



Annual Report on Transmission and Distribution Operations

Presented by: Umair Zia and Robert Frenna, Vice Presidents of Transmission and Distribution System Performance and Distribution Utility & Program Performance

June 24, 2026



Discussion Topics

 Board Policy on Transmission and Distribution Operations

 Policy Compliance and Overall Assessment

 Risk Management Assessment

Board Policy on Transmission and Distribution Operations

It is LIPA's **Board Policy on Transmission and Distribution Operations** to:

- Provide top decile reliability among peer utilities as measured by system average duration, excluding major events.
- Improve circuit conditions that cause a customer to experience four or more sustained outages or six or momentary outages in any 12-month period.
- Mitigate the effects of climate change through multi-year programs that reduce the number and duration of outages after significant system disruptions.
- Utilize modern system design and technology to anticipate and minimize outages, monitor system condition, provide for preventative and predictive system maintenance, and facilitate the efficient and timely interconnection of renewable and distributed resources.
- Safeguard people and protect facilities and functions that support operations from unauthorized access or disruption through vulnerability assessments and risk mitigation.
- Assure timely and accurate communication to customers about outages and restoration times.
- Independently verify that emergency restoration plans are complete and tested.

Policy Compliance & Overall Assessment

Meeting the Board’s Expectations for Reliability & Resiliency

✓ **Provide Top Decile Reliability to Our Customers**

Measure	2025 Result	2025 OSA Target	2025 “All-In” Result	IEEE Result vs. Top Decile Benchmark	Discussion
SAIDI	62.3	56.5	68.0	53.7 vs. 59.6	Performance met top decile benchmark
SAIFI	0.76	0.68	0.79	0.69 vs. 0.64	Performance between top decile and quartile benchmark
CAIDI	82.0	N/A	86.0	77.5 vs. 76.9	Performance between top decile and quartile benchmark
MAIFI	1.13	1.53	1.16	1.09 vs. N/A	EIA does not track MAIFI, other benchmarking indicates performance is between top decile and quartile

✓ **Improve circuit conditions that cause a customer to experience four or more sustained outages or six or more momentary outages in any 12-month period**

MCO Type	Duration	Customers Outside of Board Standard	Discussion
Sustained	≥ 5 Minutes	2.2%	Top decile performance for ≥ 4 S-MCOs per available benchmarking
Momentary	< 5 Minutes	2.8%	Nearly 10% had experienced ≥ 6 M-MCOs as of five years ago



Meeting the Board's Expectations for Reliability and Resiliency

✓ **Mitigate the Effects of Climate Change through Multi-Year Programs that Reduce the Number and Duration of Outages After Significant System Interruptions**

- PSEG Long Island has multiple reliability and resiliency programs geared towards meeting this policy objective, including but not limited to, enhanced vegetation management, branch line reclosers and storm hardening.
- In total for 2025, these programs accounted for approximately a \$600 million investment into our T&D system. This is augmented by funding obtained from federal grants totaling nearly \$500 million for several ongoing multi-year efforts.
- Collectively, these programs work together to improve the number and duration of outages after significant system interruptions, such as those caused by a major storm. Taken together, these programs are projected to improve the next Isaias-level event by over 20%, as measured by SAIDI, with that doubling to over 40% by the end of 2030.

Meeting the Board’s Expectations for Reliability and Resiliency

✓ **Summary of Grant Funding Activity Since 2023**

Project Description	Amount (\$M)	Anticipated Completion
Storm Harden Two Transmission Road Crossings	\$3.5	Dec 2026
Mitigate Poles in Disadvantaged Communities in Queens & Nassau Counties	\$5.0	Dec 2026
Mitigate Poles in Disadvantaged Communities in Suffolk County	\$5.0	Dec 2026
Install 8,500 Branch-Line Reclosers Sourced From Underrun In Superstorm Sandy Funding	\$53.0	Dec 2026
Storm Harden a Total of 166 Circuits	\$430.0	Dec 2030
	\$496.5	

LIPA filed for another mitigation funding opportunity under FEMA’s Building Resilient Infrastructure and Communities (BRIC) program, seeking \$17 million to enable the hardening of six transmission crossings. Award notifications are to be announced in early 2027.



