A topographic map of the Pacific Northwest region, showing the coastline of Washington, Oregon, and California, with various mountain ranges and river systems. The map is overlaid with a semi-transparent white box containing the title and date.

Electricity Generation

for the

Pacific Northwest

June 2006

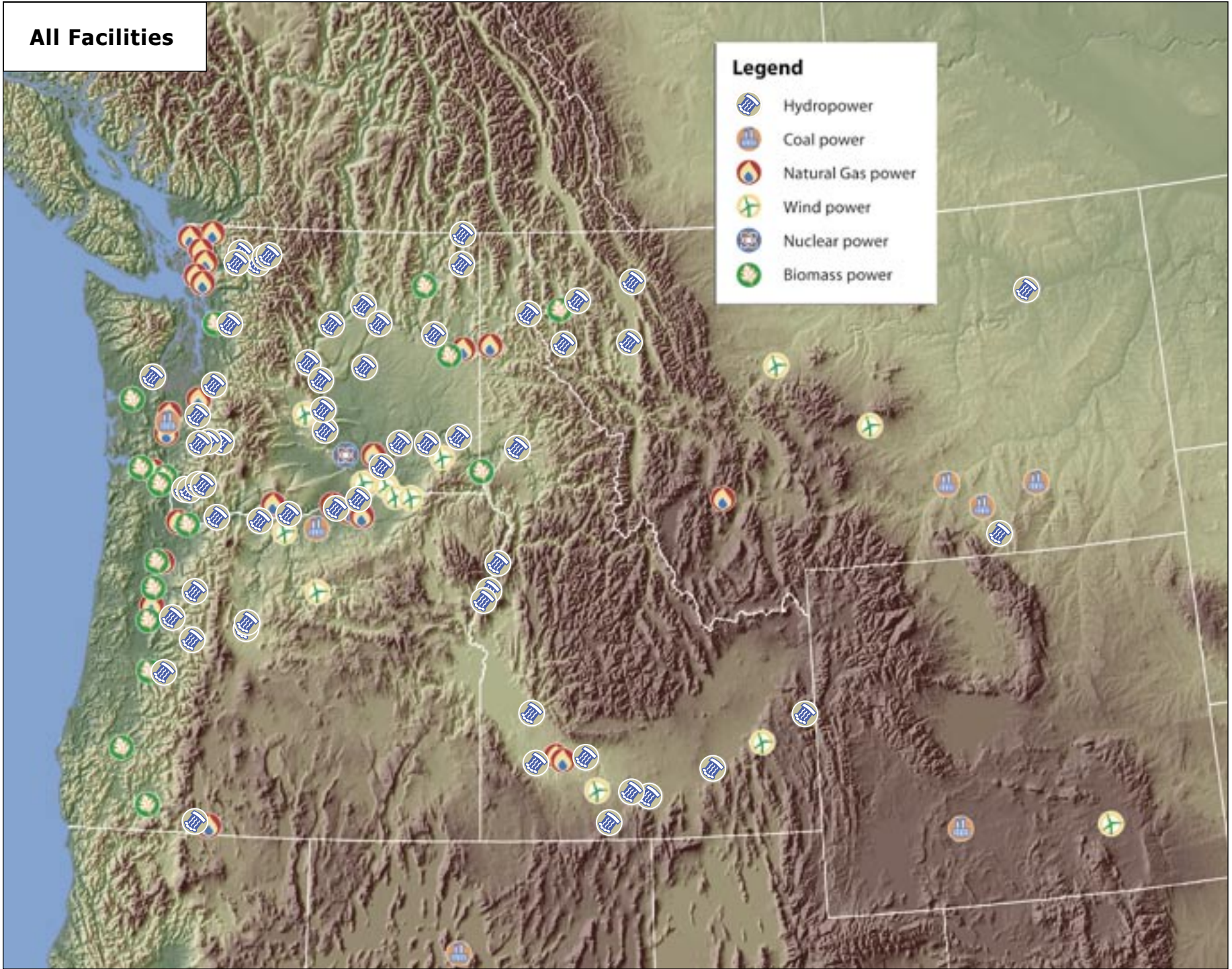
The logo for the Northwest Power and Conservation Council, featuring a stylized blue wave or fish-like shape.

**Northwest
Power and
Conservation
Council**

All Facilities

Legend

-  Hydropower
-  Coal power
-  Natural Gas power
-  Wind power
-  Nuclear power
-  Biomass power



Major Power Plants of the Pacific Northwest

From the late 1800s, when the first hydropower turbines were installed on Columbia River tributaries, into the 1960s water power from dams in the Columbia River Basin provided most of the electricity in the Pacific Northwest. Then, as population increased and the regional economy grew, demand for electricity surpassed the output of the dams. Other types of power plants were built, steadily adding to the region's electricity supply. Primarily these were baseload coal and nuclear steam-electric plants and small peaking combustion turbines fueled by natural gas. Later, the system was further expanded by the addition of highly efficient natural gas combined-cycle plants. Recently, large numbers of wind turbine generators have been added to the system.







Electricity in the Northwest still is dominated by hydropower, which accounts for about 64 percent of the supply capacity. The amount of hydropower varies with water conditions. Most of the region's hydropower is generated on the Columbia River and its tributaries, but there also are dams on other rivers, particularly those that empty into Puget Sound. In years when precipitation

In this publication, the output of power plants is expressed in megawatts of capacity. Capacity is the maximum power that can be produced by a power plant at specified times under specified conditions. One average megawatt is enough electricity to power approximately 700 homes for one year.

and runoff are normal, the region's hydroelectric system can provide about 16,000 average megawatts of electricity (an average megawatt is one million watts supplied continuously for a period of one year). The amount can be as much as 20,000 in a wet year or as little as 12,000 in a dry year. About 14 percent of the region's electricity capacity comes from plants that burn coal, with plants that burn natural gas providing a similar amount. The region's single operating nuclear plant, located in eastern Washington, accounts for about 2 percent of the region's capacity. In all, the region's power supply capacity totals about 53,000 megawatts.

