



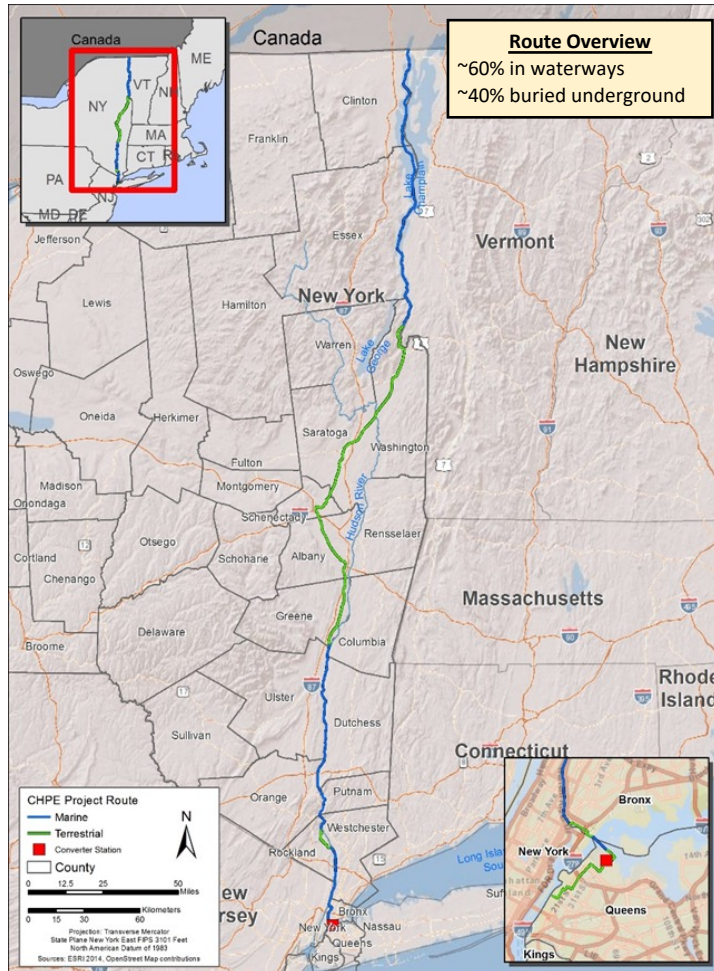
CHAMPLAIN HUDSON POWER EXPRESS

PROJECT OVERVIEW FOR THE OLD ASTORIA NEIGHBORHOOD ASSOCIATION

FEBRUARY 9, 2022



Champlain Hudson Power Express (“CHPE”) – Overview



CHPE, LLC is supported by world class suppliers, engineers, and energy infrastructure builders, and backed by Blackstone, one of the world's leading alternative asset managers.

Project Overview

- 1,250 MW fully buried HVDC transmission project delivering 10.4 TWh/year of new clean energy (enough power for more than one million New York homes)
- ~339 mile route from Canadian border to Astoria, Queens
- Target in-service of 2025; 60+ year expected operating life
- Construction-ready to help meet New York's immediate energy needs (replaces up to 50% of Indian Point generation)

Business Model

- Merchant transmission project selected by NYSDERA through a competitive RFP process to transport Canadian renewable energy directly into NYC
- Host municipalities in NY will receive ~\$1.7 billion in new tax revenue over the first 30 years of operations, benefiting 73 municipalities and 59 school districts

Regulatory & Community Support

- All major permits received (Article VII, Presidential Permit, Army Corps Permit)
- Widespread support (environmental, union, business, host communities)
- Strong local support as evidenced by 36 municipalities passing resolutions of support

Environmental & Economic Benefits, Energy Resiliency

- Estimated to decrease carbon emissions by ~3.9 MM metric tons per year and harmful local air pollutants by ~20%⁽¹⁾ (in its first full month without Indian Point, NY's carbon emissions from in-state generation rose 35% over pre-shut down⁽²⁾)
- Significant economic benefits in NY – project will utilize organized labor and is estimated to create over 1,400 direct jobs during construction and an additional +3,000 secondary jobs in NY⁽³⁾
- Buried infrastructure will make NY's aging energy grid safer, more resilient, and more reliable in climate change related events

