PSEG LONG ISLAND

LOCAL TRANSMISSION PLAN
ASSUMPTIONS

Presentation to NYISO / Interested Parties

September 25, 2026

Transmission Planning

Contents: Topics that will be Covered

- **Overview of LIPA Transmission and Distribution**
  - Background
  - Transmission System
- **Planning Criteria**
- **Planning Horizon**
- **Transmission Planning Studies**
  - Planning Process
  - Assumptions
  - Long Island Load Pockets
- **Data and Models Used**
  - Data Sources
  - Models – Major Tools Used

Background

- LIPA owns electric Transmission and Distribution (T&D) system on Long Island
- Acquired from LILCO in 1998
- Power Supply Agreement to meet capacity and energy needs for LIPA system with National Grid renewed in 2013, out to 2028
- Pursuant to the Second Amended and Restated Operations Services Agreement, PSEG Long Island (PSEG-LI) manages electric operations for LIPA's system. These management services commenced in January 2014 and, following a recent extension of the agreement, are scheduled to continue through December 31, 2030.
- LIPA, by and through its agent, PSEG Long Island LLC, provides electric service to approximately 1.2 million LIPA customers
- LIPA service area includes Nassau County, Suffolk County, and the portion of Queens County known as the Rockaways, in the State of New York

Transmission System

LIPA's transmission system is designed to provide adequate capability between generation sources and load centers.

- Over 1,400 miles of transmission (345 kV, 138 kV) and sub-transmission lines (69 kV, 34.5 kV, 23 kV), delivering power through 178 substations in its electric system.
- **Interconnections**[1]:
  - **Two 345 kV**
    - Con Ed: Y49 (NYPA) 637 MW, East Garden City to Sprain Brook (NYISO-BPS)
    - Con Ed: Y50 (LIPA/Con Ed) 656 MW, Shore Road to Dunwoodie (NYISO-BPS)
  - **Three 138 kV**
    - ISONE: NNC (LIPA/ES) 436 MW, Northport to Norwalk Harbor
    - Con Ed: 300 MW Wheel - (903) Lake Success to Jamaica & (901) Valley Stream to Jamaica
  - **Two HVDC**
    - PJM: Neptune 660 MW, Newbridge Road to Sayreville
    - ISO-NE: CSC 330 MW, Shoreham to New Haven

[1]Import assumptions on non NYISO inter ties are based on LIPA's capacity contractual negotiations and agreements.

