

COMMENTS OF H.Q. ENERGY SERVICES (U.S.) INC.

In response to the New York Public Service Commission’s (“Commission”) Notice Soliciting Comments and Providing for Technical Conference and Public Statement Hearings issued January 25, 2016, H.Q. Energy Services (U.S.) Inc. (“HQUS”), the U.S. subsidiary of Hydro-Québec (“HQ”) in the United States, hereby submits these comments regarding the development and implementation of a Clean Energy Standard in the state of New York.

HQ is one of the largest suppliers of clean energy in North America. HQ generates, transmits and distributes electricity. Its sole shareholder is the Québec government. HQ generates more than 99% of its electricity from water—a source of clean, renewable and reliable energy. It uses mainly renewable generating options, in particular large hydro, and supports the development of other technologies—such as wind energy and biomass. A responsible corporate citizen committed to sustainability, HQ carries out construction projects to prepare for the future. It also conducts R&D in energy-related fields, including energy efficiency.

Hydropower resources are amongst the cleanest generation resources available, and can be operated to provide either baseload or dispatchable energy supply to the regions in which they deliver. As a dispatchable resource, hydro can help to integrate intermittent generation in a cost effective manner, while also preserving the environmental characteristics of the supply portfolio.

Introduction

HQUS would like to commend the Commission for taking steps to ensure that the key goals outlined in Governor Cuomo’s State Energy Plan (“SEP”) are achieved: supply 50% of the state’s electricity using renewable energy by 2030, and reduce greenhouse gas (“GHG”) emissions from a 1990 baseline by 2030.¹ The Staff Whitepaper on the Clean Energy Standard (“CES”) issued January 25, 2016 provides a framework that will enable New York to meet these ambitious goals.

Meeting 50% of New York’s electricity supply using renewable resources will require an inclusive approach that utilizes all clean technologies to be successful, including large-scale hydropower from Quebec. In order to fully include these HQ hydro resources, New York should:

- Remove proposed restrictions for hydro which prevents the vast majority of HQ’s clean hydro resources from qualifying in the CES;
- Set appropriate price signals for hydro, in order to secure the historical levels of HQ hydro imports in New York (included in the baseline);
- Create incentives necessary for the delivery of new/incremental hydro supply to meet escalating annual targets.

¹ N.Y. State Energy Planning Bd., The Energy to Lead: 2015 New York State Energy Plan 111–112 (2015).

If historic HQ hydro supplies cannot be secured by New York (due to overly restrictive eligibility requirements and/or insufficient incentives to keep these supplies in New York), the state will backslide from current renewable levels. In turn, the state will first have to replace this volume of renewable energy before any progress can be made towards the 50% by 2030 objective. HQ historically supplies between 7,000 and 10,000 GWh of energy into New York each year. To put this into perspective, these deliveries are more than the total quantity procured under the 10 NYSEERDA main tier RPS solicitations conducted over the past 10 years. Thus it is critical for New York to secure the hydro historically supplied by HQ.

Expanding geographic eligibility was an important first step, but more should be done to ensure that HQ's hydro supplies are eligible and that appropriate incentives are in place. Therefore, HQUS respectfully submits these comments to assist the Commission in determining how the clean energy resources from HQ can best be deployed to aid New York in meeting the aforementioned goals in the most cost effective manner.

Summary of Comments

In order to ensure that renewable energy from HQUS is both eligible to comply with New York's CES program and will be dedicated to the New York market, HQUS is making four vital recommendations:

1. The CES eligibility standard for hydro should be expanded to include all low carbon hydro facilities (including storage resources);
2. Hydro resources from Québec delivered over existing transmission lines should be considered as Tier 2A resources;
3. Renewable generation delivered over new transmission, and therefore incremental to New York, should be eligible to compete in Tier 1 long-term contract solicitations; and
4. Alternative approaches should be considered to track renewable resources from external control areas.