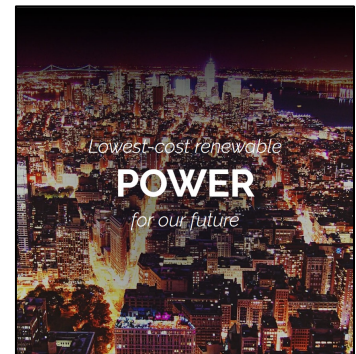
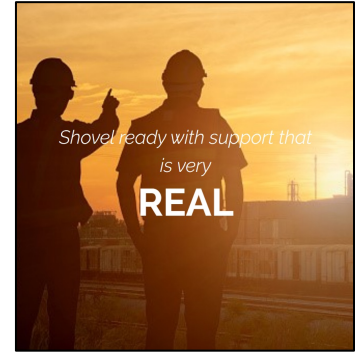
(1) Equivalent to removing 44% of passenger vehicles from New York City streets

(2) Source: NYISO (<https://www.nyiso.com/reports-information>)

(3) Source: PA Consulting

Why did New York State Select CHPE for its Tier 4 Program?

- ✓ Fully permitted – allows the project to begin reducing harmful emissions and pollutants as soon as 2025
- ✓ Large positive impacts on public health
- ✓ Significant numbers of jobs for local communities and union labor organizations
- ✓ Buried infrastructure respecting communities and protecting against storm related power outages
- ✓ Renewable hydroelectric power to replace harmful fossil fuel burning while running 24 hours a day / 7 days a week
- ✓ Payments of \$1.7 billion in taxes to communities and school districts along the route during the first 30 years of operations, including NYC



Environmental & Social Justice

By injecting firm hydropower directly into NYC, CHPE will provide a clean energy alternative to in-city fossil fuel burning power plants, most of which are located in Environmental Justice Areas. Once operational, CHPE will substantially reduce localized air pollutants. With the recent closure of Indian Point, natural gas (with oil as a back-up fuel) is providing as much as 90% of the electricity production downstate.⁽¹⁾

- By injecting 1,250 MW of continuous renewable power into Zone J, CHPE is estimated to decrease emissions of harmful pollutants from fossil-fueled power plants in NY by nearly 20% in 2026, including 498 tons of nitrogen oxides (“NOx”)
 - To put this in perspective, 498 tons of NOx reductions (212-ton reduction specifically within Zone J) would be the equivalent of **removing 15 of NYC’s 16 peaker plants** from service
 - In addition, CHPE will **reduce carbon emissions by 3.9 million metric tons** per year, or the equivalent of **removing 44% of cars from NYC streets**

Only NY State energy regulators can actually CLOSE peaker plants. However, without the addition of CHPE in the energy mix, they will not have the ability to do so.

Community Impact

- TDI works closely with communities to ensure a positive design that respects neighborhoods.
- TDI is committed to local hiring whenever possible and will have a dedicated outreach employee to ensure access to project jobs.
- The project has created the Green Economy Fund, a \$40M jobs training fund
- \$117M Environmental Trust for in-water projects and research.
- \$9M Community Investment Fund (recently announced investment in Variety Boys and Girls Club of Queens STEM lab)



Sources: PA Consulting – Analysis of Economic, Environmental, Resiliency, and Reliability Benefits to the State of New York, May 2021

(1) Source: Preliminary Comments of the City of New York on the NYSDERDA White Paper, July 24, 2020, p. 5

Jobs and Economic Opportunity

The GEF (Green Economy Fund) is a \$40 million fund for jobs training in frontline communities AND local hiring commitments.

- Will support residents living in disadvantaged and frontline communities by creating access to good paying jobs with organized labor
- Developed in close consultation with local workforce development experts, labor unions, housing authorities, community-based organizations, business groups, environmental NGOs, and academics
- Will serve the needs of communities located along the entire project route
- Will focus on funding proposals from established green jobs training programs and be accessible to residents living in disadvantaged communities, as well as workers transitioning from the fossil fuel industry

Local Hiring

The project is establishing several steps to ensure community outreach and awareness of opportunities.