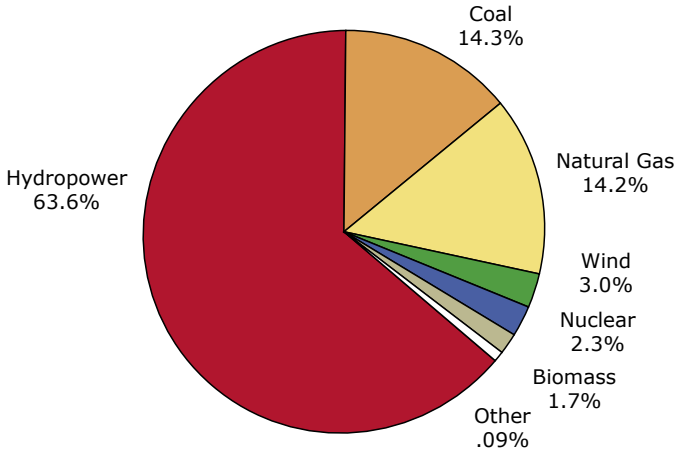
The map in this brochure shows the diversity of the modern power supply in the Northwest, but not all of the power plants. The smallest plants are not shown because there are so many. The map also doesn't depict the most important resource to the Power and Conservation Council — energy conservation. Consistent with the Northwest Power Act of 1980, the federal law that authorized the four Northwest states to create the Council, energy conservation gets planning preference over all other sources of electricity to meet future demand for power. At a cost that is less than the cost of building new generating plants, measures can be implemented to improve energy efficiency — insulation, double-paned windows, compact fluorescent light bulbs, low-wattage traffic lights and energy-efficient industrial motors, for example. Between 1983, when the Council completed its first Northwest Power Plan, and 2004 more than 2,900 megawatts of conservation have been achieved in the Northwest. Expressed as energy generation, that is more than enough power for two cities the size of Seattle.

Northwest Power Supply Capacity by Fuel Type*

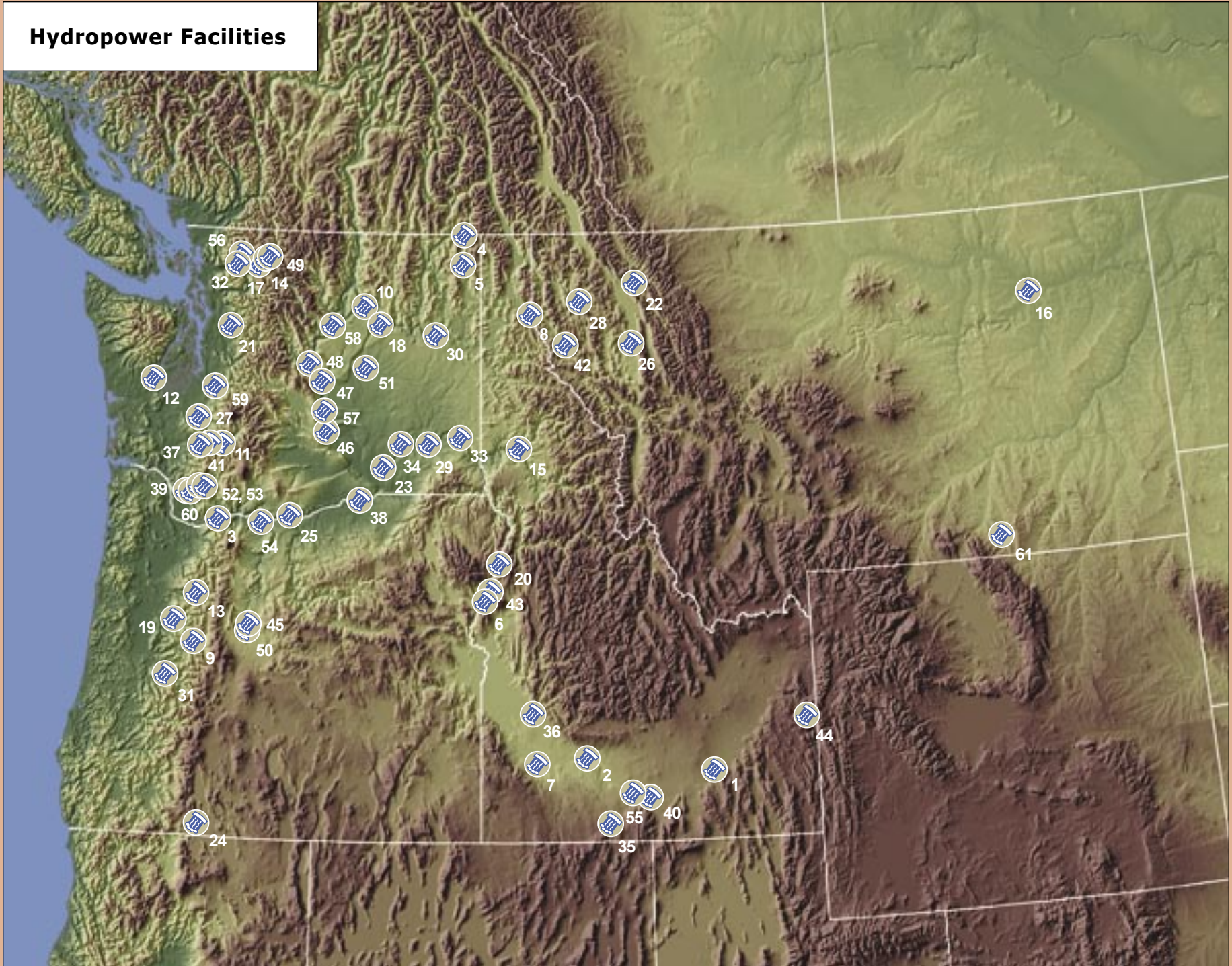
Type of Fuel	Capacity in Megawatts	Percentage of Total Supply
 Hydropower	33,562	63.6%
 Coal	7,505	14.3%
 Natural Gas	7,562	14.2%
 Wind	895	3.0%
 Nuclear	1,588	2.3%
 Biomass	1200	1.7%
Other	486	0.9%
Totals	52,798	100%

