Wyoming

Wyoming had the smallest population and the thirty-fifth largest utility generating capability in 1996. This difference in rankings is the largest among the States. The proximity of the leading fuel source for electricity production in Wyoming, coal, is a major factor in making Wyoming an exporter of inexpensive electricity. Since 1988, Wyoming has been the leading coal producer in the Nation.[1] Vast amounts of primarily subbituminous coal underlie sparsely populated areas of the State. Wyoming's coal output has grown in response to the increasing demand for low-sulfur coal. The Powder River Basin is the center of the State's coal industry. Located there is the thickest coal bed in the Nation, Wyodak, averaging 70 feet, and the leading source of coal nationally for the last 11 years. In 1996, Wyoming claimed 7 of the 10 largest coal mines in the United States. Most of the 279 million short tons of coal produced in Wyoming in 1996 was shipped to out-of-state utilities to generate electricity. About 25 million short tons were consumed by utilities in Wyoming to generate electricity.

Almost all of the utility electricity generated in the State is produced at coal-fired plants. The five largest plants, all coal-fired, are located throughout the State with the exception of the northwest corner, the location of Yellowstone and Grand Teton National Parks. The largest of these plants is PacifiCorp's Jim Bridger. PacifiCorp is the largest utility in terms of operated generating capability within the State. Coal plants represent 95 percent of generating capability, hydropower about 5 percent, and gas and oil represent a very small part of generating capability. The State has no nuclear plants. Net generation in 1996 was 96.8 percent from coal-fired plants, and 3 percent from hydroelectric plants.

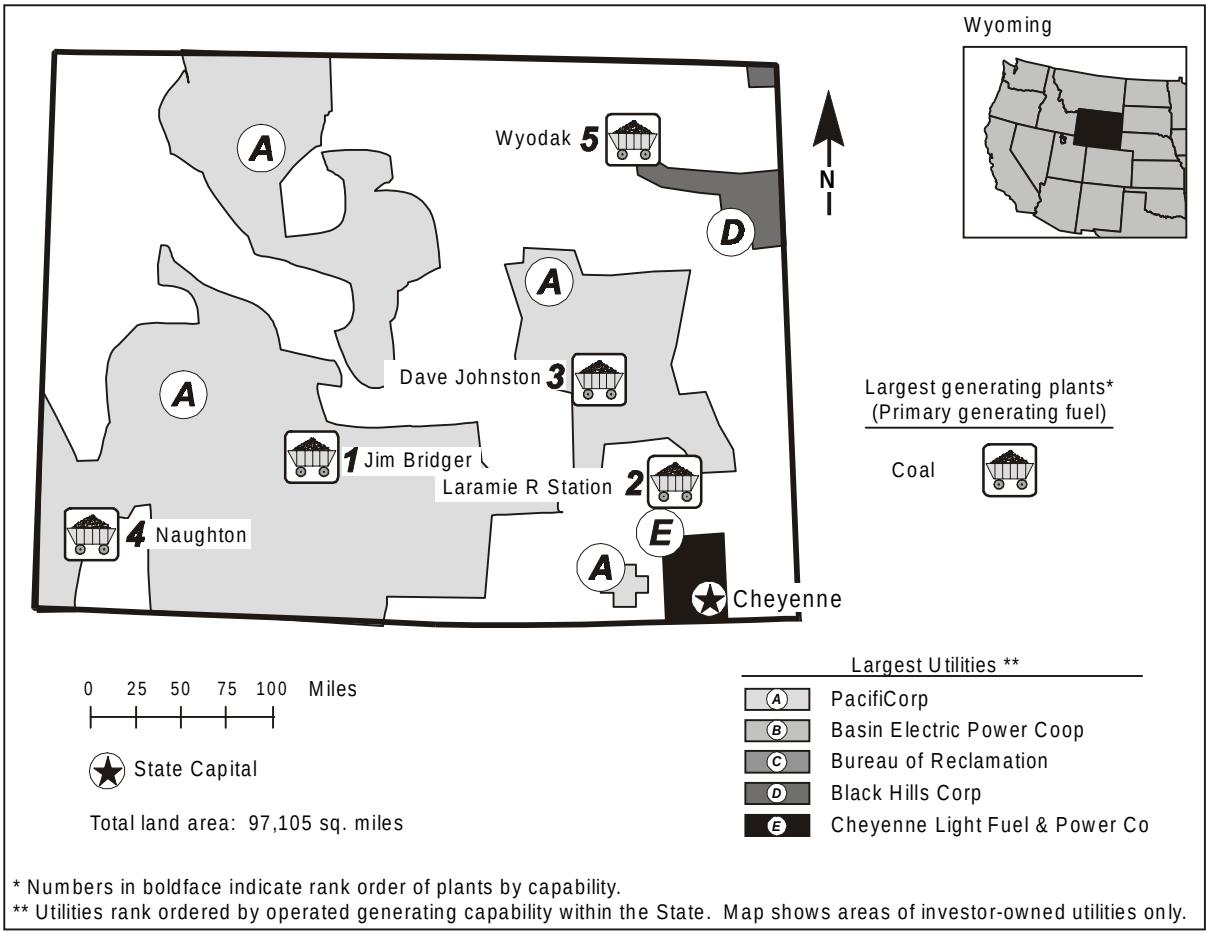
Like all States west of Kansas, Wyoming had no generating capability that was cited by The Clean Air Act Amendments of 1990 to begin compliance with stricter emissions standards for sulfur dioxide (SO_2) and nitrogen oxides (NO_x) in 1995 as part of Phase I of the Environmental Protection Agency's Acid Rain Program. All fossil-fueled units will need to begin compliance in Phase II of the program, which commences on January 1, 2000. Wyoming's emissions of SO_2 declined from 1986 to 1991. The 1996 totals were higher than they were in 1991, but were still below 1986 levels. NO_x and carbon dioxide emissions both rose over both time periods. The increases were greater for both in the period from 1986 to 1991.