Meeting the Board's Expectations for Reliability and Resiliency

- ✓ **Utilize Modern System Design and Technology to Anticipate and Minimize Outages, Monitor System Condition, Provide for Preventative and Predictive System Maintenance, and Facilitate the Efficient and Timely Interconnection of Renewable and Distributed Resources**
 - Under metric T&D-58, PSEG Long Island is accomplishing the following:
 - Leveraging advanced technologies and modern grid design to improve reliability, enhance system visibility, and support the evolving needs of customers and distributed energy resources.
 - On target to complete the installation of a branch line recloser initiative with a total population of 10,000 devices on the system by the end of 2026, resulting in reliability improvements of approximately 8% (SAIFI) and 13% (SAIDI).
 - Implementing Fault Location, Isolation, and Service Restoration (FLISR) on 42 pilot circuits which will lead to further automation and restoration of the system using advanced algorithms.
 - As our grid evolves, operating it will require new tools and processes. One example of modernizing operations can be found in the current effort of creating a comprehensive NextGen Distribution Control Room roadmap.

Meeting the Board's Expectations for Reliability and Resiliency

- ✓ **Utilize Modern System Design and Technology to Anticipate and Minimize Outages, Monitor System Condition, Provide for Preventative and Predictive System Maintenance, and Facilitate the Efficient and Timely Interconnection of Renewable and Distributed Resources**
 - PSEG Long Island will also be piloting advanced sensor technology that utilizes radio frequency (RF) signals to detect and pinpoint anomalies before they result in an outage. This early detection system will be tested on both transmission and distribution circuits.
 - The Drone Pilot Program will evaluate the use of autonomous drone technology for utility operations and asset inspections. The pilot program will assess whether remotely operated drone docks and cloud-based mission management can improve safety, efficiency, and situational awareness while reducing the need for manual field inspections. The first drone dock is currently being installed, with initial flight operations expected to begin in July 2026. Key use cases include asset condition assessments, storm response, and damage evaluations, with the results helping determine the viability of broader deployment across the transmission and distribution systems.
 - Utility 2.0 projects such as Electric Vehicle (EV) make ready build distribution infrastructure to support electric vehicle connection. Utility of the Future initiatives such as the Integrated Energy Data Resource (IEDR) platform make energy-related data from the Photovoltaic (PV) Hosting Capacity and Energy Storage System Maps available to stakeholders so they may make informed investment decisions.

Meeting the Board's Expectations for Reliability and Resiliency

✓ Safeguarding Our Critical Assets

- LIPA and PSEG Long Island continue to implement their multi-year Critical Infrastructure Protection (CIP) Program which is a layered approach of security enhancements which consists of three primary elements; access control, communications backbone and substation security upgrades.
- The Access Control initiative for all LIPA protected access points was completed Q4 2025.
- The Communications Backbone and Substations upgrades are proceeding on schedule and on budget.
- This overall approach of enhancing substation security will mitigate risks associated with Physical Asset Protection on the LIPA/PSEG Long Island risk registers.

Meeting the Board's Expectations for Reliability and Resiliency

✓ Enhance Estimated Time of Restoration (ETRs) Accuracy and Communications

- LIPA collaborates with PSEG Long Island to enhance the Estimated Time of Restoration (“ETR”) process to provide more accuracy, allowing customers to better plan for the outage duration. Overall ETR accuracy has improved in recent years due to the operationalization of factors such as device type, season/month and hour/shift that provide a more tailored time of estimated restoration being communicated to our customers. These and other factors are monitored regularly to look for opportunities to continuously improve the customer outage experience.
- In 2025, over 82% of our customers had a positive ETR experience during storm conditions where power was restored on time or within an acceptable window that was earlier than the original estimate. Furthermore, over 84% of our customers received two ETRs or less during these storms, meaning that they are being appropriately informed.
- PSEG Long Island’s ETR performance has met expectations during storm conditions and is tracked as a component of LIPA’s Storm Scorecard metric (T&D-50) as well as the DPS’ Storm Scorecard that is applicable to storm events with a duration of 72 hours or greater.
- For 2026, a new metric “Outage Information Satisfaction & Cause Code” (CS-40) was introduced, with ETR information and timeliness being a major component. A total of 82% of the customers surveyed indicated the number of outage notifications they receive (in the range of 1-3) was satisfactory. The YTD result for CS-40 for Cause Code Messages is at 71.8%, ahead of the target of 68.45%.