* June 2006

Percentage of Total Supply Capacity



Hydropower Facilities



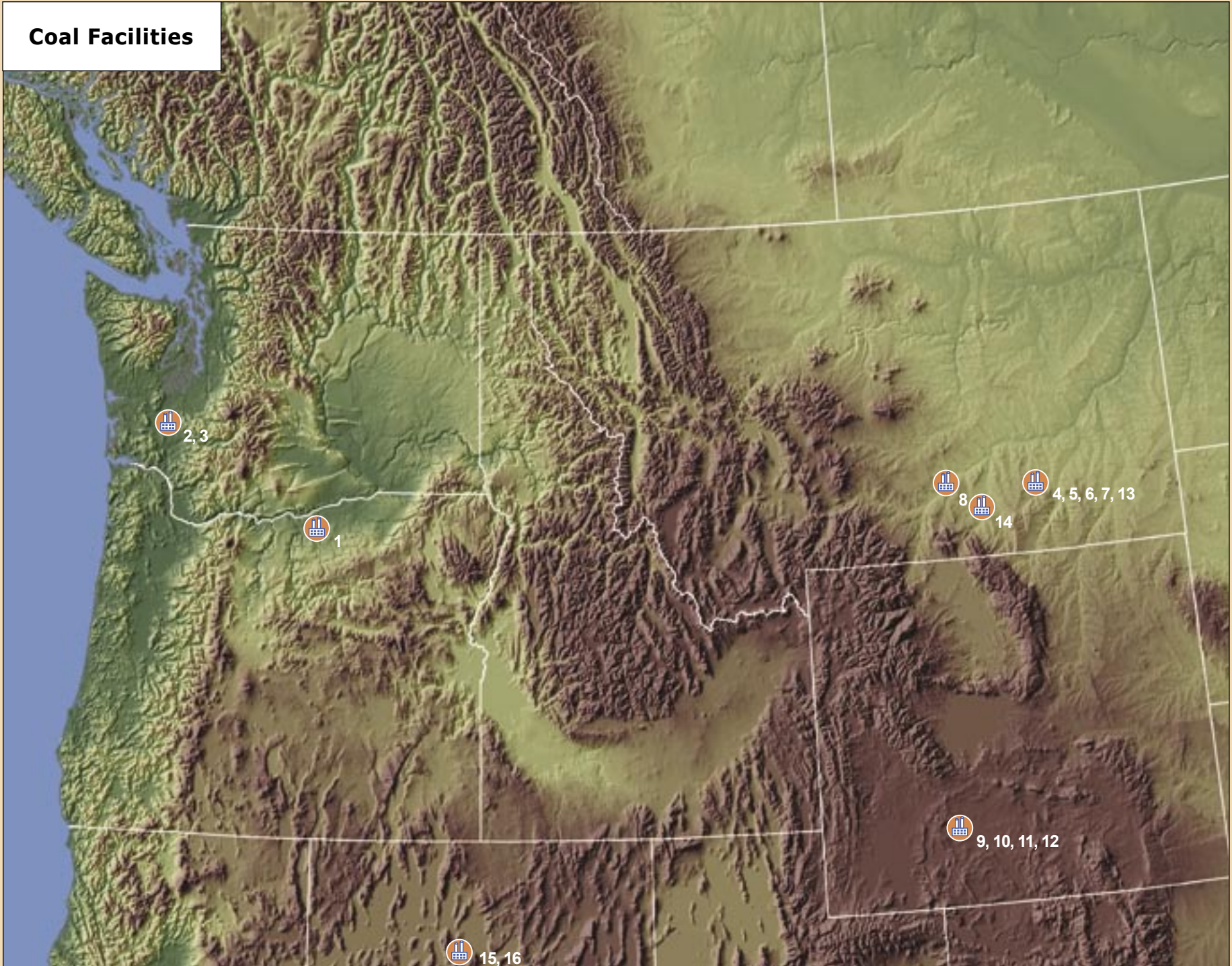


Hydropower Facilities*

Number	Project Name	Capacity	Owner	Number	Project Name	Capacity	Owner
1	American Falls	92.4	Idaho Power Co.	33	Lower Granite	810	U.S. Army Corps of Engineers
2	Bliss	75	Idaho Power Co.	34	Lower Monumental	810	U.S. Army Corps of Engineers
3	Bonneville	1050.4	U.S. Army Corps of Engineers	35	Lower Salmon Falls	60	Idaho Power Co.
4	Boundary	1039.8	City of Seattle	36	Lucky Peak	101.25	Boise Proj. Board of Control
5	Box Canyon Dam	60	Pend Oreille Co. PUD	37	Mayfield Dam	162	City of Tacoma
6	Brownlee	585.4	Idaho Power Co.	38	McNary	980	U.S. Army Corps of Engineers
7	C.J. Strike	82.8	Idaho Power Co.	39	Merwin (Ariel dam)	136	PacifiCorp
8	Cabinet Gorge	231.3	Avista	40	Milner A	58.62	Milner Dam Inc.
9	Carmen-Smith	104.5	City of Eugene (EWEB)	41	Mossyrock	300	City of Tacoma
10	Chief Joseph	2075	U.S. Army Corps of Engineers	42	Noxon Rapids	466.2	Avista
11	Cowlitz Falls	70.2	Lewis County PUD	43	Oxbow	190	Idaho Power Co.
12	Cushman 2	81	City of Tacoma	44	Palisades	118.75	U.S. Bureau of Reclamation
13	Detroit	100	U.S. Army Corps of Engineers	45	Pelton	97.2	Portland General Electric
14	Diablo	152.8	City of Seattle	46	Priest Rapids	855	Grant Co. PUD
15	Dworshak	400	U.S. Army Corps of Engineers	47	Rock Island	622.5	Chelan Co. PUD
16	Fort Peck	185.3	U.S. Army Corps of Engineers	48	Rocky Reach	1213.15	Chelan Co. PUD
17	Gorge	158.825	City of Seattle	49	Ross	338.625	City of Seattle
18	Grand Coulee	6832.5	U.S. Bureau of Reclamation	50	Round Butte	300	Portland General Electric
19	Green Peter	80	U.S. Army Corps of Engineers	51	Summer Falls	92	Columbia Basin Irr. Dists.
20	Hell's Canyon	391.5	Idaho Power Co.	52	Swift 1	240	PacifiCorp
21	Henry M. Jackson (Culmback)	111.8	Snohomish Co. PUD	53	Swift 2	70	Cowlitz PUD
