

A vertical image on the left side of the page showing a close-up of a white offshore wind turbine. The turbine has three blades and is mounted on a dark, cylindrical pile driven into the ocean. The background is a deep blue, and there are faint, stylized circuit-like patterns overlaid on the image.

Appendix F: Facility Characterization List

Long Island Offshore Wind Export Public Policy Transmission Planning Report

**A Report from the New York
Independent System Operator**

DRAFT for May 24, 2023, BIC

DRAFT – FOR DISCUSSION PURPOSES ONLY

June 10, 2022

Characterization of Project Facilities

This document provides the characterization of new transmission facilities and Public Policy Transmission Upgrades¹ comprising the Public Policy Transmission Projects proposed in response to the Long Island Offshore Wind Export Public Policy Transmission Need (“Long Island PPTN”), which is posted on the NYISO website in accordance with Section 31.4.6.5.1 of Attachment Y to the NYISO’s Open Access Transmission Tariff.

In accordance with the requirements of Section 31.4.6.5.1, the NYISO posted an initial list to provide stakeholders an opportunity to review and, as necessary, dispute facility characterizations prior to the start of the NYISO’s evaluation to identify the more efficient or cost-effective solution. The NYISO posted the initial list² on April 11, 2022, and four parties raised disputes³ on the characterization and/or ownership of several facilities. The NYISO considered the information and arguments raised in the written submissions, meetings with the parties, and at a meeting of the ESPWG on June 8, 2022, in updating and finalizing the facility characterizations. An asterisk (*) in the tables below denotes that a dispute was raised regarding the facility characterization and the dispute has not been resolved to satisfaction of a party at the time the NYISO posted the document.

Characterization of Transmission Line Facilities

ID	Transmission Facility ⁴	Facility Characterization	Owner of Existing Facility (if applicable)
L1	Barrett - Buchanan HVDC line	New	N/A
L2	Barrett (proposed) - East Garden City 345 kV line(s)	New	N/A
L3	Barrett (proposed) - Eastern Queens (proposed) 345 kV lines	New	N/A

¹ “Public Policy Transmission Upgrade” is defined in Section 31.1 of Attachment Y to the NYISO’s Open Access Transmission Tariff.

² New York Independent System Operator, Inc., “Initial Characterization of Project Facilities,” available at <https://www.nyiso.com/documents/20142/22968753/LIPPTN-FacilityCharacterization-InitialList.pdf>.

³ The written disputes and comments are available at <https://www.nyiso.com/documents/20142/22968753/Comments-on-Initial-Facility-Characterization.zip>.

⁴ For purpose of reviewing this list, “(proposed)” indicates that the terminal station is labeled as “proposed” in the substation list below.

ID	Transmission Facility ⁴	Facility Characterization	Owner of Existing Facility (if applicable)
L4	Barrett (proposed) - Tremont 345 kV line	New	N/A
L5	Buchanan (proposed) - Ramapo 345 kV line	New	N/A
L6	Central Islip - Hauppauge 138 kV uprate	Upgrade	LIPA
L7	East Garden City - Carle Place 138 kV line reconductor	Upgrade	LIPA
L8	East Garden City - Eastern Queens (proposed) 345 kV lines	New	N/A
L9	East Garden City - Jamaica 138 kV line	New	N/A
L10	East Garden City - Mott Haven 345 kV line	New	N/A
L11	East Garden City - Newbridge Road 345 kV line converting the existing 138 kV line	Upgrade	LIPA
L12	East Garden City – Roslyn 138 kV line reconductor	Upgrade	LIPA
L13	East Garden City - Shore Road (proposed) 345 kV line	New	N/A
L14	East Garden City - Shore Road 138 kV line	New	N/A
L15	East Garden City - Shore Road 345 kV line	New	N/A
L16	East Garden City - Tremont 345 kV line	New	N/A
L17	East Garden City (proposed) - Dunwoodie 345 kV line	New	N/A
L18	East Garden City (proposed) - Farragut 345 kV line	New	N/A
L19	East Garden City (proposed) - Newbridge Road 345 kV lines rebuilding the existing 138 kV lines	Upgrade	LIPA
L20	East Garden City (proposed) - Sprain Brook 345 kV line	New	N/A
L21	Eastern Queens (proposed) - Dunwoodie 345 kV line	New	N/A
L22	Eastern Queens (proposed) - Lake Success 138 kV line uprate	Upgrade	LIPA/ConEd ⁵
L23	Eastern Queens (proposed) - Tremont 345 kV line	New	N/A

⁵ This existing transmission facility is jointly owned, and the proposed upgrade will be assigned to the Transmission Owner that owns the portion to be upgraded.