Meeting the Board's Expectations for Reliability and Resiliency

✓ Independently Verify that Emergency Restoration Plans are Complete and Tested

- LIPA ensures, to the greatest extent feasible, the timely and safe restoration of energy services after an emergency consistent with the requirements of New York State Public Service Law (“PSL”) and the recommendations of the NYS Department of Public Service (DPS).
- LIPA/PSEG Long Island submitted their initial 2026 Emergency Response Plan (ERP) on December 15, 2025, and DPS recommended adoption in a letter dated March 23, 2026, to LIPA’s Board of Trustees.
- PSEG Long Island’s amended 2026 ERP expands on the Training and Exercise section to reflect the implementation of standardized documentation designed to improve consistency, accountability, and oversight across emergency preparedness activities. LIPA attends more than 19 exercises and drills throughout the year to aid in evaluating our emergency response readiness. The amended ERP also incorporates the use of Improvement Plan Trackers, which capture after action review and exercise-related improvement items, assign ownership and completion timelines, and track progress through resolution. These measures are intended to formalize continuous improvement efforts and promote year-over-year enhancements to emergency response performance.
- LIPA works with PSEG Long Island to improve our emergency readiness and response. LIPA reviews, provides feedback and approves on an annual basis PSEG Long Island’s proposed revisions to the 68 Emergency Restoration Implementation Procedures (ERIPs) to confirm they are accurate, up to date, aligned with current regulatory and operational requirements, and reflect industry best practices for emergency response and restoration activities.

Risk Management Assessment

Enterprise Risk Management

There are two highly rated risks related to the T&D Operations Board Policy:

- A major event such as a severe storm damages infrastructure and results in widespread, long duration outages, equipment damages and safety issues
 - This is the most significant risk in the portfolio and is being mitigated through the execution of numerous reliability, vegetation management and storm hardening initiatives.
- Protection of critical assets such as substations and the control centers are compromised and could result in outages, equipment damages and safety issues
 - There is significant focus on safeguarding critical assets, and we believe this risk is being managed effectively, through the execution of a multi-year integrated physical security plan.

Questions?

Robert Frenna & Umair Zia

Vice Presidents of
Transmission & Distribution
Utility, Program and System
Performance

lipower.org



FOR CONSIDERATION

June 24, 2026

TO: The Board of Trustees

FROM: Carrie Meek Gallagher

REQUEST: Approval of the Annual Report on the Board's Policy on Transmission and Distribution Operations

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's Policy on Transmission and Distribution ("T&D") Operations (the "Policy"); and (ii) finding that LIPA has complied with the Policy, which resolution is attached hereto as **Exhibit "A."**

Background

By Resolution No. 1371, dated July 26, 2017, the Board originally adopted the Policy. The last annual review of the Policy was completed in November 2024, and the Board last amended the Policy in November 2021. The amendments to the Policy in November 2021 changed the name of the Policy from T&D System Reliability to T&D Operations.

The Policy now provides that: "LIPA's vision for our transmission and distribution system is to achieve industry-leading reliability, improve resiliency by minimizing outages and reducing restoration times after significant system disruptions, and leverage modern system design and technology to provide value to all customers. The Policy also provides for an annual reporting requirement that "[t]he Chief Executive Officer, or his or her designee, will report annually to the Board on the key provisions of this Policy."

