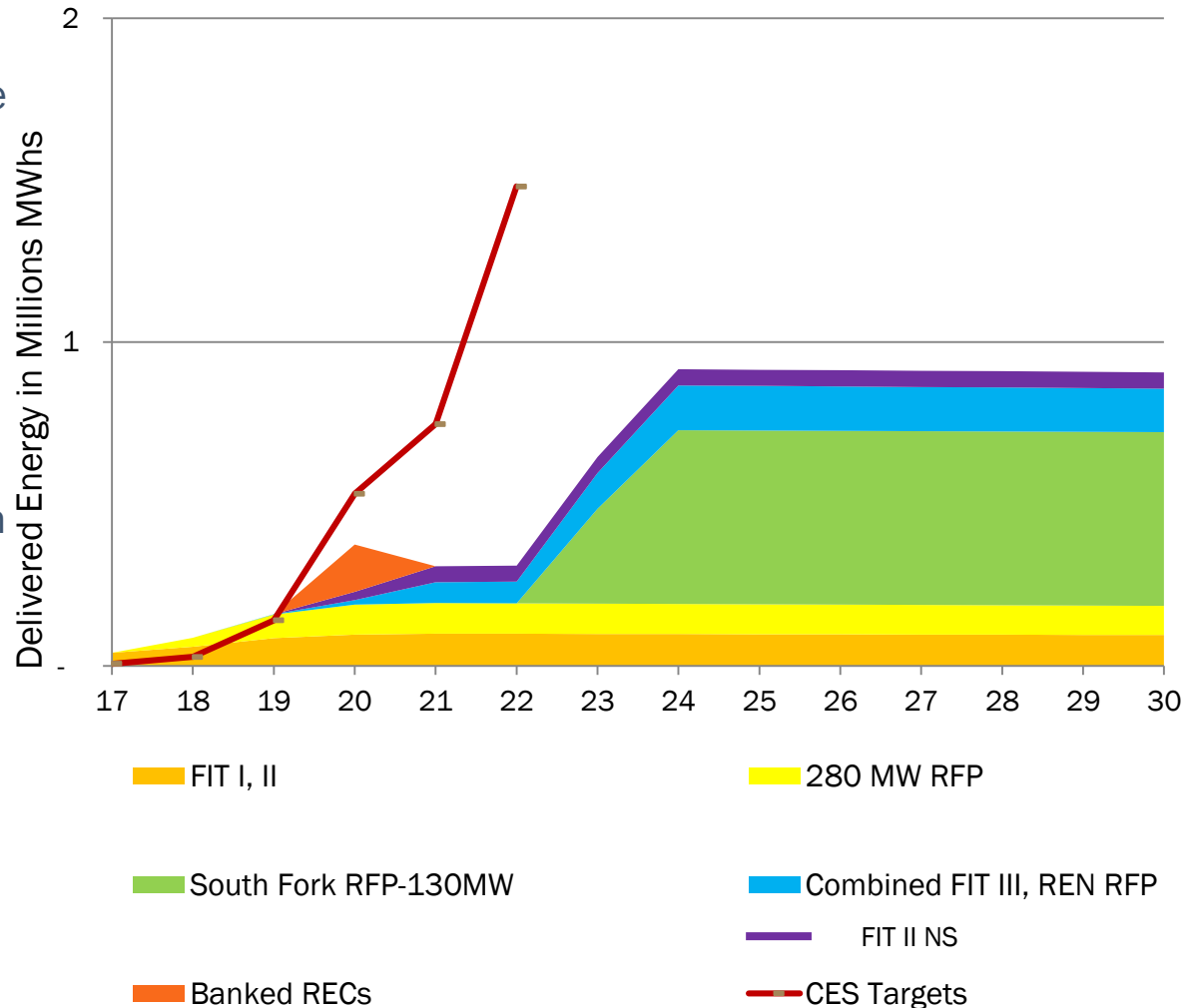
CLIMATE LEADERSHIP AND COMMUNITY PROTECTION ACT

- Passed by Legislature in late June 2019
- Establishes statewide goal for “zero-carbon” by 2050 – will require electrification of transportation and home heating
- Public Service Commission and Department of Environmental Conservation to establish regulations affecting utilities, power generators and buildings
- Excludes natural gas fuel cells from renewable energy sources*

*Status of fuel cells already under contract under prior CES rules to be determined

Projected CES Targets and Anticipated Supply

- REC deficiency expected in 2020
- LIPA established Clean Energy Compliance Fund to fund future REC purchases in the event of shortfalls
- LIPA's estimated 2030 REC requirement increased from 3.6 million under the old CES program to 7.0 million under CLCPA
- Future needs to be met through REC purchases or additional procurements
- CLCPA rules may change eligibility of gas-fired fuel cells
- COVID-19 situation has impact on targets as well as on the supply of RECs