ID	Transmission Facility ⁴	Facility Characterization	Owner of Existing Facility (if applicable)
L24	Eastern Queens (proposed) - Valley Stream 138 kV uprate	Upgrade	LIPA/ConEd ⁵
L25	Farragut - Sprain Brook 345 kV line	New	N/A
L26	Jamaica - Corona 138 kV line	New	N/A
L27	Lake Success - Jamaica 138 kV uprate	Upgrade	LIPA/ConEd ⁵
L28	Longshore (proposed) - Southgate (proposed) 345 kV lines	New	N/A
L29	Newbridge Road - Locust Grove 138 kV line reconductor	Upgrade	LIPA
L30	Newbridge Road - Ruland Road (proposed) 138 kV line reconductor	Upgrade	LIPA
L31	Newbridge Road - Ruland Road 138 kV lines reconductor	Upgrade	LIPA
L32	Northport (proposed) - Pilgrim 138 kV line	New	N/A
L33	Northport (proposed) - Sprain Brook HVDC line	New	N/A
L34	Northport (proposed)- Dunwoodie 345 kV line	New	N/A
L35	Offshore Platform - Buchanan HVDC line	New	N/A
L36	Pilgrim – Hauppauge 138 kV line reconductor	Upgrade	LIPA
L37	Pilgrim - Holbrook 138 kV line	New	N/A
L38	Ruland Road (proposed) - East Garden City 345 kV line converting the existing Ruland Road - New Bridge - East Garden City 138 kV lines	Upgrade	LIPA
L39	Ruland Road - Newbridge Road 345 kV line converting the existing 138 kV line	Upgrade	LIPA
L40	Ruland Road - Shore Road 138 kV line	New	N/A
L41	Ruland Road (proposed) - Shore Road (proposed) 345 kV line	New	N/A
L42	Ruland Road (proposed) - Sprain Brook 345 kV line	New	N/A
L43	Shore Road - Dunwoodie 345 kV line	New	N/A
L44	Shore Road - Sprain Brook 345 kV line	New	N/A
L45	Shore Road - Syosset 138 kV line	New	N/A

ID	Transmission Facility ⁴	Facility Characterization	Owner of Existing Facility (if applicable)
L46	Shore Road - Syosset 345 kV lines	New	N/A
L47	Shore Road (proposed) - Sprain Brook 345 kV line(s)	New	N/A
L48	Southgate (proposed) - Northgate (proposed) HVDC lines	New	N/A
L49	Sprain Brook - Mott Haven 345 kV line	New	N/A
L50	Syosset - Greenlawn 138 kV line uprate	Upgrade	LIPA
L51	Syosset - Oakwood 138 kV line uprate	Upgrade	LIPA
L52	Syosset - Ruland Road 345 kV line	New	N/A
L53*	Valley Stream (proposed) - East Garden City (proposed) 345 kV lines	New	N/A

Characterization of Substation Facilities

The following list describes and provides characterization of the substations and substation facilities from the proposed Public Policy Transmission Projects. The listing of facilities under a specific substation indicates that they are being installed within either; (i) the new footprint for the substation that is proposed but does not currently exist or (ii) the existing or expanded footprint for the existing substation that a project proposes to modify. Phase angle regulators (“PARs”), series reactors/capacitors, shunt reactors/capacitors, line terminal equipment, and transformers contained in the following list are proposed to be installed within the footprint of the identified substation (regardless of whether the footprint is new, existing, or expanded), unless specifically noted otherwise.

In reviewing the following list, please keep in mind that facilities may be proposed in one project as an installation in a new substation footprint, while similar facilities may be proposed in another project as an installation in an existing or expanded footprint of an existing substation. For example, a project may install a 345 kV ring bus in an expanded footprint of an existing substation, while another project could propose a 345 kV ring bus in a new substation footprint. As a result, it may appear on the list that facilities are being identified as both a new transmission facility and as a Public Policy Transmission Upgrade, but they are different proposed facilities from different projects.

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S1	Existing Barrett 138 kV Substation			
	B1	Breaker and a half GIS ⁶ installation	Upgrade	LIPA
	B2	Breaker installation	Upgrade	LIPA
	P	PAR relocation to breaker and a half GIS	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S2	Existing Corona 345 kV Substation			
	SHR	Shunt reactor(s) installation on proposed line	Upgrade	ConEd
	P1	PAR(s) installation on terminal of proposed line(s)	Upgrade	ConEd
S3	Existing Dunwoodie 345 kV Substation			
	B1	Breaker and a half GIS installation	Upgrade	ConEd
	B2	Additional bay(s) to ring bus	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	ConEd

⁶Gas insulated substation.

