STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard

Case 15-E-0302

PETITION REGARDING AGREEMENTS FOR PROCUREMENT OF TIER 4 RENEWABLE ENERGY CERTIFICATES

Summary

The New York State Energy Research and Development Authority (NYSERDA) and Department of Public Service Staff (DPS Staff) hereby submit for approval this Petition and two contracts for renewable energy credits (RECs) entered into under Tier 4 of the Clean Energy Standard (CES).

Tier 4 was established by the Public Service Commission (Commission) in October 2020 to overcome the challenge of New York City's reliance on fossil fuels and to help accelerate achievement of New York's target of 70% renewable energy by 2030. To this end, the Commission instructed NYSERDA to proceed with a Tier 4 solicitation that will increase the penetration of renewable energy into New York City (Zone J). NYSERDA issued its solicitation in January 2021 and received a highly competitive response with seven projects submitting proposals.

Following a robust and comprehensive evaluation process, which considered bid prices, viability and economic benefits, in September of 2021, the selection of two projects was announced: (1) the Clean Path New York (CPNY) project; and (2) the Champlain Hudson Power Express (CHPE) project. Contract negotiations have now concluded, and in accordance with the Commission's instructions, NYSERDA and Staff are submitting the signed contracts for the Commission's consideration and approval. The selected projects are expected to deliver 18 million megawatt-hours of renewable energy per year to Zone J, more than a third of New York City's annual electric consumption, from a diverse generation portfolio including onshore wind, solar and hydroelectric power from Upstate New York and Québec.

This Petition offers for the Commission's consideration a detailed assessment of the terms of the contracts for the CPNY and CHPE projects and their costs and benefits. Total investment into both

projects is expected to amount to nearly $24 billion. Societal benefits include the value of avoided electricity system expenditures, estimated at around $19 billion, the value of reduced greenhouse gas emissions, estimated at up to $8 billion, and regional public health benefits resulting from reduced exposure to harmful pollutants from fossil fuel resources whose energy would be replaced by generation from the two projects, estimated at up to $4 billion. Total benefits range from $27-$31 billion across the examined scenarios. Based on these estimates, Tier 4 is projected to deliver significant net societal benefits to New York of approximately $3-$7 billion.

The projects are expected to create approximately 10,000 family-sustaining jobs statewide with $8.2 billion in in-state economic development investments. These investments include a combined $460 million in community benefit funds to create pathways to green energy jobs, support public health, advance capital improvement projects, realize habitat restoration and improve the environmental footprint of buildings in disadvantaged communities.

Combining these projects with New York's existing contracted portfolio of offshore wind projects turns the page on New York City's energy history, increasing resiliency and reliability while significantly improving air quality and reducing emissions. These transformational green infrastructure projects along with the state's deployment of clean energy and offshore wind are expected to reduce New York City's fossil fuel use by more than 80 percent by 2030. In recognition of the importance of the Commission's Clean Energy Standard initiative, the Government of the City of New York (the "City") has committed to contributing financial support by sourcing its electric supply directly from offshore wind and Tier 4 generation.

The costs of program payments for the purchase of Tier 4 RECs from the projects are projected as $5.9 - $11.6 billion, equating to an estimated increase in customer electric bills of 2.1 – 4.1% (or $2.08 – $4.08 per month for the average residential customer) on average across the State for the 25-year period of the Tier 4 contracts. The range of these projections reflects future uncertainties including energy and capacity prices and includes the benefits to ratepayers from the expected purchase of Tier 4 RECs by the City, which reduces the ratepayer impact by $0.8-$1.7 billion. Additional cost reductions could occur as a result of federal transmission tax credits, which could reduce the remaining costs of Tier 4 to ratepayers to 1.8 – 3.8%. Voluntary purchase of Tier 4 RECs by New York City organizations with interest in switching to renewable energy could reduce ratepayer impact even further.

Program costs will be borne by ratepayers based on electric load. For instance, ConEdison customers with 40% of the State's load will contribute 40% of the cost, and National Grid customers 23%, reflecting their load. However, because upstate customers tend to have lower electricity bills to start with, the percentage bill impacts tend to be higher upstate than downstate, with National Grid customers experiencing around twice the percentage bill increase as that of ConEdison customers. This underscores the importance of voluntary Tier 4 REC purchases by the City, as described above, in order to manage these upstate impacts.

1 Introduction

NYSERDA and DPS Staff submit this Petition and request that the Commission issue an order approving the Tier 4 Renewable Energy Certificate Purchase and Sale Agreement between NYSERDA and Clean Path New York LLC, attached as Appendix A, and H.Q. Energy Services (U.S.) Inc. (HQUS), attached as Appendix B.[1] These projects received the highest scores in the competitive Tier 4 solicitation and have been identified as meeting the goals of the Tier 4 program, as set forth in the October 15, 2020 Clean Energy Standard Modification Order (CES Modification Order),[2] to reduce New York City's reliance on energy from fossil fuel fired power plants by increasing the penetration of renewable energy into New York City (Zone J) and by optimizing deliverability of renewable resources throughout the entirety of the State, in furtherance of the goals of the Climate Leadership and Community Protection Act (the Climate Act).

In the CES Modification Order, the Commission directed NYSERDA to conduct a Tier 4 solicitation and required any agreement(s) for the procurement of Tier 4 Renewable Energy Certificates (RECs) be filed with the Commission for approval on the basis of whether they advance the public interest and to ensure that Tier 4 REC prices are reasonable in relation to the value of the environmental attributes and other benefits, including system and public health benefits. In accordance with the CES Modification Order, this Petition includes the anticipated customer bill impacts that would result from the proposed agreements and assesses whether the Tier 4 projects advance the public interest, including considerations of: (i) whether the agreements are a cost-effective means of progressing toward the Climate Act's 2030 and 2040 Targets in light of the unique challenges of reducing the energy derived from fossil fuel in Zone J; (ii) the extent to which the selected projects will enable reduced reliance on fossil-fuel fired generation located in Zone J; (iii) the degree to which the selected projects complement the foreseeable deployment of offshore wind within Zone J; (iv) impacts to disadvantaged communities; (v) project viability; and (vi) economic benefits to the State.

2 Background

The Climate Act, enacted in July of 2019, established mandates of achieving 70 percent renewable energy by 2030 and zero emissions by 2040 associated with the electric supply needed to meet demand.[3]

On June 18, 2020, DPS Staff and NYSERDA jointly prepared a "White Paper on Clean Energy Standard Procurements to Implement New York's Climate Leadership and Community Protection Act" (The White

[1] For purposes of public review and comment, the attached copies of the Agreements redact critical electric infrastructure information and other sensitive information that is not relevant to the public interest determination.

[2] Case 15-E-0302; *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and Clean Energy Standard*, *Order Adopting Modifications to the Clean Energy Standard* (issued and effective October 15, 2020) (CES Modification Order). https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Standard/2020/October-15-Order-Adopting-Modifications-to-the-Clean-Energy-Standard.pdf

[3] Chapter 106 of the Laws of 2019 (codified, in part, in Public Service Law (PSL) §66-p). The Climate Act became effective on January 1, 2020. https://legislation.nysenate.gov/pdf/bills/2019/S6599

Paper) which proposed, among other measures, to create a new Tier 4 of the Clean Energy Standard (CES) that would provide support for renewable energy projects that deliver energy into New York City (Zone J).

In the White Paper, NYSERDA and Staff explained that the need to reduce New York City's reliance on fossil fuels is a central challenge to achieving the Climate Act's 70 by 30 Target and described the need for a new Tier 4 of the CES that would aim at increasing the penetration of renewable energy into New York City (Zone J).[4] The White Paper referenced NYISO's "Tale of Two Grids" analysis, which shows that the upstate region of the State, defined as NYISO load zones A - E, is supplied by 88% zero-emission resources but accounts for only one third of statewide load. By contrast, the downstate region (zones F-K) accounts for roughly two thirds of statewide load but is supplied by 69% fossil fuel-fired generation.[5] New York City's reliance on fossil fuel-fired generation has significantly increased since the retirement of the Indian Point Energy Center.

The White Paper further observed that, even within the downstate region, New York City is particularly dependent on fossil fuel-fired generation. New York City consumed 52,003 GWh of electricity in 2019, roughly a third of the statewide total of 155,832 GWh. [6] During that year, nearly all of the roughly 22,500 GWh of electricity generated within New York City was from fossil fuel-fired generation. [7] The White Paper concluded that the statewide 70 by 30 Target would be difficult to achieve without displacing a substantial portion of the fossil fuel-fired generation that New York City currently relies upon.

In the CES Modification Order of October 15, 2020, the Commission agreed with the rationale presented in the White Paper and concluded that a separate tier, independent of both Tier 1 and the Offshore Wind Standard, would be necessary to comply with the Climate Act and should be implemented through a NYSERDA solicitation. The Commission further directed NYSERDA to impose a non-binding limit of 1,500 MW on the first Tier 4 REC solicitation, a limit to be exceeded only upon receipt of proposals that are sufficiently compelling to warrant such a major commitment from the State and indicated an upper limit of 3,000 MW. No minimum procurement quantity was imposed.

With respect to resource eligibility, the White Paper proposed that any resource that qualifies as a "renewable energy system" under the Climate Act should be eligible under Tier 4, subject to the following conditions: (1) non-hydropower resources must have a date of commercial operation on or

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[4] Case 15-E-0302; White Paper on Clean Energy Standard Procurements to Implement New York's Climate Leadership and Community Protection Act (submitted June 18, 2020) (the White Paper), p. 45. http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BE6A3B524-6617-4506-A076-62526F8EC4CB%7D

[5] The New York Independent State Operator (NYISO). 2020. The New York ISO Annual Grid & Markets Report: The Vision for a Greener Grid, Power Trends 2020, p. 9. https://www.nyiso.com/documents/20142/2223020/2020-Power-Trends-Report.pdf/dd91ce25-11fe-a14f-52c8-f1a9bd9085c2#:~:text=Power%20Trends%202020%20is%20dedicated%20to%20their%20service%20and%20sacrifice.&text=Power%20Trends%202020%20focuses%20on,state%20in%20achieving%20these%20goals.

[6] NYISO. 2020. 2020 Load and Capacity Data: Gold Book. p. 19. https://www.nyiso.com/documents/20142/2226333/2020-Gold-Book-Final-Public.pdf/

[7] Id. at 94.

after the date of the CES Modification Order authorizing Tier 4; (2) hydropower resources that were not already in existence or under construction as of the date of the White Paper (June 18, 2020) would not be eligible; (3) hydropower resources would be subject to additionality requirements; and (4) offshore wind resources would be procured separately from Tier 4 and therefore would not be eligible for Tier 4. In the CES Modification Order, the Commission agreed with the White Paper's recommendations and also declined to allow behind-the-meter resources to be eligible under Tier 4.

The Tier 4 delivery requirement can be met by locating utility-scale eligible resources in Zone J or by demonstrating that the eligible resources located outside of Zone J will be delivered via New Transmission, defined as electrical infrastructure that electrically interconnects in Zone J after October 15, 2020 (the date of the CES Modification Order) and that provides incremental transmission capability into Zone J.

3 Procurement Process

On January 13, 2021, NYSERDA released Request for Proposals (RFP) No. T4RFP21-1 for the purchase of New York Tier 4 Eligible RECs. Following the issuance of the RFP, stakeholders were notified by email and the solicitation was posted on NYSERDA's Large-Scale Renewables website and published in the New York State Contract Reporter. A proposers' webinar was held on January 28, 2021. The deadline for any prospective proposer to submit a Notice of Intent to Propose (which was encouraged but not required by the RFP) was January 21, 2021; 16 such Notices of Intent were received.

The RFP was structured as a two-step process. In the Step One Eligibility Application, proposers submitted general information about the proposer (Proposer), the proposed project (Project), the generation resources that comprise the Project (Resources), and any new transmission facilities that would be developed to deliver the energy to New York Control Area (NYCA) Zone J (New Transmission). Proposers of Projects that included hydropower Resources were required to submit a Step One Eligibility Application including historical hydropower data, as is further discussed below. Proposers of Projects that did not include hydropower Resources were strongly encouraged but were not required to submit a Step One Eligibility Application. Except for the historical hydropower data submitted by Proposers of Projects that included hydropower Resources, all information submitted in Step One was non-binding.

Proposers had the opportunity to submit questions on Step One of the RFP by February 4, 2021; written responses were posted to the RFP website on February 11, 2021. The deadline to submit Step One Eligibility Applications was February 16, 2021. NYSERDA received 18 Step One Eligibility Applications from 14 Proposers, including four with historical hydropower data.

The CES Modification Order adopted two baseline measurements as additional criteria for hydropower resources to be included in the Tier 4 REC procurement: a Supplier Energy Baseline; and a Supplier GHG Baseline. The Supplier Energy Baseline aimed at ensuring that historical sales to NYCA by a Tier 4 supplier and its affiliates are maintained and not displaced as a result of a Tier 4 Agreement. The purpose of the Supplier GHG Baseline is to ensure that the energy associated with Tier 4 RECs is

additional to the renewable generation historically produced from facilities owned or controlled by the Proposer.

The Commission directed NYSERDA to apply the Supplier GHG Baseline to all bids with hydropower resources, whereas the Commission noted its concern that the Supplier Energy Baseline, rigidly applied, could result in the unintended consequence of both compromising the cost-effectiveness of the Tier 4 program and encouraging uneconomic dispatch of resources and accordingly directed NYSERDA to solicit bids from proposers that included hydropower resources both with and without a Supplier Energy Baseline and to evaluate them based on their overall value to the State.

