



Briefing on Board Policy on Information Technology and Cyber Security

Presented by: Brian Rudowski, Acting Chief Information Officer
Prepared for: LIPA Board of Trustees

December 18, 2024



Discussion Topics

 Board Policy Objectives

 Key Information Technology Projects

The background of the slide features a blue-toned image of two hands shaking, symbolizing agreement or partnership. Overlaid on this image is a network of white lines and dots, representing technology or data connectivity. The overall aesthetic is professional and modern.

Board Policy Objectives

Information Technology Board Policy Objectives

- Use technology to enhance and simplify the customer experience, improve reliability, and minimize operating costs.
- Ensure robust, secure technology platforms that provide operational stability and protect customer, employee, and third-party data from unauthorized access or disruption.
- LIPA supports data privacy by transparently communicating how customer information is collected, used, and disclosed.

Information Technology Board Policy Objectives

Policy Component	Metric/Initiative
<p>Invest in information technology that supports the efficiency of business operations, promotes innovation, and provides long-term customer value</p>	<ul style="list-style-type: none"> • Substantial portfolio of IT projects to advance policy objective • Relevant metrics: Project Performance, System Resiliency, System Segregation
<p>Deploy modern grid management technology and data analytics that enhance grid operations, customer service, utility asset management, and demand management, as measured by a Smart Grid Maturity Model level consistent with industry best practices</p>	<ul style="list-style-type: none"> • Continued investments to implement and enable the planned expansions of smart grid technologies.
<p>Ensure the capacity of the information technology organization to deliver reliable, robust, and resilient systems, as measured by a Capability Maturity Model Integration level of 3 or higher</p>	<ul style="list-style-type: none"> • IT Organizational Maturity Metrics • IT Project Performance Metrics
<p>Regularly upgrade information and operational technology systems to maintain all systems within their active service life and under general support from the product vendor</p>	<ul style="list-style-type: none"> • System and Software Lifecycle Management Metric



A hand in a dark suit sleeve is pointing towards the right. The background is a dark blue gradient with a network of white lines and dots, and several semi-transparent geometric shapes (triangles, squares) overlaid. The text 'Key Information Technology Projects' is centered in white.

Key Information Technology Projects

Information Technology Board Policy – Key IT Projects

Project	Purpose and Customer Benefits	Status and Plans
Systems Separation	<p>Separating all PSEG Long Island IT Systems serving LIPA from PSEG New Jersey systems.</p> <ul style="list-style-type: none"> ➤ Improve efficiency; Minimize operating costs ➤ Improve reliability ➤ Customer value 	<ul style="list-style-type: none"> • Behind schedule • All systems are targeted to be separated by the end of 2025
Contact Center as a Service (CCaaS)	<p>Fully integrated cloud-based solution providing improved omni-channel customer experience</p> <ul style="list-style-type: none"> ➤ Improve reliability ➤ customer value ➤ Innovation 	<ul style="list-style-type: none"> • Went live in Nov 2023
Standardized Data Access Platform	<p>Improve access to PSEG Long Island financial and operational data</p> <ul style="list-style-type: none"> ➤ Improve efficiency; Minimize operating costs ➤ Innovation 	<ul style="list-style-type: none"> • Phase II two-year roadmap identifies the systems to be delivered per LIPA’s business requirements



Information Technology Board Policy – Key IT Projects

Project	Purpose and Customer Benefits	Status and Plans
GRC (Governance, Risk, and Compliance) Tool Deployment	<p>Manage and automate GRC-related data and processes for Cyber Security, Business Continuity, and Disaster Recovery</p> <ul style="list-style-type: none"> ➤ Improve efficiency; Minimize operating costs ➤ Improve reliability ➤ Customer value 	<ul style="list-style-type: none"> • Phase 0 to complete in 2024 with vendor selection and project plan
CRM Replacement	<p>Consolidation of duplicative Customer Operations applications</p> <ul style="list-style-type: none"> ➤ Improve efficiency; Minimize operating costs ➤ Customer value 	<ul style="list-style-type: none"> • Completed



