

Cascade Transmission Project

Supporting the Clean Energy Transition

November 2025

State of Washington Energy Facility Site Evaluation Council

Public Informational Meetings
November 17, 18, and 19, 2025

1. Introduction
2. Situation & Need
3. Proven Solution
4. Route & Features
5. Environmental Reviews
6. Potential Benefits
7. Development Team and Related Experience
8. Questions

The Situation

To meet the climate crisis, Oregon and Washington have passed into law bold clean energy goals for electric utilities.

Electricity demand in the Pacific Northwest will increase dramatically over the next 10 years.

What's missing is new electricity transmission needed to meet future energy needs.

WA

- 80% carbon-neutral by 2030
- 100% by 2045

OR

- 80% carbon-free by 2030
- 90% by 2035
- 100% by 2040

Oregon Capital Chronicle

Demand for electricity in Northwest projected to grow 30% in decade, triple previous estimates

BY: [ALEX BAUMHARDT](#) - MAY 2, 2024

Electricity demand in the Northwest is expected to grow more than 30% in the next decade, or about 5% more than estimated last year and triple the prediction three years ago, industry experts said in a new report.

Urgent Need

Retirement of fossil fuel generation and increasing energy demand along I-5 corridor

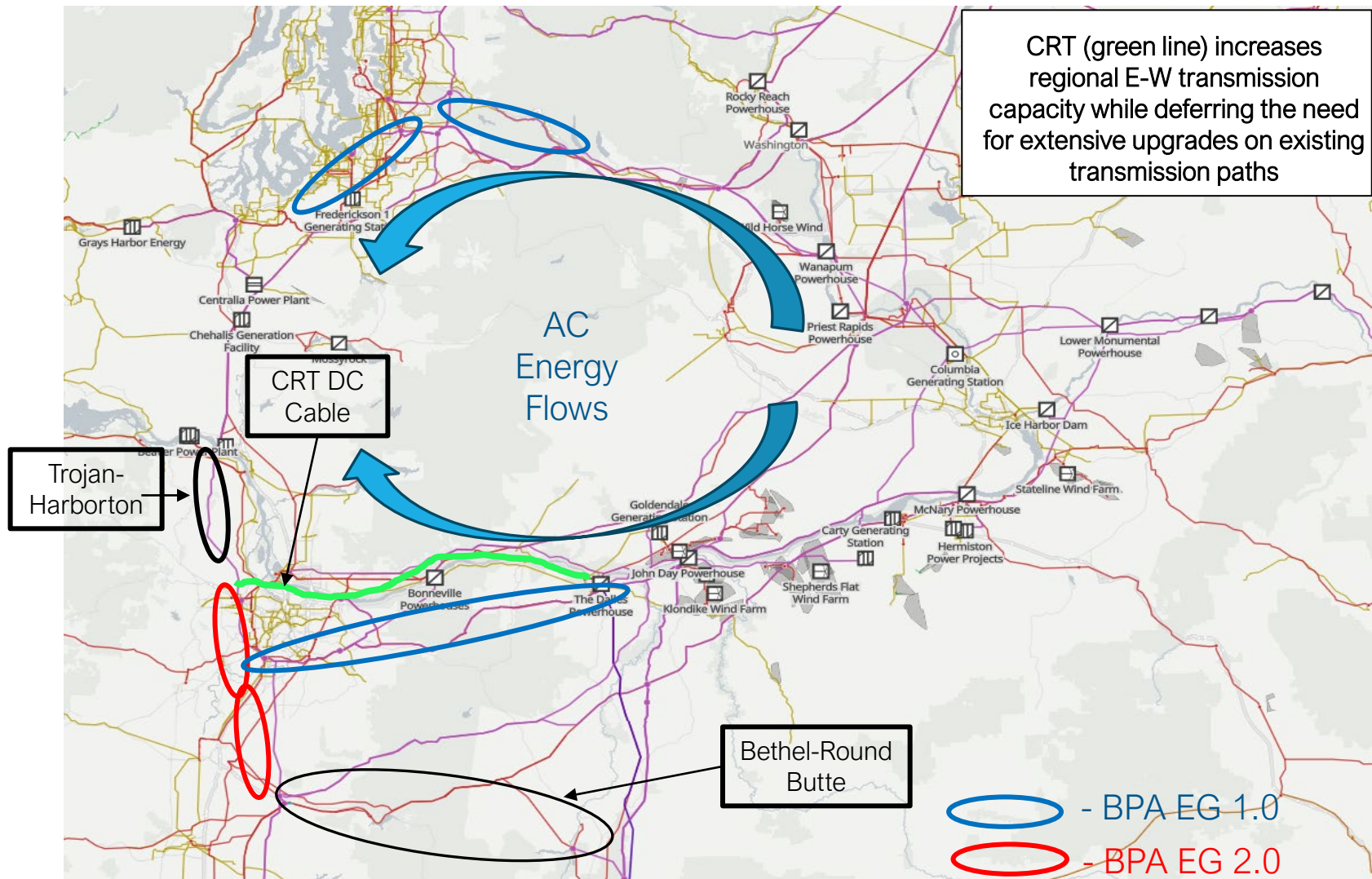
Minimal to no available east to west transmission capacity and aging transmission grid

