Organizational Expertise Exhibit

Cascade Renewable Transmission

Wasco, Hood River, and Multnomah Counties, Oregon

November 2025

Prepared for
Cascade Renewable Transmission, LLC

Submitted to
Oregon Energy Facility Siting Council

Contents

Figures

Tables

Attachments

Acronyms and Abbreviations

AC	alternating current
BPA	Bonneville Power Administration
BTB	back-to-back
CAISO	California Independent System Operator
CalPERS	California Public Employees' Retirement System
CalSTRS	California State Teachers Retirement System
CRT	Cascade Renewable Transmission (Applicant)
DC	direct current
DSCR	debt service coverage ratio
E&C	engineering and construction
Ecology	Washington State Department of Ecology
EPC	Engineering-Procurement-Construction Agreement
ESCP	Erosion and Sediment Control Plan
ESG	environmental social governance
FERC	Federal Energy Regulatory Commission
HDD	horizontal directional drilling
HDR	HDR Engineering, Inc.
HTP	Hudson Transmission Partners, LLC
HVAC	high-voltage alternating current
HVDC	high-voltage direct current
IGBT	insulated-gate bipolar transistor
IOG	Interconnector Owner's Group
ISO	International Organization for Standardization
kV	kilovolt
LCC	line commutated converter
LIPA	Long Island Power Authority
LSRP	licensed site remediation professional
MI	mass impregnated
Mvars	reactive power
MW	megawatt
NEECH	NextEra Energy Capital Holdings, Inc
NEET	NextEra Energy Transmission, LLC
NERC	North American Electric Reliability Corporation
NJDEP	New Jersey Department of Environmental Protection
NJ SHPO	New Jersey State Historic Preservation Office
NPCC	Northeast Power Coordinating Council
NPDES	National Pollutant Discharge Elimination System
NRTS	Neptune Regional Transmission System, LLC
NYISO	New York Independent System Operator
NYPA	New York Power Authority
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality

ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OR EFSC	Oregon Energy Facility Siting Council
PGE	Portland General Electric
PJM	PJM Interconnection
POD	point of delivery
POW	point of withdrawal
Prysmian	Prysmian Cables and Systems
PSE&G	Public Service Electric & Gas Company
RFP	request for proposals
ROW	right-of-way
RRO	regional reliability organization
RTO	regional transmission organizations
SCFF	self-contained fluid filled
SERA	Borough of Sayreville Economic and Redevelopment Agency
TBC	Trans Bay Cable
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
VSC	voltage source converter
WSDOT	Washington State Department of Transportation
XLPE	extruded cross linked polyethylene

1 Introduction

Cascade Renewable Transmission, LLC (Applicant) proposes to construct and operate a high-voltage direct current (HVDC) (400-kilovolt [kV]), 1,100-megawatt (MW) electric transmission facility (Facility). The Facility would interconnect the existing Bonneville Power Administration (BPA) Big Eddy 500-kV alternating current (AC) substation, located near The Dalles, Wasco County, Oregon (Eastern Interconnection), and the existing Portland General Electric (PGE) Harborton 230-kV AC substation located in Portland, Multnomah County, Oregon (Western Interconnection).

This exhibit provides contact information for the Applicant and other entities assisting the Applicant in the permitting process, evidence to support a demonstration of compliance with the organizational expertise standards, and information about permits that Cascade Renewable Transmission, LLC (CRT, the Applicant) requires for constructing and operating the proposed Facility, as required by the Oregon Administrative Rules (OAR) 345-022-0010(1) through (5).

345-022-0010 Organizational Expertise

(1) To issue a site certificate, the Council must find that the applicant has the organizational expertise to construct, operate and retire the proposed facility in compliance with Council standards and conditions of the site certificate. To conclude that the applicant has this expertise, the Council must find that the applicant has demonstrated the ability to design, construct and operate the proposed facility in compliance with site certificate conditions and in a manner that protects public health and safety and has demonstrated the ability to restore the site to a useful, non-hazardous condition. The Council may consider the applicant's experience, the applicant's access to technical expertise and the applicant's past performance in constructing, operating and retiring other facilities, including, but not limited to, the number and severity of regulatory citations issued to the applicant.

(2) The Council may base its findings under section (1) on a rebuttable presumption that an applicant has organizational, managerial and technical expertise, if the applicant has an ISO 9000 or ISO 14000 certified program and proposes to design, construct and operate the facility according to that program.

(3) If the applicant does not itself obtain a state or local government permit or approval for which the Council would ordinarily determine compliance but instead relies on a permit or approval issued to a third party, the Council, to issue a site certificate, must find that the third party has, or has a reasonable likelihood of obtaining, the necessary permit or approval, and that the applicant has, or has a reasonable likelihood of entering into, a contractual or other arrangement with the third party for access to the resource or service secured by that permit or approval.

(4) If the applicant relies on a permit or approval issued to a third party and the third party does not have the necessary permit or approval at the time the Council issues the site certificate, the Council may issue the site certificate subject to the condition that the certificate holder shall not commence construction or operation as appropriate until the third party has obtained the necessary permit or approval and the applicant has a contract or other arrangement for access to the resource or service secured by that permit or approval.

2 Applicant Contact Information (OAR 345-022-0010(5)(a)(A))

(5) To assist the Council in determining whether the standard outlined in (1) through (4) has been met, the Applicant must submit:

(a) Information about the applicant and participating persons, including:

(A) The name and address of the applicant including all co-owners of the proposed facility, the name, mailing address, email address and telephone number of the contact person for the application, and if there is a contact person other than the applicant, the name, title, mailing address, email address and telephone number of that person;

RESPONSE

The Applicant is Cascade Renewable Transmission, LLC (CRT), an entity formed in the state of New York on May 27, 2020, to develop the Cascade Renewable Transmission Project. CRT is wholly owned by CRT Holdco, LLC. In accordance with CRT Holdco's LLC Agreement, CRT's affiliates will provide support and resources in support of CRT and these supporting affiliates are comprised of subsidiaries of PowerBridge, LLC (PowerBridge); Sun2o Partners, LLC (Sun2o); and NextEra Energy Transmission, LLC (NEET).

Name and mailing address of Applicant:

Christopher Hocker, Senior Vice President
Cascade Renewable Transmission, LLC
501 Kings Highway East, Suite 300
Fairfield, CT 06825
Chocker@PowerBridge.us
(203) 416-5590

PowerBridge, LLC of Fairfield, Connecticut is a leading developer, owner, and operator of independent transmission projects, with a unique focus on underwater HVDC applications.

NextEra Energy Transmission, LLC is the leading competitive transmission company in North America, which owns, develops, finances, constructs, operates and maintains transmission assets across the continent.

Sun2o is primarily a solar developer based in New York City that recognized the need for additional east-west transmission in the Pacific Northwest region and came to PowerBridge for a solution.

Applicant contact persons with mailing address, email address, and telephone number:

Christopher Hocker
Senior Vice President
PowerBridge, LLC
501 Kings Highway East, Suite 300
Fairfield, CT 06825
203-416-5590
Chocker@PowerBridge.us

Contact persons other than Applicant:

Suzy Cavanagh
HDR Engineering, Inc.
612 E. Parkcenter Boulevard, Suite 100
Boise, ID, 83706
(208) 387-7141
suzy.cavanagh@hdrinc.com

Sarah Stauffer Curtiss
Stoel Rives LLP
760 SW Ninth Avenue, Suite 3000
Portland, OR 97205
(503) 294-9829
sarah.curtiss@stoel.com

3 Other Participants (OAR 345-022-0010(5)(a)(B))

(B) The contact name, mailing address, email address and telephone number of all participating persons, other than individuals, including but not limited to any parent corporation of the applicant, persons upon whom the applicant will rely for third-party permits or approvals related to the facility, and, if known, other persons upon whom the applicant will rely in meeting any facility standard adopted by the Council;

RESPONSE

The Applicant, CRT, is an entity formed in May 2020 to develop the Project. CRT has no employees and will rely on the organizational, managerial, financial, and technical resources of its affiliated companies to meet Oregon Energy Facility Siting Council's (OR EFSC) standards.

Cascade Renewable Transmission, LLC
501 Kings Highway East, Suite 300
Fairfield, CT 06825
(203) 416-5590
Chocker@PowerBridge.us

PowerBridge, LLC
501 Kings Highway East, Suite 300
Fairfield, CT 06825
(203) 416-5590
Chocker@PowerBridge.us

NextEra Energy Transmission, LLC
700 Universe Blvd, UST/JB
Juno Beach, FL 33408

Sun2o Partners, LLC
15 East Putnam Avenue, Suite 221
Greenwich, CT 06830
(203) 292-1883 x102

PowerBridge of Fairfield, Connecticut, is a leading developer, owner, and operator of independent transmission projects, with a unique focus on underwater HVDC applications.

NEET is the leading competitive transmission company in North America, which owns, develops, finances, constructs, operates, and maintains transmission assets across the continent.

Sun2o is primarily a solar developer based in New York City that recognized the need for additional east-west transmission in the Pacific Northwest region and came to PowerBridge for a solution.

No other participants are anticipated, with the exception of the firm(s) selected to design and build the Project, who may obtain third-party permits. Applicant anticipates that these third-party permits may include permits for construction materials, transportation of materials to the site, and other building-related permits that are typically obtained immediately prior to construction activities. Applicant anticipates that these permits will meet the facility standards adopted by OR EFSC.

4 Corporation Information (OAR 345-022-0010(5)(a)(C))

(C) If the applicant is a corporation:

(i) The full name, official designation, mailing address, email address and telephone number of the officer responsible for submitting the application;

(ii) The date and place of its incorporation;

(iii) A copy of its articles of incorporation and its authorization for submitting the application; and

(iv) In the case of a corporation not incorporated in Oregon, the name and address of the resident attorney-in-fact in this state and proof of registration to do business in Oregon;

RESPONSE

Applicant is not a corporation. Therefore, this rule is not applicable.

5 Ownership (OAR 345-022-0010(5)(a)(D))

(D) If the applicant is a wholly owned subsidiary of a company, corporation or other business entity, in addition to the information required by paragraph (C), the full name and business address of each of the applicant's full or partial owners;

RESPONSE

Applicant, CRT, is a wholly owned subsidiary of CRT Holdco, LLC. See Section 3 for company names and business addresses of the Applicant's full or partial owners.

6 Association/Joint-Venture Information (OAR 345-022-0010(5)(a)(E))

(E) If the applicant is an association of citizens, a joint venture or a partnership:

(i) The full name, official designation, mailing address, email address and telephone number of the person responsible for submitting the application;

(ii) The name, business address and telephone number of each person participating in the association, joint venture or partnership and the percentage interest held by each;

(iii) Proof of registration to do business in Oregon;

(iv) A copy of its articles of association, joint venture agreement or partnership agreement and a list of its members and their cities of residence; and

(v) If there are no articles of association, joint venture agreement or partnership agreement, the applicant must state that fact over the signature of each member.

RESPONSE

Applicant is not an association of citizens, a joint venture, or partnership. Therefore, this rule is not applicable.

7 Public/Government Entity Information (OAR 345-022-0010(5)(a)(F))

(F) If the applicant is a public or governmental entity:

(i) The full name, official designation, mailing address, email address and telephone number of the person responsible for submitting the application; and

(ii) Written authorization from the entity's governing body to submit an application;

RESPONSE

Applicant is not a public or governmental entity. Therefore, this rule is not applicable.

8 Individual Applicant Information (OAR 345-022-0010(5)(a)(G))

(G) If the applicant is an individual, the individual's mailing address, email address and telephone number;

RESPONSE

Applicant is not an individual. Therefore, this rule is not applicable.

9 Limited Liability Company Information (OAR 345-022-0010(5)(a)(H))

(H) If the applicant is a limited liability company:

(i) The full name, official designation, mailing address, email address and telephone number of the officer responsible for submitting the application;

(ii) The date and place of its formation;

(iii) A copy of its articles of organization and its authorization for submitting the application; and

(iv) In the case of a limited liability company not registered in Oregon, the name and address of the resident attorney-in-fact in this state and proof of registration to do business in Oregon.

RESPONSE

Officer responsible for submitting the application:
Christopher Hocker, Senior Vice President
Cascade Renewable Transmission, LLC
501 Kings Highway East, Suite 300
Fairfield, CT 06825
Chocker@PowerBridge.us
(203) 416-5590

Applicant is a limited liability company formed under the laws of the State of New York on May 27, 2020, and registered to do business in the State of Oregon on May 27, 2022. A copy of the Articles of Organization for Cascade Renewable Transmission, LLC, is provided in Attachment 1. Applicant is registered in Oregon (Attachment 2); therefore, Applicant is not required to identify a resident attorney-in-fact.

10 Applicant's Previous Experience (OAR 345-022-0010(5)(b)(A))

(b) Information about the organizational expertise of the applicant to construct and operate the proposed facility, including:

(A) The applicant's previous experience, if any, in constructing and operating similar facilities.

RESPONSE

The Applicant and its affiliated companies, PowerBridge, LLC (PowerBridge) and NextEra Energy Transmission, LLC (NEET), can demonstrate previous experience in developing, permitting, financing, constructing, owning, and operating high voltage transmission projects, specifically underwater HVDC electric transmission facilities. PowerBridge successfully developed and now owns and operates two 660-MW underwater transmission projects connecting New Jersey and New York: Neptune Regional Transmission System (Neptune), completed in 2007, and Hudson

Transmission (Hudson), completed in 2013. In June 2019, NEET acquired the 400-MW Trans Bay Cable project located in San Francisco, California. TBC as a wholly-owned indirect subsidiary of NEET, and TBC owns, operates and maintains the project. These three projects, which represent more than $2 billion in capital investment, are described in greater detail below.

