



September 30, 2016

New York Independent System Operator  
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Rensselaer, New York 12144

*Via email: PublicPolicyPlanningMailbox@nyiso.com*

In response to the request for proposed transmission needs being driven by Public Policy Requirements issued by the NYISO on August 1, 2016, H.Q. Energy Services (U.S.) Inc. (“HQUS”) the U.S. subsidiary of Hydro-Québec (“HQ”) hereby submits this proposal defining a proposed transmission need in the state of New York.

Hydro-Québec is one of the largest suppliers of clean energy in North America, operating a system of over 99% renewable resources, comprised largely of hydroelectric generation. Because HQ hydro supply is economically competitive with other renewable resources and environmentally sound (hydropower developed in Québec has a GHG emission profile similar to wind and less than photovoltaic solar on a lifecycle basis<sup>1</sup>), deliveries from HQ can be utilized to assist New York to meet a host of public policy objectives, including the increased use of clean and renewable energy consistent with the program objectives associated with the Clean Energy Standard (“CES”) <sup>2</sup>. Because HQ’s hydro fleet can provide both baseload and dispatchable generation, New York can leverage these resources to make significant contributions towards their renewable energy targets, and to help integrate intermittent renewable and distributed energy resources while maintaining bulk system reliability and efficient operations.

As New York looks to implement more aggressive environmental policy objectives for the future, access to incremental renewable resources will be a major determinant in achieving these goals cost effectively. Therefore, HQUS is recommending a Public Policy Requirement be identified for transmission capable of meeting the dual purpose of delivering incremental renewable supply into the New York power grid and relieving transmission congestion for full delivery of existing renewable supply from northern New York to downstate load centers.

Existing transmission interconnections between Québec and New York are often fully utilized (particularly during peak periods), preventing HQ from providing incremental renewable supply to New York when it is needed most in displacing higher emitting resources. Furthermore,

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<sup>1</sup> Hydro-Québec, Environnement et développement durable; CIRAIG; Tirado-Seco, 2014, Comparaison des filières de production d’électricité et des bouquets d’énergie électrique, 50 p., annexes. (Study comparing electricity generation options and electricity mixes, available only in French on Hydro-Québec’s website).

<sup>2</sup> Case 15-E-0302: Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard.

existing HQ interconnections deliver power into a region currently oversupplied with renewable resources. Due to a combination of persistent transmission congestion across central New York and a loss of regional load in the North Country, renewable resources in this area are forced to compete against one another to deliver energy to load centers across the state. These transmission inadequacies create periods where New York is unable to access the full capability of available renewable resources, resulting in fossil fuel generation being dispatched to serve load which could have otherwise been supplied by clean and renewable supply. Without transmission solutions which create new paths for these renewables, bottling of renewable generation in northern New York is likely to occur more frequently in the future; especially considering the projected decline of local load combined with more wind generation coming online to compete for limited transmission access.

Developing new transmission between Québec and New York and relieving transmission constraints in the North Country will contribute towards New York meeting the goals mandated in the CES and outlined in the 2014 State Energy Plan<sup>3</sup> of meeting 50% of the state's energy consumption using renewable resources by 2030 and reducing GHG emissions 40% by 2030.

According to the CES order issued August 1, 2016<sup>4</sup>, New York will require over 29 TWh of incremental renewable energy supply to meet the 50% target by 2030<sup>5</sup>. This 29 TWh requirement could increase if ambitious energy efficiency targets are not met and if New York cannot retain the full amount of supply historically delivered by existing renewable resources into New York. For context, 29 TWh will require New York to procure more than 5 times the renewable energy New York was able to obtain through the NYSERDA Main Tier RPS program from 2005 to 2015<sup>6</sup>.

Hydropower currently represents over 86%<sup>7</sup> of New York's renewable supply, demonstrating the ability for hydro to play a critical role in contributing to renewable policy goals. Since no new major hydropower facilities are expected to come into service in New York, new transmission projects between New York and Québec will be the most viable path to accessing more hydro supply of scale. HQ operates a system of approximately 37,000 GW of installed capacity, and traditionally exports between 25 and 30 TWh per year (of which only 7-10 TWh has historically been supplied to New York). Hydro delivered over new transmission can be an effective means of making progress towards the 2030 target. For example, a new 1,000 MW DC transmission project can deliver up to 8.7 TWh of incremental renewable energy to New York, nearly one third of incremental renewable energy needed to meet the 2030 target.

New or expanded transmission interconnections between Québec and New York will also allow New York to leverage the dispatchable characteristics of HQ's hydropower fleet in order to more efficiently integrate intermittent renewables into the grid, and maintain bulk system reliability

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<sup>3</sup> N.Y. State Energy Planning Bd., The Energy to Lead: 2015 New York State Energy Plan 111–112 (2015).

<sup>4</sup> Order Adopting A Clean Energy Standard, August 1, 2016,

<sup>5</sup> Order Adopting A Clean Energy Standard, August 1, 2016, Page 85

<sup>6</sup> New York State Renewable Portfolio Standard Annual Performance Report through December 31, 2015, March 2016

<sup>7</sup> Staff White Paper on Clean Energy Standard, 2016, Appendix B.

while transitioning to a supply mix comprised of 50% renewable energy. In their supplemental comments in the CES proceeding submitted on July 8<sup>th</sup>, the NYISO identified the need for new transmission investments to accommodate an increase in renewable resources in New York (expected to largely be developed in the northern and western portions of the state), and deliver these resources to load centers in southeastern New York. These comments reflect the existence of a Public Policy Requirement to relieve transmission congestion in the North Country, and the need to enable the full delivery of available clean and renewable resources.

The NYISO also estimates that the resource mix envisioned by Department of Public Service to meet the 2030 CES target of 50% electricity from renewable resources will result in an increase to the Installed Reserve Margin from 17.5% to between 40 and 45%. While it is difficult to predict the cost impact from such an increase, this shift would likely result in an increased cost to ratepayers from supporting a substantial increase in reserve capacity. This increase may be mitigated through the use of large hydro resources, as the NYISO stated “If the NYISO were to assume long-term committed Canadian hydroelectric imports with historically high performance factors, those resources would put downward pressure on the IRM [Installed Reserve Margin] percentage.”<sup>8</sup>

In addition to CES compliance, incremental HQ hydropower delivered into New York over new or expanded transmission paired with congestion relief in the North Country will provide a number of related environmental and system benefits, including lower compliance costs for federal and regional GHG emission reductions programs (Regional Greenhouse Gas Initiative and Clean Power Plan), improved fuel diversity, lower wholesale energy costs, and increased resource adequacy.

In conclusion, HQUS recommends that the Public Service Commission adopt a Public Policy Requirement for transmission capable of delivering renewable energy supply to New York and relieving transmission constraints in Northern New York. As such transmission projects will allow New York to meet goals identified in the CES, unbundle existing renewables in the North Country, reduce the impact of increasing IRM requirements from a growing penetration of intermittent resources, and improve system performance and costs. Therefore, HQUS is recommending a Public Policy Requirement be identified for transmission capable of meeting the dual purpose of delivering incremental renewable supply into the New York power grid and relieving transmission congestion for delivery of renewable supply from northern New York to downstate load centers.

Respectfully submitted,

*/s/ Stephen Molodetz*

Stephen Molodetz  
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<sup>8</sup> Supplemental Comments on the Clean Energy Standard Case 15-E-0302, NYISO, July 8, 2016, page 11