

REQUIRED ALTERNATE BID NARRATIVE
Champlain Hudson Power Express Project

RESPONSE TO
REQUEST FOR PROPOSALS

May 12, 2021

[REDACTED]

Portions of this Required Alternate Bid contain confidential, proprietary, and/or commercially sensitive information which has been redacted from the "Public Version" of this Required Alternate Bid. [REDACTED] has submitted a "Confidential Version" of this Required Alternate Bid which includes the redacted information, and which should be treated as a non-public record that is exempt from disclosure to the extent permitted under applicable laws and/or as expressly set forth in the RFP.

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GLOSSARY OF FREQUENTLY USED TERMS

FREQUENTLY USED TERMS

In addition to terms defined in the Base Proposal and the RFP (and not modified below), this Required Alternate Bid frequently uses the defined terms listed below. Also, electrical, engineering and other technical terms, as well as common terms from the energy markets, used without definition have their customary industry meanings.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

CONFIDENTIALITY STATEMENT AND ENABLING STATEMENTS

As contemplated under Sections 1.14, 7.3.2 and 10.1 of the Purchase of New York Tier 4 Eligible Renewable Energy Certificates (RECs) Request for Proposals (RFP) No. T4RFP21-1 released January 13, 2021 (RFP) issued by the New York State Energy Research and Development Authority (NYSERDA) and further described in the Request for Exemption from Disclosure letter (Letter) submitted by [REDACTED] (Proposer) with this Required Alternate Bid, certain portions of this Required Alternate Bid (including attachments and portions incorporated from the Base Proposal) contain non-public, confidential, proprietary and/or commercially sensitive information (collectively, Confidential Information). The Confidential Information constitutes trade secrets or is submitted to NYSERDA by the Proposer as a commercial enterprise or derived from information obtained from the Proposer as a commercial enterprise and which if disclosed would cause substantial injury to the competitive position of the Proposer. The Confidential Information also includes trade secrets and/or commercially confidential information supplied to the Proposer by Transmission Developers and [REDACTED] that is subject to a confidentiality agreement executed by the parties.

Under New York Public Officers Law (POL) §§ 87(2) and 89(5) and 21 New York Codes, Rules and Regulations (NYCRR) Part 501.6(d), the Confidential Information is not a public record and is exempt from public records requests and disclosure. The Proposer intends for all Confidential Information to remain confidential and be treated as such by NYSERDA and the Scoring Committee. In that regard, the Proposer submits that the Confidential Information:

- includes protected critical information describing the assets, engineering and designs for the location and details of infrastructure that could be vital to sustaining and enhancing the State's energy supply such that disruption, incapacitation or destruction of such infrastructure could jeopardize the health, safety, welfare or security of the State, its residents or its economy. As such, the Confidential Information should be exempt from disclosure pursuant to POL §§ 87 (d) and 89 (5) (a) (1-a);
- contains trade secrets and information derived from a commercial enterprise, which, if disclosed, would cause substantial injury to the competitive position of the Proposer, Transmission Developers and [REDACTED] (see POL § 87 [2] [d]; 21 NYCRR § 501.6). For example, the information includes confidential, proprietary, and/or commercially sensitive records, costs, prices, forecasts of future energy production, proposed GHG and energy baselines, processes, plans, studies, surveys, analyses, engineering, designs, critical infrastructure information, work product, cost allocation strategies and projections developed at considerable time and expense in order to compete with other developers;
- is not available to the public and cannot be easily obtained or developed from public information;
- contains confidential or proprietary information that is not published or divulged, disclosure of which would cause substantial injury to the Proposer's competitive position as a commercial enterprise;

- would be of material economic value to competitors, including, without limitation, other proposers responding to this and future requests for proposals, and would provide them with an unfair advantage in their bidding and negotiating strategies; and
- has been preserved pursuant to confidentiality agreements and has been shared only with those individuals whose roles in the preparation of this Required Alternate Bid required them to have access to it.

In accordance with RFP Sections 1.14, 7.3.2 and 10.1, the Confidential Information has been redacted from the "Public Version" of this Required Alternate Bid. Further, the Proposer has submitted a Confidential Version of this Required Alternate Bid that has been labeled "Confidential" or "Proprietary" on each page and identifies Confidential Information through shading in the narrative portion of this Required Alternate Bid. The Confidential Version of this Required Alternate Bid should be treated as a non-public record that is exempt from disclosure to the maximum extent permissible under applicable laws (including, without limitation, POL § 87(2)(d)), and as expressly set forth in the Letter pursuant to applicable law (including, without limitation, POL § 89(5) and the procedures set forth in 21 NYCRR Part 501).

