



Northport Repowering Study

May 20, 2020

BACKGROUND

In 2015, State legislation directed LIPA, PSEG Long Island, and National Grid to perform economic and technical feasibility studies for repowering legacy LILCO power generating stations

- E. F. Barrett Power Station (built 1956-71) – by April 2017
- Port Jefferson Power Station (built 1958-62) – by April 2017
- Northport Power Station (built 1967-77) – by April 2020

KEY FINDINGS OF 2017 STUDIES FOR E.F. BARRETT AND PORT JEFFERSON

- Despite being over 50-years-old, existing units are in good shape
- Growth in energy efficiency and renewables contributes to forecasted surplus of generation through 2040
- New long-term commitments to generation would reduce flexibility to respond to changing conditions
- E.F. Barrett capacity factor to decline to 6% by 2030 and Port Jefferson to decline to 5% by 2030
- Repowering would increase net costs to customers by up to \$1.2 billion for E.F. Barrett and up to \$0.9 billion for Port Jefferson

OVERVIEW OF NORTHPORT POWER PLANT

- Located in the Town of Huntington
- Plant was commissioned in 1967-1977 and consists of:
 - Four 375 MW dual fuel (gas/oil) steam turbine-generators
 - One 16 MW combustion turbine
 - Station total capacity of 1,516 MW

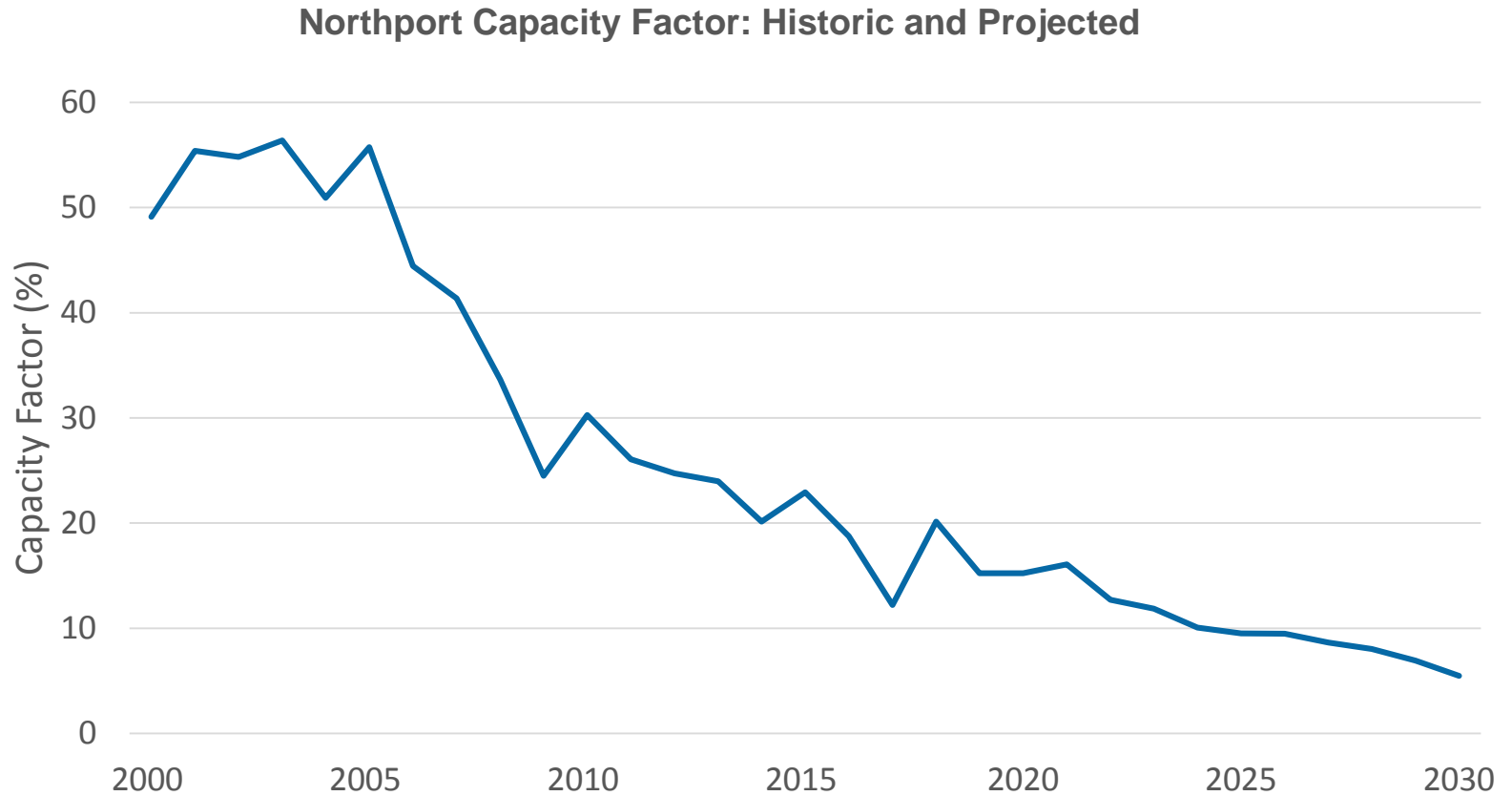


REPOWERING OPTIONS EVALUATED

- Retire one steam unit, without replacement
- Replace one steam unit with more efficient gas-fired technology
- Replace all four steam units with various combinations of gas-fired units, battery storage, and energy market purchases

