

Annual Report to the LIPA Board of Trustees on T&D Reliability

July 22, 2020

PSEG Long Island

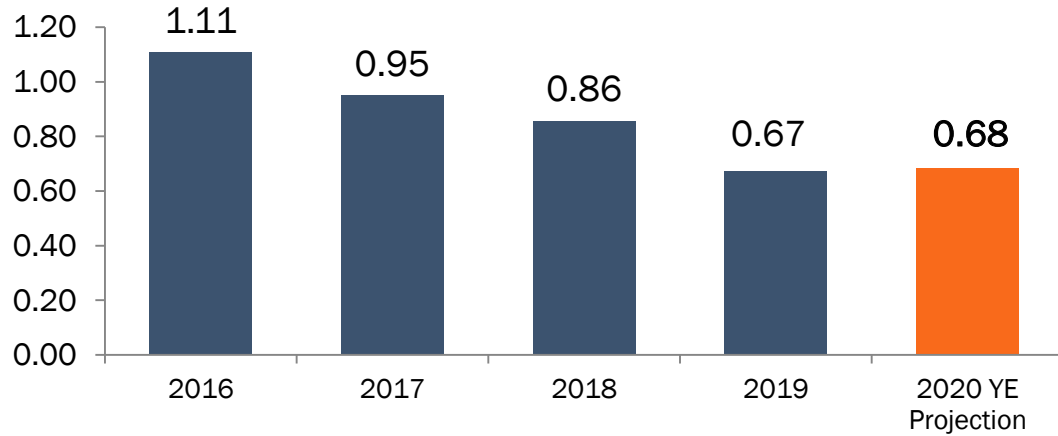
Agenda

- Reliability Metrics
- Reliability Improvement Programs
- Power Quality and Reliability
- NERC Compliance