This Required Alternate Bid includes information concerning the Proposer's expectations, beliefs, plans, objectives, goals, strategies, and assumptions of future events regarding the Alternate Project. That information constitutes "forward-looking statements" based on the current expectations, estimates, assumptions or plans of the Proposer and does not guarantee the future. Those expectations, estimates, assumptions or plans may vary materially from actual results. Factors affecting the development, construction and operation of the Alternate Project are difficult to predict, many of which are beyond the Proposer's control. New factors also may emerge from time to time, and it is not possible for the Proposer to predict all of those factors, nor can the Proposer assess the impact of each factor on the Alternate Project or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

[REDACTED]

Section 1 EXECUTIVE SUMMARY

7.7.1 Provide an overview of the Required Alternate Proposal, including proposed location and Withdrawal Point for the New York Converter Station, and plans for its substantial use.

Shovel-ready, with permits in hand and a world-class, proud union construction team mobilized, this Required Alternate Bid will deliver clean, renewable and reliable energy across a new, resilient transmission system, benefiting the environment, the State, New Yorkers and their communities.

Hydro-Québec and Transmission Developers (a Blackstone portfolio company), the Alternate Project sponsors, and ██████████ a New York solar power supplier, are proud to submit ██████████ (Alternate Project) in response to the Request for Proposals (RFP) No. T4RFP21-1 released on January 13, 2021 by the New York State Energy Research and Development Authority (NYSERDA).²

The New Alternate Transmission will deliver clean energy and associated Tier 4 RECs from Hydro-Québec's ██████████ and solar power ██████████ over a new intertie (New Alternate Transmission) to be constructed between the Hydro-Québec system and the New York Control Area (NYCA). This Alternate Project offers New York an opportunity to take a massive 1,250 MW step forward in realizing the ambitious climate goals that the Empire State has set for itself under the Climate Leadership and Community Protection Act (CLCPA) and build the foundations for a cleaner and more equitable and prosperous energy future for all New Yorkers.

PROJECT HIGHLIGHTS	
Clean Energy As Early As 2025	<ul style="list-style-type: none">➤ 10.4 TWh of clean baseload power that can replace over half of Indian Point's generation.➤ The only project ready to begin construction in 2021.
Economic Impact	<ul style="list-style-type: none">➤ Over \$49 billion in total estimated economic benefits for New York State over 25 years.➤ More than 1,400 new direct jobs for New Yorkers during construction, with a commitment to union labor.➤ One of the largest investments in New York state history.➤ An estimated \$2.5 billion reduction in the energy burden of 2.3 million New Yorkers living in Disadvantaged Communities.➤ ██████ million fund dedicated to help Disadvantaged Communities train for and take advantage of the green economy transition.➤ Heightened economic benefits for upstate New York thanks to the addition of ██████████ of upstate solar energy and the construction of the New Scotland Converter.
Environmental Benefits	<ul style="list-style-type: none">➤ Reduction of approximately 3.9 million metric tons of CO₂ emissions annually, equivalent to removing 44% of cars from New York City streets.➤ 20% decrease state-wide in localized air pollutants emitted by burning fossil-fuel for electricity generation in year one of operations. Half of this decrease will occur in New

² All deliverables requested in the RFP have been developed in detail and provided in the main body of this Required Alternate Bid.

	York City, where most fossil-fuel peaker plants in New York City are located in or adjacent to Disadvantaged Communities.
Resilient Design	<ul style="list-style-type: none"> ➤ A 1,250 MW buried transmission line with [REDACTED], delivering Hydro-Québec's reliable system power, 24/7, maximizes resiliency and reliability on the downstate power grid. ➤ A controllable, uncongested transmission route between Upstate (Zone F) and NYC (Zone J).
High Certainty of Execution	<ul style="list-style-type: none"> ➤ Hydro-Québec's vast generation resources totaling [REDACTED] solar projects are in advanced stages of development. ➤ CHPE is the only project with all major permits in hand, agreements in place with world-class HVDC contractors and a guaranteed cable manufacturing slot, allowing construction launch in 2021 and full operations between Hydro-Québec and New York City in 2025. ➤ Hydro-Québec, Transmission Developers/Blackstone and [REDACTED] are experienced clean energy developers with strong financial resources.
Options for the Future: Flexible Energy and Unrivaled Storage Capacity	<ul style="list-style-type: none"> ➤ A flexible energy source that can maximize New York's ability to efficiently integrate the planned development of offshore wind and solar. ➤ Hydro-Québec's reservoir system can act as an unparalleled long-term battery for seasonal storage of excess NY renewable generation reducing offshore wind curtailment by up to an estimated 5 TWh annually by 2040. ➤ A new upstate converter provides optionality to transmit offshore wind to upstate and help the State achieve its carbon-free 2040 mandate.

[REDACTED]

[REDACTED]

[REDACTED]

Linking New York City to North America's Largest Renewable Energy Generator and Upstate Solar Resources

By the end of 2021, fossil-fuel generated electricity use downstate will power 85-90% of New York City's needs.³ The urgent need to reverse this trend and deliver more renewable energy downstate, is clearly highlighted in the Public Service Commission's October 15, 2020 Order modifying the Clean Energy Standard.

