



THE **Brattle** GROUP

INFORMATION MEMORANDUM

CHAMPLAIN HUDSON POWER EXPRESS

June 23, 2020

DISCLAIMER

This Information Memorandum (“IM”) is intended solely to provide sophisticated parties with input that may be relevant to the Champlain Hudson Power Express open solicitation process, including the submission of an Expression of Interest. It does not, however, and should not be considered to, contain a complete statement of all the matters that an interested party should consider before an Expression of Interest is submitted, and should not be considered or treated by an interested party as a substitute for further independent investigation.

Any prices or price levels contained herein are historical and/or indicative only. Any estimates included herein constitute our sole and exclusive judgment as of the date hereof and are subject to change without notice. Any examples included herein are intended to be illustrative only and should not be relied upon as representative of any other historical period or a projection of any future period.

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CHPE, LLC and Brattle caution that both the market and the local and federal regulatory regime described in this IM are subject to change, and neither CHPE, LLC nor Brattle accept any responsibility or undertake any obligation to provide any updates to any such statements, opinions, information or matters.

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I. EXECUTIVE SUMMARY

The Champlain Hudson Power Express (“CHPE”) is an approximately 333-mile (536-km), 1,000 MW,¹ underground and underwater HVDC electric power transmission line with an aboveground HVDC converter station. The transmission line will interconnect with: (1) Hydro-Québec TransÉnergie at the U.S.-Canada border; and (2) a converter station located in Astoria, Queens where it will connect to the Astoria Annex Substation. Electric power from the Astoria Annex will be distributed onto the Consolidated Edison (“ConEd”) system at the Annex and also at the Rainey Substation in Astoria, Queens, New York, via two approximately 3.5 mile underground high voltage alternating current circuits. CHPE, LLC anticipates transitioning from the development phase to the construction phase in early 2021, and that the line will commence commercial operation in 2025.

The CHPE Project will bridge the substantial geographic gap between existing and anticipated energy resources in Canada and potentially elsewhere with high energy prices and emission reduction laws that exist in New York, particularly within Zone J (New York City). CHPE is poised to become the first transmission infrastructure solution in New York for the following reasons:

- CHPE enjoys widespread support in its host State of New York (“NY”);
- CHPE has already received all major permits;
- CHPE will transmit power directly into New York City bypassing transmission congestion;
- CHPE has queue position 458 with NYISO and is participating in the 2019 Class Year Facilities Study Interconnection Application process
- CHPE is backed by The Blackstone Group (“Blackstone”), the largest alternative asset manager in the world. Blackstone is fully prepared to commit 100% of the project equity capital required to finalize development and through construction

CHPE expects to be operational in 2025, which will allow it to help meet the recently enacted New York energy laws, such as the NY Climate Leadership and Community Protection Act (“CLCPA”) and New York City’s Local Law 97. In New York, particularly within New York City, highly favorable dynamics currently exist across all of the relevant electricity markets – energy, capacity, and Renewable Energy Credits (“RECs”).

Open Solicitation

Consistent with the requirements of the Federal Energy Regulatory Commission (“FERC”), CHPE, LLC is undertaking this open solicitation process to allocate transmission capacity on CHPE. CHPE, LLC has retained The Brattle Group as the Independent Solicitation Manager (ISM) to conduct and oversee the open solicitation process.

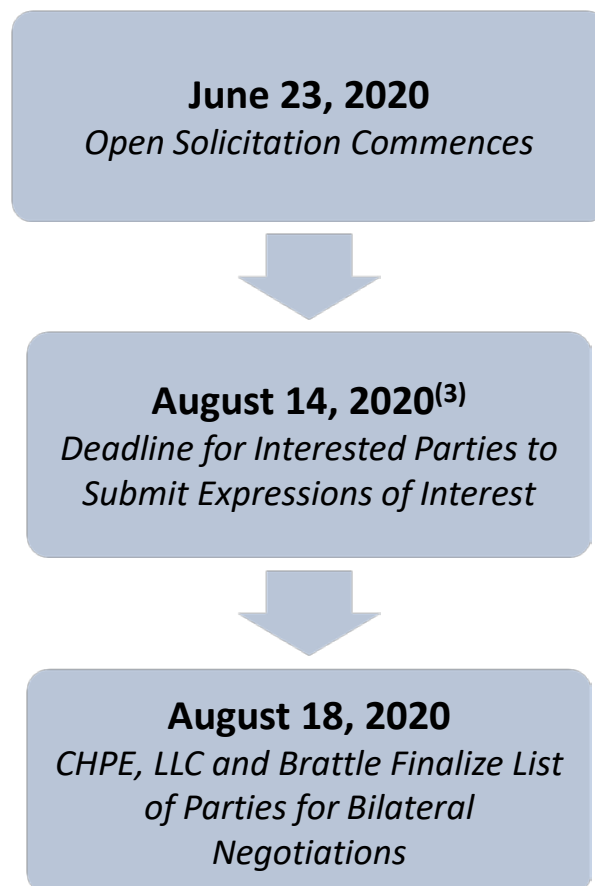
On May 29, 2020, FERC granted CHPE, LLC’s request for authority to sell 100% of the transmission rights at negotiated rates using this open solicitation process.²

¹ CHPE is a 1,000 MW project, but is currently assessing the feasibility of expanding the transmission line capacity to 1,250 MW.

² CHPE, LLC, 171 FERC ¶ 61,186 (2020), Order Granting Application for Authorization to Charge Negotiated Rates, Subject to Condition, and Granting Waivers. May 29, 2020. Docket No. ER20-1214-000.

This open solicitation requires CHPE, LLC to 1) broadly solicit interest from potential customers, and 2) allocate transmission capacity in a manner that is not unduly discriminatory or preferential.

CHPE, LLC is commencing the open solicitation on June 23, 2020. Interested parties must submit Expressions of Interest (“EOI”) by 5 PM Eastern Time on August 14, 2020, and CHPE, LLC will finalize the list of parties for bilateral negotiations by August 18, 2020.³ Additional information can be found at the open solicitation website (www.chpexpress-os.com).



³ The August 14, 2020 deadline is subject to extension in the event of further disruptions related to the COVID-19 pandemic. If an extension is warranted, the rest of the schedule will be updated accordingly.

II. PROJECT OVERVIEW

Overview of Champlain Hudson Power Express

The Champlain Hudson Power Express is a proposed 333-mile electric transmission line that will run from the Canadian border to New York City along underwater and underground routes. The electricity transmitted by CHPE will be delivered to the New York City electric grid via two ConEd substations located in Astoria, Queens.

The underwater portions of the transmission line, approximately 196 miles in length, will be submerged in Lake Champlain and the Hudson, Harlem, and East Rivers. The overland portion of the transmission line, approximately 137 miles in length, will be buried underground within existing public rights-of-way (“ROWS”) or CHPE, LLC-controlled land.⁴ The transmission line will interconnect with: (1) Hydro-Québec TransÉnergie at the U.S.-Canada border; and (2) a converter station located in Astoria, Queens where it will connect to the Astoria Annex Substation. Electric power from the Astoria Annex will be distributed onto the ConEd system at the Annex and also at the Rainey Substation in Astoria, Queens, New York, via two approximately 3.5 mile underground high voltage alternating current circuits. The Astoria Annex and Rainey Substations are owned by ConEd and provide robust interconnections that will allow transmission customers to access the New York City (Zone J) energy market.

The proposed route design avoids visual impacts, has a light environmental footprint, utilizes existing disturbed road and railroad ROWs, and capitalizes on the long, linear nature of Lake Champlain and the Hudson River to reduce installation costs and community impacts. CHPE, LLC has developed partnerships and agreements with abutters to the Project’s route, host Towns, regional organizations, and State agencies to help ensure a non-controversial project that benefits New York.

