

HQUS Feedback to draft White Paper Plan “Reliability and Market Considerations for a Grid in Transition” presented on April 15th, 2019, by NYISO

This note is to provide feedback to NYISO’s April 15th presentation “Reliability and Market Considerations for a Grid in Transition” and call for stakeholder input. Known and unknown challenges exist in transitioning, and sustaining from a system of Rankine cycle, simple cycle, and combined cycle whereby generation output, of real, imaginary, and reactive power can be regulated and balanced, to a system of renewable energy as defined in the State goal of 70% renewable energy by 2030 (“70x30”). First, the NYISO should study the extent of potential reliability issues in the achievement of this objective. Next, it should seek solutions and propose market rule changes to mitigate issues arising from the change in supply mix.

The identification of potential issues is best suited by existing planning tools and processes, akin to the Interconnection Queue process. The project scope should identify the goals of the study. HQUS recommends NYISO engage in a study of (i) reliability of interconnection¹ for the quantity of renewable resources consistent with 70x30, and taking into consideration associated retirements of non-renewable resources, (ii) identify reliability concerns, including shortfalls of Ancillary Services, and (iii) identify incremental sources of Ancillary Services (internal and/or external²) that may be underused today for various reasons. For example, the NYISO should study the real-time interchange scheduling processes by allowing the economic scheduling of interchange across controllable interties with Hydro-Quebec (HQ) every 5 minutes (aka ramping or RS4), using the 5-minute RTD³. Interchange scheduling with HQ is currently achieved on either a 15-minute or an hourly basis using the RTC software.

Thermal, Voltage, Stability and Short Circuit analyses should be conducted to assess the performance of the base system conditions within the Study Area, with and without the 70x30, in accordance with applicable Reliability Standards, guidelines and study practices, and as described under the “Section 2.4.1 of the NYISO Transmission Planning Guideline #1-1” (Attachment F of the NYISO Transmission Expansion and Interconnection Manual).

The analyses should determine the incremental impact of 70x30 on the normal and emergency transfer limits of the New York Transmission System (open and closed definitions, as applicable). Impact on System Performance and Transfer limits of the “NYISO Transmission Planning Guideline #1-1” (Attachment F of the NYISO TEI Manual). NYISO Transfer limits should be evaluated in the predominant west-to-east/north-to-south direction. Sufficient analyses should be conducted to determine the most limiting of the thermal, voltage, or stability limit under summer and winter peak load conditions.

A Study report should be prepared, following the report outline (as applicable) specified in the NYISO Transmission Planning Guideline #1-1 (Attachment F of the NYISO TEI Manual).

¹ Interconnection Study scope generally includes: Purpose, Interconnect Plan, Study Period, Study area, Base Case Conditions (e.g. with vs without the 70x30 project), Analysis (Power Flow, Stability, Short Circuit, Extreme Contingency, N-1-1, Modeling Assumptions, NUFs, SUFs, SDUs).

² The study should analyze the effectiveness of the External Ties providing: Rate Schedule 2 Reactive Supply and Voltage Support, Rate Schedule 3 Regulation and Frequency Response, Rate Schedule 4 Balancing [5-minute dispatch], Rate Schedule 5 Operating reserves (10-minute and 30-minute) & Rate Schedule 6 Black Start.

³ Because controllable interties today are scheduled using RTC and settled using RTD, there are instances where external resources are not optimized (i.e. they are either over or under committed), and this creates friction on the interties. Furthermore, scheduling on a 5 min. basis is a pre-requisite (as confirmed by NYISO) for external resources to provide operating reserve and potentially other ancillary services. As such, this could lead to enhanced and more equitable competition across multiple market products.