

Canada/U.S. Transboundary Aquatic Electric Transmission Line Impact Assessment

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Abstract

The Champlain Hudson Power Express (CHPE) transmission line proposes to bring renewable power from Canada to New York City via a primarily underwater and underground route. The project highlights international and U.S. coordination and interagency consultation, parallel federal and state compliance processes, and complex impact assessment. The project initiated federal and state permitting processes with the U.S. Department of Energy (DOE), and the New York State Public Service Commission (NYSPSC). Challenges included translating the interdependency of federal and state permitting to the Environmental Impact Statement (EIS) process; determining appropriate geographic and technical scopes based on DOE's limited regulatory authority; and addressing relevant issues such as endangered species, climate change, and mitigation within federal and state regulatory frameworks.

Introduction

The purpose of this paper is to provide an overview of the impact assessment process for the CHPE Project, an interjurisdictional project that would cross international and local boundaries requiring the approval of multiple federal and state agencies with differing geographic and subject matter jurisdictions, goals, and mandates.

Project Background

The CHPE Project is a 541-kilometer, 1,000 megawatt, high-voltage direct current (HVDC) transmission line that would provide power from the Canada/U.S. border to the New York City metropolitan area. In 2010, Champlain Hudson Power Express Incorporated (the Applicant), applied to the DOE for a Presidential permit to authorize construction, operation, maintenance, and connection of the U.S. portion of a transmission line that would cross the international border. The transmission line would traverse 162 kilometers through Lake Champlain; cross overland for 203 kilometers to the Hudson River via railroad and roadway rights-of-way (ROWs); traverse 171 kilometers through the Hudson, Harlem, and East rivers to Astoria, Queens, in New York City; and finally cross overland for 5 kilometers in Queens to a substation interconnection (Figure 1). DOE determined the issuance of a Presidential permit would constitute

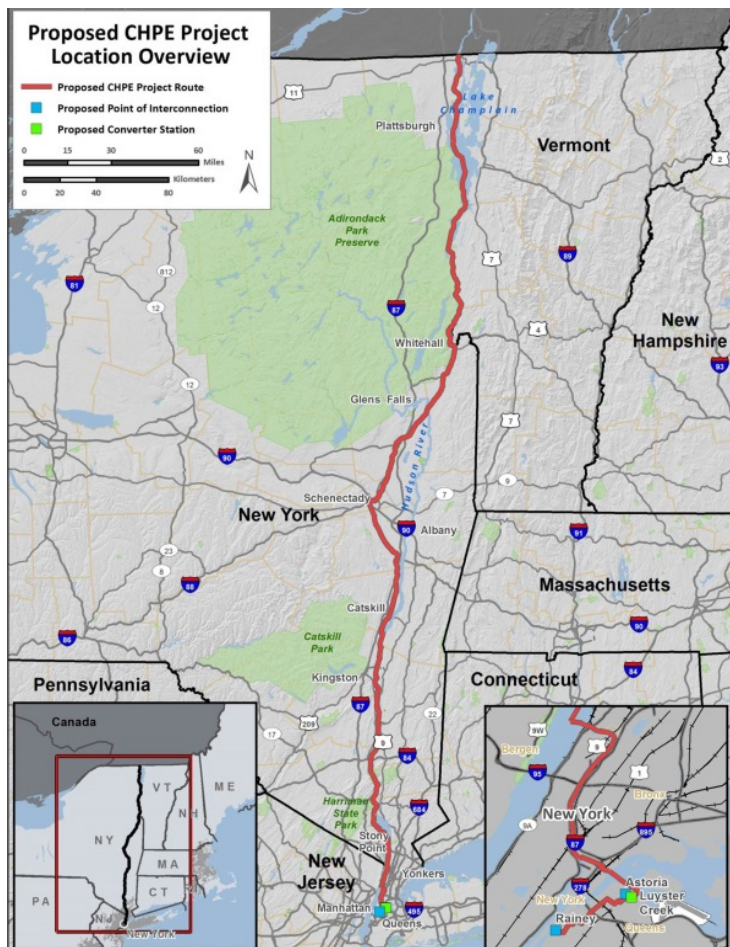


Figure 1. CHPE Transmission Line Project Route

a major federal action and an EIS was the appropriate level of impact assessment under the U.S. National Environmental Policy Act of 1969 (NEPA). An EIS is the most detailed of three distinct levels of impact assessment prepared under NEPA. All NEPA documents are prepared by (or under the guidance of) a U.S. federal government agency.