22	Hungry Horse	428	U.S. Bureau of Reclamation	54	The Dalles	1807	U.S. Army Corps of Engineers
23	Ice Harbor	603	U.S. Army Corps of Engineers	55	Twin Falls A & B	52.7	Idaho Power Co.
24	John C. Boyle	80	PacifiCorp	56	Upper Baker	90.7	Puget Sound Energy
25	John Day	2160	U.S. Army Corps of Engineers	57	Wanapum	900	Grant Co. PUD
26	Kerr	180	PPL Montana	58	Wells	774.3	Douglas Co. PUD
27	LaGrande	65	City of Tacoma	59	White River	70	Puget Sound Energy
28	Libby	525	U.S. Army Corps of Engineers	60	Yale	134	PacifiCorp
29	Little Goose	810	U.S. Army Corps of Engineers	61	Yellowtail	250	U.S. Bureau of Reclamation
30	Long Lake	71	Avista				
31	Lookout Point	120	U.S. Army Corps of Engineers				
32	Lower Baker	71.36	Puget Sound Energy				

* Hydropower facilities of 50 megawatts or greater

Coal Facilities





Coal Facilities

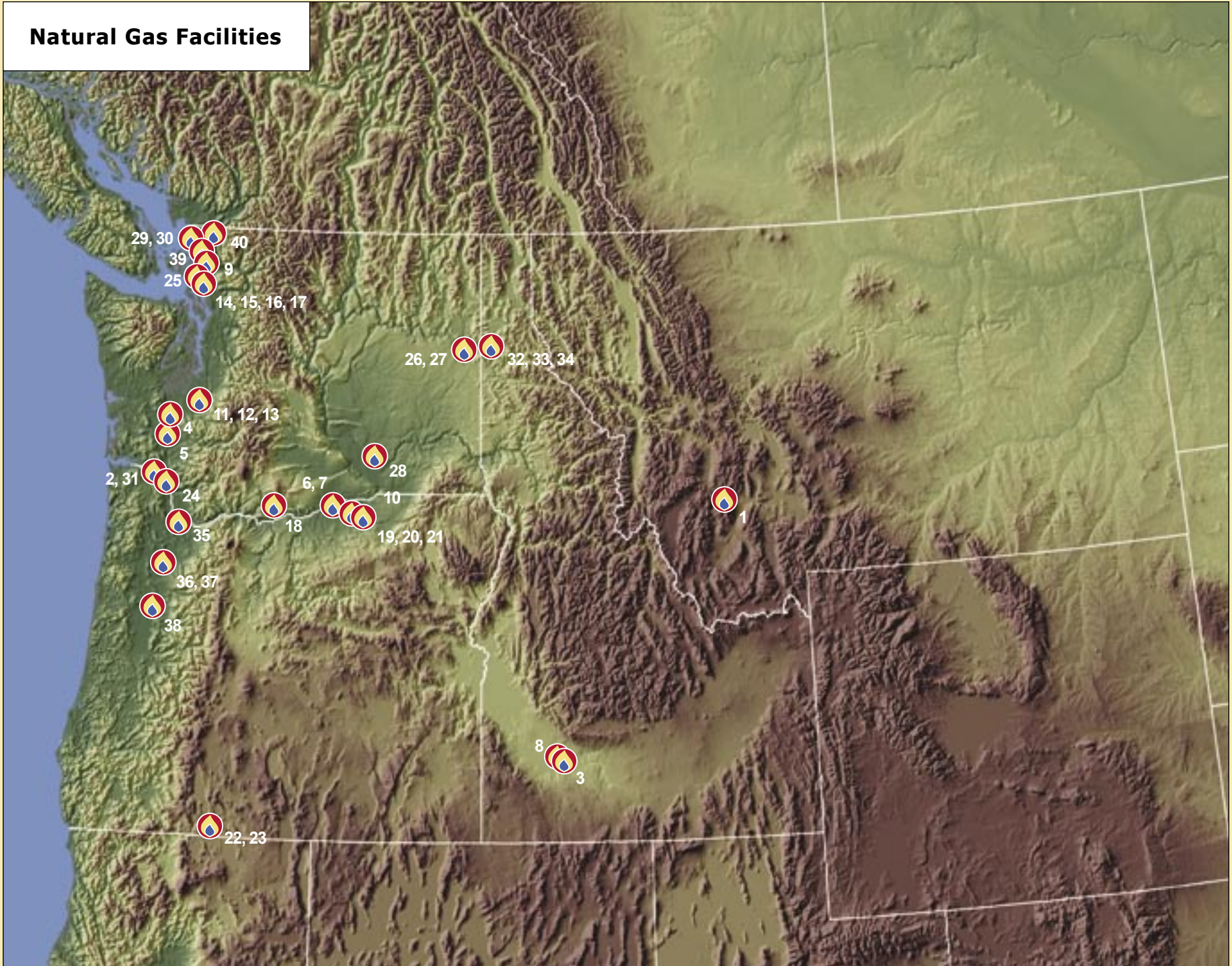
Number	Project Name	Capacity	Owner
1	Boardman	560.5	PGE (65%); GE Credit Corp (15%); Idaho Power (10%); Pac NW Generating Coop (10%)
2	Centralia 1	729.99	TransAlta
3	Centralia 2	729.99	TransAlta
4	Colstrip 1	358.4	PPL Montana (50%); Puget Sound (50%)
5	Colstrip 2	358.4	PPL Montana (50%); Puget Sound (50%)
6	Colstrip 3	778	PPL Montana (30%); Puget Sound (25%); PGE (20%), Avista (20%); PacifiCorp (10%)
7	Colstrip 4	778	NorthWestern (30%) (lease); PSE (25%); PGE (20%), Avista (20%); PacifiCorp (10%)
8	J.E. Corette	191	PPL Montana
9	Jim Bridger 1	577.875	PacifiCorp (66.7%); Idaho Power (33%)
10	Jim Bridger 2	577.875	PacifiCorp (66.7%); Idaho Power (33%)
11	Jim Bridger 3	577.875	PacifiCorp (66.7%); Idaho Power (33%)
12	Jim Bridger 4	577.875	PacifiCorp (66.7%); Idaho Power (33%)
13	Montana One (Colstrip Energy)	43.7	Colstrip Energy, LP
14	Rocky Mountain Power Plant	113	Centennial Energy Resources (MDU Resources) d.b.a. Rocky Mountain Power, Inc.
15	Valmy 1	254.26	Sierra Pacific Power (50%); Idaho Power (50%)
16	Valmy 2	267	Sierra Pacific Power (50%); Idaho Power (50%)



