<u>**FOR CONSIDERATION**</u>
December 14, 2022

TO: The Oversight and Clean Energy Committee

FROM: Thomas Falcone

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

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<u>**Requested Action**</u>

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 <u>**Exhibit "A."**</u>

<u>**Discussion**</u>

In December 2019, the Board adopted the Policy on Information and Physical Security. The
Policy delineated the Board's expectations and direction for information and physical security in
accordance with public safety, operational, reputational, and compliance requirements and
establishes 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."

<u>**Compliance with the Policy**</u>

This report covers IT and Cyber Security activities from the Board's December 2021 review to the
present. LIPA Staff recommends that, for the reasons set forth below, the Board find that LIPA
has substantially complied with the Policy.

The 2022 OSA Performance Metrics incorporated seven IT metrics in support of the Policy. The
metrics have proven to be a valuable tool to drive improvements to PSEG Long Island IT's
performance and to better align PSEG Long Island's IT activities to LIPA's priorities pursuant to
the Policy. While there have been a number of successes, performance in some areas continues to
fall short of the expected standards. The performance metrics have enhanced LIPA's ability to
identify and to work with PSEG Long Island management to address the remaining weaknesses

and gaps in PSEG Long Island's performance and alignment with LIPA's priorities. 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."
   - The 2022 Performance Metrics incorporate several metrics that support this objective, including two metrics that encompass 30 specific IT projects. Some of the key IT projects are discussed below.
     - o Enterprise Asset Management System (EAMS): In 2022, PSEG Long Island started the planning process to implement a full-fledged EAMS that can plan, schedule, and track all asset, work, maintenance (preventative, predictive, and corrective) and inventory activities, including by work order originator, specific support, failure, cause, parts, materials, supplies, crew time, fleet and equipment used, contractor, and other costs on all LIPA assets (inside and outside plant). The project encountered challenges initially, but LIPA was able to work with PSEG Long Island to bring it on track. An EAMS platform has now been selected, and the RFP to select a system integrator (SI) has been published. We expect the selection of the SI to be completed in early 2023 and the system implementation to start in the second quarter of 2023. The EAMs will facilitate improvements to both reliability and cost on behalf of customers.
     - o Enterprise Time and Attendance System: PSEG Long Island initiated the planning and procurement efforts for a new comprehensive Enterprise Time and Attendance System to address several gaps and inefficiencies that were identified in the current business processes in an assessment conducted by LIPA, including overtime management and time reporting by field personnel. The initiative aims to address existing process deficiencies while improving and enhancing time and work management capabilities. The final selection of a new software platform and systems solution integrator is planned for 2023. The new system will provide improved work scheduling and reduced cost for customers.
     - o 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, which addresses Isaias Task Force recommendations 4.04 and 4.05 to integrate the high-volume voice communications design into a more powerful all-encompassing call center design and to develop a more scalable Inbound Contact Center, was significantly delayed; but is now on track for a phased deployment of the new solution in 2023.
     - o Standardized Data Access Platform: The Standardized Data Access Platform 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. LIPA significantly reduced the scope of the project in July 2022 out of concern for the project's ability to deliver the original scope. The new scaled-down scope, focused on bringing data into the platform, is targeted for Phase 1 deployment by the end of 2022 in accordance with the Board recommendation, but LIPA remains concerned about project performance.

- o <u>GIS – Long-Term Plan, Architecture, and Technology Stack Upgrade</u>: A Geographic Information System (GIS) Upgrade Project is in-flight to upgrade the GIS software and hardware platform to a new version by the end of 2022. The software vendor no longer supports the current version. The new version provides an upgraded map viewer and graphic work design capabilities. The metric project incorporates the development of a comprehensive GIS Long-Term Plan that provides a clear roadmap for leveraging GIS across the enterprise in a manner that optimizes business value, in accordance with a recommendation adopted by the Board.

- o <u>Enterprise Mobility Strategy</u> including Field Work Management: Project to define the target mobility and fieldwork management vision, business capabilities, long-term prioritized enterprise mobile plan, and long-term fieldwork management/mobile app strategy. The project is in flight and targeted for completion by the end of 2022. The project will, among other things, enhance timely communication and reduce reliance on manual processes.

- LIPA also established an IT System Resiliency metric, which aims to minimize the probability and impact of system failures through well-designed, robust, and thoroughly exercised Disaster Recovery Plans and Business Continuity Plans (BCPs) for critical systems and processes. Performance on this metric is falling well short of the minimum acceptable standards, and LIPA will continue to work with PSEG Long Island to improve results in 2023.

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. It was originally developed by electric power utilities for use by electric power utilities. 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 in support of grid modernization, and a means to evaluate progress over time toward those objectives.

- In 2022, LIPA engaged a consultant to conduct an SGMM Assessment. A PSEG Long Island Current State view was prepared in the assessment, modeled after a framework from the U.S. Department of Energy (DOE) Next Generation Distribution System Platform (DSPx) reference from the Modern Distribution Grid Project.

