New York ISO
Independent System Operator

Technical Conference
Long Island Offshore Wind Export PPTN

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Technical Conference

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Disclaimer

- This presentation and associated technical conference is for the purposes of reviewing assumptions and methodologies applicable to the Long Island Offshore Wind PPTN and reviewing and obtaining input on the application of metrics set forth in the NYISO OATT. Nothing should be construed as final in this presentation or technical conference discussions. In the event that information provided herein or at the technical conference conflicts with the NYISO OATT or the Solicitation Letter, Developers should rely on the NYISO tariff and Solicitation Letter in submitting their proposals.

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Agenda

- Baseline Analysis & Sufficiency Criteria
- Evaluation Criteria
- PPTPP & Interconnection Processes
- Upgrades Examples

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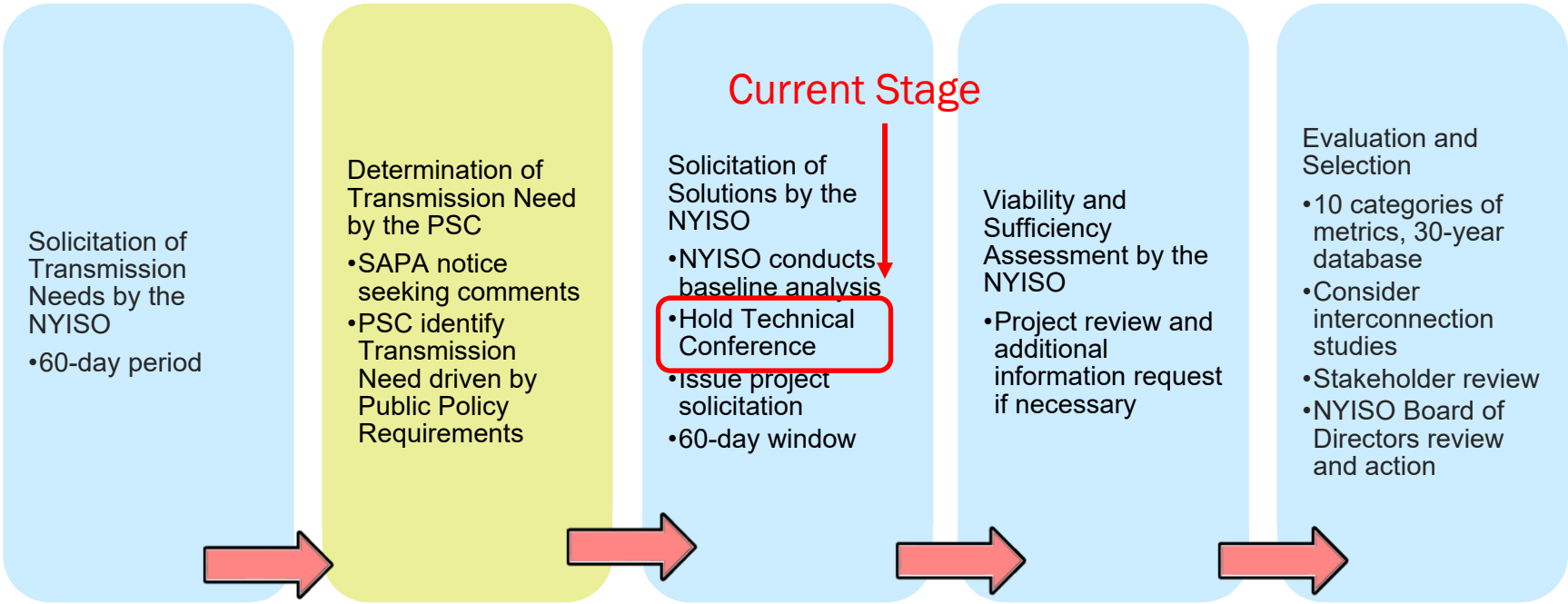
Public Policy Transmission Planning Process



Blue means NYISO steps

Green means PSC steps

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Baseline Analysis

VSA Baseline Assumptions: Methodology

- Objective: Identify system constraints impacted by LI offshore wind
- Steady-state N-0, N-1, and N-1-1 thermal and voltage analysis
- Security constrained dispatch will allow system adjustments consistent with transmission security criteria
  - Renewables maintained at full output, but certain conventional generation may be allowed to redispatch to mitigate/reduce overloads
- Additional reliability analysis will be performed in System Impact Study and Evaluation & Selection assessment to evaluate projects beyond the sufficiency criteria

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VSA Baseline Generation Assumptions

- Modeled generation retirements and land based renewable buildout consistent with RNA 70 x 30 scenario
- Over 8,000 MW conventional generation in Zone J and over 3,000 MW conventional generation in Zone K available
- Certain units dispatched in Zones J & K for local reliability needs
- Economic dispatch and operating requirements will be considered in production cost simulations and additional scenarios in Evaluation and Selection Phase

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VSA Baseline Assumptions: Generation & Load

	Zone J		Zone K	
	Summer Peak	Light Load	Summer Peak	Light Load
Load (MW net)	11,195 (including 290 MW BTM solar)	4,524 (including 644 MW BTM solar)	4,423 (including 499 MW BTM solar)	1,107 (including 1,108 MW BTM solar)
Conventional Generation Dispatch (Pgen MW)	~2,100	~900	~2,000	~500
Conventional Reserve (Pmax - Pgen MW of committed units)	~2,400	~2,400	~900	~400
Total Conventional Generation Available (Pmax)	>8,000	>8,000	>3,000	>3,000

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VSA Baseline Assumptions: Imports and Transmission Projects

- **LIPA Imports**
  - ISO-NE: Northport-Norwalk = 0, Cross Sound Cable = 0
  - PJM: Neptune = 660 MW (0 MW import in light load)
- **LIPA-NY tie lines**
  - Jamaica 138 kV ties (901/903) = 300 MW to Zone J
  - Sprain Brook-East Garden City 345 kV (Y49) reverses flow to inject power into Zone I
- **NYC Imports**
  - 1,310 MW generic HVDC injection @ Rainey 345 kV (0 MW import in light load)
- **LI and NYC LTP updates included in FERC 715**

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Offshore Wind: VSA Baseline Scenario

- **~3,000 MW in Zone K at full output:**
  - LIPA/NYSERDA Awarded: 139 MW @ East Hampton 69 kV, 880 MW @ Holbrook 138 kV, 1,260 MW @ Barrett 138 kV
  - Non-Awarded: 800 MW @ Ruland Rd. 138 kV
- **~6,000 MW in Zone J at full output:**
  - NYSERDA Awarded: 816 MW @ Gowanus 345 kV, 1,230 MW @ Astoria 138 kV
  - Non-Awarded: 1,310 MW each @ Farragut East 345 kV, Farragut West 345 kV, and West 49th St. 345 kV
- **Project sufficiency will be determined from this baseline**

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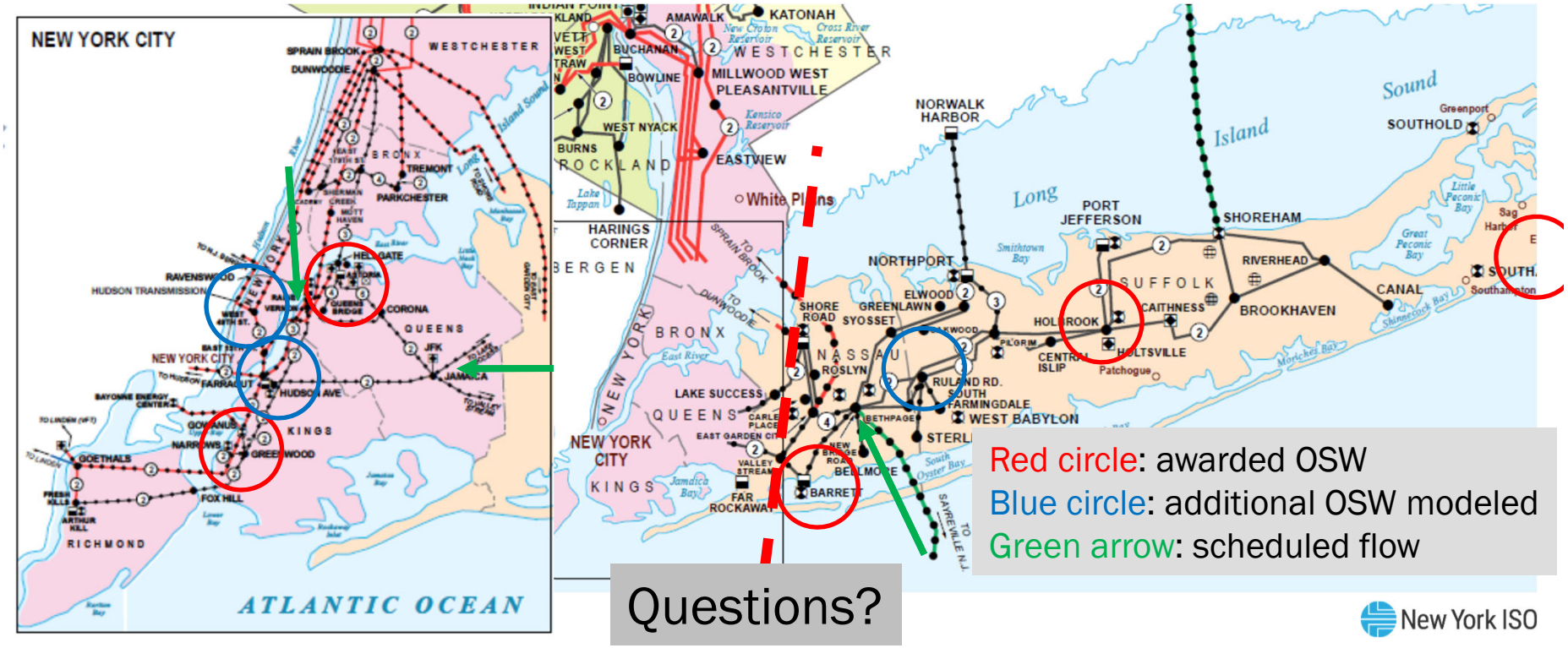
Offshore Wind: VSA Baseline Scenario



Questions?