Photo: PPL Montana

Colstrip power plant, Billings, Montana

Natural Gas Facilities

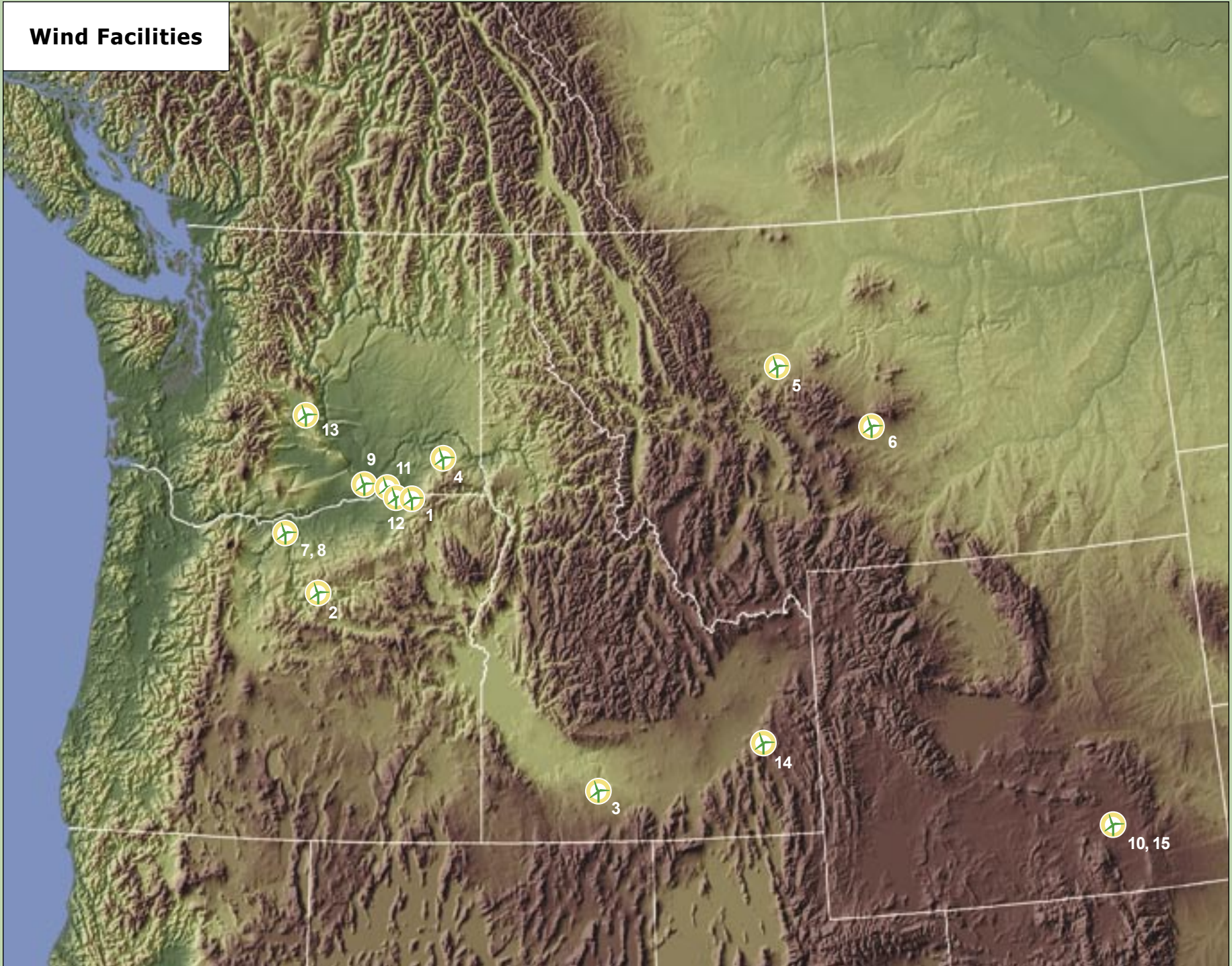




Natural Gas Facilities

Number	Project Name	Capacity	Owner
1	Basin Creek	54	Basin Creek Power
2	Beaver 1 - 7	586.2	Portland General Electric
3	Bennett Mountain	162	Idaho Power Co.
4	Big Hanaford	248	TransAlta
5	Chehalis Generating Facility	520	SUEZ Energy Marketing NA
6	Coyote Springs 1	266.4	Portland General Electric
7	Coyote Springs 2	281	Avista
8	Danskin (Evander Andrews) 1 & 2	90	Idaho Power Co.
9	Encogen 1-3	158.32	Puget Sound Energy
10	Finley Combustion Turbine Plant	27	Benton Co. PUD
11	Frederickson 1	84.6	Puget Sound Energy
12	Frederickson 2	84.6	Puget Sound Energy
13	Frederickson Power 1	269	EPCOR dba Frederickson Power, LLC (~50%)/Puget Sound Energy
14	Fredonia 1	123.636	Puget Sound Energy
15	Fredonia 2	123.636	Puget Sound Energy
16	Fredonia 3	53	Puget Sound Energy
17	Fredonia 4	53	Puget Sound Energy
18	Goldendale Energy Center	237	Calpine Corporation
19	Hermiston Generating Project 1	234.5	PacifiCorp (50%), Hermiston Generating Co. (50%)
20	Hermiston Generating Project 2	234.5	PacifiCorp (50%), Hermiston Generating Co. (50%)
21	Hermiston Power Project	649	Calpine, dba Hermiston Power Partners
22	Klamath Cogeneration Project	484	PPM Energy
23	Klamath Peakers	100	PPM Energy
24	Longview Fibre 8 (CT)	68	KVA Resources
25	March Point 1 - 4	167.04	March Point Associates
26	Northeast 1	30.6	Avista
27	Northeast 2	30.6	Avista
28	Pasco Peak Power	46	Franklin PUD and Grays Harbor PUD
29	Point Whitehorn 2	88.879	Puget Sound Energy
30	Point Whitehorn 3	88.879	Puget Sound Energy
31	Port Westward	399	Portland General Electric
32	Rathdrum 1	83.25	Avista
33	Rathdrum 2	83.25	Avista
34	Rathdrum Power	270	Cogentrix Energy; Avista Power
35	River Road Generating Plant	248	Clark Public Utilities
36	SP Newsprint GT1	51	SP Newsprint
37	SP Newsprint GT2	51	SP Newsprint
38	Sumas Energy	125.5	Sumas Cogeneration Co.
39	Tenaska WA Partners Cogen Station	245.689	Tenaska Power Partners/Diamond Generating Corp.
40	Weyerhaeuser (Albany) 01	47	Weyerhaeuser Co.