- The preliminary assessment, which is still subject to further refinement, recommended numerous areas for technology investment, such as Advanced Metering Infrastructure (AMI), Distributed Energy Resources Management Systems (DERMS), and Advanced Distribution Management System (ADMS). Some of these initiatives are incorporated into PSEG Long Island 2022/2023 performance metrics:

  - **AMI:** AMI enhancement work completed during 2022 included improved AMI integration with the Outage Management System (OMS). In 2022, LIPA completed the comprehensive review of the AMI deployment and identified opportunities to enhance the application of the AMI platform to deliver value to our customers. LIPA incorporated a business-driven 3-Year Roadmap into the PSEG Long Island 2023 performance metrics. The plan will include LIPA recommendations and identify additional initiatives to enhance operational efficiencies, emergency communication, and customer experience. In addition, the plan will include business objectives aligned to achieve the business vision with an implementation based on value and dependency prioritization and cost estimates. The 2023 metrics will also include piloting commercial disconnects, resolving collector loading and system validation and estimation to improve AMI data availability and consistency.

  - **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. The in-flight DER Visibility pilot project (U2.0) is expected to complete in 2023. The DERMS will allow for greater integration of DER into the operations of the electric grid.

  - **ADMS:** An ADMS is a modular software platform that enables the full suite of distribution grid management and optimization tools, including functions that automate outage restoration and optimize the performance of the distribution grid. ADMS functions being developed for electric utilities include fault location, isolation, and restoration; volt/var optimization; conservation through voltage reduction; peak demand management; and support for microgrids and electric vehicles. ADMS provides benefits for the customer and the utility through a strong couple to a robust OMS, and drives more efficiency with the dispatching of crews and improved ETR calculations, restoration, and customer communications. The modular approach allows LIPA to implement the functionality in a prioritized manner with considerations to costs and benefits. To this end, the development of an ADMS Long-Term Roadmap to drive implementation decisions and investments was incorporated into the 2022 performance metrics and is expected to be completed by the end of this year, with a Phase 1 project for the deployment of advanced ADMS modules scheduled to initiate in 2023.

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."

- In October 2022, in accordance with Performance Metric IT-1 and IT-2. PSEG Long Island reported that it had completed the steps needed to operate on a go-forward basis for all IT projects at a CMMI Level 3 maturity for the "Doing" and "Managing" categories.
- In November 2022, LIPA engaged a third-party vendor, an ISACA|CMMI Elite Partner, to conduct a CMMI Benchmark Appraisal of the PSEG Long Island IT department. The review engagement is expected to complete in January 2023.
- PSEG Long Island is working on filling positions per a LIPA-funded IT re-organization to improve organizational capacity.

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-4, 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.
   - A Plan to replace or upgrade end-of-life assets within two (2) years was submitted to and approved by LIPA.

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:** PSEG Long Island has reported that they have completed the Annual Penetration testing in the third quarter of 2022. PSEG Long Island is currently working on developing plans to remediate the vulnerabilities identified in the testing. PSEG Long Island has reported that they have a weekly program of vulnerability scanning of all IT assets.
   - **LIPA Cybersecurity:** LIPA's vulnerability management team meets 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 drive improvements to cybersecurity programs. The Framework focuses on using business drivers to guide cybersecurity activities and 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 has also 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 provides LIPA with the right to terminate the contract should PSEG Long Island fail to maintain compliance, which provides a strong incentive for improvement. LIPA has hired a third-party evaluator for an independent review of PSEG Long Island's cyber readiness relative to the metric. We expect this work to be completed in the first quarter of 2023. LIPA will conduct an annual independent review of PSEG Long Island's NIST Cyber Security Framework compliance status.

- LIPA issued an RFQ in the third quarter to engage a third-party evaluator for an independent assessment of LIPA's cyber security posture using the NIST CSF Framework, as well as vulnerability assessment and penetration testing of LIPA's managed systems. LIPA is currently in the process of evaluating vendor responses, and we expect the work to commence in the first quarter of 2023.

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 this information is protected, and under what circumstances that information may be shared with a third party. LIPA is working with PSEG Long Island to have this policy published on the PSEG Long Island website and to confirm its implementation.

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 both for 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 to LIPA's day-to-day operations, or the organization's 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.

Cybersecurity and PII for both LIPA and PSEG Long Island were rated medium-level risks. LIPA's Department of Innovation and Information Technology mitigates these risks with concurrent oversight of PSEG Long Island's IT department. Several of the mitigation actions noted in the Report are the completion of the annual penetration testing with remediation plans being 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 these risks are being adequately managed.

<u>Annual Review of the Policy</u>

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

<u>Recommendation</u>

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

<u>Attachments</u>

<u>Exhibit "A"</u> Resolution

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 recommends 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 hereby find that LIPA has substantially complied with the Policy and approve the annual report to the Board.

Dated: December 14, 2022