1. Expand Eligibility

HQUS is recommending that the eligibility proposed for hydro resources in the CES be expanded to include all environmentally sound resources; not limited to low-impact run-of-river facilities and upgrades to existing resources with no new storage impoundments. As proposed, this requirement will considerably limit the amount of HQ resources eligible to participate in the CES.

Broadening eligibility will provide New York access to a vast supply of renewable energy without diluting the environmental characteristics of the renewable supply portfolio: hydropower developed in Québec has a GHG emission profile similar to wind and less than photovoltaic solar on a lifecycle basis.²

² Hydro-Québec, Environnement et développement durable; CIRAIQ; 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).

The CES Whitepaper identifies that New York will need approximately 34,000 GWh of incremental renewable energy supply in order to meet the 2030 target.³ Meeting this target will require an inclusive approach that incorporates all clean and renewable technologies as well as synergistic and complimentary combinations of resources where economic and reliability benefits can be achieved.

Because New York will continue to spur aggressive growth in intermittent renewable technologies such as wind and solar, New York should consider procuring complimentary resources such as dispatchable hydropower capable of integrating these variable resources into the grid in a cost effective manner. This will allow New York to simultaneously reduce the state's reliance on fossil fuels, due to the ability of hydro resources to quickly respond to variations in demand resulting from higher penetrations of variable resources within a control area (a role conventionally performed by fossil fuel resources). By recognizing a broader base of hydro resources in the CES, New York can harness one of the most scalable and cost effective renewable technologies available to simultaneously grow renewable energy supply in the state and enable the development new intermittent renewable generation resources.

Since hydro represents the majority of New York's existing renewable supply (over 86%⁴), the inclusion of impoundment hydro in the CES will be a key consideration in meeting the 2030 target. And therefore, all renewable hydro should be considered eligible⁵.

2. Hydro Consideration for Tier 2A

The White Paper subdivides New York's existing renewable resources into Tiers 2A and 2B, with the intent to distinguish between resources that are eligible in "growth tier" RPS programs in neighboring markets and those that are not.⁶ This approach recognizes that New York will need to compete with surrounding states and provinces for renewable energy supplies in the Northeast. Therefore, HQUS is recommending that hydro deliveries from Québec (including resources with the expanded eligibility discussed in section 1) be treated as Tier 2A resources within the CES. This will allow New York to secure continued hydro deliveries from HQ, in an environment with growing demand for hydro in competing HQ export markets.

HQ Hydro Exports

HQ has been an active participant in the New York energy and markets before the inception of the NYISO in the 1980s, and has traditionally supplied between 7,000 and 10,000 GWh of energy each year into New York (representing approximately 5% of New York's baseline renewable resources). Existing interties allow for up to 13,000 GWh of hydro supplies from HQ into New York each year, which are available to be supplied under the correct price incentives.

³ Staff White Paper on Clean Energy Standard, 2016.

⁴ Staff White Paper on Clean Energy Standard, 2016, Appendix B.

⁵ New York Power Authority ("NYPA") legacy resources which include impoundments have historically been considered renewable by the Commission as a maintenance tier resource in the RPS and are expected to qualify in the CES

⁶ Staff White Paper on Clean Energy Standard, 2016, page 23

Historically, HQUS export decisions have been determined primarily by short-term wholesale electricity prices, in which HQUS looks to maximize sales into regions with the highest energy and capacity prices. However, recent state and provincial policy initiatives, as described below, could fundamentally alter this dynamic, through new incentive programs to secure HQ hydro supplies on a long-term basis.

Opportunities in Alternative Markets

Eastern Canada and New England are currently taking steps to both secure and increase the quantity of hydro supplies in their region to achieve market and policy objectives, such as: meeting RPS obligations cost effectively, increasing fuel diversity, reducing price volatility driven by a growing dependence on natural gas, compliance with state and federal emissions reduction targets, and ensuring reliability during major nuclear refurbishments and retirements. The incentives provided through these efforts will be a major determinant in which markets HQUS exports are committed to in the future.