To maintain reliability while reducing dependency on natural gas, downstate must be able to access a clean source of controllable baseload energy, to serve as a foundation on which intermittent energy sources can be added. CHPE allows just that, by providing a new 1,250 MW interconnection to [REDACTED]

³ Comments of the City of New York on CLCPA White Paper, August 31, 2020 (<http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=15-E-0302&submit=Search+by+Case+Number>, p. 9).

[REDACTED]. The mix of two clean energies and the creation of a robust regional transmission system will enable New York to reliably and efficiently meet its clean energy goals.

Unparalleled Benefits to Help Relaunch New York's Economy

The construction of the New Alternate Transmission and a converter station in New Scotland will create significant economic benefits in New York State and help launch the State's economy post-COVID recovery and assist New York's Disadvantaged Communities, who have borne the brunt of dirty power plants and harmful emissions. Faced with more frequent and costly extreme climate events linked to the climate crisis, aging infrastructure, a growing reliance on fossil fuel, and a need for resilient and reliable energy to power New York's economic engine, the urgency to decarbonize the downstate generation mix has never been as dire.

Economic benefits over 25 years include:

- ✓ An additional +3,000 secondary jobs created in New York.
- ✓ [REDACTED]
- ✓ [REDACTED] in new tax revenues for over 150 communities along the line.
- ✓ \$116 million in funding for restoration of the Hudson River and Lake Champlain and for communities along the line route.⁴
- ✓ \$17 billion in wholesale power market savings by displacing less efficient, more expensive and higher-emitting fossil-fuel generation.
- ✓ \$1.9 billion in health and societal benefits due to reductions in carbon and local pollutants.

[REDACTED]

Reliable Hydropower Coupled with New York Solar Energy to Help New York Meet its Climate Goals

Hydro-Québec, with a corporate commitment to sustainably developing energy resources, a grid that is over 99% renewable, and a history of contributing to decarbonization both in Québec and throughout the Northeast, stands ready through this Required Alternate Bid to ensure that 10.4 TWh of renewable energy will be transmitted over CHPE into New York City, 24/7, starting in 2025 and for the next 25 years.

[REDACTED]

⁴ This funding is comprised of the Environmental Trust Fund and funding for Rockland County communities.

[REDACTED]

Maintaining Grid Reliability and Resiliency

Beginning in 2025, [REDACTED] over the New Alternate Transmission into Zone J will offer an unsurpassed degree of reliability. [REDACTED]

[REDACTED] Furthermore, as these generation facilities are located far from New York City, are geographically diverse and the transmission line is buried, there is virtually no risk that local climate events, such as Hurricane Sandy that had considerable impacts on New York's energy assets, would also adversely affect Hydro-Québec's ability to generate electricity and deliver it over the new interconnection.

The use of high-voltage direct-current (HVDC) technology allows for continued power flows into New York City even if the downstate grid or the greater State power grid is undergoing stressed conditions that might otherwise constrain available supply into Zone J from the existing AC power grid.

Historically, the Central East Interface on the NYISO grid is a voltage-constrained area. The new converter will provide a dynamic reactive power source at New Scotland that will help stabilize voltages at that location.

In addition, CHPE could provide black-start capability for quick restoration of the New York City or New York statewide electric systems in the event of a blackout. The Québec electrical system, being asynchronous from its neighbors, would likely not be impacted by a New York State blackout and would remain available to provide much-needed reliable power over CHPE.⁵

Experts agree that maintaining a high level of reliability in the context of high penetration of intermittent renewables will be a challenge:

"The potential operational limitations of zero-emissions resources will have implications for system reliability. [...] On a system that is more heavily dependent upon wind, solar, and

⁵ This was demonstrated by the August 2003 Northeast blackout event during which the Québec system was not significantly impacted. The cascading outages through Ontario and New York were stopped at the asynchronous interfaces with the Québec system.

battery storage, reliability concerns may arise over energy shortfalls if intermittent supplies are unavailable and storage capabilities are limited in duration.”⁶

[REDACTED] solar power will be added to the energy mix delivered along CHPE. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

The Proposer and Transmission Developers chose [REDACTED] as the New York supplier after a Request for Interest conducted in early 2021. [REDACTED]
[REDACTED]

Champlain Hudson Power Express: Linking the Québec and New York Grids

CHPE is a permitted, shovel-ready high-voltage direct-current 339-mile transmission line project that will be constructed by Transmission Developers. Hydro-Québec will make the necessary additions to the transmission grid in Québec (the Québec Line) and Transmission Developers will construct the new CHPE line in New York and a new converter station in New Scotland.

