

The Long-Range Transmission Plan 2015 – 2025

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Presentation to ESPWG / TPAS

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Long-Range Transmission Plan

- Driver of the Plan is to maintain local reliability
- 10-year planning horizon extending through the year 2025
- Order 890 compliance
 - Criteria, assumptions and methodology posted at:
http://www.coned.com/tp/transmission_planning_process.asp

Plan posted on the Con Edison website at:

<http://www.coned.com/tp/LTP-2015-2025.pdf>

NY PSC Order for EE/DR/CHP

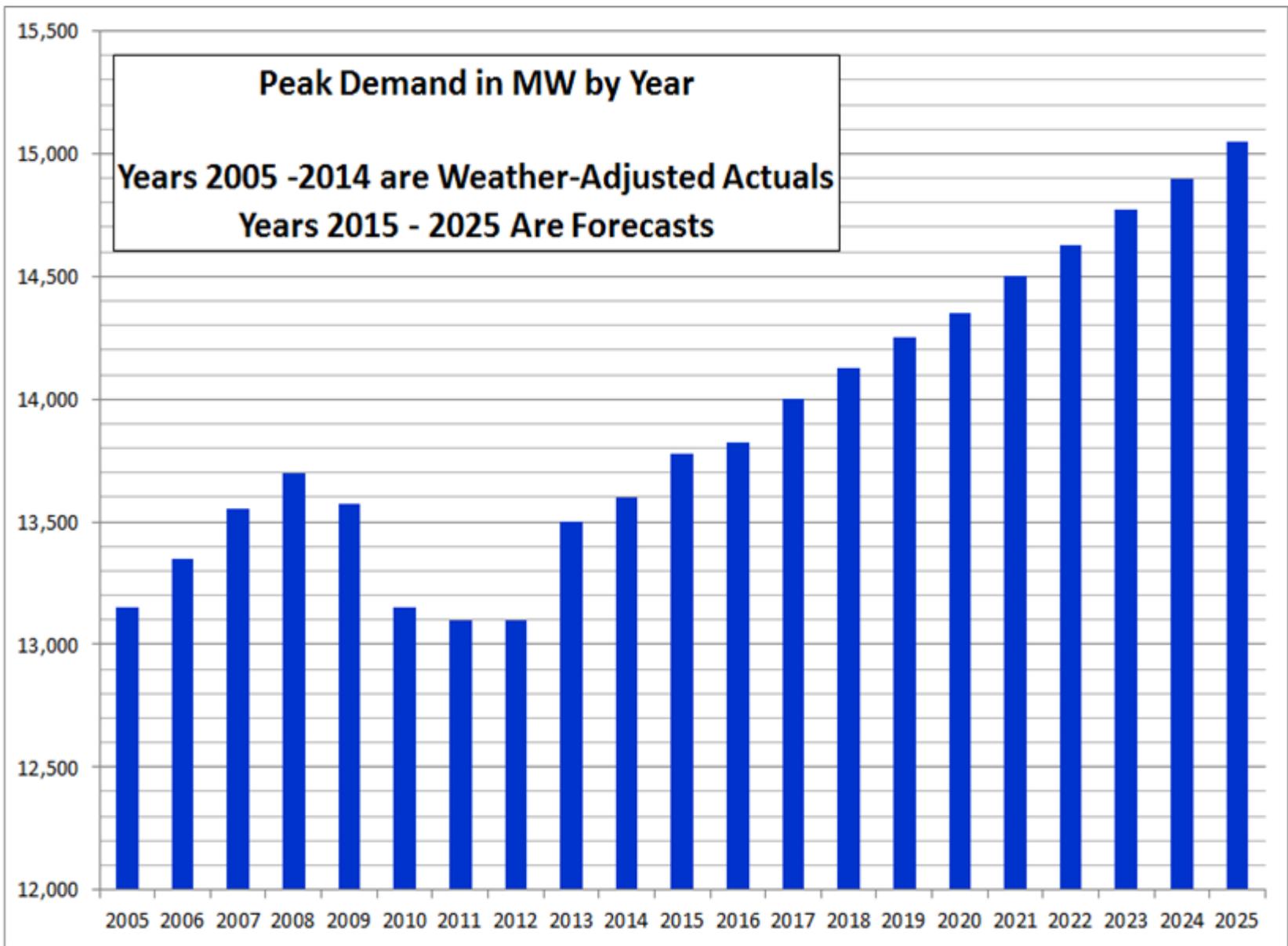
- As part of the “Transmission Owner Transmission Solutions” (TOTS) projects in response to the Indian Point Contingency Plan, the NY PSC, effective November 4, 2013, ordered Con Edison and NYSERDA to implement a DSM program in Zone J.
- In the 125 MW Revised EE/DR/CHP Program, Con Edison and NYSERDA, in consultation with NYPA, proposed a suite of new EE and DR projects designed to achieve 100 MW of peak demand reduction by the summer of 2016. NYSERDA will achieve 25 MW of CHP.
- Progress reports are provided to the PSC on a quarterly basis. The most recent Q2 2015 status report indicates that so far 6.5 MW have been achieved, 83.5 MW have been committed, and 40.4 MW are in process. These reports and other related documents can be found at the New York State Department of Public Service website:
<http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=12-E-0503>
- Con Edison’s program details can be found at this website:
http://www.coned.com/energyefficiency/demand_management_incentives.asp