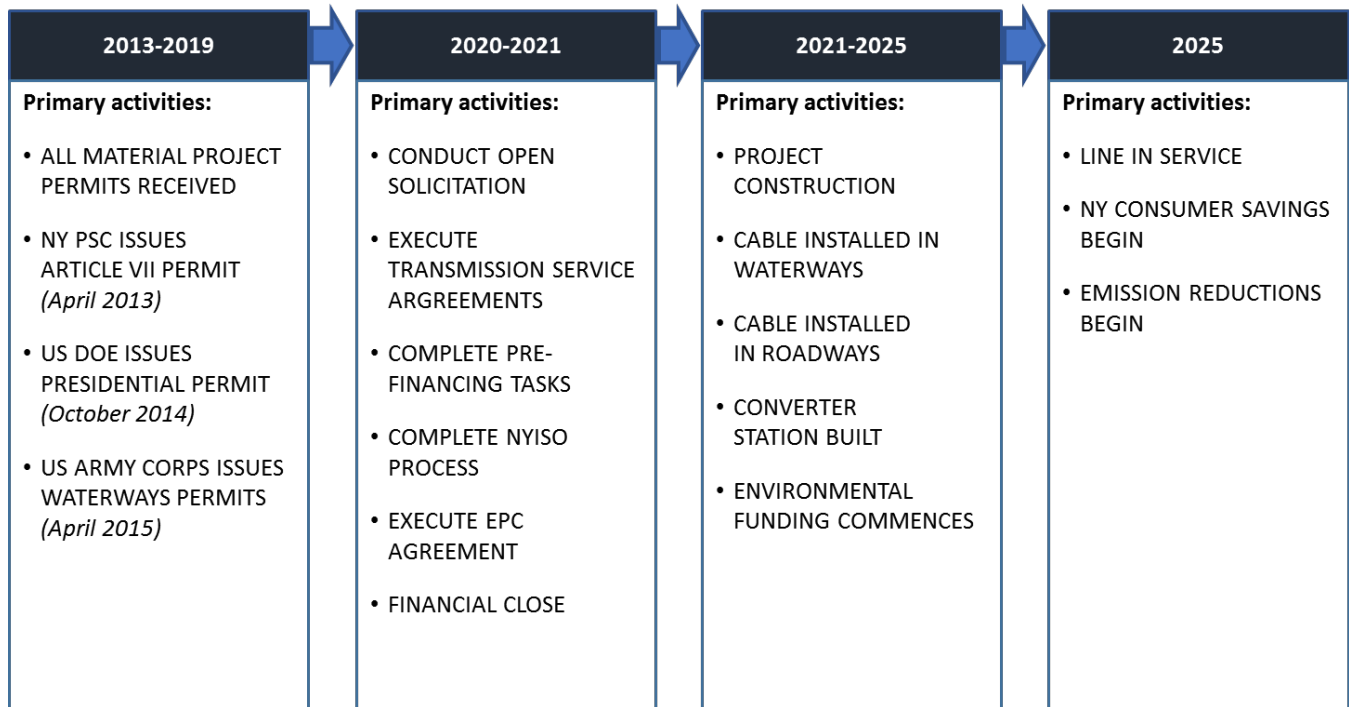
The CHPE Project will be a 1,000 MW High Voltage Direct Current (“HVDC”) cable circuit, comprised of two cross linked polyethylene (“XLPE”) cables for both the land and marine portions of the cable route. There is potential to expand the Project’s capacity by 250 MW and this uprate is currently being studied by the NYISO. The Project will use an HVDC voltage-sourced converter (“VSC”), which allows for fully independent control of both the active and the reactive power flow over its operating range.

The estimated total construction cost is approximately \$3 billion. Construction is expected to commence in 2021 and the project is expected to be operational in 2025.

⁴ These mileages reflect the current permitted route, the route modifications would extend the project route by approximately 4 miles.

Project Timeline / Accomplishments

CHPE, LLC commenced the development of the CHPE Project in 2008, and significant progress has been made to date as depicted below. Throughout the remainder of 2020 and early 2021, CHPE, LLC will be focused on executing Transmission Service Agreements with customers, finalizing the engineering, procurement and construction contract, completing preconstruction tasks and securing the necessary Project financing to commence construction of the Project. Construction is expected to begin in 2021 and end in 2025.



Regulatory

CHPE, LLC has received all of its material permits after an inclusive and rigorous permitting process. The table below provides a list of permits issued to the project as well as secondary reviews that support these approvals. Additional descriptions of these permits are also included. CHPE, LLC is also seeking approval of certain route modifications and Certificate conditions changes. These approvals are currently under regulatory review.

Permits issued to CHPE

Permit	Agency	Date Issued	Expiration Date	Permit #
Presidential Permit	US DOE	10/06/2014	No Expiration	PP-362
Permits pursuant to the federal Clean Water Act and Rivers and Harbor Act	US ACOE	05/20/2015	12/31/2025	NAN-2009-01089
- Modification 1		10/17/2016		
- Modification 2		10/15/2017		
- Modification 3		11/25/2019		
Certificate of Environmental Compatibility and Public Need (Article VII Certificate)	NY PSC	04/18/2013	No Expiration	Case 10-T-0139
Negotiated Rate Authority	FERC	05/29/2020	No Expiration	Docket ER20-1214
Secondary Review	Agency	Date Issued	Expiration Date	Review #
Concurrence on Presidential Permit	US DOS	02/14/2014	N/A	N/A
Concurrence on Presidential Permit	US DOD	06/26/2014	N/A	N/A
NEPA FEIS	US DOE	08/2014	N/A	EIS-0447
401 Water Quality Certificate	NY PSC	02/15/2012	N/A	Case 10-T-0139
Federal Coastal Zone Management Act (Consistency Certification Conditional Concurrence)	NY DOS	06/08/2011	N/A	N/A
- Amendment 1		03/03/2014		
- Amendment 2		12/15/2014		

Issued Permits Overview

- **Certificate of Environmental Compatibility and Need (Includes 401 Water Quality Certificate, Consistency Certification Conditional Concurrence):** The Certificate of Environmental Capability and Public Need (“Article VII Certificate”) is the comprehensive siting approval required by New York State to construct and operate CHPE. As part of this approval the NYPSC also issued a 401 Water Quality Certificate for CHPE. This Certificate confirms that CHPE will comply with the requirements of the Federal Clean Water Act and New York’s Water Quality Standards. In addition, the Department of State issued a Consistency Determination in June, 2011 to CHPE for Project activities that occur within the regulated Coastal Zone along the Project Route.
- **U.S. Department of Energy: Presidential Permit**
 A Presidential Permit issued by the U.S. DOE is necessary to construct, operate, maintain, and connect electric transmission facilities at the United States international border. Before a Presidential Permit may be issued, the action must be found to be consistent with the public interest, through an evaluation of the following:

 - Environmental Impacts – Pursuant to NEPA, the U.S. DOE prepares an Environmental Impact Statement (“EIS”). The U.S. Environmental Protection Agency, U.S. Coast Guard, and U.S. Army Corps of Engineers serve as cooperating federal agencies during the NEPA process.



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- Impact on Electric Reliability - The U.S. DOE considers the effect that the proposed project would have on the operating reliability of the U.S. electric power supply system; i.e., the ability of the existing generation and transmission system to remain within acceptable voltage, loading and stability limits during normal and emergency conditions.
 - The U.S. Department of State and the U.S. Department of Defense concurred with the issuance of the permit.
 - **US Army Corps Permits:**
Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act require that permits must be obtained from the U.S. ACOE in order to construct any structure in or over navigable waters, or place or excavate any dredge or fill material in waters of the U.S. The portions of CHPE that are to be placed in waterways, or that involve jurisdictional wetlands or stream/river crossings in the overland portion of the Project, triggered the need for these permits.



**US Army Corps
of Engineers®**

Pending Regulatory Reviews: Route Modifications and Certificate Modifications

Two amendments were submitted to the NY PSC in late 2019.