Renewable Procurement Activities

Procurement	Date of Issuance	Operational As Of June 1, 2020 (MW)	Projected (MW)
FIT I	July 2012	38.8	38.8
FIT II	October 2013	30.6	32.2
280 MW RFP	October 2013	48.9	48.9
FIT II (Non-Solar) ¹	March 2014	0	6.0
South Fork ²	June 2015	0	130.0
2015 Renewable RFP	December 2015	0	59
FIT III	September 2016	7.1	18.8
FIT IV ³	September 2016	0	7.4
FIT V	June 2020	0	TBD
Total		125.4	341.1

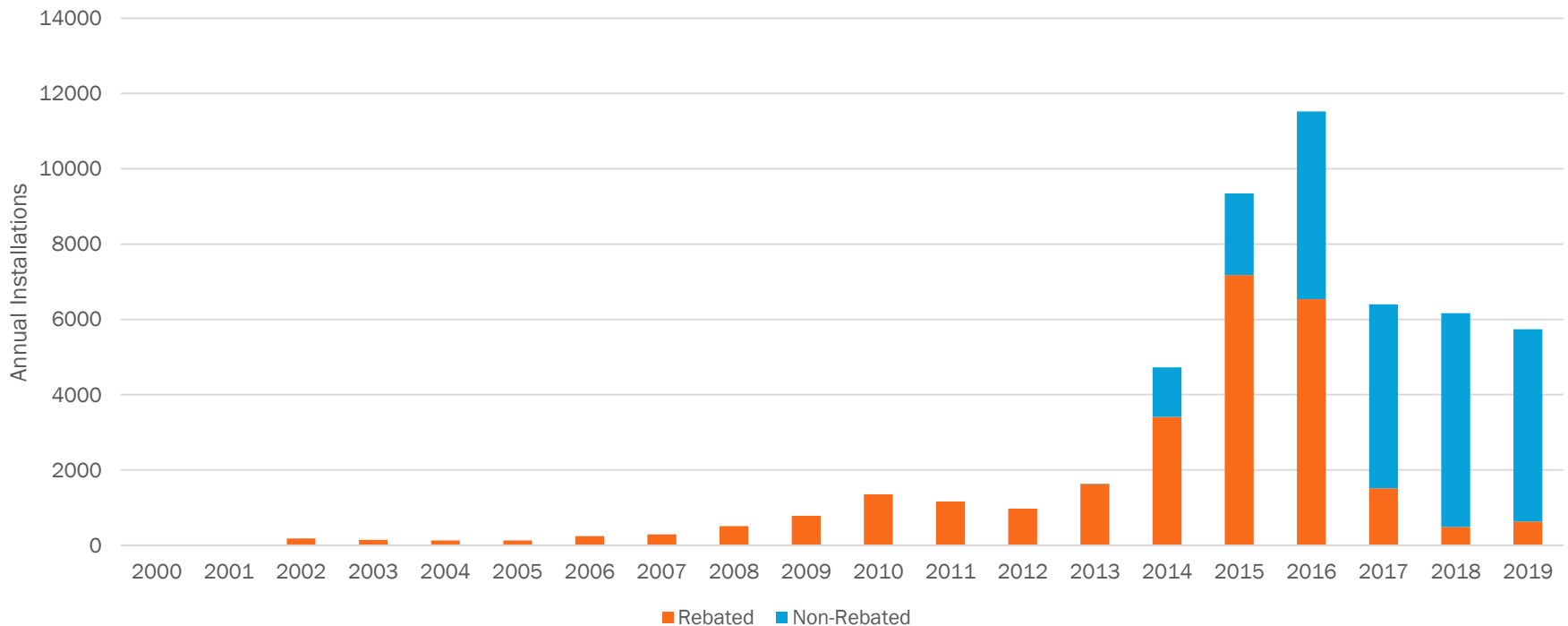
¹ CLCPA has negated CES eligibility of gas-fired fuel cells

² Wind only

³ Two Fuel Cell Energy projects (18.5 and 13.9 MW) awards were cancelled

Rooftop Solar Program

- As of 12/31/2019, rooftop solar installations total 51,350 systems and 397 MWs (AC), providing an estimated 544 GWhs per year of energy (as an offset to demand)
- 2019 additions were 5,738 systems and 52 MWs (AC) providing an estimated 77 GWhs of energy