10.1 The Neptune Project

The Neptune project is a 660-MW (500-kV) HVDC submarine electric transmission system, completed in 2007, that connects power generation resources in the PJM Interconnection (PJM) system to electricity consumers on Long Island. The cable extends from the First Energy Raritan River substation in Sayreville, New Jersey, to the Long Island Power Authority (LIPA) Newbridge Road substation in Levittown, Long Island, a distance of 67 miles (www.neptunerts.com).

Converter stations are located in Sayreville (near River Road) and at Duffy Avenue (community of New Cassel, near Hicksville) on Long Island. Most of the route – 51 miles – is underwater in the Raritan River, New York Harbor, and Atlantic Ocean; 14 miles are buried in the existing right-of-way (ROW) of the Wantagh State Parkway. The Sayreville converter station takes alternating current (AC) power from PJM via 2,500 feet of buried AC cable extending from the Raritan River substation to the converter station at 230 kV and converts it to direct current (DC) power at 500 kV. The DC power is transmitted to the Duffy Avenue converter station, where it is converted to AC at 345 kV and transmitted through approximately 1.7 miles of underground cable to LIPA's Newbridge Road substation.

Neptune's two converter stations, which are virtually identical, were built under the direction of Siemens and employ Siemens "HVDC Classic" line commutated converter (LCC) power conversion technology. The converter stations require no fuel or combustion and produce no air emissions or discharges of pollutants. They meet all local and state codes and standards for noise, visual impacts, public safety, and electro-magnetic fields. The stations are comprised of three main, connected buildings, the tallest of which is about 64 feet high, and AC harmonic filter banks/reactive elements.

The Neptune cables were manufactured by and installed under the direction of Prysmian Cables and Systems (Prysmian). There are three cables: a main high-voltage cable approximately 5 inches in diameter that carries up to 660 MW of electricity at 500 kV; a medium-voltage "return" cable necessary for carrying current in a DC system; and a fiber optic cable for system control and communication. Under water, the three cables are bundled and buried 4 to 6 feet under the river and seabed, except in the federal navigation channel, where it is buried 17 feet below authorized depth. On land, the cables are buried 3 to 4 feet below ground in separate conduits. The Neptune project includes no overhead transmission lines.

Representative photos of the Neptune project are provided in Attachment 3.

10.1.1 History

In May 2004, LIPA chose the Neptune cable as the centerpiece of its long-range plan to provide approximately 1,000 MW of new power sources to Long Island by 2010. Because the cable is a transmission connection to the PJM system, LIPA was able to increase the capacity and energy available to Long Island in a more flexible and reliable manner than attempting to site new

generating facilities on heavily populated Long Island, thereby saving ratepayers money, and making available more diverse sources of energy.

Successful completion of Neptune required permits and approvals from multiple agencies and jurisdictions (some overlapping), including the U.S. Army Corps of Engineers (USACE), New York State Public Service Commission, and the New Jersey Department of Environmental Protection (NJDEP), as well as local approvals. Neptune also required Federal Energy Regulatory Commission (FERC) approval as a "merchant" transmission line, and system studies and authorizations by the affected regional transmission organizations (RTOs), New York Independent System Operator (NYISO) and PJM, as well as the interconnecting utilities.

10.1.2 PowerBridge's Role in the Neptune Project

A previous company was responsible for the early stages of development of Neptune. In 2004, it turned to principals, now with PowerBridge, to obtain late-stage development financing, finalize key contracts with LIPA and with a Siemens/Prysmian consortium, and obtain remaining government approvals. Starting in 2005, the PowerBridge team raised more than $650 million in debt and equity financing and oversaw the 2-year construction and cable installation process. The project was completed ahead of schedule and within budget in June 2007.

PowerBridge has managed the administration and operation of Neptune since completion. Siemens provides day-to-day operation and maintenance of the converter stations under PowerBridge's oversight. Since 2007, Neptune has provided more than 20 percent of the electricity consumed on Long Island and has averaged more than 98 percent availability. Scheduling power transfers is in accordance with LIPA's needs and the rules of PJM and NYISO under Common Operating Instructions developed jointly by PowerBridge, the RTOs, and the interconnecting utilities.

Neptune is a member of PJM and operates in accordance with all applicable requirements of the North American Electric Reliability Corporation (NERC), the Northeast Power Coordinating Council (NPCC), and Reliability First Corporation.

10.1.3 Current Ownership

Major equity partners in Neptune include:

- *The California Public Employees' Retirement System (CalPERS), the retirement fund for California employees;*
- *ASF Robin 2, L.P., a wholly owned subsidiary of ARDIAN, an infrastructure fund with over $156 billion under management and advisement;*
- *An affiliate of Ullico Inc., an insurance and financial services company that focuses on the union labor market.*

10.2 The Hudson Project

Like the Neptune project, the Hudson project is a 660 MW HVDC underwater transmission link between New York and PJM. While the basic technology for Neptune and Hudson is the same, Hudson features a single back-to-back (BTB) AC-DC-AC converter station in Ridgefield, New Jersey. AC power from PJM is transmitted underground at 230 kV from the Public Service Electric &

Gas Company (PSE&G) Bergen substation in Ridgefield for approximately a quarter mile to the converter station, where it is converted to DC power, then back to AC at 345 kV. The power is then transmitted via 3 miles of cable buried underground and 3.5 miles of cable under the Hudson River before making landfall near Pier 92 and under the West Side Highway to West 52nd Street in Manhattan, New York. The cable then proceeds underground to the Con Edison West 49th Street substation (www.hudsonproject.com).

As with Neptune, Siemens designed and built the Hudson converter station, while Prysmian manufactured and installed the underground and underwater cables. The single BTB converter station occupies approximately 8 acres on the former site of a warehouse facility; the station includes a converter and control building, with filter banks on either side of the building for incoming 230kV AC power and outgoing 345kV AC power. The actual AC-DC-AC conversion takes place within the building.

The 345-kV underground cable follows existing public and railroad ROWs to a site in Edgewater, New Jersey, where it enters the Hudson River and proceeds south, primarily in New York waters, to the Manhattan landfall.

Representative photos of the Hudson project are shown in Attachment 4.

10.2.1 History

Following a 2005 request for proposal (RFP), the New York Power Authority (NYPA) ultimately selected the Hudson project in 2006 as a cost-effective means of serving its New York City government customers.

Like Neptune, Hudson was constructed and is operated under the authority of three major permits, including a New York State Article VII Certificate, a Department of the Army Permit, and an NJDEP Waterfront Development Permit. In addition, the converter station was built under the authority of the New Jersey Meadowlands Commission, which has zoning jurisdiction over the site.

Like Neptune, a consortium of Siemens and Prysmian constructed the Hudson project. Construction of the project began in May 2011 and was completed ahead of schedule and on budget, in June 2013. (See Attachment 5 for a report on the Hudson project published in *Transmission & Distribution World* in June 2013.)

Starting in 2013, the Neptune and Hudson projects have been operated and maintained jointly by Siemens under the oversight of PowerBridge employees, with specialized technical expertise available, when needed, from Siemens and Prysmian. The Hudson project is remotely operated from the Neptune facility in Sayreville. However, Hudson can be operated from the Ridgefield location, and both projects can also be operated from the Neptune converter station on Long Island. All contractual performance requirements have been met.

Hudson is a member of PJM and is subject to PJM's control authority. Hudson follows applicable compliance standards of NERC and regional reliability organization, Reliability First Corporation.

In early 2019, principal equity ownership of Hudson was acquired by Argo Infrastructure Partners, LP, an independent fund manager investing on behalf of the California State Teachers Retirement System (CalSTRS) with more than $5 billion under management, and the Dutch pension fund, APG.

10.3 The Trans Bay Cable Project

NEET's wholly-owned indirect subsidiary Trans Bay Cable LLC owns and operates the Trans Bay Cable project (TBC), a 400-MW, 53-mile direct current electrical transmission cable with fiber optic communication cables bundled together and buried in the San Francisco Bay. TBC extends from Pittsburg, California to San Francisco, California and provides up to 40 percent of the electrical power used on a daily basis in San Francisco and the surrounding area. TBC is a federally identified “Critical Asset” in the Northern California electrical grid and is governed by the Federal Energy Regulatory Commission and the California Public Utilities Commission. (www.transbaycable.com).As with Neptune and Hudson, Siemens designed and built the TBC converter stations, while Prysmian manufactured and installed the underground and underwater cables. TBC used Siemens voltage source converter technology, known as “HVDC Plus.”

10.3.1 History

In September 2005, after a lengthy stakeholder process, the California Independent System Operator (CAISO) selected TBC as the best energy transmission solution to provide reliable energy to the City of San Francisco.

TBC was constructed and is operated under the authority of two major permits, including a California Public Utility Commission Certificate and a Department of the Army Permit. Construction was completed in November of 2010.

NEET acquired TBC in June 2019. TBC is responsible for the day-to-day operation, maintenance, and permit compliance.

10.4 Reliability Requirements

Both the Neptune and Hudson facilities are system-to-system (i.e., not connected to a specific generation source) and are part of the bulk electric system in the northeastern United States, interconnecting the RTOs, PJM and NYISO. As such, both Neptune and Hudson must comply with NERC’s reliability standards of a transmission owner and shared responsibilities of a transmission operator.

PowerBridge, LLC, as the asset manager, oversees the reliability compliance of both HVDC interconnections in New York and New Jersey. NERC, through its regional reliability organizations (RROs), has periodically audited both HVDC interconnections for compliance with the operations/planning and cyber security related NERC standards. Audits range from focused assessments of one or two NERC standards to comprehensive audits of most standards applicable to a transmission owner. To date, all audits have resulted in “no findings,” meaning that the facilities met NERC standards in all respects. Several audits included positive observations. The audits also extend to the operating agreement between the two HVDC interconnections and the system operator, PJM. The PJM audits, known as the TO/TOP Matrix, focus on NERC standards for a transmission operator that both facilities share with PJM. All audits have resulted in no findings. Again, several audits included positive observations.

TBC is also a system-to-system facility and is subject to NERC and CAISO reliability standards. While under NEET ownership TBC audits have resulted in no findings.

10.5 Analysis of Similarities and Differences

10.5.1 Interconnector Electric System Operability

An HVDC interconnector within a bulk power electric transmission system is referenced in NERC terms as a DC circuit. There are two points in a DC circuit where the interconnector adjoins the existing AC system. The first is the point of withdrawal (POW) and the second is the point of delivery (POD). This describes the proposed Facility as well as the Neptune and Hudson interconnectors.

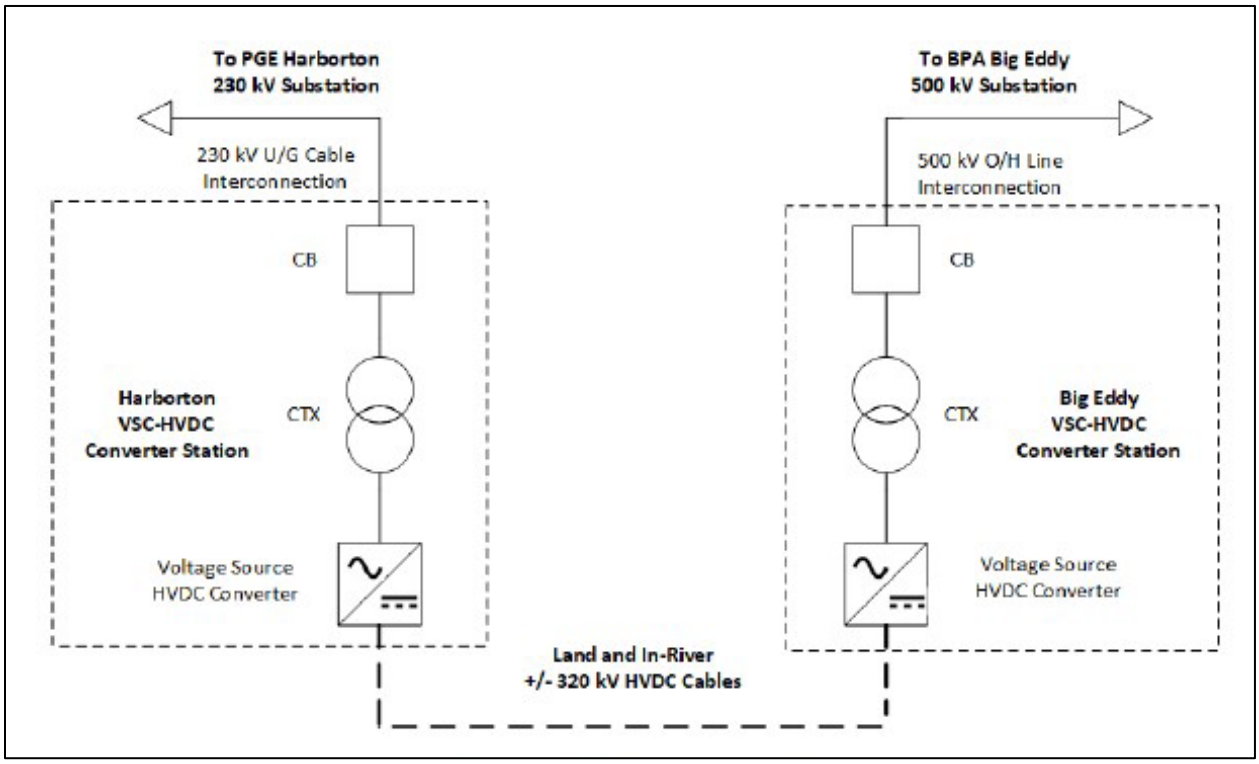
HVDC interconnectors are controllable; a system balancing authority can dispatch power transfer levels to the interconnector operator, and the HVDC operator then sets the power transfer levels accordingly. HVDC interconnector power transfers over a defined power range are designed to work within a range of AC electric system conditions.