[REDACTED] will flow from generation sites in Québec to the Hertel Substation, which is served by four 735 kV lines, ensuring a reliable connection. The energy will then be converted from high-voltage alternating current (HVAC) to high-voltage direct current (HVDC), and then transmitted over a new 36-mile buried HVDC transmission line in Québec to the interconnection point at the U.S.-Canada border. Hydro-Québec will build, operate and bear the total cost and risks associated with construction of the Québec Line. The Québec Line is expected to be primarily sited within public rights-of-way. Because the Québec Line is considerably shorter than CHPE, construction time is reduced. The in-service date is expected to be 2025.

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

The CHPE portion of the New Alternate Transmission begins at the U.S.-Canada border under Lake Champlain and extends southward to the converter station to be built in New Scotland, after which it continues to a substation in Astoria, Queens, where the power will be converted from DC to AC. Approximately 60% of the line is located in waterways (under Lake Champlain and the Hudson and Harlem Rivers) and the rest is underground within existing rights-of-way.

⁶ NYISO Power Trends 2020, p. 26: <https://www.nyiso.com/documents/20142/2223020/2020-Power-Trends-Report.pdf/dd91ce25-11fe-a14f-52c8-fla9bd9085c2>.

The New Scotland converter will allow up to [REDACTED] of upstate solar energy to access CHPE for delivery into Zone J, whenever the solar facilities are generating electricity. [REDACTED]

[REDACTED] The line will be fully controllable by NYISO, as if it were generation located in New York City, enabling NYISO to both reliably run the Zone J grid and safely retire downstate New York fossil fuel generation⁷ and/or limit operations of peaker plants during the summer 'ozone season' as required by recent NYSDEC regulations.⁸

Without the New Alternate Transmission, [REDACTED] resources will not have access to Zone J due to existing transmission constraints.

Champlain Hudson Power Express with New Scotland Converter Station



⁷ Comments of the City of New York to NYISO, January 19, 2021.

⁸ 6 NYCRR, Subpart 227-3.

New York Support for CHPE and for the New Scotland Converter Station

Ensuring adequate time and opportunities for stakeholders to understand and participate in the development of major infrastructure projects is critical to identifying and adopting appropriate modifications that minimize impacts and optimize the project's success.

Over an 8-year period, Transmission Developers undertook extensive communications activities along the entire line route, focusing its outreach on listening to and addressing the concerns of New York residents and a variety of stakeholder groups. Through years of conversations and outreach efforts, Transmission Developers and Hydro-Québec have earned broad support for the Champlain Hudson Power Express from a range of stakeholders, including towns, citizens living along the line route, nonprofit organizations, academics, unions, legislators, and economic development agencies. Importantly, 34 municipalities have passed public resolutions of support for CHPE.

Examples of public support for linking New York City with Québec's hydropower resources include:⁹

"We know they have low-cost hydropower in Canada. Let's run the cable, the transmission lines from Canada to New York City to get that power down here and let's stop talking and let's start doing."

Governor Andrew Cuomo, May 2020

"That electricity will come down to us – it's zero-emission electricity coming to us from Canada, from Quebec, hydropower that is being produced right now. And we're not taking advantage of it. We're going to take the actions working with our partners to make sure that our City government doesn't need to get its electricity from fossil fuels."

Bill de Blasio, Mayor of New York City, Earth Day 2019

"The fully permitted and approved [...] TDI Champlain Hudson Power Express transmission project, which would bring low-carbon hydropower from Quebec to New York City, could also play a significant role in replacing Indian Point's power if it is built."

Kit Kennedy, Sr. Director Climate & Clean Energy Program, Natural Resources Defense Council, April 2020

"We applaud Governor Cuomo for championing renewable energy projects as part of New York's post-COVID economic recovery. We must invest in our clean energy infrastructure including support for wind and solar upstate, continuing to develop our offshore wind resources, and bringing existing renewable hydropower sources to New York, as proposed by the Champlain Hudson Power Express. We need an all-of-the-above strategy to reduce our dependence on fossil fuels to achieve the State's goal of

⁹ For more information on community engagement for both the New York and Québec portions of the New Alternate Transmission, see Section 14.

100% clean energy by 2040, while also creating green jobs."

Julie Tighe, President of the New York League of Conservation Voters, May 2020

"The buried and resilient electric transmission line will create more than 2,000 construction-related jobs for New Yorkers, add millions in tax revenue annually to local governments that desperately need the funding and bring firm, green energy to New York City, satisfying the power needs of over 1 million residents for more than 50 years. The project will do this while reducing harmful emissions and helping the Governor and Mayor move towards a more renewable, sustainable future."

Christopher Erikson, Business Manager for IBEW-Local 3, Gotham Gazette, July 15, 2020

A Solid Team of Recognized Clean Energy Generators and Transmission Developers and Suppliers



Transitioning to a Carbon-Neutral Economy at the Lowest Cost Possible for New Yorkers

Carbon neutrality is a monumental challenge. A recent report commissioned by the New York City Mayor's Office of Sustainability¹⁰ provides cost estimates for measures required to make the City carbon neutral: between \$1.5 and \$2 trillion. Hydro-Québec and Transmission Developers are committed to offering a solution that furthers decarbonization goals, but does so at the lowest cost possible.