2019 Energy Efficiency Program

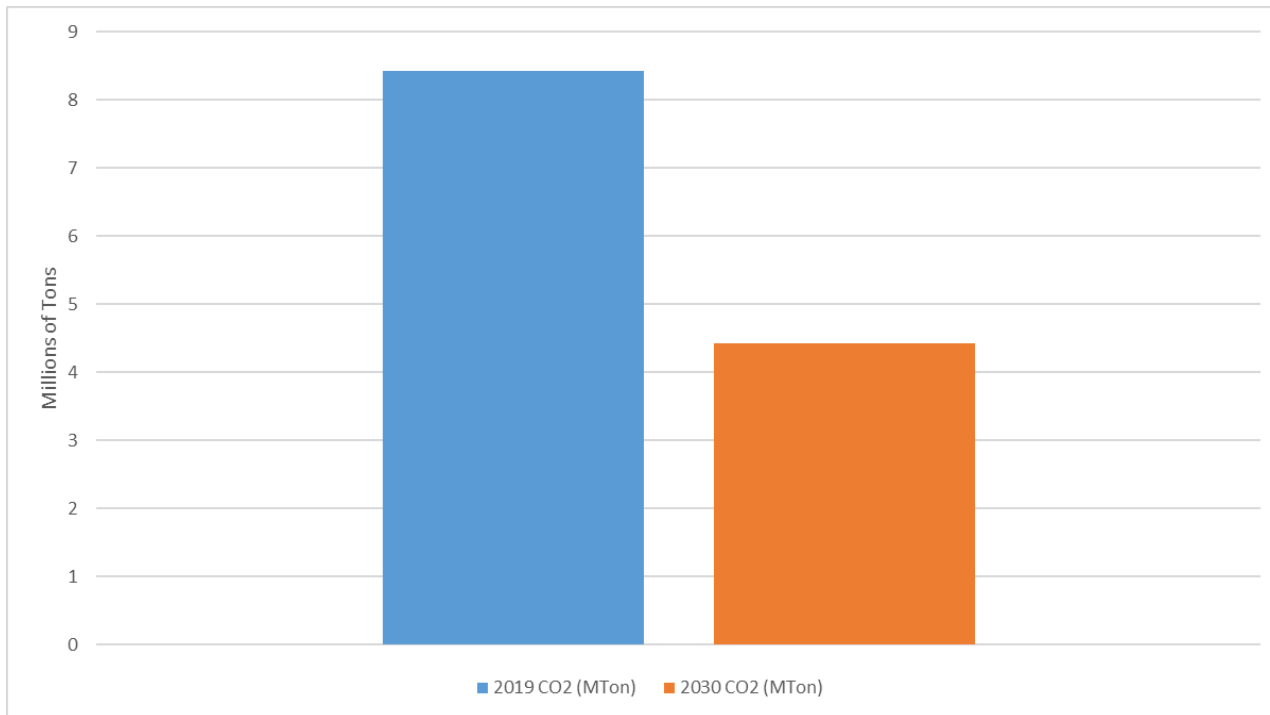
- **2019 Performance**

- Energy savings were 120% of goal
- Peak demand reductions were 110% of projection
- Expenses were 2% below budget

Program	Energy Savings (MWh)		Coincident Demand Savings (MW)	
	Goal	Verified Ex Ante	Projection	Verified Ex Ante
Commercial Efficiency Program	95,953	97,743	19.8	17.8
Residential Programs				
Energy Efficient Products	130,599	159,809	34.1	43.0
Home Comfort	2,728	3,472	1.8	1.2
Residential Energy Affordability Partnership (REAP)	1,472	1,472	0.3	0.4
Home Performance Programs	2,761	2,300	2.2	1.7
Home Energy Management	41,487	64,015	N/A	N/A
Subtotal Residential Programs	179,047	231,068	38.4	46.1
Total Energy Efficiency Portfolio	275,000	328,811	58.2	63.9

LIPA's Carbon Footprint (2019 vs. 2030)

- LIPA's carbon emissions expected to decrease approximately 48% by 2030 due to statewide 70% renewable energy target
- Graph below shows existing versus projected carbon footprint assuming 532 MW of solar and 1,810 MW of off-shore wind by 2030



Generating Unit Environmental Compliance

- Compliance with applicable regulatory and environmental standards
 - Air permits and continuous emissions monitoring
 - Water discharge permits – monthly sampling and reporting
 - Petroleum and chemical bulk storage
 - Waste management
- Power Supply Agreement with National Grid
 - NO_x emission controls systems for Legacy Gas Turbines are in engineering review for material procurement, installation & implementation
 - 316b of Federal Clean Water Act requires best technology available to reduce fish entrainment and impingement at circulating water intake systems.
 - Port Jefferson – Installation of fish friendly traveling screens and circulating water pumps to meet updated DEC permit requirements has been completed and is now in the verification cycle
 - Northport – Installation of fish friendly traveling screens and circulating water pumps is underway. Northport 4 unit is complete, Units 1, 2, & 3 on schedule for completion between 2020 and 2022
 - E.F. Barrett – In process with NYSDEC to determine required technology. Likely outcome to be similar to Port Jefferson and Northport. No changes since last year