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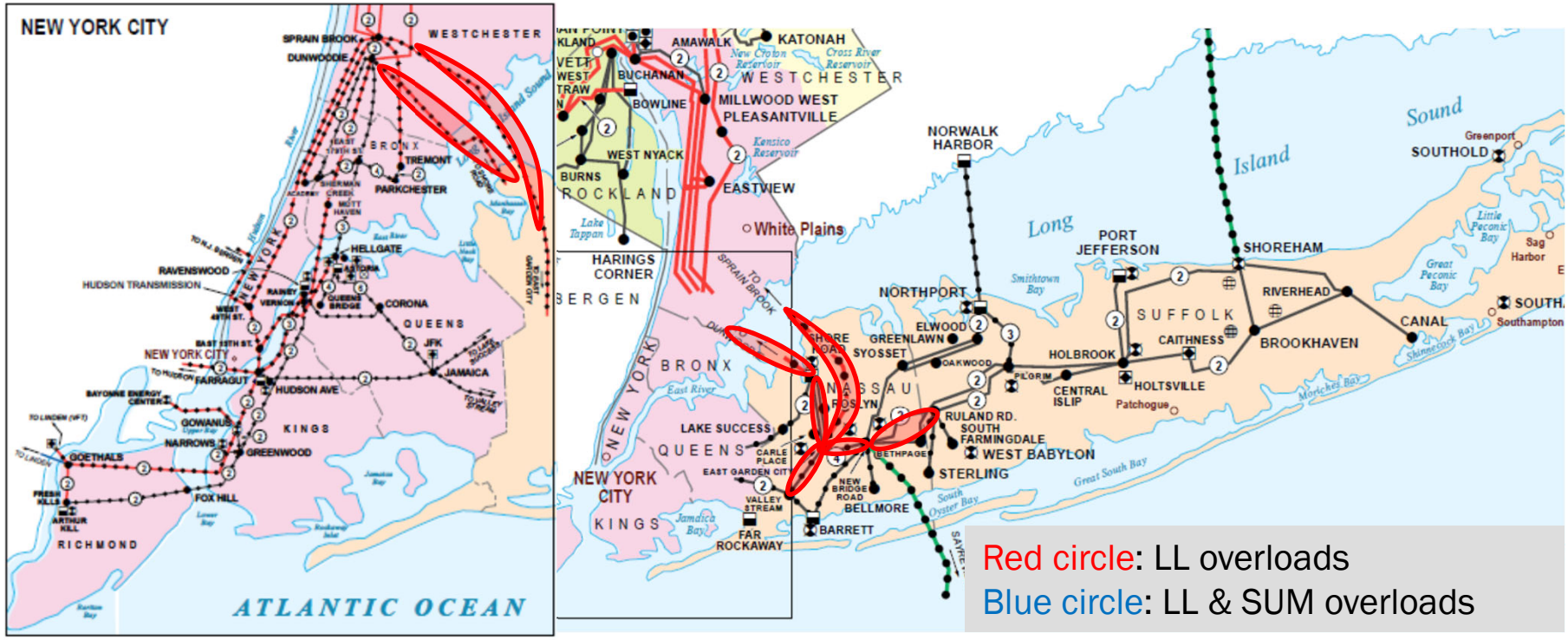
Baseline Results

Baseline Scenario: Significant N-0 Constraints



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Baseline Scenario: Significant N-0 Constraints

Monitored Facility	Light Load		Sum Peak	
	Rate (MVA)	Loading (%)	Rate (MVA)	Loading (%)
Long Island				
Valley Stream - East Garden City 138 kV	194	217	214	100
East Garden City - New Bridge Rd 138 kV	194	207	-	-
Carle Place - East Garden City 138 kV	320	184	-	-
New Bridge Rd - Ruland Rd 138 kV	259	108	-	-
Long Island Tie Lines				
Y50: Dunwoodie - Shore Rd 345 kV	780	167	-	-
Y49: Sprainbrook - East Garden City 345 kV	770	126	-	-

Table lists representative overloads. Full results will be included in the results spreadsheets.

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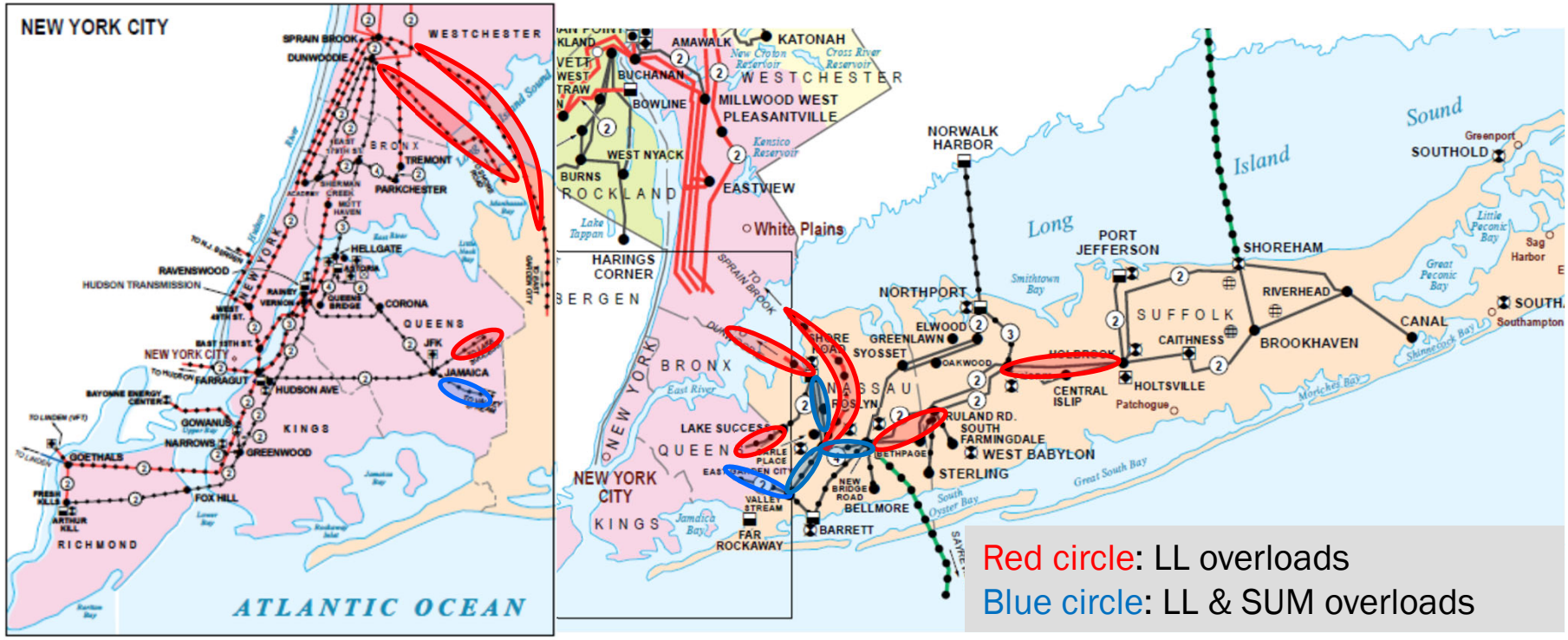
Baseline Scenario: Significant N-1 Constraints



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Baseline Scenario: Significant N-1 Constraints

Monitored Facility	Light Load			Sum Peak		
	Rate (MVA)	Loading (%)	Contingency	Rate (MVA)	Loading (%)	Contingency
Long Island						
East Garden City - New Bridge Rd 138 kV	284	216	VS Bus Con	-	-	-
Carle Place - East Garden City 138 kV	352	255	EGC Bus Con	303	102	EGC Bus Con
Valley Stream - East Garden City 138 kV	284	230	Valley Stream - EGC	298	124	Valley Stream - EGC
New Bridge Rd - Ruland Rd 138 kV	388	135	Ruland - NB	-	-	-
Haupague - C. Islip 138 kV	288	118	Holbrook - Ruland	-	-	-
Long Island Tie Lines						
Jamaica - Valley Stream 138 KV	375	231	EGC Bus Con	365	102	EGC Bus Con
Jamaica - Lake Success 138 KV	368	193	Y50	-	-	-
Y50: Dunwoodie - Shore Rd 345 kV	1028	170	Y49	-	-	-
Y49: Sprainbrook - East Garden City 345 kV	990	142	ShoreRd Bus Con	-	-	-

Table lists representative overloads. Full results will be included in the results spreadsheets.

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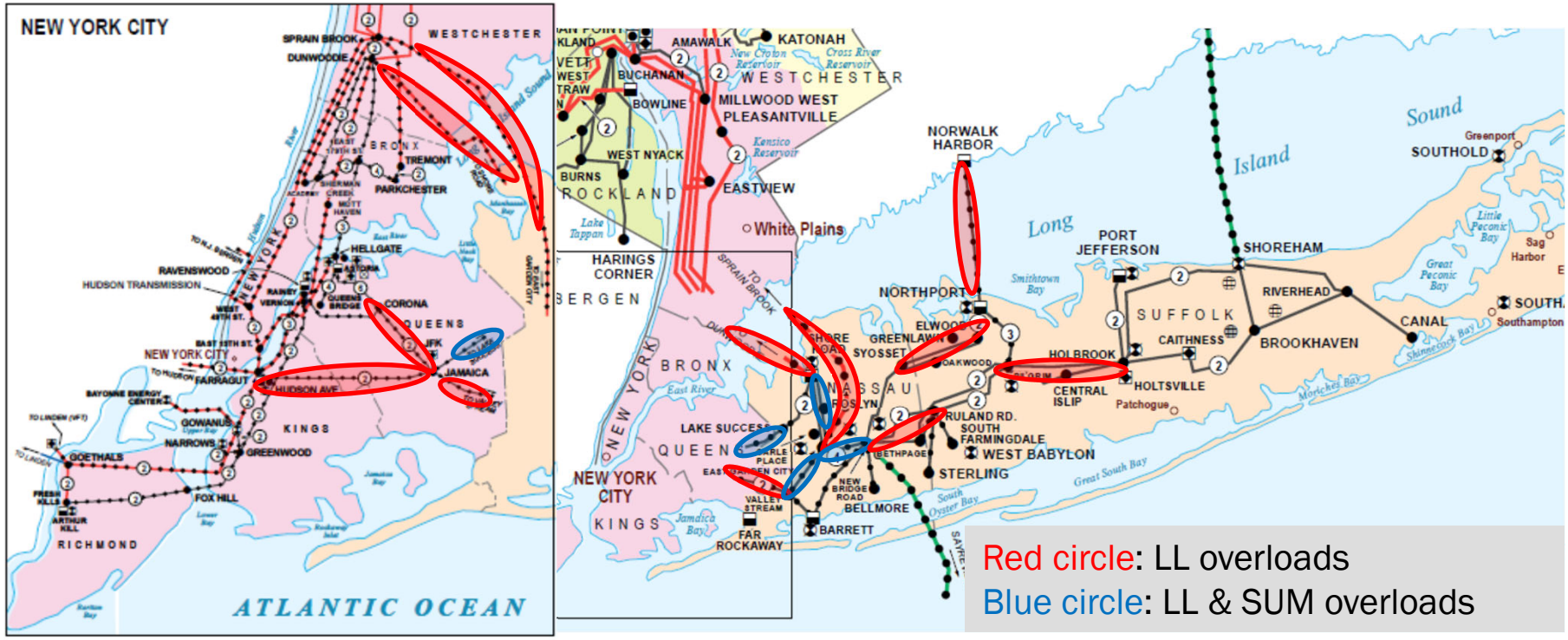
Baseline Scenario: Significant N-1-1 Constraints