The first Amendment was submitted in September, 2019 and seeks to modify four permit conditions. An order approving three of the four conditions was completed in March, 2020. The fourth proposed condition modification is under review by the NYPSC.

The second Amendment was submitted on December 6, 2019 and seeks approval of route modifications along eight segments of the route. Advanced project development efforts and stakeholder feedback resulted in the need to propose these route modifications along ~10% of the total 333-mile permitted route. These proposed changes add approximately 4 miles to the overall route and are for the upland route with no expected increase in environmental impacts. A Procedural Conference for this Amendment was held on March 4, 2020. After this conference a public comment period was set that ended on April 30, 2020. To view these amendments please visit: <http://www.chpexpress.com/regulatory-documents.php>.

CHPE, LLC will also submit an application to the U.S. DOE for approval of the proposed route modifications. In addition, Project developer Transmission Developers, Inc. ("TDI") will seek a permit modification from the U.S. Army Corps.

Interconnection Milestones

CHPE will interconnect to the New York bulk power system at two ConEd-owned substations in Astoria, Queens.

NYISO - System Reliability Impact Study (Q#458). The Project submitted its interconnection request to NYISO in October, 2014 and was assigned queue position Q#458. Siemens PTI, as a consultant to NYISO, completed a System Impact Study in January, 2017 that was approved by NYISO in February, 2017. This Study concluded that the CHPE could be reliably interconnected at the proposed Point of

Interconnection in the New York Control Area subject to certain proposed upgrades to be confirmed during the NYISO Class Year Facilities Study process.

NYISO - Class Year Facilities Study (Q#458). All large facilities seeking to interconnect into the New York Bulk Transmission System are required to participate in a Class Year Facilities Study (CYFS) as part of the interconnection application process. During this Study, all Class Year participants are modeled in order to determine specific upgrades and the associated costs required for each participant as well as potential shared upgrades and associated allocated costs for each participant. CHPE is a member of Class Year 2019; the CYFS is in progress and is expected to be completed by the end of 2020. CHPE had participated in Class Year 2017 and elected not to proceed at that time. It is expected that CHPE's upgrade costs in Class Year 2019 will not be materially different from those determined by NYISO in Class Year 2017 and these costs are incorporated into the overall Project Cost.

Potential 250 MW Uprate. TDI is currently assessing the feasibility of expanding the transmission line capacity to 1,250 MW. In June 2019, the Interconnection Request (Q887) corresponding to the update was filed with NYISO for the US Interconnection. The System Reliability Impact Study for the uprate is expected to be completed in July 2020.

Canadian Interconnection. CHPE must also interconnect with the Hydro Quebec TransÉnergie ("HQT") system. North of New York, the HQT system is uncongested and serves as an excellent conduit to move power from Canada into New York. Hydro Quebec Power ("HQP") filed an interconnection request (on behalf of the CHPE) with HQT in June 2019. The associated System Impact Study was completed in October, 2019 and concluded that the CHPE could be reliably interconnected at the proposed Point of Interconnection in Quebec.

Outreach

CHPE, LLC views proactive and sustained outreach as a critical element of development activities. It attempts to empower stakeholders and reduce opposition by soliciting and incorporating feedback from interested parties prior to making regulatory filings. Since commencing development activities, CHPE, LLC has made a concerted effort to initiate outreach with interested and potentially impacted stakeholders -- local landowners, town leaders, local businesses, state elected officials, state and federal agencies, New York utilities, not-for-profit organizations, trade associations, regional commissions, and New York citizens. As a result of this commitment to transparent and inclusive outreach as well as the project design, the Project has historically and continues to have strong support from key stakeholders as well as the public.

Some examples of outreach activities initiated by CHPE, LLC include:

- As part of the state siting process, CHPE, LLC worked with 14 interested and diverse parties for 16 months to negotiate a Joint Settlement which became the foundation for the State Siting Permit (Article VII Certificate).
- After the Project was permitted, several communities in North Rockland County expressed concerns with potential impacts to their residences, historic sites, and recreational facilities along a seven-mile route segment. In response to these concerns, CHPE, LLC hired a Director of Community Relations, who spent over a year meeting with elected officials, business owners, civic organizations, and

concerned citizens to establish a solution to their concerns. After hundreds of meetings, all five municipalities signed an MOU publicly supporting a new route through their community.

- Recently and as a part of pre-construction engineering, CHPE, LLC identified certain segments of the route that required modification. Prior to formalizing these modifications with Regulatory Agencies, CHPE, LLC spent two years working with 14 affected municipalities to solicit feedback, and ultimately secured resolutions of support from these municipalities for the modifications.

Route and Land Control

The permitted waterway route is approximately 191 miles, with 97 miles in Lake Champlain, 67 miles in the Upper Hudson River, and 27 miles in the Lower Hudson and Harlem Rivers. The permitted upland route is approximately 146 miles, which involves 111 miles on railroad ROWs, 30 miles on New York State or municipal roads, and 5 miles on CHPE-controlled property.

CHPE, LLC is authorized to install cables along this entire route from the border to Astoria by the Certificate issued by the New York Public Service Commission (“NY PSC”) in 2013 and by approvals issued by federal authorities thereafter. Extensive coordination has occurred with the various landowners, particularly the Railroad owners and the NY State Department of Transportation who own the majority of the upland ROWs. In certain cases, CHPE, LLC has obtained easements to utilize private property.

Cost Competitiveness

CHPE’s proposed route and technology ensure that it is a cost competitive proposal within New York. HVDC technology in buried cable format has a track record of safety and reliability. These cables can and have been installed with minimal environmental impacts and disruption to communities.

Utilizing Lake Champlain for approximately 30% of the route provides several competitive advantages compared to terrestrial installation including:

- Cables can be efficiently transported in approximately 15-mile sections to Lake Champlain via the Hudson River from the Atlantic Ocean;
- These long sections allow for quicker and less expensive installation due to fewer cable splices and the relative ease of burial;
- Approximately half of the Lake Route will involve laying the cables on the bottom of the Lake; and
- In general, lake installation is less disruptive to communities.

The overland route was carefully chosen and reviewed by New York stakeholders. The majority of the overland route is relatively flat and proposed along public rights of way or on land CHPE, LLC controls. Furthermore, the route avoids sensitive environmental land and highly-developed areas, so construction impacts to residents and the environment will be minimal.

III. OPEN SOLICITATION OVERVIEW

Overview of Open Solicitation Process

On May 29, 2020, FERC granted CHPE, LLC's request for authority to sell 100% of the transmission rights at negotiated rates using this open solicitation process.

CHPE, LLC has retained The Brattle Group as the Independent Solicitation Manager ("ISM") to conduct and oversee the open solicitation process.

The open solicitation process will commence on June 23, 2020. On that date, interested parties can access the CHPE Open Solicitation website (www.chpexpress-os.com). The website will contain additional information about the Project.

Parties interested in purchasing transmission capacity on the CHPE must submit an "Expression of Interest" ("EOI") to Brattle no later than 5 PM Eastern Time on August 14, 2020.⁵ Directions for submitting the EOI can be found on the CHPE Open Solicitation website (www.chpexpress-os.com).

CHPE, LLC will not consider negotiating with any party that does not express interest in at least 50 MW of capacity. After review of the EOIs, CHPE, LLC will negotiate agreements for the sale of transmission rights at negotiated rates with each selected prospective customer. Transmission rights will be available for flows from Quebec to NYISO.

Prospective customers should be aware that CHPE, LLC's open solicitation process could result in the initial allocation of all 1,000 MW of CHPE's transmission line capacity. Consequently, the open solicitation may be the sole opportunity to acquire all or some of the transmission capacity on CHPE in the near term. CHPE, LLC, therefore, encourages interested parties to submit EOIs on or before August 14, 2020.

TDI is currently assessing the feasibility of expanding the project to 1,250 MW.

Any changes to the project or the status of the open solicitation process will be posted to the open solicitation website.