Assessments

- System Performance
- Transmission Load Area (TLA)
- Transmission Substation
- Interconnection of New Generation / Transmission Resources

System Performance

- Thermal
- Voltage
- Short Circuit
- Stability
- Transient Switching Surge and Lightning Withstand Capabilities
- Extreme Contingencies



17 Actual Transmission Load Areas

	Transmission Load Areas	Contingency Level
1	New York City - 345 kV	2
2	West 49th Street - 345 kV	2
3	New York City - 138 kV	2
4	Astoria - 138 kV	2
5	East 13th Street - 138 kV	2
6	Astoria East / Corona - 138 kV	2
7	Astoria West / Queensbridge - 138 kV	2
8	Vernon - 138 kV	2
9	East River - 138 kV	2
10	Greenwood / Staten Island- 138 kV	1
11	Corona / Jamaica - 138 kV	1
12	Bronx- 138 kV	1
13	Eastview - 138 kV	1
14	Staten Island - 138 kV	1
15	Dunwoodie North / Sherman Creek - 138 kV	1
16	Dunwoodie South - 138 kV	1
17	Millwood / Buchanan - 138 kV	1

TLA Assessments

- Thermal
 - Power, in terms of MVA, on a transmission path must not exceed its applicable emergency rating (LTE or STE, as applicable) and be able to be returned to normal levels for that path post contingency
 - First and second (if TLA is designated second contingency)
- Voltage
 - Bus voltages must not exceed their limits either above or below their nominal ratings
- Short-Circuit
 - 3 phase, 2 phase to ground or single phase to ground faults create a short-circuit flow on a transmission path that should not exceed the appropriate short-circuit rating of any of the breakers that are necessary for the isolation of that transmission path

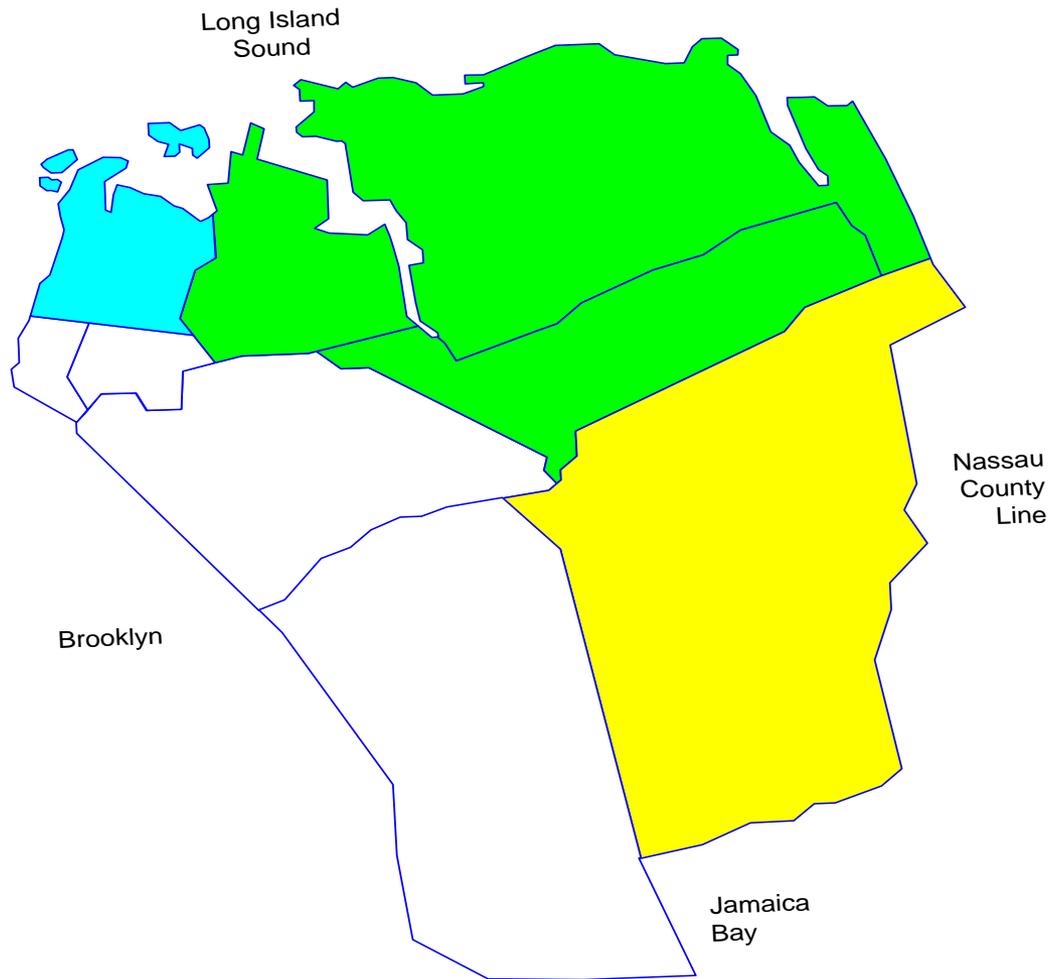
Study Year	Long Range Plan Assumptions
2015	<ul style="list-style-type: none"> • Con Edison Load (Coincident Peak) = 13,775 MW
2020	<ul style="list-style-type: none"> • Con Edison Load (Coincident Peak) = 14,350 MW • Transfer 70 MW of load from Brownsville (served from Farragut) to Glendale (served from Vernon) • Consistent with Public Service Commission order, establish 100 MW of Energy Efficiency improvements, allocated system-wide.
2025	<ul style="list-style-type: none"> • Con Edison Load (Coincident Peak) = 15,050 MW • Gowanus Transmission Station expanded to support future area stations

