Invenergy

VIA ELECTRONIC DELIVERY

October 31, 2022

Mr. Zachary Smith
Vice President, System & Resource Planning
New York Independent System Operator
10 Krey Boulevard
Rensselaer, New York 12144

Re: Request for Proposed Transmission Needs Being Driven by Public Policy Requirements for the 2022-2023 Transmission Planning System

Dear Mr. Smith,

On August 31, 2022, pursuant to Section 31.4.2 of the NYISO Open Access Transmission Tariff, the New York Independent System Operator ("NYISO") issued a solicitation of transmission needs driven by Public Policy Requirements for which the NYISO should solicit and evaluate transmission solutions for the 2022-2023 Transmission Planning Cycle. Invenergy appreciates the opportunity to comment on transmission needs driven by public policy requirements in New York State. Specifically, Invenergy recommends the need for significant transmission investment in the Southern Tier, pursuant to the findings identifying significant transmission constraints bottling renewables.

Invenergy is North America's largest privately held global developer and operator of sustainable energy solutions. Since 2001, Invenergy has developed over 191 clean energy generation and storage facilities, totaling around 30 gigawatts (GW). This includes four operating wind and solar projects, and over 2,000 megawatts (MWs) of upstate wind, solar, and energy storage in New York. In addition, Invenergy is a joint partner in the Clean Path New York HVDC transmission project and is developing Leading Light Wind, an offshore lease holder in the New York Bight Wind Lease Area.

Public Policies Driving Transmission Need

The Climate Leadership and Community Protection Act (CLCPA)

The key public policy driving the need for new and upgraded transmission in New York is the Climate Leadership and Community Protection Act (CLCPA) signed into law in 2019. For the electric sector, the CLCPA set the goals to achieve 70 percent of the state's electricity from renewable sources by 2030 and have one hundred percent of the state's electricity from carbon-free resources by 2040. Specific carve-outs in the CLCPA include the installation of 3,000 MWs of energy storage by 2030. In January 2022, Governor Hochul doubled the state's energy storage deployment target from 3 GWs to at least 6 GWs by 2030. The CLCPA also details a nation leading goal of 9,000 MWs of offshore wind by 2035.

Clean Energy Standard (CES)

In 2020, the Public Service Commission (PSC) established an order under the Clean Energy Standard (CES) to achieve the goals set in the CLCPA and directed NYSERDA to procure Renewable Energy Credits (RECs) annually. To date, NYSERDA has signed 90 Tier 1 contracts to procure RECs from onshore wind, solar and energy storage projects totaling around 9,500 MWs.

The Accelerate Renewable Energy Growth and Community Benefit Act (AREGCBA)

In April 2020, New York passed The Accelerate Renewable Energy Growth and Community Benefit Act ("The AREGCBA") to "improve and streamline the process for environmentally responsible and cost-effective siting of large-scale renewable energy projects across New York." The AREGCBA directed the Commission to initiate a planning process to guide investments in the New York grid.

Directed by the AREGCBA and subsequent Commission orders in November 2020, the Utility Transmission & Distribution Investment Working Group Report ("Joint Utility Report") filed a report where each utility identified key areas of constraints in their respective distribution systems. The findings resulted in subsequent requests for additional analyses and recommendations for upgrades to be filed as a part of utility rate cases. These findings will be discussed as a part of Invenergy's recommendation.

Proposed Transmission Needs

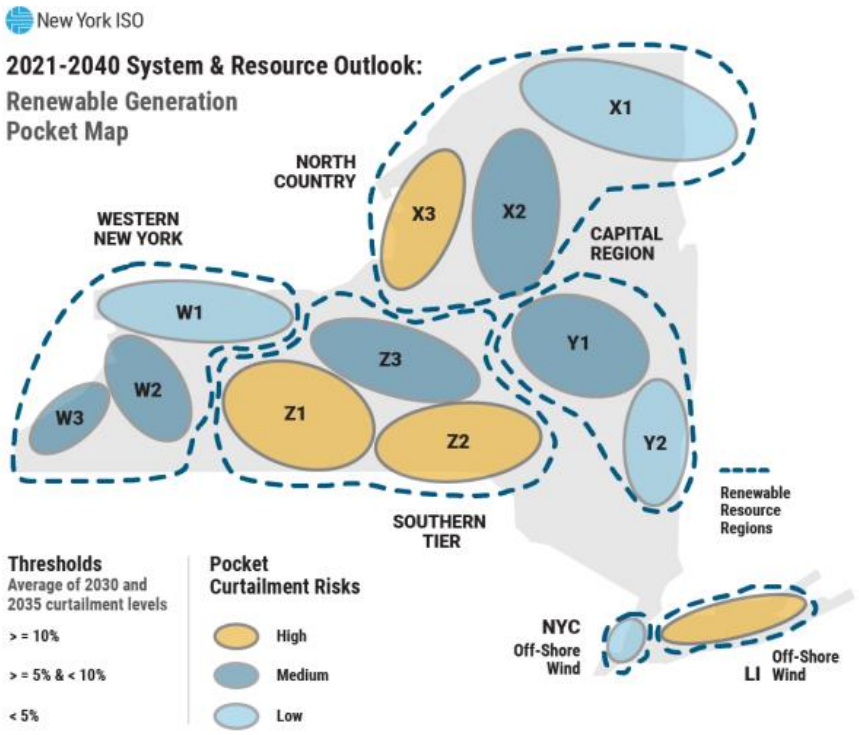
The renewable goals established in these policies have been modeled to identify the impact on the transmission grid. As will be discussed here, these analyses consistently show that the quantity of renewables required to meet the CLCPA put significant strain