Open Solicitation Schedule

The open solicitation process was launched on June 23, 2020. Interested participants may submit a completed EOI (available on the open solicitation website described below) by 5 PM Eastern Time on August 14, 2020. This document can either be sent via email to chp-express-ism@brattle.com or uploaded through the Document Submittal tab of the CHPE Open Solicitation website (www.chpexpress-os.com).

After receiving EOIs, CHPE, LLC will engage in negotiations with all, or a subset, of the interested parties based on the selection criteria described below. CHPE, LLC will notify by August 18, 2020 those parties with which it will negotiate. The objective of the negotiation phase is to execute one or more transmission service agreements for all of the CHPE capacity prior to October 15, 2020. CHPE, LLC reserves the right to terminate the open solicitation process or withdraw from negotiations at any time.

⁵ The August 14, 2020 deadline is subject to extension in the event of further disruptions related to the COVID-19 pandemic. If an extension is warranted, the rest of the schedule will be updated accordingly.

Schedule for Open Solicitation Process	
Timeframe	Description
June 23, 2020	<ul style="list-style-type: none"> Open Solicitation Commences
August 14, 2020	<ul style="list-style-type: none"> Deadline for Potential Customers to Submit Expressions of Interest
August 18, 2020	<ul style="list-style-type: none"> Finalize List of Parties for Negotiations
August - December, 2020	<ul style="list-style-type: none"> Negotiation and Execution of Transmission Service Agreement(s)
December, 2020	<ul style="list-style-type: none"> Submit Section 205 Filing to FERC

Selection Criteria

CHPE, LLC will consider negotiating with only those parties interested in purchasing at least 50 MW of transmission capacity on the Champlain Hudson Power Express. After receiving the EOIs, CHPE, LLC (with assistance from Brattle) will then evaluate potential negotiating parties based on the following criteria:

- (1) Level of creditworthiness;
- (2) Anticipated amount of reserved capacity;
- (3) Anticipated length of term;
- (4) Financial strength;
- (5) Desired date for the commencement of transmission service;
- (6) Development status of energy assets; and
- (7) Information regarding energy supply and ability to advance New York public policies.

Interested parties must submit information related to these criteria on the EOI document available on the CHPE Open Solicitation website (www.chpexpress-os.com). CHPE, LLC is not requiring parties to execute a confidentiality agreement in order to submit an Expression of Interest Form. However, if a party wishes to execute one, CHPE, LLC will accommodate that request. CHPE, LLC's confidentiality agreement is available upon request.

Communications with Interested Parties

In addition to the information currently posted on the CHPE Open Solicitation website (www.chpexpress-os.com), additional information may be posted in subsequent updates.

Questions regarding the open solicitation process should be directed to Brattle through the "Ask the Manager" tab on the CHPE Open Solicitation website or directly via email at chp-express-ism@brattle.com (or, via phone to James Reitzes at Brattle at (202) 419-3330). Questions regarding the project should be directed to Josh Bagnato (josh.bagnato@chvtllc.com or (802) 477-3830).

Website Details

The CHPE Open Solicitation website (www.chpexpress-os.com) has been established to host materials related to this open solicitation process and facilitate communication between Brattle and interested parties. The website is divided into the following sections:

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- Home: where an overview of the open solicitation process is posted from the Independent Solicitation Manager;
 - Ask the Manager: where interested entities should submit questions directly to the Independent Solicitation Manager;
 - Calendar: contains a list of important dates related to the open solicitation process;
 - FAQ: contains answers to questions submitted to the Independent Solicitation Manager;
 - Documents: contains links to important documents regarding the open solicitation process;
 - Document Submittal: a template through which interested entities can submit materials to the Independent Solicitation Manager (e.g., the completed Expression of Interest); and
 - Registration: a template that interested entities may complete to receive email announcements regarding the open solicitation process.

IV. POTENTIAL VALUE PROPOSITION

Overview

There is a confluence of factors which lead to the initiation of CHPE's development.

- ***New York State Renewable Mandates.*** A series of renewable mandates have resulted in increased demand for renewable generation. The most recent such legislation was passed on July 18, 2019, when Governor Cuomo signed the Climate Leadership and Community Protection Act (CLCPA). CLCPA mandates 70% renewable energy by 2030, which will require ~38 TWh of additional renewable energy over the next decade.⁶
- ***New York City Renewable Mandates.*** In 2014, New York City committed to reducing CO₂ emissions 80% (relative to 2005 levels) by 2050 and 40% by 2030.⁷
- ***New York City Building Legislation.*** In May of 2019, New York City passed a bill, NYC Local Law 97, requiring all city-owned buildings to be 100% green-powered by 2050, with an interim goal of 50% by 2030.⁸ The bill also mandates an 80% decrease in emissions from large, private buildings by 2050.
- ***Potential Tier 4 RECs.*** NYSERDA released a White Paper on June 18, 2020 which contemplates, among other items, establishing a new Tier (Tier 4) under the Clean Energy Standard for renewables that can deliver into Zone J.⁹ Based on this White Paper renewable energy physically delivered over CHPE would qualify for Tier 4 Renewable Energy Credits ("RECs").
- ***Indian Point Retirement.*** In 2017, the governor's office announced that the nuclear Indian Point plant would close by 2021. On April 30, 2020 Indian Point's ~1,000 MW Unit 2 was permanently shut down; the remaining 1,000 MW of Indian Point's capacity is expected to shut down next year. The retirement of 2,000+ MW of base-load, carbon-free power will increase the need for new generation capacity. This need will be exacerbated by the eventual phase out of the remaining ~45-year-old subsidized upstate nuclear plants.

⁶ CES Annual Progress Report: 2018 Compliance Year (as of Dec. 2019). To achieve the 70% by 2030 mandate, an additional ~38 TWh of renewable energy is required beyond the ~42 TWh of existing renewables and ~19 TWh of contracted renewables.

⁷ See, e.g., "New York City's Roadmap to 80 x 50," The City of New York, p. 5. Available at https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/New%20York%20City's%20Roadmap%20to%2080%20x%2050_Final.pdf

⁸ https://www1.nyc.gov/assets/buildings/local_laws/1197of2019.pdf

⁹ NYSERDA, "White Paper on Clean Energy Standard Procurements to Implement New York's Climate Leadership and Community Protection Act", June 18, 2020.

<http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={E6A3B524-6617-4506-A076-62526F8EC4CB}>. Note that the recommendations within the White Paper have not been approved by the State and are subject to change.

- **NO_x Regulations.** NYDEC NO_x regulations are expected to result in retirements of up to 3,000 MW of downstate thermal peakers by 2025, further exacerbating the need for capacity deliverable to downstate load zones.¹⁰
- **Supplementing Offshore Wind (“OSW”).** OSW represents an important component of NY’s renewable future; however, intermittent generation necessitates greater supply diversity.
- **Transmission Congestion.** Transmission constraints on the grid limit the ability to supply more clean energy to downstate consumers.¹¹
- **Storms.** New Yorkers face prolonged power outages due to storm events such as Hurricane Sandy. As a result, New York State has begun prioritizing transmission projects with resilient designs to mitigate damage from extreme storms.

Energy Market Opportunities

New York ISO Overview

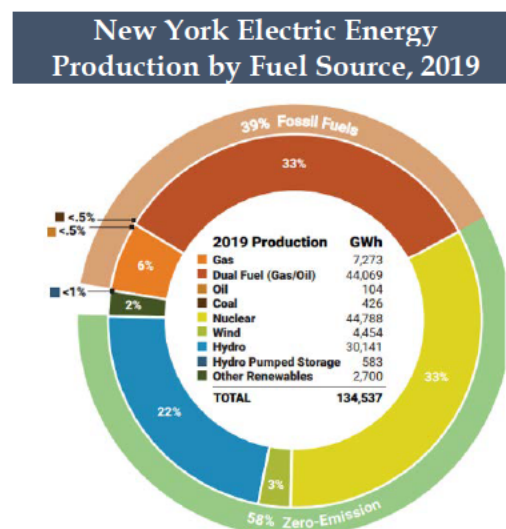
The New York independent system operator (“NYISO”) administers the electrical grid covering the entire state of New York. Its all-time peak demand was 33,956 MW in July 2013. NYISO, subject to FERC jurisdiction, operates several markets, acts as system operator, and is responsible for transmission and other aspects of planning for New York.

