LIPA COMMUNITY ADVISORY BOARD
MEETING AGENDA
Monday, September 19, 2022
8:00 A.M.

I. Welcome & Introductions (5 minutes)
II. Clean Energy Transition (20 minutes)
III. South Fork Wind Update – Jen Garvey (20 minutes)
IV. Update on Reliability and Resiliency Initiatives (20 minutes)
V. Upcoming Tariff Proposals (20 minutes)
VI. Community Update (5 minutes)
VII. Legislative Commission Update (5 minutes)
VIII. Round Table Discussion (25 minutes)

Next Meeting Dates:
Friday, December 16, 2022
Community Advisory Board Meeting
LIPA Board Room – Uniondale, NY
COMMUNITY ADVISORY BOARD MEETING

September 19, 2022
AGENDA

01. Clean Energy Transition
02. South Fork Wind Update
03. Update on Reliability and Resiliency Initiatives
04. Upcoming Tariff Proposals
05. Community Update
06. Legislative Commission Update
07. Roundtable Discussion
WELCOME & INTRODUCTIONS
CLEAN ENERGY TRANSITION UPDATE
## Meeting New York’s Clean Energy Goals

### Renewables
- **70% by 2030**
- **Electric Sector GHG Reduction 100% by 2040**

### Offshore Wind
- **9,000 MW by 2035**

### Solar Energy
- **6,000 MW by 2025**
- **10,000 MW by 2030**

### Energy Efficiency
- **185 trillion BTU reduction by 2025**

### Battery Storage
- **3,000 MW by 2030**

### Electric Vehicles
- **100% zero-emission vehicles by 2035**
In June 2021, LIPA launched an **Integrated Resource Plan (IRP)** to study the transition to a zero-carbon grid by 2040.

The IRP will result in an action plan for the period of 2023 to 2030 that will recommend key actions and investments needed to **achieve state goals** while continuing to meet the electricity needs of LIPA’s customers **reliably and cost-effectively**.

IRP preliminary results will be available in **Q1 2023**.

An initial public hearing was held in September 2021. Additional opportunities for public input will be provided as study results are available.
CLEAN ENERGY TRANSITION ON LONG ISLAND IS UNDERWAY

Long Island Clean Energy Projects in Service and Under Procurement

<table>
<thead>
<tr>
<th>Solar (830 MW)</th>
<th>Size (MW AC)</th>
<th>In-service (Est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Island Solar Farm</td>
<td>32</td>
<td>2011</td>
</tr>
<tr>
<td>Eastern Long Island Solar Project</td>
<td>11</td>
<td>2013</td>
</tr>
<tr>
<td>Shoreham Solar Commons</td>
<td>25</td>
<td>2018</td>
</tr>
<tr>
<td>Riverhead Solar</td>
<td>20</td>
<td>2019</td>
</tr>
<tr>
<td>Kings Park Solar I and 2</td>
<td>4</td>
<td>2019</td>
</tr>
<tr>
<td>Solar Feed-in Tariffs I-III</td>
<td>89</td>
<td>2021-2022</td>
</tr>
<tr>
<td>LI Solar Calverton</td>
<td>23</td>
<td>2021</td>
</tr>
<tr>
<td>Riverhead Solar II</td>
<td>36</td>
<td>2022</td>
</tr>
<tr>
<td>Behind-the-meter</td>
<td>577</td>
<td>2000-2022</td>
</tr>
<tr>
<td>Solar Communities (FIT V)</td>
<td>15</td>
<td>2022</td>
</tr>
</tbody>
</table>

- **Offshore Wind (2,270 MW)**

<table>
<thead>
<tr>
<th>Offshore Wind</th>
<th>Size (MW AC)</th>
<th>In-service (Est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Fork Wind Farm</td>
<td>130</td>
<td>2023</td>
</tr>
<tr>
<td>Sunrise Wind</td>
<td>880</td>
<td>2024</td>
</tr>
<tr>
<td>Empire Wind 2</td>
<td>1,260</td>
<td>2026</td>
</tr>
</tbody>
</table>