Information Technology Board Policy – Key IT Projects – Operational Technology

Project	Purpose and Customer Benefits	Status and Plans
<p>DERMS</p>	<p>Manage distributed energy resource (DER) assets (rooftop photovoltaic solar panels, behind-the-meter batteries, fleet of electric vehicles, etc.) to deliver grid services and balance demand with supply</p> <ul style="list-style-type: none"> ➤ Improve efficiency; Minimize operating costs ➤ Improve Reliability ➤ Innovation 	<ul style="list-style-type: none"> • Went live in 2023
<p>CG Concentrator Replacement</p>	<p>The new Concentrators mitigate the risks related to smart device growth, product obsolescence and cyber security risks</p> <ul style="list-style-type: none"> ➤ Improve efficiency; Minimize operating costs ➤ Improve Reliability 	<ul style="list-style-type: none"> • Deployment in-progress • Completion in 2025
<p>JMUX Replacement</p>	<p>Implement a new technology platform to replace the nearing end-of-life network communication platform for critical T&D and NERC applications</p> <ul style="list-style-type: none"> ➤ Improve Reliability 	<ul style="list-style-type: none"> • Equipment vendor selection in Q4 2024 • Deployment 2025-2027
<p>EMS Upgrade</p>	<p>Upgrade the GE PowerOn Reliance SCADA/EMS system</p> <ul style="list-style-type: none"> ➤ Improve Reliability 	<ul style="list-style-type: none"> • Planned deployment in June 2025



Questions?

Brian Rudowski,
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FOR CONSIDERATION

December 18, 2024

TO: The Oversight and Clean Energy Committee

FROM: John Rhodes

SUBJECT: Consideration of Recommendation to Approve the Annual Report on the Board Policy on Information Technology and Cyber Security

Requested Action

The Oversight and Clean Energy Committee (the “Committee”) of the Board of Trustees (the “Board”) of the Long Island Power Authority (“LIPA”) is requested to adopt a resolution recommending that the Board: (i) approve the annual report on the Board Policy on Information Technology and Cyber Security (the “Policy”) for the period since the last annual review; and (ii) find that LIPA has substantially complied with the Policy, which resolution is attached hereto as **Exhibit “A.”**

Discussion

In December 2019, the Board adopted the Information and Physical Security Policy. The Policy delineated the Board’s expectations and direction for information and physical security in accordance with public safety, operational, reputational, and compliance requirements. It established a reporting requirement to the Board on compliance with the key provisions of the Policy. In 2021, the prior policy was supplanted by the Information Technology and Cybersecurity Policy. The Policy provides that LIPA’s “vision for information technology and cyber security is to use technology to enhance and simplify the customer experience, improve reliability, and minimize operating costs while ensuring robust, secure technology platforms that provide operational stability and protect customer, employee, and third-party data from unauthorized access or disruption. LIPA supports data privacy by transparently communicating how customer information is collected, used, and disclosed.” The Board completed the last annual review of the Policy in December 2022.

Compliance with the Policy

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

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

1. “Invest in information technology that supports the efficiency of business operations, promotes innovation, and provides long-term customer value.”
 - LIPA funded a substantial portfolio of IT projects in 2024, which advances the goals of

increasing efficiency, promoting innovation, and providing long-term customer value. The portfolio covers a range of projects, including enhancements to existing systems and implementation of new technologies, with the larger projects covered by the 2024 IT metrics. Some noteworthy IT projects are discussed below.