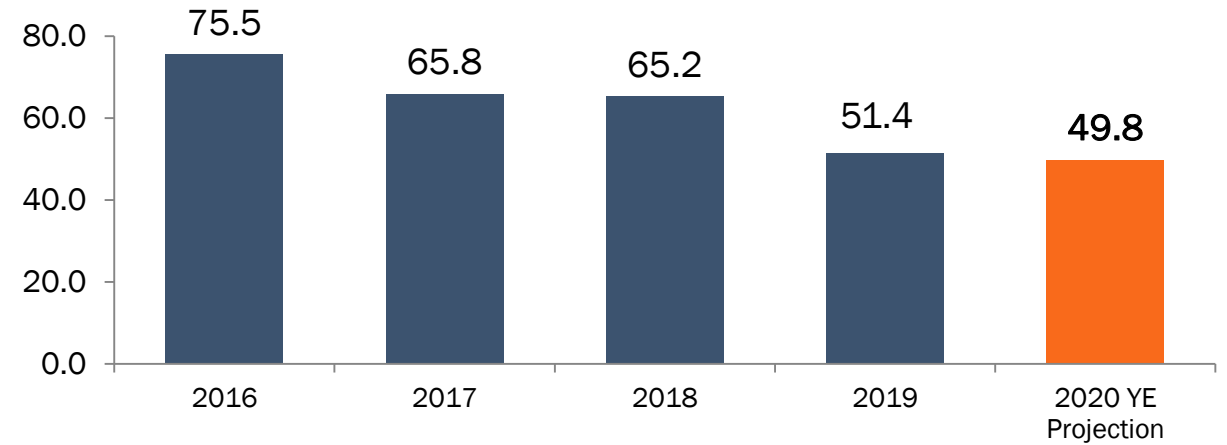
Reliability Improvements

2016 to 2020 YE Forecasted

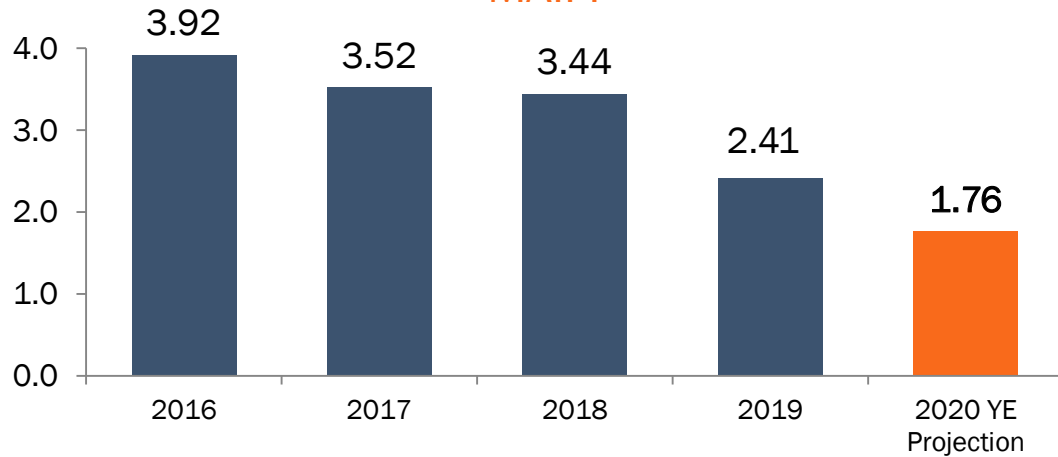
SAIFI



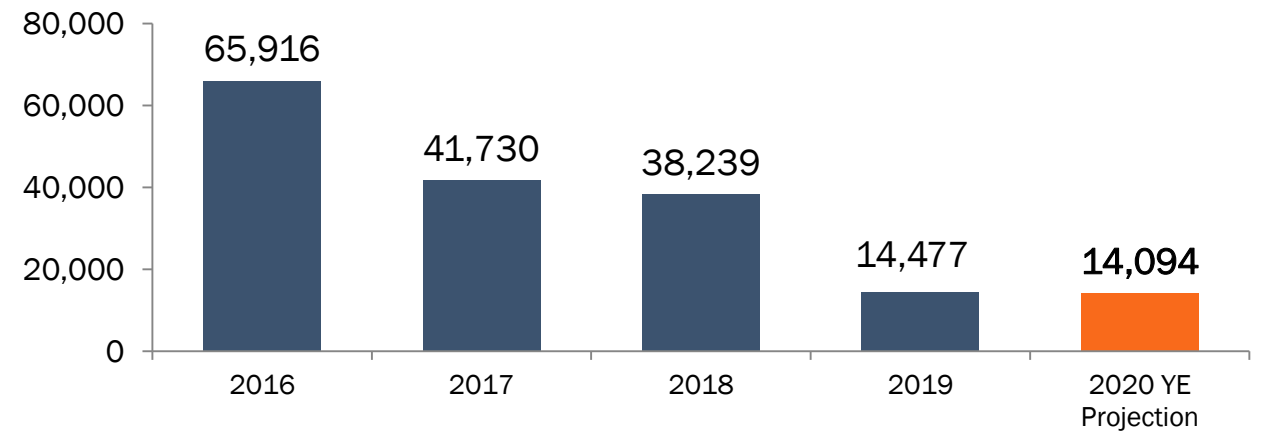
SAIDI



MAIFI



Sustained Multiple Customer Outages



Improvements to Reliability Since 2016

Performance Metric	Improvement Since 2016
SAIFI	↑ 39%
SAIDI	↑ 34%
MAIFI	↑ 55%
MCO	↑ 79%