- **Energy Storage (360 MW)**

<table>
<thead>
<tr>
<th>Energy Storage</th>
<th>Size (MW AC)</th>
<th>In-service (Est.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Hampton &amp; Montauk Storage</td>
<td>10</td>
<td>2018 &amp; 2019</td>
</tr>
<tr>
<td>TBD</td>
<td>175</td>
<td>2025</td>
</tr>
<tr>
<td>TBD</td>
<td>175</td>
<td>2030</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,460</strong></td>
<td></td>
</tr>
</tbody>
</table>
LIPA’s carbon footprint is declining rapidly.

LIPA’s carbon emissions expected to decrease approximately **60% by 2030** from 2010 levels from already planned actions.
South Fork Wind Farm

In 2017, the LIPA Board approved the first power purchase agreement in the country for offshore wind in federal waters

Fast Facts

• Operational in 2023
• Meets growing energy needs of South Fork
• Extensive environmental review and public comment process
• Enough to power 70,000 homes
• Equivalent of taking 60,000 cars off the road annually
• More to come! Three offshore wind projects will interconnect with Long Island by 2027
## NEW YORK OFFSHORE WIND PROJECTS

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Owner</th>
<th>Size (MW)</th>
<th>Contract Off-Taker</th>
<th>Interconnect Utility</th>
<th>In-Service Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Fork Wind</td>
<td>Joint Venture: Ørsted and Eversource</td>
<td>130 MW</td>
<td>LIPA</td>
<td>LIPA</td>
<td>2023</td>
</tr>
<tr>
<td>Empire Wind 1</td>
<td>Equinor Wind US LLC</td>
<td>816 MW</td>
<td>NYSERDA</td>
<td>ConEd</td>
<td>2024-25</td>
</tr>
<tr>
<td>Sunrise Wind</td>
<td>Joint Venture: Ørsted and Eversource</td>
<td>880 MW</td>
<td>NYSERDA</td>
<td>LIPA</td>
<td>2024-25</td>
</tr>
<tr>
<td>Empire Wind 2</td>
<td>Equinor Wind US LLC</td>
<td>1,260 MW</td>
<td>NYSERDA</td>
<td>LIPA</td>
<td>2026-27</td>
</tr>
<tr>
<td>Beacon Wind</td>
<td>Equinor Wind US LLC</td>
<td>1,230 MW</td>
<td>NYSERDA</td>
<td>ConEd</td>
<td>2028</td>
</tr>
</tbody>
</table>

**Map**

- Proposed Port Facility
- Proposed Point of Interconnection
- PSEG-LIPA Award
- 2018 Solicitation Awards
- 2020 Solicitation Awards

**Community Advisory Board** – September 2022
LIPA and Con Edison conducted a regional study in 2020 to connect 9,000 megawatts (MW) of offshore wind to Long Island and New York City electric grid.

In 2021, the New York State Public Service Commission (PSC) confirmed in New York State’s Power Grid Study the need for Long Island’s transmission system upgrades to move offshore wind-generated electricity onshore and to the rest of the state.
Buildings and transportation produce the majority of New York's carbon emissions.

Steps need to be taken to reduce Long Island's carbon footprint, including the electrification of transportation and heat and hot water in buildings and homes.
New York’s electric demand will grow **65 to 80% by 2050**, primarily to electrify transportation and building sectors that are the majority of the state’s carbon emissions.

80% load growth is less than **2% per year spread over 30 years**, which is modest relative to historic growth.

