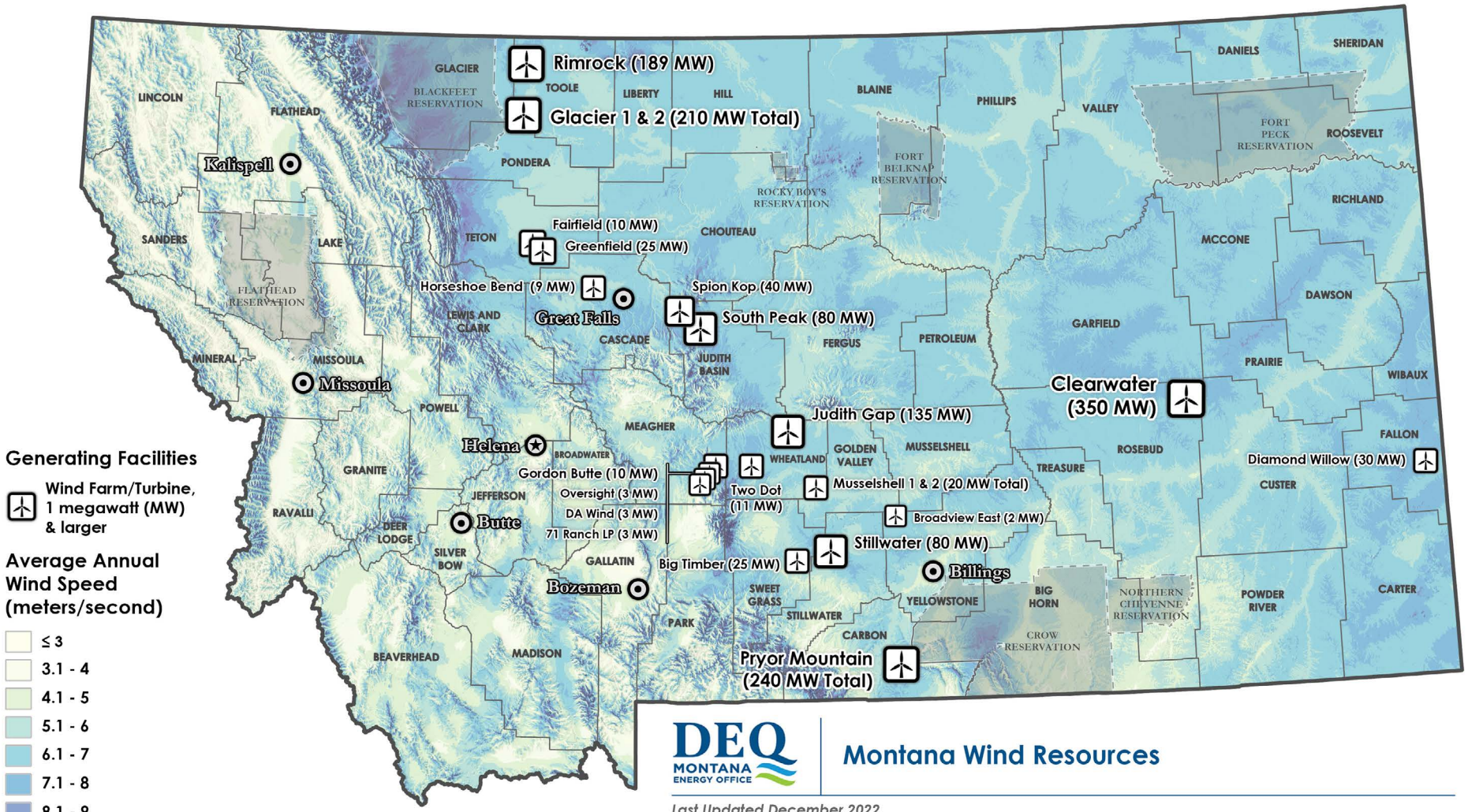
The history of the dams currently owned by NorthWestern reflects Montana's history with electricity deregulation and the re-regulation that followed. The 11 hydroelectric facilities currently owned by NorthWestern were built over several decades between the early 1900s and the late 1950s. The Montana Power Company (NorthWestern's predecessor) was formed in 1912 and acquired the existing dams and built additional large dams over several decades to serve their customers.