- Contact Center as a Service: In 2022, PSEG Long Island began the Contact Center as a Service project to provide a fully integrated cloud-based contact center solution, allowing for numerous customer-facing improvements, including a seamless omni-channel customer experience, improved response time on resolutions, enhanced reporting, and many other enhancements. The project went live in November 2023.
- System Separation: In the amended OSA between LIPA and PSEG Long Island, effective April 1, 2022, the parties agreed that it would be beneficial for all IT Systems serving LIPA to be separate and distinct from the systems, data, reports, and information of PSEG Long Island and its affiliates. In 2022, as required by the OSA, a joint LIPA and PSEG Long Island IT Team developed an IT System Separation Plan ("the Plan") to separate all PSEG Long Island IT Systems serving LIPA from PSEG New Jersey systems. The Plan, which has been adopted by the Board, organizes the systems to be separated into four logical groupings ("bundles") for phased implementation. Work began with the issuance of an RFP for the first bundle in the last quarter of 2022 and the discovery and documentation of the remaining bundles/applications in 2023. The project has experienced significant schedule delays, and the 2024 IT-07 System Separation metric will not be met. All systems are targeted to be separated by the end of 2025, in accordance with the OSA, and LIPA will continue to engage in oversight actively.
- Standardized Data Access Platform (SDAP): The SDAP project was initiated to implement the Board recommendation to improve LIPA and Department of Public Service ("DPS") access to PSEG Long Island financial and operational data through a Standardized Data Access Platform comprised of an enterprise-wide data warehouse, a broader data lake, and tools to support reporting and analytics. A reduced-scope Phase I deployment was delivered in 2022. As part of Phase II SDAP, LIPA and PSEG Long Island developed a two-year roadmap identifying some of the systems, such as CCaaS, AMI, CAS, GRIDX, Procurement Ariba, SAP HR, etc., for which the data will be ingested into the data lake as per LIPA's business requirements. The data for the remaining systems will be identified and delivered in future phases.
- CRM Replacement: PSEG Long Island has been maintaining the Salesforce CRM platform at a significant cost; however, the capabilities that were being leveraged were redundant with those provided by other tools. At LIPA's request, PSEG Long Island initiated a project to identify and implement alternate methods of managing these functions. In 2023 and 2024, Customer Operations functions were implemented allowing for significant cost savings in Customer Operations license and maintenance fees and improving the overall Call Center agent and customer

experience.

- Governance, Risk, and Compliance (GRC) Tool Deployment: This project will select and implement a GRC tool to manage and automate GRC-related data and processes for the critical areas of Cyber Security, Business Continuity, and Disaster Recovery. The tool will provide efficiencies through automation, support regulatory compliance, and enable the organization to mature risk management capabilities through data and process enhancements. The project was initiated in response to the 2023 NIST Cybersecurity Framework (CSF) assessment recommendation. Phase 0 will be completed in 2024, and it will provide vendor selection and a project plan for implementation in 2025.
 - LIPA has also established annually recurring IT System Resiliency metrics (IT-03 and IT-10), which aim to minimize the probability and impact of system failures through well-designed, robust, and thoroughly exercised Disaster Recovery Plans (DRPs) and Business Continuity Plans (BCPs) for critical systems and processes. The metric was not met in 2022 and 2023. Given the importance of making progress towards the objective of developing a resiliency program that ensures that PSEG Long Island can continue to perform its essential functions and deliver core capabilities during and following disruptions to normal operations, LIPA engaged a third-party consultant in 2024 to conduct a holistic assessment of the resiliency program and develop recommendations on the path forward, including action plans with prioritized and achievable improvements. The assessment report was provided to PSEG Long Island in September 2024. PSEG Long Island will complete the actions identified in the report for 2024 and will submit a PIP in the 1 Qtr. of 2025 to outline the plan to complete the report's recommendations. The metric will be carried forward in 2025 to review the progress on the gap closure and ensure that the critical systems are exercised according to a structured plan.
2. “Deploy modern grid management technology and data analytics that enhance grid operations, customer service, utility asset management, and demand management, as measured by a Smart Grid Maturity Model level consistent with industry best practices (i.e., top 25% of utilities).”
- The Smart Grid Maturity Model (SGMM) is a business tool stewarded by the Software Engineering Institute at Carnegie Mellon University. The model provides a framework for understanding the current extent of smart grid deployment and capability within an electric utility, a context for establishing strategic objectives and implementation plans supporting grid modernization, and a means to evaluate progress over time toward those objectives. In 2022, LIPA engaged a consultant to conduct an SGMM Assessment. The preliminary assessment recommended numerous areas for technology investment, such as Advanced Metering Infrastructure (AMI), Distributed Energy Resources Management Systems (DERMS), and Advanced Distribution Management System (ADMS). Several initiatives have since been undertaken, including AMI, DERMS, and ADMS Roadmap. For instance:
 - DERMS: DERMS is a software platform used to manage a group of distributed energy resource (DER) assets—such as rooftop photovoltaic solar panels, behind-the-meter batteries, or a fleet of electric vehicles—to deliver grid services and

balance demand with supply to help utilities achieve mission-critical outcomes. In 2023, PSEG Long Island went live with a DERMS Phase 1 deployment, providing Distribution Operators visibility to DER and allowing for greater integration of DER into the electric grid operations.