**U.S. Electricity Growth Since 1950 (Percentage Growth, Three Year Rolling Average)**

• Cold climate heat pumps can help customers save on both carbon and money

• LIPA is leveraging our customer insights, relationships, and contractor network to accelerate heat pump adoption

Long Island Homes Heat with Oil at Eight Times the National Average

Long Island Households Could Save Money and Reduce Their Carbon Footprint with Heat Pumps

<table>
<thead>
<tr>
<th></th>
<th>Buying NEW Central Air Conditioning</th>
<th>Buying NEW Air-Source Heat Pump</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upfront Cost</strong></td>
<td>$6,700</td>
<td>$9,700</td>
</tr>
<tr>
<td><strong>LIPA Rebate</strong></td>
<td></td>
<td>$2,400</td>
</tr>
<tr>
<td><strong>Net Cost</strong></td>
<td>$6,700</td>
<td>$7,300</td>
</tr>
<tr>
<td><strong>Annual Home Heat Bill</strong></td>
<td>$1,800</td>
<td>$800</td>
</tr>
<tr>
<td><strong>Annual Savings</strong></td>
<td></td>
<td>$1,000</td>
</tr>
<tr>
<td><strong>Payback Period</strong></td>
<td></td>
<td>Less than one year</td>
</tr>
<tr>
<td><strong>Carbon Footprint from heating (2022)</strong></td>
<td></td>
<td>-42%</td>
</tr>
<tr>
<td><strong>Carbon Footprint from heating (2040)</strong></td>
<td></td>
<td>-100%</td>
</tr>
</tbody>
</table>

Example is for typical Long Island home with oil heat and a need to replace their central air-conditioning with a new unit. Figures do not reflect impact of new incentives from the Inflation Reduction Act or the recent increase in oil prices since November 2021.
SOUTH FORK WIND UPDATE
UPDATE ON RELIABILITY
AND RESILIENCY INITIATIVES
The LIPA Board of Trustees has set objectives for reliability and resiliency to measure management's performance.

LIPA Board’s **reliability** objectives:
- Provide **top decile levels of reliability** as measured by system average outage duration
- **Improve circuit conditions** that cause customers to experience 4 or more sustained or 6 or more momentary outages in any 12-month period
- Utilize **modern system design and technology** to anticipate and minimize outages, and provide for **preventative and predictive maintenance**

LIPA Board’s **resiliency** objectives:
- Mitigate effects of climate change through multi-year programs to **reduce the number and duration of outages caused by storms**
- Assure **timely and accurate communication** to customers about outages and restoration times
- **Independently verify emergency restoration plans and testing of IT systems**

Community Advisory Board – September 2022
• LIPA has invested a record **$4.9 billion** in infrastructure since 2016 to improve the reliability and resiliency of Long Island’s electric grid

• **300% increase** since 2010

• In addition to customer funds, LIPA is eligible for FEMA and other grants due to its status as a public power utility
The Long Island Grid Resiliency Improvement Program seeks to **quantify and further reduce the number of customers and restoration times** after a severe weather event

**Reduce the number of outages by:**
- Continuing to harden worst performing distribution circuits
- Hardening one transmission supply feed to every substation in a load pocket
- Reducing number of customers behind each protective device to less than 500
- Additional hazard tree removal and deploying intelligence to the tree trim cycle

**Shorten length of storm restoration by:**
- Utilizing smart meter data for operational intelligence
- Selective undergrounding of hard to access rear-lot service
- Deploying electricians for low-voltage restoration

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**Illustrative Restoration Curve**

- **Stage A:** Ensure supply availability
- **Stage B:** Active Mainline + Branchline restoration
- **Stage C:** Tail end restoration and cleanup

1. **Reduce total outage count**
2. **Faster outage restoration**
3. **Minimize tail & restoration duration**
LIPA expects **$500 million to $560 million** in Capital Budget funds to be spent on transmission and distribution (T&D) projects in 2022, including **$70+ million** for storm hardening. Total capital budget of **$783 million**.