The proposed Facility has a system feature that is similar to TBC and is a performance improvement compared to the Neptune and Hudson interconnectors. Reactive power (Mvars) will be dispatchable independent of the scheduled real power transfers, thus providing independent capability for support of the regional electric system.

10.5.2 Power Transmission

A standard DC circuit has three high voltage electrical circuits, as illustrated in Figure 1.

Figure 1. Project Diagram



Abbreviations: PGE=Portland General Electric; BPA=Bonneville Power Administration; kV=kilovolt; U/G=underground ; CB=circuit breakers ; CTX=converter transformers ; VSC=voltage source converter ; HVDC=high-voltage direct current

First, a high-voltage alternating current (HVAC) circuit connects the converter station at the POW to the withdrawal AC system. Then, between the two converter stations is the HVDC circuit. The converter station at the POD is connected to the delivery AC system by an HVAC circuit. The HVAC electrical circuits can be one of several standard system voltages.

Table 1 compares the proposed Facility transmission cables with those used in the Neptune, Hudson, and TBC projects.

Table 1. Comparison of CRT, Neptune, and Hudson Project Transmission Cables

Project	Submarine DC	Underground DC	Submarine AC	Underground AC	Overhead DC	Overhead AC
CRT	82.5 miles +/- 320kV	15.8 miles +/- 320kV	None	3.1 miles 230kV	None	500 feet 500kV
Neptune	51 miles +500kV	14 miles +500kV	None	1.7 miles 345kV 0.25 miles 230kV	None	None
Hudson	None	None	3.5 miles 345kV	3.25 miles 345kV 0.25 miles 230kV	None	None
TBC	53 miles +/- 200kV	>1 mile +/- 200kV	None	1.0 mile 230kV 0.3 mile 115kV	None	None

Abbreviations: CRT=Cascade Renewable Transmission Project; DC=direct current; AC=alternating current; kV=kilovolt

In addition, the cable systems for all four projects include fiber optic cables for internal communication and control purposes. For the underwater installation, the fiber optic cable is bundled with the transmission cables. For land-based installation, the cables are separated within a trench.

10.5.3 Insulating Technology

10.5.3.1 Underground Cables

The Neptune, Hudson, and TBC facilities use extruded cross-linked polyethylene (XLPE) for their underground cable insulation, as will the proposed Facility underground and submarine cables.

10.5.3.2 Submarine Cables

The Neptune HVDC submarine cable (+500kV) employs mass impregnated (MI) paper tape insulation. The center conductor is surrounded by multiple layers of paper tape, which is soaked in high viscosity insulating fluid, then surrounded by metal and plastic sheathing. The fluid is not free-flowing and does not leak in the event of a rupture. The proposed Facility HVDC submarine cable would instead use XLPE insulation for underground high voltage cables. The proposed Facility's voltage is expected to be 320kV (alternatively, 400kV depending on cost and availability of materials at the time of manufacture).

The submarine cables for the Hudson project, at 345kV AC, initially used self-contained fluid filled (SCFF) insulating technology when installed in 2013. As described below in Section 8, the SCFF cables were replaced with XLPE cables in 2017.

The submarine cables for TBC are XLPE cables.

10.5.4 Power Conversion

Functionally, an HVDC power transmission system converts power from AC to DC at the POW converter station, and converts DC back to AC at the second, substantially identical converter station located near the POD. The POW HVDC converter station is a rectifier and the POD HVDC converter station is an inverter. The converters can reverse their functions and transmit power in the opposite direction, if needed, provided that the proper system studies have been completed and the Interconnector has been approved for such transfer. This can be seen schematically in Figure 1.

HVDC transmission uses solid-state power electronics in one of two forms. The first is the light triggered thyristor that is used in an LCC. The second is the insulated-gate bipolar transistor (IGBT) used in a voltage source converter (VSC). Each accomplishes fundamentally the same thing, AC to DC conversion followed by DC to AC re-conversion in order to get the energy to the POD. The proposed Facility would use VSC converter technology. One important difference is that VSC requires a much smaller station footprint (approximately 5 acres) due to a reduced need for major equipment installation. Another important difference, already noted, is that the VSC converter, due to the IGBT technology allows for independent real power (MW) and reactive power (Mvar) dispatch, which is an enhancement for AC system voltage support.

Both Neptune and the Hudson projects use LCC conversion technology. At the time that these projects were developed and designed (2000-2008 period), LCC was the dominant conversion technology, while VSC conversion was developed and proven at relatively small applications. TBC uses VSC technology. Presently, VSC technology has surpassed LCC as the preferred technology for HVDC applications throughout the world.

For Neptune, there are two converter station locations: the POW station in Sayreville, New Jersey, and the POD station in New Cassel, North Hempstead (Long Island), New York. The Sayreville station is situated on an approximately 7.6-acre footprint that was considered a “brownfield” site, historically occupied by the Sayre & Fisher brick factory that was a major supplier of construction bricks in the late 1800s and early 1900s. The site had been abandoned with the structures removed and taken over by the Borough of Sayreville Economic and Redevelopment Agency (SERA), an entity charged with redeveloping such sites for productive use. The New Cassel station is situated on a portion of an approximately 15-acre site that is occupied by a New York State Department of Transportation (NYSDOT) maintenance facility adjacent to a New York State parkway. The maintenance facility structures (offices, road salt storage, paved areas, etc.) are situated at the front of the site, while the larger, rear portion, was vacant other than temporary placement of materials such as road sweepings and concrete barriers. The rear portion also included a landfill, officially closed since about 1993, that had been used for the burial of sweepings and road debris. Although precise records have not been found, the landfill area, reportedly, was originally excavated for mining of sand and soil. To accommodate the Neptune station, the NYSDOT site was subdivided, with approximately 7.5 acres to the rear of the site leased to Neptune by New York State.

For Hudson, a BTB converter station (which is the two converter stations on the same property and no DC transmission in between) was constructed on an approximately 21-acre parcel, of which approximately 13 acres consist of wetlands. The non-wetland portion of the site was created around 1940 by using “historic fill” (reclaimed soil from other locations) and was occupied by an industrial warehouse complex and associated paved area for trucks and maintenance, built around the same time. Only a small portion of the privately-owned warehouse facility was in active use at the time that

the Hudson project was in development. The site was acquired in fee in 2011 by Hudson Transmission Partners, LLC (HTP), a subsidiary of PowerBridge, LLC, which demolished the warehouse facility, remediated the non-wetland portion of the site in accordance with NJDEP requirements, and constructed the converter station. There was no incursion into the wetlands, and therefore no wetland remediation was required.

For TBC, there are two converter station locations: one in Pittsburg, California, and the other in San Francisco, California. The Pittsburg station is situated on an approximately 5.4-acre site, which is located less than 1 mile from Pacific Gas and Electric's 230-kV substation. The San Francisco station sits on an approximately 6.8-acre site and is located less than 1 mile from Pacific Gas and Electric's 115-kV Potrero substation. Both converter station sites were secured under long-term leases.

The proposed Facility would require a smaller footprint for its converter station than Neptune and Hudson and would use VSC conversion technology, similar to TBC. In addition, based on preliminary research, the Applicant does not anticipate the need for significant remediation at either the POW or POD converter station sites prior to construction. (See Section 16, Mitigation, for additional information about remediation at the Neptune and Hudson sites.)

10.5.5 Cable Installation

The submarine cable installation method is functionally similar for the proposed Facility and those methods used for the Neptune, Hudson, and TBC facilities. For Neptune, Hudson, and TBC, Prysmian installed submarine cable using a hydroplow, a cable burial machine towed by a ship (for Hudson) and by a barge and a ship (for Neptune and TBC, which required two separate phases of undersea cable installation). Hydroplow technology features the creation of an approximately 24-inch-wide trench in the sediment using high-pressure water jets in the plow blade which fluidizes the sediment while simultaneously laying the cable bundle in the trench at the prescribed depth. The fluidized sediments then settle back down into the trench.

For Neptune, the required depth of burial was 17 feet below authorized depth within the Ambrose federal navigation channel in New Jersey; this required approximately 73,000 cubic yards of excavation within the channel to allow the hydroplow to achieve the prescribed depth in some locations. Outside of the channel, the depth required by permits was 4 feet; however, the owner (Neptune Regional Transmission System, LLC [NRTS], a subsidiary of PowerBridge) required Prysmian to achieve a target depth of 6 feet to provide an extra degree of cable protection. For the Hudson project, permit requirements were 15 feet below authorized depth in the federal navigation channels, and 10 feet below actual depth outside of the channels. No dredging in the federal channels was required for cable burial. For TBC, the cable was installed 3 to 6 feet below the bed of the San Francisco, San Pablo, and Suisun bays.

For the proposed Facility, the cable bundle would be installed at a planned depth in the bed sediments of 10 feet below the mudline to meet the USACE requirements. Where the cable bundle crosses the navigation channel prism below Bonneville Lock and Dam, the cable bundle would be installed to a minimum depth of -34 feet Columbia River Datum (CRD) (top of bundle), which may require installation deeper than 10 feet. Installation could be up to 15 feet deep in the Federal Navigation Channel prism, where this depth is required to meet the USACE requirement of installation below -34 feet CRD. Pre-installation dredging of material over a length of up to 1,650

linear feet and width of 24 feet may be needed to facilitate required depths of cable installation in the navigation channel prism. This material would be side cast into the channel, outside the navigation channel prism.

10.5.6 Engineering and Environmental Constraints

10.5.6.1 Converter Station Sites

VSC conversion technology to be used for the proposed Facility requires less land area (approximately 5 acres) in comparison to LCC converter stations such as Neptune and Hudson. The Applicant believes that the identified converter station sites in North Portland and outside of The Dalles present no significant engineering challenges because they are relatively flat and accessible by existing roadways. Based on visual inspection and information provided by the Port of Portland for the western converter station site, there has been no indication of significant or unusual environmental issues. These preliminary conclusions are subject to further environmental and cultural resource studies, which are documented in this application. The Applicant will also conduct pre-construction geotechnical evaluations and environmental site assessments to determine the presence and extent (if any) of contaminated soil or groundwater.

Both the Neptune and Hudson converter station sites required environmental remediation of pre-existing conditions. The remediations were completed successfully by affiliated companies of PowerBridge. For the Hudson site, approximately 13 of the 21 acres of the parcel consists of protected wetlands; however, the layout of the converter station was designed to completely avoid any wetlands incursion and thus was not subject to related restrictions or mitigation measures.

10.5.6.2 Cable Installation

For both Neptune and Hudson, submarine cable bundles were installed as prescribed by the permitting agencies. Agency prescriptions included the following:

- *Working within seasonal work windows to protect aquatic life during times of migrations and spawning*
- *Monitoring sediment, turbidity, and water quality in real time during cable installation*
- *Selecting submarine alignment to avoid known sensitive habitat areas*
- *Monitoring of work area for impacts to endangered, threatened, and protected species (such as sea turtles and piping plover)*
- *Preparing reports comparing pre- and post-installation conditions related to benthos, fish and shellfish, thermal impacts, and electromagnetic field impacts*

None of the prescribed environmental requirements for Neptune and Hudson interfered with the progress of the submarine installation, and there were no instances of non-compliance. The Applicant believes this record was likely due in part to the relatively small “footprint” created by the submarine cable installation and the temporary nature of the disturbance to the seabed.

The Applicant expects permit requirements for the installation of its submarine cable for the proposed Facility to be similar in kind to those required for Neptune and Hudson, while recognizing

that conditions of the Columbia River will likely result in site-specific conditions that will vary from those met for Neptune and Hudson.

For both Neptune and Hudson, terrestrial cable installation by underground burial (including both trenching and trenchless methods) used proven and commonly used construction techniques. The Neptune land route required approximately 14 miles of burial in the eastern shoulder alongside the Wantagh State Parkway on Long Island, a major state highway, and was closely monitored by the NYSDOT for compliance with design standards and traffic safety. The route required using horizontal directional drilling (HDD) to cross under approximately 20 bridge abutments and interchanges. In addition, the work required complete restoration of disturbed vegetation (grass and trees), including a post-construction maintenance period to assure the restoration was successful.

For Hudson, the land route was a combination of open trenching in public roadways in the New Jersey municipalities of Ridgefield, North Bergen, and Edgewater, and the Borough of Manhattan, New York City; installation via HDD along railroad ROW and under wetlands areas in New Jersey; and trenching via rock excavation through an approximately mile-long historic railroad tunnel. The installation was in accordance with the requirements of the respective municipalities and the affected railroads.

In comparison to Neptune and Hudson, the Applicant expects that the underground portions of the cable alignment for the proposed Facility would generally be less complicated and more straightforward. Much of the proposed Facility route would require open trenching on or alongside public roadways in much the same way that underground utilities are commonly installed. Installation within railroad-owned property would be in accordance with railroad requirements. Proven trenchless technology (HDD, jack-and-bore) would be used as appropriate for crossing under roads and railroads, and for avoidance of sensitive areas.