- 2016 Year End versus 2020 Year End Projections

Reliability Improvement Programs

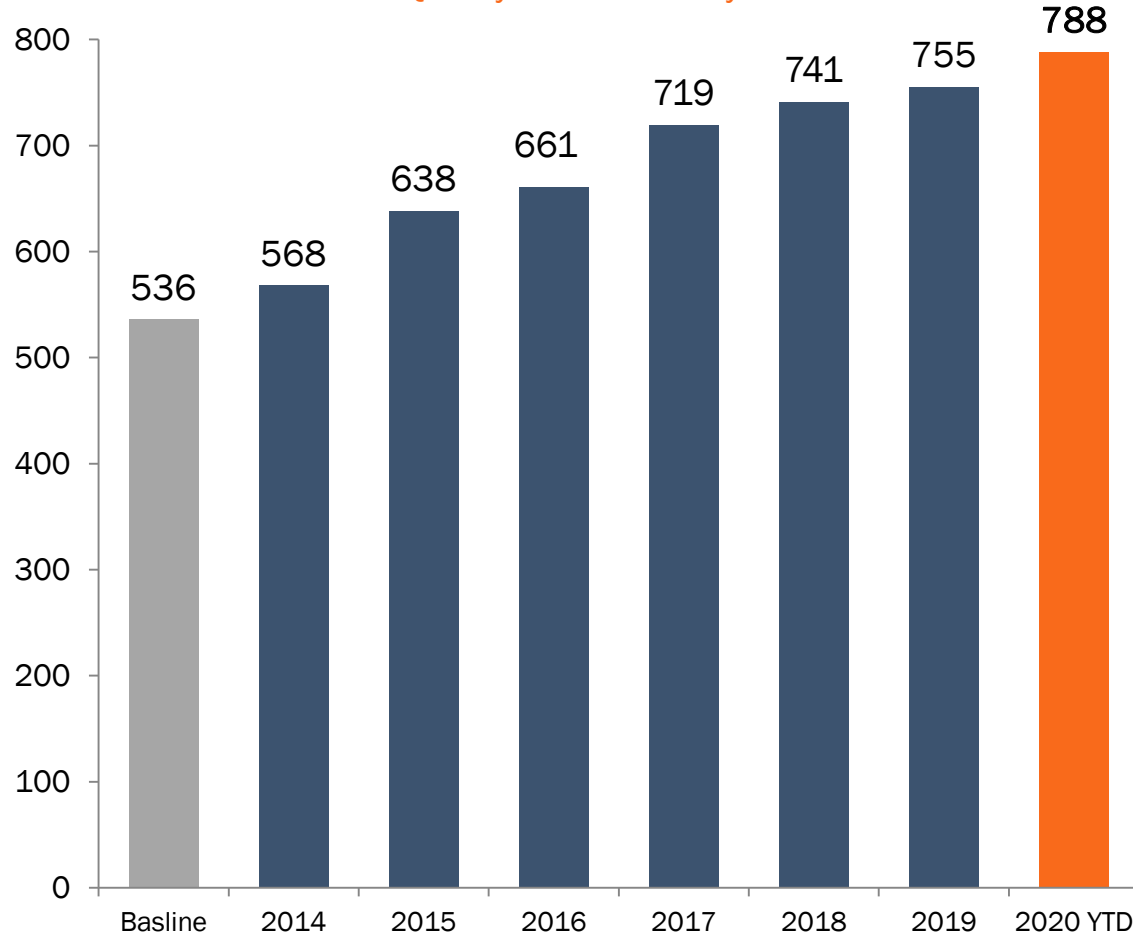
Reliability Programs	Program Effectiveness
FEMA Hardening	33% reduction in number of customer outages 1 year before versus 1 year after work completion
Power On!	Continuation of FEMA mainline hardening on targeted circuits 2020 program to directly benefit 57,000 customers
Less Than 500 Customers (LT5H)	3% Annual SAIFI Improvement through 2023. 15% total program benefit.
CIP/NOP	30% reduction in the number of preventable customer outages (overhead equipment and tree) 1 year before versus 1 year after work completion
Smart Grid Initiatives	AMI meter integration with GIS/OMS to proactively identify overloaded fuses and transformers Machine learning (AI) to identify vine conditions
Non Reclose Assurance (NRA) Automation	44% decrease in NRA outages versus 2016
Vegetation Management Program	44% reduction in the number of vegetation related customer outages 1 year before versus 1 year after trim
MAIFI Improvement Program	78% reduction in the number of momentary customer interruptions 1 year before versus 1 year after work completion

