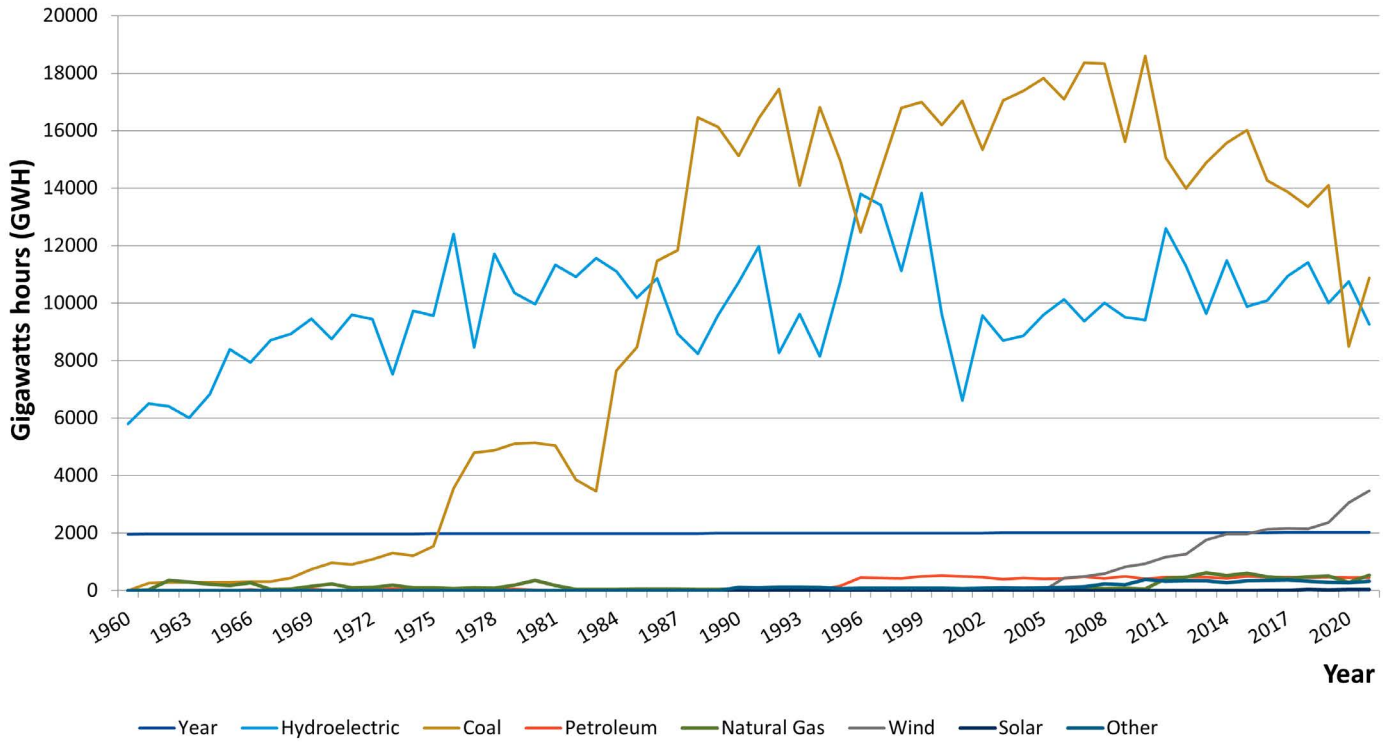
Figure 1.2 Montana Historical Electricity Production Chart by Fuel Type, 1990-2021[23]



During spring runoff, hydroelectric utilities operate their systems to take advantage of cheap hydroelectric power, both on their own systems and on the wholesale market around the region. Routine maintenance on thermal plants is scheduled during this period. Thermal plants generally must run more in the fall and winter when hydroelectric power availability is low.

COAL-FIRED GENERATION

Between 1986 and 2020, coal-fired generation provided the majority of the electricity produced in the state. This coal-dominated era started when Colstrip Unit 4 was completed in 1986. But now the future of coal generation in Montana is changing. Montana-Dakota shuttered the 44 MW coal-fired Lewis and Clark Generating Station in 2021 after the utility's economic analysis found the Sidney plant could no longer compete with other resources. That closure was preceded by shut down of Colstrip Units 1 and 2 in 2020 after owners Talen and Puget Sound Energy determined that operation of both 307 MW plants was no longer economical. Portland General Electric, Puget Sound Energy, Avista, and PacifiCorp, all of which own shares of the remaining Colstrip Units 3 and 4, have all announced that they will be financially ready to exit the plant by 2025. Talen Montana, which owns a 30 percent stake in Unit 3, and NorthWestern, which owns a 30 percent share of Unit 4, have not announced plans for an early exit from the plant. In 2023 NorthWestern announced plans to acquire Avista's 222 MW share of Units 3 and 4 effective January 1, 2026. NorthWestern's depreciation schedule for its share of the plant currently runs through 2042.

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23 *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/. Up to 2019, Solar data came from NWE generating capacity additions as reported by Montana Renewable Energy Association based on data from NWE. As of 2020, solar data is from the same source as the other fuels.*

Only two other small coal plants are actively running with any regularity in the state. One is the Colstrip Energy Limited Project (CELP) plant, which is fueled with waste coal from the Colstrip power plant, and which has a QF contract for sale of its output to NorthWestern that will expire in 2024. The other is Beowolf's 116 MW Hardin Generating Station. The Hardin plant has been powering a cryptocurrency mining operation in recent years but that contract is set to expire by the end of 2022, leaving the future of the plant in question. With the closure of Colstrip Units 1 and 2 in early 2020, hydropower became the largest source of electricity for Montana with coal falling to second place.

As of June 2022, there was a total of 1,630 MW of coal-fired generating capacity in Montana, representing 29 percent of the state's nameplate generating capacity. In comparison in 2020, coal generated a total of 8,490 GWh, representing 36 percent of all in-state electricity generation. In 2015, coal generation was even higher totaling 16,013 GWh, representing 55 percent of all in-state electric generation.[24]

Table 1.3 Montana Coal-Fired Generation Facilities[25]

Facility Name	Company Name	County	Initial Operation Date	Generator Nameplate (MW)
Colstrip Unit 3	Talen Energy (30%), Puget Sound Energy (25%), Portland General Electric (20%), Avista (15%), PacifiCorp (10%)	Rosebud	1984	740
Colstrip Unit 4	NorthWestern Energy (30%), Puget Sound Energy (25%), Portland General Electric (20%), Avista (15%), PacifiCorp (10%)	Rosebud	1986	740
Rosebud Power Plant	Colstrip Energy Limited Partnership (CELP)	Rosebud	1990	35
Hardin Generating Station	Beowolf/Big Horn Datapower Holdings LLC	Big Horn	2006	107

Table Summary: This table lists the largest coal generation plants in Montana. There are four remaining coal plants in Montana.

The two-unit facility in Colstrip leads all coal-fired electric generation in terms of capacity. It also contributes the most electric production of any facility in the state averaging more than 14,000 GWh annually over the past decade, although output is under 10,000 GWh as of 2020. The two units at Colstrip are jointly owned by a total of six entities (see Table 1.4.).

24 *U.S. Department of Energy, Energy Information Administration, Form EIA-923.*

25 *Montana Energy Office.*