New overhead wires and towers challenging to permit; visual, wildfire and extreme weather vulnerability concerns

Generation east of the Cascades bottlenecked or curtailed due to limited transmission



Washington Benefits from New Transmission



CRT: A Unique Solution

Meets Renewable Energy Goals

Improves Grid Flexibility, Resiliency and Safety

Helps Meet Increased Load

Will Not Interfere With Other Infrastructure

PORTLAND
BUSINESS JOURNAL

Proposal to put a high-voltage power line under the Columbia River begins regulatory trek

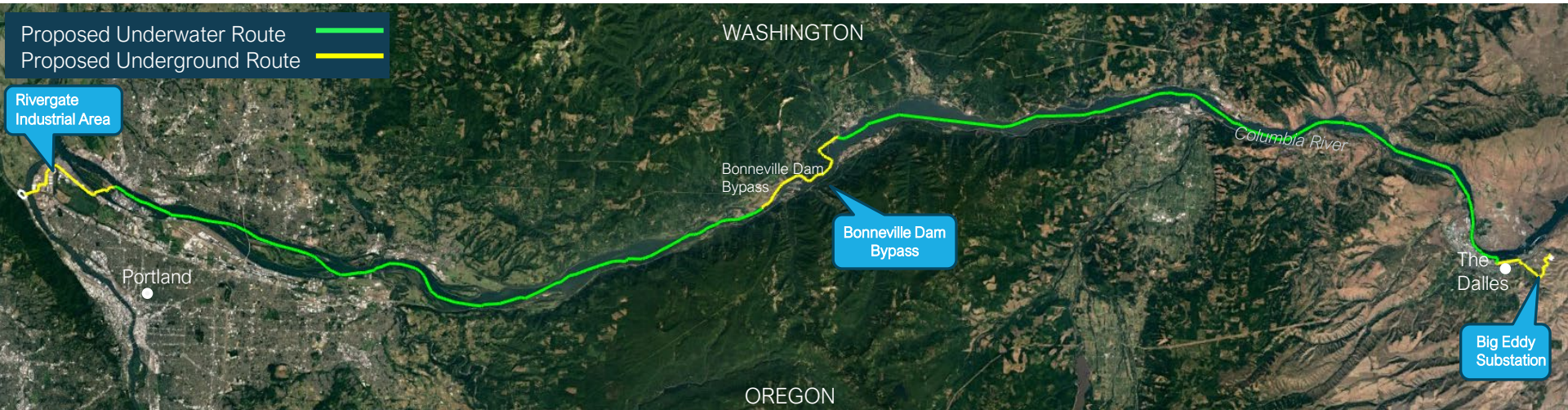
May 2, 2023

The Columbian

Company wants to bury 100-mile transmission line in Columbia River; it could carry solar, wind energy to Clark County

August 30, 2024

The CRT Project



Approximately 100-mile underwater and underground HVDC transmission line carrying 1,100 MW of energy generated east of the Cascades to customers west of the Cascades.