- Hiring of a dedicated Workforce Development Manager tasked with outreach to frontline communities in NYC and along the route to ensure notification of available jobs
- Work with Community Boards, Chambers of Commerce, and other community organizations to establish a communications plan to ensure notification of available jobs
- Company and labor unions will conduct outreach in communities along the route to discuss possible work opportunities, as well as barriers to work in the community
- Workforce Development Manager to also be responsible for outreach on secondary jobs opportunities such as trucking and food service -- these secondary jobs will be sourced from the communities hosting construction

Proven Technology

HVDC Transmission Cables

- High voltage direct current (HVDC) technology is a safe, reliable, time-tested technology used worldwide for nearly 80 years -- ideal for transporting electricity over long distances with minimal losses
- Two, five-inch diameter cables are buried / submerged along the route
- No environmental exposure / shock / magnetic field issues (cables are solid-state with no insulating liquids)



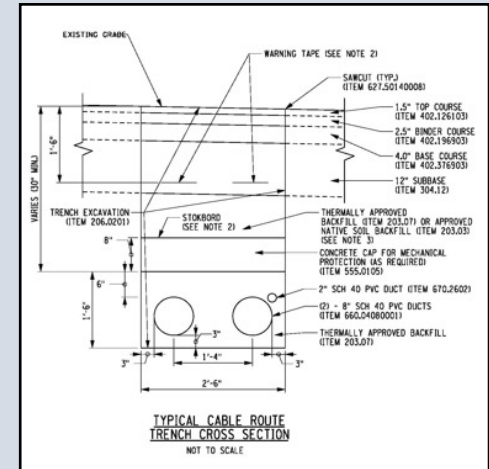
VSC Converter Station

- Utilizes Voltage Source Converter (VSC) technology to convert power from AC to DC to AC
- Provides reactive power (voltage support) that stabilizes the electric grid and provides black start capability for New York City's electric system
- Converter building is approximately 168ft x 133ft x 60ft (height)