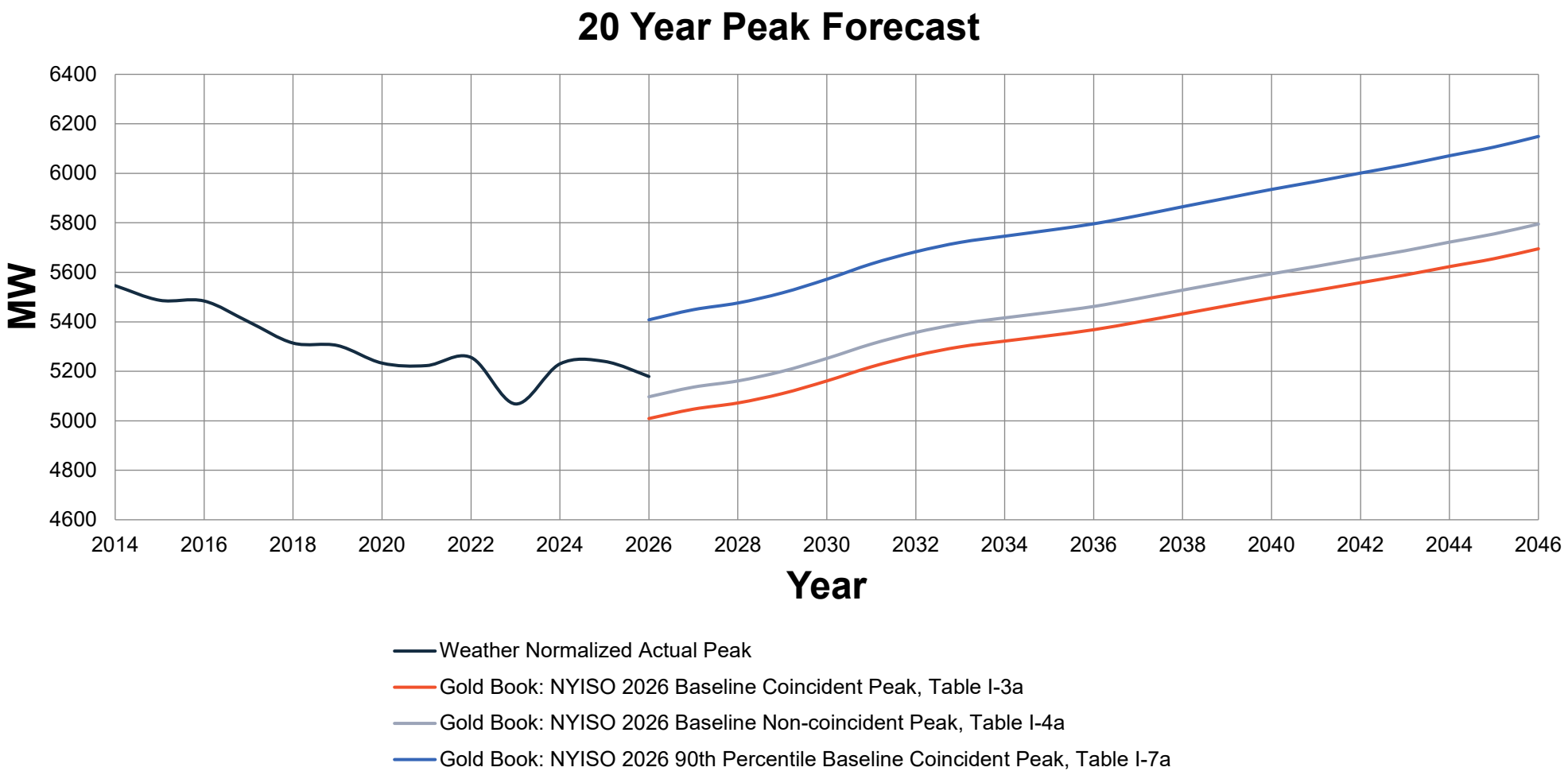
Planning Criteria and Study Horizon

- **Transmission Planning Criteria***
  - PSEG Long Island Transmission Planning Criteria
  - Ensure that electric system will meet applicable reliability requirements (NERC/NPCC/NYSRC)
  - PSEG LI performance requirements for Transmission-Connected resources using non-synchronous generation
  - PSEG LI Performance Requirements for Large Loads Connected to the LIPA System
- **Other Criteria/Policy**
  - LIPA Substation Design Criteria
  - LIPA Board Policy on Construction of Transmission and Distribution Projects
  - Interconnection Requirements**
- **Study Horizon**
  - T&D Development Plan – 10 Years
  - High Demand Analysis – 20 Years

*Planning criteria can be found in the latest NYISO FERC Form 715 filing.

** Interconnection Requirements can be found on PSEG Long Island's Legal & Regulatory page: https://www.psegliny.com/aboutpseglongisland/legalandregulatory

Zone K Load Forecast



Planning Process

- The planning process for the T&D System begins with the load forecast and generation resource scenarios.
- Transmission System Studies: Identify transmission system limitations and recommend reinforcements for an area of the system.
  - Assessment of alternatives that can result in the development of major transmission capital projects.
    - Alternative assessments inherently evaluate Non-Wires Alternatives (NWAs) as potential full or partial solutions, with a focus on identifying the most cost-effective and efficient approach to meeting system needs.
    - Grid Enhancing Technologies may also be evaluated if applicable
    - Consideration of planned or projected asset health and risk-based reliability projects.
  - Coordinates with other ongoing Transmission Planning Initiatives
- The projected load magnitude and timing of load growth are critical factors that influence system needs.
- Distributed Energy Resource (DER) penetration is currently captured in the substation load forecast.