The Washington Route

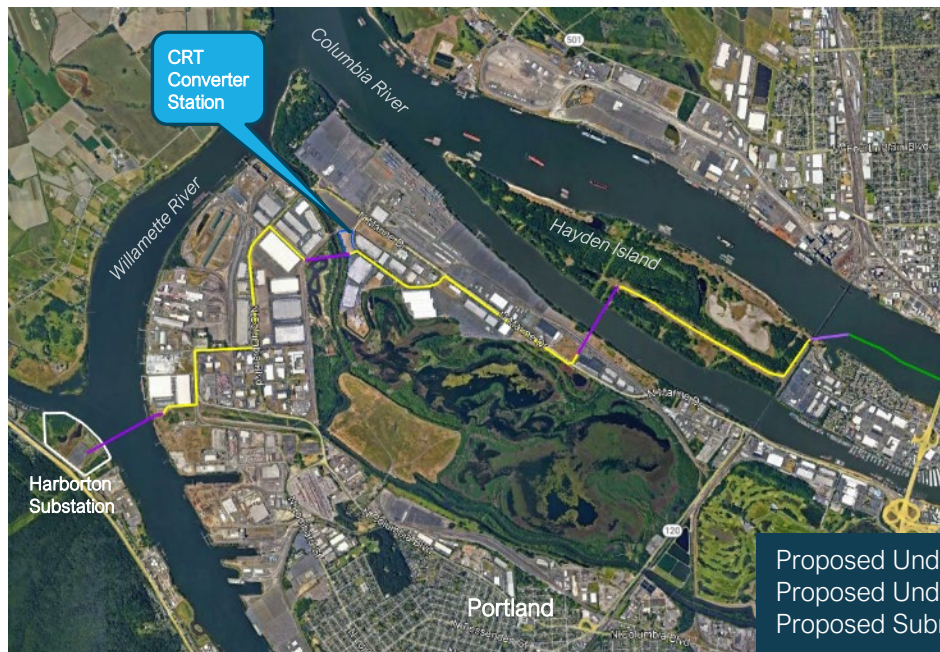


7.5-mile Underground Bonneville Dam Bypass

Bypasses Bonneville Dam on land, traveling underground around the dam and locks on existing public-rights of-way.

Oregon Land Routes

Project Converter Stations are located in The Dalles adjacent to BPA's Big Eddy Substation and in the Rivergate Industrial Section of Portland, near PGE's Harborton Substation



Portland/Rivergate Industrial District
5-mile Underground Line



The Dalles
5-mile Underground Line

Why An Underwater Line?

Alternatives Considered

High-voltage overhead lines:

- No available path through the Gorge or densely populated areas without unacceptable impacts

Underground for c.100 miles:

- I-84 not permissible under federal and state rules
- Not constructable for long stretches of SR 14 due to natural and manmade obstacles
- Not constructable in railroad rights-of-way and would interfere with railroad operations

Advantages:

- ✓ Proven installation methods, with dozens of similar projects worldwide
- ✓ No visual impacts
- ✓ Minimal impacts to environment and habitat
- ✓ Zero risk from wildfire
- ✓ Able to support the grid if other major lines go down
- ✓ No maintenance required during normal operation (40-50 year lifespan)

HVDC Submarine Cable

A 12" bundle consisting of two 6" in diameter HVDC cables + a 1" fiber optic cable buried beneath the Columbia River from The Dalles to Portland.

The 100-mile cable will safely transport 1,100 MW of renewable energy generated east of the Cascades to serve 800,000 homes west of the Cascades in Washington and Oregon.

The lead developer, PowerBridge, LLC has successfully developed, financed, built, and currently owns and operates two similar underwater HVDC transmission systems in New York and New Jersey.