The principal NYISO markets are for energy and capacity.

Additional NYISO characteristics include the following:

- 19.8 million New Yorkers served;
- 155,832 GWh of electricity served in 2019;
- +11,000 circuit miles of high-voltage transmission lines;
- 2019 peak demand of 30,397 MW; all-time peak demand of 33,956 MW in July 2013;
- +400 wholesale energy market participants; and
- +700 power generating units.

NYISO is split into 11 load zones (A through K), with zones A-E generally being thought of as “upstate” and the rest considered “downstate.” Differences between the energy profiles of these two regions have led NYISO to characterize its current supply conditions as “A Tale of Two Grids,” with 88% of upstate energy being zero-emission, whereas 69% of downstate energy production is from fossil fuels.

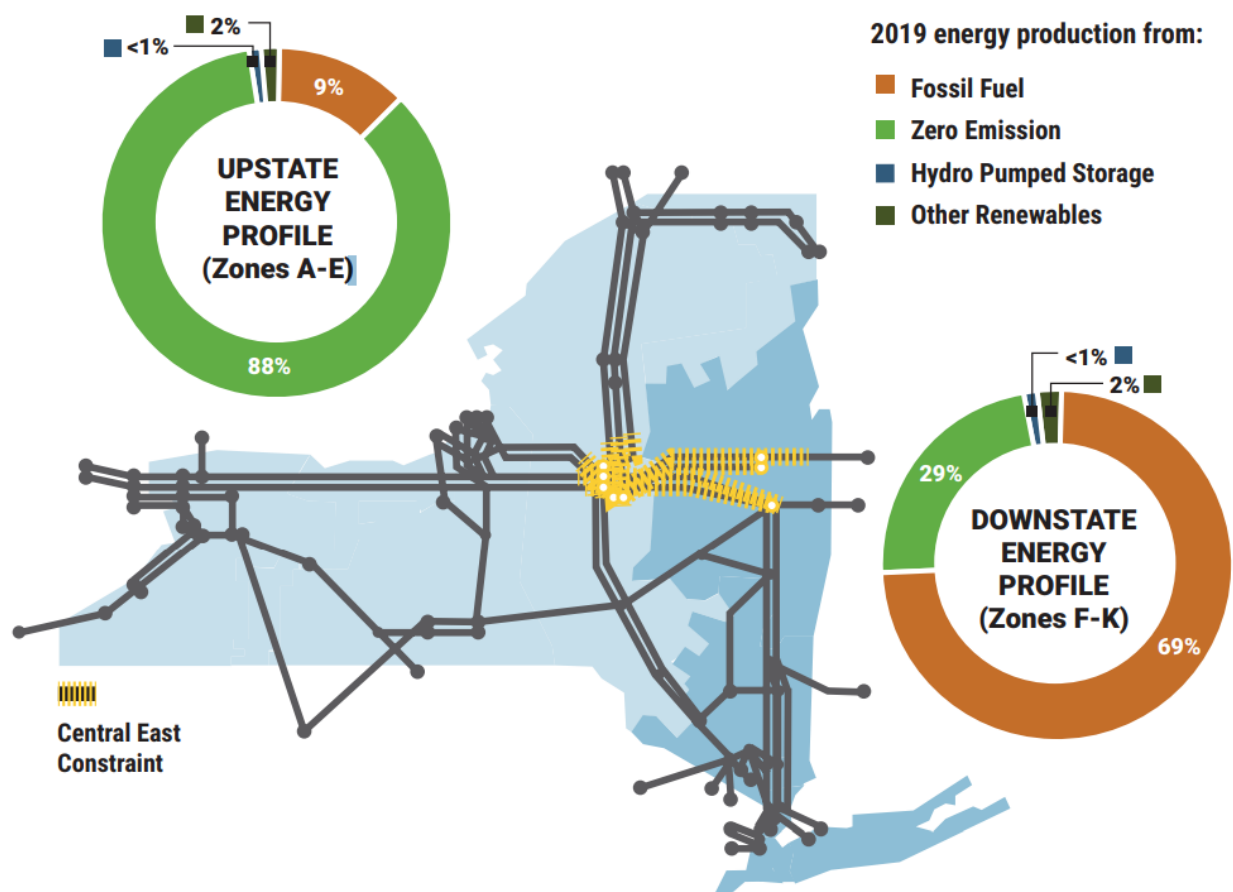


Source: NYISO Annual Grid & Markets Report: Power Trends 2020

¹⁰https://www.nyiso.com/documents/20142/5552484/2018CRP_NYISO_PeakerScenario_pptMarch19ESPWG.pdf/871cdd4d-963a-4a81-38f6-f60a063b1d21

¹¹ [NYISO Power Trends 2019](#), p. 64.

► **Tale of Two Grids**



Source: NYISO Annual Grid & Markets Report: Power Trends 2020

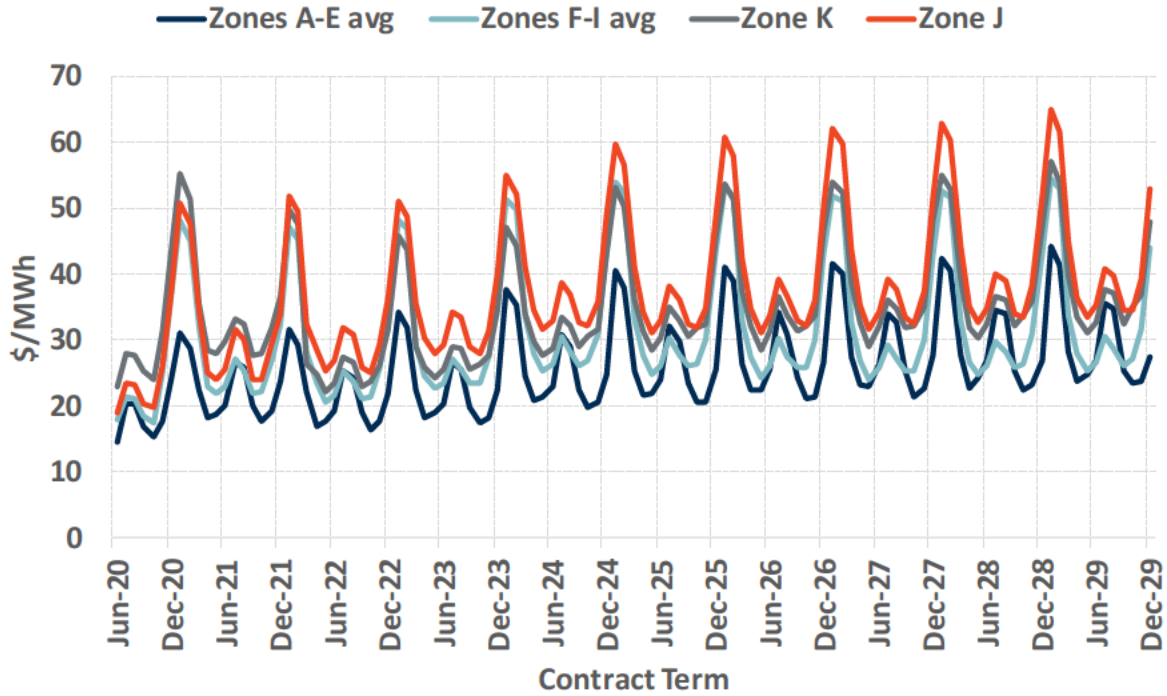
Additional relevant characteristics of NYISO Zone J include the following:

- 52,003 GWh of electricity served in 2019 (33% of state total);
- Coincident summer peak demand was 10,015 MW in 2019; forecasted to be ~11,500 MW in future years;
- Zone J summer capacity is < 9,600 MW; and
- Energy prices in Zone J are among the highest in the state, as discussed in greater detail below.