To establish the Supplier GHG Baseline, NYSERDA required proposers submitting projects with hydropower resources to provide (i) a minimum of 20 years of historical energy production data, and (ii) a proposed Supplier GHG Baseline. NYSERDA then calculated and set each Supplier GHG Baseline as the sum of annual generation across applicable facilities. For each facility, annual generation was derived based on capacity as of October 1, 2020. NYSERDA calculated the capacity factor for each facility from the submitted data as the average capacity factor of the facility over the period since the most recent change in capacity. If it had been less than ten years since a capacity change at a particular facility, NYSERDA calculated the average capacity factor over the period of the ten years ending December 2020.

NYSERDA used the historical hydropower data submitted in Step One to determine an initial Supplier Energy Baseline and Supplier GHG Baseline for each of the proposed Projects containing hydropower Resources. NYSERDA shared its initial determination of each Project's baselines with the Project's Proposer and allowed the Proposer to comment. On April 12, 2021, NYSERDA informed the Proposers that submitted Step One Eligibility Applications containing historical hydropower data of the final hydropower baseline determination for each such proposer.

NYSERDA subsequently updated the RFP on March 29, 2021 and on April 20, 2021, to provide further clarifications to Proposers.

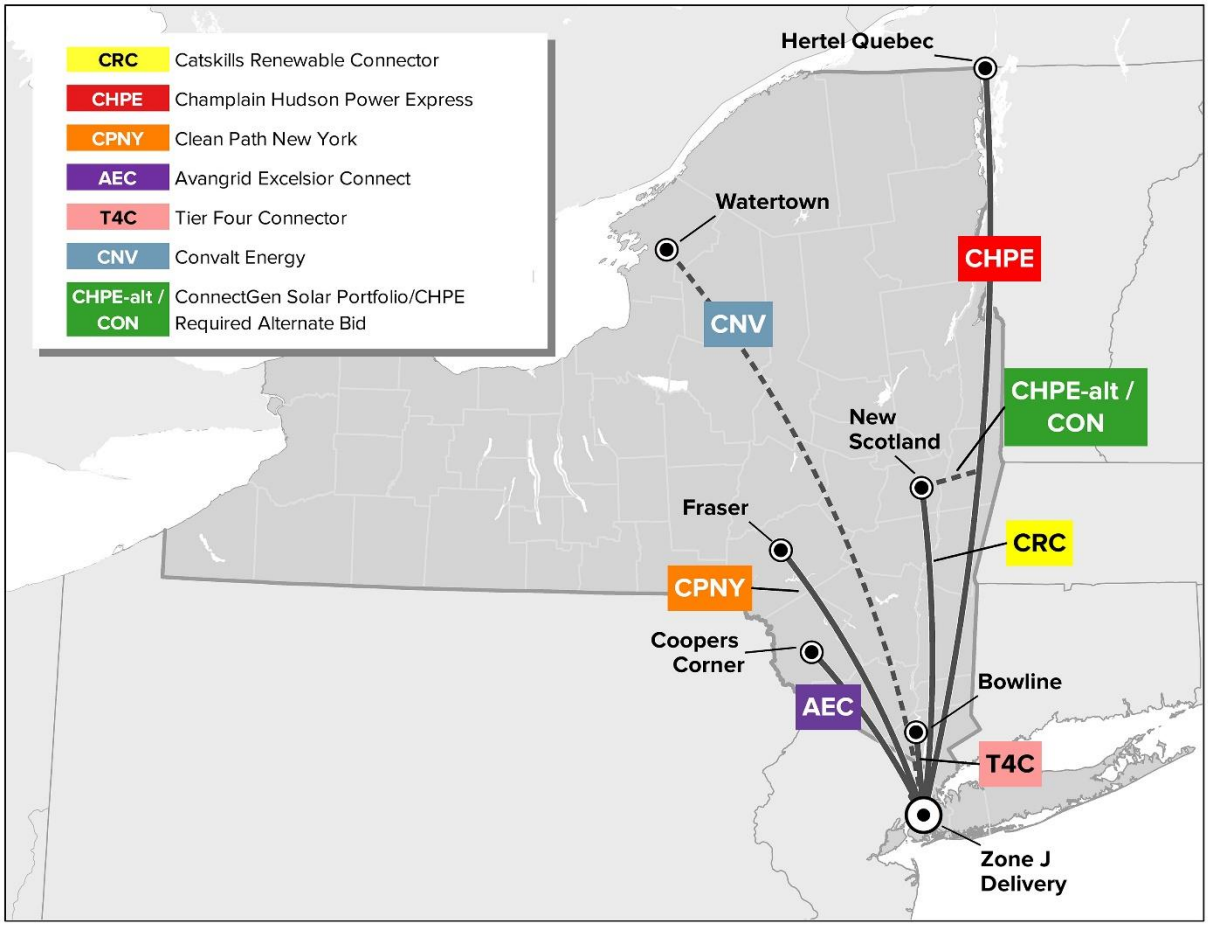
In the Step Two Proposal, NYSERDA required Proposers to submit a conforming, binding proposal (Proposal), including but not limited to: a description of the Project, Resources and New Transmission, experience and qualifications, financing plan, permitting plan, environmental mitigation plan, claimed economic benefits, annual quantity of Tier 4 RECs that the Proposer proposes to deliver to Zone J (Bid Quantity), pricing information (Bid Prices), and an explanation of how the Project would meet the Tier 4 delivery requirements. NYSERDA required proposers of Projects that included hydropower Resources to base their Step Two Proposal on the baseline determinations issued by NYSERDA under Step One. NYSERDA established a deadline of May 3, 2021 for Proposers to submit written questions on Step Two of the RFP. Written responses were posted to the RFP website on a rolling basis until May 7, 2021. NYSERDA also required proposers to register for the NYSERDA Salesforce Portal by May 10, 2021. Step Two Proposals were due on May 12, 2021.

NYSERDA received Proposals from seven Proposers:

- Avangrid Networks, Inc.: a 106-mile 1,200-MW HVDC transmission line from Zone E; Resources included solar and wind Resources, as well as an option with storage.
- Catskills Development, LLC: a 115-mile 1,200 MW HVDC transmission line from Zone F; Resources included solar and wind Resources.
- Clean Path New York LLC: a 174-mile 1,300 MW HVDC transmission line from Zone E; Resources included solar and wind Resources, as well as an option with storage.
- ConnectGen NY Solar LLC: a Resource-only proposal with 720 MW of solar that would be delivered to Zone J via the converter station included in H.Q. Energy Services (U.S.) Inc.'s Required Alternate Bid.
- Convalt Energy, Inc.: a 1,200 MW HVDC transmission line from Zone E; Resources include solar Resources.
- H.Q. Energy Services (U.S.) Inc.: a 375-mile 1,250 MW HVDC transmission line from Québec (Canada), Resources include hydropower; because the Withdrawal Point is outside NY, the Proposal includes a Required Alternate Bid with an additional converter station in Zone F.
- Tier Four Connector, LLC: a Transmission line from Zone G, with an unspecified Resource portfolio.

All Proposals were based on delivery of generation from outside Zone J into Zone J through New Transmission. The six New Transmission facilities associated with these Proposals are shown in Figure 1. In total, the Proposals represented 6,418 MW of transmission capacity and a total Bid Quantity of 38,308,461 MWh of Tier 4 RECs annually.

Figure 1: Proposed New Transmission Facilities[8]



Most Proposers submitted multiple Bids, consisting of different Bid Prices and/or proposed alternate pricing or other terms. A total of 33 Bids were received across the seven Proposals.

4 Selection Process

The evaluation process was supported by a Scoring Committee comprised of six evaluators: three independent, external evaluators, one evaluator from the New York Department of Public Service (DPS) and two internal staff from NYSERDA.

Per the terms of the CES Modification Order, NYSERDA employed a scoring system that weighted price and non-price factors, for a total of 100 points, as follows:

- Project Viability, Operational Flexibility and Peak Coincidence: 20 points
- Incremental Economic Benefits to New York State: 10 points
- Offer Prices: 70 points

[8] H.Q. Energy Services (U.S.) and ConnectGen NY Solar Proposals utilize Champlain Hudson Power Express.

NYSERDA tasked the Scoring Committee with awarding points for the non-price components of each proposal. NYSERDA conducted offer price scoring through the development of a confidential Levelized Net REC Cost (LNRC) model. This model was developed by NYSERDA's Large-Scale Renewables Team, Energy and Environmental Analysis Team, and technical support contractor, Levitan & Associates, Inc. (LAI).

Further external support was provided by NYSERDA's outside counsel, Harris, Wiltshire & Grannis, LLP and Sive, Paget & Riesel, PC, and by NYSERDA's facilitation contractor, Kearns & West.

To ensure that each evaluator had a common understanding of each Proposal prior to scoring, and to further buttress subject-matter expertise, accuracy in assessments, and objectivity of results, NYSERDA engaged several New York State agencies as specialist reviewers who supported the Scoring Committee by contributing targeted, subject-matter specific assessments on portions of the proposals. The Specialist Reviewers and their areas of assessments included:

- Environmental and Permitting: NYS Department of Environmental Conservation
- Interconnection and Delivery: NYS Department of Public Service
- Coastal Zone Management: NYS Department of State

The evaluation process for Step Two Proposals was comprised of ten principal steps, notably:

1. Receipt and Distribution of Proposals to Scoring Committee Members
2. Proposal Completeness Review
3. Bid Eligibility Review
4. Viability Determination
5. Initial Preliminary Ranking
6. Counterproposals
7. Revised Preliminary Ranking
8. Consideration of Program Policy Factors and Final Ranking
9. Public Interest Review
10. Determination of recommended Award Group

4.1 Proposal Completeness, Eligibility, Viability

NYSERDA issued deficiency notices (in case of incomplete Proposal aspects) and written questions to Proposers following Proposal submission to assist in making eligibility determinations.

A viability review was carried out in accordance with Section 5.1 of the RFP. One Proposal was deemed non-viable by the Scoring Committee and excluded from further consideration in the evaluation and selection process.

4.2 Clarifying Questions and Interviews

Separate from communication aimed at eligibility determinations, evaluators identified additional written clarifying questions aimed at increasing understanding of the information presented in each Proposal and responses to such questions were received.

For each round of clarifying questions, NYSERDA set a deadline for all evaluation parties to submit questions for consolidation, which then were prioritized for group discussion and facilitated via a Webex/conference call with the Scoring Committee to revise the clarifying questions list. The final clarifying questions list was then reviewed by NYSERDA and distributed to each Proposer.

The Scoring Committee and NYSERDA developed interview questions using a process similar to the one used for clarifying questions. To facilitate scheduling and the availability of subject-matter experts, NYSERDA distributed the general interview topics to the Proposers in advance of the interviews. This allowed the Proposers to plan their interview teams in accordance with the expected topics, while also leaving the NYSERDA interview team with flexibility in the ultimate direction of the discussions.

Consistent with COVID-19 protocols, all interviews were held via Webex. Depending on the number of prepared questions, interviews were scheduled for between one and two hours. The NYSERDA interview team was supported by outside counsel with technical support offered by LAI. The Scoring Committee and Specialist Reviewers observed the interviews through a one-way videoconference and provided feedback to the interview team throughout the process in cases where follow-up questions were desired.

4.3 Non-Price Scoring

Proposal materials, answers to clarifying questions, assessments from specialist reviewers, and non-price score sheets were provided to the Scoring Committee for each Proposal. The information provided, along with information gained from the Proposer interviews, was used by the members of the Scoring Committee to develop the individual evaluator scores for each of the eligible and viable bids. These individual scores were then used as the basis for consensus building among the Scoring Committee.

In the Project Viability, Operational Flexibility and Peak Coincidence category, the Scoring Committee assessed Proposals in the areas identified in Section 3.2 of the RFP:

- Proposer Experience;
- Proposed Technology;
- Interconnection and Delivery;
- Development Plan and Proposed Commercial Operation Date;
- Financing Plan;
- Permitting Plan and Status;
- Energy Resource Assessment;
- Project Labor Agreement;

- Carbon Emissions and Embodied Carbon;
- Energy Deliverability;
- Operational Flexibility; and
- Peak Coincidence.

In the New York State Economic Benefits category, the Scoring Committee evaluated Proposer claims, in total for the State and as they benefit Disadvantaged Communities,[9] in the areas of:

- Category 1: Project-specific spending and job creation in New York State;
- Category 2: Investment in transmission and other infrastructure, supply chain, and community economic development in New York State; and
- Category 3: Input activities that provide opportunities for the New York workforce and for specific communities.

The Scoring Committee met for approximately one week to conduct the non-price scoring that contributed to an Initial Preliminary Ranking. During the Scoring Committee meetings, each Proposal was discussed to leverage the subject-matter expertise of the individual Scoring Committee members and specialist reviewer input. The robust discussions served to promote a common understanding of how each Proposal measured up against the established scoring criteria. In addition, the Scoring Committee captured strengths and weaknesses of each Proposal. The consensus-building process promoted consistency and fostered objectivity and fairness. Ultimately, the Scoring Committee arrived at a common set of consensus non-price scores, which were incorporated into the Initial Preliminary Ranking.