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Baseline Scenario: Significant N-1-1 Constraints

Monitored Facility	Light Load				Sum Peak			
	Rate (MVA)	Loading (%)	1st Contingency	2nd Contingency	Rate (MVA)	Loading (%)	1st Contingency	2nd Contingency
Long Island								
East Garden City - New Bridge Rd 138 kV	284	287	EGC - NewBridge	EGC - NewBridge	287	127	Barrett - VS	Barrett - VS
Gleenwood - Shore Road 138 kV	388	365	Y49	Gleenwood Bus Con	324	133	Y49	EGC - Roslyn
Valley Stream - East Garden City 138 kV	284	346	Valley Stream - EGC	Ruland OSW	298	173	EGC - Roslyn	Barrett Bus Con
New Bridge Rd - Ruland Rd 138 kV	331	167	NewBridge - Ruland	NewBridge - Ruland	-	-	-	-
Syosset - Greenlawn 138 kV	368	120	Carle - EGC	Elwood Bus Con	-	-	-	-
Haupague - C. Islip 138 kV	288	120	Holbrook - Ruland	Pilgram xfmr	-	-	-	-
Long Island Tie Lines								
Jamaica - Lake Success 138 KV	368	295	Y49	Y50	345	113	901	Astoria OSW
Jamaica - Valley Stream 138 KV	375	250	Y50	Y49	-	-	-	-
Y50: Dunwoodie - Shore Rd 345 kV	1028	206	Y49	901	-	-	-	-
Y49: Sprainbrook - East Garden City 345 kV	990	169	Y50	NNC	-	-	-	-
Norwalk - Northport 138 kV	210	152	Y49	Y50	-	-	-	-
New York City								
Farragut West 345/138 kV xfmr	177	174	Y49	Y50	-	-	-	-
Corona - Jamaica 138 kV	250	162	Y49	Y50	-	-	-	-
Hudson Ave - Jamaica 138 kV	363	144	Y49	Y50	-	-	-	-

Table lists representative overloads. Full results will [illegible] spreadsheets.

Questions?

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Alternate Scenario Results

Alternate Scenario

- **~6,000 MW Offshore Wind in Zone K at full output:**
  - LIPA/NYSERDA Awarded: 139 MW @ East Hampton 69 kV, 1,050 MW @ Holbrook 138 kV, 1,350 MW @ Barrett 138 kV
  - Non-Awarded: 1,150 MW each @ Ruland Rd. 138 kV, East Garden City 345 kV, Northport 138 kV
- **~6,000 MW Offshore Wind in Zone J at full output:**
  - NYSERDA Awarded: 816 MW @ Gowanus 345 kV, 1,230 MW @ Astoria 138 kV
  - Non-Awarded: 1,310 MW each @ Farragut East 345 kV, Farragut West 345 kV, and West 49th St. 345 kV
- **Other major assumptions consistent with Baseline Scenario**

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Alternate Scenario, cont'd

- This scenario will be used in the Evaluation and Selection phase to evaluate and rank projects' performance in the expandability and other metrics.
- Other scenarios, including different offshore wind points of injection and sizes, may also be used in the Evaluation and Selection phase.

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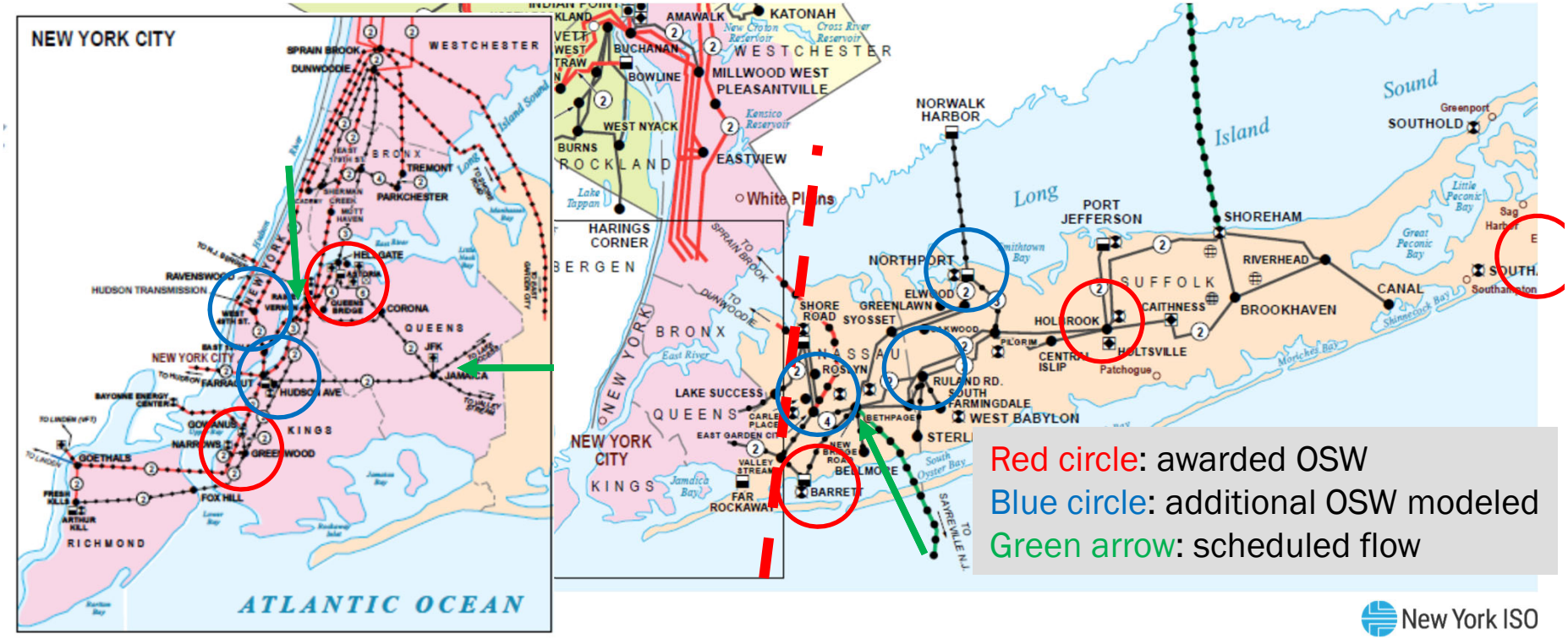
Alternate Scenario



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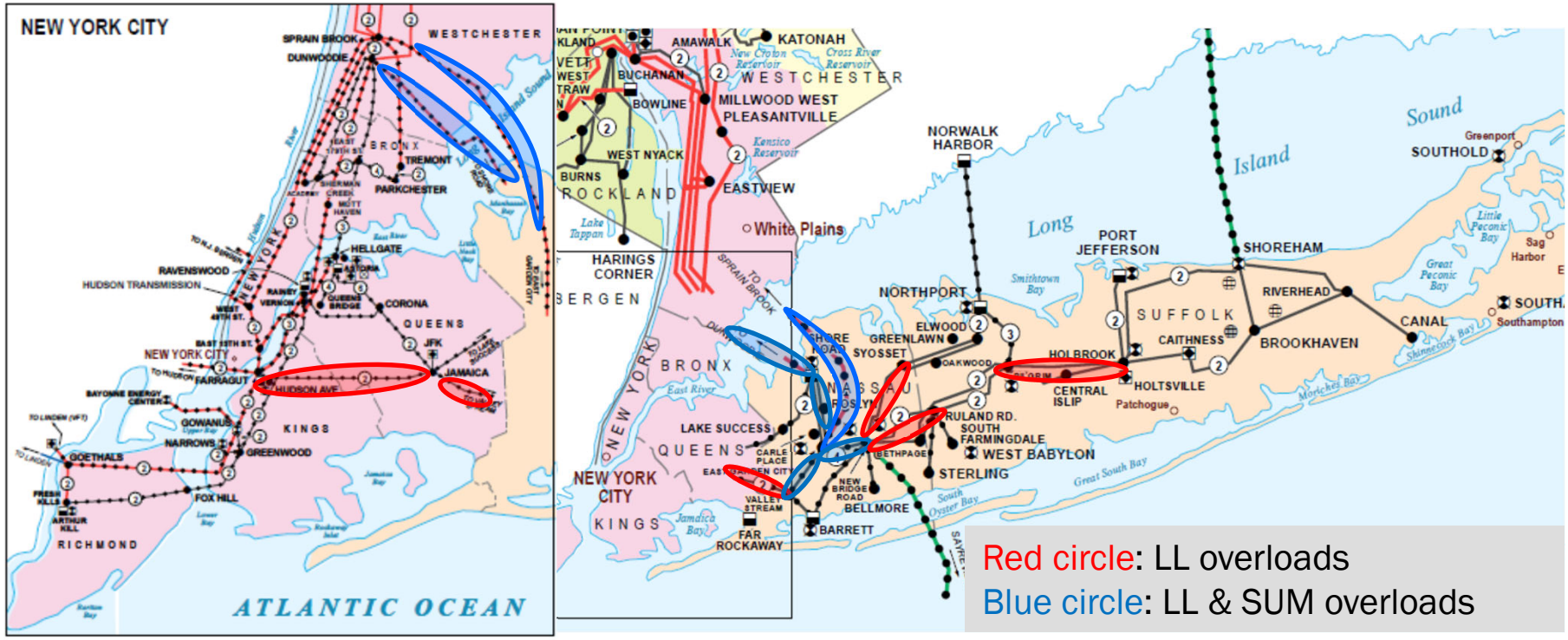
Alternate Scenario: Significant N-0 Constraints



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Alternate Scenario: Significant N-0 Constraints

Monitored Facility	Light Load		Sum Peak	
	Rate (MVA)	Loading (%)	Rate (MVA)	Loading (%)
Long Island				
East Garden City - New Bridge Rd 138 kV	194	354	207	159
Gleenwood - Shore Road 138 kV	351	328	264	189
New Bridge Rd - Ruland Rd 138 kV	259	200	-	-
Valley Stream - East Garden City 138 kV	194	150	214	107
Locust Grove - New Bridge Rd 138 kV	365	130	-	-
Haupague - C. Islip 138 kV	215	126	-	-
Long Island Tie Lines				
Y50: Dunwoodie - Shore Rd 345 kV	780	340	690	112
Y49: Sprainbrook - East Garden City 345 kV	770	301	708	191
Jamaica - Valley Stream 138 KV	320	142	-	-
New York City				
Hudson Ave - Jamaica 138 kV	178	186	-	-
Farragut West 345/138 kV xfmr	143	127	-	-

Table lists representative overloads. Full results will be included in the results spreadsheets.