Local Transmission Plan (LTP) Planning Assumptions

- LIPA's projected Local Transmission Plan (LTP) is based on a series of planning assumptions that are applied consistently throughout the planning process and adapted, as appropriate, to meet the objectives of individual studies*
- LIPA's LTP incorporates the following key assumptions
  - Load Forecast: Load forecast supports evaluations of reliability, resource adequacy, transmission constraints, and system performance under projected conditions, including non-coincident peak loads for individual load pockets and the overall LIPA system, as well as system-wide light-load conditions
  - Resource Plan: Resource Plan assumptions are critical in identifying system needs. LTP incorporates the resource plan from LIPA's IRP with relevant updates to reflect the latest solicitations, information and best available data and ensures transmission grid is evaluated against the planned resource portfolio for the LIPA system.
  - T&D System Model: As a baseline planning assumption, firm transmission and distribution projects are generally modeled in service in the applicable study year.

**In addition to standard deterministic planning reliability criteria, PSEG Long Island's Long Term Transmission Plan also integrates asset reliability condition and age degradation as a reinforcement drivers to identify system needs and grid modernization opportunities.*

LTP Core Assumptions

Study Models

- Load Pocket Non-Coincident
  - Summer Peak
- Zone K Non-Coincident
  - Summer Peak
  - Summer Extreme
  - Winter Peak
  - Winter Extreme
  - Light Load

Major Generation Additions

- Existing & Firm local generation to be available for dispatch*
- Future Q535 Riverhead Solar II @ Edwards Ave 138kV (36MW)
- Future Q766/987 Sunrise Wind @ Holbrook 138kV (924 MW)

Generation Retirements

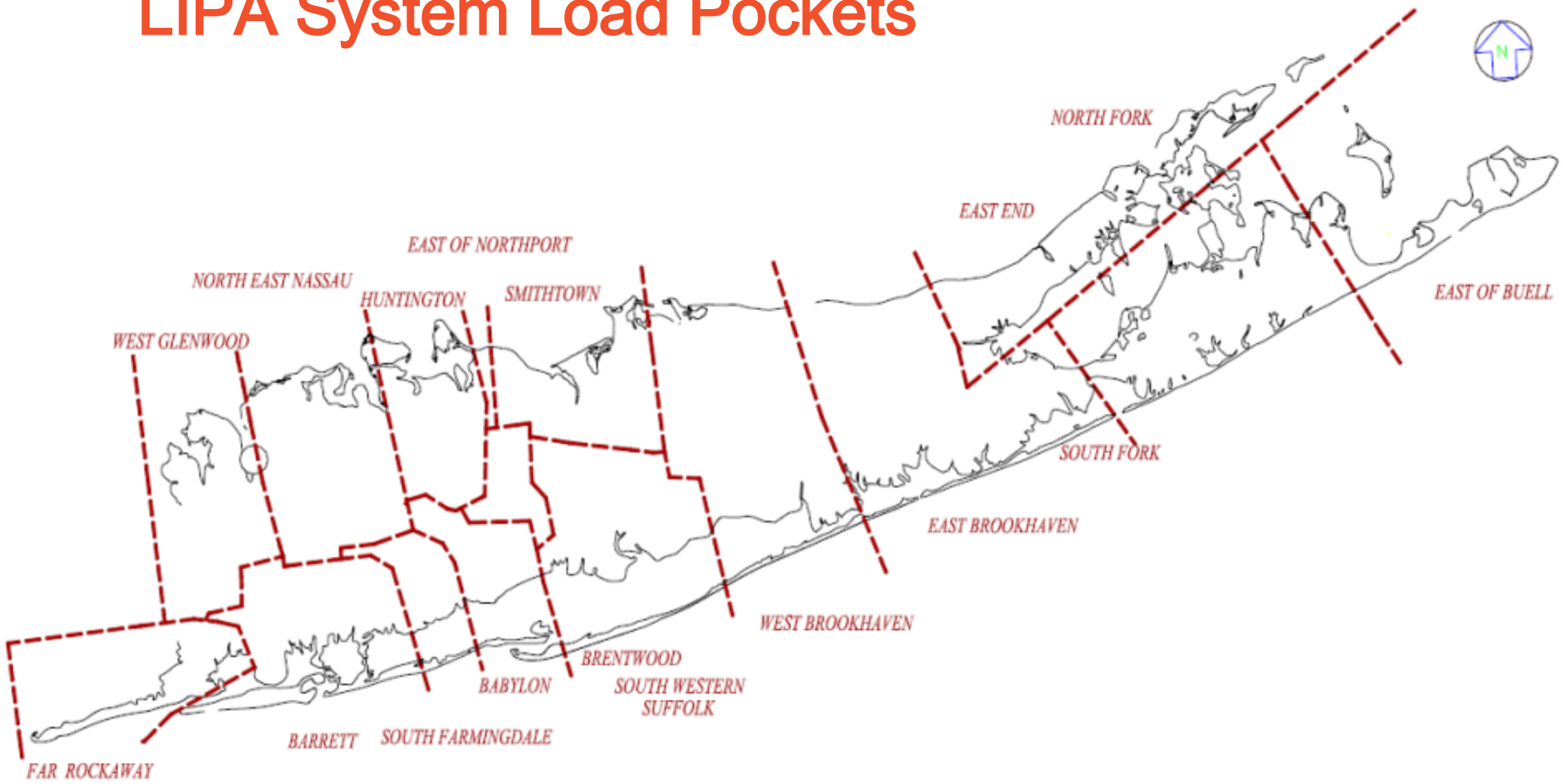
- Glenwood GT1
- West Babylon GT4
- Northport APG Unit
- Port Jefferson APG Unit
- Pinelawn CC
- Trigen