The Scoring Committee met again to consider Proposal revisions submitted as part of the counterproposal process (discussed in more detail further below). The Scoring Committee adjusted selected non-price scores to reflect such revisions through a consensus-building process and incorporated the scores into a Revised Preliminary Ranking.

4.4 Price Scoring

NYSERDA based offer price scoring on computation of each proposal's LNRC as described in Section 4.3 of the RFP. In accordance with the RFP, NYSERDA carried out this computation based on a Contract Delivery Term commencing in 2025. In accordance with the CES Modification Order, no pre-determined cap on Tier 4 REC prices was applied.[10]

[9] The Climate Leadership and Community Protection Act (CLCPA) directs the Climate Justice Working Group (CJWG) to establish criteria for defining disadvantaged communities. However, until the criteria are established, New York State has specified interim criteria for disadvantaged communities, which includes two types of communities, those: (i) located within census block groups that meet the U.S. Housing and Urban Development (HUD) 50% area median income (AMI) threshold of the top quartile of census block groups in New York, ranked by the percentage of low and moderate income (LMI) households, defined as households with annual incomes at or below 50% of the AMI of the county or metro area where the census block group resides, that are also located within the DEC Potential Environmental Justice Areas; or (ii) located within New York State Opportunity Zones.
[10] CES Modification Order, p. 81.

To facilitate direct comparison across all Proposals and contract structures, NYSERDA converted all offer prices to levelized dollar per megawatt hour metrics in nominal dollars. In the case of the Index REC offers, the annual strike prices were first converted into expected annual net REC values by subtracting a forecast of projected Reference Energy Prices and Reference Capacity Prices. Reference Energy Prices were calculated based on the NYISO CARIS 2019 forecast[11] and Reference Capacity Prices were calculated based on the 2020 DPS BCA forecast.[12] Further detail on these forecasts is also provided in Section C.6.1 of Appendix C. In the case of the Fixed REC offers, no additional conversion was necessary.

4.5 Score Aggregation and Initial Preliminary Ranking

The price and non-price evaluations proceeded in separate, parallel processes with the independent Scoring Committee members blind to prices throughout their non-price evaluation. After consensus on the non-price points was reached by the Scoring Committee and preliminary non-price and price scores were available, NYSERDA normalized the raw scores to maintain the intended component weights as defined in the CES Modification Order. In conducting this normalization, NYSERDA followed the criteria specified in the RFP:

- The maximum contributions by category to the final aggregate score (Section 3.1)[13]
    - Offer Price: 70 points
    - Project Viability, Operational Flexibility and Peak Coincidence: 20 points
    - Incremental Economic Benefits to New York State: 10 points
- Allocation of the maximum points available for the Bid Price component (70 points) to the bid with the lowest LNRC, and proportionate allocation of lower numbers of points to higher LNRC bids (Section 4.4). This approach was also used (though in reverse) for Project Viability, Operational Flexibility and Peak Coincidence and Incremental Economic Benefits scores.

The resulting non-price and price points were combined to determine the Initial Preliminary Ranking.

[11] The New York State Independent System Operator (NYISO). 2020. 2019 Congestion Assessment and Resource Integration Study; Comprehensive System Planning Process, CARIS – Phase 1, Appendices B – M. (CARIS). This forecast extends to 2028. Thereafter, the energy price was assumed to stay constant in real dollar terms at the 2028 level (i.e., continuing to increase with inflation annually in nominal dollar terms).
https://www.nyiso.com/documents/20142/13246341/2019_CARIS_Report_v20200617.pdf/fa44a341-786d-2b83-0c00-22951bb112a0

[12] Zonal Summer and Winter Installed Capacity Market (ICAP) generator prices from 2025 to 2040 were projected as per the DPS August 2020 Capacity Price Forecast per the BCA Order (Order Establishing the Benefit Cost Analysis Framework, Case 14-M-0101, January 21, 2016). In 2041 and thereafter, the capacity prices were held constant at the 2040 level in real dollar terms.
https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={F8C835E1-EDB5-47FF-BD78-73EB5B3B177A}

[13] Page references in this section are to Request for Proposals T4RFP21-1 and related Appendices, available at https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard/Renewable-Generators-and-Developers/Tier-Four.

4.6 Counterproposals and Revised Preliminary Ranking

As indicated in the CES Modification Order[14] and Section 5.6 of the RFP, NYSERDA retained the right, during its review process, to issue counterproposals to any Proposer. Such revised proposals and counterproposals could include changes to the Bid Price or to related terms and conditions including risk mitigation provisions.

NYSERDA conducted communications with Proposers on issues related to price and other commercial provisions in parallel with the non-price review described above. Any Proposal features that emerged from bilateral discussions with any Proposer but were considered to potentially be relevant to other Proposers were made available by NYSERDA to other Proposers for inclusion in their Proposals. This process concluded with NYSERDA providing an opportunity to all Proposers with eligible and viable Bids to provide improved offers by July 14, 2021.[15]

Following the submission deadline for improved offers, the Scoring Committee reconvened to reach consensus on any changes to the non-price scores resulting from the counterproposals process. Price scores were also updated based on the improved offers. The resulting final non-price and price points were added to determine the Revised Preliminary Ranking.

While NYSERDA considered all eligible bids in determining the Revised Preliminary Ranking, NYSERDA subsequently removed from the Revised Preliminary Ranking any bids that were based on requested terms that materially deviated from those set out in the RFP and the form Tier 4 contract to an extent not deemed acceptable by NYSERDA, and in respect of which it turned out to be impossible (through the process of counterproposals) to agree on mutually acceptable changes.

4.7 Program Policy Factors and Final Ranking

NYSERDA considered the Revised Preliminary Ranking in the context of other factors that contribute to the achievement of the CES mandate, the reduction of greenhouse gas emissions, and the objectives of the CES Modification Order. These program policy factors include:

- The efficient utilization of key transmission points of interconnection and Project selections that will promote the cost-efficient integration of renewable generation into New York City;
- Reliability and geographic benefits and/or costs in the NYCA, and the reduction of execution risk through diversity;
- Public health benefits of reducing local air contaminants by displacing thermal generation in New York City, and, in particular, in Disadvantaged Communities;

[14] CES Modification Order, p. 97.

[15] One additional counterproposal was issued to and accepted by HQUS after the conclusion of the Final Ranking described above. The accepted counterproposal included a reduction in price and an improvement in contract terms for NYSERDA. At the time the counterproposal was issued, HQUS already ranked among the top two Proposers in the Final Ranking, and HQUS' acceptance of the counterproposal did not change the Final Ranking.

- The extent the Project contributes to grid reliability and enables reduced reliance on thermal generation in Zone J through its dispatchability and level of firm supply;
- The extent to which the Project allows the State to accelerate the reduction of GHG emissions in furtherance of the Climate Act objectives;
- The extent to which a Project's deliveries are not met through the re-directing of existing resources in a way that provides no net benefit to the State;
- The extent to which the proposed Project promotes delivery of renewable energy from upstate regions of the State into Zone J, eases the curtailment of upstate renewable resources, and optimizes deliverability of renewable resources throughout the entirety of the State; and
- The degree to which two or more smaller Projects provide more competitive benefits and potentially more timely achievement of Commercial Operation, versus the potential scale economy anticipated with a single large Project.

Following detailed review of the Revised Preliminary Ranking results, NYSERDA determined to not apply Program Policy Factors and confirmed the Revised Preliminary Ranking as the Final Ranking.

4.8 Public Interest Review

NYSERDA evaluated whether each Project would advance the public interest of the State. The public interest criteria considered include:[16]

- Whether the agreement is a cost-effective means of progressing toward the Climate Act's 2030 and 2040 Targets in light of the unique challenges of reducing fossil fuel use in Zone J;
- The extent to which the selected project or projects will enable reduced reliance on thermal fired generation located in Zone J;
- The degree to which the selected project or projects complement the foreseeable deployment of offshore wind that will be available to serve Zone J;
- Impacts to Disadvantaged Communities;
- Project viability; and
- Economic benefits to the State.

In accordance with the CES Modification Order, NYSERDA applied the Benefit Cost Analysis (BCA) Framework established by the Commission in the Reforming the Energy Vision proceeding[17] to determine if a Proposal should be considered for an award. The BCA carried out as part of the public interest review is described in more detail in Section 5.11 and Appendix C and also provided insights on

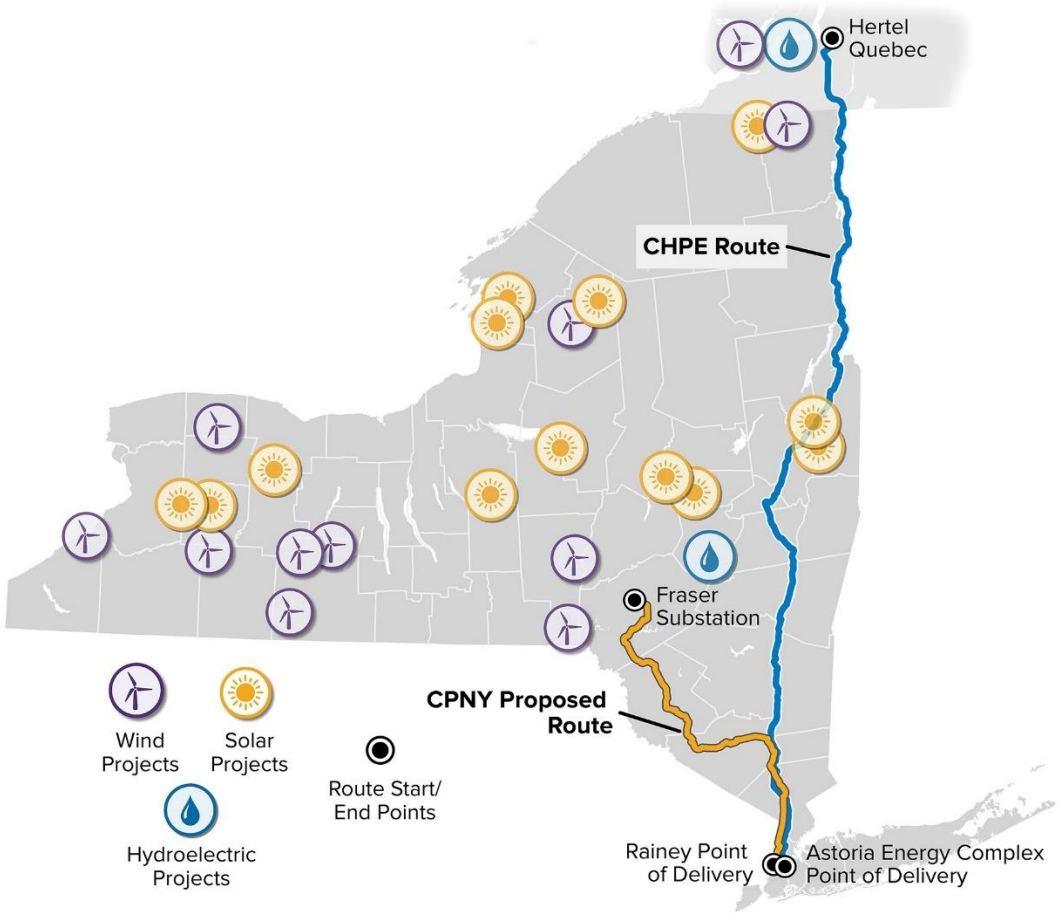
[16] CES Modification Order, p. 82.
[17] Case 14-M-0101. Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Establishing the Benefit Cost Analysis Framework (issued January 21, 2016), Appx. C. https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={F8C835E1-EDB5-47FF-BD78-73EB5B3B177A}

the interaction with thermal-fired generation in Zone J and offshore wind. The final three components of the public interest review – impacts to Disadvantaged Communities, project viability, and economic benefits – were considered as part of the Scoring Committee's review of the Proposals, as described above.

5 Award Recommendation

NYSERDA and DPS Staff recommend that the Commission approve the Tier 4 Contracts that NYSERDA has entered into with Clean Path New York LLC (CPNY) and H.Q. Energy Services (U.S) Inc. (HQUS) as the first and second ranked projects in the Final Ranking. For each of these Projects, the Contract reflects the Project's highest-scoring bid variant. With respect to CPNY, the highest-scoring bid variant was its bid that includes storage and unforced delivery rights (UDRs); for HQUS, the highest-scoring bid variant was the bid that includes summer-only UDRs and does not include the Supplier Energy Baseline or the New York Converter Station.

Figure 2: Transmission Route and Resource Map of the Selected Projects



5.1 Summary

The recommendation is based on the complementary aspects and combined benefits of these two Projects:

- **Diverse portfolio.** The combination of in-State and out-of-State Resources expands the State's renewable resource pool and technology diversification between onshore wind, solar, and hydroelectric – see Figure 2. This resource portfolio offers important synergies including complementary generation profiles and reduced climate change vulnerabilities that lead to greater system reliability and resilience. This will be especially important as the state advances to a 2040 zero-emission grid.
- **Meeting transmission needs.** The New York Power Grid Study[18] found that additional bulk transmission upgrades beyond a single (1,000 MW scale) Tier 4 project would be needed by 2040 to resolve congestion and curtailments. The total capacity of 2,550 MW associated with the two Projects recommended for award is aligned with the magnitude of the expected transmission needs through 2040.
- **Execution risk mitigation.** Awarding two projects through this solicitation limits NYSERDA's execution risk. While both projects were deemed to be highly viable by the Scoring Committee, NYSERDA is cognizant of the more mature development status of the HQUS Project, in that the generating Resources are already in operation and the U.S. portion of the transmission line has been permitted.
- **Contribution to clean generation goals**. The two Tier 4 Projects will enable accelerated achievement of New York's goal of 70% renewable generation by 2030.
- **Societal benefits.** The combined projects will deliver significant net societal benefits to the State estimated at $2.9 – $7.4 billion (net present value), consisting of system resource cost savings (such as reduced investments in storage and transmission infrastructure), greenhouse gas reductions and air quality improvements. This includes $1.8 – $4.0 billion of public health benefits from air quality improvements alone.[19]
- **Benefits to New York City.** The projects are projected to result in a 51% reduction in electricity generated by New York City's remaining in-city fossil fuel plants in 2030. Compared to 2025, this represents an estimated reduction of 84% from clean energy developments including Tier 4 and offshore wind, and New York City will be well on its way to having a zero-emissions grid by 2040.

