BOARD AGENDA SUMMARY SHEET

Date: May 10, 2019	Board Meeting Date: May 22, 2019						
For All Board Voting Items:							
Title of Agenda Item: Approval of the Annual Report and Amendments on the Board's Policy on T&D Reliability							
Consent Agenda: □Yes ⊠No Accompanying Presentation: ⊠Yes □No							
Recommendation from Committee: \boxtimes N/A \square F&A \square GP&P \square Oversight & REV							
PSEG Long Island Presenter: John O'Connell							
For Policy Reports Only:							
Type of Policy / Report: □ Operating; □ Governance; □ Compliance; ⊠ Mission							
Compliance	Since Last Report: ⊠Yes □No						
	Date: May 10, 2019 The Annual Report and Amendment Accompanying Press ee: ⊠N/A □ F&A □ GP&P □ O PSEG Long Island P ting; □ Governance; □ Compliance S 018 Compliance S						

Proposed Changes to Policy: \square Yes \square No

Requested Action:	The Board is requested to adopt a resolution: (i) approving the annual report for the Board Policy on T&D Reliability; (ii) finding that the Long Island Power Authority and its subsidiary, LIPA, have 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 provides that the "Chief Executive Officer will report annually to the Board" on certain elements of the Policy. Staff proposes the following revisions to the Policy: (i) the reference to the Oversight Committee was changed to the Oversight and REV Committee consistent with the consolidation of the Overnight Committee and REV Committee into a single committee; (ii) to remove the reference to physical and cyber security, as the Board is scheduled to adopt a separate policy on physical and cyber security during 2019; (iii) amending the annual reporting requirements consistent with the reporting requirements for other Board policies; and (iv) clarifying the basis for excluding outages from reported reliability statistics.

FOR CONSI May 22, 2019	DERATION
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 of the Long Island Power Authority (the "Board") 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 the Long Island Power Authority and its subsidiary, LIPA (collectively the "Authority" or "LIPA") have 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 provides that the "Chief Executive Officer will report annually to the Board" on certain elements of the Policy.

Compliance with the Policy

Staff recommends that, for the reasons set forth below, the Board find that the Authority 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, the Authority 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 consistent with Department of Public Service guidelines."

- For 2018, the System Average Interruption Duration Index (SAIDI) was 65.2 minutes, which continues to rank within the first quartile of peer utilities
- Circuit Improvement Program (CIP) for customers served by targeted circuits, interruptions have been reduced by approximately 15%, on average, for the first year after completing the program
- Vegetation Management completed the first four-year tree trimming cycle for the transmission and distribution systems

"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 consistent with the Department of Public Service guidelines) 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 targeted areas with higher level of sustained (i.e. greater than 5 minute) customer outages to address mainline, branches and services. The number of customers with four or more sustained outages in any 12-month period has declined by 14% over the last 12 months
- Residential Underground Distribution a new program has been implemented to replace underground cable for the network system
- Multiple Momentary Outages established a Tier 2 metric with PSEG Long Island to track multiple momentary outages by customers. PSEG Long Island is evaluating several initiatives to cost-effectively reduce such outages

"fund cost-effective approaches for resiliency, thereby enhancing the safe and timely restoration of electrical service after severe weather or adverse events; and protecting critical assets, systems and processes against physical and cyber-attacks."

- Completed storm hardening, funded by FEMA, of approximately 820 miles out of a program total of 1025 mile
- Continuing to advance "Storm Impact Analysis" to aid in 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
- Reporting on Physical and Cyber-attacks will be presented with the Board's new policy on Physical and Cyber Security, as discussed below

"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 approximately 850 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 Circuit Improvement Program, and 136 are scheduled be completed in 2019.

• Installation of Smart Meters. Approximately 66,500 meters were installed in 2018. For 2019, the goal is to install an additional 250,000 of which 75,500 have been installed in the first quarter. Smart meters will help detect and respond to power outages and monitor power quality

Annual Review of the Policy

Staff proposes the following revisions to the Policy:

- The reference to the Oversight Committee was changed to the Oversight and REV Committee consistent with the consolidation of the Overnight Committee and REV Committee into a single committee
- To remove the reference to physical and cyber security, as the Board is scheduled to adopt a separate policy on physical and cyber security during 2019
- Amending the annual reporting requirements consistent with the reporting requirements for other Board policies
- Clarifying the basis for excluding outages from reported reliability statistics

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"ResolutionExhibit "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 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 Board has received the annual Staff report on compliance with the Policy; and

WHEREAS, the Board has reviewed the Policy and approves the changes to the Policy as recommended by Staff.

NOW, THEREFORE, BE IT RESOLVED, that consistent with the accompanying memorandum, the Board hereby finds that the Authority has complied with the Policy for the period since the last annual review of the Policy, approves the annual report to the Board, and approves updates to the Policy.

Dated: May 22, 2019



Board Policy:	Transmission & Distribution System Reliability		
Policy Type:	Mission		
Monitored by:	Oversight and REV Committee		
Board Resolution:	#1371, approved July 26, 2017 <u>#[xxxx], amended May 22, 2019</u>		

Board Policy on Transmission & Distribution System Reliability

It is the policy of the Long Island Power Authority to maintain a reliable and resilient Transmission and Distribution ("T&D") system at an affordable cost. The Authority 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 events <u>consistent with</u> <u>Department of Public Service guidelines</u>¹;
- 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-consistent with the Department of Public Service guidelines) 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);
- fund cost-effective approaches for resiliency, thereby enhancing the safe and timely restoration of electrical service after severe weather or adverse events; and protecting critical assets, systems and processes against physical and cyber attacks; and
- use smart grid technologies to minimize outages, monitor system conditions, and facilitate the interconnection of renewable and distributed resources.