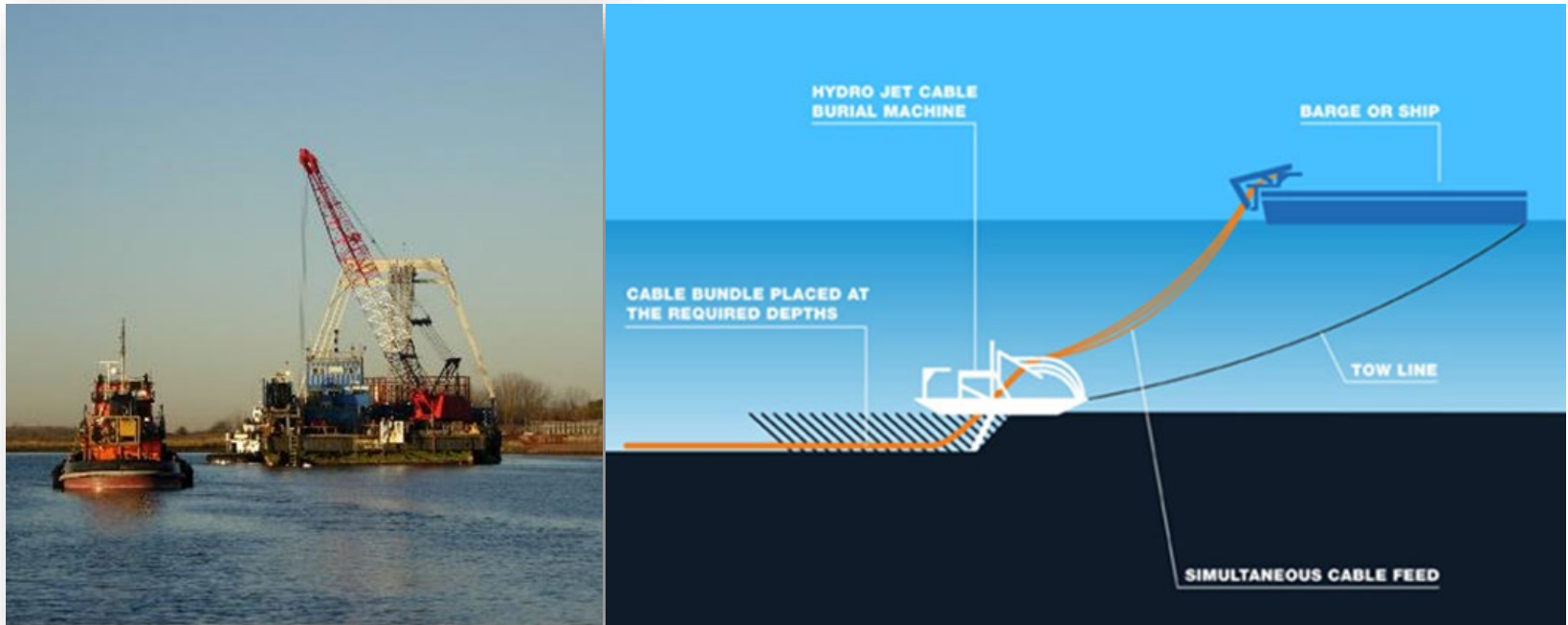


12" diameter cable bundle



6 " diameter cable

Low-Impact Construction



- A hydroplow fluidizes a 24-inch-wide trench while the cable bundle is simultaneously installed 10-15 feet below the USACE authorized river bottom. The sediment, primarily sand, then settles, covering the cable and refilling the trench.
- A single vessel and tug, of typical size on the Columbia River, will be used to install the cable bundle. The vessel moves very slowly, with approximate speeds of 1 - 1.5 miles per day.
- The in-water portion of the project can be completed in 8-9 months, split over the duration of two permitted winter work windows.

Converter Stations



Photo: NextEra's Trans Bay Cable converter station San Francisco, CA

Converter stations are needed to convert Alternating Current (AC) power to Direct Current (DC), and vice versa. The CRT DC transmission cable will begin and end at 5-acre converter stations near existing BPA and PGE electricity facilities in The Dalles and in Portland's Rivergate Industrial District.

Permits, Approvals, and Studies

- US Army Corps of Engineers (USACE) Section 10, Section 401 (Clean Water Act certificates issued by states), Section 404, Section 408 permits
- NEPA review, Environmental Impact Statement
- Section 106 consultation with Tribal Nations
- Washington EFSEC Siting Agreement
- Oregon EFSC Siting Authorization
- Permits and approvals as required by affected municipalities (Portland, The Dalles, Stevenson, WA)
- Interconnection agreements with Bonneville Power Administration and Portland General Electric
- Studies conducted or underway: Biological Assessment, Sediment Transport, Geophysical Survey of river bottom, Sediment Profile Imaging, EMF modeling, temperature modeling, geotechnical, etc.