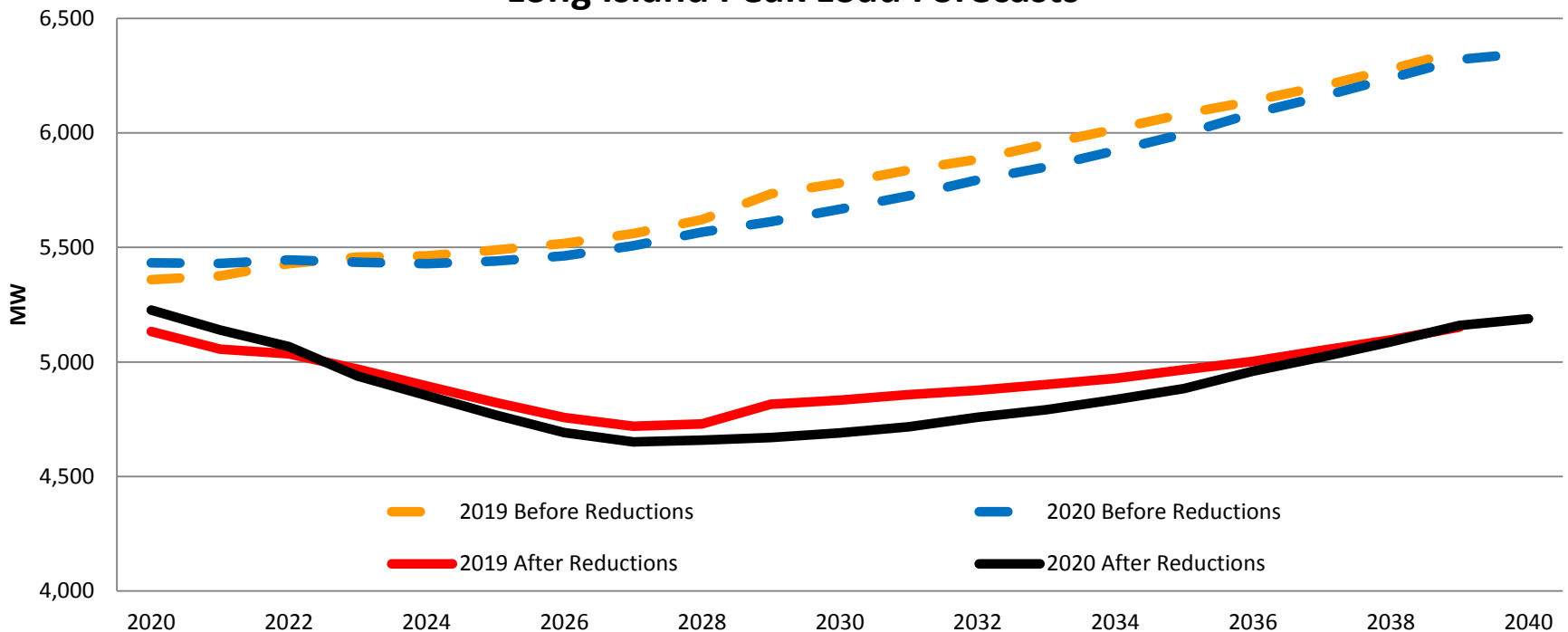
Generating Unit Performance 2019 vs. 2018

- All units met or exceeded contract targets
- Nine Mile Point 2 2019 capacity factor (99.1%) better than national average (94.2%)
- Availability of fleet is better than 2018 and New York average
- Heat rate (efficiency) performance of fleet is similar to last year
- Peaking units performed better than national average

Load Forecast Change From Last Year

- Comparison of NYISO Gold Book Forecasts
 - Does not reflect COVID-19 impact
- Little change in long term trend both before making reductions for energy efficiency and renewables and after making those reductions