- In 2024, the operational technology focus has been on a number of critical Life Cycle Planning (LCP) projects to upgrade or replace technologies nearing end-of-life. These projects will increase capacity and enhance capabilities, supporting and enabling the planned future expansions of smart grid technologies. These projects are discussed further in Item #4.
3. “Ensure the capacity of the information technology organization to deliver reliable, robust, and resilient systems, as measured by a Capability Maturity Model Integration level of 3 or higher.”
- LIPA has established an Organizational Maturity metric to improve IT capability and performance and achieve Capability Maturity Model Integration (CMMI) Maturity Level 3. The 2024 metric requires a third-party consultant's benchmark appraisal of PSEG Long Island's CMMI maturity level. Due to resource conflicts with system separation, the appraisal targeted for Q4 2024 is now planned for Q1 2025.
 - LIPA established the Project Performance metrics (IT-05 and IT-06) to improve project performance across the portfolio. While overall performance continues to fall short of the expected standards, the performance metrics have enhanced LIPA's ability to identify and work with PSEG Long Island management to address weaknesses and gaps in PSEG Long Island's project performance.
4. “Regularly upgrade information and operational technology systems to maintain all systems within their active service life and under general support from the product vendor.”
- Metric IT-04, System and Software Lifecycle Management was established to ensure all IT and OT assets managed by PSEG Long Island on behalf of LIPA, including but not limited to computers, communications equipment, networking equipment, hardware, software, and storage systems, are within their active service life and under general support from the product vendor Pursuant to the metric, PSEG Long Island developed an Asset Inventory and a Two-Year Refresh Plan in 2022, which are now refreshed annually. The updated 2024-2025 Refresh Plan specifies a number of refresh projects to be conducted in 2024 to advance the objective of replacing or upgrading all end-of-life assets and was approved by LIPA. Execution of the plan is in progress.
 - In 2024, the Life Cycle Replacement projects include some critical upgrades of operational technology systems, including:
 - EMS Upgrade: This project was initiated in 2024 to upgrade the SCADA/EMS system, add a test/development environment at the Alternate Control Center (ACC), and develop a solution for compliance with the Ambient Adjusted Rating regulatory requirement (FERC 841 Order). The project is on track to deploy the upgraded EMS (Energy Management System) at the new Transmission Control Center (TCC) and the ACC in June 2025.
 - Multiplexer Replacement: This multi-year project is for the evaluation, design, and

implementation of a new technology platform to replace the nearing end-of-life Multiplexer, which provides the network communication platform for critical T&D and NERC applications. A Systems Integrator (SI) was selected in 2023 and has been conducting an RFP process for the evaluation and selection of a new equipment vendor, as well as design activities to assess the structural work required to accommodate the new equipment. The equipment vendor is expected to be selected in Q4 2024, with the implementation to continue through 2027.

- CG Concentrator Project: The data Concentrators are critical networking devices that manage the communications and controls of over 3,000 SCADA devices across the PSEG Long Island service territory. The existing Concentrators had limited expansion capability and had come to the end of life for continued product support. In 2023, the project's first phase was completed with the selection of new Concentrators that provide the capacity needed to sustain the SCADA device growth as more Smart connected devices are connected to the grid, with enhanced cybersecurity features. Installation and commissioning of the new Concentrators at all sites were planned to be completed in 2024 but will extend into 2025 as the vendor resolves issues at the Hewlett site.
- DER to DSCADA Communications Upgrade: This project upgrades the SCADA communications network from Distributed Energy Resources (DER) to the DSCADA/EMS systems and increases capacity, which is necessary to allow for new DER to be connected to the EMS and DSCADA systems at the currently projected growth rates. Deployment is planned to be completed in 2024.