Canadian Review

The source of electric power supplied to the CHPE Project is expected to be from a generating station interconnected to the Hydro-Québec TransÉnergie electric transmission system. The electricity would be transmitted through a new HVDC converter station at Hydro-Québec TransÉnergie's Hertel Substation, south of Montréal, and carried by a new transmission line to the CHPE Project at the Canada/U.S. border (collectively referred to as the Hertel-New York Interconnection project).

Although development of the CHPE Project would require the associated construction of a new HVDC converter station and transmission line in Québec, NEPA does not require analysis of environmental impacts that occur outside of the United States when a foreign nation is participating with the United States or is otherwise involved in the action. This approach is consistent with Executive Order 12114, *Environmental Effects Abroad of Major Federal Actions*, which requires federal agencies to prepare analyses of potentially significant impacts from federal actions in certain defined circumstances and exempts agencies from preparing analyses in others. In the case of the Hertel-New York Interconnection project, the Québec Provincial Government and Canadian Government, through the National Energy Board, are responsible for conducting an environmental review for impacts in Canada, as applicable, as part of their authorization processes associated with the construction of facilities in Canada.

U.S. Federal/New York State Review

The CHPE Project was required to go through simultaneous U.S. federal and state permitting and review processes for agencies with different jurisdictional responsibilities. Both processes began in 2010 when the Applicant submitted a Presidential permit application to the DOE for the international border crossing, and a siting application under Article VII of the New York State Public Service Law to the NYSPPSC for siting and construction of a major utility transmission facility. Although DOE only had jurisdiction over the CHPE Project's crossing of the international border, the EIS addressed potential impacts of the whole project. New York State has primary authority over the siting of transmission lines within the state, and through its Article VII environmental review and permitting process, the state helped refine the CHPE Project route and imposed other project conditions and measures to reduce impacts that were ultimately analyzed in the federal EIS.

In 2011, the federal EIS process was put on hold while the New York State process continued. During the state process, meetings and negotiations among 30 active stakeholders occurred to provide information and address route concerns, culminating in a "Joint Proposal" in 2012. This Joint Proposal, which included routing changes made to address stakeholder concerns, informed and became the basis for the Proposed Action analyzed in the EIS. The state Article VII Certificate was issued in early 2013, while the federal Final EIS, Record of Decision, and the Presidential permit were issued in mid to late 2014. The project is currently going through final review and permitting. Construction is expected to begin later in 2017 and operation in 2020 (Powers 2016).

Lessons Learned: Issues, Challenges, and Solutions

Several issues arose during preparation of the CHPE Project EIS that illustrate the complexity of an interjurisdictional impact assessment. Some aspects of the impact assessment that were affected by the involvement of multiple jurisdictions included the following:

- Development of alternatives within project scope
- Agency consultation for threatened and endangered species
- Climate change.

Alternatives Analysis. The action DOE analyzed in the EIS was the issuance of a Presidential permit that would authorize the CHPE Project's crossing of the Canada/U.S. border. However, analysis of the impacts of constructing and operating the transmission line was required to facilitate the decisionmaking process for the Presidential permit. This action presented challenges in identifying and analyzing project alternatives, and determining which alternatives were reasonable to be carried forth for full analysis in the EIS.

Project Alternatives. A range of reasonable alternatives for the CHPE Project were analyzed. Ultimately, only the Proposed Action and the No Action Alternative were carried forward for detailed impact analysis in the EIS. DOE determined that given the issuance of the state Article VII Certificate, other alternatives were no longer feasible because DOE did not have jurisdiction over siting of the project, which was determined through the state process.

Out of Scope Alternatives. Some stakeholders requested analysis of other alternatives that were determined to be outside the scope of the CHPE Project. Some of these alternatives included the following:

- Restarting mothballed coal-powered power plants in New York State.
- Development of alternative energy production, including wind farms and solar panels.
- Addressing impacts in Canada, including those from the Romaine hydroelectric complex and Hertel-New York Interconnection project.