Repowering Scenarios, in MW	Ref. Case (Status Quo)	Retire Single Unit	Replace Single Unit	Replace All Steam Units			
Existing Units	1516	1141					
New Combined-Cycle Unit(s)			340	680	680	340	680
New Combustion Turbines				920	690	690	460
New Battery			50		150	150	150
Interconnect Offshore Wind						400	
Upgrade Northport-Norwalk Cable							229
Total	1516	1141	1531	1616	1536	1596	1535

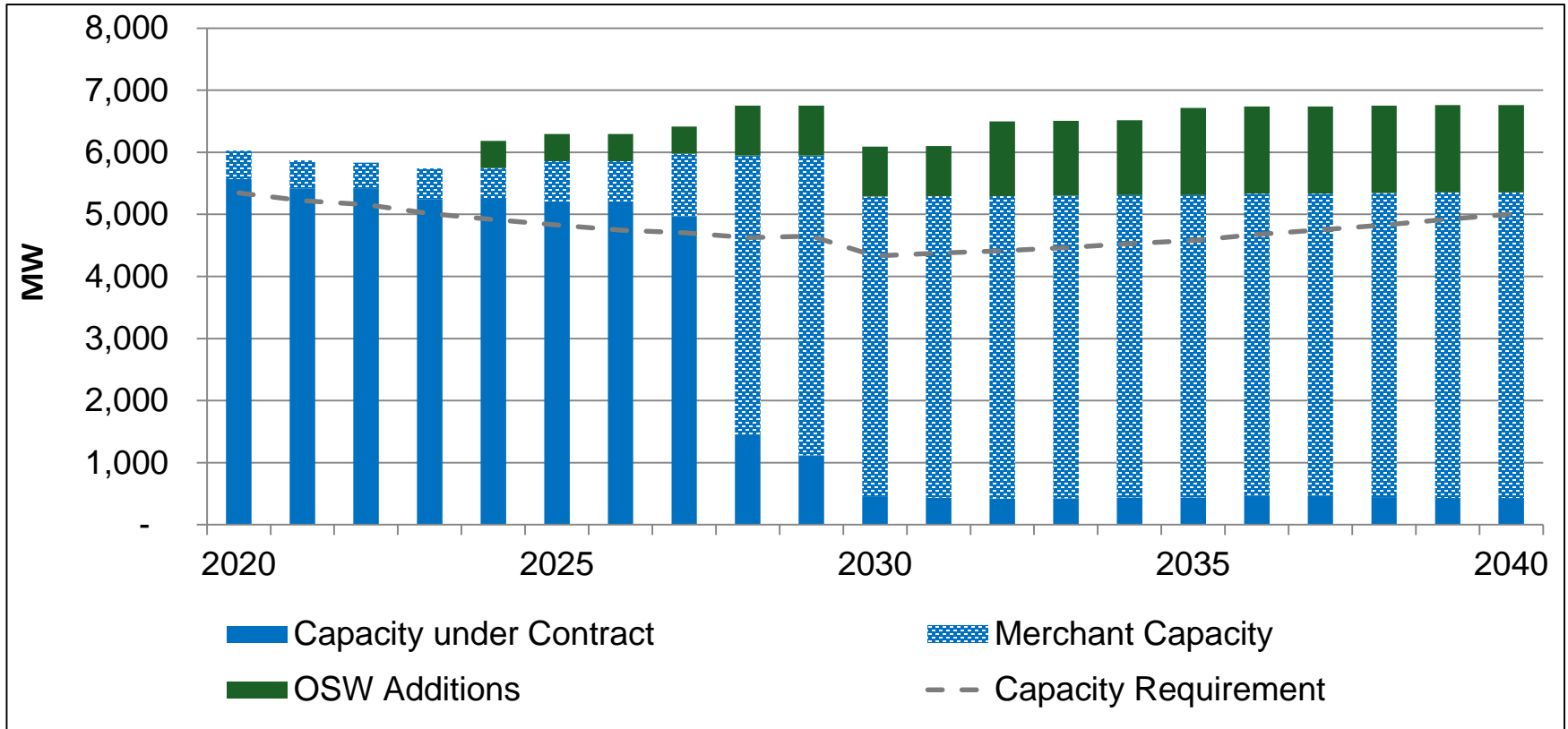
DECLINING PLANT OPERATION



- Northport capacity factor forecasted to decline to 2.9% by 2035

SURPLUS CAPACITY TO GROW AS RENEWABLE RESOURCES ADDED

LIPA Capacity Resources and Contract Expirations



RESULTS OF ECONOMIC ANALYSIS

- All repowering options studied increase costs to customers
- Retirement – not a repowering – of one of the four existing steam units would be cost-justified

Scenario	Increase / (Reduction) in Costs, NPV for 2020-40
Retire one steam unit	(\$303) million
Replace one steam unit	\$682 million
Replace all steam units	\$1.2 to \$1.7 billion

CONCLUSIONS

- Need for conventional generating resources is declining due to:
 - Increasing penetration of rooftop solar, distributed resources, and energy efficiency
 - Implementation of Climate Act mandates (100% carbon-free energy by 2040)
- Absent any retirements, LIPA has a growing surplus of generating capacity
- Under the PSA, between now and contract expiration in 2028, LIPA has the option to cease purchasing capacity from
 - Any of the three remaining steam plants (in "capacity blocks")
 - Any of the 30+ internal combustion units
- It is economic to retire some inefficient 1960's-era units
 - Previously announced peaking unit retirements at West Babylon and Glenwood Landing in 2020 and 2021
 - Additional peaking unit retirements under consideration, including at Glenwood Landing
 - Study to conclude in Q4 2020 will identify 400 to 600 MW of steam unit retirements for 2022; additional steam plant retirements after 2024
 - Retired brownfield sites can compete in LIPA RFPs for new clean energy infrastructure (e.g. storage); however, some sites likely uneconomic due to inflated property tax bills