Currently, regional efforts in New England are underway by participating states to procure incremental clean energy resources to cost effectively meet renewable and clean energy goals. The Clean Energy RFP⁷ was issued November 12, 2015 between Connecticut, Massachusetts, and Rhode Island to solicit proposals for qualified renewable resources and transmission projects providing for the delivery of qualified renewable resources. HQUS submitted two projects into this solicitation, which, if selected, will commit HQUS to delivering up to 9,000 GWh of energy into New England each year. These bids include an innovative project to combine wind and hydro delivered over new transmission as a firm block of clean energy, made possible through a long-term contract.

In Massachusetts, legislation⁸ has been introduced to solicit for up to 18,900 GWh of long-term contracts for new hydro supplies, in order for Massachusetts to meet aggressive GHG emissions reductions targets required in the Global Warming Solutions Act⁹.

In Canada, provincial markets are looking toward incremental deliveries from HQ to meet clean energy goals and aid in market transitions. The capability of HQ resources to deliver clean and controllable energy makes HQ supplies suitable for replacing low emitting baseload nuclear generation during refurbishments, and replacing conventional thermal generation retirements.

RPS Eligibility

Similar to Tier 2A resources in New York coming off long-term contracts, HQ hydro resources can qualify in renewable energy programs in surrounding markets. Within the various state RPS programs in New England, hydro resources from HQ are currently eligible in the Vermont state program,¹⁰ enabling Vermont to mandate the second highest RPS target in the United States.¹¹

⁷ Notice of Request for Proposals from Private Developers for Clean Energy and Transmission, November 2015.

⁸ S.B. 1965, 189th Gen. Court, (Mass. 2015).

⁹ Global Warming Solutions Act of 2008, 2008 Mass. Acts. 298.

¹⁰ Vermont Act 56 An act relating to establishing a renewable energy standard and energy transformation program.

In Connecticut, HQ hydro is eligible to count towards RPS compliance as a backstop, with hydro procured by utilities under long-term contracts eligible to count towards RPS compliance if certain trigger events occur related to regional REC shortages.¹² Legislation has also been introduced in Maine and New Hampshire to expand RPS eligibility to include HQ hydro in order to meet growing compliance targets more cost effectively.

Securing HQ deliveries in New York

In recognition of these regional initiatives, the CES provides New York with an opportunity to encourage continued HQUS deliveries into the state (HQ hydro represents over 7,000 GWh of the 41,300 GWh of New York's existing renewable resources in 2014). Including HQ hydro as a Tier 2A resource will allow New York to secure these supplies, and maintain the current renewable baseline.

New York is geographically positioned to access abundant renewable resources from neighboring control areas, allowing the state to set targets well above what the state could reasonably achieve using only in-state generation. However, New York will need to compete with these surrounding regions for the renewable suppliers that are currently delivering into New York and not secured under long-term contract. As with all renewable generation, New York will need to assign hydropower resources into the appropriate tiers and with sufficient incentives to ensure that New York remains competitive in attracting renewable resources into the state.

3. Incremental Renewables over new Transmission

The targets outlined in the CES White Paper will require significant quantities of incremental renewable energy delivered into New York, supplied from resources within the state and imported from external control areas. While near-term goals may be met with existing infrastructure, interties between New York and adjacent regions may not be sufficient to physically deliver cost competitive renewable energy supplies needed to meet more aggressive goals in future years. Therefore, HQUS is recommending that renewable resources delivered over new transmission projects into New York be eligible to compete in Tier 1 long-term contract solicitations.

The development of new transmission projects will be critical to unlocking renewable energy supplies that cannot otherwise access the New York market, such as resources in remote or congested areas. And accessing these resources will become increasingly vital as annual compliance targets begin to outpace the quantity of renewable supply that can reasonably be brought online each year. As the most cost effective renewable energy projects have already been completed, New York will need to look towards more expensive projects to meet growing compliance targets.