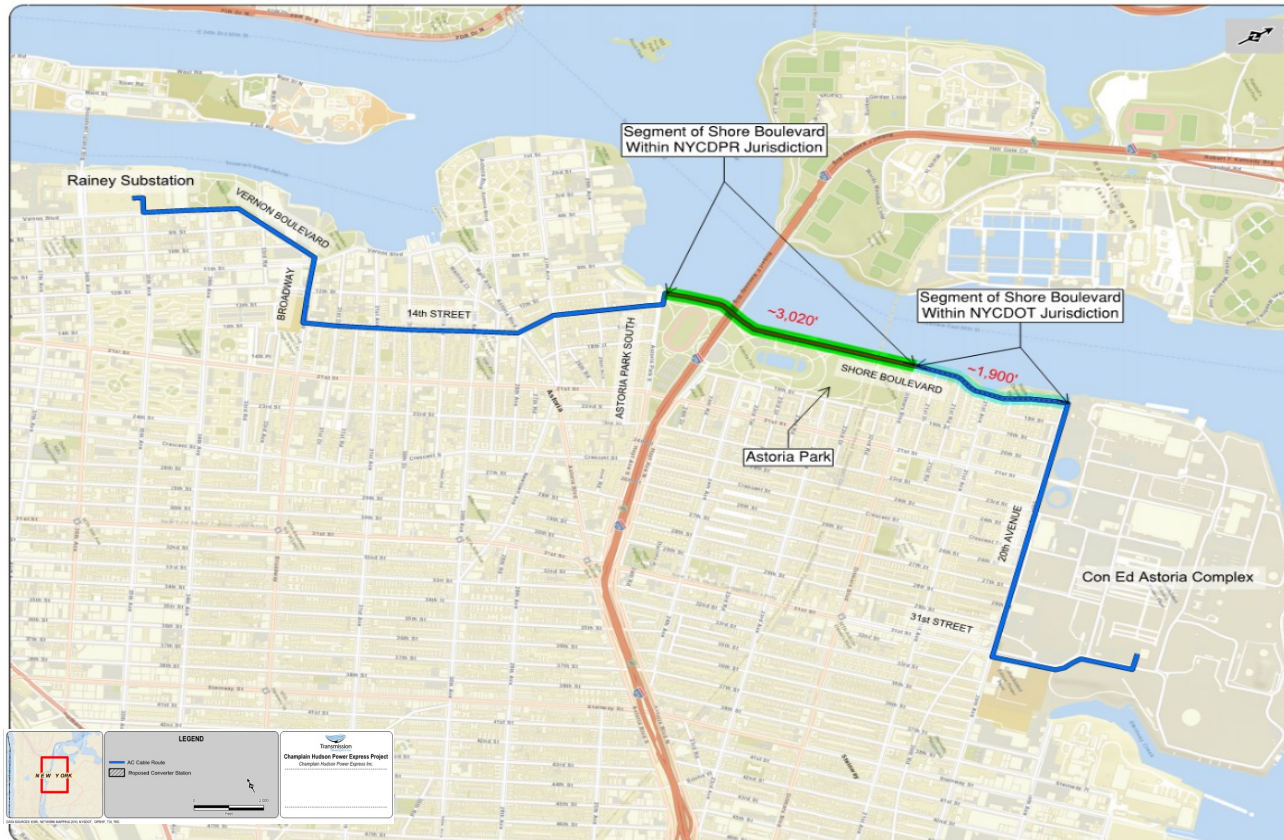


Installation Overview

- Cables buried ~5 feet under the ground within conduits with protections installed to prevent damage and inadvertent intrusion
- Installation closely coordinated with right-of-way owners including, NYSOGS, NYSDOT, municipalities, NYCDOT, and NYC Parks
- Installation impacts deemed minimal by State and Federal Agencies



Astoria-Rainey Cable Route

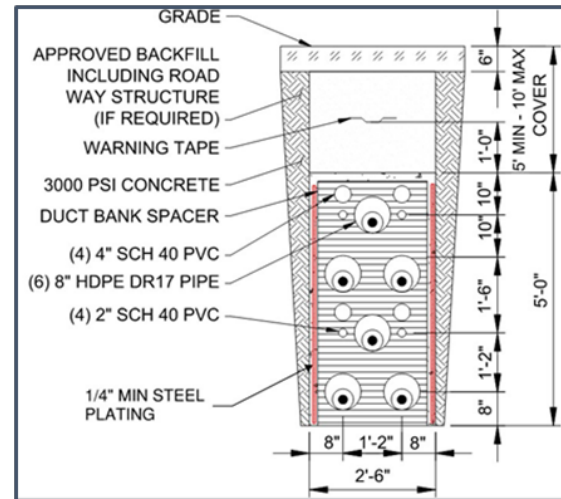


Street Name	Approximate Length	
	Feet	Miles
20th Avenue	3,391	0.64
Shore Boulevard	4,950	0.94
Astoria Park South	149	0.03
14th Street	4,126	0.78
Broadway	848	0.16
Vernon Boulevard	2,177	0.41
35th Avenue	372	0.07
Total Length	16,013	3.03

Astoria Construction Overview

- Construction activities in roads will be similar to NYCDEP or other utility-type installations
- Construction will begin in Summer 2023 and be completed by Spring 2025
- Construction will be implemented on a discrete segment basis over the three-mile route with a timeline for completion of each segment ranging from 3-4 months
- Affected street lanes and potential segment closings will be coordinated with the community and approved by NYCDOT
- Construction trench is plated during non-working hours
- During segment construction CHPE will work with the community on a rolling basis to mitigate street parking concerns
- CHPE will work closely with the stakeholders within Astoria over the next year to proactively mitigate any concerns, problem solve, and establish a successful construction plan

Construction Sequence



Mitigating Construction Impacts

CHPE will work with NYCDOT and relevant community stakeholders to minimize impacts during the construction process through implementing block-by-block specific design and construction plans.

Focus Areas

Foot Traffic

- All work within curb line (*not on sidewalks*)
- Crosswalks to be bridged over where possible / as needed
- Will adhere to ADA requirements
- Materials will be primarily stored out of the sidewalk and road ROW

Street Parking

- Impact minimized to the greatest extent possible following segment/block-by-block construction progress
- Will plate over trench during off-hours to maintain access to parking spaces where possible and needed

Busy Bus Stops

- Will work closely with NYCT and bus schedules
- Will create temporary measures as need to maintain bus routes

Bike Lanes

- Will follow NYC guidance and requirements for temporary bike lanes during construction
- Will plan on keeping lane open at all times
- Detours will be created as needed

Citi Bike Locations

- Citi Bike locations will be protected, via using concrete barriers
- Will be relocated if needed, around construction progress

A wide-angle photograph of the New York City skyline as seen from across a body of water, likely the Hudson River. The skyline is dense with various skyscrapers, including the Freedom Tower on the left. The water in the foreground is dark blue with shimmering reflections of the sun and the buildings. A few small sailboats are visible on the water.

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