Wind Facilities





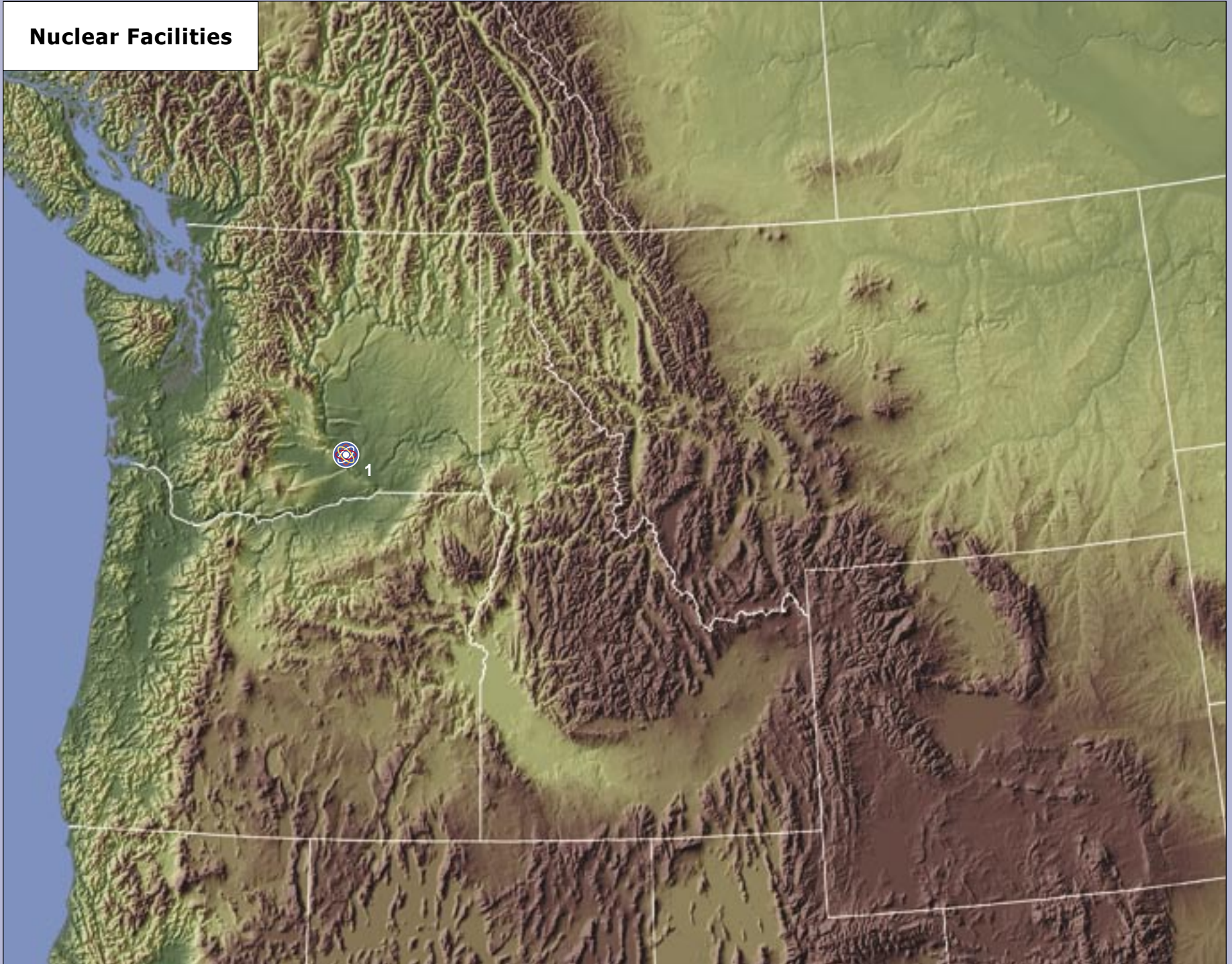
Wind Facilities

Number	Project Name	Capacity	Owner
1	Combine Hills I	41	Enrus Energy America, Inc.
2	Condon	49.8	SeaWest Power Systems
3	Fossil Gulch	10.5	Exergy Development Group
4	Hopkins Ridge	150	Puget Sound Energy
5	Horseshoe Bend	9	United Materials
6	Judith Gap	135	Invenergy Wind, LLC
7	Klondike I	24	PPM Energy
8	Klondike II	75	PPM Energy
9	Nine Canyon	63.7	Energy Northwest
10	Rock River I	50	Shell WindEnergy, Inc.