11 Qualifications of Applicant's Personnel (OAR 345-022-0010(5)(b)(B))

(B) The qualifications of the applicant's personnel who will be responsible for constructing and operating the facility, to the extent that the identities of such personnel are known when the application is submitted.

RESPONSE

This section includes a representative list of key personnel from PowerBridge and NEET, who have direct experience in the development, construction, operation, and maintenance of major transmission systems. As noted previously, both PowerBridge and NEET are currently responsible for underwater HVDC interconnections in the U.S. that are comparable to CRT.

11.1 Management

Most of the senior personnel of PowerBridge have been involved with the Neptune, and later, Hudson, projects since before their construction in such key roles as permitting, financing, construction oversight, community relations, operations and maintenance, and administration. In addition, most have decades of professional experience in the electric power industry in these areas.

Edward M. Stern is President and CEO at PowerBridge. Ed has more than 30 years of experience leading the successful development, financing, construction, operation and ownership of major energy and infrastructure projects. Under Ed's guidance, PowerBridge developed, financed, and built the Neptune project, completed in 2007, and the Hudson project, completed in 2013. Both Neptune and Hudson are 660 MW HVDC underwater and underground electric transmission systems, managed by PowerBridge, that interconnect the PJM market in New Jersey with power grids in New York. Neptune extends 65 miles (51 underwater) between Sayreville, New Jersey, and Long Island, while Hudson runs from Ridgefield, New Jersey for approximately 7 miles into Manhattan's West Side, including four miles underneath the Hudson River. Both projects were completed on budget and ahead of schedule.

Jeffrey T. Wood is Chief Commercial Officer at PowerBridge. Jeff joined the PowerBridge team in 2011 and is primarily responsible for leading the financing effort for the Hudson project. Jeff is a former managing director at the investment bank Société Générale, where he was responsible for serving as financial advisor and for arranging $600 million in non-recourse project financing for PowerBridge's Neptune project.

Jeff has over 30 years of experience in project finance with involvement in raising more than $7 billion in debt and equity. Before joining PowerBridge, he was a Senior Vice President with Noble Environmental Power of Essex, Connecticut, where he was responsible for raising more than $700 million of non-recourse debt and $200 million of tax equity for a portfolio totaling 330 MW of wind power in New York State. His finance experience also includes positions with J.P. Morgan Chase and Wachovia Securities, where he was involved in the financing of major energy projects both in the U.S. and internationally.

Ernest B. Griggs is Senior Vice President and Project Manager at PowerBridge. Ernie serves as project manager for both the Neptune and Hudson projects. His responsibilities include oversight for compliance with all NERC requirements for planning and operating a transmission facility in the North American bulk power system. Ernie has over 35 years of large-scale project management, HVDC, and electric power industry experience in bulk power generation, transmission, and operations, primarily in the northeastern United States. While at New England Power Co., his responsibilities included project management of Phase I and II of the 2,250 MW HVDC interconnection between New England and Hydro-Quebec, oversight of a 1,200 MW hydroelectric system, and project management of the Bear Swamp hydroelectric pumped storage project. He was also Director of Operations for New England Power during its transition to Pacific Gas and Electric's National Energy Group with operational responsibilities across the New England asset portfolio. Ernie is a founding member of the international HVDC Interconnector Owner's Group (IOG).

Thomas G. Beaumonte is Chief Financial Officer and Treasurer at PowerBridge. Tom has more than 30 years of experience as a senior financial executive in planning, operations, strategic planning, budgeting, cost reduction, and financial reporting for both domestic and international companies. Prior to joining PowerBridge at its inception, Tom served as vice president, comptroller, and treasurer of Enel North America, Inc. and its predecessor company, CHI Energy, Inc.

Previously, Tom served as director of UBS Warburg, Inc. of New York, treasurer and assistant controller of Republic New York Securities Corporation of New York, vice president of Lehman Brothers Holdings of New York, and supervisory senior at Ernst & Young of New York.

Kathy Neary is Vice President of Accounting and Administration at PowerBridge. Kathy joined the PowerBridge team upon its founding and helped create all of the company's accounting and risk management functions. Kathy has more than 20 years of accounting and financial management experience and is primarily responsible for administrative, insurance, accounting, cash management and certain other financial matters for PowerBridge and its affiliated entities and projects.

After starting her career with Arthur Andersen, she joined CHI Energy, Inc. and its successor company, Enel North America, Inc. and held the position of manager of finance, responsible for corporate financial analysis as well as oversight of insurance matters for more than 80 energy facilities.

Chris Hocker is Senior Vice President and Chief Development Officer at PowerBridge. Chris joined PowerBridge in 2004 after 20 years of experience in the electric power industry that encompassed project planning, licensing and permitting, government and community relations, business development, and corporate communications. He was responsible for permit compliance during construction of the Neptune project and led the successful permitting effort for the Hudson project.

Between 1990 and 2004, he was employed by Enel North America, Inc., and its predecessor company, CHI Energy, Inc. With CHI, he initially focused on licensing, planning, and government and community relations for a proposed 1,500-MW power project, responsible for preparing a successful siting application for the project generating facility as well as a separate siting application for a related 345-kV transmission line. He later served as senior vice president, Corporate Affairs, for CHI and Enel North America, part of the senior management team responsible for corporate development. He served on the board of directors of the National Hydropower Association, a Washington, D.C.-based trade association of utility and independent hydropower owners, for 9 years, including one year as president of the association.

James T. Sullivan is Vice President of Operations at PowerBridge. Jim is primarily responsible for operations and maintenance and NERC reliability compliance for the Neptune and Hudson projects. Jim joined the PowerBridge team in 2011, bringing more than 30 years of experience in the engineering, operations, maintenance, and management of electric systems, primarily for HVDC transmission systems.

For more than 20 years he has been responsible for development of operating procedures and for compliance with reliability requirements for HVDC systems. His previous work experience includes over 10 years as a supervisor for a 2,000-MW HVDC converter terminal in New England; and 7 years with National Grid as supervisor and director of HVDC operations and maintenance for the New England/Hydro Quebec HVDC Interconnection. Prior to joining PowerBridge, Jim served as a consultant specializing in developing operations and maintenance and reliability compliance procedures for various major clients, including the Neptune project.

John Ostrowski is Vice President of Construction at PowerBridge. John joined PowerBridge in 2022 with 35 years of experience in the engineering and installation of electric power systems. He began his career as an electrical engineer for the Long Island Lighting Co. and its successor, KeySpan Energy, where he advanced to area supervisor and supervising service operator for the installation, operation, restoration, and improvements of distribution and bulk transmission systems. He then joined Pirelli/Prysmian Cables, where he was responsible for directing the installation of

numerous land-based and submarine cable projects. These included the Neptune and Hudson projects.

John later formed Power Installation & Design Group, and in association with Railroad Construction Company, Inc. and was responsible for directing multi-million-dollar transmission and substation projects, such as replacement and upgrading of a transmission line for Tampa Electric Co., and a $100 million project involving the demolition of obsolete substation facilities and construction of a new substation and associated utilities and structures.

Susan Brown is Manager Permits and Compliance at PowerBridge. Susan joined PowerBridge in 2011. She has both development and operations responsibilities, including safety, environmental and regulatory compliance oversight, and environmental social governance (ESG) reporting for HTP and NRTS. She has more than 25 years of diverse experience that includes marketing, education, and information technology.

NEET is a leading independent transmission company with more than 2,200 miles of transmission lines across 11 U.S. states and Canada, representing a total investment of more than $5 billion.

Matt Pawlowski is the Vice President of Development for NEET, with over 15 years of industry-related experience. As part of this role, Mr. Pawlowski is responsible for the Greenfield Transmission Development team and the Land Acquisition, Siting, and Geographic Information Systems (GIS) teams with the goal of growing the transmission portfolio with strategic opportunities throughout North America. In previous roles at NextEra Energy, Inc. and its affiliates, Mr. Pawlowski was the executive director of Business Management and Regulatory Affairs at NextEra Energy Resources, LLC (NEER), managing the interconnection processes for renewable generation across the U.S. and the regulatory relationship with the Southwest Power Pool (SPP) and the Midcontinent Independent System Operator (MISO).

La Margo Sweezer-Fischer is the Vice President of Operations for NEET with over 24 years of experience. Ms. Sweezer-Fischer is responsible for setting and managing operations and maintenance standards and practices, leading the Operations team, and interfacing with NEET Systems and operational staff; directing the safe, reliable, and cost-effective operations of NEET assets across North America to ensure operational excellence via the comprehensive application of processes, procedures, and standards for transmission operations; and managing control center operations, transmission line and substation field asset operations, installation, and maintenance for current NEET assets, including those of New Hampshire Transmission, LLC (New Hampshire Transmission) in New England, Lone Star Transmission, LLC (Lone Star) in Texas, and TBC and Horizon West Transmission, LLC (Horizon West Transmission) in California.

James Alligan is the Senior Director Capital Projects and Strategic Initiatives for NEET. He has over 40 years of global consulting expertise and operational responsibility across Power Generation and Delivery. In his current role, Mr. Alligan is responsible for providing Leadership on the development of Transmission & Substations programs up to 800 kV. Mr. Alligan has served in various roles within major utilities and industry groups, working directly with Engineering, Procurement, and Construction (EPC) vendors. For 4 years Mr. Alligan established and led the Operations business for the world's first Modular Multilevel Voltage-Sourced Converter High-Voltage Direct Current (HVDC) Technology project, Trans Bay Cable, LLC. For 8 years, Mr. Alligan led the T&S applications at the Electric Power Research Institute (EPRI) and has authored and contributed to many publications on subjects

related to his field of work. He led Stakeholder teams to achieve new technology buy-in and optimized T&S programs at utilities across the US, and globally. Prior to his work at EPRI, Mr. Alligan worked on T&S Hardening projects in Boston, Massachusetts with ABB, Ltd. He worked 20 years in the United Kingdom (UK) at the National Grid Company, including Managing the Central London T&S Area Team. He helped establish National Grid's Asset Management organization, and prior to this he worked in nuclear and fossil generation for the Central Electricity Generation Board (CEGB). Mr. Alligan is a graduate of the CEGB five-year Power Engineering program.

Dan Mayers is a Director of Strategic Initiatives for NEET Operations supporting special projects, including wildfire mitigation initiatives, with over 42 years of electric utility, transmission, and power system planning, substation, and transmission line design and engineering, transmission line siting and permitting, procurement, project management, operations, and engineering and construction (E&C) experience in progressive management roles. Mr. Mayers has supported the siting, engineering, procurement, and construction of over 2,500 miles of new 69 to 500-kV transmission lines and over 275 substations/switchyards throughout the United States and Canada. Mr. Mayers' previous roles were as Director of Transmission Engineering and Project Director, Transmission/Substation within the E&C Group for NextEra Energy Resources and Florida Power & Light Company, respectively.

11.2 Community and Native American Relations

The Applicant has placed a high priority on early engagement with potentially affected communities and interest groups, as well as with Native American tribes. In addition to Applicant's affiliate resources, the Applicant has engaged consultants as part of the development team to assist with appropriate outreach efforts.

Carol Loughlin is president of and a senior consultant with Lakeridge Resources in Seattle. She has an extensive background in energy project development, finance, and power marketing, with over two decades of industry experience. As a consultant to the Applicant, she leads the effort to engage with community groups, tribes, labor organizations, local officials, and educational institutions to explore potential partnerships to share project benefits in communities that could be affected by the proposed Facility.

Prior to forming Lakeridge Resources, Carol was a consultant with Sapere Consulting in Washington State focused on energy project development and finance, transmission and interconnection, and power marketing. She developed complex financial and rate structure models to evaluate potential acquisitions and project financing and refinancing and supported renewable energy developers with interconnection applications and studies. She also supported utility resource acquisition processes, performed market studies, prepared RFP responses, and negotiated power purchase agreements for independent power producers in the Pacific Northwest region.

Maia D. Bellon is a consultant with Cascadia Solutions and a Partner with Cascadia Law Group based in Seattle and Olympia. Maia advises tribal government, municipal, and private clients on a wide array of complex environmental matters, including climate and energy policy, air quality, water resources, toxics cleanup, water quality, and tribal law.

Prior to joining Cascadia, Maia was director of the Washington State Department of Ecology (Ecology) where she managed a staff of 1,700 employees and a biennial budget of $2.3 billion. Maia

previously served as the deputy and program manager of Ecology's Water Resources Program, regulating the state's freshwater resources and overseeing Ecology's Dam Safety Office and Well Construction and Licensing Program. Maia also served as an assistant attorney general for 15 years representing Ecology before the Pollution Control Hearings Board, Shorelines Hearings Board, Growth Management Hearings Board, and Washington superior and appellate courts.

Meghan E. Gavin is a consultant with Cascadia Solutions and an attorney with Cascadia Law Group. Meghan handles complex environmental and natural resource matters. She offers litigation, regulatory, and advisory services supported by a strong scientific background. Her experience includes defending tribal treaty rights, and representing clients in negotiations with regulatory agencies, such as over the scope of agreed environmental covenants. She also works with regulatory agencies to advance matters of environmental justice important to her clients and advises on environmental and energy transactions, including for climate-friendly infrastructure projects.

