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Comments on NYISO's Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2018-2019 Transmission Planning Cycle

Pursuant to Section 31.4.2 of the New York Independent System Operator (NYISO) Open Access Transmission Tariff (OATT), NYISO requests "any stakeholder or interested party to submit proposed transmission needs being driven by public policy requirements and for which the NYISO should solicit and evaluate transmission solutions". Invenergy appreciates the opportunity to comment on transmission needs driven by public policy requirements in New York State. Invenergy is North America's largest privately held independent power producer. Since 2001, Invenergy has developed over 127 clean energy generation and storage facilities totaling more than 20,200 megawatts (MW), including four operating wind and solar projects in New York.

As stated in the NYISO's 2018 Power Trends report, the NYISO views open markets as an essential, effective platform for pursuing public policy goals. The mission of NYISO is to maintain and enhance regional reliability, operate fair and competitive wholesale electricity markets, and to plan for the power system of the future. Invenergy agrees that open markets and long-term transmission planning are essential to allowing New York to reach clean energy mandates and goals.

Public Policies

The key public policy driving the need for new and upgraded transmission in New York is the Clean Energy Standard (CES). The CES was adopted by the New York Public Service Commission (PSC) in 2016, and mandates 50 percent of New York's electricity is generated from renewable sources by 2030 ("50 by 30"). The CES represents the electric power sector's contribution to the larger New York greenhouse gas (GHG) emission reduction target – a 40 percent reduction in GHG emission reductions by 2030 and 80 percent reduction in GHG emissions by 2050 both from 1990 levels. NYSERDA is also studying the most rapid, cost-effective, and responsible pathway to reach 100 percent renewable energy statewide.

Another public policy driving the need for new and upgraded transmission is Governor Cuomo's Reforming the Energy Vision (REV) initiative. In the REV process, the PSC identified six policy objectives: 1) fuel and resource diversity; 2) system reliability and resiliency; 3) reduction of carbon emissions; 4) system wide efficiency; 5) enhanced customer engagement; and 6) market animation. Fuel and resource diversity, system

reliability and resilience, system efficiency, and carbon emission reduction are all outcomes of expanding and upgrading transmission near existing and planned renewable resources.

Transmission Needs

To ensure achievement of the CES and other New York policy goals, adequate upgrades to the transmission grid must be put in place to enable clean energy supply to reach end users without significant curtailment due to system congestion. Curtailment of clean energy supplies stifles progress towards both the 50 by 30 energy supply and GHG emission goals by effectively wasting the energy generating potential of existing, planned, and future carbon free resources.

Prior to the PPTN solicitation, at the request of the New York DPS, NYISO released *Public Policy Transmission Needs Study: Transmission Constrained Renewable Generation Pockets* ("*Transmission Needs Study*") on July 27, 2018 to provide insight on possible public policy-related transmission needs. To conduct the analysis, NYISO projected renewable resource additions to satisfy the CES 50 by 30 goal. For the purposes of the *Transmission Needs Study* analysis, NYISO projected almost 4,000 MW of additional land based wind and almost 3,000 MW of additional solar to reach the 50 percent CES by 2030. NYISO's assessment allocated the majority of the new renewable additions to Zones A, C, and E, consistent with the proposed 5,322 MW of new wind and solar developments in Zones A-E listed in NYISO's Power Trends Report. Invenergy supports NYISO's additional resource projections. These Zones have the best combined project fundamentals, based on a combination of land availability, cost, and resource level. This is illustrated by the magnitude of existing and planned projects in these Zones. Furthermore, together these fundaments serve as rational predictors of siting decisions for future developments needed to fulfill the 50 by 30 goal.

Given these assumptions, NYISO modeled system operation and identified where renewable curtailment was needed to relieve thermal violations in the system. NYISO identified "pockets", created by anticipated network constraints, where significant curtailment would occur during periods of high renewable generation. NYISO's study found that additional transmission in Pocket X in northern New York would unbottle up to 1,050 MW of renewable generation, enabling it to reach end users. The analysis also identified significant unbottling potential of up to 925 MW in Pocket Z in the Southern Tier. Combined, new and upgraded transmission in these areas would maximize the unbottling potential of existing, planned, and future projects and best support

achievement of public policy goals. Invenergy supports NYISO's findings and encourages transmission development in the X and Z Pockets.

Conclusion

In conclusion, we support NYISO's study results and believe transmission expansion in Pockets X and Z will result in increased bulk electric system flexibility and reliability, carbon emission reductions, and will enable a more efficient dispatch of bulk electric system renewable resources. New and upgraded transmission unbottling Pockets X and Z likely present an optimal pathway towards enabling New York State to meet the CES and GHG emission reduction goals. Thank you for the opportunity to comment. Please feel free to reach out with questions or comments.

Sincerely,

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