[18] NYSERDA. 2021. New York Power Grid Study. https://www.nyserda.ny.gov/About/Publications/New-York-Power-Grid-Study

[19] See Appendix C for further details in respect of the Tier 4 benefit cost analysis and health analysis. The health impact assessment focused on the reduction in fine particulate matter and did not include benefits from reductions in ozone formation or reductions in emissions of toxic air pollutants. This approach is also being used for development of the Climate Action Council Scoping Plan, and in that context, it has been acknowledged that this approach is a conservative estimate, i.e. underestimate, of the health benefits. Full achievement of the societal benefits including local health benefits will likely require additional local transmission and distribution upgrades to relieve local load pocket constraints.

- **Economic benefits.** The Projects are committing to $8.2 billion in both upstate and downstate investment in labor, materials, and development, including more than $460 million of investments in community benefits funds, and support for approximately 10,000 family-sustaining jobs, including significant economic benefits accruing to Disadvantaged Communities, helping accelerate the State's economic recovery from COVID-19.

Based on the above considerations, NYSERDA and Staff determined that the awards constitute a sufficiently compelling proposition to warrant this level of commitment from the State.

NYSERDA and Staff also believe that these awards, once delivered, will fulfil the objective of Tier 4 as set out in the CES Modification Order. Subject to the Commission's approval of the CPNY and HQUS Contracts and unless any impediments arise in future that could jeopardize the success of either of the two Projects, NYSERDA and Staff do not perceive a need for authorization of further Tier 4 solicitations.

This section provides further detail on the recommended Projects and the Public Interest Review carried out in support of the recommendation. Public Interest Review criteria addressed in this section include evaluation of project viability and economic benefits, benefit cost analysis, and an assessment of other benefits.

5.2 CPNY: Project Details

CPNY's project includes a new 174-mile, 1,300 MW HVDC transmission line from a withdrawal point near Frasier Substation in Delaware County, NY to the injection point at the Rainey Substation in Queens, NY. The transmission line route is shown in Figure 3.

Figure 3: CPNY Proposed Transmission Route

The resource portfolio consists of 23 generation resources, shown in Figure 2 and listed in Table 1, including 1,932 MW of wind capacity and 1,430 MW of solar capacity.

Table 1: CPNY Generation and Storage Resources

Resource Name	Location	Capacity (MW)	Technology Type	Expected COD
Alle-Catt Wind	Wyoming, Cattaraugus, Allegany Counties, NY	339.78	Onshore Wind	9/30/2024
Horseshoe Solar	Livingston County, NY	180.00	Non-BTM Solar PV	12/31/2023
Number Three Wind	Lewis County, NY	104.00	Onshore Wind	9/30/2022
Canisteo Wind	Steuben County, NY	250.00	Onshore Wind	6/30/2023
Bull Run Wind	Clinton County, NY	449.00	Onshore Wind	9/30/2024

Resource Name	Location	Capacity (MW)	Technology Type	Expected COD
Verona Solar	Oneida County, NY	350.00	Non-BTM Solar PV	12/31/2024
Twinleaf Solar	Lewis County, NY	75.00	Non-BTM Solar PV	12/31/2024
Taproot Solar	Montgomery County, NY	205.00	Non-BTM Solar PV	12/31/2025
Wintergreen Solar	Montgomery County, NY	75.00	Non-BTM Solar PV	9/30/2025
Orangeville Solar	Wyoming County, NY	75.00	Non-BTM Solar PV	9/30/2025
Seventy Seven Solar	Wyoming County, NY	100.00	Non-BTM Solar PV	12/31/2024
Bull Run Solar	Clinton County, NY	170.00	Non-BTM Solar PV	9/30/2025
Ball Hill Wind	Chautauqua County, NY	107.20	Onshore Wind	12/31/2022
Bluestone Wind	Broome County, NY	111.80	Onshore Wind	12/31/2022
High Bridge Wind	Chenango County, NY	103.20	Onshore Wind	9/30/2023
Bald Mountain Solar	Washington County, NY	20.00	Non-BTM Solar PV	12/31/2022
West River Solar	Saratoga County, NY	20.00	Non-BTM Solar PV	6/30/2024
Sandy Creek Solar	Jefferson County, NY	20.00	Non-BTM Solar PV	12/31/2023
Greens Corners Solar	Jefferson County, NY	120.00	Non-BTM Solar PV	12/31/2023
Sky High Solar	Onondaga County, NY	20.00	Non-BTM Solar PV	3/31/2023
Baron Winds Phase I	Steuben County, NY	121.80	Onshore Wind	12/31/2022
Heritage Wind	Orleans County, NY	198.00	Onshore Wind	10/31/2023
Prattsburgh Wind	Steuben County, NY	147.00	Onshore Wind	12/31/2023
Blenheim-Gilboa	Schoharie County, NY	1,160.00	Pumped Storage	7/31/1973

Also shown in Figure 2 and listed in Table 1 is the 1,160 MW Blenheim-Gilboa storage facility, which is another component of the specific selected bid, and which will be used to provide firming services to maximize the availability and reliability of renewable power delivered via the transmission line. CPNY also plans to add a further 514 MW of Resources to those identified above.

The recommended bid has a planned June 30, 2027 commercial operation date (COD) for the transmission line.

The CPNY team includes the New York Power Authority (NYPA) and Forward Power (a joint venture of Invenergy and energyRe).

Table 2 below describes key terms of the Tier 4 Renewable Energy Certificate Purchase and Sale Agreement between NYSERDA and CPNY. Further details are included in Section 6.

Table 2: CPNY Contracting Summary

Counterparty	Clean Path New York LLC
New Transmission	Clean Path New York project
Transmission Capacity	1,300 MW
Proposal Attributes	With UDRs and energy storage
Bid Quantity	7,870,865 MWh/year
COD	June 30, 2027
Contract Tenor	25 years
Nominal Strike Price	$129.75/MWh, constant

5.3 CPNY: Project Viability Evaluation

The Scoring Committee evaluated CPNY's Proposal in each of the Project Viability, Operational Flexibility and Peak Coincidence categories listed in Section 3.2 of the RFP.

- **Proposer Experience**: NYPA has a significant amount of experience developing bulk transmission projects throughout New York. Invenergy is a worldwide developer of transmission and generation, with transmission experience in CAISO, ERCOT, MISO, NYISO, PJM, WECC, SERC, SPP, Canada, and in the TVA territory, as well as internationally. Invenergy's generation development experience includes over 27 GW of power projects across the Americas, Europe, and Asia. While energyRe is a new company, its development team includes personnel with significant experience developing projects involving interconnection to ConEdison's transmission infrastructure, including the Hudson Yards cogeneration microgrid, Time Warner Center load management energy conservation, and the Gateway Center battery storage project in Brooklyn.
- **Proposed Technology**: Transmission line technology is standard and similar to what others are proposing to use. Many of the Resources in the portfolio have Tier 1 contracts. Equipment for the Resources is not firmly contracted but challenges are not expected. The Blenheim-Gilboa pumped storage facility is already operating.
- **Interconnection and Delivery**: Resources have NYISO interconnection queue statuses ranging from Feasibility Study Pending to Interconnection Agreement Completed. The transmission line has a NYISO interconnection status of Scoping Meeting Pending.
- **Development Plan and Proposed Commercial Operation Date**: The COD allows for some flexibility and presents a reasonable probability that the project can meet the schedule. The COD is in the middle of the proposed CODs for the spectrum of Proposals.
- **Financing Plan**: The development team has significant financing experience. NYPA has an AA/Aa2 credit rating and generates $2.4 billion in annual revenue on average. Invenergy has completed more than $42 billion in transactions. energyRe has historically sourced between $5 and $10 billion of debt and equity capital per year.

- **Permitting Plan and Status**: The storage facility already exists. The COD allows time to complete permitting. Only Article VII is on the critical path. The transmission line route, while partially in the Hudson River, goes on land to avoid the most environmentally-sensitive areas. The transmission line makes extensive use of existing rights-of-way and will be buried underground to minimize environmental and community impacts.
- **Energy Resource Assessment**: The Energy Resource Assessment is site-specific and internally produced. The identified Resource portfolio is close to the level needed to meet the Bid Quantity.
- **Project Labor Agreement (PLA)**: Proposer has made a commitment to have construction managers and prime contractors negotiate PLAs for work directly enabled under the Tier 4 contract.
- **Carbon Emissions and Embodied Carbon**: Proposer has a high-quality plan, including quantitative modeling and use of the Moata Carbon Portal.
- **Energy Deliverability**: Modeling indicates high deliverability to New York City.
- **Operational Flexibility**: The pumped storage facility is large and provides significant operational flexibility.
- **Peak Coincidence**: Based on the provided 8760 data, the project will have high deliverability during hours with high net load in Zone J.

5.4 CPNY: Economic Benefits Evaluation

The Project represents a combined upfront private sector investment of $2.1 billion in the Upstate and Downstate economies over the first three years of the contract delivery terms, including significant investment in Disadvantaged Communities. Although not allocated to specific Resources, the total claimed economic benefits associated with the Tier 4 Resource portfolio are $0.8 billion, of which $0.3 billion are incremental to the $0.5 billion of economic benefits included in the 14 existing Tier 1 contracts.

An additional $2.5 billion is expected to be invested over the remainder of the contract delivery term, including significant investment in Disadvantaged Communities, for a total of $4.7 billion over the full 25-year term. The Project will support nearly 8,300 short- and long-term jobs in project development, construction, and operation over the 25-year contract delivery term (Table 3). The economic benefits include a commitment to $270 million of investments in activities that provide opportunities for the workforce and communities in New York State. Economic benefits will be geographically diversified, including investment and jobs throughout upstate New York and in New York City.

Table 3: CPNY Gross Economic Benefits

New York State Economic Benefits[20]	
Total through 3rd year of Contract Delivery Term	$2,124,950,000
Total over 25-Year Contract Delivery Term	$4,659,498,000
Total Short-Term and Long-Term Jobs, Direct	8,288

5.5 HQUS/CHPE: Project Details

The HQUS Project, also referred to by reference to the U.S. portion of its transmission line as the Champlain Hudson Power Express (CHPE), includes a new 375-mile (36 miles in Québec and 339 miles in New York), 1,250 MW HVDC transmission line from a withdrawal point at the Hertel Substation in La Prairie, Québec to the injection point at the Astoria Annex Substation in Queens, NY. The transmission line route is shown in Figure 4.

The resource portfolio consists of 36,910 MW of hydropower in Québec. In addition, HQUS has committed to adding annual generation of 4 TWh of new wind or solar energy to its mix (equivalent to around 1,400 MW of wind capacity), see Section 6.6.

The recommended bid has a December 15, 2025 COD for the transmission line.

The HQUS team includes Transmission Developers (TDI, a The Blackstone Group, Inc. portfolio company), which is the collective term for CHPE LLC, the owner of CHPE, together with TDI-USA, the developer of CHPE, and CHPE Properties, Inc., a New York transportation corporation, as well as their predecessor entities.

Table 4 below describes key terms of the Tier 4 Renewable Energy Certificate Purchase and Sale Agreement between NYSERDA and HQUS. Further details are included in Section 6.

[20] The economic benefits reported here represent each Proposer's total claims (nominal, undiscounted), including those associated with Resources that have Tier 1 contracts. They do not include any offsetting economic impacts from raising electric rates to pay for the contract costs, nor do they include any positive or negative multiplier effects.