Long Island Peak Load Forecasts

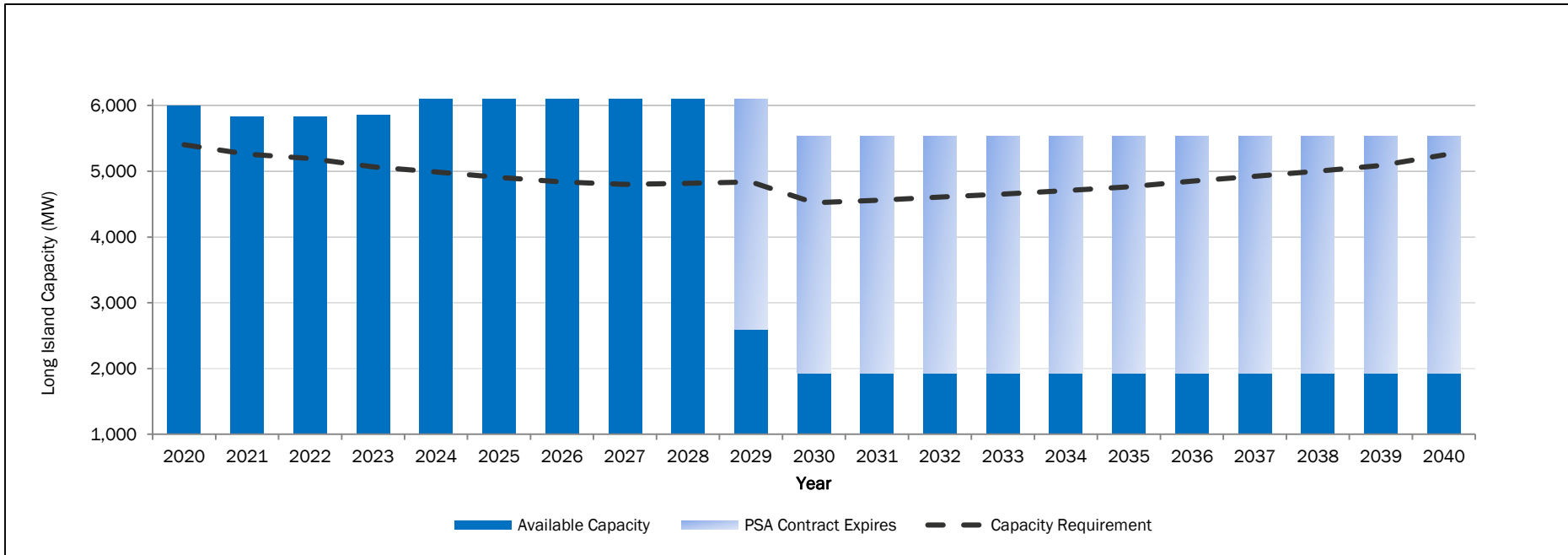


Regulatory Markets – Aligning Long Island Interests

- **New York State and Independent System Operator Rulemaking**
 - **PSC Order on Resource Adequacy** – working through the NYISO participant process on enhancements to existing market designs in order to align them with State Renewable Energy Policies and Targets
 - **NY State DEC NOx Regulations** – evaluated and incorporated final DEC NOx rules into a Compliance Plan for LIPA combustion turbines which was submitted to DEC
 - **NYISO Demand Curve Reset** – working with NYISO, consultants and market participants on updates and review of NYISO Capacity Markets required by Tariff every 4 years
 - **Renewable Energy Integration** – working through the NYISO participant process on development of rules governing the participation and operation of Energy Storage, Solar and Offshore Wind Resources in the NYISO Markets
- **Working with NYSERDA and PSC**
 - Integration of CL&CPA goals for renewable energy integration on Long Island
 - Assessing LI T&D System for upgrades under State Public Policy Transmission Process
 - Evaluation of opportunities for installation of Battery and Solar Facilities

Resource Adequacy

- Current resources meet projected LI Locational Capacity Requirement through 2040
- PSA contract expires May 2028. Most other contracts expire before 2040
- Implementation of CLCPA will require replacement of existing fossil units with renewable and storage options by 2040



Note: Capacity requirement decreases in year 2030 due to expiration of Marcus Hook contract

BOARD AGENDA SUMMARY SHEET

Committee or Board: Board	Date: July 10, 2020	Board Meeting Date: July 22, 2020
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For All Board Voting Items:

Title of Agenda Item: Approval of the Annual Report and Amendments to the Board Policy on Resource Planning, Energy Efficiency and Renewable Energy

Consent Agenda: Yes No

Accompanying Presentation: Yes No

Recommendation from Committee: N/A F&A; GP&P; Oversight & Clean Energy

LIPA Presenter: Rick Shansky

PSEG Long Island Presenter: TBD

Enterprise Risk Management Discussion: Yes No

For Policy Reports Only:

Type of Policy / Report: Operating; Governance; Compliance; Mission

Date of Last Report: July 24, 2019

Compliance Since Last Report: Yes No

Proposed Changes to Policy: Yes No

Requested Action:	The Board is requested to adopt a resolution: (i) approving the annual report on the Policy; (ii) finding that LIPA has complied with the Policy; and (iii) approving certain amendments to the Policy.
Summary: (include proposed amendments to Board Policies, if applicable)	<p>By Resolution No. 1372, dated July 26, 2017, the Board adopted the Policy. The Policy was last reviewed and amended by the Board by Resolution No. 1487, dated July 24, 2019.</p> <p>The Policy sets objectives for resource planning, power supply procurement, portfolio management, and energy efficiency programs that support LIPA's mission and the State's clean energy goals. The Policy also establishes regular performance reporting by Staff to enable the Board to assess performance against the objectives of the Policy. Staff proposes the following revisions to the Policy: changing the name of the Policy to the Board Policy on Resource Planning and Clean Energy; and other minor, nonmaterial revisions. The proposed changes are more specifically shown on <u>Exhibit "B"</u>.</p>

FOR CONSIDERATION

July 22, 2020

TO: The Board of Trustees

FROM: Thomas Falcone

SUBJECT: Approval of the Annual Report and Amendments to the Board Policy on Resource Planning, Energy Efficiency and Renewable Energy

Requested Action

The Board of Trustees of the Long Island Power Authority (the “Board”) is requested to adopt a resolution: (i) approving the annual report on the Board Policy on Resource Planning, Energy Efficiency and Renewable Energy (the “Policy”); (ii) finding that the Long Island Power Authority (“LIPA”) has complied with the Policy; and (iii) approving certain amendments to the Policy, which resolution is attached hereto as **Exhibit “A”**.

Background

By Resolution No. 1372, dated July 26, 2017, the Board adopted the Policy. The Policy was last reviewed and amended by the Board by Resolution No. 1487, dated July 24, 2019.

The Policy sets objectives for resource planning, power supply procurement, portfolio management, and energy efficiency programs that support LIPA’s mission and the State’s clean energy goals. The Policy also establishes regular performance reporting by Staff to enable the Board to assess performance against the objectives of the Policy.

Compliance with the Policy

Staff recommends that, for the reasons set forth below, the Board find that LIPA has complied with the Policy since the review of the policy last year.

Compliance with each element of the Policy is discussed in detail below.

Planning

“Planning for a power supply portfolio that meets applicable New York State Independent System Operator and New York State Reliability Council requirements, environmental standards, and the State’s clean energy goals; and updating the Integrated Resource Plan to reassess system needs, as necessary, but no less than every five years.”

- Long Island capacity reserves are expected to meet NYISO’s minimum locational capacity requirement through 2040.
- The load forecast continues to decline through the late 2020’s. Projections for electric vehicles and heat pumps, as well as load reductions for behind-the-meter solar and other

distributed energy resources, are captured in the 2020 load forecast update.

- Implementation of the Climate Leadership and Community Protection Act (“CLCPA”) will require replacement of existing fossil fuel plants by 2040 with renewable energy, energy storage, and other carbon-free technologies.
- PSEG Long Island is studying Long Island’s peaking generation portfolio and integration of renewables, batteries, demand response, and distributed resources. The retirement of vintage peaking units in West Babylon and Glenwood Landing was announced in early 2020, and additional retirement feasibility studies will be completed by year-end for the retirement of 400 to 600 megawatts of steam units.
- LIPA plans to meet its share of the State’s Renewable Energy Standard through future procurements or REC purchases from NYSERDA.

Managing the Portfolio

“Managing the power supply portfolio to minimize cost and maximize performance, including the economic scheduling of assets, power plant availability and thermal efficiency, within contractual constraints.”

- All power supply portfolio contracts met or exceeded contract targets.
- Heat rate (i.e. efficiency) and availability of generation fleet continues to be better than industry average for comparable technologies.
- Nine Mile Point Unit 2’s capacity factor for 2019 (99.1%) exceeded industry average (94.2%).
- PSEG Energy Resource & Trade has met or exceeded all contractual performance targets, including Neptune and Cross Sound cable performance, generation bidding to the NYISO, load forecasting, fuel procurement and scheduling, as well as settlements and invoicing.
- LIPA obtained reductions in National Grid’s gas transportation rates starting in 2019, with further reductions expected as a result of a new rate design proposed in 2020 by the Department of Public Service in response to comments from stakeholders, including LIPA.

Competitive Procurement

“Minimizing cost by competitively procuring generation and distributed energy resources through wholesale market purchases, bilateral contracts, and if appropriate, after balancing cost and risk, ownership or pre-payments for energy, utilizing to the extent feasible and cost-effective, Authority-owned land and rights to acquire generating sites”

- LIPA has competitively procured 341.1 MW of Clean Energy Standard resources through RFPs and feed-in tariffs, including:
 - 125.4 MW of solar projects that are currently operational;
 - 72.3 MW of solar projects under development;
 - 130 MW of offshore wind under development; and
 - 13.4 MW of fuel cells under development.
- In 2020, PSEG Long Island has initiated three new procurements for renewable power supply and non-wires alternatives, including:
 - RFI/RFP for up to 175 MW of energy storage projects, in compliance with the storage mandate in the CLCPA;

- North Fork RFI for up to 130 MW of non-wires alternatives to address the power supply needs on the North Fork of eastern Long Island; and
- Community Solar feed-in tariff for up to 20 MW of new renewable resources whose benefits will be directed toward low- and moderate- income customers.