A study conducted by researchers at Duke University examining potential scenarios for replacing Indian Point indicated that when direct costs and environmental costs are examined, all scenarios targeting decarbonization involve the development of CHPE.¹¹ The same study also highlights the considerable economic benefit associated with avoided greenhouse gas emissions starting earlier – as of 2025 – than would be the case with other solutions.

Also, a recent investigation by the U.S. International Trade Commission into the potential economic effects of increased renewable electricity commitments in Massachusetts (where Hydro-Québec's energy was selected after a competitive clean energy solicitation) concluded that:

¹⁰ *Pathways to Carbon-Neutral NYC*, April 2021

<https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/Carbon-Neutral-NYC.pdf>.

¹¹ Ryan S.D. Calder, Mark E. Borsuk, and Celine S. Robinson, Analysis of Environmental and Economic Impacts of Hydropower Imports for New York City through 2050, Plain-Language Summary: <https://nicholasinstitute.duke.edu/sites/default/files/publications/Analysis-of-Environmental-and-Economic-Impacts-of-Hydropower-Imports-for-New-York-City-through-2050-Plain-Language-Summary.pdf>.

"Case studies show the potential for hydroelectricity imports to help stabilize electricity prices, reduce costs to consumers, and make variable renewable energy (such as wind and solar) more profitable."¹²

The January 2021 New York Power Grid Study¹³ concludes that a new transmission project delivering renewable energy to New York City will be a critical component to achieving the 70% by 2030 renewable target:

"The Zero Emissions Study found that New York's 2030 goals could be met at low levels of curtailment and congestion without significant bulk-power transmission upgrades beyond those already planned and under development, and a new HVDC line delivering dispatchable renewable energy into New York City that is assumed to materialize as a result of the State's new Tier 4 procurement."¹⁴

The Power Grid Study also finds that achieving a zero-emission electricity system by 2040 will require additional flexible zero-emission resources in combination with the renewable and storage resources expected to materialize as a result of current State efforts and programs. Leveraging the flexible capabilities of Hydro-Québec deliveries over CHPE can provide these characteristics, and reduce the possibility that New York would need to extensively rely on the continued operation of thermal generation to provide operational flexibility, as Hydro-Québec can provide this flexibility using clean energy, and more cost-effectively than generation fueled by renewable natural gas and/or battery energy storage projects (which are assumed to be more expensive than conventional fuels).¹⁵

Project Eligibility

[REDACTED]

[REDACTED]

¹² International Trade Commission: <https://www.usitc.gov/publications/332/pub5154.pdf>, p. 18.

¹³ Initial Report on the New York Power Grid Study, https://brattlefiles.blob.core.windows.net/files/20842_initial_report_on_the_new_york_power_grid_study.pdf.

¹⁴ Power Grid Study, page 79.

¹⁵ Power Grid Study, page 89.

[REDACTED]

Meeting Zone J Delivery Requirements

The Alternate Project will meet the delivery requirements under RFP Section 2.2 because the Delivery Point of the New Alternate Transmission will be located in Zone J, and the electrical interconnection will occur after October 15, 2020.

Expected Commercial Operation Date

CHPE is ready to begin construction by the end of 2021 [REDACTED] allowing the New Alternate Transmission to be fully operational and begin flowing clean energy into New York Zone J in 2025. [REDACTED]

Responding to Future New York Electricity Needs: Optional Operational Flexibility and Storage Capability

In the near term, downstate New York can greatly benefit from a considerable influx of new clean renewable baseload energy able to replace output from Indian Point and fossil-fuel peaker plants. In coming years, and to meet the clean energy goals mandated through the CLCPA, specifically the 2040 carbon free electricity requirement, New York State and particularly the downstate region will witness a massive buildout of intermittent offshore wind and solar energy resources. A flexible resource will be needed to quickly ramp up when wind and solar generation decreases. Energy storage capabilities will be necessary when overproduction from these sources occurs to avoid curtailing the renewable resource. This clean energy transition will result in a fundamental change of New York's grid.

Hydro-Québec's [REDACTED] complemented by a HVDC system will supply baseload generation but also offers operational flexibility, allowing for deliveries of controllable and dispatchable energy.

Access to [REDACTED] from Québec represents a long-term flexible asset for New York State that will be of help with changing electricity needs, by providing a foundation for the downstate grid. To meet the 2040 CLCPA goal, deliveries over CHPE may need to be bi-directional to efficiently and reliably run the grid. A bi-directional line will be able to rapidly ramp up and down to meet energy requirements in Zone J. By acting as a natural battery, storing energy as needed in the form of water in its vast reservoir system – for hours, days, months, or even on a seasonal basis, and then returning that energy back to New York during periods of low renewable production and high demand. Using CHPE to flow excess offshore wind into the Québec reservoir system could help reduce NYISO offshore wind curtailment in 2040 by approximately 25%, or 5 TWh, depending on the level of offshore wind generation operating on the system. The value of this reduced curtailment is estimated at over \$500 million in 2040.¹⁷

¹⁷ PA Consulting Report on CHPE, May, 2021 (Attachment 16.1 to the Base Proposal).