The Chief Executive Officer will report annually to the Board on the key provisions of the T&D System Reliability Policy. ÷

Compliance with applicable industry standards and environmental regulations;

- Analysis of system average reliability and interconnection service metrics;
- Comparison to the system average performance of peer electric utilities;
- Analysis of worst performing circuits and associated improvement plans;
- Analysis of restoration performance following severe weather or major outages; and
- Use of resiliency approaches and smart grid technologies.

¹ <u>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 shall consider whether such outages are consistent with the pattern of restoration or otherwise anomalous in terms of duration or barriers to restoration, <u>at least 10%</u> of the customers in a utility division.</u>

Exhibit "C"



Board Policy:	Transmission & Distribution System Reliability
Policy Type:	Mission
Monitored by:	Oversight and REV Committee
Board Resolution:	#1371, approved July 26, 2017 #[xxxx], amended May 22, 2019

Board Policy on Transmission & Distribution System Reliability

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- 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;
- 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);
- 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 will report annually to the Board on the key provisions of the T&D System Reliability 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 shall consider whether such outages are consistent with the pattern of restoration or otherwise anomalous in terms of duration or barriers to restoration.





Annual Report to LIPA Board of Trustees Transmission & Distribution System Reliability

May 2019





Agenda – T&D System Reliability

- Reliability Metrics
- Storm Restoration Performance
- Compliance
- Smart Grid Progress
- Initiatives



T&D Reliability Metrics





• 2017 Performance Range for NYS Utilities (Excluding Con Edison), SAIFI 0.59–1.18, CAIDI 100.8–132.0 min and SAIDI 62.6–155.8 min

• 2018 Performance Range not yet available

SAIDI, SAIFI and MAIFI forecasted to improve from 2018

Customers with Multiple Outages (Sustained MCO)

Sustained MCO Metric by Month



- MCO currently 6.1% better than 1st Quartile
- 14.2% improvement since April 2018



Storm Restoration

Year	No. of Storms	Total Outage Jobs	Total Customer Outages	Cust. Restored Within 4 hrs	Average Outage Duration (minutes)
2016	21	6,980	532,729	86%	131
2017	13	4,960	328,705	79%	203
2018	19	9,407	504,325	77%	237
2019 (YTD)	5	1,394	69,113	93%	85

 48% (4,515) of the 2018 storm outage jobs and 47% (237,032) customer outages came from the four March Nor'Easters.

T&D System Reliability - Compliance

NERC Compliance

- Successfully completed 2018 NERC Critical Infrastructure Protection Audit
- Submitted three NERC Internal Control Evaluations (ICE) in 2018
- Preparing for upcoming 2020 NERC Transmission Operator Audit
- Improvements to Alternate Control Center
- 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



Smart Grid Progress

- Automatic distribution switch installations
 - 896 switches ("ASUVs") as part of FEMA Storm Hardening
 - 626 Installed and Commissioned to Date
 - > 233 Additional Installed Awaiting Commissioning
 - > 37 remain to be installed
 - 136 ASUVs to be installed under Circuit Improvement Program in 2019
 - Replacement of Joslyn switches
- Advanced Metering (AMI)
 - Installed YTD 104,803 meters
 - 2019 Goal 250,000 meters



Initiatives to Improve Reliability

- Non-Reclosure Assurance ("NRA") Automation was completed in 2018
- Targeted Programs to Improve Reliability:
 - Circuit Improvement Program (CIP) 130 circuits for 2019
 - Customer interruptions on average have been reduced by 15% for the first year after completion under CIP
 - FEMA Storm Hardening Program (820 miles completed out of 1025 miles)
 - Mainline incidents dropped by 36% for circuits with at least one year after FEMA construction
 - Vegetation Management Completed first 4 year cycle
 - > 2,450 Miles Combined Distribution and Transmission planned for 2019
 - Infrared T&D, 3,700 total T&D miles to be inspected
 - 2,500 miles of distribution
 - 1,200 miles of transmission
- Customer Centric Reliability Programs
 - Multiple Customer Outages/Repeat Fuse Program
 - Residential Underground Distribution
 - MAIFI Reduction Initiatives



Initiatives to Improve Reliability: Storm Response

Storm Response Improvement

- Storm Impact Analysis
- Combines transmission & distribution asset data, vegetation information, and storm characteristics to generate a dynamic model of anticipated system impact based on a particular storm's intensity and track
- Model includes all storm events of all types (i.e. thunderstorms, blizzards, ice storms, hurricanes, etc.) and all severities, and will grow as additional events occur
- Delivers actionable information on forecasted damage locations and outage magnitude that will enable PSEG Long Island to:
 - Determine the number of crews needed
 - Strategically deploy them prior to arrival of a storm

Mobile Damage Assessment

- Field Mobility Mobile App Launched and in Apple/Google App Stores
 - Undergoing continuous improvement
 - > Can be used to dispatch and assign jobs to foreign crews & contractors
 - > Currently being used by Company employees for survey, crew guides



Interconnection Metrics

For Smaller Projects < 50 kW in Size

- Tier 2 Metric for 2019
- Higher volume of activity in the thousands annually, less complicated and shorter study processes

For Larger Projects > 50 kW in Size

- Tier 2 Metric for 2019
- Lower volume of activity in the hundreds annually, more complicated and lengthy study processes