Figure 4: Québec Line and CHPE Transmission Line Route

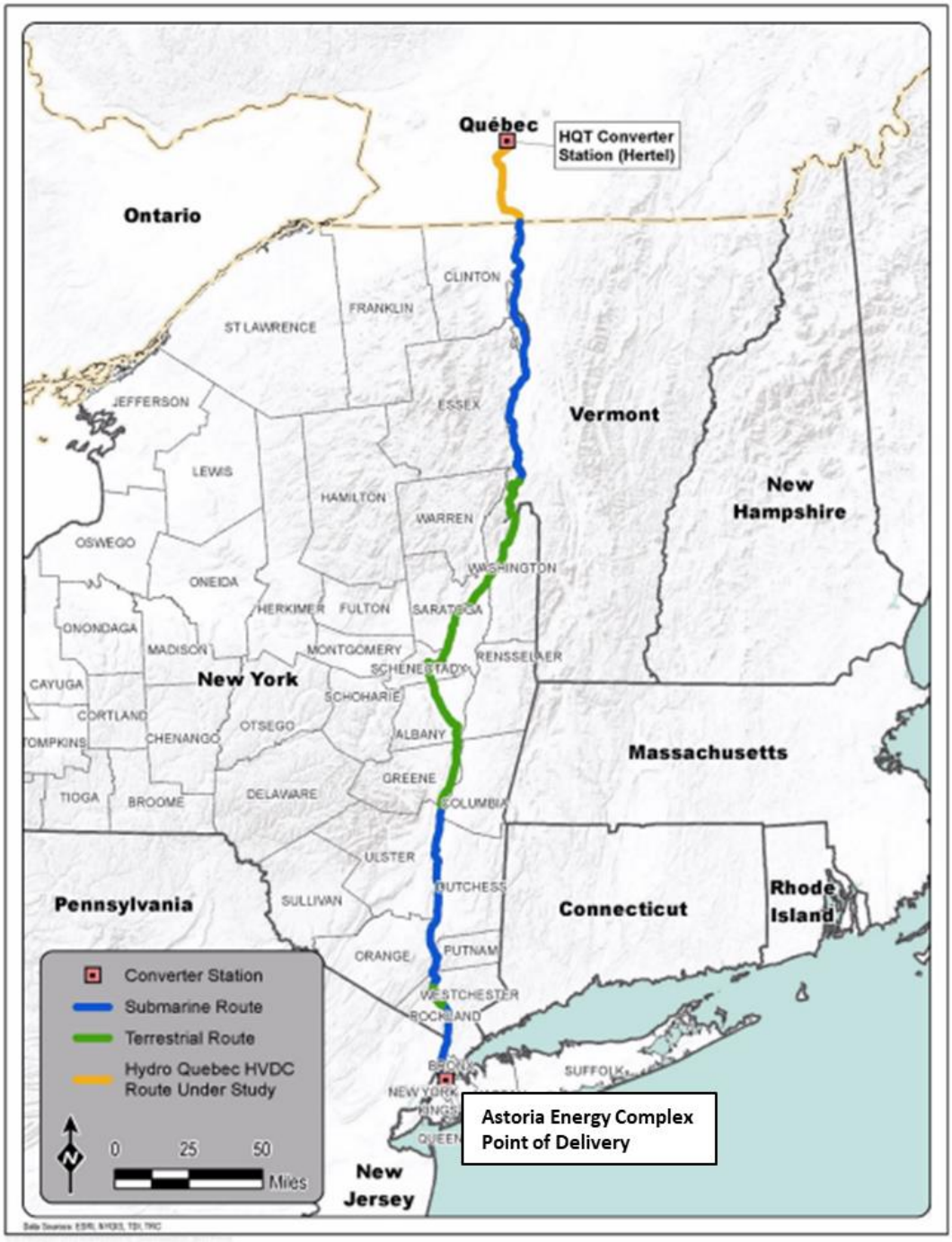


Table 4: HQUS/CHPE Contracting Summary

Counterparty	H.Q. Energy Services (U.S.) Inc.
New Transmission	Champlain Hudson Power Express project
Transmission Capacity	1,250 MW
Proposal Attributes	With Summer-only UDRs, without Supplier Energy Baseline, without New York Converter Station
Bid Quantity	10,402,500 MWh/year
COD	December 15, 2025
Contract Tenor	25 years
Nominal Strike Price	$97.50/MWh, escalating at 2.5% per year

5.6 HQUS/CHPE: Project Viability Evaluation

The Scoring Committee evaluated HQUS's Proposal in each of the Project Viability, Operational Flexibility, and Peak Coincidence categories listed in Section 3.2 of the RFP.

- **Proposer Experience**: Resources are already in-service. Blackstone, which is the lead developer for CHPE, is a global leader in alternative asset management. Hydro-Québec, the parent company of HQUS, will be responsible for building and operating the Québec Line. Hydro-Québec manages power flows across Québec, and currently operates five HVDC converter stations that serve to exchange electricity with neighboring control areas. The team has ten years of experience developing CHPE.
- **Proposed Technology**: The transmission line uses standard technology from established suppliers, and the developers have already contracted with a cable supplier.
- **Interconnection and Delivery**: The transmission line has a NYISO interconnection status of Facilities Study Pending for 1,000 MW of capacity and System Reliability Impact Study / System Impact Study in Progress for 250 MW of capacity.[21]
- **Development Plan and Proposed Commercial Operation Date**: The transmission line is at a mature development stage, with the New York segment already permitted. The Québec Line will be permitted as all underground and is not expected to present a challenge to the timeline. The COD is earlier than other submitted Proposals.
- **Financing Plan**: Project sponsors Hydro-Québec and Blackstone have credit ratings from S&P of AA- and A+, respectively. Hydro-Québec's fixed transmission assets totaled CA$23.8 billion at the end of 2020. Blackstone had US$649 billion of assets under management as of March 31, 2021. The project will be financed using standard finance vehicles.

[21] Subsequent to the Scoring Committee's review, the CHPE transmission line completed its NYISO System Reliability Impact Studies and is currently awaiting the results of its NYISO Class Year 2021 Facilities Study to determine final interconnection costs required to deliver 1,250 MW of capacity and energy.

- **Permitting Plan and Status**: The New York transmission line (CHPE) is already permitted. Hydro-Québec is experienced at permitting in Québec.
- **Energy Resource Assessment**: Resource assessment is based on historical production from the Resource portfolio.
- **Project Labor Agreement**: Developers have committed to negotiating PLAs for construction of the New York segment of the transmission line.
- **Carbon Emissions and Embodied Carbon**: Hydro-Québec has made a commitment to be carbon neutral in its operations by 2030. Kiewit, the installation contractor for the terrestrial U.S. segment, has created a carbon mitigation plan specific to the project.
- **Energy Deliverability**: Modeling indicates high deliverability to New York City.
- **Operational Flexibility**: Hydropower Resources are fully dispatchable.
- **Peak Coincidence**: Based on the provided 8760 data, the project will have high deliverability during hours with high net load in Zone J.

5.7 HQUS/CHPE: Economic Benefits Evaluation

The Project represents a combined upfront private sector investment of $1.3 billion in the upstate and downstate economies over the first three years of the contract delivery terms, including significant investment in Disadvantaged Communities.

An additional $2.1 billion is expected to be invested over the remainder of the contract delivery term, including significant investment in Disadvantaged Communities, for a total of over $3.4 billion over the full 25-year term. The project will support over 1,400 jobs in project development, construction, and operation over the 25-year contract delivery term (Table 5). These commitments include $189 million of investments in Hudson River and Lake Champlain restoration, support for disadvantaged communities, workforce development and job retraining for fossil industry workers, and capital improvements in host communities, including $40 million of investments in activities that provide opportunities for the workforce and communities in New York State. Economic benefits will be geographically diversified, including investment and jobs throughout upstate New York and in New York City.

Table 5: CHPE Gross Economic Benefits

New York State Economic Benefits	
Total through 3rd year of Contract Delivery Term	$1,342,764,000
Total over 25-Year Contract Delivery Term	$3,513,492,000
Total Short-Term and Long-Term Jobs, Direct	**1,444**

5.8 Price

Each Project was proposed under NYSERDA's Index REC pricing option. As such, the bid prices were submitted as Year 1 Strike Prices that represent each Project's targeted total amount of revenue per

MWh from commodity revenues (energy and capacity) and Tier 4 REC compensation, and an annual escalation rate to be applied to the Strike Price. Net Tier 4 REC payments would be calculated by deducting monthly Reference Energy and Capacity Prices from the Strike Price. More information regarding the settlement mechanism is presented in Section 4.2 of the RFP.

A similar calculation of projected net cost per REC over the contract period was carried out for the purpose of price scoring, in accordance with Section 4.3 of the RFP. This calculation reflects the Energy and Capacity Reference Price forecasts as discussed in Section 4.4, as well as Project capacity (UDRs) offered per the submitted bids. The Strike Prices, submitted UDR levels and resulting projected net REC costs per MWh (based on the annual Bid Quantity profiles) are set out in Table 6.

Table 6: Price per Tier 4 REC

	CPNY	HQUS/CHPE
Year 1 Strike Price as per bid (nominal)	$129.75/MWh	$97.50/MWh
Levelized Strike Price (real 2021$)	$94.20/MWh	$92.86/MWh
UDRs as per bid	1,300 MW	1,250 MW May-Oct only
Levelized Net REC Cost (real 2021$)	$23.36/MWh	$32.01/MWh

Notes:

- For CPNY the levelized Strike Price is significantly lower than the Year 1 Strike Price because CPNY's offer does not escalate its Strike Price over time, i.e., the Strike Price remains at the level through the term (in nominal terms) as shown above. Accordingly, in real terms it declines by the level of inflation each year, which has the effect of reducing the levelized Strike Price. By contrast, the HQUS bid escalates the first-year Strike Price over time. This explains why the first-year nominal Strike Price for HQUS is closer to the levelized Strike Price than is the case for the CPNY Proposal
- While HQUS/CHPE has a lower levelized strike price than CPNY, it has a higher levelized net REC cost primarily because of the difference between the two projects' levelized capacity prices. This is partially due to CHPE only including summer capacity, but more significantly because CPNY's Bid Quantity represents a lower transmission line utilization level, spreading the project's capacity revenues across fewer MWh of RECs.
- Uncertainty around both the commodity price forecasts and the opportunity for the Project to realize the submitted UDR level under applicable market rules, and potential impact of these uncertainties on ratepayer cost, are discussed in Section 5.9.

As set out in Section 4.5 of the RFP, in the event a federal transmission investment tax credit (or similar) is introduced, the Project would reduce its price such that 75% of the benefit from such tax credit is translated into a price reduction with equivalent reduction in the cost to ratepayers. This could result in a reduction of the LNRC to as low as $19.67/MWh for CPNY and $28.21/MWh for HQUS/CHPE.

5.9 Cost and Ratepayer Impact

NYSERDA has analyzed the program costs arising from net Tier 4 REC payments under the recommended Tier 4 awards as well as resulting impacts on electricity bills. In addition, a societal benefit cost analysis was carried out, discussed further below in Section 5.11 as part of the Public Interest Review required by the RFP. Further details on both the ratepayer impact and the benefit cost analysis are set out in Appendix C.

Cost and ratepayer impact projections depend primarily on three uncertainties: future commodity prices (where lower commodity prices would lead to a greater Tier 4 REC payment and vice versa), uncertainty around the market rules NYISO will apply to internal controllable lines (which would affect the CPNY project), and cost mitigation opportunities (including voluntary purchase of Tier 4 RECs and federal tax credits).

NYSERDA estimates that, without accounting for ratepayer impact mitigation through voluntary purchase of Tier 4 RECs or tax credits, the proposed Tier 4 awards would lead to a statewide levelized[22] impact on electricity bills between 2.4% – 4.7% (or $2.36 – $4.64 per month for the typical residential customer), with the projected range of these figures (and scenarios shown further below) reflecting the stated uncertainties on future commodity prices and NYISO market rules.

The near-term, first year statewide bill impacts in 2028 (which is the first full year both Projects would be operational) are projected to be between 3.0%-5.7% (or $3.16 – $5.95 per month for the typical residential customer).

Tier 4 program costs will be borne by Statewide customers based on electric load. For example, ConEdison customers together will contribute approximately 40% and National Grid customers approximately 23%, reflecting their statewide load shares. Nevertheless, the resulting customer bill impact percentage can vary by utility and customer class, with percentage bill impacts across upstate utilities projected as higher than those in New York City. For example, National Grid ratepayers are projected to experience the highest near-term (2028) bill impacts of between 5.2% - 9.9% while the ConEdison ratepayers are projected to experience a lower level of bill impacts between 2.6% - 4.9%. This difference between the two sample utilities is primarily because customers' bills vary by utility. In upstate utilities, like National Grid, electric bills tend to be lower than those downstate in ConEdison, which results in higher percentage impacts. Also, because these costs are allocated across utilities and customers by kWhs, the % bill impacts will be greater for those customers that have higher consumption load factors. These dynamics underscore the importance of voluntary Tier 4 REC purchases by the City to manage the projected upstate impacts, discussed in Section 5.10.