5. “Conduct quarterly internal vulnerability assessments and annual third-party vulnerability assessments and penetration testing of all information and operational technology systems and promptly mitigate vulnerabilities”

- **PSEG Long Island Cybersecurity**: Starting in late 2023, PSEG Long Island engaged an external vendor to conduct representative assessments of internal, external, D-SCADA, and mobile/web application attack surfaces. The results of these assessments were finalized in the summer of 2024. PSEG Long Island has reported that it has remediated all External surface vulnerabilities and the highest-severity Internal vulnerabilities. Remediation is ongoing for the remaining vulnerabilities. PSEG Long Island has planned to conduct a vulnerability assessment and penetration testing in 2025.
- As per the DPS Management Audit recommendation, LIPA will also conduct an independent penetration testing and vulnerability assessment of the PSEG Long Island system in 2025.
- The Northeast Power Coordinating Council (NPCC) audited PSEG Long Island’s North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) standards from April through August of 2024. PSEG Long Island’s Cyber Security Risk and Compliance (CSRC) received a subset of five recommendations for the NERC CIP-008 standard covering Cyber Security Incident and Response Planning. PSEG Long Island is on track to complete the recommendations by 4 Qtr. 2024. PSEG Long Island has reported that they have a weekly vulnerability scanning program for all IT assets.

- Ransomware can severely impact business processes and leave organizations without the data to operate or deliver mission-critical services. The organizations affected often experience reputational damage, significant remediation costs, and interruptions in their ability to provide core services. In 2024, LIPA established the Ransomware Readiness and Response metric (IT-09). The metric ensures that any suspected or confirmed ransomware incidents are responded to consistently, controlled, and effectively. An independent third-party consultant reviewed and assessed the adequacy of PSEG Long Island in responding to a ransomware incident. The assessment report was provided to PSEG Long Island in June 2024. The assessment report provided observations, identified gaps, and made recommendations. The recommendations are organized into an actionable roadmap based on best practices for developing, implementing, and improving PSEGLI's ransomware readiness and response plans. PSEG Long Island is currently working to develop and submit a PIP for LIPA approval to fully implement the ransomware readiness and response roadmap, which aligns with the recommended timelines in the assessment report. In 2025, LIPA will engage the services of an independent consultant to review the gap closure artifacts/deliverables and gap closure activities and observe the ransomware response and recovery plan exercise as required by the 2025 (IT-09) performance metric.
 - **LIPA Cybersecurity:** In 2023, LIPA completed all information technology systems' third-party vulnerability assessments and penetration testing. In the first quarter of 2024, LIPA remediated all the vulnerabilities identified and plans to do the same in the second quarter of 2025.
 - LIPA's vulnerability management team meets bi-weekly and reviews vulnerabilities identified in systems managed by LIPA using a real-time vulnerability management/reporting tool. The team creates the remediation plan for newly identified vulnerabilities based on their criticality and reviews the remediation status of previously identified vulnerabilities. LIPA has also implemented tools to provide 24X7 monitoring and notification of any new vulnerabilities identified. The vulnerability reporting tool sends daily alerts to the Cybersecurity team.
6. "Maintain a level of 3 or higher on the NIST Cybersecurity Framework, as evaluated annually through an independent assessment."
- LIPA and PSEG Long Island have adopted the NIST Cybersecurity Framework (CSF) to improve cybersecurity programs. The Framework uses business drivers to guide cybersecurity activities. It considers cybersecurity risks as part of the risk management processes, including guidance on People, Processes, and Technology to implement defense in depth for the enterprise.
 - LIPA established a cybersecurity default metric for PSEG Long Island under the reformed PSEG Long Island contract, effective April 1, 2022, to achieve and maintain NIST CSF Tier 3. The reformed contract gives LIPA the right to terminate the contract should PSEG Long Island fail to maintain compliance, providing a strong improvement incentive. LIPA has hired a third-party evaluator to independently review PSEG Long Island's cyber readiness relative to the metric. The assessment work was completed in the First quarter of 2023, and the Final Assessment and Recommendations report was provided to PSEG Long Island in May 2023. A review by an independent consultant has started in 3 Qtr. 2024 to

determine the progress PSEG Long Island has made to remediate the findings of the 2023 report. The final assessment report will be available in Jan. 2025.