- Included within the 2022 performance metrics of the reformed LIPA contract with PSEG Long Island are requirements for future work on **resiliency programs**:
  - Overhead hardening of **44 mainline circuits**
  - ~150 **ASUVs** to be installed and commissioned
  - **Underground Pilot** for rear-lot service for a minimum of four locations in 2022 and develop program for 2023*
  - Develop plans to **harden supply** to each of the eight transmission load pockets*
  - Operationalizing **Automatic Circuit Recloser Vipers** (ACRV) for a minimum of ten circuits and develop program for 2023
  - Manage the amount of **double wood poles** by end of 2022

- **Storm hardening pilot programs** will be evaluated at the end of 2022 to determine future funding

- Increased **underground cable replacement** included in 2022 budget

- **Climate study** to be complete by year-end
• Included in 2022 performance metrics is an expansion of vegetation management programs by **$14.9 million** from $32 million in 2021 to **$47 million** in 2022.

• Includes an expanded Hazard Tree Removal Program targeting **12,000 trees** (up from 3,000 previously).

• Utilizing **intelligence and analytics** regarding species, growth rate, and location to limit vegetation-caused outages.

• Includes implementing a new “**Trim to Sky**” protocol on circuits to the first protective device on each circuit.
UPDATE ON RELIABILITY
AND RESILIENCY INITIATIVES: FEMA
LIPA is eligible for FEMA and other grants due to its status as a public power utility, mitigating a significant portion of the financial risk of storms and impacts on customer bills.

In addition to funds for storm restoration costs (above), LIPA is also eligible for grants for storm hardening to reduce damage in future storms.
Mitigation Opportunities – 406 Isaias Grant

- LIPA submitted a request for Mitigation funding under section **406 of the Stafford Act** on December 1, 2021. The Hazard Mitigation Plan seeks **$426 million** of funding to harden 200+ circuits. (Section 406 is a non-competitive grant program).

- The Hazard Mitigation Plan was submitted using the same “tools in the toolbox” as was approved by FEMA (and DHSES) after Superstorm Sandy.

- As part of the HMP, LIPA submitted a BCA prepared by the FEMA BCA specialist that supported the $426 million request.

- LIPA was asked to refine the scope of work as FEMA was seeking detailed engineering packages for each of the 164-circuit selected for mitigation **before awarding the grant**.
  
  - The process to prepare an RFP, hire the contractor, walk the circuits and prepare the engineering for each circuit will take 12-13 months and cost $9.8 million.
  
  - PSEG Long Island issued the RFP earlier this month and is expected to award the contract(s) by the end of October to perform the detailed engineering.
Mitigation Opportunities — 404 Isaias Grant

- LIPA submitted a *404 Hazard Mitigation Plan* with NY State DHSES on November 1, 2021, and modified the filing on February 28, 2022, to reflect feedback from DHSES staff, seeking approximately *$3 million* of funding.

- The HMP targets three transmission crossings originally included in the Sandy HMP that sought funding for nine crossings. The LOU provided funding for six crossing and therefore LIPA is requesting funds to harden the remaining three.

- The crossings include:
  - Seaford Oyster Bay Expressway at Clark Street
  - Wantagh Parkway at Park Avenue
  - Route 347 at Gibbs Pond Road
Public Assistance - Ida

- LIPA applied for and has submitted documentation for PA grants related to 2 projects totaling **$8,598,476**.
  - Match is 90%.

### Funding

<table>
<thead>
<tr>
<th>Cat B:</th>
<th>Env Cleanup</th>
<th>Obligated</th>
<th>$ 104,286</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat F:</td>
<td>Outside Crews</td>
<td>Pending FEMA 406 HMP*</td>
<td><strong>7,634,342</strong></td>
</tr>
<tr>
<td>Anticipated Recoveries @ 90%</td>
<td></td>
<td></td>
<td><strong>$7,738,628</strong></td>
</tr>
</tbody>
</table>

*Detailed engineering and associated reports have been requested. 12-13month process to conclude July 2023.*
Last session, the Legislature authorized the issuance of Utility Debt Securitization Authority (UDSA) bonds on LIPA's behalf to refinance debt for savings and fund resiliency investment.

