Agenda

- Storage roadmap and Long Island
- Potential opportunities
- Current initiatives
  - Utility scale
  - Behind-the-meter
Storage Roadmap Approach

• Stimulate value-added third-party investment
• Spur industry cost reduction
• Remove impediments to financing
• Improve data access and granularity
• Uncover and reward locational and time values
• Streamline permitting and siting, lower soft costs
• Authorize bridge incentives of $350 million
  ($53 million planned for Long Island)
Storage Roadmap Potential

Estimated cost-beneficial bulk system deployment in Long Island per Acelerex model (based on prior CES goal of 50% X 2030)

- 150 MW by 2025
- 500 MW by 2030

Estimated cost-beneficial customer-sited deployment in Long Island per ERS and E3

- 75 MW by 2025
Potential Opportunities in Long Island

- Peaker replacement and hybridization
- Complementing offshore wind and other renewables
- Deferring T&D reinforcements
- Behind-the-meter benefits
Peaker replacement and hybridization

99 x 2030 % of LIPA’s combustion fossil generation contracts up for renewal

Flexibility to reposition LIPA’s generation fleet

Factors

- injection of offshore wind and other renewables
- NOx emissions rules

Factors: Energy Storage Update for Oversight and REV Committee
Complementing Renewables

South Fork Wind Farm, operational in 2022, will power nearly 70,000 homes

New York’s three largest utility-scale solar farms and leading residential rooftop solar installations

New York’s largest utility-scale battery storage system is now operational

Long Island leads in clean fuel cell commitments

Long Island’s energy efficiency program reduces energy sales by 1.7% per year

Meeting Long Island’s CES Share
Complementing Renewables

9,000 MW of offshore wind to be interconnected in Long Island and NYC

Flexible resources can complement renewables
- Ramp-down when renewables generate
- Ramp-up when renewables don’t generate
- Provide voltage support
Deferring T&D Reinforcements

Key parameters
- Duration
- Cost
- Location on the T&D system

Successful Example
- South Fork NWA defers transmission
- Two 5 MW, 8-hour batteries
- New York’s largest utility-scale energy storage system
Utility 2.0 storage value stacking

- 2.5 MW, 12.5 MWh battery project approved
- Avoids new substation / distribution bank upgrades
- Frequency regulation planned as secondary use case
- Load growth may require additional battery by 2027

Behind-the-meter incentives

- Paid through existing dynamic load management programs
- Storage may participate as standalone or paired with solar
- $40/kW-year or $60/kW-year in a constrained area
- Net cost to customer less than conventional generator
Incentive design considerations

**Solar + storage vs. standalone**
- Eligibility for federal tax credit improves customer economics
- Allowing standalone opens program to more customers
- Leaving the choice to customers is a good option when values are difficult to quantify

**How to measure performance**
- Baseline vs. direct meter
Questions?