TLA Assessment Results

Three TLAs show need for system reinforcements:

- Astoria East / Corona 138 kV TLA
 - Queens
- Corona / Jamaica 138 TLA
 - Queens
- Greenwood / Staten Island 138 kV TLA
 - Brooklyn and Staten Island

Areas Served by the Astoria East / Corona 138 kV TLA (in Blue / Green), and the Corona /Jamaica 138 kV TLA (in Green-Yellow)



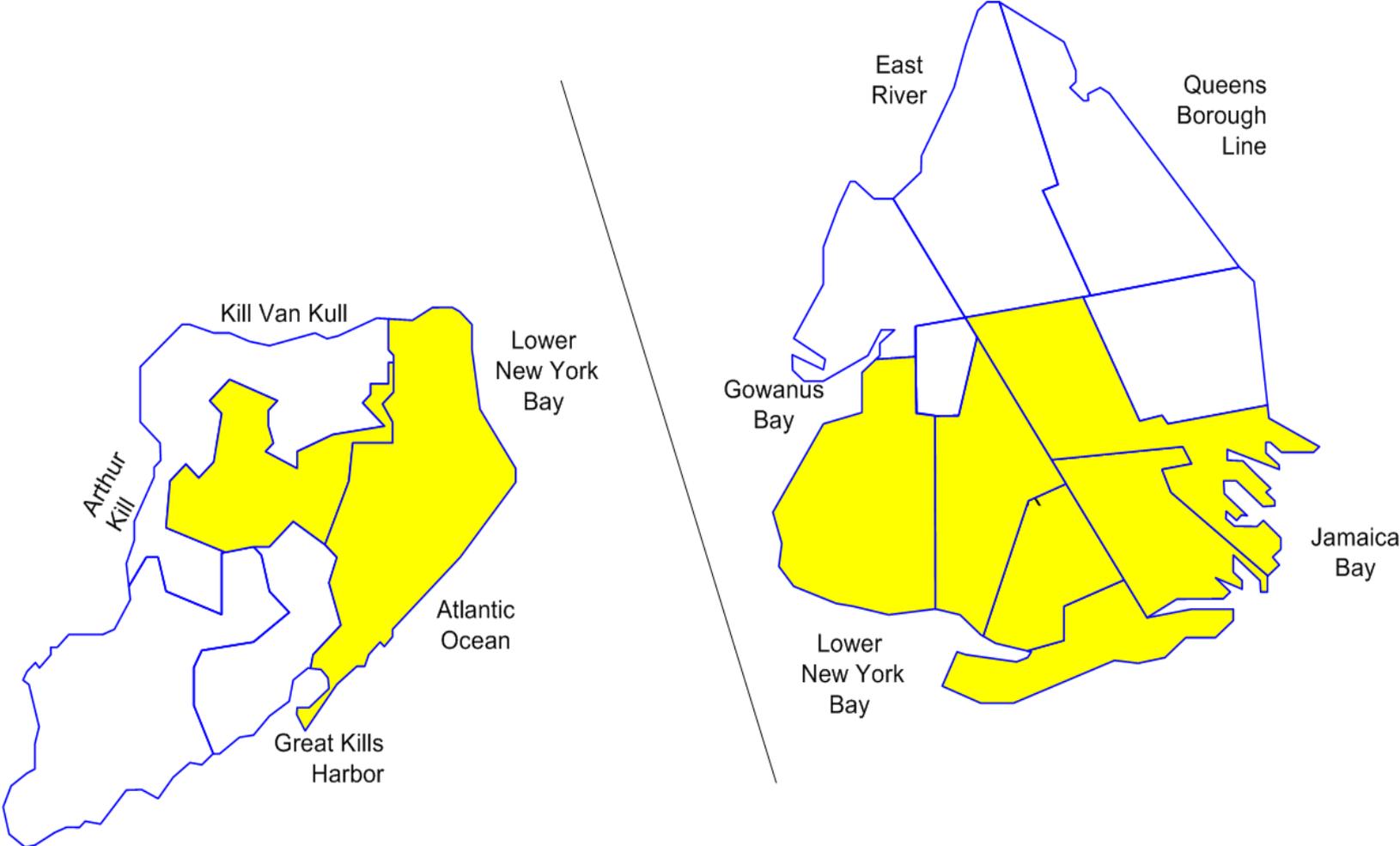
Astoria East / Corona 138 kV TLA

Geographic Coverage	Queens			
Design Criteria	Second Contingency			
Planned Changes In Load Area	2019	Establish new 138 kV transmission line with transformer and Phase Angle Regulator connecting Rainey and Corona Substations		
Assessment	2015	First Contingency	Loss of Astoria Energy I	No deficit
		Second Contingency	Loss of Astoria Energy I, followed by loss of feeder 34091 and Astoria Unit 2	No deficit
	2020	First Contingency	Loss of Astoria Energy I	No deficit
		Second Contingency	Loss of Astoria Energy I, followed by loss of feeder 34091 and Astoria Unit 2	No deficit
	2025	First Contingency	Loss of Astoria Energy I	No deficit
		Second Contingency	Loss of Astoria Energy I, followed by loss of feeder 34091 and Astoria Unit 2	No deficit
Operational Remediation	2015	Utilize 300 hour ratings for feeders 34051/52 and 701/702 until new transmission line established in 2019		
	2020	None required		
	2025	None required		
Planning Solution	2015	None required – See Operational Remediation		
	2020	None required – See Planned Changes in Load Area		
	2025	None required		
Short Circuit Considerations	None			

Corona / Jamaica 138 kV TLA

Geographic Coverage	Queens			
Design Criteria	First Contingency			
Planned Changes In Load Area	2019	Establish new 138 kV transmission line with transformer and Phase Angle Regulator connecting Rainey and Corona Substations		
Assessment	2015	First Contingency	Bus fault resulting in the loss of feeder 901, 702 and transformer bank 4 at Jamaica 138 kV	No Deficit
	2020	First Contingency	Bus fault resulting in the loss of feeder 901, 702 and transformer bank 4 at Jamaica 138 kV	No Deficit