UDSA bonds have “triple-A” ratings and lower interest and debt service coverage requirements than LIPA bonds.

Last week, UDSA issued $935 million of bonds:

- Funded $100 million of 2022 storm resiliency investment through the issuance of “green bonds” at a lower cost than LIPA debt
- Refinanced LIPA and UDSA debt for interest savings
- Present value savings for customers: $42 million
UPDATE ON RELIABILITY AND RESILIENCY INITIATIVES: OMS UPDATE
PSEG Long Island redeployed CGI Outage Management System (OMS) v6.7.8 into production on February 6, 2022 after numerous delays

- OMS v6.7 failed during Tropical Storm Isaias in August 2020
- LIPA customers have spent over $45 million on OMS and communication system remediation to date*
- Re-deployment of OMS was delayed at least four times to February 2022
  - Smart meter integration into OMS was further delayed from March 2022 to June 2022. Without smart meter integration several important storm management / restoration features were not available to customers. Performance (stress) testing on this integration was completed in September 2022
- PSEG Long Island reports that the system is functioning as expected

PSEG has provided a $17 million credit to management fees paid by LIPA through 2025 to partially offset OMS remediation costs
Phase I of LIPA’s IV&V of PSEG Long Island’s OMS deployment consists of initiation, shakedown, functional testing, and performance testing of the deployed systems

• Review of OMS design specifications, configurations, and interface implementations

• Running PSEG Long Island's functional and performance tests (under hurricane conditions) to independently repeat and verify test results

• Reviewing the design of PSEG Long Island's tests to ensure the tests are adequate to evaluate whether OMS v 6.7.8 complies with requirements

• Development of Phase 2 plans for further testing, as needed
PSEG Long Island did not follow mature IT practices in its functional testing used to certify the OMS v 6.7.8 ready for deployment

- Many test scripts were not documented accurately or completely. They relied upon the testers' implicit knowledge to execute the tests which risks reliability and repeatability of the tests.

- PSEG Long Island does not use version control systems for tracking test cases, test data, or configuration. This causes uncertainty as to what test scripts, test cases, and test data were used for validating the system.

- Some test cases did not match the OMS system behavior but were marked as passed by PSEG Long Island based on implicit "understanding" that the functionality works. These practices compromise the integrity of the test plan.

- Mistakes in mapping functionality to the test objectives also reduce the effectiveness and reliability of the testing done by PSEG Long Island.
LIPA recommendations from Phase I IV&V:

- PSEG Long Island should review all their existing functional test scripts and re-test each script until all the tests pass on a “repeatable” basis.

- Focus on improving test management practices, which will involve staff training and appropriate use of Software Development Life Cycle (SDLC) and test management tools.

- Ensure that system, integration, and user acceptance testing follows a defined cadence and is organized accordingly.

- Develop a Quality Assurance and Quality Review processes around testing and test management.

LIPA’s IV&V of the OMS will continue until all the identified issues are remedied and PSEG Long Island implements the necessary process and organizational changes.

LIPA will update the Board on the status of its IV&V at the September 28, 2022 Board meeting.
UPCOMING TARIFF CHANGES
Annual Budget and Rate Update
LIPA Staff proposes to modify the Tariff to implement rate adjustments as determined through LIPA’s annual budget process. Consistent with LIPA’s annual budget process, a proposed budget will be published in early November 2022, in advance of the budget workshop for LIPA’s Board, which will be held on November 16. The resulting rate adjustments will increase the annual aggregate delivery revenues of LIPA by an amount not to exceed two and one-half percent and will be effectuated through a pro rata increase to all Service Classifications.