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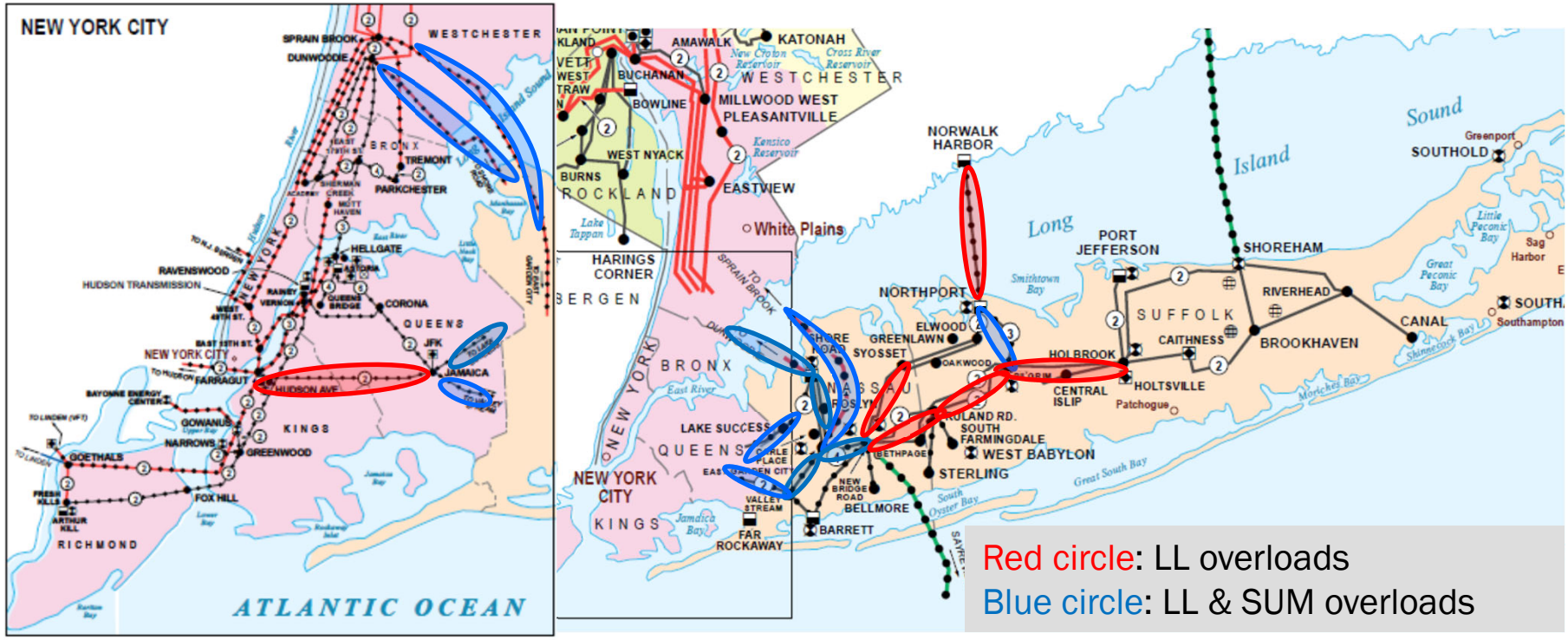
Alternate Scenario: Significant N-1 Constraints



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Alternate Scenario: Significant N-1 Constraints

Monitored Facility	Light Load			Sum Peak		
	Rate (MVA)	Loading (%)	Contingency	Rate (MVA)	Loading (%)	Contingency
Long Island						
Glenwood - Shore Road 138 kV	388	459	Y49	324	261	Y49
East Garden City - New Bridge Rd 138 kV	284	329	VS Bus Con	287	178	VS Bus Con
New Bridge Rd - Ruland Rd 138 kV	388	253	Ruland - NewBridge	-	-	-
Valley Stream - East Garden City 138 kV	284	177	Jamaica - VS	298	137	EGC - Valley Stream
Haupague - C. Islip 138 kV	288	177	Holbrook OSW	-	-	-
Northport 138 kV PAR	591	140	Ruland Rd Bus Con	482	104	Pilgram Bus Con
Locust Grove - Syosset 138 kV	591	134	Ruland Rd Bus Con	-	-	-
Bagatelle Rd - Pilgram 138 kV	617	122	Ruland Rd Bus Con	-	-	-
Long Island Tie Lines						
Y50: Dunwoodie - Shore Rd 345 kV	1028	385	Y49	963	153	Y49
Jamaica - Valley Stream 138 KV	375	296	EGC - CP	366	166	EGC Bus Con
Y49: Sprainbrook - East Garden City 345 kV	990	290	EGC - CP	948	190	ShoreRd Bus Con
Jamaica - Lake Success 138 KV	368	164	Y49	345	127	Y50
Norwalk - Northport 138 kV	210	121	Y49	-	-	-
New York City						
Farragut West 345/138 kV xfmr	177	215	Y49	-	-	-
Hudson Ave - Jamaica 138 kV	363	160	Y49	-	-	-

Table lists representative overloads. Full results will be included in the results spreadsheets.

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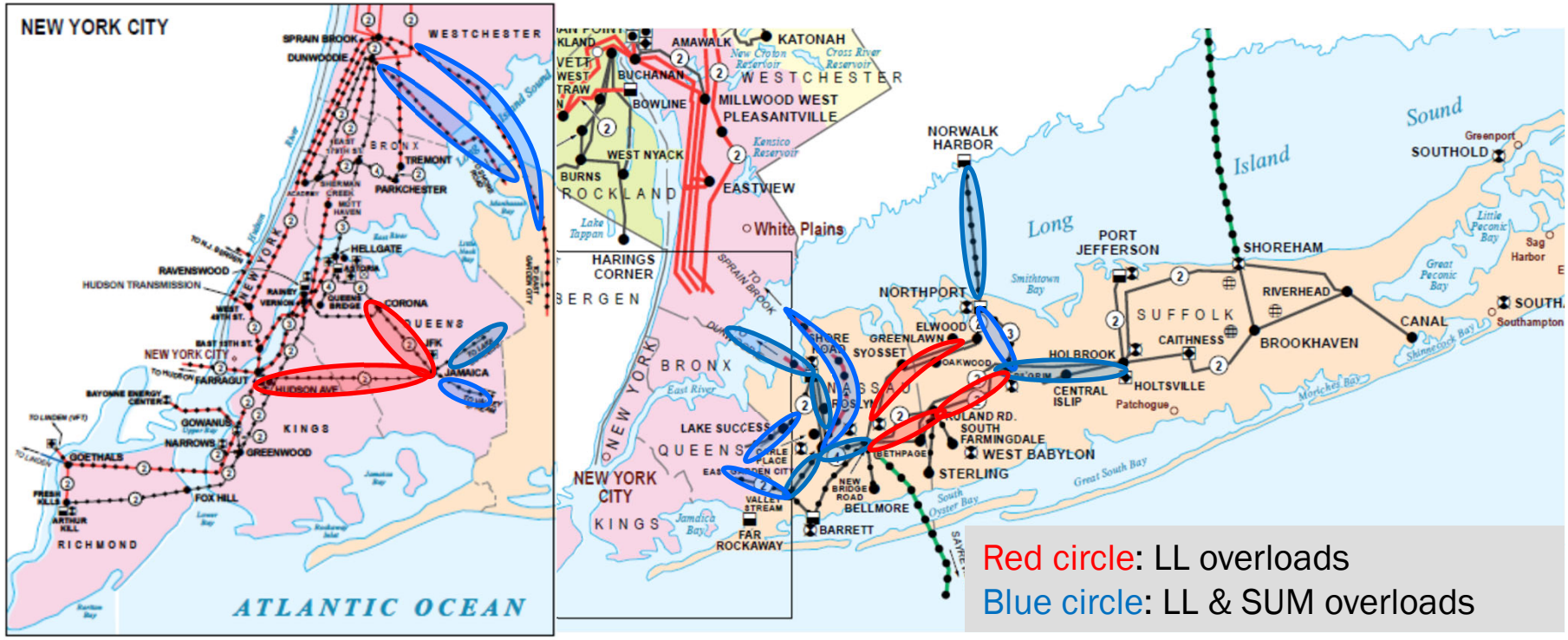
Alternate Scenario: Significant N-1-1 Constraints



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Alternate Scenario: Significant N-1-1 Constraints

Monitored Facility	Light Load				Sum Peak			
	Rate (MVA)	Loading (%)	1st Contingency	2nd Contingency	Rate (MVA)	Loading (%)	1st Contingency	2nd Contingency
Long Island								
East Garden City - New Bridge Rd 138 kV	284	413	EGC - NewBridge	EGC - NewBridge	287	231	EGC - NewBridge	EGC - NewBridge
Gleenwood - Shore Road 138 kV	388	595	Glwd- Roslyn	Y49	324	449	ShoreRd - Glwd	Y49
Valley Stream - East Garden City 138 kV	284	278	VlyStr xfmr	VlyStrm - EGC	298	178	VlyStrm - EGC	Barrett Bus Con
New Bridge Rd - Ruland Rd 138 kV	331	266	NB - Ruland	NB - Ruland	-	-	-	-
Northport 138 kV PAR	591	199	Northport - Pilgram	Northport Bus Con	482	241	Northport - Pilgram	Northport Bus Con
Haupague - C. Islip 138 kV	288	181	Ruland - Holbrook	Pilgram xfmr	281	159	Holdbrook OSW	Pilgram xfmr
Syosset - Greenlawn 138 kV	368	157	Elwood xfmr	Northport Bus Con	-	-	-	-
Bagatelle Rd - Pilgram 138 kV	617	111	NNC	LG - Syosset	-	-	-	-
Long Island Tie Lines								
Jamaica - Valley Stream 138 KV	375	390	Y49	ShoreRd Bus Con	365	238	Y50	Y49
Y50: Dunwoodie - Shore Rd 345 kV	1028	375	Y49	ValleyStream Bus Con	963	174	901	Y49
Norwalk - Northport 138 kV	210	343	NNC	NNC	192	138	Y50	Y49
Y49: Sprainbrook - East Garden City 345 kV	990	321	ShoreRd xfmr	ShoreRd Bus Con	948	230	Y50	EGC - Carle
Jamaica - Lake Success 138 KV	368	313	Rainy - Farragut	Y50	345	241	Y50	Y49
New York City								
Corona - Jamaica 138 kV	250	200	Y49	Astoria OSW	235	153	Y50	Y49
Farragut West 345/138 kV xfmr	177	191	HG - Astoria	Y50	-	-	-	-
Hudson Ave - Jamaica 138 kV	363	161	HG - Astoria	Y50	-	-	-	-

Table lists representative overloads. Full results wi lts spreadsheets.