Permitting Update

Washington Energy Facility Site Evaluation Council (EFSEC)

- Initial consultation August 2023
- Preapplication Request filed December 2023
- Informational Public Meetings in Clark, Skamania and Klickitat Counties Feb 2024
- Application filed October 2025

Oregon DOE Energy Facility Siting Council (EFSC)

- Notice of Intent (NOI) to File for Site Certification submitted March 2023
- Informational Public Meetings held in The Dalles and Portland May 2023
- Project Order issued July 2023
- Preliminary Application to be filed 4Q 2025

United States Army Corps of Engineers (USACE)

- Section 408 Initial Request filed December 2021
- Section 404 filed June 2024; Public Notice Issued July 2024
- Agency Review and Tribal Consultation Underway

Agency Coordination

- Multi-Agency Coordination Meetings held as needed

Benefits to Communities

Well Paying Jobs with Benefits

- 300-400 jobs during construction
- Approximately 20 long-term jobs during operations
- Project Labor Agreements

Property Tax Base Increases

Expand Workforce Training and Education Partnerships

Potential Community Benefits Plan Investments

- Fish recovery and habitat restoration partnerships
- Technical education partnerships
- Community amenities, such as walking and cycling trail extensions

Enable Energy Projects East of Cascade Mountains

- Hundreds of construction jobs
- Long-term employment opportunities

Development Team



PowerBridge, LLC (lead developer) has built and now operates two undersea and underground transmission projects, New York to New Jersey:

- Neptune completed in 2007 – 65 miles, 660 MW Raritan River, Atlantic Ocean
- Hudson, completed 2013 – 7 miles, 660 MW Hudson River



Sun2O Partners, an experienced renewable developer



NextEra Energy Transmission, subsidiary of NextEra Energy:

- Leading publicly traded U.S. utility and renewable developer
- Owns and operates TransBay Cable project, completed in 2010 – 53 miles, 400 MW (under San Francisco Bay)

Similar Marine Transmission

Project	Country	Miles	Rating	Voltage	Online Date
ElecLink	UK-France	32	1000 MW	320 kV	2022
North Sea Link	Norway-UK	453	1400 MW	525 kV	2021
NordLink	Germany-Norway	387	1400 MW	500 kV	2020
Nemo	UK-Belgium	87	1000 MW	400 kV	2019
BorWin3	Germany	99	900 MW	320 kV	2019
BorWin2	Germany	120	800 MW	300 kV	2014
Hudson*	NJ/NY, US	7	660 MW	345 kV	2013
TransBay**	San Francisco, US	53	400 MW	200 kV	2010
Neptune*	NJ/NY, US	67	660 MW	500 kV	2007
BassLink	Australia	230	500 MW	400 kV	2005
Cross Sound	CT/NY, US	25	330 MW	150 kV	2003

* Projects developed and operated by PowerBridge

** Project owned and operated by NextEra

PowerBridge Transmission Experience

PowerBridge has built and now operates two underwater transmission projects in the New York, New Jersey area.



- Completed 2007, \$650M cost
- Links PJM Electricity with Long Island Power Authority
- 65-mile, 660 MW HVDC
- 51 miles undersea, 14 miles underground



- Completed 2013, \$850M cost
- Links PJM and NY grids across Hudson River
- 7-mile underwater and underground

Our Values & Commitment to You

RESPECT

- We will engage openly, honestly, and respectfully with all local, state, federal and tribal governments, and residents.

ABOVE AND BEYOND

- We will meet or exceed all permitting and regulatory requirements to build and operate this project.

RESPONSIVE

- We will respond to all questions and inquiries as quickly as possible. If we don't immediately have an answer, we will say so and seek out the information.

COMMUNITY

- We will partner with local residents and communities to support organizations and causes to advance the environmental, social, and economic interests of the region.

Cascade Transmission Project

Supporting the Clean Energy Transition

www.cascaderenewable.com