WIND POWER

Montana's large geographic area and high plains regions make it one of the highest ranked states for utility wind generation potential in the United States. The National Renewable Energy Laboratory estimates Montana's wind potential at 80 meters above ground to be 679,000 MW, ranking Montana second in total wind energy production potential. As depicted in the map below, most of the state's best wind energy resource lies in the central and eastern areas of the state. Despite this potential, Montana's distance from large population centers (energy loads) and its transmission constraints have resulted in the state only developing a small fraction of its utility scale wind potential. As of 2022, Montana had 1,124 MW of installed wind energy capacity. This puts Montana at 22nd out of 50 states for installed wind capacity in the United States.

Wind accounted for about 13 percent of Montana's net electricity generation in 2020.

Map 1.4 Montana Wind Resources



DEQ MONTANA ENERGY OFFICE

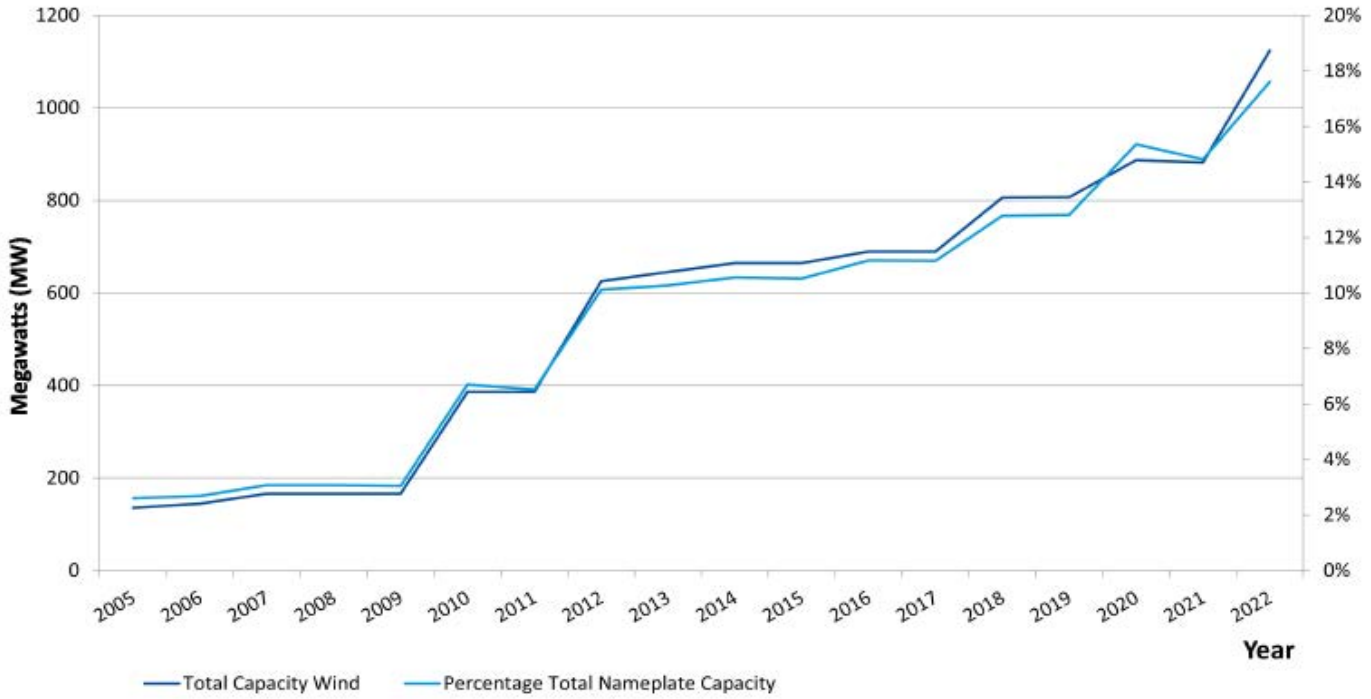
Montana Wind Resources

Last Updated December 2022

Facility Data Source: U.S. Energy Information Administration (EIA), 2020; Montana Departmemt of Environmental Quality, 2021