Questions?

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Sufficiency Criteria

Sufficiency Criteria

- Add at least one bulk transmission intertie cable connecting between Zone K and the rest of the New York Control Area
- Additional transmission expansion or upgrades, as necessary
- Ensure full output of at least 3,000 MW of offshore wind connected to Long Island (Zone K) while maintaining transmission security under N-0, N-1, and N-1-1 for summer peak and light load conditions
  - Focus will be resolving constraints on bulk facilities impacted by Long Island offshore wind
- Further detail on Sufficiency Criteria will be provided in the PPTN Solution Solicitation

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Clarifications of Sufficiency Criteria

- A sufficient project must meet the entire PPTN – i.e. Developers should not submit separate projects for LIPA-ConEdison interface constraints and Long Island constraints.
- The requirement for a new transmission intertie cable connecting is between Zone K and the rest of the New York Control Area, not necessarily to Zone I or J.
- Non-transmission solutions may be proposed, but are not eligible for cost recovery under NYISO tariff.

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Sufficiency Assessment

- NYISO will model the proposed Public Policy Solution in the Baseline Scenario
- Steady-state N-0, N-1, and N-1-1 thermal and voltage analysis
- Security constrained dispatch will allow system adjustments consistent with transmission security criteria
  - Downstate renewables maintained at full output for all VSA analysis, but certain conventional generation may be allowed to redispatch to mitigate/reduce overloads

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Potential Constraints Excluded From Sufficiency Criteria

- Facilities operating voltage below 100 kV
- Facilities not significantly impacted by the export of power from Long Island offshore wind projects
- Facilities anticipated to be upgraded by offshore wind developers
  - 138 kV circuits between Barrett and New Bridge Rd, and between Barrett and East Garden City.
- Certain constraints excluded from sufficiency criteria may be respected in the evaluation of more efficient and cost-effective solution

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Developer Resources

- **To the extent practicable, NYISO will provide developers with:**
  - Baseline and Alternate Scenario cases and auxiliary files
  - Ratings information and limiting equipment of major constrained facilities
  - One line diagrams
  - Assumptions used in economic planning and other relevant studies

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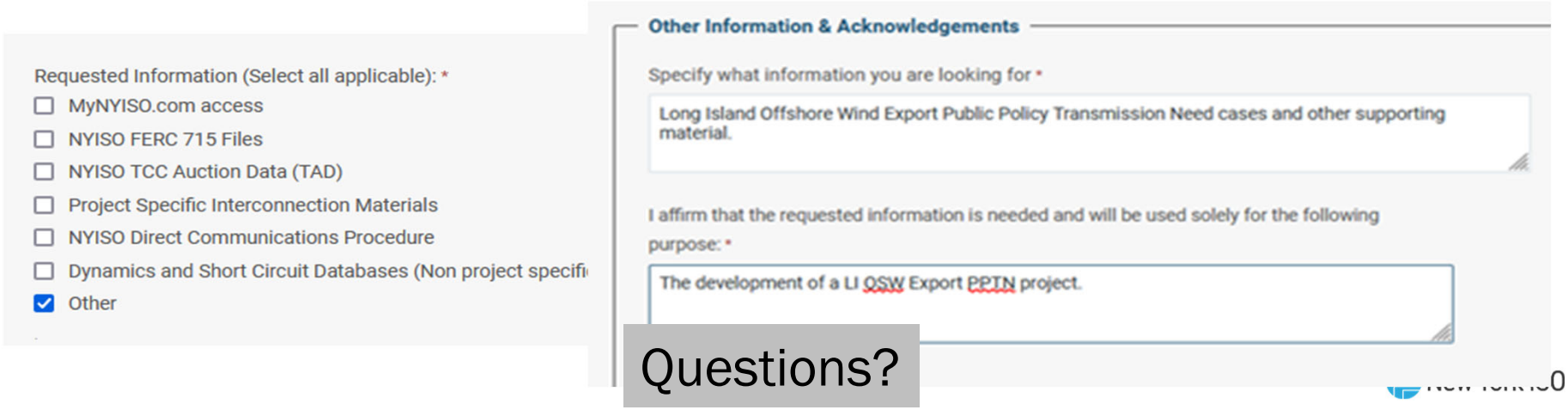
Baseline Cases and Detailed Results

- Detailed results will be available on NYISO website
- Baseline study cases and auxiliary files are available to prospective developers
  - Must complete CEII/NDA here



Questions?

Overview of Comparative Evaluation Metrics

Overview

- The evaluation of Public Policy Transmission Projects differs from other planning processes because it can give varying levels of consideration to the baseline and the scenarios.
- The process for the evaluation of solutions is described in the NYISO Public Policy Transmission Planning Process Manual, and evaluates the metrics set forth in the NYISO's tariff Section 31.4.6 of the OATT, as well as the criteria prescribed by the PSC.

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Criteria and Metrics

Per Section 31.4.8.1 of Attachment Y to the NYISO OATT, NYISO will consider the following criteria and metrics:

capital cost estimate, voluntary cost cap, cost per MW ratio, expandability, operability, performance, production cost, property rights and routing, potential construction delays, and other metrics applicable to of the Public Policy Requirement to achieve the Climate Leadership and Community Protection Act (CLCPA) targets

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Databases for Comparative Evaluation

- Power flow: used in metrics such as transfer limit, cost per MW, and operability
- Resource adequacy: used to maintain enough resources for MARS database and analyze ICAP benefits
- Production cost: used in metrics such as production cost savings, emission, LBMP, load payment, and performance
- Independent Consultant (SECo) databases: used in metrics such as overnight capital cost, schedules, property rights, and expandability

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PSC Criteria

- Section 31.4.8.1.8 of Attachment Y: The NYISO shall apply any criteria specified by the Public Policy Requirement or provided by the NYPSC and perform the analyses requested by the NYPSC, to the extent compliance with such criteria and analyses are feasible.
- The following criteria from the PSC order will be considered in the comparative evaluation and will be stated in the solicitation letter.

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PSC Criteria

- Adding at least one bulk transmission intertie cable to increase the export capability of the LIPA-Con Edison interface, that connects NYISO's Zone K to Zones I and J to ensure the full output from at least 3,000 MW of offshore wind is deliverable from Long Island to the rest of the State; and
- Upgrading associated local transmission facilities to accompany the expansion of the proposed offshore export capability.
- The NYISO's analysis should ensure no transmission security violations, thermal, voltage or stability, would result under normal and emergency operating conditions. The analysis should also ensure the system would be maintained in a reliable manner.

Questions?

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Cost Estimates and Cost Containment

- In selecting a more efficient or cost effective project, both cost estimates and capital cost containment measures will be a critical factor impacting benefit/cost ratios and the financial burden to rate payers.
- For applicable capital costs, Developers can voluntarily submit a single not-to-exceed amount (a "hard cap") or a cap with a cost sharing percentage that would apply to actual costs in excess of the cap (a "soft cap," for example, 80/20, means that 80% of cost overruns would be paid by ratepayers and 20% would be paid by shareholders). The NYISO will be conducting qualitative and quantitative evaluation of the cost containment mechanism if a developer submits a cost cap.

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Independent Overnight Cost Estimates

- SECO will develop the independent cost estimates considering material and labor cost by equipment, engineering and design work, permitting, site acquisition, procurement and construction work, and commissioning needed for the proposed project.
- Preliminary contingency: 30%
- Preliminary escalation factors: 3%
- Final contingency and escalation factors used in the evaluation and selection phase will be communicated to stakeholders.

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Cost Containment—Evaluation Overview

- The NYISO will consider cost containment proposals in both a quantitative and qualitative manner:
- Use in Quantitative Cost Metrics: Depending on several factors, the NYISO will use the proposed cap for contained capital cost elements (Included Capital Costs) to estimate the total capital cost of the project that is used in existing quantitative cost metrics.
- Qualitative Evaluation: In addition, the NYISO will assess any proposed cap qualitatively through a new metric. The additional metric is intended to factor in cost containment as one metric among a host of metrics the NYISO may consider to evaluate, assess and select the more efficient or cost effective transmission project to meet a Public Policy Transmission Need.

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Quantitative Factors – Hard Cap

- A hard cap for capital costs is defined as an amount (the cap) over which the Developer agrees not to recover costs from ratepayers for contained capital costs.
- The NYISO will use the Developer's cost cap as the estimate for Included Capital Costs plus its independent consultant's estimate of the Developer's Excluded Capital Costs to calculate a total project capital costs, whether the Developer's cost cap is above or below the independent consultant's cost estimate.
- The NYISO will use the total capital cost to assess the performance of transmission projects under the cost-based selection metrics, including capital cost and cost per MW.

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Quantitative Factors – Soft Cap

- **Soft cap: A soft cap for capital costs is defined as an amount (the cap) above which excess costs are shared between shareholders and ratepayers based on a defined percentage.**
- **If the Developer's soft cap for the Included Capital Costs is above the amount estimated by the NYISO's independent consultant, the NYISO will rely on the Developer's amount for the Included Capital Costs to calculate the total capital cost of the Developer's Public Policy Transmission Project.**
- **If the Developer's cost cap is below the independent consultant cost estimate, the NYISO will calculate an adjusted estimate for contained capital costs for use in the quantitative cost metrics.**
  - The adjusted estimate will be based upon the amount of financial risk that the Developer proposes to assume.
  - The adjusted estimate for contained capital costs will be calculated by multiplying the difference between the Developer's capital cost cap and the independent consultant estimate (for the same facilities) by the risk percentage assumed by ratepayers.
  - The NYISO will add the ratepayer risk exposure amount to the Developer's cost cap, plus excluded capital costs, and use the total for its quantitative metrics.

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Example of Percentage Cost Sharing

	80/20 Risk Share		50/50 Risk Share		0/100 Risk Share	
	Contained Costs	Excluded Costs	Contained Costs	Excluded Costs	Contained Costs	Excluded Costs
Developer Proposal	100		100		100	
Independent Estimate	200	75	200	75	200	75
Adjusted Estimate	180	75	150	75	100	75
Total Capital Costs for Evaluation	255		225		175	

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Qualitative Metric

- **This metric will consider:**
  - The effectiveness of the proposed Cost Cap in providing an incentive to the Developers to contain their Included Capital Costs, i.e., how aligned is the Developer's incentive to maximize its profits by avoiding cost overruns compared to the level of risk exposure to consumers, and what degree of risk is the Developer assuming to pay for cost overruns
  - The effectiveness of the proposed Cost Cap in protecting ratepayers from Included Capital Cost overruns
  - The magnitude of the difference between the Cost Cap and the independent cost estimate

Questions?