Energy Prices

The impact of the factors discussed here, including transmission constraints and impending retirements, is also reflected in around-the-clock (“ATC”) energy pricing curve displayed below. The figure reflects market expectations of energy prices in each month for each of four regions: the upstate Zones (A-E), the “downstate” Zones north of New York City (F-I), Zone J (New York City), and Zone K (Long Island). By the time the CHPE Project is expected to come online, forward energy pricing markets are expecting Zone J prices to be the highest in the state. In winter months, ATC prices are expected to approach and often exceed \$60/MWh. These prices exceed upstate prices by over \$20/MWh and exceed the next highest (those in Zone K) by more than \$7/MWh.

NYISO Monthly Power Forwards as of June 15, 2020



Source: OTC Global Holdings via S&P Global Market Intelligence, as of June 15, 2020.

Capacity Market Opportunities

Capacity Prices

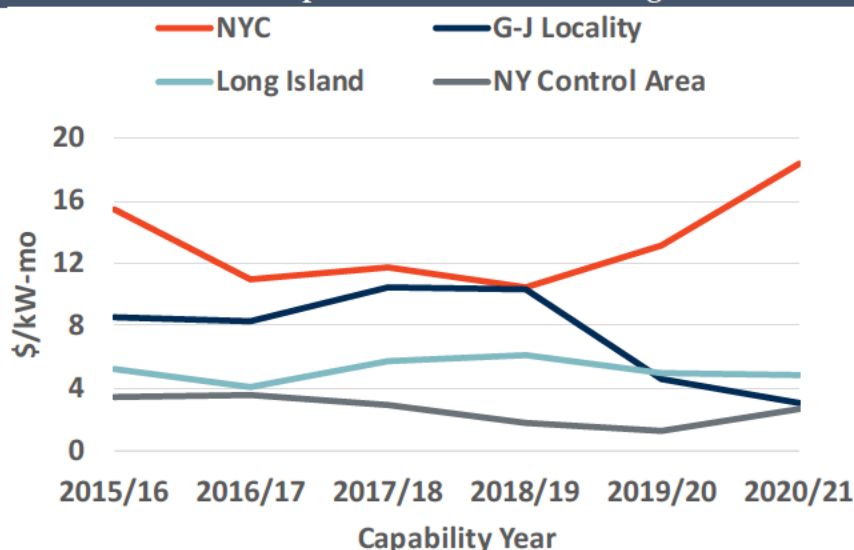
As generation using CHPE will be deliverable into New York City, capacity markets provide additional revenue opportunities to those owning transmission rights on the line. The relevant capacity prices for transmission owners on CHPE are those referred to as “NYC” by NYISO (also occasionally referred to as “In-City”). In the most recent seasonal strip auctions, capacity prices rose in NYC while falling in other zones, as illustrated in the graph below. These changes were driven by variations in supply and demand and annual updates to the ICAP demand curves. The table below indicates that in 2020/21, summer capacity prices in NYC were 3.7 to 6.8 times those in other parts of the state.

Seasonal Strip Auction Market Clearing Price

	NYC	G-J Locality	Long Island	NY Control Area
2017/18				
Summer	11.71	10.50	5.79	3.00
Winter	3.10	2.70	0.75	0.37
2018/19				
Summer	10.43	10.39	6.10	1.75
Winter	3.00	2.93	0.80	0.35
2019/20				
Summer	13.10	4.63	4.95	1.30
Winter	3.50	0.65	0.26	0.18
2020/21				
Summer	18.36	3.07	4.90	2.71

Source: S&P Global Market Intelligence.

Summer Strip Auction Market Clearing Price



Source: S&P Global Market Intelligence.

Renewable Energy Credit ("REC") Market Opportunities

New York State's Clean Energy Standard creates additional revenue opportunities for in-state renewable generation through renewable energy credits ("RECs"). The program is administered by the New York State Energy Research and Development Authority (NYSERDA), which purchases RECs through annual centralized procurements. NYSERDA-qualified renewable resources using the CHPE transmission line will qualify for NYSERDA Tier 1 RECs. New York REC prices are among the highest in the country; the most recent results were from the 2019 procurement, with weighted average prices at \$18.59/MWh, virtually unchanged from the previous year's weighted average price of \$18.52/MWh. A summary of recent procurement results, along with a comparison to REC prices in other states, is provided in the following tables.

Recent NYSERDA Procurement Outcomes

Solicitation Year	Weighted Average Tier 1 REC Purchase Price (\$/REC)
2016	24.24
2017	21.71
2018	18.52
2019	18.59

Source: S&P Global Market Intelligence.

REC Price Index for Selected States as of June 12, 2020

Term	State	REC Product	Price (\$/REC)
2019	Maine	ME Class I	0.66
2019	Texas	TX REC	0.94
2019	Pennsylvania	PA Tier I	10.10
Multi-Year	New York	NY Tier I	18.59
2019	New Hampshire	NH Class I	45.08
2019	Massachusetts	MA Class I	45.50
2019	Connecticut	CT Class I	45.88

Source: S&P Global Market Intelligence.
Notes: S&P compiles price information from a range of market indicators in assembling these indices.

The annual NYSERDA procurements provide opportunities for new in-state renewable generation meeting NYSERDA eligibility requirements. In recent years, NYSERDA procurements have led to the development of roughly 1,350MW of new renewable energy capacity per year.¹² For example, the recently-completed 2019 Solicitation resulted in 21 agreements for projects which are expected to contribute 1,278 MW of new renewable energy capacity throughout New York State.¹³

NYSERDA also released a White Paper on June 18, 2020 which contemplates, among other items, establishing a new Tier (Tier 4) under the Clean Energy Standard for renewables that can deliver into Zone J. Based on this White Paper renewable energy physically delivered over CHPE would qualify for Tier 4 RECs. Note that the recommendations within the White Paper have not been approved by the State and are subject to change.

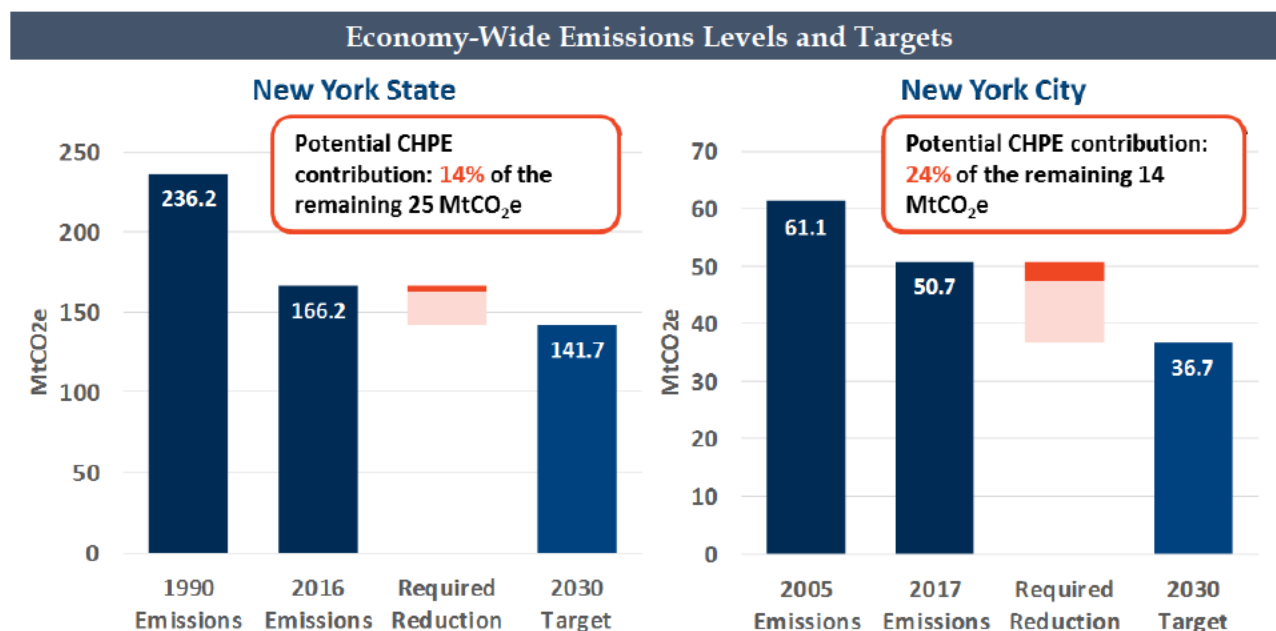
Greenhouse Gas (“GHG”) Reduction Goals and Progress

