

OREGON WAVE ENERGY TRUST UTILITY MARKET INITIATIVE

TASK 2.4: OREGON COASTAL TRANSMISSION MAP AND SUBSTATIONS



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The Utility Market Initiative was prepared by *Pacific Energy Ventures* on behalf of the Oregon Wave Energy Trust.

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For information about this project, please contact Justin Klure at Pacific Energy Ventures:

Phone: (503) 475-2999

Email: jklure@peventuresllc.com

About Oregon Wave Energy Trust

The Oregon Wave Energy Trust – (OWET) - with members from fishing and environmental groups, industry and government - is a nonprofit public-private partnership funded by the Oregon Innovation Council in 2007. Its mission is to serve as a connector for all stakeholders involved in wave energy project development - from research and development to early stage community engagement and final deployment and energy generation - positioning Oregon as the North America leader in this nascent industry and delivering its full economic and environmental potential for the state. OWET's goal is to have ocean wave energy producing 2 megawatts of power - enough to power about 800 homes - by 2010 and 500 megawatts of power by 2025.



BPA Transmission Facilities in Western Oregon

BPA Transmission Facilities

- 115-kV
- 230 - 345-kV
- 500-kV
- Greater than 500-kV
- ▲ BPA Substation

Foreign Owned Substations

- Coos-Curry Electric Coop
- Central Lincoln PUD
- Portland General Electric
- PacificCorp
- Tillamook PUD
- Western Oregon Electric Coop
- Consumer's Power, Inc.

0 10 20 30 40
Miles

N
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Coastal Area Substations

		BPA			
Substation	Owner	Transformer	Nameplate	Primary	Secondary
		T-Number	Capacity, MVA	Voltage, kV	Voltage, kV
Clatsop	BPA	T-608	75/100	230	115
Knappa-Svensen	PAC			115	
Fern Hill	PAC			115	
Youngs Bay	PAC			115	
Astoria	PAC			115	
Warrenton	PAC			115	
Lewis & Clark	PAC			115	
Seaside	PAC			115	
Cannon Beach	PAC			115	
Tongue Point				115	
Necanicum	WOEC	T-661	1.0	115	12.5
Nehalem	TPUD			115	24.9
Mohler	TPUD			115	24.9
Garibaldi	TPUD			115	24.9
T.C.C.A.	TPUD			115	24.9
Tillamook	BPA	T-1585	280	230	115
Hebo	BPA	Capacitors	32.4-MVAR	115	115
Hebo	TPUD			115	20.8
Nestuca	TPUD			115	20.8
Wilson River	TPUD			115	
Trask River	TPUD			115	24.9
Beaver	TPUD			115	12.5
Tillamook No.3	TPUD			115	12.5
Tillamook No.6	TPUD			115	24.9
Boyer	PAC			115	
Devils Lake	PAC			115	
Grand Ronde	PGE			115	
Toledo	BPA	T-1715 Bk-1	140/200	230	69
	BPA	T-1627 Bk-2	140/200	230	69
Toledo-CPI	CPI	Sw. Sta.		69	69
Bayview	CPI			69	12.5
Toledo-CL	CLPUD			69	12.5
G.P. Paper	CLPUD			69	12.5
Toledo West-CL	CLPUD			69	12.5
Lower Ollala	CLPUD			69	12.5
Mossy Lane	CLPUD	Sw. Sta.		69	69
Steenon Rd	CLPUD			69	12.5
Siletz	CLPUD			69	12.5
Depoe Bay	CLPUD			69	12.5
Lincoln Beach	CLPUD			69	12.5
Otter Rock	CLPUD			69	12.5
Agate Beach	CLPUD			69	12.5
Newport	CLPUD			69	12.5
Nye Beach	CLPUD			69	12.5
Seal Rock	CLPUD			69	12.5
Yachats	CLPUD			69	12.5
Lundy	CLPUD			69	12.5

Wendson	BPA	T-1453	168	230	115
Mapleton	BPA	T-1391 Bk-1	12/16/20	115	12.5
	BPA	T-793 Bk-2	6/8	115	34.5
Heceta	CLPUD			115	12.5
Kingwood	CLPUD			115	12.5
Florence	CLPUD			115	12.5
Berrydale	CLPUD			115	12.5
Tahkenitch	BPA	T-1671	140/200	230	115
Gardiner	BPA	T-1156 Bk-1	22/29.9/37.3	115	13.8
	BPA	T-1051 Bk-2	12/16	115	13.8
Gardiner-CL	CLPUD				13.8/12.5
Reedsport	BPA	T-962	6/8	115	12.5
Reedsport-CL	CLPUD			115	12.5
Lakeside	CLPUD			115	12.5
Hauser	BPA	Sw. Sta.	--	115	115
Hauser-CL	CLPUD			115	12.5
Glasgow	CLPUD			115	12.5
Sumner	CCEC			115	24.9
Fairview-CC	CCEC			115	24.9
Fairview	BPA	T-773	150/200/250	230	115
Jordan Point	PAC			115	
South Dunes	PAC			115	
North Bend	PAC			115	
State Street	PAC			115	
North Bend Steam Plant	PAC			115	
Empire	PAC			115	
Lockhart	PAC			115	
Coos River	PAC			115	
Isthmus	PAC			115	
Coquille	PAC			115	
Myrtle Point	PAC			115	
Norway	BPA	T-847	6/8	115	12.5
Norway-CC	CCEC			115	12.5
Morrison	CCEC			115	24.9
Bandon	BPA	T-848 Bk-1	6/8	115	12.5
	BPA	T-1100 Bk-2	6/7.5	115	12.5
Two Mile Road	BPA	T-1745	15/20/25	115	12.5
Langlois	BPA	T-786	6/8	115	12.5
Langlois-CC	CCEC			115	12.5
Elk River	CCEC			115	12.5
Port Orford	BPA	T-845	6/8	115	12.5
Geisel Monument	CCEC			115	12.5
Rogue	BPA	T-1639	140/200	230	115
Gold Beach	BPA	Sw. Sta.	--	115	115
Gold Beach	CCEC			115	12.5
Pistol River	CCEC			115	12.5
North Brookings	CCEC			115	12.5
Parkview	CCEC			115	12.5
Brookings	CCEC			115	12.5
Harbor	CCEC			115	12.5