- LIPA also established The Cyber Security Organization metric, which aims to advance the objective of building a cyber security organization under the PSEG Long Island CISO that is independent of PSEG New Jersey and fully capable of developing, managing, and supporting the cyber security program independent of Affiliate Services (as defined in the OSA). The Cyber Security Organization study report was provided to PSEG Long Island in October 2023. The study recommendations aligned with the planned Systems Separation and the NSIT CSF remediation project resource requirements and addressed the evolving organizational needs. LIPA funded the positions identified in the new organizational design in the 2024 budget request. PSEG Long Island is expected to completely implement the organizational design and build the organization in 2024. The metric is currently on track, with 11 FTEs planned to be hired in 2024, with 4 FTEs remaining to be hired before the end of the year.
 - An independent assessment of LIPA’s cyber security posture using the NIST CSF Framework was completed in Q4 of 2023. In 1 Qtr. 2024, a work plan was developed to manage and track the implementation of the report's recommendations. LIPA is currently implementing the report's recommendations and documenting its processes. LIPA has completed approximately 55% of the work identified in the work plan and will continue implementing tools and capabilities as part of the program's maturing.
7. “Communicate how customer information is collected, used, and disclosed and ensure that, if confidential customer information is shared with a third party for a business purpose, the third party has robust information security practices.”
- PSEG Long Island collects customers’ information to provide electric service. The policy posted on the LIPA website describes what personal information is collected, when it is collected, how it is used, how it is protected, and under what circumstances that information may be shared with a third party. The policy has also been posted on the PSEG Long Island website.

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 several risks related to the policy for both LIPA and PSEG Long Island. For LIPA, these risks include a cyber event resulting from unauthorized access to LIPA-managed systems that results in material financial losses, impact on LIPA’s day-to-day operations, or the organization’s reputation. Additionally, there is a risk related to PSEG Long Island’s system separation from PSEG Newark. This risk is “system separation and/or transition is not fully completed by the PSEG LI 2025 contract expiration and results in increased costs, system disruption, and/or negative reputation”. For PSEG Long Island, these include a “cyberattack on the EMS/BCS systems that disables or allows someone to access control of the system operationally, resulting in the inability to operate the system effectively.” Also, the breach of personally identifiable information (PII) could result in fraud, financial impact, and negative public perception.

The system separation project is behind schedule, and the related metric IT-07 will not be achieved in 2024. This project and its associated risks are being closely monitored and are expected to be completed by the contract expiration date of December 31, 2025.

Cybersecurity and PII for both LIPA and PSEG Long Island are rated as high-level risks. LIPA's Department of Innovation and Information Technology mitigates these risks with a comprehensive risk management strategy and concurrent oversight of PSEG Long Island's IT department. The strategy includes several of the mitigation actions noted in this Report, including the completion of the annual penetration testing with remediation plans developed for vulnerabilities identified, the adoption of the NIST cybersecurity framework with a goal of maintaining a level 3 or higher assessment, and the adoption of a Cyber Security Default Metric.

In light of the extensive efforts detailed in this Policy of both LIPA's Department of Innovation and Information Technology and PSEG Long Island's IT department, we believe the cyber and PII risks are being adequately managed.

Annual Review of the Policy

LIPA Staff has reviewed the Policy and recommends no change at this time.

Recommendation

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

Attachments

Exhibit "A" Resolution

Exhibit “A”

RESOLUTION RECOMMENDING APPROVAL OF THE ANNUAL REPORT TO THE BOARD OF TRUSTEES ON THE BOARD POLICY ON INFORMATION TECHNOLOGY AND CYBER SECURITY

WHEREAS, the Board Policy on Information Technology and Cyber Security (the “Policy”) was approved by the Board of Trustees in November 2021; and

WHEREAS, the Oversight and Clean Energy Committee (the “Committee”) of the Board of Trustees has conducted the annual review of the Policy and has recommended that the Policy has been substantially complied with.

NOW, THEREFORE, BE IT RESOLVED, that consistent with the accompanying memorandum, the Committee hereby recommends that the Board of Trustees find that LIPA has substantially complied with the Policy and approve the annual report to the Board.

Dated: December 18, 2024