DOE determined that the federal action evaluated in the EIS was not the construction of electric power generation facilities. As such, continued operation or development of other power sources or transmission lines were not the subject of the application for a Presidential permit and, therefore, were outside of the scope of the CHPE Project EIS. Additionally, based on Executive Order 12114, impacts in Canada were also determined to be outside the scope of the EIS. The Romaine hydroelectric complex is independent of and not connected to the CHPE Project, and would not be affected by the federal action of issuing a Presidential permit for the project. Although the Romaine hydroelectric complex is a possible source of power for the CHPE Project, Hydro-Québec has existing hydroelectric facilities with sufficient capacity to supply power to the CHPE Project.

Agency Consultation. Initial agency consultation efforts for the project were delayed by data requests from federal agencies that were not involved in the state process. Because federal agencies did not participate in the state process, they were also not involved in development of mitigation measures and establishment of exclusion zones for the CHPE Project, and consultation with these agencies did not get substantially underway until after the Draft EIS was released.

Threatened and Endangered Species Consultation. Listed and candidate species in the project area included the shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), Karner blue butterfly (*Lycaeides melissa samuelis*), Indiana bat (*Myotis sodalis*), and Northern long-eared bat (*Myotis septentrionalis*). Federal agencies, such as the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS), were concerned with impacts on these species from construction through aquatic and terrestrial habitats, including aquatic transmission line installation using water jetting, and use of concrete mats where the transmission line could not be buried.

Consultation with NMFS on aquatic species progressed slowly due to their request for additional information on potential impacts on aquatic species. Evaluation of the impacts from water jetting and installation of concrete mats demonstrated that increases in turbidity would be short-term during construction and pre-existing conditions would likely be re-established over time. To further minimize impacts on aquatic species, NMFS requested modifications to construction windows developed during the state Article VII process, which limit the time periods when aquatic installation activities can occur. The Applicant proposed mitigation measures to minimize turbidity and would conduct pre- and post-installation surveys to verify a return to original conditions.

Consultation with USFWS on terrestrial species was most concerned with the loss of potential fringe habitat for the Karner blue butterfly and Indiana bat. The agency originally requested a “likely to adversely affect” finding under the Endangered Species Act due to proposed vegetation maintenance (i.e., mowing) in the transmission line ROW. However, no existing wild blue lupine habitat, which the Karner blue butterfly uses for nectar, would be impacted because the Applicant would install the transmission line using horizontal directional drilling under existing lupine habitat. Vegetation maintenance could actually stimulate growth of lupine in other areas. Collaborative review of the data resulted in agreement that a “may affect, but not likely to adversely affect” finding was more appropriate. Analysis determined that while loss of Indiana bat roosting trees could occur, impacts would only occur in fringe habitat along already established road and railroad ROWs.

Climate Change. The Applicant expects most of the electricity transported through the CHPE Project would be from renewable resources, primarily hydropower. The CHPE Project is expected to introduce 7.65 terawatt hours per year of low-carbon renewable energy into New York’s power markets (CHPEI 2012). It is anticipated that the electricity delivered by the CHPE Project would be of lower cost. Therefore, the Applicant has stated that the power would be purchased first and displace natural gas and oil-fueled sources of electricity supplying the region. This would result in the potential to reduce regional greenhouse gas emissions. NYSDPS predicted the CHPE Project would reduce annual emissions of carbon dioxide by approximately 1.5 million tons, sulfur dioxide by 751 tons, and nitrogen oxides by 641 tons (NYSDPS 2012).

Conclusion

The experience and lessons learned from the CHPE Project EIS can be applied to impact assessments for transmission lines, and other long-distance linear infrastructure projects that include multiple jurisdictions with varied statutory requirements. A common theme among the lessons learned is to engage all parties early and often. Early coordination should include alignment of all federal, state, and local processes to allow these processes to proceed in conjunction or consecutively to reduce the total required completion time. It is important to identify all agencies that have jurisdiction over resources in the project area and their responsibilities, and offer them a role in the project. The framework for the impact assessment should be clearly identified early to allow all reviewing parties an opportunity to provide comments.

Acknowledgements

The authors would like to acknowledge Brian Mills and Julie Smith of DOE for serving as co-authors for the CHPE Project EIS, and the Applicant for this project, Transmission Developers, Inc., which led to the preparation of this paper.

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