Renewable energy delivered over new transmission may represent an avenue for New York to access incremental renewable supplies, procured in a cost effective manner compared to new Tier 1 resources. Incremental supply over new transmission also provides a number of

¹¹ Vermont target is 75% by 2032, second only to Hawaii with a 100% RPS target by 2045.

¹² Connecticut Public Act 13-303.

additional power system benefits, such as improved system reliability, reduced congestion, and increased fuel diversity (further benefits outlined in the NYISO filing to the Commission on developing a more robust grid in New York¹³).

The scale of these resources will also make a substantial contribution toward New York's annual targets, as a 1,000 MW transmission line is capable of delivering over 8,700 GWh of renewable energy each year, or approximately 25% of the required 34,000 GWh of incremental renewable supply needed in New York. In the case of Québec, new transmission could allow for a mix of incremental hydro and wind to be delivered into New York. There is abundant, cost competitive wind potential available in Quebec, which could be unlocked using new transmission interconnections with New York, and integrated with HQ hydro to deliver a firm and reliable block of renewable energy.

Since new transmission projects face similar challenges to developing new Tier 1 generation resources, such as the need for long-term revenue certainty to secure financing, solicitations conducted through the CES that award long-term support for incremental renewables delivered over new transmission may be the most viable way to enable both the transmission and incremental supply. Through this approach, incremental renewable supply paired with transmission can effectively compete with Tier 1 generation through a competitive solicitation which selects the best projects, eliminating unnecessary costs and risks to ratepayers.

4. Alternative Tracking Approach

While it is vital that renewable energy delivered into New York from external control areas be tracked in a transparent and verifiable manner, New York should be cautious not to create overly burdensome processes to track such resources, which could act to limit the amount of verifiable clean energy imported into New York. The New York Generation Attribute Tracking System ("NYGATS") draft operating rules¹⁴ state that only renewable energy resources located in a control area with a Compatible Certificate Tracking system will be eligible to create Unit-Specific Certificates. Since the NYGATS will act as the compliance platform for the CES, this provision will prohibit renewable resources from Québec and Ontario from participating in the CES, as these regions do not currently have a compatible tracking system in place.

Fortunately, there are alternative approaches that could be adopted by the NYGATS to accurately verify Unit-Specific imports into New York that work within the framework of the NYGATS operating rules. This approach is currently being used by the ISO-NE regional tracking system, the New England Power Pool Generation Information System ("NEPOOL GIS"), which utilizes a similar design to the NYGATS and is also administered by APX.¹⁵ This alternative approach enables qualified resources importing into ISO-NE to generate unit specific attributes by including a unique identification number (representing the renewable generator) in the import schedule, and generating unit specific attributes based on the lesser of the generation

¹³ NYISO filing June 4, 2015 Case 14-E-0454.

¹⁴ New York Generation Tracking System (NYGATS) Operating Rules, issued by the New York State Energy Research and Development Authority in consultation with the Commission on October 28, 2015

¹⁵ Please see the HQUS comments on the New York Generation Tracking System Operating Rules submitted December 4, 2015.

and transmission schedule each hour. In this way, certificates are only created when there is verifiable evidence that both the designated unit was producing energy, and that this energy was delivered into ISO-NE.

Because the implementation of a system-wide compatible tracking system in Québec in the near term presents significant costs and operational risks, the consideration of an alternative approach at least for the interim, will allow for uninterrupted access to substantial volumes of renewable energy for New York.

Conclusion

The CES White Paper creates a practical framework that will enable New York to meet its ambitious renewable objectives. However, specific details of the CES remain to be developed, that will have a crucial impact on the success and cost of the program. Integrating the recommendations outlined in this paper will ensure New York to retain current HQUS deliveries and incent incremental deliveries over new transmission; which will be instrumental in allowing New York to meet growing annual targets in the most cost effective manner. These recommendations will help New York take the next steps on its path toward a cleaner, more efficient energy future.