As discussed above, New York State and New York City have both enacted legislation that will mandate the use of renewable power in the coming decade. In particular, New York State has set a goal of reducing

¹² <https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard/Renewable-Generators-and-Developers/RES-Tier-One-Eligibility/Solicitations-for-Long-term-Contracts>

¹³ <https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard/Renewable-Generators-and-Developers/RES-Tier-One-Eligibility/Solicitations-for-Long-term-Contracts/2019-Solicitation-Resources>

emissions (relative to 1990 levels) by 40% by 2030 and by 85% by 2050.¹⁴ For its part, New York City has set a goal of emissions reductions (relative to 2005 levels) of 40% by 2030 and 80% by 2050.¹⁵ Both the City and the State have made progress towards these goals, but as the charts below indicate, significant progress is still needed if the goals are to be attained. According to the most recent emissions inventories, the State and the City still need to reduce emissions by 25 and 14 metric tons of CO₂ equivalent (MTCO₂e), respectively, in order to meet their 2030 goals. The retirement of the Indian Point nuclear station will make this more challenging, as it represents the loss of 2,000+ MW of base-load, carbon-free power. Thus, the need for progress towards these goals presents an opportunity for low-or zero-emission energy.



Sources: PA Consulting Group. "Champlain Hudson Power Express ("CHPE"): Analysis of Economic, Environmental, and Reliability Impacts to the State of New York." August 2017. NYC Mayor's Office of Sustainability. "Inventory of New York City Greenhouse Gas Emissions." <https://nyc-ohs-inventory.cusp.nyu.edu/>. NYSERDA. "New York State Greenhouse Gas Inventory: 1990-2016." July 2019.

Analysis by PA Consulting shows the CHPE Project has the potential to contribute 14% of the remaining State-wide emissions reductions needed and 24% of the remaining City-wide reductions needed.

Downstream Demand Opportunities

The anticipated offtake plan for power transmitted via the CHPE Project is driven primarily by NYC Local Law 97, which will set emissions limits for both city operations and large buildings, beginning in 2024.¹⁶ Furthermore, Mayor de Blasio has set a goal that all city operations will be powered with clean energy by 2025. In response to the new law, CHPE, LLC is working with large NYC building owners to potentially supply their long term "in-city" delivered renewable energy needs. CHPE, LLC continues to work with other New York State entities to ensure that CHPE capacity is fully subscribed. The potential for power delivered using CHPE capacity to qualify for Tier 4 RECs may increase the attractiveness of offtake opportunities.

¹⁴ See <https://www.dec.ny.gov/energy/99223.html>; <https://www.nysenate.gov/legislation/bills/2019/s6599>

¹⁵ See, e.g., <https://www1.nyc.gov/office-of-the-mayor/news/209-19/action-global-warming-nyc-s-green-new-deal#/0>

¹⁶ https://www1.nyc.gov/assets/buildings/local_laws/1197of2019.pdf

V. DESCRIPTION OF PARTIES

Champlain Hudson Power Express

Champlain Hudson Power Express, LLC (“CHPE, LLC”) is majority-owned by TDI-USA Holdings, Corp., a Blackstone Portfolio Company. New York-based Blackstone is a global leader in alternative asset management with more than \$538 billion in assets under management as of March 31, 2020. The CHPE, LLC team is made up of the same leadership team currently developing the New England Clean Power Link (“NECPL”) in Vermont. That project has received all major federal and state permits required to proceed. The developers have a strong track record of working in partnership with local elected officials, community groups, and other stakeholders to develop projects that meet unique energy needs of growing economies, while minimizing local impacts.

Blackstone

Blackstone Energy Partners is Blackstone's energy-focused private equity business, with a successful record built on Blackstone's industry expertise and partnerships with exceptional management teams. Blackstone private equity has invested or committed \$16 billion of equity globally across a broad range of sectors within the energy industry.

Blackstone is one of the world's leading investment firms. Blackstone seeks to create positive economic impact and long-term value for its investors, the companies it invests in, and the communities in which they work. Blackstone does this by using extraordinary people and flexible capital to help companies solve problems. Blackstone's asset management businesses, with over \$538 billion in assets under management, include investment vehicles focused on private equity, real estate, public debt and equity, non-investment grade credit, real assets and secondary funds, all on a global basis. Further information is available at www.blackstone.com.

The Brattle Group

The Brattle Group provides consulting and expert testimony in economics, finance, and regulation to corporations, law firms, and governments around the world. Through its energy practice, Brattle has provided assistance to electric utilities, transmission companies, independent power producers, municipal utilities and cooperatives, power purchasers, and regulators such as the FERC and state public utility commissions. Brattle has extensive experience with auction design and management issues and providing strategic bidding advice to bidders in the electric power and telecommunications sectors. More generally, Brattle has analyzed energy and capacity pricing issues in the NYISO in a variety of different contexts.

As the Independent Solicitation Manager for the open solicitation process, Brattle will, among other responsibilities, manage communications with parties involved in the solicitation process, administer the procurement website, respond to bidder questions, and handle expressions of interest. Further information is available at www.brattle.com.

Baker Botts (Federal Regulatory Counsel to CHPE, LLC)

Baker Botts is an international law firm of approximately 750 lawyers practicing throughout a network of 14 offices around the globe. Among other things, the firm advises generation and transmission owners

on the development and negotiation of interconnection and transmission service agreements; negotiated rate and market-based rate issues; the development and operation of ISO/RTO market rules; tariff requirements and compliance obligations; and matters before the Federal Energy Regulatory Commission. The firm has been at the forefront of the development of cross-border transmission facilities, representing projects in New England, New York, Pennsylvania, and Texas. Further information is available at www.bakerbotts.com.

VI. APPENDIX

Additional Information	
Description	Website
Project Website:	<ul style="list-style-type: none"> • www.chpexpress.com
Open Solicitation Website	<ul style="list-style-type: none"> • www.chpexpress-os.com
Project Regulatory Documents:	<ul style="list-style-type: none"> • www.chpexpress.com/documents.php
DOE Environmental Impact Statement Website:	<ul style="list-style-type: none"> • www.chpexpresseis.org
NY State Siting Website (Docket 10-T-0139):	<ul style="list-style-type: none"> • http://documents.dps.ny.gov/
The Brattle Group:	<ul style="list-style-type: none"> • www.brattle.com

Management Biographies

Donald Jessome - Chief Executive Officer.

Mr. Jessome is CEO of Transmission Developers, Inc. and, along with John Douglas, is a co-founder. He earned his undergraduate degree in Electrical Engineering from the Technical University of Nova Scotia (currently referred to as Dalhousie University) in 1987 and his Masters of Business Administration, with Distinction, from Saint Mary's University in 1999.