A study published by researchers at MIT highlighted this point:

*"[I]n a low-carbon future, it is optimal to shift the utilization of the existing hydro and transmission assets away from facilitating one-way export of electricity from Canada to the U.S. and toward **a two-way trading of electricity to balance intermittent U.S. wind and solar generation.**"¹⁸*

It will also be feasible to flow electricity from New York City back to the New Scotland converter station and into upstate New York. This flexibility will be valuable to New York State if there is excess offshore wind power in the future.

This Project could include future additional services tailored to reflect the evolving needs of the New York and New York City electricity system, including bi-directional flow – to help with the State's clean energy transformation and achieve deep decarbonization of the electricity system.

Conclusion

The permitted CHPE line offers certainty that no other project can and is poised to deliver, annually, 10.4 TWh of clean Québec hydropower beginning in 2025 [REDACTED]. This Alternate Project represents a unique, low-risk opportunity to enable New York to meet its CLCPA goals – and to meet them as quickly as possible.

This Required Alternate Bid will provide firm clean energy, lower greenhouse gas emissions and reduce levels of localized air pollution, and create new construction jobs and considerable economic benefits for New Yorkers, especially in Disadvantaged Communities, at a time when relaunching the economy is imperative. Creating a new interconnection between the Québec and upstate and downstate New York grids will increase the reliability and resiliency of New York's electricity supply, and tap a source of continuously generating baseload power that in the future could complement new intermittent resources to be constructed in downstate New York. This new structural element in the State's energy system will provide strategic value for decades to come.

¹⁸ MIT Center for Energy and Environmental Policy Research: Two-Way Trade in Green Electrons: Deep Decarbonization of the Northeastern U.S. and the Role of Canadian Hydropower, <http://ceepr.mit.edu/publications/working-papers/719>.

Section 2 BID PRICE JUSTIFICATION

7.7.2 Proposer must explain and justify how the Bid Price for the Required Alternate Bid was derived. Provide the basis for any incremental costs associated with development of the New York Converter Station, including but not limited to site acquisition, interconnection, and permitting costs. Provide the basis for any incremental costs or cost savings associated with development of Resources that are unique to the Required Alternate Bid. Explain how uncertainties in construction, permitting, and interconnection costs were treated in the Bid Price. Discuss how the expected delivery quantity of Tier 4 RECs, energy delivery profile, anticipated electricity market revenues, and any other relevant factors affect the derivation of the Bid Price.

NYSERDA reserves the right to ask for additional information and to conduct due diligence with respect to Proposer's Required Alternate Bid Price justification, and NYSERDA may require independent audit and verification of the elements thereof. Should NYSERDA find evidence of unreasonable price inflation, NYSERDA reserves the right to take remedial measures, including requiring a price reduction, rescinding an award, or disqualifying both Proposer's Required Alternate Bid and Bid without the New York Converter Station.

[Redacted]

[Redacted]

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Section 3 PROPOSER EXPERIENCE

7.7.3 Provide the information requested in Section 7.6.3, to the extent that the Project Team and/or Project organization are different for the Required Alternate Bid. If the Project Team and Project organization are unchanged from the accompanying Bid, so indicate.

[REDACTED]

[REDACTED]

Section 4 RESOURCE DESCRIPTION AND SITE CONTROL

7.7.4 Provide the information requested in Section 7.6.4 for any Resources that are unique to the Required Alternate Bid.

[Redacted content]

Section 5 DELIVERY PLAN

7.7.5 Delivery Plan

5.1 Utilization

1. Proposer must describe how it intends to substantially utilize the New York Converter Station and associated capacity on the New Transmission. Describe how the New York Converter Station and capacity on the New Transmission will be utilized to optimize deliverability of renewable resources throughout the entirety of the State, promote delivery of renewable energy from upstate regions of the State into Zone J, and ease the curtailment of upstate renewable resources in support of the policy goals set forth in the CLCPA.

[Redacted]

[Redacted]

[Redacted]

5.2 Allocation

2. Proposers must describe how the New York Converter Station and New Transmission capacity will be allocated among different Resources in a portfolio. Describe arrangements among the different Resources with respect to priority for use of New Transmission capacity.

[Redacted]

[Redacted]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Section 6 INTERCONNECTION PLAN

7.7.6 Interconnection Plan

6.1 Withdrawal Point; Capacity; Estimated Converter Station Losses

Identify the proposed Withdrawal Point of the New York Converter Station and the location of the Withdrawal Point in the NYISO high voltage bulk transmission system. Provide the capacity of the New York Converter Station, and whether it will be bi-directional or only allow for AC to DC conversion from the NYISO high voltage AC system to the HVDC New Transmission. Provide estimated converter station losses.

