

September 28, 2018

Public Policy Transmission Planning
New York Independent System Operator, Inc.
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Proposed Transmission Needs Driven by Public Policy Requirements

LS Power Grid New York, LLC (“LS Power”, formerly known as North America Transmission, LLC) is pleased to provide these comments in response to the August 1, 2018 Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2018-2019 Transmission Planning Cycle.

New York State is experiencing tremendous change in how electricity is generated, transmitted and consumed. The Public Policy Transmission Need process is a critical tool to aid in planning a transmission grid that will keep up with these changes, and ensure safe, reliable, and economic service. In the comments below, LS Power identifies certain Public Policy Requirements driving the need for transmission, and proposes criteria for the evaluation of solutions.

Each of the identified Public Policy Transmission Needs arise from the Clean Energy Standard (“CES”):¹ delivery of Tier 1 renewable resources; offshore wind interconnection; and retirement of nuclear facilities.

Tier 1 Renewable Resources

NYISO presented results of an analysis of Tier 1 renewable resources at the July 27, 2018 joint meeting of the Electric System Planning Working Group and Transmission Planning Advisor Subcommittee (“ESPWG/TPAS”). This analysis assumed a balanced set of renewable resources suggested by the Department of Public Service shown on the following page, with 45% by energy delivered in Zones J-K, 30% in Zones A-C, and 26% in Zones D-G.

¹The NYPSC Order Adopting a Clean Energy Standard in Case 15-E-0302 and Case 16-E-0270 issued and effective as of August 1, 2016 (“CES Order”) qualifies as a Public Policy Requirement under Attachment Y of the NYISO Open Access Transmission Tariff.

Zone	Capacity			Equivalent Energy*			Total (GWh)	Energy
	Land based wind (MW)	Solar (MW)	Off-shore Wind (MW)	Land based wind (GWh)	Solar (GWh)	Off-shore Wind (GWh)		
A	1,645	213		3,747	261	-	4,008	30%
B		102		-	125	-	125	
C	958	186		2,182	228	-	2,410	
D	325	170		740	208	-	949	26%
E	835	700		1,902	858	-	2,760	
F	120	1,000		273	1,226	-	1,500	
G		400		-	491	-	491	
H		6		-	7	-	7	
I		0		-	-	-	-	
J/K			2,400	-	-	9,461	9,461	
K		328		-	402	-	402	45%
Total	3,883	3,105	2,400				22,113	

* Capacity factor of 26% for land based wind, and 15% solar (Source: NYISO's Power Trends 2018) and 45% for off-shore wind (Source: NYSERDA Off-Shore Wind Study)

Based on this assumed set of representative Tier 1 resources, load-flow cases were run which identified several transmission system constraints:

- 230 kV system in St. Lawrence, Franklin and Clinton Counties; and
- 230 kV lines between Adirondack and Marcy.

In addition, NYISO performed an analysis of potential renewable energy bottling and found that generation in four renewable energy zones would be bottled to some extent without transmission upgrades. Some bottling occurred on the 115 kV system and some was present on the 230 kV or 345 kV system. Regardless of the voltage level where bottling occurs, it is possible that upgrades to the bulk power system may best resolve the issue. The NYISO analysis suggests the following potential transmission system limits could constrain over 1,000 MW of resources:

- Northern New York 230 kV and 115 kV; and
- Western + Southern Tier 345 kV and 115 kV.

One approach to resolving the constraints would be to address individual generator issues in the NYISO interconnection Class Year process. However, the Tier 1 generation will not necessarily be interconnected in a single Class Year, but may be staggered over a series of many renewable procurements. This could result in multiple piecemeal upgrades which would be more expensive than a single set of optimized upgrades. Or, it could be that upgrades are not triggered until a certain level of generation interconnection is established in an area. It would be unfair for certain generators in a single Class Year to be saddled with all upgrades triggered by that class, when earlier Class Years may have taken up all of the available head room on the transmission system and would also benefit from the new transmission capacity. The result of this inefficiency could be the elimination of potentially more economic resources due to the emergence of transmission constraints. Instead, it would be

more efficient to plan the transmission system to accommodate the expected set of least cost resources to avoid the constraints and bottling discussed above.