Power Quality and Reliability

J.D. Power - Residential and Business Results

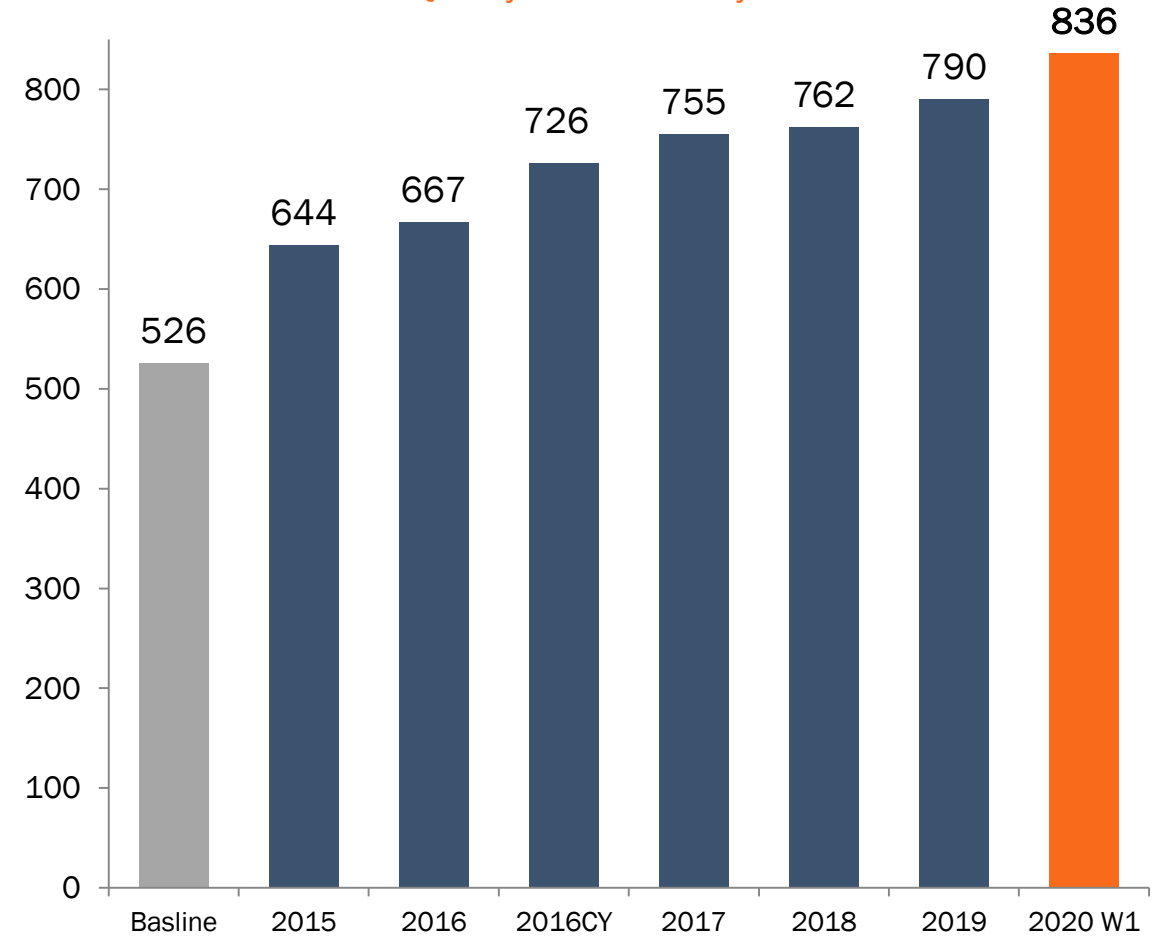
J.D. Power Residential

Power Quality and Reliability Results



J.D. Power Business

Power Quality and Reliability Results

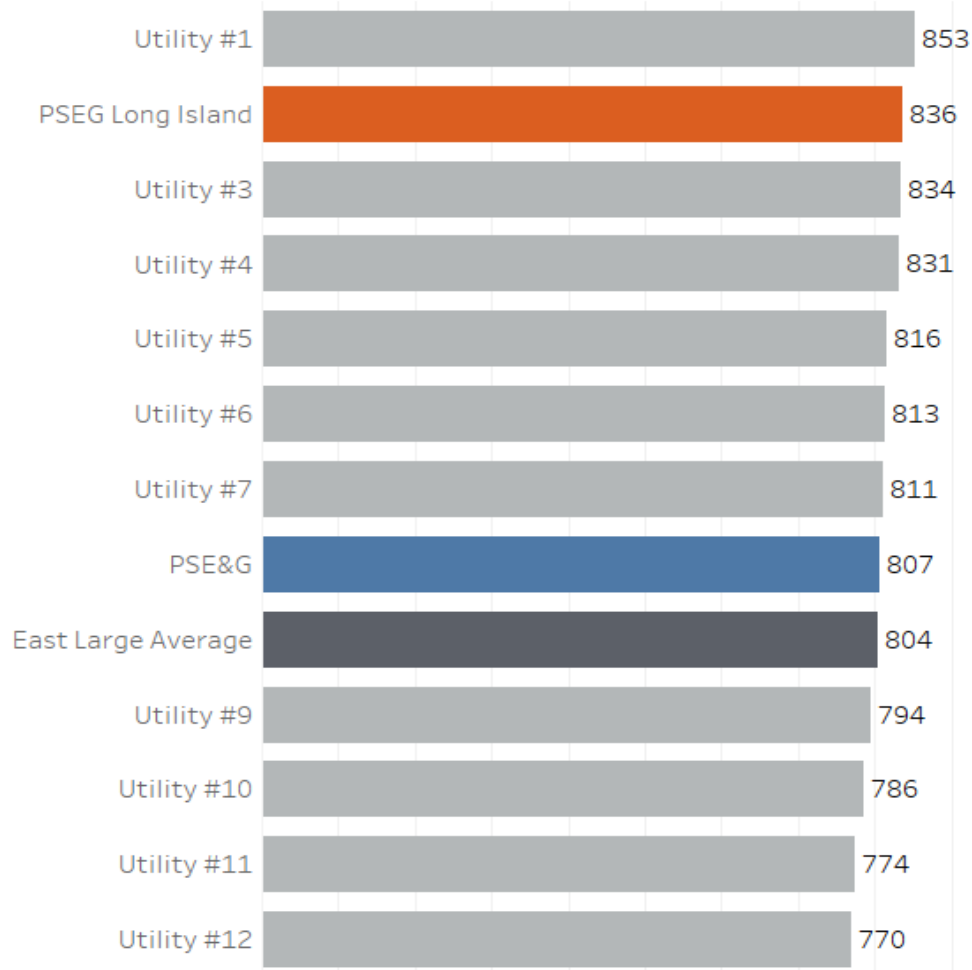


Power Quality and Reliability

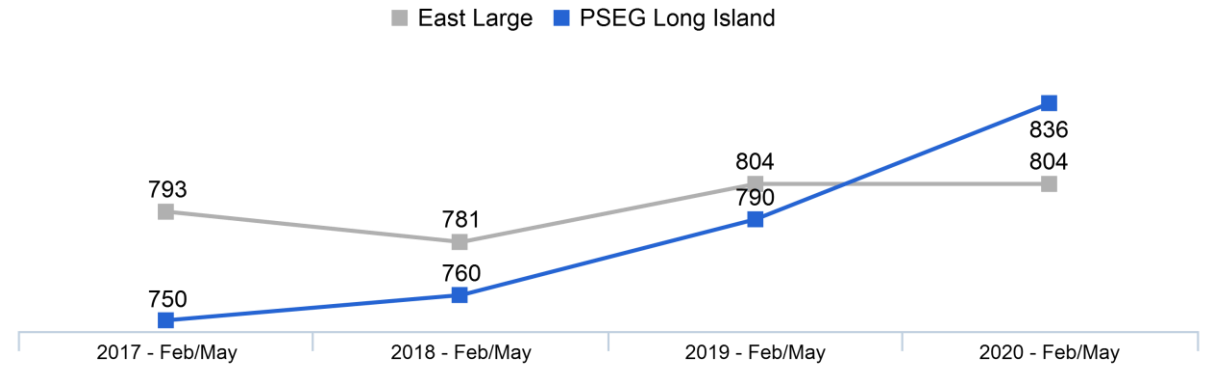
J.D. Power – 2020 W1 Business Results

Power Quality and Reliability Satisfaction

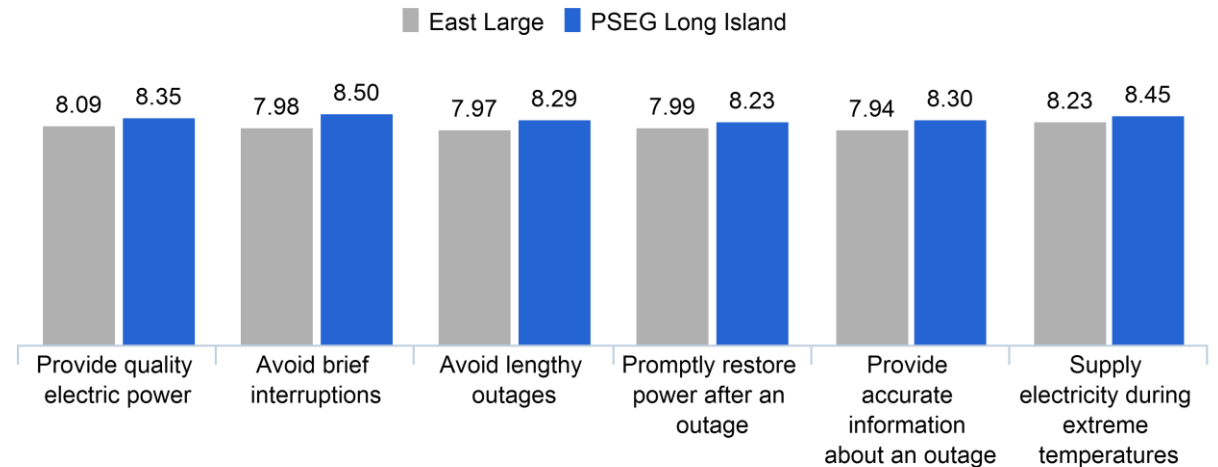
J.D. Power Business - 2020 W1 Results (February-May)



Power Quality & Reliability Trend



Power Quality & Reliability Attributes



T&D System Reliability – Compliance

- NERC Compliance
 - Successfully closed out all 2018 NERC Critical Infrastructure Protection Audit observations
 - Submitted three NERC Internal Control Evaluations (ICE) in 2019.
 - The modified ACC was tested successfully for an extended period of 48hrs to allow operators to experience the changes.
- Completed annual transmission system operating studies including: Summer and Winter Studies, Loss of Gas Study and Transient Voltage Recovery Guideline.
- Environmental
 - No major incidents recorded

BOARD AGENDA SUMMARY SHEET

Committee or Board: Board	Date: July 15, 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 Transmission and Distribution System Reliability

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: John O’Connell

Enterprise Risk Management Discussion: Yes No

For Policy Reports Only:

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

Date of Last Report: May 22, 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)	By Resolution No. 1371, dated July 26, 2017, the Board adopted the Policy with the purpose of maintaining a reliable and resilient T&D system at an affordable cost. The Policy was last reviewed and amended by the Board pursuant to Resolution No. 1479, dated May 22, 2019. The Policy provides that the “Chief Executive Officer will report annually to the Board on the key provisions of the Policy.” Staff proposes the following revisions to the Policy: (i) updated description of the goal associated with momentary outages; and (ii) other minor editorial changes. The proposed changes are more specifically shown on <u>Exhibit “B”</u> .