Rebecca Sher, JD is the Director of Tribal and Indigenous Relations for NextEra Energy, and its affiliates with 14 years of experience. Ms. Sher is responsible for the development and implementation of NextEra Energy's innovative, voluntary Tribal Relations Program aimed at conducting early coordination and building and managing relationships with federally-recognized Native American Indian Tribes. Ms. Sher works closely with tribes and tribal communities across the United States through project development, construction, and operations to identify, avoid, and/or resolve potential issues that may arise, including cultural resource concerns. Prior to joining NextEra Energy, Ms. Sher was an attorney for Native American Indian Tribes at a private law firm in Colorado.

12 Qualifications of Known Contractors (OAR 345-022-0010(5)(b)(C)

(C) The qualifications of any architect, engineer, major component vendor, or prime contractor upon whom the applicant will rely in constructing and operating the facility, to the extent that the identities of such persons are known when the application is submitted.

RESPONSE

The Applicant has not selected contractors to construct or operate the Facility. In developing and executing its transmission projects, PowerBridge and NEET assemble a team of experienced contractors, consultants, and advisors with extensive knowledge and capabilities to supplement in-house resources. Typically, principal contractors are well known nationally and internationally, supplemented with appropriate local and regional expertise.

While the Applicant has not made formal commitments to third parties for the proposed Facility, the Neptune, Hudson, and TBC projects were each designed and built by a consortium of Siemens and Prysmian in accordance with a comprehensive Engineering-Procurement-Construction (EPC) Agreement. (These companies have several decades of global expertise in HVDC technology and the manufacture and installation of submarine cable systems.) Under the EPC agreements, the consortium was responsible for executing the work in compliance with all applicable permits and regulatory requirements for a fixed price. The EPC agreements contained customary provisions for

schedule and warranties. In addition, Siemens provides operation and maintenance services for both the Neptune and Hudson projects on a third-party basis, under the oversight of qualified PowerBridge personnel. Similarly, Siemens provides technology expertise to assist NEET with the operation of TBC. It is likely that one or both of those companies (or those of similar capabilities and resources) will be members of the Applicant's project team.

13 Applicant's Past Performance (OAR 345-022-0010(5)(b)(D))

(D) The past performance of the applicant, including but not limited to the number and severity of any regulatory citations in constructing or operating a facility, type of equipment, or process similar to the proposed facility.

RESPONSE

Neither the Neptune facility nor the Hudson facility has experienced any violations or citations related to federal or state occupational health and safety requirements. The TBC facility has not experienced any such violations or citations since its acquisition by NEET in 2019.

Both the Neptune and Hudson facilities hold the following state and federal authorizing permits: New York State Certificate of Environmental Compatibility and Public Need; NJDEP Waterfront Development Permit; and Department of the Army Permit issued by the USACE, New York District. Since commencing commercial operation in June 2007, the Neptune facility has received no notices, citations, or complaints related to violations of these authorizing permits.

In January 2016, the Hudson facility experienced a fault in the submarine portion of its SCFF cable system in the Hudson River, taking the facility out of service. After repair of the cable, a second fault in the submarine cable was experienced in June 2016 and subsequently repaired. A third fault occurred in November 2016. Each fault resulted in the discharge of non-toxic insulating fluid (T3788) into the river at a rate of about 3 gallons per hour until the faults were located and the leaking cables were capped. In each of the three instances of cable faults and leakage of fluid, PowerBridge promptly notified the U.S. Coast Guard (USCG) and all other affected permitting and environmental agencies and dispatched a marine clean-up contractor to monitor the water surface and capture surface fluid with absorbents on a round-the-clock basis.

After each such incident in 2016, USACE notified the permittee, HTP, that HTP was considered to be in violation of General Condition 2 of its permit, which specifies: "You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit."

After the third such incident in 2016, PowerBridge determined that the only way to assure no further incidents was to replace the submarine portion of the cable system in its entirety. Over the next several months, PowerBridge sought and received authorizations from the federal and state permitting authorities to replace the cable in accordance with a detailed work plan. Under PowerBridge supervision, the SCFF cable was removed from the riverbed (after draining the cable of insulating fluid), and a new XLPE cable bundle was installed in the same alignment. No changes were made to the terrestrial portion of the cable or to the converter station. The Hudson cable

system was re-energized in September 2017. Since then, the Hudson facility has operated at 99.99 percent availability (as of July 31, 2024).

In September 2017, the USCG issued a Preliminary Assessment Letter indicating that the third incident (in November 2016) was a violation of federal law (discharge of oil or a hazardous substance into the navigable waters of the United States) and assessing a penalty of $5,000. However, upon written appeal by HTP, in November 2017, the Coast Guard Hearing Officer issued as final a Letter of Warning (rather than a Violation) with no penalty assessed.

TBC holds the following authorizing permits: Department of Army Permit issued by the USACE, Clean Water Act compliance permits and certifications from the Department of Defense, and Bay Area Quality Management District Air Permits and Permits to operate in Pittsburg and Potrero. TBC is also subject to oversight from FERC and the California Public Utility Commission. Since NEET's acquisition of TBC in 2019, TBC has received no notices, citations, or complaints related to violations of these authorizing permits or regulatory oversight. NEET and its subsidiaries uphold stringent standards in construction and operation, ensuring compliance with all applicable regulations. NEET and its subsidiaries continuously strive to operate with excellence and regulatory adherence, aligning with the high standards set forth by NextEra Energy.

14 Warranty to Secure Necessary Expertise (OAR 345-022-0010(5)(b)(E)

(E) If the applicant has no previous experience in constructing or operating similar facilities and has not identified a prime contractor for construction or operation of the proposed facility, other evidence that the applicant can successfully construct and operate the proposed facility. The applicant may include, as evidence, a warranty that it will, through contracts, secure the necessary expertise;

RESPONSE

The Applicant's affiliates have demonstrated significant experience constructing and operating similar facilities. The draft letter in Attachment 6, to be signed by the Applicant, PowerBridge, and NEET, will affirm that Cascade Renewable Transmission, LLC (CRT), will have access to sufficient financial and technical resources and expertise to construct, own, operate, and maintain the Facility, for which financial and technical resources and expertise may be obtained as services provided by PowerBridge or NEET.

14.1 Assurance of Obligations Under Site Certificate

The information in this section describes how the Applicant will assure that its obligations under the site certificate will be satisfied and will indemnify the OR EFSC against costs and expenses it may incur as a result of enforcement of the site certificate.

The Applicant is a special purpose company established for the development, financing, construction, and operation of the proposed Facility. The Applicant's affiliates are leading strategic energy companies with capabilities to complete the proposed Facility: PowerBridge, NEET, and Sun2o. In addition to development capital being provided by these three companies or their affiliates,

development capital has been or is currently being provided by Ullico Infrastructure Fund and Ardian US, LLC, each of which are global leaders in providing equity capital for energy infrastructure projects.

PowerBridge is a privately held limited liability company organized under the laws of Connecticut whose principal business is the development and management of energy-related infrastructure facilities such as the Facility. PowerBridge's leading examples of its business activities are two HVDC transmission facilities owned by special purpose companies: NRTS or Neptune and HTP or Hudson. Equity ownership in Neptune and Hudson is largely held by institutional investors and/or investment funds.

NEET is a leading competitive transmission company in North America. NEET is a wholly-owned subsidiary of NextEra Energy Capital Holdings (NEECH). NEECH owns and provides funding for NextEra Energy Resources and NextEra Energy's operating subsidiaries, other than Florida Power and Light. NEECH is a wholly-owned subsidiary of NextEra Energy, Inc., which is a leading clean energy company with a publicly traded market capitalization of approximately $140 billion.[1] NEET owns and operates nine major subsidiaries within NextEra Energy: Lone Star Transmission, a regulated transmission service provider in Texas operating 654 circuit miles of 345-kV transmission lines and 11 substations; New Hampshire Transmission, a regulated 345-kV switchyard transmission owner in New Hampshire; Trans Bay Cable, which manages a 53-mile, 200-kV high-voltage underwater transmission system in California from Pittsburg to San Francisco; GridLiance Holdco, LP, which oversees three FERC-regulated transmission utilities with around 700 circuit miles of high-voltage transmission lines across five states; NEET New York which operates the Empire State Line, a 22-mile, 345-kV transmission line; Horizon West, which operates a 230-kV, 300-MVAr SVC substation in California; NEET MidAtlantic, which operates a 40-mile, 345-kV transmission line in Indiana; NEET Southwest, which operates a 48-mile, 345-kV transmission line in Oklahoma; and East-West Tie, which operates 560 circuit miles of 230-kV transmission line in Ontario, Canada. Overall, NEET's subsidiaries manage 2,900 circuit miles across 16 states and Canada, encompassing a diverse range of operating assets and development projects.

The key to assuring that the Applicant's obligations under the site certificate are satisfied is the financial structure of the project company, CRT, from the start of construction throughout its operating life. This will be a similar structure as that used for the Neptune, Hudson, and TBC projects, which has resulted in an investment grade credit rating (BBB- or better) for the long-term debt obligations of each project.[2] The Applicant intends for and expects CRT's debt obligations to likewise achieve an investment grade credit rating from a recognized financial rating agency.

Under this structure, Neptune, Hudson, TBC, and eventually CRT are stand-alone, financially stable entities that rely on their contractual framework for their financial strength. As with Neptune and Hudson, necessary preconditions to obtaining financing and initiating construction for the proposed Facility may include:

[1] https://www.investor.nexteraenergy.com/fixed-income-investors/financial-policy

[2] Debt holders for Neptune, Hudson, and TBC are primarily major life insurance companies, such as Allstate, John Hancock, Massachusetts Mutual, Metropolitan Life, New York Life, etc.

- *Government permits and approvals needed to construct and operate the proposed Facility, including (but not necessarily limited to) site certificates issued by the appropriate authorities in Oregon and Washington as well as permits issued by USACE.*
- *Long-term (i.e., up to 40 years) off-take agreement(s) between CRT and one or more investment grade credit rated entities to assure a revenue stream sufficient to satisfy credit obligations and provide a return to shareholders.*
- *Debt capital commitments from project finance banks and/or institutional investors comprised primarily of life insurance companies that when aggregated with the equity capital commitments are sufficient to construct the Facility.*
- *All real estate agreements conferring rights needed for the Facility to be constructed and operated (e.g., easements, leases, or fee ownership by CRT).*
- *One or more fixed-price contracts with experienced, qualified, and financially substantial companies to construct the Facility on an EPC basis, with guaranteed completion dates and performance obligations.*
- *Interconnection agreements with PGE and BPA.*
- *Management services agreement with an industry leading firm to provide the required expertise for daily management of the business including construction oversight, operations oversight, permit compliance, accounting, cash management, etc.*[3]
- *Commitments by financially substantial insurance providers to underwrite the potential casualty risks associated with project construction and operation.*

These and other essential documents will be subject to a rigorous due diligence process by independent attorneys and qualified engineers representing the equity and debt investors. To assure satisfactory performance both during construction and long-term operation, the financing package may include such features as:

- *Liquidated damages, incentives, and warranty provisions in the EPC contract(s) to assure timely completion of construction in accordance with specified performance standards for materials, equipment, and workmanship.*
- *Insurance coverage for property, casualty, and liability as well as for business interruption, based on an independent risk analysis.*

(v) Provisions in the credit agreement for debt providers assuring a debt service coverage ratio (DSCR) of at least 1.2x, in addition to the establishment of appropriate reserves.

- *"Step-in" provisions of the credit agreement to permit financial stakeholders to assume operational control of the project company in the unlikely event of a default under the credit agreement.*

These provisions and features of the financial structure for CRT give exceptionally strong assurances that the proposed Facility will be constructed and operated satisfactorily over the course of its useful life. Even under unexpected, severe adverse conditions, the multiple financial stakeholders can be expected to act affirmatively to protect their asset, assure its long-term reliable

[3] For Neptune and Hudson, this service has been provided by affiliates of PowerBridge.

operation in accordance with its permits, and thereby protect the interests of the OR EFSC and the State of Oregon.

In addition, the letter in Attachment 6, signed by the Applicant, PowerBridge and NEET, affirms that CRT will have access to sufficient resources and expertise to construct, own, operate, and maintain the Facility, for which resources and expertise may be obtained as services provided by affiliates of PowerBridge or NEET.

15 ISO Certified Program (OAR 345-022-0010(5)(b)(F))

(F) If the applicant has an ISO 9000 or ISO 14000 certified program and proposes to design, construct and operate the facility according to that program, a description of the program.

RESPONSE

The Applicant does not propose to design, construct, or operate the Facility according to an International Organization for Standardization (ISO) 9000 or ISO 14000 certified program.

16 Mitigation (OAR 345-022-0010(5)(b)(G))

(G) If the applicant relies on mitigation to demonstrate compliance with any standards of Division 22 or 24 of this chapter, evidence that the applicant can successfully complete such proposed mitigation, including past experience with other projects and the qualifications and experience of personnel upon whom the applicant will rely, to the extent that the identities of such persons are known at the date of submittal.

RESPONSE

Mitigation for the proposed Facility may be required for potential impacts to wildlife habitat, cultural resources, and other resources. The mitigation measures proposed by the Applicant for compliance with OAR Divisions 22 or 24 are described in the specific exhibit in which impacts are described.

PowerBridge has experience over multiple jurisdictions in implementing mitigation and monitoring programs for similar HVDC facilities.

16.1 Mitigation Experience

Neither the Neptune nor Hudson facilities required extensive direct mitigation measures for impacts caused by construction or operation. All three converter stations, two for Neptune and one for Hudson, were built on sites that were unoccupied or underutilized, appropriately zoned, without extensive intrusion into vegetated areas or wildlife habitat. For the cable installations, the narrow “footprint” of the jet plow burial machine caused only temporary impacts during installation. Pre- and post-installation monitoring and studies, as described below, have shown no impacts requiring mitigation.