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S4	Existing East Garden City 138 kV Substation (LIPA)			
	B1	345 kV Breaker and a half GIS installation	Upgrade	LIPA/NYPA ⁵
	B2	138 kV Breaker(s) installation	Upgrade	LIPA
	T	Transformer(s) installation	Upgrade	LIPA/NYPA ⁵
	SHR1	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	LIPA/NYPA ⁵
	SHR2	Shunt reactor(s) installation on bus	Upgrade	LIPA/NYPA ⁵
	SR	Series reactor(s) installation on terminal of existing line(s)	Upgrade	LIPA
	P1	PAR(s) installation on terminal of proposed 138 kV line(s)	Upgrade	LIPA
	P2	PAR(s) installation on terminal of proposed 345 kV line(s)	Upgrade	LIPA/NYPA ⁵
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S5	Existing East Garden City 345 kV Substation (NYPA)			
	B1	Breaker and a half AIS ⁷ installation	Upgrade	NYPA
	B2	Breaker and a half GIS installation	Upgrade	NYPA
	SHR1	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	NYPA
	SHR2	Shunt reactor(s) installation on terminal of existing line(s)	Upgrade	NYPA
	P	PAR(s) installation on terminal of proposed line(s)	Upgrade	NYPA
S6	Existing Elwood 138 kV Substation			
	SHR	Shunt reactor(s) installation on bus	Upgrade	LIPA
S7	Existing Farragut 345 kV Substation			
	B	Breaker and a half GIS installation	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on terminal of proposed line	Upgrade	ConEd

⁷ Air insulated substation

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S8	Existing Holbrook 138 kV Substation			
	B	Breaker(s) installation	Upgrade	LIPA
S9	Existing Jamaica 138 kV Substation			
	B	Breaker(s) installation	Upgrade	ConEd
S10	Existing Lake Success 138 kV Substation			
	SHR	Shunt reactor(s) installation on terminal of existing line	Upgrade	LIPA
	P1	PAR(s) uprate	Upgrade	LIPA
	P2	PAR relocation to proposed Eastern Queens substation	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S11	Existing Mott Haven 345 kV Substation			
	B	Breaker(s) installation	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	ConEd
S12	Existing Newbridge Road 345/138 kV Substation			
	B1	Breaker and a half 345 kV GIS installation on existing footprint	Upgrade	LIPA
	B2	Breaker(s) installation	Upgrade	LIPA
	B3	Ring bus GIS installation on existing footprint	Upgrade	LIPA
	T	Transformer(s) installation	Upgrade	LIPA
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	LIPA
S13	Existing Northport 138 kV Substation			
	P1	PAR(s) installation between substation buses	Upgrade	LIPA

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S14	Existing Pilgrim 138 kV Substation			
	B	Breaker(s) installation	Upgrade	LIPA
	P	PAR(s) uprate	Upgrade	LIPA
S15	Existing Rainey 345 kV Substation			
	B1	Breaker and a half GIS installation	Upgrade	ConEd
	B2	Breaker(s) installation	Upgrade	ConEd
S16	Existing Ramapo 345 kV Substation			
	B	Additional bay(s) installation	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on proposed line(s)	Upgrade	ConEd
S17	Existing Ruland Road 138 kV Substation			
	B1	Breaker(s) installation	Upgrade	LIPA
	B2	Ring bus 345 kV GIS installation	Upgrade	LIPA
	T	Transformer(s) installation	Upgrade	LIPA
	SHR	Shunt reactor(s) installation on bus	Upgrade	LIPA
	SR	Series reactor(s) installation on terminal of existing line(s)	Upgrade	LIPA
	P	PAR(s) installation on terminal of proposed line(s)	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S18	Existing Shore Road 345/138 kV Substation			
	B1	Breaker and a half 345 kV GIS installation	Upgrade	LIPA
	B2	Breaker(s) installation	Upgrade	LIPA
	SHR1	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	LIPA
	SHR2	Shunt reactor(s) installation on bus	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S19	Existing Sprain Brook 345 kV Substation			
	B	Additional bay(s) installation	Upgrade	ConEd
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	Upgrade	ConEd
	SR	Series reactor(s) installation on terminal of proposed line(s)	Upgrade	ConEd
S20	Existing Syosset 138 kV Substation			
	B	Ring bus 345 kV GIS installation	Upgrade	LIPA
	T	Transformer(s) installation	Upgrade	LIPA
	SHR	Shunt reactor(s) installation on bus	Upgrade	LIPA
	P	PAR(s) installation on terminal of proposed line(s)	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA
S21	Existing Valley Stream 138 kV Substation			
	P	PAR relocation to proposed Eastern Queens substation	Upgrade	LIPA
	R	Relay work for P5 contingency mitigation	Upgrade	LIPA