Clean Energy

“Procuring cost-effective renewable resources, renewable energy certificates (“RECs”), and behind-the-meter resources such as energy efficiency and demand response, including acting in coordination with other State energy authorities, if advantageous to our customers; integrating cost-effective distributed energy production and storage technologies; and enabling the economic and secure dispatch of resources deployed within the distribution system and on customer premises.”

- LIPA had sufficient RECs to meet its share of the State Clean Energy Standard for 2019 and is projected to be deficient in Tier-1 RECs beginning in 2020. Accordingly, LIPA has established a Clean Energy Compliance Fund to fund future clean energy projects or REC purchases through LIPA or NYSERDA procurements, in a manner consistent with the NYSERDA Alternative Compliance Payment fund. Additionally, LIPA is seeking to participate in future NYSERDA REC procurements to expand the base of projects available for REC compliance.
- In 2019, residential and commercial energy efficiency programs resulted in 63.9 MW of incremental demand savings and 328,811 MWh of energy savings.
- Long Island continues to have the most robust rooftop solar market with more than 51,000 residential systems. In 2019, customer-side installed capacity increased 52 MW (AC) with incremental annualized energy savings of 77 MWh.
- In 2018 and 2019, two 5 MW (40 MWh) utility-scale storage systems became operational.
- Value of Distributed Resources (“VDER”) was instituted for demand-metered customers.
- Home Energy Management Program continued serving 490,000 customers.
- Deployed Dynamic Load Management (“DLM”) and Edge load curtailment programs.
- Collaborative partnership for developing a microgrid project in Huntington.

Wholesale Market Policy

“Minimizing cost by representing the interests of Long Island electric customers in the New York and regional wholesale markets and their respective stakeholder processes, including direct engagement with Federal and State regulatory authorities.”

- LIPA has maintained ongoing opposition at the Federal Energy Regulatory Commission to significant increases in PJM rates for transmission service associated with LIPA’s power purchases via the Neptune cable.
- LIPA has encouraged NYISO to begin assessment of long-term market structure issues associated with CLCPA implementation, including renewable curtailment, transmission buildout, need for flexible generation capacity, increased reserve and regulation requirements.
- LIPA worked cooperatively with other transmission owners on market rules for local transmission and distribution, that is built to support CLCPA implementation.

Annual Review of the Policy

Staff proposes the following revisions to the Policy:

- Changing the name of the Policy to the Board Policy on Resource Planning and Clean Energy.
- Other minor, nonmaterial revisions.

The proposed changes are more specifically shown on **Exhibit “B”**.

Recommendation

Based upon the foregoing, I recommend approval of the above requested action by adoption of a resolution in the form attached hereto.

Attachments

<u>Exhibit “A”</u>	Resolution
<u>Exhibit “B”</u>	Resource Planning, Energy Efficiency and Renewable Energy Policy (redline)
<u>Exhibit “C”</u>	Resource Planning, Energy Efficiency and Renewable Energy Policy (clean)

RESOLUTION APPROVING THE REPORT TO THE BOARD OF TRUSTEES ON THE BOARD POLICY ON RESOURCE PLANNING, ENERGY EFFICIENCY AND RENEWABLE ENERGY

WHEREAS, the Resource Planning, Energy Efficiency and Renewable Energy Policy (the “Policy”) was originally approved by Resolution No. 1372, dated July 26, 2017; and

WHEREAS, the Policy was last amended by Resolution No. 1487, dated July 25, 2019; and

WHEREAS, the Board has conducted an annual review of the Policy and affirms that the Policy has been complied with and the changes to the Policy recommended herein are due and proper.

NOW, THEREFORE, BE IT RESOLVED, that consistent with the accompanying memorandum, the Board hereby finds that LIPA has complied with the Resource Planning, Energy Efficiency and Renewable Energy Policy for the period since the last annual review and approves the annual report to the Board; and

BE IT FURTHER RESOLVED, that consistent with the accompanying memorandum, the changes to the Policy that are reflected in attachment **Exhibit “B”** are hereby approved.