11	Stateline	300	FPL Energy
12	Vansycle Wind Energy Project	24.9	ESI Vansycle Partners
13	Wild Horse	228.6	Puget Sound Energy
14	Wolverine Creek	64.5	Invenergy, dba Wolverine Creek Energy, LLC
15	Wyoming Wind Energy (Foote Creek Rim 1)	41.4	PacifiCorp (80%); EWEB (20%)



Combine Hills Wind Project, Milton-Freewater, Oregon

Nuclear Facilities





Nuclear Facilities

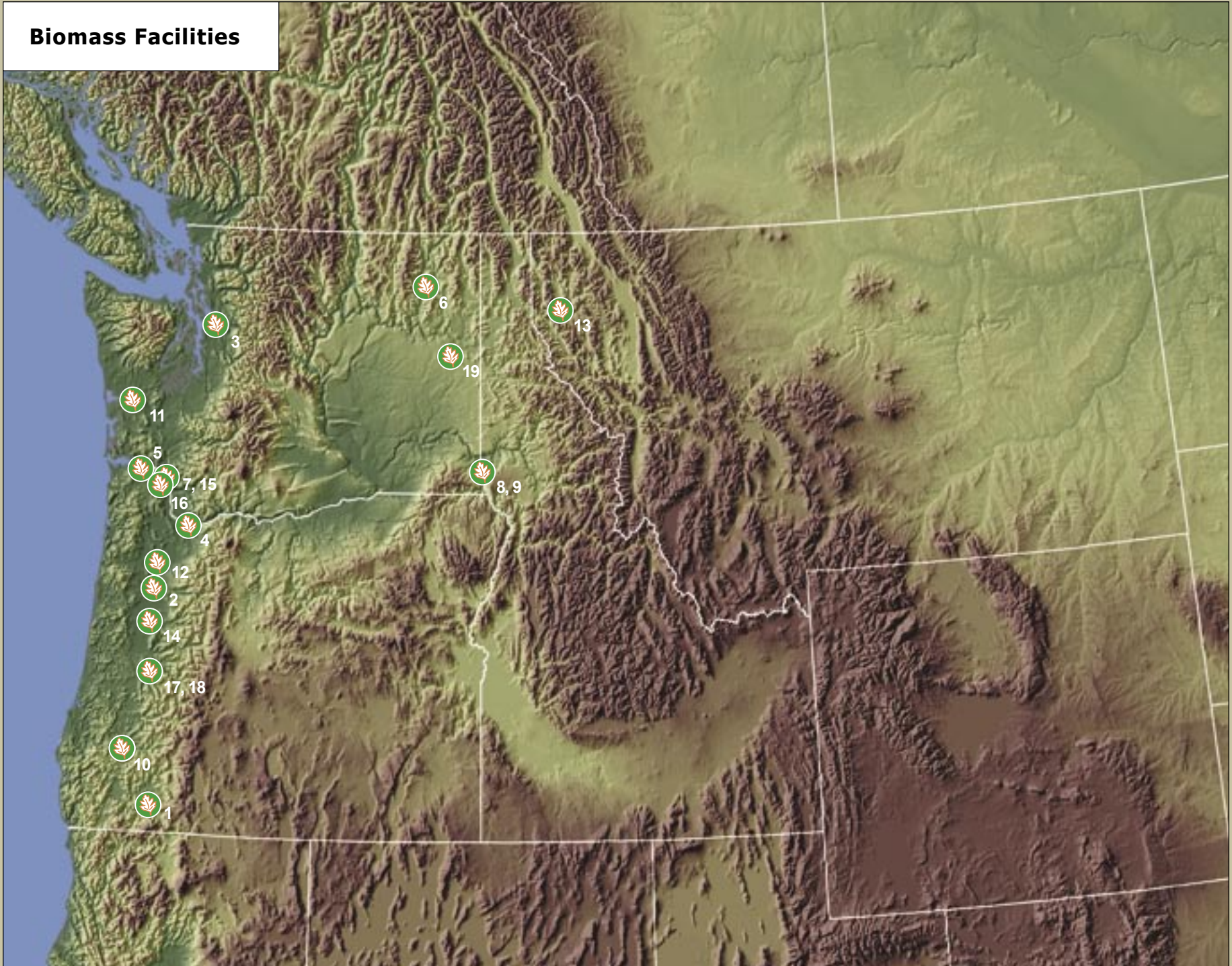
Number	Project Name	Capacity	Owner
1	Columbia Generating Station	1200	Energy Northwest