Wyoming's five investor-owned utilities accounted for almost 73 percent of the retail sales in the State in 1996. PacifiCorp is the largest utility in the State in terms of retail sales. Cooperatives sold over 23 percent of the electricity in the State in 1996. The two largest cooperatives are Tri-County and Lower Valley Power and Light Cooperatives. The average price of electricity, 4.31 cents per kilowatthour, was fourth least expensive in the Nation.

The Wyoming Public Utility Commission (PUC) held public hearings in September 1997 on deregulating the electric power industry, and although both proponents and opponents feel deregulation is inevitable, they are reluctant for the State to take a lead, since prices are already among the lowest in the Nation. In June 1998, the PUC had scheduled a hearing on deregulation to establish voluntary guidelines for utilities, but canceled the hearing in response to legislators' concerns.[2] Also in June 1998, a restructuring bill that had been killed in January was revived. However, it is likely that Wyoming will continue taking a slow approach to restructuring, observing other States' experiences before implementing retail competition.

[1] Energy Information Administration, State Coal Profiles, DOE/EIA0576 (Washington, DC, January 1994), p. 107.

[2] Energy Information Administration, Status of State Electric Utility Deregulation Activity, http://www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html.



* Numbers in boldface indicate rank order of plants by capability.
** Utilities rank ordered by operated generating capability within the State. Map shows areas of investor-owned utilities only.