Compliance with the Policy

LIPA Staff recommends that for the reasons set forth below, the Board find that LIPA has complied with the Policy since the last annual review. Compliance with each element of the Policy is discussed in detail below.

As set forth in the Policy, "[t]o achieve our vision for reliability, LIPA will":

"provide top decile reliability (i.e., top 10% of peer utilities) as measured by system average outage duration, excluding major events."

- LIPA has taken steps to improve reliability, as further discussed below, with the objective of maintaining the Board's policy objective of top 10% reliability among peer utilities as measured by system average outage duration (i.e., the average outage minutes per customer

per year, excluding major weather events).

- PSEG Long Island's 2025 performance for system average outage duration per customer was 62.3 minutes, which was worse than the 2024 year-end result of 59.3 minutes. The 2025 performance failed to meet the OSA metric (T&D-07) target of 56.5 minutes.
- The top decile benchmark was 59.6 minutes, as determined by a national group of peer utilities, utilizing the IEEE methodology of reliability reporting. Under that methodology, PSEG Long Island successfully met the Board's top decile standard.
- Though recorded performance has increased by several minutes over the last few years, it is worth noting that 2025 "all-in" reliability, which captures system performance for all conditions, inclusive of storms, and is the truest measure of actual customer outage experience, was the best on record for Long Island at 68.0 minutes.
- PSEG Long Island was sixth place out of a group of sixty-six peers, equating to top decile, when measuring collective performance for: System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), and the Customer Average Interruption Duration Index (CAIDI). Furthermore, PSEG Long Island's reliability performance, using the IEEE methodology, widely used in the industry, is situated in top decile for SAIDI, with SAIFI and CAIDI in close proximity to top decile. PSEG Long Island's Momentary Average Interruption Frequency Index (MAIFI) performance, that measures outages of less than five minutes in duration, has continuously improved over an extended period of time, and is on pace to set an all-time best once again for our customers. Though benchmarking is not as prevalent for MAIFI as it is for other reliability indices, PSEG Long Island falls within top quartile among its industry peers.

"improve circuit conditions that cause a customer to experience four or more sustained outages or six or more momentary outages in any 12-month period."

- Annual reliability programs are designed to improve circuit performance, including the Circuit Improvement Program ("CIP"), the Multiple Customer Outage Program ("MCO"), and the Multiple Device Operation Program ("MDO").
- There are two performance metrics that address multiple customer outages, T&D-10 for sustained outages and T&D-12 for momentary outages. To better focus on customers with the worst outage experience, the metric for sustained MCOs was refined in 2024 to address four discrete levels ranging from six to twelve or more customer outages, as measured over a rolling 12-month period. In 2025, the sustained MCO metric was not met, as performance fell short for each of the four discrete outage levels, but measured broadly, 2.2% of our customers experienced four or more sustained outages during the year. However, the momentary MCO metric was met with a best-ever year that saw 2.8% of our customers experience six or more momentary outages.

"utilize modern system design and technology to anticipate and minimize outages, monitor system conditions, provide for preventative and predictive system maintenance, and facilitate the efficient and timely interconnection of renewable and distributed resources."

- PSEG Long Island continues to leverage advanced technologies and modern grid design to improve reliability, enhance system visibility, and support the evolving needs of customers and distributed energy resources. As part of metric T&D-58, PSEG Long Island is on target

to complete the installation of a branch line recloser initiative with a total population of 10,000 devices on the system by the end of 2026. When completed, this is projected to result in reliability improvements against current performance of approximately 8% and 13% for SAIFI, and SAIDI, respectively.