Wind Speed Data: Global Wind Atlas, 2022

Figure 1.3 Montana Wind Generation Total Nameplate Capacity and Percentage Total Capacity 2005-2022[29]



CURRENT PROJECTS

Montana's first utility-scale wind project, the 135 MW Judith Gap wind facility near Harlowton, started operating in 2005. Judith Gap is owned by Invenergy and supplies energy under a power purchase agreement to NorthWestern. Montana saw several additional wind energy projects come online between 2005 and 2012. In 2007, the Diamond Willow Wind Farm near Baker began operating. This 30 MW facility is owned by Montana-Dakota. In 2009, both phases of the 210 MW Glacier Wind Farm were completed. This is currently the second largest wind energy facility in the state and is located near the town of Shelby in northcentral Montana. The 189 MW Rim Rock Wind Farm located north of Cut Bank and the 40 MW Spion Kop Wind Farm northwest of Geyser were completed in 2012. In addition to the larger wind energy developments, a number of smaller wind energy developments have successfully obtained power purchase contracts to sell renewable electricity to NorthWestern. These developments included the 10 MW Gordon Butte Wind Farm completed in 2012 outside of Martinsdale, and the 20 MW Musselshell I&II Wind Farms completed in 2012 south of Shawmut. Montana's newest wind facilities came online between 2018 and 2022. The Stillwater facility is owned by Pattern Energy and began operating in 2018. The 80 MW South Peak Wind Farm south of Geyser has been operated by Allete Clean Energy since 2020 and sells power through a power purchase agreement to NorthWestern. The 240 MW Pryor Mountain wind facility near Bridger began operation in 2021 and is the largest wind facility in Montana as of mid 2022. By early 2023, the Clearwater Wind Farm will be the largest in Montana. It is owned and operated by PacifiCorp, a large investor-owned utility that serves customers in Wyoming, Utah, Washington, and Oregon. Several smaller wind projects under 1 MW also have contracts to sell their power to NorthWestern.

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29 *Sources: The initial operation date, name and location for facilities is from DEQ Energy Office institutional knowledge and inquiries with utilities over time. Federal Power Commission (1960-76); U.S. Department of Energy, Energy Information Administration, Power Production, Fuel Consumption and Installed Capacity Data, EIA-0049 (1977-80); U.S. Department of Energy, Energy Information Administration, Electric Power Annual, EIA-0348 (1981-89); U.S. Department of Energy, Energy Information Administration, 1990-2021, Form EIA-923 detailed data with previous form data (EIA-906/920), 'Net Generation by State by Type of Producer by Energy Source, fille named 'Annual_generation_state',* https://www.eia.gov/electricity/data/state/.

Table 1.7 Montana Wind Facilities Larger than 9 Megawatts (MW)[30]

Facility Name	Owner	County	Operation Date	Generator Name-plate (MW)
Pryor Mountain	PacifiCorp	Carbon	2021	240
Glacier Wind 1&2	NaturEner	Toole	2008, 2009	210
Rimrock Wind	NaturEner	Toole	2012	189
Judith Gap Wind	Invenergy	Wheatland	2005	135
Spion Kop Wind	NorthWestern Energy	Judith Basin	2012	40
Diamond Willow 1&2	Montana-Dakota Utilities	Fallon	2007, 2010	30
Greenfield Wind	Greenbacker Renewable Energy	Teton	2016	25
Fairfield Wind	Greenbacker Renewable Energy	Teton	2014	20
Musselshell 1 &2	Goldwind USA	Wheatland	2012	20
Two Dot Wind	NJR Clean Energy Ventures	Wheatland	2014	9.7
Gordon Butte Wind	Gordon Butte Wind, LLC	Meagher	2012	9.6
Horseshoe Bend Wind	United Materials of Great Falls, Inc.	Cascade	2006	9
South Peak Wind	Allete Clean Energy	Judith Basin	2020	80
Stillwater Wind	Pattern Energy	Stillwater	2018	80

Table Summary: This table lists the large wind farms in Montana.

30 *Montana Energy Office.*