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S22	Proposed Barrett 345 kV Substation on New Footprint		New	N/A
	B1	Ring bus installation	New	N/A
	B2	Straight bus installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P	PAR(s) installation on terminal of proposed line(s)	New	N/A
S23	Proposed Buchanan 345 kV Substation on New Footprint		New	N/A
	B*	Breaker and a half GIS installation	New	N/A
	SHR*	Shunt reactor(s) installation on terminal of proposed line	New	N/A
	P*	PAR(s) installation on terminal of existing line(s)	New	N/A
S24	Proposed East Garden City 345 kV Substation on New Footprint		New	N/A
	B*	Breaker and a half GIS installation	New	N/A
	SHR*	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P*	PAR(s) installation on terminal of proposed line(s)	New	N/A
S25	Proposed Eastern Queens 345/138 kV Substation on New Footprint		New	N/A
	B	Ring bus installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on bus	New	N/A
	P1	PAR(s) installation on terminals of proposed line(s)	New	N/A
	P2	PAR relocation from existing Valley Stream and Lake Success substations	Upgrade	LIPA

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S26	Proposed Longshore 345/138 kV Substation on New footprint		New	N/A
	B1	Breaker and a half GIS installation	New	N/A
	B2	138 kV GIS breaker(s) installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P	PAR(s) installation on terminal of proposed line(s)	New	N/A
S27	Proposed Northgate 345 kV Substation on New Footprint		New	N/A
	B*	Breaker and a half GIS installation	New	N/A
	H	HVDC station(s)	New	N/A
S28	Proposed Northport 138 kV Substation on New Footprint		New	N/A
	B*	Breaker and a half 138 kV GIS installation	New	N/A
S29	Proposed Northport 345 kV Substation on New Footprint		New	N/A
	B1	Breaker and a half bus 345 kV GIS installation	New	N/A
	B2	Ring bus installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHC	Shunt capacitor(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	H	HVDC station(s)	New	N/A

ID	Sub ID	Substation Facility	Facility Characterization	Owner of Existing Facility (if applicable)
S30	Proposed Ruland Road 345/138 kV Substation on New Footprint		New	N/A
	B1*	Breaker and a half 138 kV GIS installation	New	N/A
	B2*	Ring bus 138 kV AIS installation	New	N/A
	B3*	Ring bus 345 kV AIS installation	New	N/A
	T*	Transformer(s) installation	New	N/A
	SHR*	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P*	PAR(s) installation on terminal of proposed line(s)	New	N/A
S31	Proposed Shore Road 345/138 kV Substation on New Footprint		New	N/A
	B	Ring bus installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	P	PAR(s) installation on terminal of proposed line(s)	New	N/A
S32	Proposed Southgate 345/138 kV Substation on New Footprint		New	N/A
	B1	Breaker and a half 345 kV GIS installation	New	N/A
	B2	Breaker(s) 138 kV GIS installation	New	N/A
	T	Transformer(s) installation	New	N/A
	SHR	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A
	H	HVDC station(s)	New	N/A
S33	Proposed Valley Stream 345 kV on New Footprint		New	N/A
	B*	Breaker and a half GIS installation	New	N/A
	T*	Transformer(s) installation	New	N/A
	SHR*	Shunt reactor(s) installation on terminal of proposed line(s)	New	N/A

Notes:

- In accordance with Section 31.4.6.5.1 of Attachment Y to the OATT, the descriptions of the facilities listed above are not expressly linked to any particular Public Policy Transmission Project for the Long Island PPTN, and may describe a facility proposed in one or more proposed Public Policy Transmission Projects. The descriptions are intended to provide enough detail in order for interested parties to reasonably understand the nature of proposed facilities and, as a result, may differ from a Developer's naming convention in its proposal(s).
- Stand-alone transition stations (*e.g.*, underground cable to overhead line junctions) and stand-alone HVDC converter stations are considered as a part of the line and not expressly listed, unless otherwise reflected in list of substation facilities.
- Certain facility elements are not separately broken out in the lists but are characterized as Public Policy Transmission Upgrades. Specifically, the following elements are characterized as Public Policy Transmission Upgrades, unless otherwise noted:
 - re-terminating existing lines,
 - decommissioning existing lines,⁸
 - equipment to facilitate new connections to existing substations that is to be situated within the fence line of existing substations,
 - upgrades to terminal equipment within existing substations to increase the rating of existing lines, and
 - segments of lines that are proposed to be built in order to loop existing lines into and out of new substations.
- Line segments connecting new substations and nearby existing substations are characterized as new facilities, unless the connection utilizes an existing line (*e.g.*, re-terminating or looping into a new substation).

⁸ In the case of decommissioning an existing line, the work required to remove the existing line and associated equipment is considered a Public Policy Transmission Upgrade.