

February 15, 2023

Public Policy Transmission Planning
New York Independent System Operator, Inc.
10 Krey Boulevard
Rensselaer, NY 12144

By e-mail to PublicPolicyPlanningMailbox@nyiso.com

LS Power Grid New York Corporation I ("LS Power") submits the following comments to the Long Island offshore Wind Export PPTN: Power Flow Results presented at the February 8th, 2023 ESPWG/TPAS in response to the Expandability and Operability metrics under consideration by NYISO.

Considerations for the Technological Benefits of VSC HVDC Technology

TO35 proposal includes multiple Voltage Source Converter (VSC) HVDC terminals connecting Long Island to the rest of the New York Control Area. VSC HVDC technology provides the ability to operate under any system short circuit condition, provide dynamic VARs for voltage regulation independently at each DC terminal, quickly adjust real and reactive power flows in response to system contingencies, control flows regardless of future system changes, and provide black start capability.¹

With the increased frequency of storms and intermittent resources needed to meet the CLCPA, VSC HVDC provides additional benefits to support the transmission system in NY. LS Power believes additional consideration should be given to these technological advantages when evaluating TO35.

The Weighted Short Circuit Ratio (WSCR) calculation for T035 is incorrect.

The denominator of the WSCR calculation sums the power production of the generation resources. NYISO appears to have included the VSC HVDC capability in this calculation, which is incorrect. While it may be appropriate to include other types of HVDC technology in the denominator (e.g., Line Commutated Converter), VSC HVDC technology should not be included given its technical advantages/operating characteristics as described above. The inclusion of T035 in the NYISO analysis should not result in a reduction to the WSCR.

WSCR is not an appropriate metric to compare VSC HVDC and HVAC solutions.

The WSCR concept was proposed by ERCOT as part of a 2014 study for a specific circumstance to gauge grid strength. WSCR is a biased metric which is directly proportional to the Short-Circuit MVA contribution provided by synchronous machines only. The application of WSCR is highly system-dependent and, most importantly for this circumstance, does not consider the benefits provided by VSC HVDC. While VSC HVDC improves grid strength, it is not considered within the WSCR calculation. ERCOT did not have VSC HVDC facilities in its study area that needed to be considered when it established the WSCR calculation.

¹ <https://www.hitachienergy.com/about-us/case-studies/mackinac> and <https://library.e.abb.com/public/c1f12e6192fdee7ac1257450005cb8b1/08TD0083.pdf>.

Given the varying technologies being considered, NYISO must use alternative approaches to compare the grid strength offered by the various solutions. For example, NYISO could conduct a current injection study and plot the resulting voltage variations. This approach would not bias one technology versus another. Clearly, as demonstrated by the use of VSC HVDC technology to stabilize weak power networks,² NYISO cannot rely on the WSCR calculation as a metric to compare grid strength.

LI Export Capability

Please provide the incremental transfer created by T035 if the East Garden City 138 kV P5 contingency were resolved. In prior PPTN's, NYISO would evaluate this as a metric of expandability (e.g., additional transfer created if limited scope upgrades were completed).

Sincerely,

Tim Lundin
Regulatory Policy Manager

²<https://library.e.abb.com/public/181cbb7702cd43d0c1257d650024a088/Mackinac%20HVDC%20Converter%20Automatic%20runback%20utilizing%20locally%20measured%20quantities.pdf>.