[Redacted text block]

The total capacity of CHPE will remain at 1,250 MW in accordance with the Base Proposal.

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted header text]

[Redacted main body text]

6.2 Interconnection Status of New Transmission

Proposers must provide information regarding the interconnection status of New Transmission with the New York Converter Station. If the interconnection process has been initiated, provide the queue position and available information regarding interconnection request to NYISO and/or any neighboring control areas, as applicable. Available interconnection studies undertaken by the applicable control area or third parties on behalf of New Transmission must be provided. Describe transmission system upgrades that will be needed to interconnect the New Transmission at the Withdrawal Point of the New York Converter Station.

Interconnection Status

The interconnection process for CHPE is detailed in Section 7 of the Base Proposal. For this Required Alternate Bid and to enable [REDACTED] of New York renewable energy to access CHPE, Transmission Developers has initiated the following interconnection process.

The Interconnection Request associated with the addition of the NS Converter terminal has been accepted into NYISO's Interconnection Queue and assigned position #1155. This new interconnection will enable CHPE to access the bulk power grid at National Grid's New Scotland Substation and will eventually supplement the combined Q #631 and Q #887 projects.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- SRIS Report for Q #631.
 - Additional details on the transmission upgrades that may be required to interconnect the NS Converter can be found in the SRIS report for Q #631. That report was approved by the NYISO's Operating Committee at its meeting on January 17, 2019, and can be found with the meeting materials for that meeting. In particular, Section 11.1 of that report identifies the upgrades required to interconnect the NS Converter, and the time required to place those upgrades into service.

[REDACTED]

[REDACTED]

Section 7 ENERGY RESOURCE ASSESSMENT

7.7.7 Provide the information requested in Section 7.6.8 for any Resources that are unique to the Required Alternate Bid.

[Redacted content]

Section 8 ENERGY STORAGE OPERATION PLAN

7.7.8 Provide the information requested in Section 7.6.9 if applicable for the Required Alternate Bid.



Section 9 BUSINESS ENTITY AND FINANCING PLAN

7.7.9 Provide the information requested in Section 7.6.10, to the extent that the business entity and/or Financing Plan are different for the Required Alternate Bid. If the business entity and Financing Plan are unchanged from the accompanying Bid, so indicate.

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

Section 10 PERMITTING PLAN

7.7.10 Provide the information requested in Section 7.6.11 that is applicable to the development of the New York Converter Station and for any Resources that are unique to the Required Alternate Bid.

The same permits that have already been issued for the CHPE project would apply to the configuration with the NS Converter. See Section 11 of the Base Proposal. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] The information in Section 11 of the Base Proposal remains the same for the Québec Line in this Required Alternate Bid.

Section 11 ENVIRONMENTAL MITIGATION PLAN

7.7.11 Provide the information requested in Section 7.6.12 that is applicable to the development of the New York Converter Station and for any Resources that are unique to the Required Alternate Bid.

The Best Management Practices (BMPs) that are detailed in Section 12 of the Base Proposal will all extend to the NS Converter. Since the environmental impacts associated with the NS Converter are very minor, it is unlikely additional BMPs will be required as part of the permitting process. If they are required, Transmission Developers will incorporate them into its NS Converter construction plan.

Since the amount of energy delivered into Zone J will be equivalent between this Required Alternate Bid and the Base Proposal and all generation transmitted on CHPE will be renewable, the carbon emission reductions and benefits to Disadvantaged Communities will remain the same as described in Section 12 of the Base Proposal.

[REDACTED]

[REDACTED]

[REDACTED] the construction of the NS Converter will not affect the Québec Line, the environmental mitigation plan described in Section 12 of the Base Proposal regarding the Canadian portion of the Project remains the same for the Canadian portion of the Alternate Project in this Required Alternate Bid.

Section 12 PROJECT SCHEDULE

7.7.12 Provide the information on Project schedule and milestones requested in Section 7.6.13 for the Required Alternate Bid.

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]

[Redacted]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

Section 13 OPERATIONAL FLEXIBILITY AND PEAK COINCIDENCE

7.7.13 Provide the information requested in Section 7.6.14 that is applicable to the Required Alternate Bid.

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

Section 14 COMMUNITIES ENGAGEMENT PLAN

7.7.14 Provide the information requested in Section 7.6.15 that is applicable to the Required Alternate Bid.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The underlying comprehensive approach of Transmission Developers to community engagement will remain unchanged, and the additional construction activities (and associated local workforce opportunities) in New Scotland will be integrated into that approach. Specifically, Transmission Developers will continue regular communications on the CHPE project with county and local officials, and other interested parties including nearby residents and businesses. Representatives of Transmission Developers will continue to brief town officials on a regular basis.