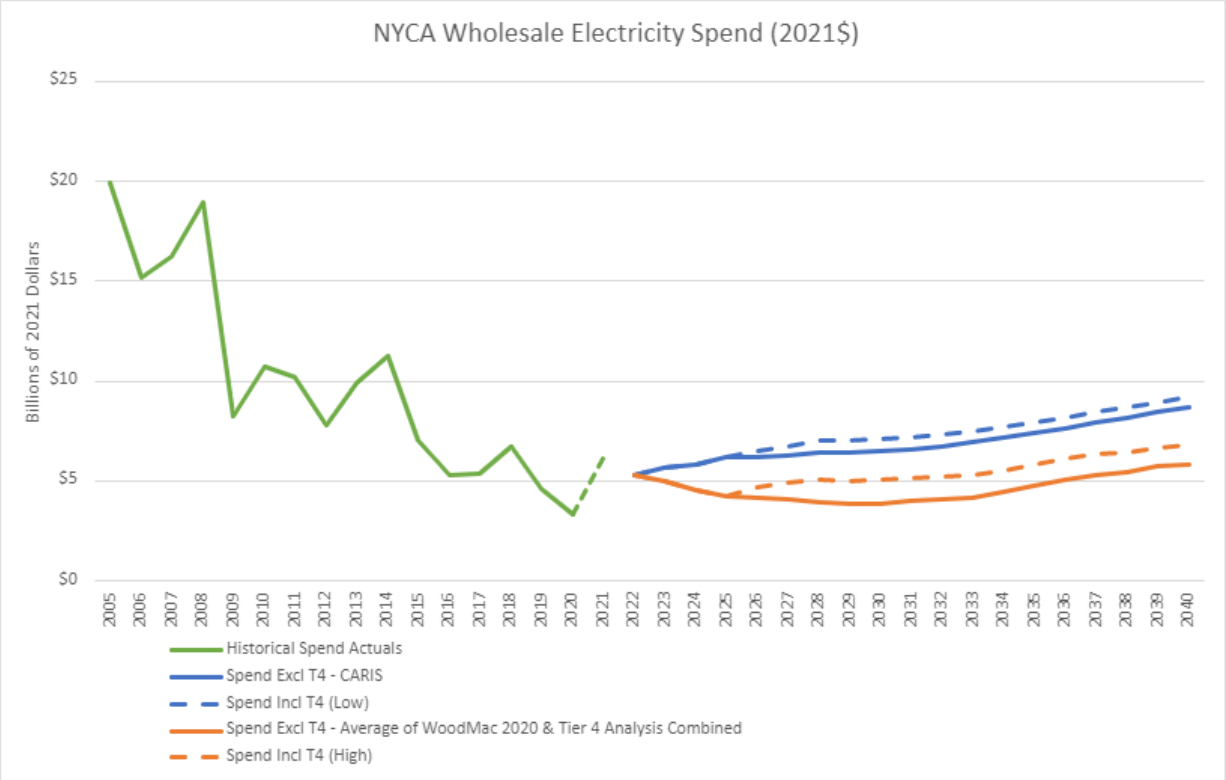
Near-term ratepayer bill impacts could be lower due to potential energy price effects resulting from the Tier 4 projects. These price effects can occur under the Tier 4 program because of reduced transmission

[22] Statewide levelized bill impact indicators provide an average indication of cost both across the State and the Tier 4 program period, by dividing the net present value of projected program costs over the Tier 4 program period by the net present value of projected statewide energy spend over the same period. See Appendix C.

congestion costs, and where the added renewable generation, due to its low operating cost, results in the least efficient fossil fueled plants being pushed off the margin, thereby lowering prices – see Appendix C (Section C.6.3) for further discussion of price effects. The BCA Framework Order recognizes that such price effects are more likely to occur in the near term, and that their magnitude, location and duration is difficult to predict. Accounting for energy price effects, the near-term first year statewide bill impacts in 2028 are projected to be between 1.8% – 4.5% (or $1.80 – $4.58 per month for the typical residential customer). Similarly, National Grid ratepayers are projected to experience near-term first year bill impacts between 3.7% – 8.4% with forecasted energy price effects, while ConEdison ratepayers are projected to experience near-term first year bill impacts between 1.2% – 3.5% with forecasted energy price effects.

These bill impact projections illustrate that lower electric commodity prices – reflected in the upper range of the cost estimates – can lead to higher Tier 4 program costs. In this scenario, the higher program costs accompany low overall energy prices. Therefore, even with higher Tier 4 program costs ratepayers would experience relatively lower energy bills as compared to the alternative scenario of higher commodity prices accompanied by lower Tier 4 program costs. These dynamics are illustrated in Figure 5. In addition, this figure indicates that the Tier 4 pricing structure has the effect of mitigating ratepayers' exposure to increases in price, since Tier 4 program costs decrease as commodity prices increase. Finally, this figure shows that even with the Tier 4 program costs, customers are expected to benefit from historically low forecasted commodity prices compared to 10-15 years ago.

Figure 5: Interaction Between Tier 4 Cost and Wholesale Electricity Spend



Notes:

- This figure compares Tier 4 program cost to wholesale energy cost, not retail bills. Tier 4 costs would appear relatively lower when set against retail bills, as shown in the percentage ratepayer impact metrics further above.
- Historical Spend Actuals are quantified as the product of the historical annual statewide load and historical day-ahead annual average statewide wholesale electricity prices (load-weighted) as reported by NYISO.
- Future Spend Excluding Tier 4 is quantified as the product of the annual statewide load forecast and the respective annual average statewide (load-weighted) electricity price forecast for the scenario in question.
- Future Spend Including Tier 4 is the sum of the Spend Excluding Tier 4 and the projected annual Tier 4 program cost associated with the respective commodity price forecast scenario.
- The graph does not include other clean energy-related program costs above those reflected by wholesale electricity market clearing prices.

5.10 Cost Mitigation: Voluntary Purchase Opportunities and Federal Tax Credits

In addition to contributing to New York's Climate Act targets, Tier 4 provides important benefits to New York City and furthers New York City's clean energy goals. The Government of the City of New York (the "City") has made significant investments to reduce its carbon footprint through energy efficiency programs and has stated its intention to couple these demand-side interventions with an investment to catalyze the development and delivery of large-scale renewable energy to New York City. On April 19, 2021, the Office of the Mayor sent a letter to NYSERDA expressing its interest in purchasing renewable energy in Zone J through the Tier 4 program.

Negotiations between NYSERDA and the City to enter into a Tier 4 sale agreement are currently underway. Key terms of the agreement between NYSERDA and the City are expected to include:

- Over the contract period, the City would purchase Tier 4 RECs for its yearly electric load beyond the purchase of its proportional share of OREC-supported offshore wind determined on a load share basis.
- The City would be able to elect to purchase additional ORECs should not enough Tier 4 RECs be available to cover the entirety of its load.
- The purchase price per Tier 4 REC would be established as the average net REC price per REC paid by NYSERDA to the Tier 4 projects, with a maximum of the price of the Tier 4 RECs of the CHPE Project; in each case plus any Commission-approved administrative adder applicable to NYSERDA's resales of Tier 4 RECs to load serving entities.
- The purchase term would extend to cover a 25-year period starting from the earlier commercial operation date of the Tier 4 Projects.

- The agreement would be conditional upon the Commission approving both of the recommended Tier 4 Projects.
- As discussed further below, the City is notifying the Commission of its intent to work with its load serving entity (LSE), the New York Power Authority (NYPA), to reduce NYPA's participation in CES tiers other than offshore wind by the amount of the City's load to accommodate this larger purchase of Tier 4 RECs, which would take effect when purchase of Tier 4 RECs begins under the City's agreement with NYSERDA.
- The agreement could be terminated early by NYSERDA if the Commission concludes that the City buying Tier 4 RECs instead of bearing its share of overall CES costs no longer leads to net ratepayer savings.
- Because this is a long-term agreement and the City appropriates funds on an annual basis, the agreement would be subject to the appropriation of funds for subsequent City fiscal years. However, the City would agree to include in its preliminary and executive budgets for each fiscal year the monetary obligations set forth in the agreement anticipated to become due in such fiscal year.
- The agreement would refer to commitments made in the HQUS Contract regarding indigenous communities (summarized in Section 6.6 below). If those commitments are breached, the City would have the right to cease purchasing Tier 4 RECs generated by HQUS but would continue to purchase Tier 4 RECs generated by CPNY to the extent available.

The City is submitting a Notice to the Commission concurrently with this filing, notifying the Commission that, in recognition of the significant financial commitment the City intends to take on through its Tier 4 REC purchase and the resulting net benefit to statewide ratepayers, the City's load-serving entity, NYPA, intends to reduce its participation in CES tiers other than offshore wind by the amount of the City's load. Accordingly, the Notice suggests that the Commission direct NYSERDA to recalculate the CES load serving entity (LSE) commitments related to Tiers 1, 2, 3 (Tier 3 RECs are also referred to as Zero Emission Credits or ZECs), and 4, but not offshore wind RECs to account for this.

The Notice from the City quantifies the benefit to ratepayers from its Tier 4 REC purchase as $0.8 - $1.7 billion (net present value), reflecting the net effect of its purchase payments minus the reduced CES participation described in the Notice. NYSERDA's analysis reaches a similar conclusion as that presented in the City Notice. This range equates to a reduction of the Tier 4 program cost of at least 12%, and is applied accordingly in this Petition and the analysis in Appendix C. Across the range of scenarios examined here, this could reduce the remaining ratepayer cost and bill impact of the program to 2.1% – 4.1% (statewide, levelized); near-term costs in 2028 could reduce to range from 2.7% – 5.0% without energy price effects or 1.4% – 3.8% with energy price effects.

If federal transmission tax credits are enacted, under the provisions of the Tier 4 Contracts this would reduce the price of the Tier 4 Projects. This could lead to a similar cost reduction impact as the purchase by the City, for example, reducing levelized cost estimates to 2.1% – 4.3%.

The combination of the purchase by the City and federal transmission tax credits could result in an overall reduction in levelized bill impacts by 18 – 24%, reducing levelized costs to 1.8% – 3.8%. First-year costs would reduce to 2.3% – 4.7% without forecasted energy price effects or 1.0% – 3.4% with forecasted energy price effects.

Further significant savings could materialize in the form of Tier 4 REC purchases by New York City building owners under New York City Local Law 97,[23] which places obligations on owners of large buildings to reduce carbon emissions, which may be pursued through the purchase of RECs. A study by Level Agency for Infrastructure for the Real Estate Board of New York[24] indicates that demand for RECs such as Tier 4 RECs pursuant to Local Law 97 could range from 5.1 TWh to 12.8 TWh per year by 2030. When taken together with the estimated City Tier 4 annual purchase quantity of approximately 4 TWh, this results in a potential total upper range voluntary purchase quantity approaching the total Bid Quantity of CPNY and CHPE of about 18 TWh.

These estimates emphasize the important role that voluntary purchases could play in reducing the cost of Tier 4 to ratepayers. The Commission may consider how these potential benefits could be taken into account as part of its assessment of the recommended awards.

5.11 Cost Effectiveness: Benefit Cost Analysis

As part of the Public Interest Review, Tier 4 projects were submitted to benefit cost analysis (BCA). This analysis estimated the magnitude of the Tier project investments, and compared those investments to the benefits from reduced electricity system expenditures, avoided greenhouse gases and public health benefits from improved air quality.[25]

Across a wide range of scenarios, the CPNY and CHPE Projects both individually and combined present net societal benefits, allowing for a high level of confidence in the overall conclusion that the societal benefits from the recommended Projects exceed costs and that the Projects thus pass the benefit cost test. Benefits from lower electricity system expenditures alone (such as fewer additional investments needed in energy storage and transmission as a result of the Tier 4 Projects) approach the investment cost of the Tier 4 Projects. In addition, societal benefits include significant health benefits from better air quality and the value of avoided greenhouse gas emissions. Summary BCA results are shown below in Table 7. Further details on inputs, methodology and results of this analysis are provided in Appendix C.

[23] Local Laws of the City of New York for the Year 2019, No. 97. 2019. https://www1.nyc.gov/site/sustainablebuildings/ll97/local-law-97.page

[24] LL97 Compliance REC Demand Analysis Methodology and Results. 2021. https://www.rebny.com/content/dam/rebny/Documents/PDF/Policy/210809%20REC%20Analysis%20Summary%20Memo.pdf

[25] The health impact assessment focused on the reduction in fine particulate matter and did not include benefits from reductions in ozone formation or reductions in emissions of toxic air pollutants. Accordingly, air quality benefits shown here reflect a conservative approach.

Table 7: Benefit Cost Analysis Net Benefit

Real 2021 $B NPV	Resource Investment	System Resource Value	Carbon Value	Air Quality Value	Net Benefit
High Capacity Value Scenario	$23.7	$19.0	$8.1	$4.0	**$7.4**
Low Capacity Value Scenario	$23.7	$18.6	$8.1	$4.0	**$6.9**
Low Carbon Value Scenario	$23.7	$19.0	$3.6	$4.0	**$2.9**
Low Air Quality Value Scenario	$23.7	$19.0	$8.1	$1.8	**$5.2**

5.12 Other Benefits

In accordance with the parameters for the Tier 4 Public Interest Review as set out in the CES Modification Order and described in Section 4.8 above, other benefits assessed here include interactive effects with fossil generation and offshore wind development in Zone J, as well as impacts to relieve transmission congestion.

As Appendix C explains in more detail, the BCA conducted for Tier 4 included quantification of expected air quality impacts based on simulation of bulk electricity system capacity and dispatch. This analysis also provided insights on the extent to which the Tier 4 projects are expected to displace fossil generation in Zone J and the extent to which delivery of Tier 4 energy to Zone J and downstate offshore wind generation would be complementary.

- **CPNY and CHPE reduce Zone J's reliance on fossil-fuel-fired generation.** This analysis estimates a 51% decrease in total fossil generation in Zone J in 2030 relative to the Reference Case. Compared to 2025, this represents an estimated reduction of 84% from clean energy developments including Tier 4 and offshore wind.
- **CPNY and CHPE complement the development of offshore wind**. CPNY's resources are intermittent onshore wind and solar, and HQUS's resources are dispatchable hydroelectric, all of which have generation profiles that are different from and complementary to offshore wind. The solar component of the CPNY resources with high dispatch during the day complements the higher dispatches during night hours from offshore wind that; in addition, the higher output from solar during the summer complements the higher output from offshore wind during the winter months. The dispatchability of the Canadian hydroelectric resources and the use of the Blenheim-Gilboa pumped hydro storage unit included in CPNY's Project to shape downstate deliveries will be complementary to offshore wind, as flows across the interconnecting lines are able to ramp up and down quickly to reduce the amount of storage needed to support offshore wind development. The analysis as described in Appendix C projected no incremental

curtailment of current or future offshore wind procurements as a result of Tier 4 generation. The complementary nature of the CPNY and CHPE projects to offshore wind is particularly evident by 2040 when clean generation achieves a zero-emission power grid. Under this supply mix, together with CPNY and CHPE the offshore wind curtailment is projected to be 16% lower compared to the Reference Case. This integration of offshore wind is achieved with reduced storage requirements: total storage in zones J and K is estimated as reducing by 31% compared to the storage requirements in the No Tier 4 Case.

