



# Cascade Renewable Transmission Project

Securing our clean energy future.

February 2024

State of Washington  
Energy Facility Site Evaluation Council  
Public Informational Meetings  
February 6, 7 and 8, 2024

1. Introduction
2. Situation & Need
3. Proven Solution
4. Route & Features
5. Environmental Reviews
6. Marine Transmission
7. Team & Commitments
8. Questions

# The Situation

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

What's missing is new electricity transmission needed to make them a reality.

WA

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

OR

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



# The Situation

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## How PGE plans to get more clean electricity to meet demand, emission goals

April 5, 2023

PGE said it will be impossible to meet the 2030 emission target without upgrading and building new transmission lines – the high-voltage power lines that move energy from generation source to customers. Transmission lines are notoriously costly and difficult to approve and experts have sounded the alarm in recent years that the current aging transmission system cannot support additional clean energy loads.

# Urgent Need

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Minimal to no available east to west transmission capacity

Stranded renewables east of the Cascades

Increasing energy demand

Challenges with overhead wires and towers



NORTHWEST STATES NEED TO BUILD NEW POWER LINES, FAST  
Otherwise, Oregon and Washington will miss critical climate targets.

October 13, 2022



**Lack of Transmission Lines Could Slow  
State's Renewable Energy Transformation**

January 3, 2023



# Proven Solution

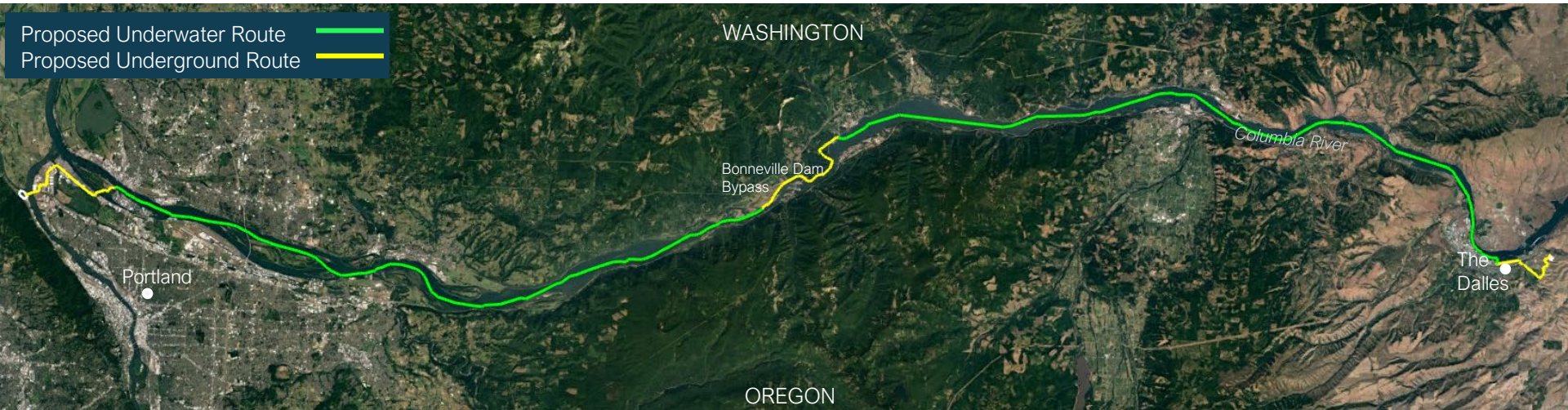
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A 12" bundled transmission line with two 6" cables + fiber optic buried beneath the Columbia River from The Dalles to Portland.

The ~100-mile High-Voltage Direct Current (HVDC) line will safely transport 1,100 MW of renewable energy generated east of the Cascades to serve 800,000 homes west of the Cascades.



# The Route

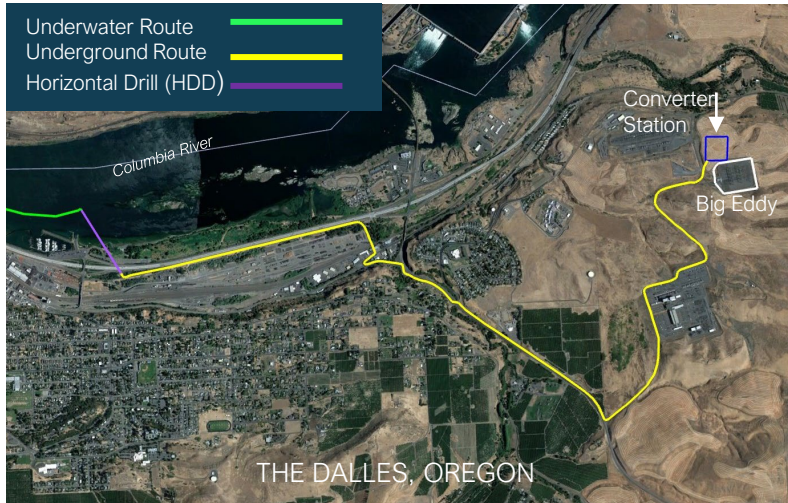


## Columbia River 79-mile In-River Route

Transports 1,100 MW of renewable energy generated east of the Cascades to customers west of the Cascades via an HVDC transmission line.