For both projects, the authorizing federal and state permits included “conditional” mitigation – that is, measures that would be required if significant impacts were to occur. As an example, for cable installation by jet plow, permits for both Neptune and Hudson required real-time monitoring,

sampling, and analysis of water for excessive turbidity and the presence of contaminants above certain thresholds. If water samples showed exceedance of prescribed thresholds, then cable installation operations would be modified (such as by decreasing the speed of the installation vessel or decreasing pressure of water jets on the jet plow) until sampling showed that levels were no longer exceeded. However, for both projects, the monitoring and sampling programs did not show any exceedances, so no operational modifications were required. For the Neptune project, a report on observed effects on suspended sediment and water quality during cable installation was prepared and submitted post-installation.

Similarly, the authorizing permits required pre-installation and post-installation monitoring and sampling to determine impacts for the following:

- *Benthic organisms (Neptune and Hudson)*
- *Shellfish (Neptune only)*
- *Fisheries (Neptune only)*
- *Electro-magnetic fields and thermal impacts of the submarine cable (Neptune only)*
- *Sediment (Hudson only – a report on the suspended sediment and water quality monitoring program during Neptune cable installation is noted above)*

Reports of the monitoring and sampling were prepared and submitted to the permitting agencies after construction. The reports showed no significant impacts that were attributed to the submarine cable installation. No mitigation measures were required or imposed by agencies post-construction for either Neptune or Hudson.

For the Neptune project, concerns were raised about the potential impact of cable installation on the habitat for commercially valuable hardshell clams and surf clams in New Jersey waters. A condition of the NJDEP Waterfront Development Permit required NRTS to make seven annual payments of $110,000 each to the NJDEP Bureau of Shellfisheries, not as direct mitigation for impacts to clams, but as stated in the permit, for “use to enhance and manage the State’s shellfish resources.” These payments were made, as required, for 7 years, beginning in 2007.

In addition, for the Hudson project, the New Jersey State Office of Historic Preservation (NJ SHPO) required a post-construction report on the impacts of installing the underground cable within the 92nd Street Tunnel, a National Register eligible, pre-1900 rock railroad tunnel. In accepting the report, the NJ SHPO concluded that cable installation did not adversely affect the integrity or the appearance of the tunnel.

16.2 Site Remediation

The description of site remediation included here is not intended to illustrate mitigation for direct impacts of facility construction or operation, but rather mitigation for the activities of previous site owners that was nonetheless required for the facilities to be built.

As noted elsewhere, the two converter station sites for Neptune were vacant parcels with pre-existing site conditions requiring remediation. The Long Island site was part of a NYSDOT maintenance facility, which included a closed landfill historically used for road debris such as sweepings. Building a portion of the converter station on top of the landfill required opening the

landfill, installing necessary structural supports, and then re-closing the landfill. This was done in accordance with a Plan approved by the New York State Department of Environmental Conservation (NYSDEC), which further required NRTS twice per year to inspect the landfill cover for integrity and conduct air sampling to determine if hazardous gases are emanating from the landfill. This program has been carried out per NYSDEC requirements since 2007, with no impacts reported to date.

Neptune's Sayreville, New Jersey site was a brownfield parcel (formerly a brick factory) requiring remediation of pre-existing conditions per NJDEP requirements. NRTS carried out remediation in phases: partial remediation during facility construction in 2005-2006, and completion of remediation over the period 2014-2022. As part of the second phase of remediation, as mitigation for impacts to 0.055 acres of wetlands, NRTS purchased an equivalent amount (0.055) of wetland mitigation credits through an approved wetlands mitigation bank.

The site of the Hudson BTB converter station in Ridgefield, New Jersey, was an underutilized warehouse facility that had been built on "historic fill" around 1940 and utilized for light industrial purposes, including truck fueling. The site was thus subject to NJDEP regulatory requirements for remediation after transfer to HTP. Prior to starting construction of the converter station, HTP, in accordance with an NJDEP-approved remediation plan, demolished the warehouse buildings and paved areas, removed an average of two feet (elevation) of soil from the entire buildable area of the site, and replaced it with 4 feet of clean fill. The remediation also included the excavation and removal of identified "hot spot" areas of contaminated soil and the removal of underground petroleum storage tanks.

Remediation of both the Neptune and Hudson sites in New Jersey required NJDEP approvals after certifications by licensed site remediation professionals (LSRPs). Currently, the LSRPs conduct biennial inspections and submit certifications to the NJDEP that the approved engineering and institutional controls for the sites remain in place. These inspections and certifications have been conducted as scheduled, with no findings of non-compliance.

16.3 Visual Impact Mitigation

Both Neptune and Hudson constructed their respective converter stations in accordance with detailed site plans as approved by local authorities. Examples of visual impact mitigation include construction of a brick façade and decorative (and functional) clock tower at the Sayreville converter station (Neptune); planting and maintenance of vegetative screening for both Neptune and Hudson; and construction of sound walls at portions of the converter stations, which also act as a visual screen (Neptune and Hudson). In addition, cable installation of the Neptune cable along the Wantagh State Parkway required restoration and maintenance of vegetation disturbed by trenching during the installation.

16.4 Noise Mitigation

Both the Neptune and Hudson converter station employ LCC conversion technology, using converter transformers that generally produce sound levels greater than those produced by the VSC conversion technology to be employed by the Facility. For both facilities, sound walls and barriers were constructed as necessary to meet state and local noise control requirements, as confirmed by post-construction monitoring. Neither project has experienced noise complaints.

In terms of resourcing, PowerBridge has staff and resources that actively manage environmental commitments and compliance that flow from regulatory approvals. The company draws on contracted expertise, as necessary. PowerBridge has experience as detailed above with constructing similar large transmission line projects. This experience includes hiring and overseeing specialty contractors with area-specific expertise in required local areas, and in complying with all required permit conditions during and after construction, and demonstrates the ability of PowerBridge to manage compliance and conditions of permit approval during construction and operation of large projects, including conditions related to implementation of mitigation projects.

The Applicant will retain and rely on the expertise of experienced contractors such as HDR Engineering, Inc. (HDR) and others as needed to implement mitigation projects such as habitat mitigation plans and revegetation plans. HDR has experience conducting post-construction monitoring measures on numerous projects throughout the Pacific Northwest region.

17 Identification and Description of Required Permits (OAR 345-022-0010(5)(c)(A) and (B))

(c) Information about permits needed for construction and operation of the facility, including:

(A) Identification of all federal, state and local government permits related to the siting of the proposed facility, a legal citation of the statute, rule or ordinance governing each permit, and the name, mailing address, email address and telephone number of the agency or office responsible for each permit;

(B) A description of each permit, the reasons the permit is needed for construction or operation of the facility and the applicant's analysis of whether the permit should or should not be included in and governed by the site certificate;

RESPONSE

17.1 Federal Permits

Table 2 identifies the federal permits required for Facility construction and operation to meet the standards required by OAR 345-022-0010(5)(c), subsections (A) and (B).

Table 2. Federal Permits

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
U.S. Army Corps of Engineers (USACE) Joe Brock Regulatory Project Manager (503) 808-4377 joeseph.w.brock@usace.army.mil	Record of Decision (ROD) / National Environmental Policy Act (NEPA) Compliance Section 106 of the National Historic Preservation Act (NHPA) compliance Section 7 of the Endangered Species Act	NEPA, Section 102 (42 United States Code [USC] § 4332); 40 Code of Federal Regulations [CFR] § 1500 Lead federal agency is required to consult with State Historic Preservation Officer(s), Indian Tribes, representatives of local governments, applicants for federal permits/approvals, and other interested parties regarding the findings and determinations made during the NHPA Section 106 process (as outlined in 36 CFR 800). Consultation with US Fish and Wildlife Service and the National Marine Fisheries Service under Endangered Species Act (ESA) Section 7 if listed or candidate species are potentially affected. The issuance of a federal permit is a federal action requiring environmental analysis under NEPA. The NEPA process is not within the jurisdiction of the Oregon Energy Facility Siting Council (OR EFSC); therefore, it should not be included in or governed by the site certificate. The Applicant will be seeking authorization from the USACE (which will act as the NEPA lead agency) concurrently with approval from OR EFSC.
USACE Portland District Melody White, Multnomah County and Portland Harbor Regulatory Contact P.O. Box 2946 Portland, OR 97208-2946 (503) 808-4385 Melody.J.White@usace.army.mil	Section 404 of the CWA/ Section 10 of the Rivers and Harbors Act (RHA)	CWA, Section 404 (33 USC § 1344); 33 CFR §§ 320, 323, 325-328, and 330 A Section 404 permit will be required if dredge or fill occurs in waters of the United States. Generally, a Section 404 permit requires a CWA Section 401, Water Quality Certification. Section 10 requires authorization for any work in or over navigable water of the United States. This federal process is not within the jurisdiction of OR EFSC; therefore, it should not be included in or governed by the site certificate.

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
USACE Portland District Sally Bird-Gauvin, Section 408 Project Manager P.O. Box 2946 Portland, OR 97208-2946 (503) 808-4765 Sally.A.Bird-Gauvin@usace.army.mil	Section 14 of the RHA (Section 408 Permission) Archaeological Resources Protection Act (ARPA) permit	RHA, Section 14 (33 USC § 408, Section 408) ARPA (16 U.S.C. §470aa (b)) permit is required to perform archaeological investigations on federal lands. Permission is required for the permanent or temporary action that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness of any USACE Civil Works project. This federal process is not within the jurisdiction of OR EFSC; therefore, it should not be included in or governed by the site certificate.
Bonneville Power Administration (BPA) BPA Transmission Services Contact: Interconnection Administrator (360) 619-6047 interconnection@bpa.gov	Interconnection Agreement ARPA Permit	Interconnection services to the Federal Columbia River Transmission System and interrelated matters. ARPA (16 U.S.C. §470aa (b)) permit is required to perform archaeological investigations on federal lands. This federal process is not within the jurisdiction of OR EFSC; therefore, it should not be included in or governed by the site certificate.
United States Forest Service (USFS) Region 6 (541) 308-1700 SM.FS.r6crgnsawfb@usda.gov	Special Use/ Utility Permit	Work within the National Scenic Area. This federal process is not within the jurisdiction of OR EFSC; therefore, it should not be included in or governed by the site certificate.

17.2 State Permits Not Federally Delegated

Table 3 identifies and describes state permits required for Facility construction and operation to meet the standard required by OAR 345-022-0010(5)(c), subsections (A) and (B).

Table 3. State Permits Not Federally Delegated

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
Oregon		
Oregon Energy Facility Site Council (OR EFSC) energy.siting@oregon.gov	Site Certificate	Transmission lines over 230 kilovolts (kV), more than 10 miles long, and that are to be constructed in more than one city or county of the state.
Oregon Department of State Lands (ODSL) Jevra Brown, Aquatic Resource Planner (503) 986-5297 Jevra.Brown@state.or.us	Removal-Fill Permit	Activities involving filling or removing 50 cubic yards or more of material in a wetland or waterway. The Removal-Fill Permit should be included in and governed by the site certificate.
ODSL Jevra Brown, Aquatic Resource Planner (503) 986-5297 Jevra.Brown@state.or.us	Waterway Authorization for submerged land leasing	Use of the state-owned submerged and submersible lands requires authorization from ODSL. Authorizations from ODSL for submerged and submersible lands should not be included in and governed by the site certificate.
Oregon State Historic Preservation Office (SHPO) Oregon Parks and Recreation Department Oregon Heritage/State Historic Preservation Office Attn: John Pouley, State Archaeologist (503) 986-0577 John.Pouley@oregon.gov	Archaeological Excavation Permit	Oregon Revised Statutes (ORS) Chapter 97, 358, 390; OAR Chapter 736, Division 51 Ground-disturbing activity that may affect a known or unknown archaeological resource on public or private lands requires a permit issued by the Oregon Parks and Recreation Department. If needed, the Applicant will obtain the permit from SHPO; therefore, this permit should not be included in or governed by the site certificate.

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
Oregon Department of Transportation (ODOT) District 9, The Dalles Dan Shanahan, District 9 Manager 3313 Bret Clodfelter Way The Dalles, OR 97058 (541) 296-2927 Dan.T.Shanahan@odot.oregon.gov	Encroachment Permit - Utility	Activity along a state highway, or an activity that requires the use of the state highway for other than a normal transportation. An ODOT Encroachment Permit for a Utility is a permit for the installation, maintenance, and operation of utility facilities such as pipelines, pole lines, buried cable, and conduits upon state highway right of way (work within Interstate 84 (I-84) corridor) If needed, the Applicant's contractor will obtain necessary permits from ODOT; accordingly, these permits should not be included in or governed by the site certificate.
Washington		
Washington State Energy Facility Site Evaluation Council (WA EFSEC) Sonia Bumpus, EFSEC Director (360) 664-1363 Sonia.bumpus@efsec.wa.gov	Energy Facility Site Certification State Environmental Policy Act (SEPA)	"Opt-in" to WA EFSEC jurisdiction: electrical transmission facilities: (A) of a nominal voltage of at least 115 kV and (B) located in more than one jurisdiction that has promulgated land use plans or zoning ordinances. Revised Code of Washington (RCW) 43.21C requires state and local agencies to identify and analyze the adverse environmental impacts of a proposal before making a decision on that proposal (RCW 43.21C.030) The Applicant intends to seek certification from WA EFSEC. This is a Washington state authorization and should not be included in or governed by the site certificate.