A key further attribute of CPNY is that the project's transmission bypasses the Central-East interface, which relieves congestion on that constraint, which in turn can avoid exacerbating congestion and curtailments of CPNY's and other future Tier 1 Upstate wind and solar resources. CHPE bypasses completely the NY grid and injects the Québec renewable resources directly into NYC. This helps reduce the system capital and fixed costs of meeting the Climate Act goals.

Finally, the Tier 4 transmission lines can be expected to have a lifetime of 60 or more years, offering value to New York well beyond the Tier 4 program period.

6 Contract Terms and Conditions

The Tier 4 RFP included, as Exhibit E, a form of Tier 4 Renewable Energy Certificate Purchase and Sale Agreement (the "Bid Contract Form").

The Bid Contract Form included the following principal provisions:

- The Seller's commitment to create and sell, and the Purchaser's commitment to buy, Tier 4 RECs generated by the delivery of renewable energy to Zone J, subject to the fulfillment of various conditions, including contract approval by the Commission and receipt of all required permits and approvals.
- A REC delivery term of 25 years from the Project's achievement of commercial operation.
- A committed deadline for achieving commercial operation, subject to the ability to extend the deadline by paying additional security deposits (refundable upon achieving commercial operation).[26]
- An index pricing structure that takes into account fluctuation in Zone J energy and capacity markets.
- A Bid Quantity reflecting the Seller's estimate of Tier 4 RECs to be delivered in the winter and summer. Seller was required to commit to delivery of Tier 4 RECs equal to no less than 40% of the seasonal Bid Quantity for each of the summer and winter seasons.

[26] NYSERDA and DPS Staff propose that if contract security is surrendered to NYSERDA (which could occur, for example, if a project fails to meet certain deadlines), the funds received would be used, after covering any relevant contract administration or enforcement costs, to reduce the costs of Tier 4 RECs to ratepayers.

- For hydro power, a requirement that energy delivered into Zone J be additional to the Supplier GHG Baseline described in Section 3 of this Petition.
- A provision to reduce the REC price in the event that federal fiscal support, in the form of tax credits, grants or other similar programs, becomes available for the construction of electric transmission facilities.
- A detailed Seller commitment to provide a certain verifiable dollar amount of economic benefits to the State of New York from January 1, 2021 through the first three years of the contract delivery term, including employment of labor, consumption of local goods and services, purchases of New York State – manufactured equipment, rent payments, taxes and other similar expenditures. The provision included agreed upon procedures for reporting and auditing such expenditures.
- A commitment to pay labor used in construction in accordance with New York State prevailing wage laws.
- A commitment to enter into collective bargaining agreements ("Project Labor Agreements") with bona fide trade labor organization representing workers to be employed in the construction of project resources in the United States directly enabled by the Tier 4 program.

As part of the bid process, Proposers submitted proposed modifications to the Bid Contract Form and requested clarification with respect to a number of contractual provisions. NYSERDA, together with its advisers, engaged with Proposers to provide clarification of certain contract provisions and to attempt to resolve proposed modifications to the Bid Contract Form. In addition, NYSERDA proposed certain additional provisions designed to protect ratepayer interests and otherwise benefit the State. The results of these negotiations are reflected in the Tier 4 Renewable Energy Certificate Purchase and Sale Contracts between NYSERDA and CPNY attached as Appendix A (the "CPNY Contract") and between NYSERDA and HQUS attached as Appendix B (the "HQUS Contract").

This section provides a summary of the principal modifications to the Bid Contract Form contained in the CPNY Contract and the HQUS Contract. Unless otherwise indicated, section references are to the CPNY Contract and HQUS Contract, as applicable.

6.1 Both Contracts: Disadvantaged Communities

The CES Modification Order detailed ways in which achieving the 70 by 30 target will yield significant benefits for disadvantaged communities and required specific measures to ensure the interests of disadvantaged communities are explicitly valued in the selection process and advanced on a project-by-project basis. In conformance therewith and as further described above, the Tier 4 RFP required Proposers to include information regarding project impacts on Disadvantaged Communities, and the Scoring Committee assessed this information in its evaluation of Proposals and scoring of Economic Benefits. In addition, NYSERDA has incorporated additional provisions in the contracts specifically related to Disadvantaged Community impacts.

Specifically, each contract:

- Requires each Seller to include in each quarterly progress report all activities undertaken with respect to provision of benefits to Disadvantaged Communities (see Section 6.02).
- Requires each Seller to review feedback from Disadvantaged Communities with respect to the appropriate scope and method of determining benefits to Disadvantaged Communities to be provided by Seller, including (i) public comments filed in connection with this Petition; and (ii) processes established by the Climate Act to finalize the definition and criteria for identification of Disadvantaged Communities.
- After such feedback is reviewed, requires the parties to negotiate in good faith to establish the details and parameters of an appropriate framework for identifying, measuring and tracking benefits to Disadvantaged Communities, taking into account the separate intrinsic benefits resulting from projects of this nature such as emissions reductions and associated public health benefits, which were recognized by the Commission in the CES Modification Order (see Section 12.03 of each contract, Exhibit H-1 of the CPNY contract and Exhibit I-1 of the HQUS Contract);
- Requires each Seller to make reasonable efforts to ensure that members of Disadvantaged Communities are apprised of employment opportunities in connection with the Selected Project and Associated New Transmission Facility and that businesses in Disadvantaged Communities have the opportunity and awareness to compete for contracting opportunities.
- Requires each Seller to keep NYSERDA apprised of these communications and, as appropriate, coordinate messaging between its and NYSERDA's similar efforts within the same communities.
- Lays out a list of general categories that the parties expect the benefits provided by the projects to be encompassed within and invites stakeholder comment (see Exhibit H-1 of the CPNY Contract and Exhibit I-1 of the HQUS Contract); and
- Codifies and requires specific commitments that are designed to benefit Disadvantaged Communities in whole or in part. Exhibit H-2 of the CPNY Contract and Exhibit I-2 of the HQUS Contract set forth the specific commitments made, which include:
    - A $270 million Disadvantaged Communities Investment Fund to be established by CPNY.
    - $189 million in community benefit funds to be established by the CHPE project for Hudson River and Lake Champlain restoration, support for disadvantaged communities, workforce development and job retraining for fossil industry workers, and capital improvements in host communities.
    - Specific commitments to engagement with key local stakeholders throughout the development process.
    - Specific commitments with respect to inclusion of local communities in workforce development.

The contracts with each project are designed in recognition of the fact that the definition of what should be considered a benefit to Disadvantaged Communities, and how benefits should be quantified, is a matter that requires ongoing stakeholder agreement and is evolving through the processes established under the Climate Act. Stakeholders are encouraged to comment on the list of categories of potential benefits set forth in Exhibit H-1 of the CPNY Contract and Exhibit I-1 of the HQUS Contract and to provide suggestions on how they can be identified, measured and tracked.

6.2 Other Provisions Applying to Both Contracts

The following modifications to the Bid Contract Form were agreed with and implemented in both Contracts:

- Each Contract has been modified to provide that, to the extent the Commission does not approve the Contract in question within 150 days after the date of this Petition, the deadline for the project to achieve commercial operation is extended day for day, and in the event that the Commission does not approve the Contract within 195 days of signing, either party may terminate the contract. In addition, in the event that Commission approval of the Contract imposes conditions that would materially adversely affect the Project's pricing, revenues or obligations, the Seller may elect to terminate the contract or work with NYSERDA to reflect the Commission's conditions in the contract. In the event that, after 60 days, Seller and NYSERDA are unable to agree on contract changes to reflect the Commission's conditions in the contract, Seller may terminate the contract (Sections 2.06 and 14.01(g)).
- NYSERDA's right to terminate the contract if the minimum Tier 4 REC delivery requirements are not met within six months of the prescribed commercial operation deadline has been modified to instead provide NYSERDA with the right to terminate the contract if the associated transmission line has not achieved commercial operation by the prescribed commercial operation deadline. (Section 13.01(g)).
- Rather than requiring the creation of a Delivery Verification Plan within 6 months of the contract's effective date, a Tier 4 REC Delivery Verification Plan was agreed upon and attached as a schedule to each Contract. The agreed Delivery Verification Plan provides details regarding measurement of hourly matching of generating resources and energy deliveries into Zone J and the process for measuring energy storage and discharge from storage resources (Section 3.01).
- The minimum Tier 4 REC delivery requirements will be measured over a period of three preceding six-month seasonal capability periods, commencing with the third seasonal capability period after the commencement of the delivery term, instead of a single six-month seasonal capability period. In addition, energy that was not delivered into Zone J because of NYISO dispatch decision will be added back as if it had been delivered for purposes of calculating compliance with the minimum REC delivery requirements. (Section 4.10(c) CPNY Contract, Section 4.08 HQUS Contract).

- A provision has been added addressing the impact of COVID-19 on the project as an event of force majeure. Only COVID-19 impacts that are not known as of the contract's effective date will be events of force majeure (Section 16.3).

6.3 CPNY Contract: NYISO Market Rules

Modifications to the Bid Contract Form were agreed upon to address uncertainties related to the current absence of NYISO market rules governing intrastate controllable transmission lines, noting that such market rules are unlikely to be known in final form until sometime after the CPNY Contract takes effect.

These modifications include a provision dealing with the risk that NYISO might, at times, not dispatch Tier 4 energy through the Tier 4 transmission line when the project would otherwise be able to generate and deliver energy into Zone J (and earn the resulting Tier 4 RECs). In this case, the modification to the Bid Contract Form adjusts the REC price to provide compensation for such RECs that would have been received but for NYISO's decision not to dispatch, in the form of additional compensation at times when NYISO does dispatch (Section 4.05).

In addition, a provision was added regarding the extent to which the final NYISO market rules will permit or limit the CPNY project to participate in the Zone J Capacity Market on substantially equivalent terms as other resources are permitted to participate in that market (Acceptable Capacity Rules). The provision clarifies that NYISO rules that limit the quantum of participation in the Zone J Capacity Market based on generation resources' capacity factors, production profiles and energy deliverability are not regarded as constituting such limitations. In the event that, (i) within (180) days prior to the commencement of commercial operation (the "NYISO Rule Deadline"), NYISO establishes market rules governing internal controllable transmission lines that are not Acceptable Capacity Rules or (ii) as of the NYISO Rule Deadline, NYISO has not promulgated and deployed Acceptable Capacity Rules, CPNY and NYSERDA will modify the capacity pricing provisions of the CPNY Contract consistent with CPNY's ability to participate in the NYISO Capacity Market. In the event that CPNY and NYSERDA cannot come to agreement on appropriate modifications to the capacity pricing provisions in the CPNY Contract, a three-person panel will be appointed to arbitrate a decision on the appropriate modifications. (Section 4.03(c))

6.4 CPNY Contract: Other Provisions

This section summarizes modifications to the Bid Contract Form agreed with CPNY in a number of other areas:

- In order to attempt to accelerate the commercial operation deadline for the project, CPNY will take commercially reasonable steps to cause the associated new transmission line to be admitted to the first NYISO Interconnection Class Year Process for which it is eligible after the effective date of the CPNY Contract.
- It will be an event of default under the CPNY Contract if CPNY does not file its application under Article VII of the New York State Public Service Law by June 30, 2023. This deadline may be

extended for up to 6 consecutive 6-month periods by posting contract security in the amount of $2 multiplied by the specified Bid Quantity of Tier 4 RECs (~$15 million) for each extension. This contract security will be returned if and when CPNY files its Article VII application. (Section 13.01(h)).

- It will also be an event of default under the CPNY Contract if CPNY does not issue a notice to proceed under the construction contract for the Associated New Transmission Facility on or before June 30, 2025. This deadline may be extended for up to 6 consecutive 6-month periods by posting contract security in the amount of $2 multiplied by the specified Bid Quantity of Tier 4 RECs (~$15 million) for each extension. This contract security will be returned if and when CPNY issues the notice to proceed. (Section 13.01(h)).
- The CPNY Contract provides that certain Resources have been identified as causing an anticipated amount of curtailment of other local generation facilities. The contract provides that any such Resource and any Resource that is proposed to be added to the CPNY project be evaluated for its potential to cause curtailment of other generating resources within its Generation Pocket (an area defined in the July, 2020 NYISO CARIS study). To the extent a proposed generating resource of the project causes incremental curtailment of another locally situated resource (a) in excess of 3%, or 4,000 MWh in the case of local resources with an award under Tier 1 or another state environmental attribute procurement that will remain in effect through January 1, 2030, or (b) 6%, or 8,000 MWh, in the case of local resources with no such award, such generating resource cannot be added to the CPNY project unless (i) CPNY commits to make transmission upgrades that will eliminate such curtailment risk, (ii) one or more transmission projects that will eliminate the curtailment have been selected and designated for implementation by the NYISO and Commission, or (iii) CPNY agrees to adjust the bidding and scheduling of its curtailing projects to eliminate the curtailment. This requirement does not apply to curtailment of locally situated generating resources that are not anticipated to be in operation on January 1, 2030. Any generating resource of the project with a Tier 1 contract will be deemed acceptable to NYSERDA (without conditions regarding curtailment) and may be included in the CPNY project.
- The CPNY Contract requires that the Parties expeditiously commission a study to conduct the analysis described above with respect to the Canisteo Project. If the analysis does not result in the inclusion of the Canisteo project, and the parties are unable to agree on adjustments to the contract to reflect its not being included, CPNY will have the right to terminate the CPNY Contract.
- Except as provided in the paragraph below, NYSERDA is not required to purchase Tier 4 RECs in any month in excess of 120% of the Bid Quantity based on a rolling 10-year (120-month) average of Tier 4 RECs generated (the “Percentage Limit”). In addition, NYSERDA is not required to purchase Tier 4 RECs generated from resources that are additional to the quantity of capacity reasonably estimated at P50 to achieve the Bid Quantity (the “Resource Limit”). Any Tier 4 RECs

produced in excess of either the Percentage Limit or the Resource Limit are considered "Additional RECs."