Mr. Jessome has spent his entire career in the energy field, starting with 22 years at Emera Inc., a publicly traded company in Canada with \$5.3 billion in energy infrastructure assets centered on power and natural gas. Mr. Jessome worked in a broad range of areas while at Emera, including transmission & distribution operations and construction, integrated system planning, system operations, generation operations and fuel procurement, marketing and sales, and most recently Director of Asset Optimization and Power Trading for Emera Energy Inc. a wholly owned nonregulated trading and asset optimization company of Emera Inc. During this tenure Mr. Jessome has sat on numerous advisory boards, including his membership as one of the inaugural members of the NBSO Market Advisory Committee and a founding member of the CEA Power Marketing Committee. Mr. Jessome has extensive knowledge of the power markets in the Northeast including ISO-NE, NYISO, IESO, TransEnergie, NBSO, and PJM through his extensive marketing and trading experience with both the regulated and nonregulated business at Emera.

Prior to co-founding Transmission Developers, Inc., Mr. Jessome joined Riverbank Power in 2008 as Vice President of Marketing and Trading to help the company develop its commercialization strategy for its 1,000 MW underground pump-storage technology, referred to as Aquabank™. This strategy included the development of economic models and programs for the sale of energy, capacity and renewable attributes for both the regulated and market-based energy markets. In addition, Mr. Jessome was responsible, along with the CEO, for raising equity financing for Riverbank's development plans. Mr. Jessome is a board member of Riverbank Power.

Gene Martin - President and Chief Operating Officer.

Mr. Martin is president and COO of Transmission Developers, Inc. Mr. Martin's career spans 30 years of experience in general and executive management for five of the top NYSE-listed companies in the energy, engineering and construction sectors. His professional background includes divisional CEO roles with EMCOR Group (NYSE:EME), KeySpan Energy (NYSE:KSE), and UtiliCorp United (NYSE:ILA), as well as various management roles for SCANA Corp. (NYSE:SCG) and AECOM (NYSE:ACM), where he built several life cycle service companies to over \$5 billion, capitalizing on new markets and service opportunities and serving some of the world's largest commercial, industrial and institutional companies across their global operations.

Over the past 30 years he led operations which developed successful power and thermal projects, with energy T&D and commodity sales in both domestic and international markets. His experience includes multibillion-dollar acquisitions and leading-edge efforts in the DBOM and EPC of key energy infrastructure. He was the leader and management spokesperson for utility, contracting and engineering investments in excess of \$3 billion, including the \$1.15 billion acquisition of United Energy in Melbourne, Australia. He has acted as an expert witness on integrated resource planning and on the successful siting of several new generation facilities throughout North America and has lectured globally on energy management, operations, marketing, deregulation and competition, including a keynote address to the Australian Parliament on "Building Retail Competitive Choice in National Utilities Industries."

In his most recent role as senior vice president for AECOM (NYSE:ACM), he led U.S. Central, U.S. Northeast and U.S. Southeast Energy Operations. In less than three years, he turned around a losing division, growing net revenues by 89% to \$36 MM and establishing the fastest-growing unit at AECOM.

He has been recognized by Edison Electric Institute and the American Gas Association with national awards for business vision, revenue enhancement, operational excellence and marketing achievement, and was named to World Generation magazine's Class of 2002. Gene also sits on the State University of New York's Advanced Energy and Research Technology Center and Heath Consultant's Board and is active with many charities and civic organizations at the executive level.

Gene Martin was awarded a full scholarship, receiving a Master's in Business Administration and BSME from the University of South Carolina.

Bill Helmer - Executive Vice President, General Counsel, and Secretary.

Bill Helmer has practiced energy, environmental, contract, and real estate law during a career spanning over three decades. He has occupied senior positions in New York State government, litigated groundbreaking cases before federal courts and the Court of Appeals, the highest court in New York State, and handled the legal issues associated with the development and financing of many large and complicated power projects. He is a member of the bar of the Supreme Court of the United States.

Mr. Helmer is a graduate of Hamilton College and he earned a Master of Arts degree at Columbia University in New York City. He graduated with honors from the Law School of the State University of New York University at Buffalo in 1982. After a judicial clerkship, Bill practiced law privately in Albany, New York, for a dozen years until he was placed in charge of the Environmental Protection Bureau in the State Attorney General's office.

The Bureau serves as the litigation counsel for all environmental cases involving state bodies, such as the Departments of Environmental Conservation and State, the Adirondack Park Agency, and many others.

During his tenure as Bureau Chief, Mr. Helmer managed a staff that included over 30 attorneys, six scientists, and dozens of other employees in offices located in Buffalo, Albany, and New York City.

From 1999 until 2007, Bill served as special counsel in the New York Power Authority's law department. At the Authority, Bill oversaw all legal matters associated with the Authority's nuclear fleet until the plants were sold to Entergy Corporation late in 2000. Shortly before the sale, Bill also assumed responsibility for the Authority's hydroelectric relicensing portfolio. By early 2007, new 50-year federal licenses had been issued for the Authority's projects on the St. Lawrence and Niagara Rivers.

Bill is a sought-after writer and lecturer. He has served as an adjunct faculty member at Union College, where he designed and taught "The Land and the Law" environmental studies course. At the New York Bar Association, Bill is a member of the Environmental and General Practice Sections. He is also a past Chairman of the latter section and a past member of the Public Utility Law Committee.

Bill's published works include scores of articles and 16 entries in the official Encyclopedia of New York State. He has served as a quarterfinals judge for the National Environmental Law Moot Court competition held annually at Pace Law School. He is also the co-host of the award-winning "Capital Green Scene" weekly radio program on WVCR-FM 88.3, which made its debut on Earth Day, 2008.

Todd Singer - Executive Vice President - Chief Financial Officer.

Mr. Singer is the Chief Financial Officer for Transmission Developers. He is a senior operating and finance executive with 20+ years of diverse corporate and investment banking experience. He has significant expertise in the alternative energy and power/utility industries. During his investment banking career, Todd was responsible for originating and executing over \$97 billion in capital markets transactions and \$3.6 billion in M&A transactions. Todd was formerly the founding principal of Brookdale Energy Advisors, a strategic and financial consulting business focused on alternative energy. In that role, he served as a consultant and head of strategy and corporate development for a wind energy storage company and as a consultant with the Natural Resources Defense Council in its Center for Market Innovation, where he was focused on energy efficiency finance.

Mr. Singer worked for over eight years as an investment banker at Morgan Stanley, where he was an Executive Director in Global Capital Markets. Following business school, Todd was also a consultant at Price Waterhouse Coopers and an investment banker at Bank of America. He also worked in advertising finance at Time Warner's Time Inc. subsidiary.

As a result of this diverse range of experience, Todd has a broad skill set, including developing and implementing corporate strategy, leading complex projects, winning new business, working with regulators, and analyzing and projecting financial statements. He is particularly adept at evaluating needs and driving results.

Todd received his Masters of Business Administration from Columbia Business School and his BS in Management with a minor in Art History from Bucknell University. Todd is on the Board of Directors of the Bucknell Alumni Association and was formerly the Co-Chair of the Bucknell Professional Networks, a 3,500-member network of alumni covering a broad range of industries and disciplines. He was also the founding Co-Chairman of the Bucknell Finance Network, a worldwide network of all Bucknell alumni working in finance. He is also a former Chairman of the Reunion Gift Committee and has been a guest lecturer at Bucknell.

Josh Bagnato - Vice President, Project Development

Mr. Bagnato has a long history of energy experience. From 2007-2013 he worked at First Wind (now Sun Edison), an independent North American renewable energy company, where he managed a wide array of tasks during the development, construction and operational phases of utility scale wind and solar projects throughout the U.S., particularly in New England.

Prior to that, Josh held several positions with the Massachusetts Office of Environmental Affairs, including serving as the Director of Renewable Energy Policy and Acting Chief of Staff for the Massachusetts Department of Environmental Conservation.

Josh earned a Bachelor of Arts from Hamilton College and a Master's Degree in Business Administration from Boston University.