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Transfer Capability and Cost per MW

- The net load in Long Island after considering the impact from behind-the-meter solar generation is forecasted to range between 1,100 and 4,400 MW by 2031, and potentially reaching an even wider range in the following decades.
- The variability of load hour-by-hour, combined with the variability of offshore wind, leads to the criticality of having a robust intertie between Long Island and the rest of New York. In order to serve load while maintaining appropriate levels of operating reserves in Long Island at all times, transmission projects capable of supporting power transfer both into and out of Long Island will be highly preferred.

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Operability

- The design of substations and network connectivity could affect flexibility in operating the system, such as dispatch of generation, access to operating reserves, access to ancillary services, and ability to remove transmission for maintenance.
- Proposals that reduce the need to cycle generation, or better enable the system to respond to system conditions that are more severe than design conditions, will be more favorable.
- Proposals that design facilities to operate in extreme weather conditions more likely to occur with climate change (equipment hardening) will be more favorable.

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Expandability

- To achieve the CLCPA goal of 9,000 MW offshore wind by 2035, NYSERDA has yet to award the remaining 4,684 MW, and the points of interconnection for these future awards are yet to be determined.
- Project proposals that can facilitate feasible combinations of interconnections will better support the expansion of renewable generation, and would be ranked higher in this evaluation metric.

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Performance

- The ability to efficiently optimize the operation of the transmission system for both Long Island imports and exports will be more favorable.

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Property Rights

- Developers should indicate how they intent to obtain property rights for their project, including, but not limited to use of new or existing rights of ways.
- The NYISO and SECO will review, in consultation with the DPS, transmission routing studies provided by developers. Results will be considered in schedule, cost estimates, and expandability.

Questions?

New York ISO

Project Schedule

- The independent duration estimates include the anticipated time for Article VII application preparation, Article VII approval, procurement, and construction.
- Independent minimum duration estimates are the reasonable best case, and may add an estimate for minor siting, permitting, and construction delays.

New York ISO

Production cost and renewable energy deliverability

- The increased transfer capability and relief of New York transmission constraints would result in changes in production cost, locational-based marginal prices, load payment, and CO_2 and other emissions. To support achieving the CLCPA mandates, transmission proposals that result in reduction in state-wide congestion and emissions, as well as minimizing curtailment of renewable generation, will be more favorable.
- Results from production cost simulations such as the following categories may be considered:
  - Production Cost / load payment /demand congestion change, average LBMP change
  - CO2 Emission Change
  - Incremental Energy over the LIPA-NYISO interface
  - Renewable generation curtailment and energy deliverability
- Evaluation will consider state-wide impacts of proposed projects on production costs and renewable energy deliverability

New York ISO

ICAP savings

- Evaluate whether particular projects are likely to produce additional Installed Capacity ("ICAP") cost savings relative to the other proposed projects
- Relies upon the NYISO's optimization tool that minimizes ICAP costs by iteratively adjusting the megawatt requirements for each of the capacity zones, while observing emergency transfer criteria interface limits, transmission security limits for each locality and the LOLE reliability criterion of 0.1 days per year, and pricing capacity using a set of Net CONE cost curves
- The NYISO leverages the tool in order to estimate how future ICAP costs may be impacted by proposed transmission projects

New York ISO

Consequences for Other Regions

- Through the NYISO Transmission Interconnection Procedures, the NYISO will consult with the PJM and ISO-NE concerning any potential impacts due to the proposed projects, if necessary.
- If additional material impacts are identified, the Transmission Interconnection Procedures will identify the necessary upgrades, and any available results will be incorporated into the report.

New York ISO

Impact on Wholesale Electricity Markets

- The proposed projects will increase the LIPA-ConEdison transfer capability and reduce congestion. The NYISO staff will review and determine if there is any adverse impact on the New York wholesale electricity markets.
- The draft results will be provided to Market Monitoring Unit for its review and consideration.

New York ISO

Evaluation of Interaction with Local Transmission Owner Plans

- **The OATT requires the NYISO to review the LTPs as they relate to the BPTF to determine whether any proposed regional Public Policy Transmission Project on the BPTF can**
  - more efficiently or cost-effectively satisfy any local needs driven by a Public Policy Requirement identified in the LTPs, or
  - might more efficiently or cost-effectively satisfy the identified regional Public Policy Transmission Need than any local transmission solutions to needs driven by Public Policy Requirements identified in the LTPs

Questions?

New York ISO

PPTPP Process & Application

Process Overview

1. Solution Solicitation:

- NYISO holds technical conference
- NYISO solicits solutions to Public Policy Transmission Needs
- Developers submit qualification information if not yet qualified
- Qualified developers submit proposed solutions

New York ISO

Process Overview…cont'd

2. Viability & Sufficiency Assessment:

- The NYISO will conduct three initial assessments to determine whether the submitted proposals are: (1) complete, (2) viable, and (3) sufficient to satisfy the Public Policy Transmission Need.
- The NYISO will reject from further consideration during that planning cycle proposals not deemed viable and/or sufficient.
- The NYISO will present the Viability and Sufficiency Assessment to stakeholders, interested parties, and the NYDPS for comment.
- Developers determine whether or not to proceed to the evaluation stage within 15 days of VSA results filed with NYPSC

New York ISO

Process Overview...cont'd

3. Evaluation of Efficiency or Cost Effectiveness:

- NYISO evaluates proposed Public Policy Transmission Projects that have been found to be viable and sufficient and where Developers have decided to proceed
- NYISO ranks Public Policy Transmission Projects for efficiency or cost effectiveness based on tariff metrics and any additional predetermined metrics
- NYISO evaluates the impacts on wholesale markets

New York ISO

Process Overview…cont'd

4. Selection of Public Policy Transmission Project:

- NYISO prepares draft PPTP Report and submits to ESPWG and TPAS for review
- Market Monitoring Unit provides evaluation to MC
- BIC and MC review and advisory vote
- NYISO Board approves PPTP Report and either selects a Public Policy Transmission Project or states reasons for not selecting
- NYISO posts final PPTP Report

New York ISO

PPTPP General Illustrative Timeline

Major Steps	Process Steps	Estimated Months
Solicitation of Solutions	Prepare baseline assessment	3
	Hold technical conference	
	Issues solicitation for solutions	2
	Solutions due in 60 days	
Viability & Sufficiency Assessment	Perform Viability & Sufficiency Assessment	4
	Stakeholder review	
	Final Viability & Sufficiency Assessment filed with PSC	
Evaluation & Selection	Evaluate transmission solutions and issue draft report	6
	Stakeholder review	3
	Board review and action	

*Viability & Sufficiency and Evaluation timeline is dependent on the number and complexity of proposed solutions.

Questions?

New York ISO

Solicitation for Solutions

- NYISO will post a letter to its website soliciting the proposal of Public Policy Transmission Projects and Other Public Policy Projects to satisfy the PPTN.
- The solicitation window will remain open for a period of 60 days.
- Any updates on anticipated schedule will be communicated to stakeholders at ESPWG/TPAS meetings.

New York ISO

Project Submission

- **A Developer must:**
  - Submit information required in Section 31.4.5.1 of Attachment Y by completing and submitting to the NYISO the forms set forth in Attachments B and C to the PPTPP manual
    - NOTE: An updated version of Attachment C – Data Submission for Public Policy Transmission Projects will be available prior to the issuance of the solicitation
  - Execute a study agreement with the NYISO and submit to the NYISO a non-refundable application fee of $10,000 and a study deposit of $100,000
  - Submit a Transmission Interconnection Application or Interconnection Request, as applicable
- **All project proposals should be submitted to the NYISO via e-mail to its Public Policy Planning Mailbox: PublicPolicyPlanningMailbox@nyiso.com**
- **Submittal of a Transmission Interconnection Application or Interconnection Request must be done through the "Interconnection Projects Community" webpage**
  - Developers require a Interconnection Projects Community portal account, and such access should be started as soon as possible

New York ISO

Project Submission…cont'd

- Developers shall submit redacted and un-redacted versions of their project information in accordance with Sections 31.4.4.3.3 and 31.4.15 of Attachment Y.
- A Developer must submit a separate application for each Public Policy Transmission Project; the only permitted alternatives within a proposed Public Policy Transmission Project are routing alternatives.

New York ISO

Project Submission...cont'd

- Developers should propose project schedule, including identifying in-service dates required sequencing of components, if applicable.
- Developers should distinguish which project components are new facilities and which are upgrades, as well as clearly identify facilities that are included as potential interconnection facilities that will be subject to further study by the NYISO.
- NYISO is engaged with stakeholders on discussions to revise the tariff to include a mechanism to implement a TO's right of first refusal (ROFR) to build, own and recover the cost of upgrades to their existing transmission facilities. Developers are encouraged to follow this in NYISO's stakeholder process to understand how tariff revisions would impact project requirements.

Questions?

New York ISO

Coordination with Interconnection Process

- **A Developer submitting a Public Policy Transmission Project must also submit an Interconnection Request under the Transmission Interconnection Procedures (TIP) or Large Facility Interconnection Procedures (LFIP), whichever is applicable.**
  - NOTE: Most transmission projects will use the TIP to evaluate the interconnection of its facility. Developers should also clearly identify any potential interconnection facilities when submitting their TIP applications to avoid confusion.
- **To the extent available, information from interconnection studies will be used in the evaluation of more efficient and cost effective solution.**