Columbia Generating Station, Richland, Washington



Photo: Energy Northwest

Biomass Facilities





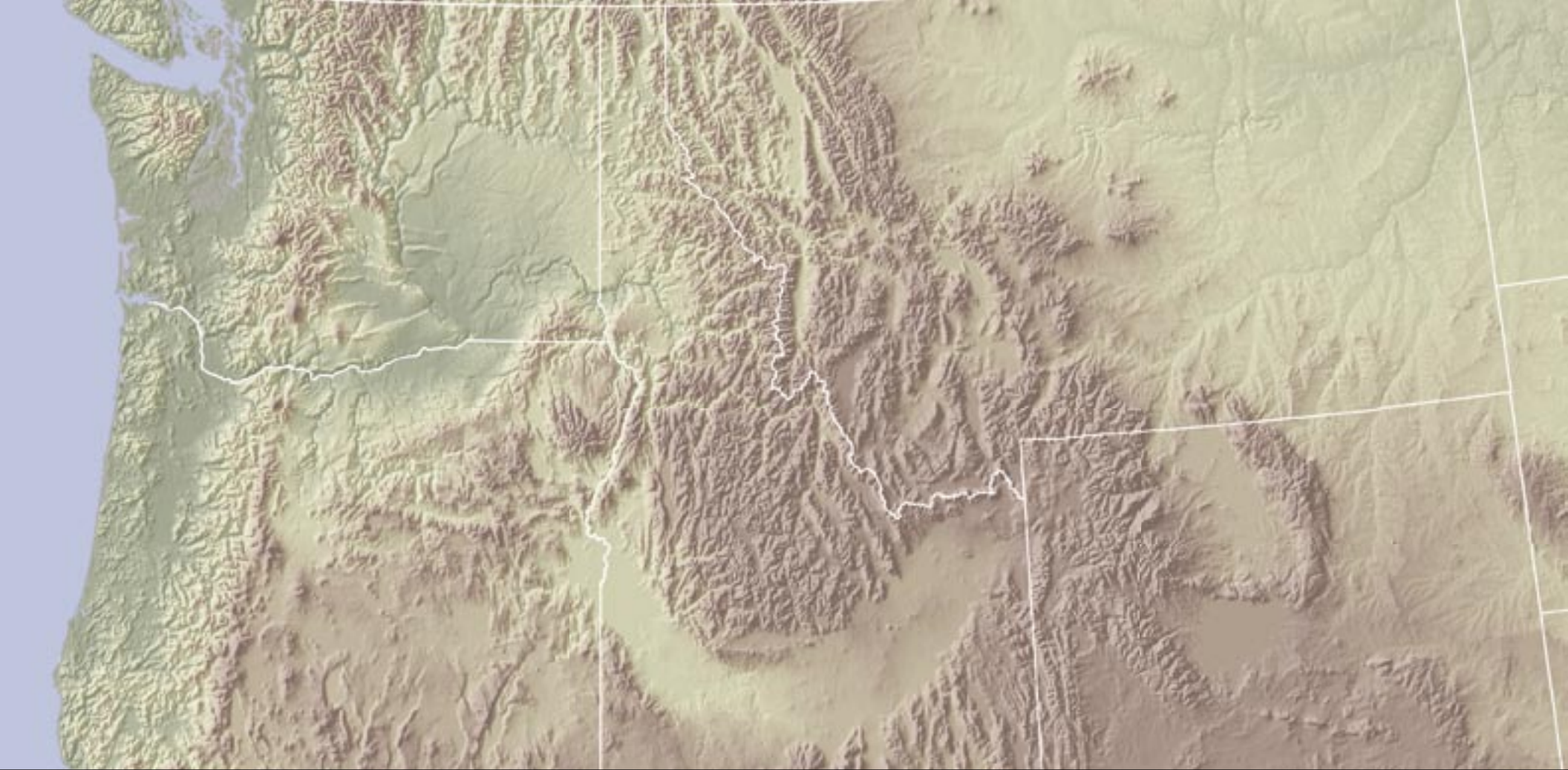
Biomass Facilities

Number	Project Name	Capacity	Owner
1	Biomass One 1 & 2	25	Biomass 1, L.P.
2	Covanta Marion	14	Ogden-Martin
3	Everett Cogeneration Project	42	Snohomish Co. PUD
4	Georgia-Pacific (Camas)	52	PacifiCorp
5	Georgia-Pacific (Wauna)	36	Clatskanie PUD; EWEB
6	Kettle Falls Generating Station	50.7	Avista
7	Longview Fibre 1 - 7 (CR & Pwr Boilers)	67	Longview Fibre Co.
8	Potlatch (Lewiston) 3	28.8	Potlatch Corp.
9	Potlatch (Lewiston) 4	65	Potlatch Corp.
10	Roseburg Forest Products (Dillard)	45	Roseburg Forest Products
11	Sierra Pacific (Aberdeen) GEN 1	18	Sierra Pacific Industries
12	SP Newsprint (ST)	40	SP Newsprint
13	Stimson Lumber	14.5	Stimson Lumber
14	Weyerhaeuser (Albany) 02	45	Weyerhaeuser Co.
15	Weyerhaeuser (Longview) TG 4	18	Weyerhaeuser Co.
16	Weyerhaeuser (Longview) TG 5	31.4	Weyerhaeuser Co.
17	Weyerhaeuser (Springfield) 3	12.5	Weyerhaeuser Co.
18	Weyerhaeuser (Springfield) 4 (WEYCO)	51.2	City of Eugene (EWEB)
19	Wheelabrator Spokane GEN 1	26	City Of Spokane



Kettle Falls Generating Station, Kettle Falls, Washington

Photo: George Perks, Avista Utilities



The Northwest Power and Conservation Council

The Northwest Power and Conservation Council was authorized to be created through the 1980 Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) to give the citizens of Idaho, Montana, Oregon and Washington a stronger voice in determining the future of key resources common to all four states — namely, the electricity generated at, and fish and wildlife affected by, the Columbia River Basin hydropower dams.

The Council is a unique organization that helps the Pacific Northwest make critical decisions that balance the multiple uses of the Columbia River and its tributaries.



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Council Document: 2006-10

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Jim Kempton

Oregon

Joan M. Dukes, Council vice chair
Melinda S. Eden

Montana

Bruce Measure
Rhonda Whiting

Washington

Tom Karier, Council chair
Frank L. Cassidy Jr. "Larry"

For a more detailed interactive version of these maps, see the Council's website: www.nwcouncil.org/maps/power