on the existing NYISO transmission system and that significant investment is needed to achieve the CLCPA electric sector goals in an economic manner as transmission constraints in the existing system limit full delivery of renewable energy.

First, the Joint Utility Report demonstrated significant constraints on the system. Each of the utilities performed analysis, and in particular, the Hornell & South Perry area in NYSEG service territory show the highest concentrations and severity of renewable bottlenecks in the state. The constraints were significant and Avangrid was requested to study further to better identify necessary upgrades to alleviate the constraints in the region and unbottle significant renewables. While the revised and further proposed Areas of Concern or "Phase 2a upgrades" are currently under PSC review[1], Invenergy's analysis shows there is additional need in the region showing several lines require upgrades from 115 kV lines to 230 or 345 kV solutions outside of the Phase 2a proposed projects. This type of solution would be well suited as a PPTN competitive solicitation to drive the best results for investment.

The constraints identified in the Hornell & South Perry area in NYSEG are consistent with the findings in NYISO's 2021-2040 System & Resource Outlook ("The Outlook"). The Outlook provides an overview of potential resource development pathways and their related transmission constraints and opportunities. The Outlook identifies renewable energy "pockets" created by anticipated network constraints, where significant curtailment would occur during periods of high renewable generation, aligned with CLCPA goals. Key findings show five terawatt hours (or approximately 5 percent) of renewable generation to be curtailed in 2030 and 10 terawatt hours in 2025 due to transmission limitations in renewable pockets and spillage to occur as early as 2030.

[1] NYSDPS Case: 20-E-0197, Item: 148 and 149, 2022 March 9, Attachment B and Areas of Concern Study Appendix B, Niagara Mohawk Power Corporation, d/b/a National Grid and New York State Electric & Gas Corporation, Rochester Gas and Electric Corporation,



The Outlook showed pockets Z1 and Z2 in the Southern Tier have the greatest solar and wind opportunity to support growth in clean energy with many renewables in queue but are two of the most constrained pockets in the state. The Outlook recommends Finger Lakes and Southern Tier pockets Z1 and Z2 as priority regions for transmission expansion.[2]

As a result of those findings, Invenergy recommends a Public Policy Need be declared and a subsequent investment in the transmission system in these pockets of highest curtailment risk: Z1 and Z2 in the Finger Lakes and Southern Tier. Invenergy secondarily recommends consideration of transmission investment need in the X3 pocket in the North Country and the Long Island Offshore Wind pocket after the pockets Z1 and Z2 have been addressed.

Invenergy recommends that the transmission investment in this region is aligned with the required timeline to meet the CLCPA's 2030 goals. Upgrades should target areas with

[2] NYISO, 2021-2040 System & Resource Outlook (The Outlook), pg. 65

significant existing constraints that would unbottle mature development projects and provide enough headroom to spur new development.

Conclusion

In conclusion, there must be significant upgrades to the transmission system to ensure renewables can be delivered to customers reliability while minimizing curtailment and spillover due to transmission congestion. Curtailment and spillage of clean energy supplies stifles progress towards the CLCPA zero emissions goal by wasting energy generating potential from existing, planned, and future carbon free resources.

We support the findings in The Outlook that identify four pockets that will benefit from transmission expansion and recommend NYISO and the PSC identify these areas as those needing investment to fulfill the public policy goals. In particular, new and upgraded transmission for Pockets Z1 and Z2 in the Southern Tier will result in increased bulk electric system flexibility and reliability, carbon emission reductions, and more efficient dispatch of bulk electric system renewable resources.

Thank you for the opportunity to comment. Please feel free to reach out with questions or comments.

Respectfully submitted,

Invenergy LLC

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