	2025	First Contingency	Bus fault resulting in the loss of feeder 901, 702 and transformer bank 4 at Jamaica 138 kV	No Deficit
Operational Remediation	2015	None required		
	2020	None required		
	2025	None required		
Planning Solution	2015	None required		
	2020	None required		
	2025	None required		
Short Circuit Considerations	None			

Area Served by Greenwood / Staten Island 138 kV TLA



Greenwood / Staten Island 138 kV TLA

Geographic Coverage	Brooklyn and Staten Island			
Design Criteria	First Contingency			
Planned Changes In Load Area	2018	Establish Breaker 3N (at Greenwood 138 kV substation), to separate feeder 42232 from feeder 42G13 (GTs 1&3)		
Assessment	2015	First Contingency	Bus Fault with Stuck Breaker #4N results in loss of Gowanus GTs 1&3, Narrows GT2, Feeder 42232.	No deficit
	2020	First Contingency	Bus Fault with Stuck Breaker #4S results in loss of Gowanus GTs 2&4, NYPA GTs, Feeder 42231.	No deficit
	2025	First Contingency	Bus Fault with Stuck Breaker #4S results in loss of Gowanus GTs 2&4, NYPA GTs, Feeder 42231.	No deficit
Operational Remediation	2015	None required		
	2020	None required		
	2025	None required		
Planning Solution	2015	None required		
	2020	None required		
	2025	None required		
Short Circuit Considerations	None			

Transmission Substations

- Expansion of the Gowanus Transmission station for the support of area stations is anticipated in the year 2025.

No additional Transmission connections are planned for this station.

New Merchant Generation and Transmission Proposals

- New York City continues to attract significant amounts of new generation and transmission capacity
- NYISO's interconnection queue listing, dated 9-30-15 shows
 - Proposed Generation Facilities: 2,743 MW
 - Proposed Transmission Facilities (including HVDC): 4,675 MW

Contact Information

- Parties interested in commenting on Con Edison's Transmission Planning Process can e-mail comments and suggestions to:

TPTeam@coned.com