- Additionally, under the same metric PSEG Long Island is implementing Fault Location, Isolation, and Service Restoration (FLISR) on 42 pilot circuits which will lead to further automation and restoration of the system using advanced algorithms.
- As our grid evolves, operating it will require new tools and processes. One such example can be found under metric T&D-58 where there are efforts to modernize our operations, with the first step being the creation of a comprehensive NextGen Distribution Control Room roadmap.
- PSEG Long Island will also be piloting advanced sensor technology that utilizes radio frequency (RF) signals to detect and pinpoint anomalies before they result in an outage. This early detection system will be tested on both transmission and distribution circuits.
- The Drone Pilot Program is a joint LIPA and PSEG Long Island initiative to evaluate the use of autonomous drone technology for utility operations and asset inspections. The pilot program will assess whether remotely operated drone docks and cloud-based mission management can improve safety, efficiency, and situational awareness while reducing the need for manual field inspections. The first drone dock is currently being installed at a LIPA substation, with initial flight operations expected to begin in July 2026. Key use cases include asset condition assessments, storm response, and damage evaluations, with the results helping determine the viability of broader deployment across the transmission and distribution systems.
- Utility 2.0 projects such as Electric Vehicle (EV) make ready build distribution infrastructure to support electric vehicle connection. Utility of the Future initiatives such as the Integrated Energy Data Resource (IEDR) platform make energy-related data from the Photovoltaic (PV) Hosting Capacity and Energy Storage System Maps available to stakeholders so they may make informed investment decisions.

“safeguard people and protect facilities and functions that support operations from unauthorized access or disruption through vulnerability assessments and risk mitigation.”

- LIPA and PSEG Long Island continue their multi-year plan to implement a layered approach of security enhancements via its Critical Infrastructure Protection (CIP) Program which consists of three primary elements; access control, communications backbone and substation security upgrades. This will enable us to strengthen our compliance with regulatory requirements related to NERC CIP physical security standards.
- A critical milestone was reached at the close of 2025 with the completion of the Access Control initiative for all LIPA protected access points.
- The communications backbone and substation security upgrades are proceeding on schedule and on budget.
- This overall approach of enhancing substation security will mitigate risks associated with Physical Asset Protection on the LIPA/PSEG Long Island risk registers.

The Policy further provides that “[t]o achieve our vision for resiliency, LIPA will:”

“mitigate the effects of climate change through multi-year programs that reduce the number and duration of outages after significant system disruptions.”

- PSEG Long Island has multiple reliability and resiliency programs geared towards meeting this policy objective, including but not limited to, enhanced vegetation management, branch line reclosers and storm hardening. In total for 2025, these programs accounted for approximately \$600 million investment into our T&D system. Collectively, the work completed to date under these programs is projected to improve the next Isaias-level event by over 20%, as measured by SAIDI, with that improvement projected to double to over 40% with the completion of planned program work over the next five years.
- LIPA has been awarded total grant funding of \$496.5 million since 2023 through the diligent efforts of both LIPA and its service provider. This consists of two separate applications for \$5 million each to mitigate poles in disadvantaged communities in Nassau/Queens, and in Suffolk County. In December 2024, LIPA was awarded \$3.5 million to storm harden two transmission road crossings. Work on the crossings is scheduled to begin early 4th quarter of 2026 and conclude by year-end. The pole replacements are underway and scheduled to conclude later in 2026.
- In July 2024, LIPA was awarded a \$430 million mitigation grant to harden 166 overhead circuits. Work on these circuits is scheduled to begin in September 2026, with expected completion in 2030, pending FEMA approval to extend the program end from October 2028. Furthermore, in December 2024, LIPA gained approval to use \$53 million from the Underrun of Funds from the award it received under Superstorm Sandy to install 8,500 branch-line reclosers across the T&D system. The physical work is scheduled to conclude prior to the end of 2026.
- LIPA recently filed for another mitigation funding opportunity under FEMA’s Building Resilient Infrastructure and Communities (BRIC) program, seeking \$17 million to enable the hardening of six transmission crossings. The award notifications are scheduled to be announced in early 2027. LIPA will continue to pursue these competitive grant opportunities as they are made available.

“assure timely and accurate communication to customers about outages and restoration times.”