FOR CONSIDERATION

July 22, 2020

TO: The Board of Trustees

FROM: Thomas Falcone

REQUEST: Approval of the Annual Report and Amendments to the Board's Policy on Transmission and Distribution System Reliability

Requested Action

The Board of Trustees (the "Board") of the Long Island Power Authority ("LIPA") is requested to adopt a resolution: (i) approving the annual report on the Board Policy on Transmission and Distribution ("T&D") System Reliability (the "Policy"); (ii) finding that 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. 1371, dated July 26, 2017, the Board adopted the Policy with the purpose of maintaining a reliable and resilient T&D system at an affordable cost. The Policy was last reviewed and amended by the Board pursuant to Resolution No. 1479, dated May 22, 2019.

The Policy provides that the "Chief Executive Officer will report annually to the Board on the key provisions 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.

As set forth in the Policy, LIPA shall:

"comply with the applicable standards of the North American Electric Reliability Corporation, the Northeast Power Coordinating Council, the New York State Reliability Council, the New York Independent System Operator, and environmental regulations."

- Successfully completed 2018 NERC Critical Infrastructure Protection (CIP) Audit
- Submitted three NERC Internal Control Evaluations (ICE) to aid in the upcoming 2020 NERC Operational Audit

“fund cost-effective programs to provide a level of reliability, as measured by *system average* outage duration (known as System Average Interruption Duration Index or SAIDI), within the first quartile as compared to peer utilities, excluding major events.”

- For 2019, the System Average Interruption Duration Index (SAIDI) was 51.4 minutes, which continues to rank within the first quartile of peer utilities
- Vegetation Management – Reportable customer outages due to vegetation were 5.85% lower than 2019 and 22.1% lower than the previous 5-year average.

“fund cost-effective programs to provide a level of reliability *for each customer* that is within a reasonable variance from *system average* conditions (excluding major events) including: programs to track and improve circuit conditions that cause a customer to experience four or more sustained outages (i.e., greater than 5 minutes in duration) in any 12-month period; and establishing comparable processes for momentary outages (i.e., outages less than 5 minutes in duration).”

- Multiple Sustained Customer Outages – PSEG Long Island targeted areas with higher level of sustained (i.e. greater than 5 minute) customer outages. The number of customers with four or more sustained outages in any 12-month period was 14,477 in 2019 compared to 38,239 in 2018, for a 62% decline.
- Multiple Momentary Outages – established a Tier 2 metric with PSEG Long Island to track the number of customers with multiple momentary outages. PSEG Long Island reported a 33% improvement between May 2019 and May 2020, due to relay setting changes.

“fund cost-effective approaches for resiliency, thereby enhancing the safe and timely restoration of electrical service after severe weather or adverse events.”

- Completed storm hardening, funded by FEMA, of approximately 960 miles out of a program total of 1,025 miles.
- Approved a Phase II storm hardening program to begin in 2020 (the “Power On” program) to continue cost effective hardening efforts over the next four years.
- Continued with the development of a dynamic model for the prediction of storm intensity and impact. Model to be used for predicting customer outages, number of crews needed and deployment.

“use smart grid technologies to minimize outages, monitor system conditions, and facilitate the interconnection of renewable and distributed resources.”

- Installation of automated distribution switches -- as part of the FEMA storm-hardening program all 894 smart switches have been installed to reduce the number of customers impacted by disruption on a circuit. Switches are also being installed as part of the Circuit Improvement Program, and 135 are scheduled for completion in 2020.
- Installation of Smart Meters -- approximately 305,000 meters were installed in 2019 with a year-end cumulative total of approximately 434,000 since the program began. For 2020, the goal is to install an additional 250,000 of which 62,500 have been installed in the first

quarter. Smart meters help detect power outages and monitor power quality.