- Although NYSERDA is not obligated to purchase Additional RECs, in the event that NYSERDA sells Tier 4 RECs to voluntary purchasers, other than the City, NYSERDA will purchase available Additional RECs from CPNY for sale to such voluntary purchasers and will compensate CPNY by sharing a portion of the net revenue that NYSERDA actually receives each year from any such sale in agreed percentages declining from 80% to 50% based on the number of Additional RECs sold in the year.
- The CPNY Contract provides for two categories of Project Labor Agreements: one for the transmission line and one for generating resources. Each of the generating resources (other than those that are already constructed or significantly constructed) will be required to execute a Project Labor Agreement other than (i) those generating resources that have an existing Tier 1 contract, and (ii) those generating resources not under the direct control of CPNY or any of its affiliates. (Section 18.11).
- The CPNY Contract includes a provision requiring NYSERDA's consent for any change in the siting of the project's New York City converter station from the currently planned location in Astoria, Queens (Exhibit E).
- In the event, as a result of a change in applicable law, certain relief is provided to Tier 1 contract awardees, generally, such relief will be offered to CPNY as well (Section 4.09(c)).

6.5 HQUS Contract: Tier 4 Hydropower Baselines

As a proposal that includes hydropower, the HQUS Project is subject to baseline requirements as further described in Section 3 of this filing. All of HQUS' bid variants were subject to the Supplier GHG Baseline, and as required HQUS submitted its bids both with and without Supplier Energy Baseline. HQUS' highest-scoring bid recommended in this filing did not include the Supplier Energy Baseline. Accordingly, discussion in this section is confined to the Supplier GHG Baseline.

Following the process to establish the Supplier GHG Baseline, as described in Section 3 of this Petition, HQUS' Supplier GHG Baseline was determined as 198,915,243 MWh annually.

Compliance with the Supplier GHG Baseline is implemented in the Bid Contract Form by measuring the amount by which a project's production ("Supplier Production for GHG Baseline") exceeds the Supplier GHG Baseline. The amount of Supplier Production for GHG Baseline in excess of the GHG Baseline is called the "Supplier GHG Baseline Limit". Under the Bid Contract Form, Tier 4 RECs are only purchased for energy generation up to the amount of the Supplier GHG Baseline Limit, and Supplier Production for GHG Baseline was measured as a 3 to 5-year average of a project's historical energy production.

The CES Modification Order provided that NYSERDA should have "flexibility to develop rules for suppliers to satisfy the Supplier GHG Baseline through annual averaging and to implement contract provisions that excuse the supplier from compliance only in temporary, force majeure-type

circumstances that fall entirely out of the supplier's control." By granting flexibility to NYSERDA, the Commission recognized the inherent challenges posed to hydropower production by the variability of water flows.

Employing this principle of flexibility, the HQUS Contract contains a negotiated modification to the Supplier GHG Baseline provisions. The modification employs a system of "banking" and "borrowing" that has the effect of averaging the HQUS project's Supplier Production for GHG Baseline over the contract delivery term, subject to certain limitations. To the extent that the HQUS resources annually generate energy in excess of the Supplier GHG Baseline plus the amount of Tier 4 energy delivered into Zone J, HQUS will be permitted to "bank" the surplus energy, effectively creating a credit in the amount of the surplus. The modification also allows HQUS to "borrow" by enabling HQUS to sell a full complement of Tier 4 RECs in years in which its production would not create a sufficient Supplier GHG Baseline Limit to permit HQUS to do so. Any banking and borrowing over time would be accounted as a net positive or negative balance.

This mechanism acknowledges that any accumulated deficit remaining at the end of the Contract Delivery Period would represent Tier 4 RECs that were compensated for in years when the Supplier GHG Baseline Limit was insufficient to support such compensation. In this case, HQUS would be required to promptly reimburse NYSERDA after the end of the Contract Delivery Term for any remaining accumulated deficit, plus interest. HQUS may compensate NYSERDA by (i) transferring Tier 1 RECs to NYSERDA at no cost to NYSERDA, (ii) by making renewable energy investments after the contract delivery term approved by NYSERDA, or (iii) if Tier 1 RECs are unavailable, and HQUS and NYSERDA cannot agree on renewable energy investments, by a cash payment from HQUS to NYSERDA.

Under the banking and borrowing mechanism (Exhibit H), HQUS cannot accumulate surplus or deficit balances at any time in excess of 80 TWh. Thus, there is a limit on the degree to which HQUS could carry over benefit from years of excess production. There is also a limit on the degree to which HQUS could build levels of deficit that create an unreasonable risk to NYSERDA in relying on HQUS reimbursement at the end of the contract delivery term. HQUS is also permitted to mitigate the risk of accumulated deficits by including in the calculation of its annual production (i) Tier 1 RECs produced during the Contract Delivery Term that it transfers to NYSERDA at no cost, and (ii) the benefits of new demand side management and other programs and actions intended to reduce electricity and energy consumption in Québec that applicable regulators in Québec have authorized after the effective date of the HQUS Contract (only savings that have been filed or otherwise published in accordance with such regulatory authorization shall be included for this purpose).

Because the CES Modification Order does not specifically call for these items to be included in the calculation of production to meet the Supplier GHG Baseline requirement, this Petition requests that the Commission approve this approach to the extent it differs from the approach approved in the CES Modification Order.

The HQUS Contract does not maintain the 3 to 5-year average of prior production for purposes of calculating HQUS's annual production for comparison against the Supplier GHG Baseline set out in the Bid Contract Form, as the "banking" and "borrowing" system already amounts to an averaging of production; further averaging would be superfluous.

Accounting of annual compliance with the baseline through the banking and borrowing mechanism will be applied based on the prior year's production and the prior year's delivery of energy into Zone J for purposes of determining the amount of Tier 4 RECs HQUS will be eligible to sell (before borrowing) in any given year. Given that Tier 4 RECs are recognized in NYGATS, invoiced and purchased by NYSERDA on a monthly basis, using prior-year data avoids the complication of having to reconcile based on data at the end of each contract year and require HQUS effectively to true-up Tier 4 RECs previously sold. For the first year of the contract delivery term, since there is no prior-year data on REC purchases, and to smooth the effect of potential outlier hydraulic years prior to the contract delivery term a simple average of production data over the five years immediately prior to the contract delivery term will be used to determine the amount of "banking" and "borrowing" that can be applied to that first year.

The CES Modification Order provides that NYSERDA may "excuse the supplier from compliance with the Supplier GHG Baseline" under "temporary force majeure-type circumstances that fall entirely out of the supplier's control." The approach in the HQUS Contract is intended to provide HQUS with limited flexibility to accommodate extreme water flow shortages that are beyond its control. This mechanism does not, however, "excuse" HQUS from compliance with the Supplier GHG Baseline. In the event that HQUS is not in compliance with the Supplier GHG Baseline measured over the contract delivery term, HQUS is obligated to reimburse NYSERDA, with interest, for the entire accumulated deficit as described above.

This Petition requests that the Commission approve the above approach to the Supplier GHG Baseline to the extent the Commission concludes that it differs from the approach approved in the CES Modification Order.

6.6 HQUS Contract: Other Provisions

This section summarizes agreed modifications to the Bid Contract Form agreed with HQUS in a number of other areas:

- It shall be an event of default under the HQUS Contract if the U.S. Transmission Provider has not issued a notice to proceed under the construction contract (the Pre-COD Milestone) for the associate transmission line on or before the nine-month anniversary of the date of PSC approval of the contract (the Pre-COD Milestone Date). This deadline may be extended for up to 6 consecutive 6-month periods by posting contract security in the amount of $2 multiplied by the specified Bid Quantity of Tier 4 RECs for each extension (Section 15.01(b)).
- In the event that U.S. Transmission Provider is unable to achieve the Pre-COD Milestone on or before the nine-month anniversary of the initial Pre-COD Milestone Date as a result of events or

circumstances beyond its control, HQUS will have the right to terminate the HQUS Contract and receive a refund of its Contract Security. Events beyond the U.S. Transmission Provider's control do not include (i) the inability to secure permits or governmental authorizations necessary for the development, construction, or operation of the U.S. Transmission Line or (ii) any change, event or development in or affecting the economy or the financial or securities markets in the United States or elsewhere in the world, or generally affecting the industry or industries in which the U.S. Transmission Provider operates (Section 14.01(h)).

- On or before deadline for the project to achieve commercial operation (without giving effect to any extensions), HQUS will either own or enter into long-term power purchase agreements with new projects intended to generate Qualified Renewable Energy of at least 4.0 TWh annually (Section 2.07).
- HQUS's Minimum Delivery Requirements are reduced to the extent that the transmission line is unavailable for reasons other than Hydro Québec's or the U.S. Transmission Provider's failure to employ Good Utility Practices or a defect in the as-built transmission line's ability to deliver the Bid Quantity to the Delivery Point (Section 4.08).
- Hydro Québec will self-insure and the U.S. Transmission Provider will obtain customary insurance coverage from a third-party carrier (Section 11.04).
- The HQUS Contract includes provisions in which HQUS agrees to cause the U.S. Transmission Provider to adhere to specific commitments with respect to mitigation of environmental impacts on the Hudson River (Exhibit J), including acceleration of the funding and project execution of the Environmental Trust Fund, prioritizing research and/or monitoring of sturgeon, funding of wetlands mitigation, and adhering to substantive regulations and stakeholder consultation requirements.
- The HQUS Contract also includes provisions in which HQUS makes specific commitments with respect to indigenous communities (Exhibit I-2), including:
    - Entry into a joint ownership arrangement with the Mohawk Council of Kahnawà:ke with respect to the Québec portion of the transmission line, which will provide an equity share in the project as well as commitments regarding contracting opportunities and environmental and archeological studies and potential excavations.
    - Purchasing wind energy from the Apuait projects co-owned by Québec Innu communities.
    - Maintaining efforts to prioritize actions taking into account the rights, interests and perspectives of Indigenous peoples.
    - Consulting with Indigenous groups in connection with any new transmission lines for the new wind/solar to be developed in accordance with this contract.
    - Consulting with Indigenous groups on any changes to maximum or minimum water levels or material environmental impacts caused by plant refurbishments.

- Conducting and sharing with Indigenous groups environmental impact assessments regarding new transmission lines for the new wind/solar to be developed in accordance with this contract and plant refurbishments that will change maximum or minimum water levels or result in material environmental impacts to the watercourse.

7 State Environmental Quality Review Act (SEQRA)

On October 15, 2020, the Commission issued a SEQRA findings statement associated with modifications to the CES, including the Tier 4 procurement, that were reviewed pursuant to a Final Supplemental Generic Environmental Impact Statement (FSGEIS) filed on September 17, 2020. The FSGEIS does not review specific siting of generation or transmission, but instead considers in general and conceptual terms the effects of the October 15, 2020 Order (including the Tier 4 program). The FSGEIS builds upon similar prior analyses conducted via GEIS and supplements thereof conducted by the Commission in 2015, 2016, 2018, and 2020, all of which are incorporated by reference into the FSGEIS. In accordance with the findings statement and the FSGEIS, the Commission directed NYSERDA to issue a solicitation for Tier 4 RECs and submit an executed agreement to the Commission for approval.

Pursuant to the terms of the FSGEIS and findings statement, site-specific siting procedures must be followed prior to the construction of any transmission or generation resource facilities. The HQUS and CPNY contracts do not authorize or fund construction of the transmission or generation resources contemplated, but instead set forth agreements for the purchase and sale of Tier 4 RECs. In consideration of the September 17, 2020 FSGEIS and the October 15, 2020 SEQRA findings statement referenced above, NYSERDA and Staff recommend that no further action is necessary under SEQRA with respect to approval of the HQUS and CPNY contracts, as such approval is in conformance with the conditions and thresholds established therein.

Dated: November 30, 2021

Respectfully Submitted,

Peter Keane
Deputy General Counsel
NYSERDA
17 Columbia Circle
Albany, New York 12203
518.862.1090 ext.3366
Pete.keane@nyserda.ny.gov

Appendix A. Tier 4 Renewable Energy Certificate Purchase and Sale Agreement between the New York State Energy Research and Development Authority and Clean Path New York LLC.

Appendix B. Tier 4 Renewable Energy Certificate Purchase and Sale Agreement between the New York State Energy Research and Development Authority and H.Q. Energy Services (U.S.) Inc.

Appendix C. Cost Analysis