# The Route



The Dalles  
4.5-mile Underground Cable



Portland/Rivergate Industrial  
7-mile Underground Cable

Transmission begins east and ends west at converter stations near existing Bonneville Power Administration (BPA) and Portland General Electric (PGE) electricity facilities.



# The Route



## 7.5-mile Underground Bonneville Dam Bypass

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

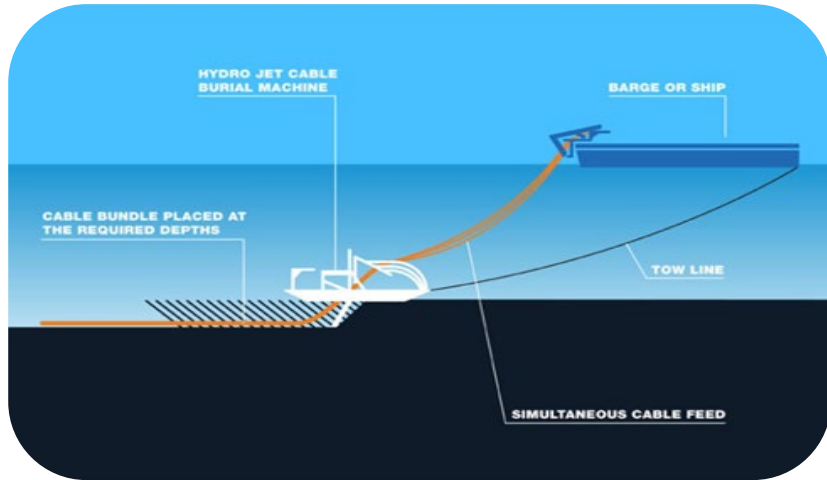
# Converter Stations

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The transmission line will begin and end at 5-acre converter stations in The Dalles and Portland/Rivergate Industrial area near existing BPA and PGE electricity facilities.

# Low-Impact Construction



- Water jets create an 18" trench, while the cable bundle is installed 10-15 feet below the riverbed and sediment settles to cover the cable.
- A single barge and tug, typical on the Columbia River, will be used to install the cable bundle. The project can be completed in 30 months; 4-6 months of which is river installation.



# Project Schedule

	2024	2025	2026	2027	2028	2029
Northern Grid Planning Process						
Permitting						
Financing						
Real Estate						
Engineering Procurement Construction						
Interconnection						
Testing						
Commercial Operation						

# Key Features

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## Clean Energy:

- Helps achieve OR and WA clean energy goals
- Power for 800,000 homes

## Low Impact:

- Designed to avoid impacts to sensitive cultural and natural resources
- Avoids habitat, visual and wildfire impacts of overhead transmission

## Jobs:

- Supports 300-400 high-skilled union jobs and apprenticeship programs at peak of construction

## Construction Cost:

- No public investment required for \$1.5 billion (est.) construction

## Taxes:

- Not seeking state tax breaks
- Will ultimately strengthen local tax base

# Protecting The Columbia River Gorge

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## Environmental Reviews

- After multi-year public reviews, the project will meet or *exceed* all federal, state, and local environmental requirements.

## Tribal Consultation

- The project will respect and be responsive to Tribal Nation concerns.

## Marine Impacts

- Multiple studies related to electromagnetic fields (EMF) have found no measurable adverse impacts on fisheries from similar marine transmission cables.

## Low-impact Construction

- River installation will occur during the late fall and winter months to avoid impacts on fisheries and river recreation.

## Environmental Track Record

- After 28 total years of operation, two similar east coast lines have reported no adverse environmental impacts.



# Major Required Permits & Approvals

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- US Army Corps of Engineers (USACE) Section 10, Section 401 (Clean Water Act certificates issued by states), Section 404, Section 408 permits
- NEPA review
- 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
- Began major permit application process Q1 2023

Federal and multi-state approval process is comparable to that undertaken by PowerBridge for the Neptune and Hudson underwater HVDC projects linking New Jersey and New York.

# 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
<b>Hudson*</b>	<b>NJ/NY, US</b>	<b>7</b>	<b>660 MW</b>	<b>345 kV</b>	<b>2013</b>
TransBay	San Francisco, US	53	400 MW	200 kV	2010
<b>Neptune*</b>	<b>NJ/NY, US</b>	<b>67</b>	<b>660 MW</b>	<b>500 kV</b>	<b>2007</b>
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*

# PowerBridge Transmission Experience

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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 Team

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Chris Hocker



Susan Brown



Ernie Griggs



Jeff Wood



Carol Loughlin



Corey Kupersmith

# Our Values & Commitment to You

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## 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.



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Securing our clean energy future.

[www.cascaderenewable.com](http://www.cascaderenewable.com)