Dated: July 22, 2020

Board Policy: **Resource Planning, ~~Energy Efficiency~~ and ~~Renewable~~ Clean Energy**

Policy Type: **Mission**

Monitored by: **Oversight and ~~REV~~ Clean Energy Committee**

Board Resolution: **#1372, approved July 26, 2017**
#1421, amended July 25, 2018
#1487, amended July 24, 2019
[#xxxx], amended July 22, 2020



Board Policy on Resource Planning, ~~Energy Efficiency~~ and ~~Renewable~~ Clean Energy

It is the policy of the Long Island Power Authority to supply the energy needs of ~~the Authority's~~ its customers in a clean, reliable, and affordable manner by:

- **Planning.** Planning for a power supply portfolio that meets applicable New York State Independent System Operator and New York State Reliability Council requirements, environmental standards, and the State's clean energy goals, as set forth in the Climate Leadership and Community Protection Act ("CLCPA"); and updating the Integrated Resource Plan to reassess system needs, as necessary, but no less than every five years.
- **Managing the Portfolio.** Managing the power supply portfolio to minimize cost and maximize performance, including the economic scheduling of assets, power plant availability and thermal efficiency, within contractual constraints.
- **Competitive Procurement.** Minimizing cost by competitively procuring generation and distributed energy resources through wholesale market purchases, bilateral contracts, and if appropriate, after balancing cost and risk, ownership or pre-payments for energy¹, utilizing to the extent feasible and cost-effective, ~~Authority~~ LIPA-owned land and rights to acquire generating sites.²
- **Clean Energy.** Procuring cost-effective renewable and energy storage resources, renewable energy certificates, offshore wind renewable energy certificates ("RECs" and "ORECs", respectively), ~~and~~ behind-the-meter resources ~~such as,~~ energy efficiency, and demand response, as well as supporting beneficial electrification of transportation and buildings, to meet LIPA's share of the State's clean energy goals as set forth in the CLCPA, including: acting in coordination with other State energy authorities, if advantageous to our customers³; ~~integrating cost effective distributed energy production and storage technologies;~~ and enabling the economic and secure dispatch of resources deployed within the distribution system and on customer premises.
- **Wholesale Market Policy.** Minimizing cost by representing the interests of Long Island electric customers in the New York and regional wholesale markets and their respective stakeholder processes, including direct engagement with Federal and State regulatory

¹ ~~The Authority~~ LIPA owns an 18% share of Nine Mile Point Unit 2 and has certain options to buy generation assets, typically at the expiration of a power purchase agreement, or to prepay for energy in exchange for a discount. ~~The Authority~~ LIPA will not take construction or development-related risks on new generation projects.

² In selecting among alternatives, ~~the Authority~~ LIPA will take into consideration the operational, environmental and economic benefits to the Authority's service territory, including their impact on long-term local employment.

³ ~~In selecting among reasonably comparable alternatives, the Authority~~ LIPA ~~will opt for lower carbon emitting resources.~~

authorities.

The Chief Executive Officer, [or his or her designee](#), will report annually to the Board on the key provisions of this Policy.

Board Policy:	Resource Planning and Clean Energy
Policy Type:	Mission
Monitored by:	Oversight and Clean Energy Committee
Board Resolution:	#1372, approved July 26, 2017 #1421, amended July 25, 2018 #1487, amended July 24, 2019 [#xxxx], amended July 22, 2020



Board Policy on Resource Planning and Clean Energy

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- **Competitive Procurement.** Minimizing cost by competitively procuring generation and distributed energy resources through wholesale market purchases, bilateral contracts, and if appropriate, after balancing cost and risk, ownership or pre-payments for energy¹, utilizing to the extent feasible and cost-effective, LIPA-owned land and rights to acquire generating sites.²
- **Clean Energy.** Procuring cost-effective renewable and energy storage resources, renewable energy certificates, offshore wind renewable energy certificates (“RECs” and “ORECs”, respectively), behind-the-meter resources, energy efficiency, and demand response, as well as supporting beneficial electrification of transportation and buildings, to meet LIPA’s share of the State’s clean energy goals as set forth in the CLCPA, including: acting in coordination with other State energy authorities, if advantageous to our customers; and enabling the economic and secure dispatch of resources deployed within the distribution system and on customer premises.
- **Wholesale Market Policy.** Minimizing cost by representing the interests of Long Island electric customers in the New York and regional wholesale markets and their respective stakeholder processes, including direct engagement with Federal and State regulatory authorities.

The Chief Executive Officer, or his or her designee, will report annually to the Board on the key provisions of this Policy.

¹ LIPA owns an 18% share of Nine Mile Point Unit 2 and has certain options to buy generation assets, typically at the expiration of a power purchase agreement, or to prepay for energy in exchange for a discount. LIPA will not take construction or development-related risks on new generation projects.

² In selecting among alternatives, LIPA will take into consideration the operational, environmental and economic benefits to the Authority’s service territory, including their impact on long-term local employment.