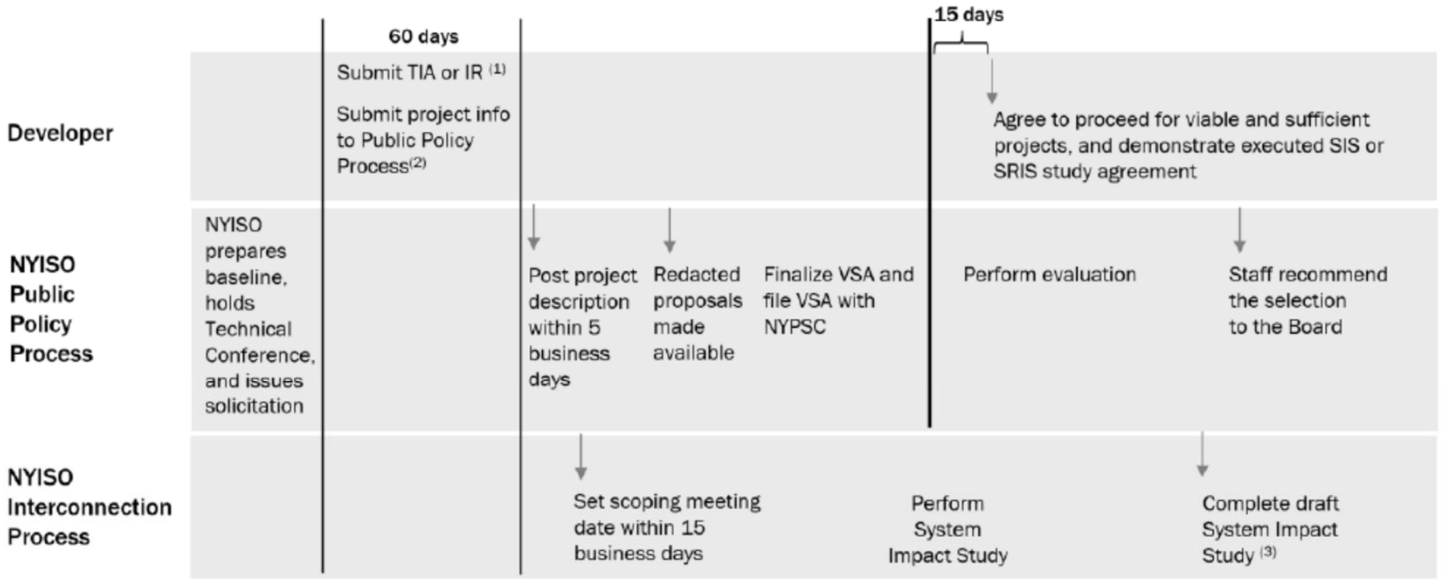
New York ISO

Coordination with Interconnection Process…cont'd

	Public Policy Transmission Planning Process	Transmission Interconnection Procedures
Purpose	Evaluate & select the more efficient or cost effective solution for PPTN	Identify required NUFs needed to reliably connect project
Process Stages	Viability & Sufficiency, Evaluation & Selection, post-selection agreements and monitoring	System Impact Study, Facilities Study, Interconnection Agreement
Application Process	Proposals containing information in Sections 31.4.4.3, 31.4.4.4, and 31.4.5 emailed to PublicPolicyPlanningMailbox@nyiso.com	TIP Interconnection Request submitted through Interconnection Portal
Application Fees	$10,000 Application fee + $100,000 study deposit	$10,000 Application fee + $120,000 SIS Deposit

New York ISO

Coordination with Interconnection Process…cont'd



1. Submit Transmission Interconnection Application or Interconnection Request set forth in Attachments P and X of the OATT, which application or request shall contain identical information as submitted in the Public Policy Process.
2. Submit info in accordance with Section 31.4.4.3.2 of OATT including executed study agreement, redacted and un-redacted proposals, and $10K application fee and $100K study deposit.
3. The tariff provides that NYISO Board will consider the status and available results of the interconnection studies in making its selection. Although it is not a tariff requirement, NYISO prefers the draft SIS be completed before the NYISO recommends the selection to the Board.

New York ISO

Correspondence

- **All correspondence with the NYISO should be done via e-mail to its Public Policy Planning Mailbox: PublicPolicyPlanningMailbox@nyiso.com**
- **CEII data will be exchanged through the Box**
  - Developer specific folders
  - Each member of the development team will have to submit a CEII request to access the data on the Box
- **Please designate more than one point of contact**

New York ISO

NYISO Requests for More Information

- If: (i) the NYISO determines that the Developer's submission of its project information is incomplete, or (ii) the NYISO determines at any time in the planning process that additional project information is required, the NYISO shall request that the Developer provide additional project information or satisfy other project submission requirements in Sections 31.4.4.3 or 31.4.4.4 within 15 days.
- A Developer's failure to provide the data requested by the NYISO within the timeframes described above shall result in the rejection of the Developer's proposed project from further consideration during that planning cycle.

Questions?

New York ISO

Examples of Facility Characterization

Considerations in Developing Proposals

- On April 15, 2021, FERC clarified certain aspects of the NYISO's transmission planning process, including that there is a federal ROFR for Transmission Owners to build, own, and recover the cost of upgrades to their existing transmission facilities
- Under Section 31.6.4 of the OATT, and consistent with Order No. 1000, an upgrade is:

  > an improvement to, addition to, or replacement of a part of an existing transmission facility and shall not refer to an entirely new transmission facility.

- The NYISO is actively engaged with stakeholders on a mechanism to implement the ROFR in the Public Policy Transmission Process that is envisioned to apply to the ongoing PPTN
- Developers should consider the differences between new transmission facilities and upgrades to existing transmission facilities in developing their proposals and completing the transmission data submission form

New York ISO

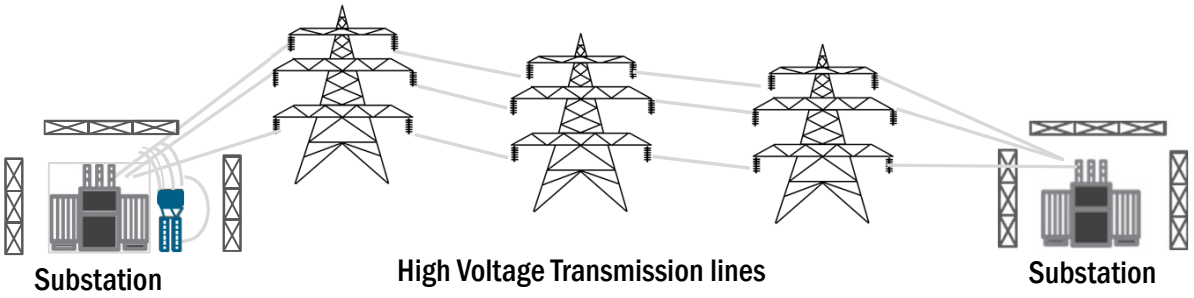
Considerations in Developing Proposals

- The following examples of facility characterizations are basic scenarios applied against the Order No. 1000 definition of upgrades, and based on existing Commission precedent
- Developers should refer to Commission precedent under Order No. 1000 for further information on what facilities constitute new transmission facilities and upgrades to existing transmission facilities

New York ISO

Example Facility Characterization

Example 1: Increase the rating of a 345 kV line by replacing an existing wavetrap

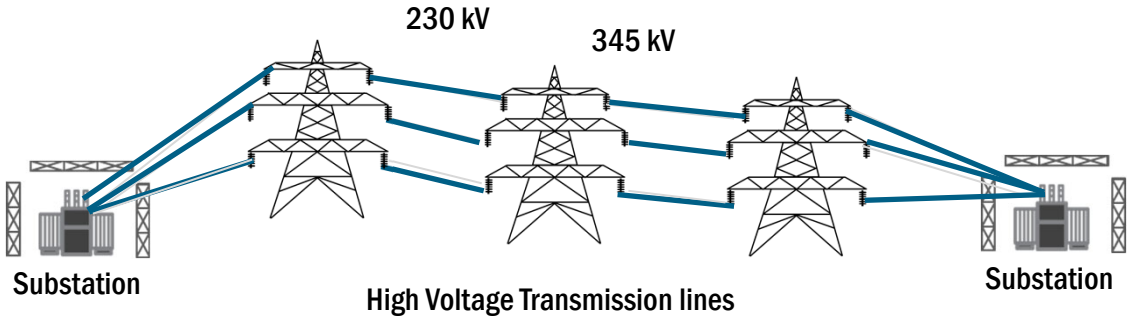


Upgrade, as it is an improvement to an existing transmission facility or a replacement of a part of an existing transmission facility

New York ISO

Example Facility Characterization

Example 2: Reconductor an existing 230 kV transmission line with a 345 kV conductor on the existing structures with same substations

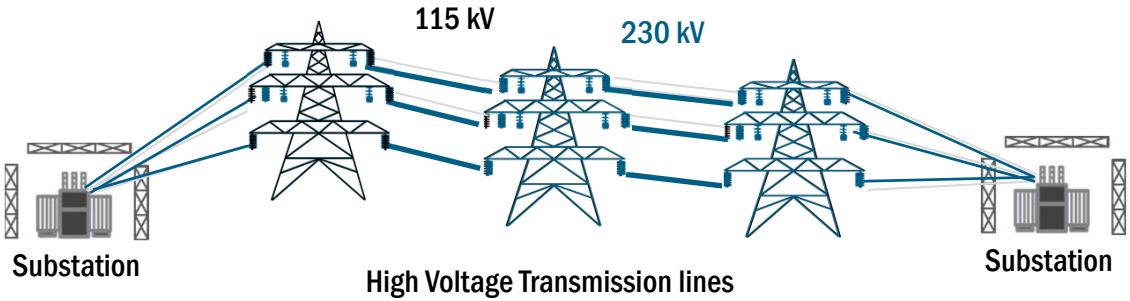


Upgrade, as this is an improvement to an existing transmission facility by increasing the nominal voltage

New York ISO

Example Facility Characterization

Example 3: Replace an existing 115kV transmission line with a 230 kV transmission line by removing the existing 115 kV line and rebuilding a 230 kV line on new structures, new insulators, etc. in the same right-of-way with same substations

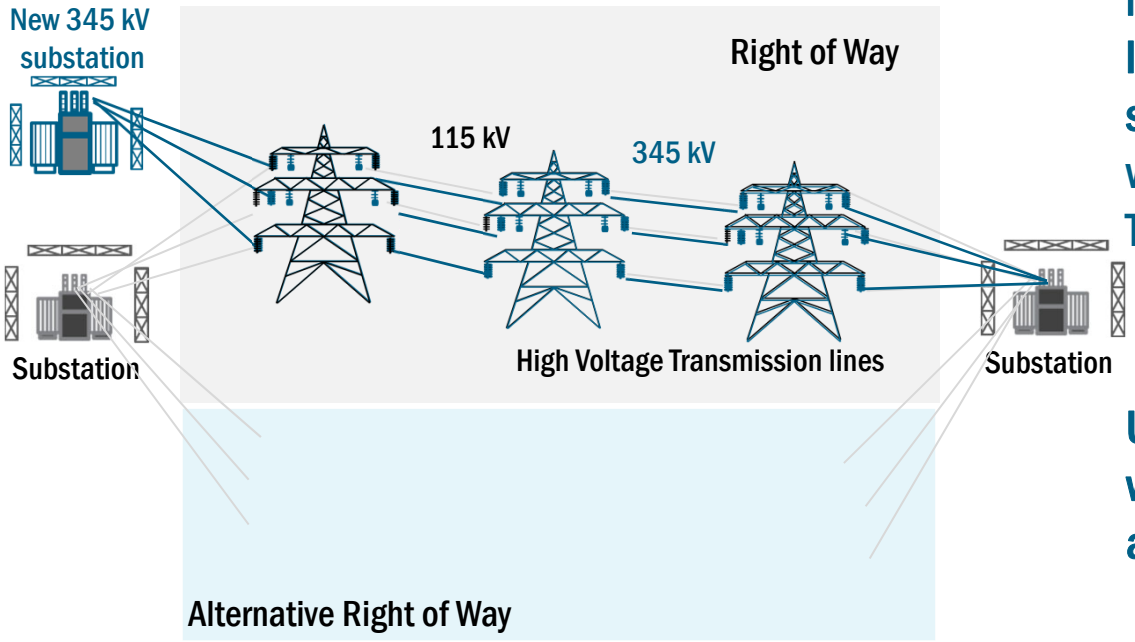


Upgrade, as this is an improvement to an existing transmission facility by increasing the nominal voltage