- LIPA continues to collaborate with PSEG Long Island to enhance the Estimated Time of Restoration (“ETR”) process to provide more accuracy, allowing customers to better plan for the outage duration. Overall ETR accuracy has improved in recent years due to the operationalization of factors such as device type, season/month and hour/shift that provide a more tailored time of estimated restoration being communicated to our customers. These and other factors are monitored regularly to look for opportunities to continuously improve the customer outage experience.
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- For 2026, a new metric “Outage Information Satisfaction & Cause Code” (CS-40) was introduced, with ETR information and timeliness being a major component. A total of 82% of the customers surveyed indicated the number of outage notifications they receive (in the range of 1-3) was satisfactory. The YTD result for CS-40 for Cause Code Messages is at 71.8%, ahead of the target of 68.45%.

“independently verify that emergency restoration plans are complete and tested.”

- LIPA continues to ensure, to the greatest extent feasible, the timely and safe restoration of energy services after an emergency consistent with the requirements of New York State Public Service Law (“PSL”) and the recommendations of the NYS Department of Public Service (DPS).
- LIPA/PSEG Long Island submitted their initial 2026 Emergency Response Plan (ERP) on December 15, 2025, and DPS recommended adoption in a letter dated March 23, 2026, to LIPA’s Board of Trustees.
- PSEG Long Island’s amended 2026 ERP expands on the Training and Exercise section to reflect the implementation of standardized documentation designed to improve consistency, accountability, and oversight across emergency preparedness activities. LIPA attends more than 19 exercises and drills throughout the year to aid in evaluating our emergency response readiness. The amended ERP also incorporates the use of Improvement Plan Trackers, which capture after action review and exercise-related improvement items, assign ownership and completion timelines, and track progress through resolution. These measures are intended to formalize continuous improvement efforts and promote year-over-year enhancements to emergency response performance.
- LIPA continues to take additional measures to work together with PSEG Long Island to improve our emergency readiness and response. LIPA reviews, provides feedback and approves on an annual basis PSEG Long Island’s proposed revisions to the 68 Emergency Restoration Implementation Procedures (ERIPs) to confirm they are accurate, up to date, aligned with current regulatory and operational requirements, and reflect industry best practices for emergency response and restoration activities.

Enterprise Risk Management Discussion

The Board has adopted a policy on Enterprise Risk Management (“ERM”). Enterprise risks are brought to the Board’s attention throughout the year. There are two risks directly related to this Policy:

- a major event such as a severe storm damages the infrastructure and results in widespread, long duration outages, and negative public perception;
- protection of critical assets such as substations and the control centers are compromised and could result in outages, equipment damages, and safety issues.

The major event risk is the highest rated risk in the PSEG Long Island portfolio. PSEG Long Island is mitigating this risk through ongoing storm-hardening initiatives and system-reliability programs which have demonstrated the distribution system’s ability to withstand smaller storms. Additionally, comprehensive training, annual tabletop exercises, and functional exercises are

facilitated to assess the readiness of personnel and processes. With the numerous mitigation actions PSEG Long Island has implemented related to reliability, vegetation management, and storm hardening initiatives, we believe this risk is being effectively managed.

The protection of critical assets risk is also a highly rated risk. To mitigate this risk, there are several substation security upgrade projects which are funded and underway in addition to those that have already been completed. Additional security enhancements include a layered approach to perimeter intrusion detection, and utilizing a combination of best practices and technologies. There is a significant focus on safeguarding critical assets, and we believe PSEG Long Island is managing this risk effectively.

Annual Review of the Policy

The Policy was last updated in November 2021, to reflect the Board's strategic direction in this area. LIPA Staff has reviewed the Policy and proposes no changes at this time.

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

RESOLUTION APPROVING THE REPORT TO THE BOARD OF TRUSTEES ON THE BOARD POLICY ON TRANSMISSION & DISTRIBUTION OPERATIONS

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

WHEREAS, the last annual review of the Policy was completed in November 2024; and

WHEREAS, the Board has conducted an annual review of the Policy and affirms that the Policy has been complied with.

NOW, THEREFORE, BE IT RESOLVED, that consistent with the accompanying memorandum, the Board hereby finds that the LIPA has complied with the T&D Operations Policy for the period since the last annual review and approves the annual report to the Board.

Dated: June 24, 2026