Annual Review of the Policy

Staff proposes the following revisions to the Policy:

- Updated description of the goal associated with momentary outages; and
- Other minor editorial changes.

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

- Exhibit “A”** Resolution
Exhibit “B” Board Policy on Transmission & Distribution System Reliability (redline)
Exhibit “C” Board Policy on Transmission & Distribution System Reliability (clean)

RESOLUTION APPROVING THE REPORT TO THE BOARD OF TRUSTEES ON, AND AMENDMENTS TO, THE BOARD POLICY ON TRANSMISSION & DISTRIBUTION SYSTEM RELIABILITY

WHEREAS, the Board Policy on Transmission and Distribution System Reliability (the “Policy”) was originally approved by the Board of Trustees by Resolution No. 1371, dated July 26, 2017; and

WHEREAS, the Policy was last reviewed and amended by the Board pursuant to Resolution No. 1479, dated May 22, 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 the Long Island Power Authority has complied with the Transmission and Distribution System Reliability 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: **Transmission & Distribution System Reliability**
Policy Type: **Mission**
Monitored by: **Oversight and ~~REV~~-Clean Energy Committee**
Board Resolution: **#1371, approved July 26, 2017**
#1479, amended May 22, 2019
[#xxxx], amended July 22, 2020



Board Policy on Transmission & Distribution System Reliability

It is the policy of the Long Island Power Authority (“LIPA”) to maintain a safe, reliable and resilient Transmission and Distribution (“T&D”) system at an affordable cost. ~~The Authority~~LIPA shall:

- comply with the applicable standards of the North American Electric Reliability Corporation, the Northeast Power Coordinating Council, the New York State Reliability Council, the New York Independent System Operator, and environmental regulations;
- fund cost-effective programs to provide a level of reliability, as measured by *system average* outage duration (known as System Average Interruption Duration Index or SAIDI), within the first quartile as compared to peer utilities, excluding major events¹;
- funding cost-effective programs to provide a level of reliability *for each customer* that is within a reasonable variance from *system average* conditions (excluding major events) including:
 - programs to track and improve circuit conditions that cause a customer to experience four or more sustained outages (i.e., greater than 5 minutes in duration) in any 12-month period; and
 - ~~establishing comparable processes for~~programs to track and improve circuit conditions that cause a customer to experience multiple momentary outages (i.e., outages less than 5 minutes in duration);²
- funding cost-effective approaches for resiliency, thereby enhancing the safe and timely restoration of electrical service after severe weather or adverse events; and
- using smart grid technologies to minimize outages, monitor system conditions, and facilitate the interconnection of renewable and distributed resources.

The Chief Executive Officer, or his or her designee, will report annually to the Board on the key provisions of ~~the T&D System Reliability~~this Policy.

¹ NYCRR 97.1 defines a “major” storm as one resulting in at least one customer outage lasting at least 24 hours or outages affecting at least 10% of the customers in a utility division. In applying the 24-hour exclusion, ~~the Authority~~LIPA shall consider — whether such outages are consistent with the pattern of restoration or otherwise anomalous in terms of duration or barriers to restoration.

Board Policy: **Transmission & Distribution System Reliability**
Policy Type: **Mission**
Monitored by: **Oversight and Clean Energy Committee**
Board Resolution: **#1371, approved July 26, 2017**
#1479, amended May 22, 2019
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 - programs to track and improve circuit conditions that cause a customer to experience multiple momentary outages (i.e., outages less than 5 minutes in duration);
- fund cost-effective approaches for resiliency, thereby enhancing the safe and timely restoration of electrical service after severe weather or adverse events; and
- use smart grid technologies to minimize outages, monitor system conditions, and facilitate the interconnection of renewable and distributed resources.

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

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