New York ISO

Example Facility Characterization

Example 4: Relocate an existing 115 kV transmission line to alternative right-of-way (ROW) in order to accommodate a new 345 kV transmission line originating from a new substation



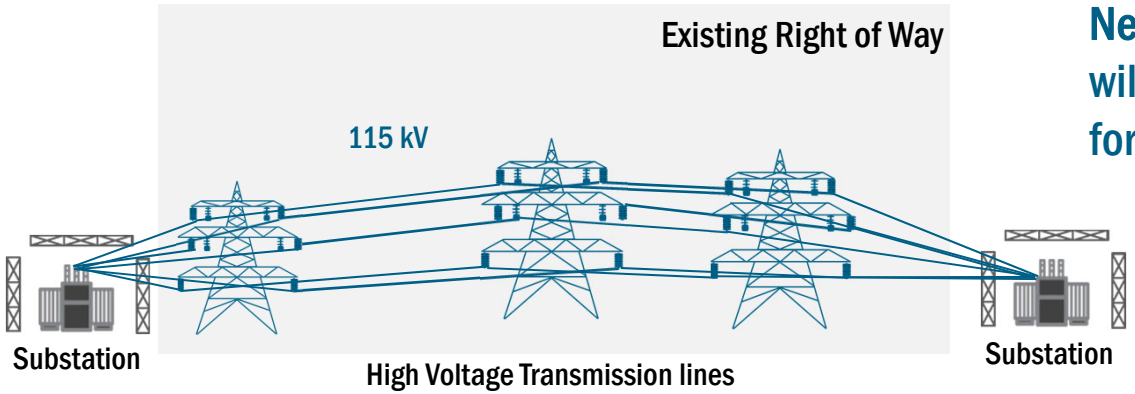
New Facility = new 345 kV line, towers, and substation, and Developer will need to negotiate with TO for ROW use

Upgrade = relocated 115 kV as well as any added ROW to accommodate facility

New York ISO

Example Facility Characterization

Example 5: Build a new 115 kV transmission line and new structures in an existing ROW

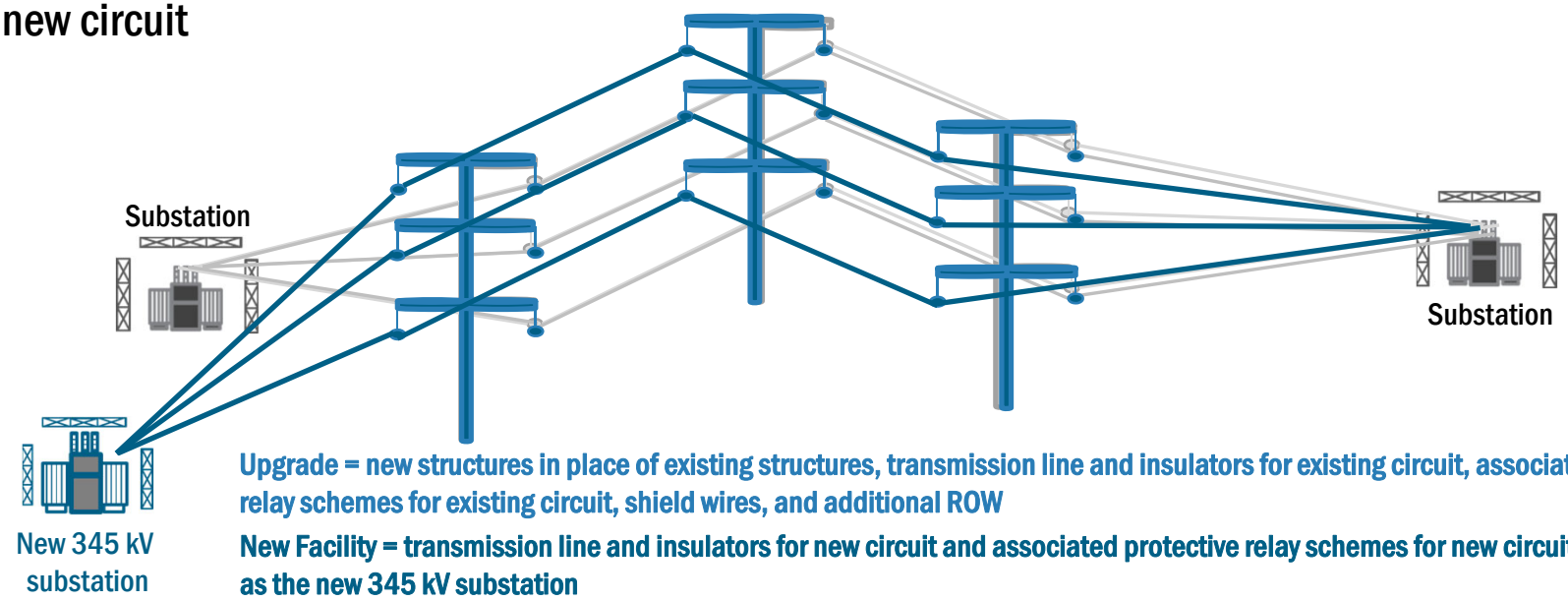


New Facility, and Developer will need to negotiate with TO for ROW use

New York ISO

Example Facility Characterization

Example 6: Co-locate a new 345 kV circuit originating from a new substation on an existing single-circuit transmission line with structures that cannot be expanded to accommodate the new circuit



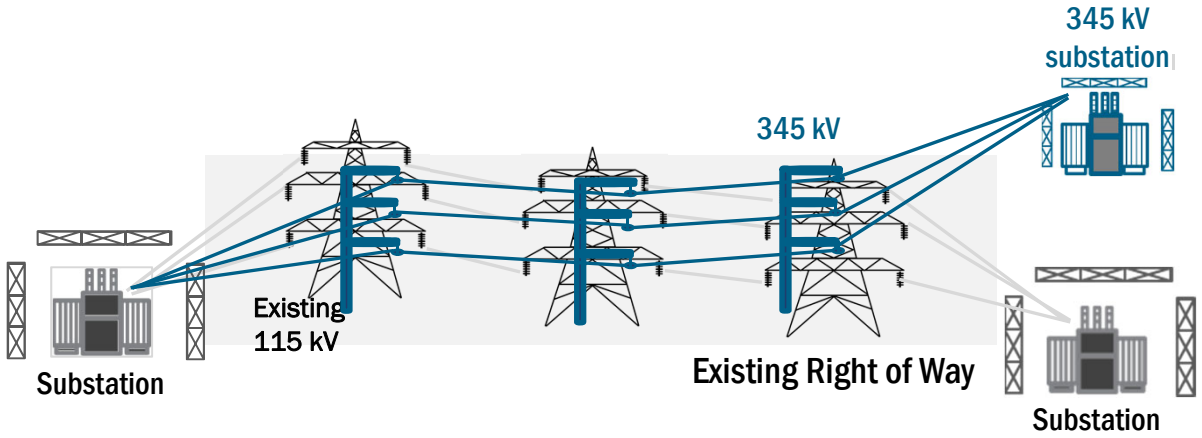
Upgrade = new structures in place of existing structures, transmission line and insulators for existing circuit, associated protective relay schemes for existing circuit, shield wires, and additional ROW

New Facility = transmission line and insulators for new circuit and associated protective relay schemes for new circuit, as well as the new 345 kV substation

New York ISO

Example Facility Characterization

Example 7: Removal of an existing 115 kV transmission line to allow a new 345 kV transmission line to take its place in the existing ROW, but the new line would connect to the system in a different configuration, result in a different power flow, increase voltage/transfer capability, and perform different functions compared to the existing transmission line

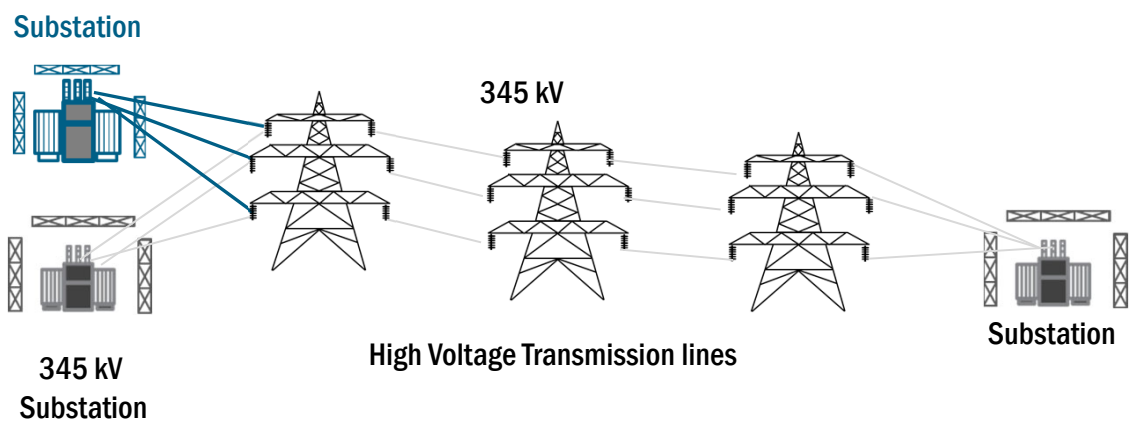


New Facility = transmission line and insulators for new circuit and associated protective relay schemes for new circuit, as well as the new 345 kV substation

New York ISO

Example Facility Characterization

Example 8: Relocate an existing substation to accommodate a proposed project by building a new 345 kV substation near the existing substation and routing all transmission circuits from the existing substation into the replacement substation and removing the existing substation



Upgrade = Relocation of the 345 kV substation

Questions?

New York ISO

Next Steps

Next Steps in Solicitation Phase

- Additional questions may be sent to PublicPolicyPlanningMailbox@nyiso.com by July 15th, 2021
- Additional resources will be made available to prospective developers
- Post FAQ document addressing detailed questions of VSA assessment
- Issue Solution Solicitation Letter – anticipated early August

New York ISO

Questions?