Future Transmission Projects

- Awarded PPTN project - Propel NY Energy – Alternate Solution 5
- Belmont 69kV conversion with two 69kV circuits
- New 69kV Bridgehampton to Buell circuit
- Shore Road 138kV 80MVAR Shunt Reactor
- 69kV Bayport to MacArthur SDU Upgrade

*Assumption for resource dispatch levels may vary by study, and are typically based on a 95% confidence level, coincident with the respective load forecast.

LIPA System Load Pockets



Data Sources

- **Load Forecast**
- **NYISO - The Major Source of Base Cases used in Modeling / Transmission Studies**
  - Load Flow
  - Fault Duty
  - Stability
- **Generator Owners/HVDC/FACTS**
  - MW/MVAR Capability
  - Modeling Characteristics
- **Internal Sources**
  - EMS Data – PI Historian
  - Equipment Characteristics & Facility Ratings (e.g., Engineering, Operations)

Models - Major Tools Used

- **Thermal / Voltage Analysis**
  - **PSS®E** : Siemens Power Technologies International's (PTI) Power System Simulator - *Transmission system load flow; thermal, voltage under normal and contingency conditions*
  - **TARA** : PowerGEM's steady state power flow software tool - *Load flow studies, N-1-1 power flow analysis and system operating limits analysis*
  - **MAPS™** : General Electric's (GE) Multi-Area Production Simulation
- **Fault Duty**
  - **ASPEN™** : Advanced Systems for Power Engineering, Inc. - Short circuit analysis program/ Breaker fault duty analyses
- **Stability**
  - **PSS®E** : Siemens Power Technologies International's (PTI) Power System Simulator - System Dynamic Simulation
  - Additional Complex Load Model used for Transient Voltage Recovery Studies
- **Electromagnetic Transients**
  - **PSCAD™:** Electromagnetic transient simulations; specialized control interactions, resonance, and stability studies
- **Other**
  - **Python**: Software language utilized for automation of various analysis and data management

PSEG LONG ISLAND

Thank *you*

LTP-PSEGLongIsland@psegliny.com