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
Washington State Department of Archaeology and Historic Preservation (DAHP) DAHP Section 106 Review Group 106@dahp.wa.gov DAHP SEPA Review sepa@dahp.wa.gov	National Historic Preservation Act (NHPA) Section 106 Review + Unanticipated Discovery Plan (UDP) SEPA Review	Project funding or permit that may affect a historic property or historic site, both those listed or eligible for inclusion in the National Register of Historic Places (NRHP). Review potential project impacts on archaeological, historical, and cultural resources under SEPA (RCW 21.43c) in coordination with EFSEC (lead state agency). All projects involving ground disturbance in native soils require a UDP. This is a Washington state authorization and should not be included in or governed by the site certificate.
Washington State Department of Fish and Wildlife (WDFW) – Region 5 Amaia Smith (Skamania and Clark Counties) (360) 839-5308 Amaia.Smith@dfw.wa.gov Amber Johnson (Klickitat County) (360) 701-2738 Amber.johnson@dfw.wa.gov	Hydraulic Project Approval	Any form of work that uses, diverts, obstructs, or changes the natural flow or bed of any fresh water or saltwater of the state (over, under, or within). This includes bed reconfiguration, all construction or other work waterward, under and over the ordinary high water mark (OHWM), including wetlands, dry channels, and may include projects landward of the OHWM (e.g., activities outside the OHWM that will directly impact fish life and habitat, falling trees into streams or lakes, bridge maintenance, dike construction, etc.). Administered by WA EFSEC. This is a Washington state authorization and should not be included in or governed by the site certificate.
Washington State Department of Natural Resources (WDNR) Rivers District (360) 577-2025 aquaticleasing.rivers@dnr.wa.gov	Aquatic Lands Use Authorization or Aquatic Lands Lease	Most activities taking place on state-owned aquatic lands (including harbors, tidelands, shorelands, and beds of navigable waters) may require an authorization, such as a license, lease, rights-of-entry, or easement lease. These state-owned aquatic lands include the coast, bedlands, lakes, rivers, and Puget Sound marine areas. Administered by WA EFSEC. This is a Washington state authorization and should not be included in or governed by the site certificate.

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
Washington State Department of Transportation (WSDOT) – Southwest Region Dennis Noyes Utilities Project Delivery Manager, Utility Permit & Franchise Engineer (360) 905-2298 Dennis.Noyes@wsdot.wa.gov	General Permit	Work within WSDOT right-of-way. This is a Washington state authorization and should not be included in or governed by the site certificate.

17.3 State Permits Federally Delegated

Table 4 identifies and describes state permits that have been delegated by the federal government that may be required for Facility construction and operation to meet the standard required by OAR 345-022-0010(5)(c), subsections (A) and (B).

Table 4. State Permits Federally Delegated.

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
Oregon		
Oregon Department of Environmental Quality (ODEQ) Water Quality Program Sara Slater, 401 Program Coordinator 700 NE Multnomah Street, Suite 600 Portland, OR 97323 (541) 633-2007 Slater.Sara@deq.state.or.us	Clean Water Act (CWA), Section 402, National Pollutant Discharge Elimination System (NPDES) 1200-C	An NPDES construction stormwater permit is required for construction activities that will disturb one or more acres of land. The Applicant will obtain this permit directly from ODEQ as it is outside the jurisdiction of the Oregon Energy Facility Siting Council (OR EFSC) and should not be included in or governed by the site certificate.
ODEQ Water Quality Program Sara Slater, 401 Program Coordinator 700 NE Multnomah Street, Suite 106 Portland, OR 97323 (541) 633-2007 Slater.sara@deq.state.or.us	Section 401 of the Clean Water Act (CWA), Water Quality Certification	CWA, Section 401 (33 USC § 1341); Oregon Administrative Rule (OAR) Chapter 340, Division 48 Water quality certification is required for projects that are processed under the USACE Section 404 Nationwide Permits. The Applicant will obtain this permit directly from ODEQ as it is outside the jurisdiction of OR EFSC and should not be included in or governed by the site certificate.

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
Washington		
Washington State Department of Ecology (Ecology) Joyce Smith Permit Administrator (360) 407-6858 joyce.smith@ecy.wa.gov	NPDES Construction Stormwater General Permit	Soil disturbing activities of one acre and more and may discharge stormwater to surface waters of the state, which includes storm drains, ditches, wetlands, creeks, rivers, lakes, and marine waters. Administered by the Washington State Energy Facility Site Evaluation Council (WA EFSEC). This is a Washington state authorization and should not be included in or governed by the site certificate.
Washington State Department of Ecology (Ecology) Loree'L Randall Shoreland & Environmental Assistant Project Manager (360) 485-2796 ecyrefedpermits@ecy.wa.gov	Section 401 Water Quality Certification	A federal permit is required to conduct any activity that might result in discharge of dredged or fill material into waters or wetlands. Administered by WA EFSEC. This is a Washington state authorization and should not be included in or governed by the site certificate.

17.4 Third-Party Federally Delegated Permits

The Applicant may rely on its construction contractors to obtain some required federally delegated permits. No permits have been identified to date.

17.5 Local Permits

Table 5 identifies the local permits required for Facility construction and operation to meet the standard required by OAR 345-022-0010(5)(c), subsections (A) and (B).

Table 5. Local Permits

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
Local Permits in Oregon		
City of Hood River	Development Permit	Development (excavation and grading) when installing the in-river HVDC transmission cable within the Columbia River.
City of Portland Bureau of Development Services, Land Use Review 1900 SW Fourth Avenue (503) 823-7300 bds@portlandoregon.gov	Conditional Use Permit, Type III	Development of Facility components in the OS, RF, RMP base zones.
City of Portland	Tree Permit	Removal of street trees outside of Urban Pocket Areas

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
City of Portland Bureau of Development Services, Plan Review 1900 SW Fourth Avenue (503) 823-7300 bds@portlandoregon.gov	Site Development Review and Building Permit	A development permit is required for earthwork resulting in exposure of bare soil or excavation or fill greater than 10 cubic yards. The Applicant's third-party contractor will obtain ancillary permits (as needed) directly from the City of Portland; accordingly, this permit should not be included in or governed by the site certificate.
City of Portland Bureau of Development Services, Trade Permits (503) 823-7300 bds@portlandoregon.gov	Electrical Permit	New installations, additions, or alteration to electrical systems. The Applicant's third-party contractor will obtain ancillary permits (as needed) directly from the City of Portland; accordingly, this permit should not be included in or governed by the site certificate.
City of Portland	Building or Development Permit	Portions of the Facility within the c and p environmental overlay zones
City of The Dalles Community Development Department Dawn Hert dhert@ci.the-dalles.or.us	Conditional Use Permit	Approval to develop a Community Facilities use in the CLI, I and CR zones.
City of The Dalles Community Development Department Dawn Hert dhert@ci.the-dalles.or.us	Physical Constraints Permit	All development that includes grading. Can be combined with land use permit review. The Applicant's third-party contractor will obtain ancillary permits (as needed) directly from the City of The Dalles; accordingly, this permit should not be included in or governed by the site certificate.
City of The Dalles Department of Public Works (541) 980-7703 publicworks@ci.the-dalles.or.us	Right-of-Way Construction Permit	Any construction within City Right-of-Way. The Applicant's third-party contractor will obtain ancillary permits (as needed) directly from the City of The Dalles; accordingly, this permit should not be included in or governed by the site certificate.
Hood River County	Floodplain Development Permit	HVDC cable system segments of underground cable within the floodplain.
Multnomah County	Floodplain Development Permit	Grading, excavation and filling in the Flood Hazard Overlay zone.

Responsible Agency/ Agency Contact Information	Permit	Authority/Description
Wasco County Wasco County Planning Department Kelly Howsley Glover, Planning Director 2705 East Second Street, The Dalles, OR 97058 (541) 506-2560 Kellyg@co.wasco.or.us	Development Type II review for a Development Permit	Approval to develop a Utility/Energy Facility use within the EFU A-1 zone and OZ-1 zone The Applicant will seek an OR EFSC determination of compliance with local land use standards under ORS 469.504(1)(b). This permit should be included in and governed by the site certificate.
Wasco County Wasco County Building Codes Services Kylee Ruby, Permit Technician (541) 506-2650 kyleer@co.wasco.or.us	Conditional Use Permit	Non-farm use (HVDC transmission cable) in NSA jurisdiction.
Wasco County Public Works Department	Road Approach Permit	Proposed new driveway to connect to a public road (Columbia View Drive).
Local Permits in Washington		
City of Stevenson Planning Department	Grading Permit	Utility facility in the PR zone
Skamania County Skamania County Planning and Development Department Alan Peters, Community Development Director (509) 427-3906 apeters@co.skamania.wa.us	Shoreline Substantial Development Permit; Shoreline Conditional Use Permit	A non-water oriented utility/parallel transmission facility in the Natural Environment and High Intensity Environments. Shoreline modification – fills upland of OHWM in the High Intensity Environment. The Applicant will seek determination of compliance with local land use standards under the WA EFSEC permit. This is a Washington local land use authorization and should not be included in or governed by the site certificate.
Skamania County	Administrative review	Public facilities and utilities (Rural I, designation 10) in the Industrial (MG) zoning designation; Underground utility facilities in F-2 Large Woodland (NSA General Management Area)
Skamania County Planning and Development Department	Grading Permit	Grading (temporary) in the MG zone
Skamania County Public Works Department	ROW Permit and Resolution No. 2010-15	Utility installation in Skamania County Road right-of-way

18 Permit Applications Not Federally Delegated (OAR 345-022-0010(5)(c)(C))

(C) For any state or local government agency permits, licenses or certificates that are proposed to be included in and governed by the site certificate, evidence to support findings by the Council that construction and operation of the proposed facility will comply with the statutes, rules and standards applicable to the permit. For permits related to wetlands and water rights the applicant may show this evidence in the State and Local Laws and Regulations Exhibit.

RESPONSE

A Removal/Fill Permit will be required if Facility construction impacts waters of the United States (Clean Water Act [CWA]), including wetlands. A Removal/Fill Permit will be required because removal and fill will be greater than the required threshold to obtain a permit (50 cubic yards). See the State and Local Laws and Regulations Exhibit for removal fill application details; the State and Local Laws and Regulations Exhibit includes the evidence needed for the council to determine compliance with the applicable rules and standards.

No new water rights are required for the Facility. Water for construction will be purchased from an existing water rights holder(s). Water for operations will be supplied by the local municipality or by exempt well under Oregon Revised Statute (ORS) 537.545 to provide water to the converter stations.

19 Permit Applications Federally Delegated (OAR 345-022-0010(5)(c)(D))

(D) For federally-delegated permit applications, evidence that the responsible agency has received a permit application and the estimated date when the responsible agency will complete its review and issue a permit decision.

RESPONSE

The U.S. Environmental Protection Agency (USEPA) has delegated authority to the Oregon Department of Environmental Quality (ODEQ) in Oregon and Washington State Department of Ecology (Ecology) in Washington to issue National Pollutant Discharge Elimination System (NPDES) stormwater discharge permits for construction and operations activities. The Applicant will prepare an NPDES 1200-C Permit application for the Facility to authorize the discharge of the construction stormwater from construction activities that disturb more than 1 acre of land. The NPDES 1200-C Permit application will be included as an attachment to the Soil Protection Exhibit. ODEQ's response to the application submittal, confirming receipt, will also be included as an attachment to the Soil Protection Exhibit. Once the application(s) is submitted, the Applicant anticipates a permit decision from the ODEQ and Ecology before the start of construction.

20 Third Party State or Local Permits (OAR 345-022-0010(5)(c)(E))

(E) If the applicant relies on a state or local government permit or approval issued to a third party, identification of any such third-party permit and for each:

(i) *Evidence that the applicant has, or has a reasonable likelihood of entering into, a contract or other agreement with the third party for access to the resource or service to be secured by that permit.*

RESPONSE

The Applicant typically relies on its Engineering-Procurement-Construction (EPC) contractors to obtain third-party permits. The Applicant will contract with one or more reputable firms with successful track records with comparable facilities.

(ii) Evidence that the third party has, or has a reasonable likelihood of obtaining, the necessary permit.

RESPONSE

The EPC contractor(s) will be a reputable firm with proven experience in the industry that has a reasonable likelihood of securing permits and completing compliant work.

(iii) An assessment of the impact of the proposed facility on any permits that a third party has obtained and on which the applicant relies to comply with any applicable Council standard.

RESPONSE

The Applicant's affiliate, PowerBridge, has worked with Siemens and Prysmian, experienced electric transmission line EPC contractors, on two similar underground and underwater high-voltage direct current (HVDC) transmission systems. These are the Hudson Project, a 7-mile-long, 660-megawatt (MW) electric transmission line with a single converter station, and the Neptune Regional Transmission System, a 65-mile-long, 660-MW electric transmission line with two converter stations. Both projects include underground and underwater cables between New York and New Jersey. Siemens and Prysmian are leading providers of electric power and cable systems, respectively, throughout the world. The Applicant would hire these contractors, or a contractor of similar caliber and experience for this Facility.

The Applicant may rely on its third-party contractors to obtain some required permits. In order to identify all potentially required permits, the Applicant assumes that the contractor would use nearby concrete and gravel suppliers; no temporary batch plants would be used.