Prolonged Outage Credits
LIPA Staff is proposing changes to LIPA’s Tariff to offer bill credits and food and medicine spoilage reimbursements consistent with Commission policy for residential and small business customers affected by a Widespread Prolonged Outage. These proposed changes will better align LIPA’s Tariff with other electric utilities in the State.
Large Renewable Host Community Benefit
Staff is proposing to implement a Host Community Benefit Program in the LIPA service territory. The Program will provide an annual bill credit to residential electric utility customers with premises located in a Renewable Host Community for each of the first ten years that an MRE Facility operates in that Renewable Host Community.

Long Island Choice Merchant Function Charge
Staff is proposing to create a Merchant Function Charge, applicable to all customers receiving electric commodity service from LIPA, and to establish the purchase of receivables rate for ESCOs that participate in Long Island Choice and utilize the Consolidated Bill Option with Purchase of Receivables.

Interconnection Cost Sharing
The proposal will seek to implement new rules for sharing the costs of distribution system upgrades among DER project developers and to make other changes to further conform the SGIP to recent Commission policy and the July 2021 Order. The proposed changes will also conform the SGIP to the New York State Standardized Interconnection Requirements and Application Process for New Distributed Generators and Energy Storage Systems 5 MW or Less Connected in Parallel with Utility Distribution Systems used by other utilities in the State.
UPCOMING PROPOSED TARIFF CHANGES

KEY DATES:

- Notice of Proposed Rulemaking Filed: September 14
- Public Hearing Nassau County: November 16
  333 Earle Ovington Blvd
  Uniondale, NY
- Public Hearing Suffolk County: November 17
  100 Veterans Mem. Highway
  Hauppauge, NY
- LIPA Board Meeting: December 14
Developing and implementing enhanced electric rate designs is a key part of achieving New York’s Climate Act goal of a carbon-free electric grid by 2040.

**LIPA will develop and adopt new Time of Day rates for all electric customers over the next three years.** Customers will still have an option for a fixed rate. LIPA will deploy programs, services and tools to help customers minimize summer peak usage and bills.

Shifting electric use during a few peak hours to other times of day reduces need to buy energy from sources that are **less environmentally friendly and more expensive** and the need to make **expensive investments in the electric grid** (substations, transformers) to meet peak capacity.

Customers can choose **electric vehicles, heat pumps, and battery storage** and save money by using cheaper off-peak power.

Tariff change to implement this proposal is expected to go to the board in Q1 2023, with implementation in 2024.
• 10-mile path from Port Jefferson to Wading River is now home to a trail for walking, running, and biking using LIPA’s right of way

• LIPA took part in the opening of the North Shore Rail Trail on a site formerly occupied by a 19th century railroad line

• LIPA gained ownership of land after the rail line was abandoned in the 1930s

• The project dates to the 1970s, but inactivity and funding complications delayed it becoming a reality for decades
UNITED WAY GRANT

- LIPA recently awarded United Way of Long Island with a grant worth $200,000 in support of the organization's Net Zero Energy Challenge campaign.

- United Way’s headquarters in Deer Park will include rooftop solar, air-source heat pumps, and electric vehicle charging.

- United Way expects $60,000+ in reduced energy bills to be reinvested back into their core mission for Long Island.

- United Way runs programs in their facility for disadvantaged young adults and veterans providing skills training in clean energy jobs of the future.

UNITED WAY’S NET ZERO ENERGY PROJECT TIMELINE

PLANNING
- Engineering & Design Plans
- Budget
- Capital Campaign
- Energy & Construction Planning
- Site Selection
- Construction

CONSTRUCTION
- Construction
- Operations
- Maintenance
The 2022 New York State budget enacted a Legislative Commission on the Future of LIPA to investigate and report to the legislature on the establishment of a public power model of management for LIPA’s assets.

Eight members of the Commission have been announced so far. There will also be an Advisory Committee to the Commission, but that has not yet been appointed.

The first hearing will likely be held later this year.
ROUND TABLE DISCUSSION