Since the construction of the NS Converter will not affect the activities contemplated in the Base Proposal for the Québec Line, the community engagement plan described in Section 15 of the Base Proposal regarding the Canadian portion of the Project remains the same regarding the Canadian portion of the Alternate Project in this Required Alternate Bid.

Section 15 INCREMENTAL ECONOMIC BENEFITS PLAN

7.7.15 Provide the information requested in Section 7.6.16 that is applicable to the Required Alternate Bid.

[Redacted]

[Redacted]

[Redacted]

[Redacted]

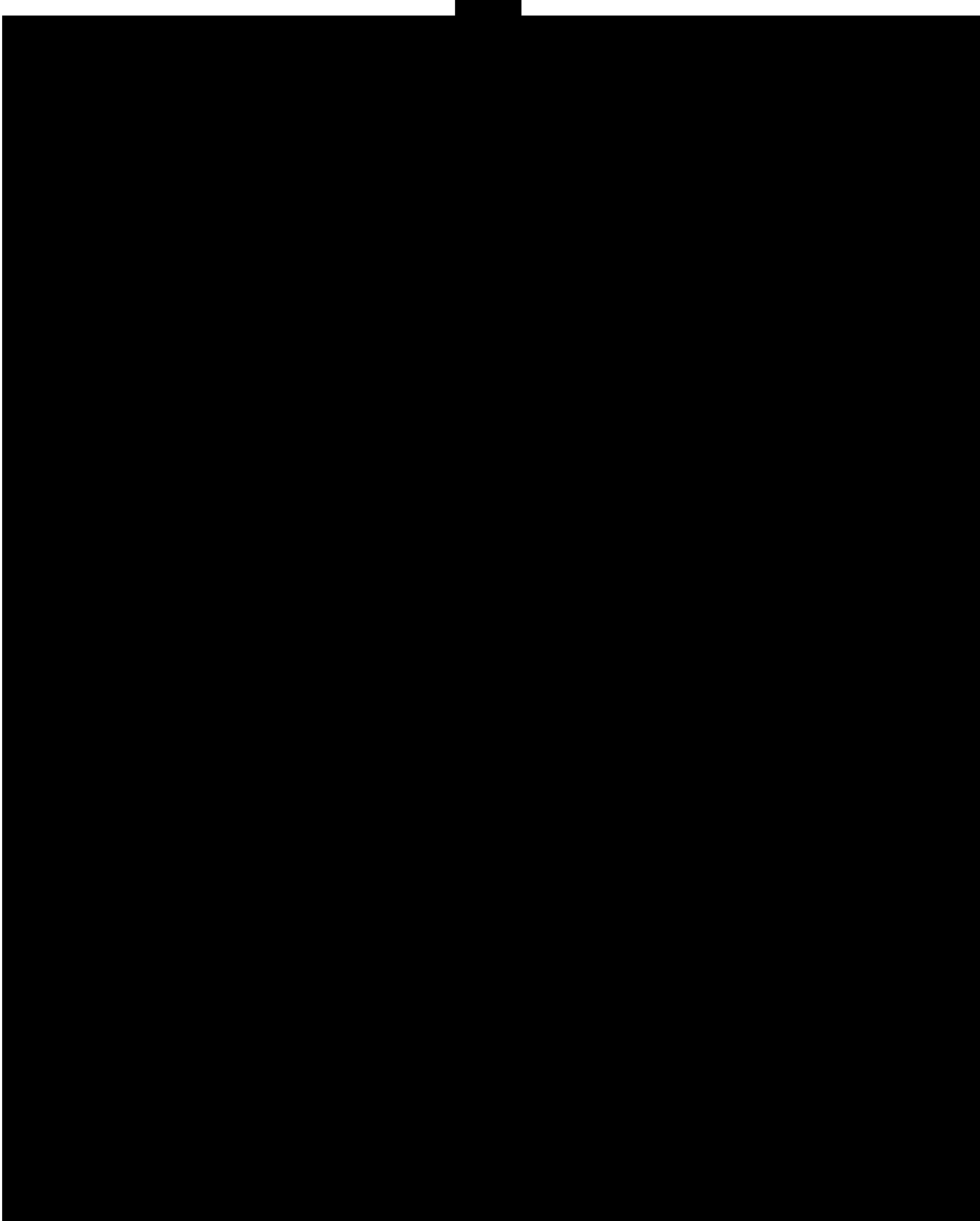
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

[Redacted]

⁴⁴ The significant economic benefits described in the PA Consulting Report on CHPE, May 2021 ([Attachment 16.1](#) to the Base Proposal) apply equally to the Alternate Project. See Appendix C of the PA Consulting Report for information regarding the incremental benefits of the NS Converter.

[Redacted]



[Redacted]

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[Redacted]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] • [REDACTED] [REDACTED] [REDACTED] [REDACTED]
[REDACTED]	[REDACTED] • [REDACTED] [REDACTED] [REDACTED] [REDACTED]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED] [REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] • [REDACTED]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED] [REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED] [REDACTED]