The Applicant understands that an Encroachment Permit for a Utility (issued by the Oregon Department of Transportation [ODOT]) and/or a General Permit (issued by the Washington State Department of Transportation [WSDOT]) may be required for an activity that requires the use of the state highway for other than normal transportation. An ODOT Encroachment Permit for a utility is a permit for the installation, maintenance, and operation of utility facilities such as pipelines, pole lines,

buried cable, and conduits upon state highway right-of-way (work within Interstate 84 (I-84) corridor), a WSDOT General Permit is for work within the WSDOT right-of-way.

The EPC contractors, or their designated subcontractors, would obtain local permits such as mechanical, electrical, utility street opening, grading, building, and structural permits from cities or counties.

21 Third Party Federal Permits (OAR 345-022-0010(5)(c)(F))

(F) If the applicant relies on a federally-delegated permit issued to a third party, identification of any such third-party permit and for each:

(i) Evidence that the applicant has, or has a reasonable likelihood of entering into, a contract or other agreement with the third party for access to the resource or service to be secured by that permit.

(ii) Evidence that the responsible agency has received a permit application.

(iii) The estimated the date when the responsible agency will complete its review and issue a permit decision.

RESPONSE

No third-party federal permits are anticipated for this Facility.

22 Monitoring (OAR 345-022-0010(5)(c)(G))

(G) The applicant's proposed monitoring program, if any, for compliance with permit conditions.

RESPONSE

The Applicant will comply with monitoring requirements from the Oregon Energy Facility Siting Council (OR EFSC) and other jurisdictional agencies responsible for granting project permits or approvals. Specific monitoring measures for compliance with permit conditions are discussed in the relevant exhibits.

23 Conclusion

Based on the evidence provided in this exhibit, the OR EFSC can conclude that the Applicant complies with the organizational expertise standard under OAR 345-022-0010.

Attachment 1. Articles of Organization for Cascade Renewable Transmission, LLC

STATE OF NEW YORK

DEPARTMENT OF STATE

I hereby certify that the annexed copy has been compared with the original document in the custody of the Secretary of State and that the same is true copy of said original.

WITNESS my hand and official seal of the Department of State, at the City of Albany, on May 27, 2020.

Brendan C. Hughes
Executive Deputy Secretary of State

Rev. 06/19

ARTICLES OF ORGANIZATION
OF
Cascade Renewable Transmission, LLC

Under Section 203 of the Limited Liability Company Law

THE UNDERSIGNED, being a natural person of at least eighteen (18) years of age, and acting as the organizer of the limited liability company hereby being formed under Section 203 of the Limited Liability Company Law of the State of New York certifies that:

FIRST: The name of the limited liability company is:

Cascade Renewable Transmission, LLC

SECOND: To engage in any lawful act or activity within the purposes for which limited liability companies may be organized pursuant to Limited Liability Company Law provided that the limited liability company is not formed to engage in any act or activity requiring the consent or approval of any state official, department, board, agency, or other body without such consent or approval first being obtained.

THIRD: The county, within this state, in which the office of the limited liability company is to be located is ALBANY.

FOURTH: The Secretary of State is designated as agent of the limited liability company upon whom process against it may be served. The address within or without this state to which the Secretary of State shall mail a copy of any process against the limited liability company served upon him or her is:

c/o PowerBridge, LLC
501 Kings Hwy East
Suite 300
Fairfield, CT 06825

FIFTH: The limited liability company is to be managed by: ONE OR MORE MANAGERS.

SIXTH: The existence of the limited liability company shall begin upon filing of these Articles of Organization with the Department of State.

SEVENTH: The limited liability company shall have a perpetual existence.

EIGHTH: The limited liability company shall defend, indemnify and hold harmless all members, managers, and former members and managers of the limited liability company against expenses (including attorney's fees, judgments, fines, and amounts paid in settlement) incurred in connection with any claims, causes of action, demands, damages, liabilities of the limited liability company, and any pending or threatened action, suit, or proceeding. Such indemnification shall be made to the fullest extent permitted by the laws of the State of New York, provided that such acts or omissions which gives rise to the cause of action or proceedings occurred while the Member or Manager was in performance of his or her duties for the limited liability company and was not as a result of his or her fraud, gross negligence, willful misconduct or a wrongful taking. The indemnification provided herein shall inure to the benefit of successors, assigns, heirs, executors, and the administrators of any such person.

I certify that I have read the above statements, I am authorized to sign these Articles of Organization, that the above statements are true and correct to the best of my knowledge and belief and that my signature typed below constitutes my signature.

Erin E. Boyle (signature)

Erin E. Boyle , ORGANIZER
Withers Bergman LLP
157 Church Street, 12th Floor
New Haven, CT 06510

Filed by:
Erin E. Boyle
Withers Bergman LLP
157 Church Street, 12th Floor
New Haven, CT 06510

FILED WITH THE NYS DEPARTMENT OF STATE ON: 05/27/2020
FILE NUMBER: 200527010334; DOS ID: 5757210

Attachment 2. Business Entity Filing Records

APPLICATION FOR AUTHORITY

Corporation Division
www.filinginoregon.com

E-FILED
May 27, 2022
OREGON SECRETARY OF STATE

REGISTRY NUMBER

197453492

TYPE

FOREIGN LIMITED LIABILITY COMPANY

1. ENTITY NAME

CASCADE RENEWABLE TRANSMISSION, LLC

2. MAILING ADDRESS

501 KINGS HWY E STE 300
FAIRFIELD CT 06825 USA

3. NAME & ADDRESS OF REGISTERED AGENT

00329227 - C T CORPORATION SYSTEM

780 COMMERCIAL ST SE STE 100
SALEM OR 97301 USA

4. MEMBERS/MANAGERS

MANAGER

PB CRTS, LLC

501 KINGS HWY E STE 300
FAIRFIELD CT 06825 USA

5. MANAGEMENT

This Limited Liability Company will be manager-managed by one or more managers

6. DATE OF ORGANIZATION

05-27-2020

7. DURATION

PERPETUAL

8. JURISDICTION

NY

9. PRIMARY PHYSICAL LOCATION

501 KINGS HWY E STE 300
FAIRFIELD CT 06825 USA

I declare, under penalty of perjury, that this document does not fraudulently conceal, fraudulently obscure, fraudulently alter or otherwise misrepresent the identity of the person or any officers, managers, members or agents of the limited liability company on behalf of which the person signs. This filing has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete. Making false statements in this document is against the law and may be penalized by fines, imprisonment, or both.

By typing my name in the electronic signature field, I am agreeing to conduct business electronically with the State of Oregon. I understand that transactions and/or signatures in records may not be denied legal effect solely because they are conducted, executed, or prepared in electronic form and that if a law requires a record or signature to be in writing, an electronic record or signature satisfies that requirement.

ELECTRONIC SIGNATURE

NAME

MERYL SEELY

TITLE

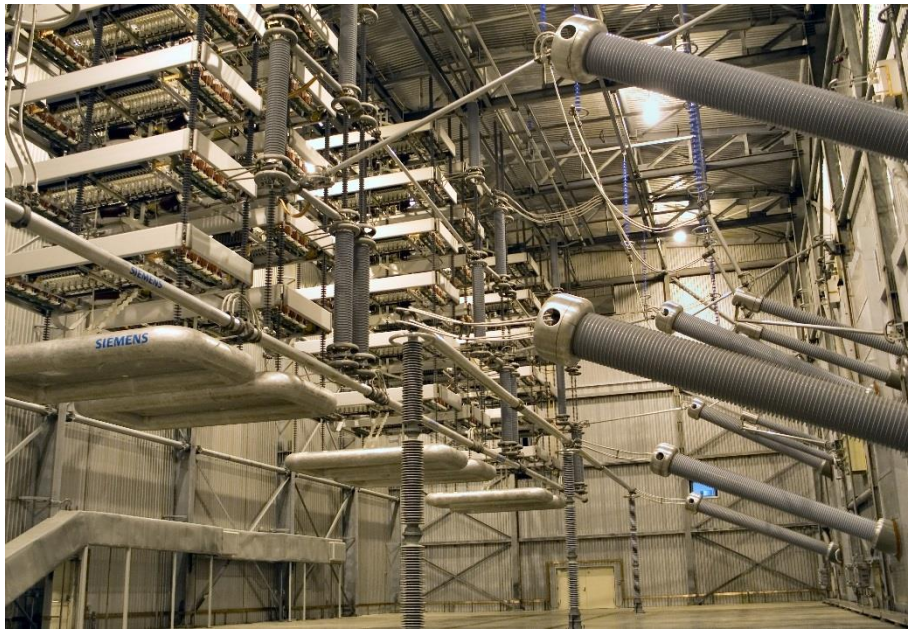
AUTHORIZED AGENT

DATE

05-27-2022

Attachment 3. Neptune Project Representative Photos

Photos of the Neptune Project (clockwise from top left): The installation barge laying cable in New Jersey's Raritan River; conduit for installation of the DC land based cable is laid in trenches along the Wantagh Parkway on Long Island; the street view of Neptune's converter station in Sayreville, New Jersey and the interior view of the converter valve hall.



Attachment 4. Hudson Project Representative Photos

Photos of the Hudson Transmission Project (clockwise from top left): The hydro plow is lowered into New York's Hudson River prior to submarine cable burial; conduit installed under New Jersey's Bellman Creek by HDD transitions to duct bank burial; underground cable installation nears completion in a public right-of way in Fairview, New Jersey; the final phase of construction is underway at the Hudson back-to-back converter station in Ridgefield, New Jersey.

Attachment 5. *Transmission & Distribution World*, "Hudson Transmission Project Goes Online Ahead of Schedule" (June 2013)

TRANSMISSION & DISTRIBUTION WORLD

Hudson Transmission Project Goes Online Ahead of Schedule

Wed, 2013-06-05 11:06

Hudson Transmission Partners, LLC has completed testing of its underground and underwater, 660 MW electric transmission project between Ridgefield, New Jersey and Manhattan, and has begun delivering power to customers in New York City. The Hudson transmission project route has a total length of about 7.5 miles, with a cable bundle buried under the Hudson River for about 3.5 miles and buried underground for approximately four miles, starting in Ridgefield, New Jersey. The line connects to the Con Edison system at the West 49th Street substation in the heart of Manhattan and is capable of providing about five percent of New York City's peak demand. The project began construction in May 2011 at a cost of approximately $850 million and was completed six weeks ahead of schedule, despite the two hurricanes that hit the area during the construction period.

The Hudson project is the second major underwater transmission project completed by PowerBridge, follow ing the 660 MW Neptune undersea transmission project, completed in June of 2007, which extends 65 miles between New Jersey and Long Island. Neptune has supplied approximately 20 percent of Long Island's electricity needs since going into service. T he Hudson and Neptune projects provide access to power from the PJM energy grid, one of the largest and most diverse power markets in the United States.

Using HVDC technology, the electricity drawn from the PJM grid is converted from AC to DC power, and then back to AC power, at a newly built converter station in Ridgefield, New Jersey, for the purpose of maximizing reliability and controllability in delivering power to Manhattan.

PROJECT FACTS

- Hudson Transmission Partners, the developer, owner and operator of the Hudson project, is responsible for its planning, permitting, financing , and construction . HTP is managed by PowerBridge, LLC of Fairfield, Connecticut. HTP partners also include Anbaric, LLC of Wakefield, Massachusetts and Triton, LLC of Portland, Maine.
- Siemens Energy, Inc. provided the design, engineering, construction and installation of the back-to-back HVDC converter station in Ridgefield, New Jersey. Siemens will also provide operation and maintenance services for project in conjunction with its operation of Neptune.
- Prysmian Cables and Systems USA, LLC supplied and installed the approximately 7.5 miles of 345 kV under water and underground cable that connects PJM with New York City.
- The Hudson cable bundle extends from the PSE&G Bergen substation in Ridgefield , NJ to the nearby HVDC converter station, and then travels approximately 3.5 miles underground to Edgewater, NJ where it enters the Hudson River. The cables make landfall on Manhattan's West Side between Piers 92 and 94, then travels a short distance from W. 52nd Street along the West Side Highway to the Con Edison West 49 th Street substation.

Attachment 6. Warranty Letter

CASCADE
RENEWABLE TRANSMISSION

May 20, 2025

Oregon Department of Energy
Energy Siting Division
550 Capital St. NE
Salem, OR 97301

To whom it may concern,

As described in the Application for Site Certificate submitted by Cascade Renewable Transmission, LLC for the Cascade Renewable Transmission Project ("Facility"), PowerBridge, LLC and NextEra Energy Transmission, LLC have indirect ownership of Cascade Renewable Transmission, LLC.

With this letter, Cascade Renewable Transmission, LLC, PowerBridge, LLC and NextEra Energy Transmission, LLC confirm that Cascade Renewable Transmission, LLC will have access to sufficient financial and technical resources and expertise to construct, own, operate and maintain the Facility, which resources and expertise may be obtained as services provided by PowerBridge, LLC, NextEra Energy Transmission, LLC or affiliates thereof on terms and conditions that will ensure availability of such resources and expertise to Cascade Renewable Transmission, LLC as and when needed to ensure safe and reliable construction and operation of the Facility.

Thank you in advance for your consideration of this matter.

Very truly yours,

Chris Hocker
Vice President
Cascade Renewable
Transmission, LLC

Edward M. Stern
CEO
PowerBridge, LLC

NextEra Energy Transmission, LLC

Matt Valle
President
June 11, 2025 11:53 ET