Tier 1 Renewable Resources represent a Public Policy Requirement that could create a Public Policy Transmission Need. NYISO should release a transmission system model that includes an indicative set of renewable resources, such as used in the analysis presented at the July ESPWG/TPAS meeting. Proposals would be evaluated based a number of metrics, including the lowest cost per MWh of expected additional renewable energy to be delivered.

The need to establish a Public Policy Transmission Need related to Tier 1 Renewable Resources is urgent due to the long lead-time required for transmission planning and development. For example, the NYISO portion of the AC Transmission process was initiated with the August 1, 2014 Request for Proposed Transmission Needs Being Driven by Public Policy Requirements, with transmission facilities currently estimated to be placed in service nine years later, in 2023. Assuming a similar lead-time, a Public Policy Transmission Need arising from the August 1, 2018 notice would be placed in service in 2027, toward the end of CES procurement. It is likely that any latent transmission system capacity will be taken by the earlier stage resources, and there may be a relatively high level of curtailment for resources, without transmission upgrades. Delaying the necessary transmission planning will result in much higher costs for customers, with more expensive resource selection, transmission system congestion, and curtailment of low-cost, low-emission renewable energy.

Waiting until the next cycle under the NYISO tariff, beginning August 1, 2020, will be too late to contribute to a least-cost plan during procurement of Tier 1 Renewable Resources prior to 2030. New York State must move forward now to ensure implementation of the CES in a coordinated, least-cost manner.

Offshore Wind

New York State is establishing an offshore wind industry. The PSC issued the Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement on July 12, 2018 (“Offshore Wind Phase 1 Order”). The Offshore Wind Phase 1 Order adopted an approach that Phase 1 Offshore Wind procurement require generators to be responsible for transmission interconnection, with a recommendation of continued study of transmission options for Phase 2 procurement.

There are many benefits of having competitive transmission for Phase 2 of offshore wind procurement. First, there will be cost savings from regulated ownership of offshore transmission facilities due to lower financing and other costs. In addition, there will be cost savings from sharing of offshore transmission facilities between multiple generators. There could be additional ratepayer benefits from integrated offshore transmission facilities with multiple interconnection points, compared to radial interconnections dedicated to a single resource area. There will be synergies from integrated facilities, with lower losses and higher overall deliverability than multiple radial lines. In addition, competitive procurement would be the best method to apply competitive pressure on cost and also the best method to identify innovative approaches that could result in the lowest net cost to ratepayers. For

these reasons, the best path forward for offshore wind transmission facilities for Phase 2 would be competitive procurement of offshore transmission. Competitive procurement of offshore transmission should be conducted under the NYISO Public Policy Transmission Need process.

The evaluation criteria for an offshore transmission Public Policy Transmission Need would include a number of metrics, including the most efficient and cost-effective proposal to deliver a threshold amount of offshore wind, and the least cost per MWh of delivered offshore wind.

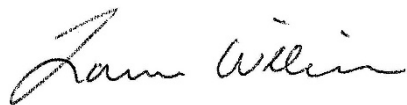
Nuclear Retirements

The Zero-Emissions Credit (“ZEC”) established in the CES Order expires in 2029. The ZEC is described in the CES Order as a bridge to the clean energy future, and the final ZEC tranche runs through March 31, 2029. As part of the 2016 Reliability Needs Assessment, NYISO studied a scenario with No Nuclear generation in New York State, which resulted in a Loss of Load Expectancy (“LOLE”) 10 times greater than in the base case, and three times higher than the standard of 0.10. This provides an indication that if all existing nuclear units retire at the expiration of the ZEC program on March 31, 2029, there could be a significant reliability need. While there is sufficient time to begin planning for this need in 2029, there is also a chance that units may become uneconomic prior to March 31, 2029, even with the ZEC program. At a minimum, NYISO should perform further study of the possibility of nuclear unit retirements and the implication for reliability in New York. In the event such studies identify a need for new transmission prior to 2027, a Public Policy Transmission Need should be established. The evaluation criteria for such a Public Policy Transmission Need would be the resolution of identified reliability violations at the least cost.

Summary

North America Transmission respectfully requests that the NYISO include these identified Public Policy Requirements in its submittal to the New York Public Service Commission.

Sincerely,

A handwritten signature in cursive script that reads "Lawrence Willick".

Lawrence Willick

Senior Vice President