Table 1. 1996 Summary Statistics

Item	Value	U.S. Rank
NERC Region(s)		WSCC
Net Exporter or Importer		Exporter
State Primary Generating Fuel		Coal
Population (as of 7/96)	480,011	51
Average Revenue (cents/kWh)	4.31	[a]4
Industry		
Capability (MWe)	W	[b]W
Generation (MWh)	W	[b]W
Capability/person (KWe/person)	W	[b]W
Generation/person (MWh/person)	W	[b]W
Sulfur Dioxide Emissions (Thousand Short Tons)	87	31
Nitrogen Oxide Emissions (Thousand Short Tons)	177	16
Carbon Dioxide Emissions (Thousand Short Tons)	45,319	20
Sulfur Dioxide/sq. mile (Tons)	0.90	39
Nitrogen Oxides/sq. mile (Tons)	1.83	32
Carbon Dioxide/sq. mile (Tons)	466.70	35

Item	Value	U.S. Rank
Utility		
Capability (MWe)	5,966	35
Generation (MWh)	40,851,631	28
Average Age of Coal Plants	21 years	
Average Age of Oil-fired Plants	33 years	
Average Age of Gas-fired Plants	--	
Average Age of Nuclear Plants	--	
Average Age of Hydroelectric Plants	40 years	
Average Age of Other Plants	--	
Nonutility[c]		
Capability (MWe)	W	W
Percentage Share of Capability	W	W
Generation (MWh)	W	W
Percentage Share of Generation	W	W

-- = Not applicable. W = Withheld.

Table 2. Five Largest Utility Plants, 1996

Plant Name	Type	Operating Utility	Net Capability (MWe)
1. Jim Bridger	Coal	PacifiCorp	2,080
2. Laramie R Station	Coal	Basin Electric Power Coop	1,650
3. Dave Johnston	Coal	PacifiCorp	772
4. Naughton	Coal	PacifiCorp	700
5. Wyodak	Coal	PacifiCorp	335

Table 3. Top Five Utilities with Largest Generating Capability, and Type, Within the State, 1996
(Megawatts Electric)

Name	Net Summer Capability	Net Coal Capability	Net Oil Capability	Net Gas Capability	Net Nuclear Capability	Net Hydro/Other Capability
A. PacifiCorp	3,888	3,887	--	--	--	1
B. Basin Electric Power Coop	1,650	1,650	--	--	--	--
C. Bureau of Reclamation	291	--	--	--	--	291
D. Black Hills Corp	125	125	--	--	--	--
E. Cheyenne Light Fuel & Power Co	10	--	10	--	--	--
Total	5,964	5,662	10	--	--	292
Percentage of Utility Capability	100.0	--	--	--	--	--

-- = Not applicable.

Figure 1. Utility Generating Capability by Primary Energy Source, 1996

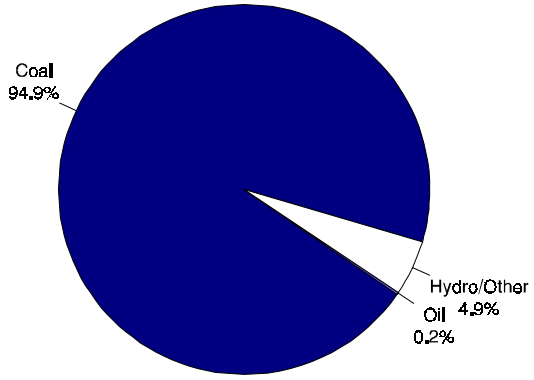


Figure 2. Utility Generation by Primary Energy Source, 1996

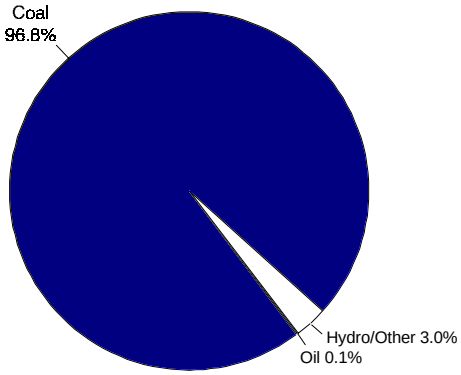


Figure 3. Energy Consumed at Electric Utilities by Primary Energy Source, 1996

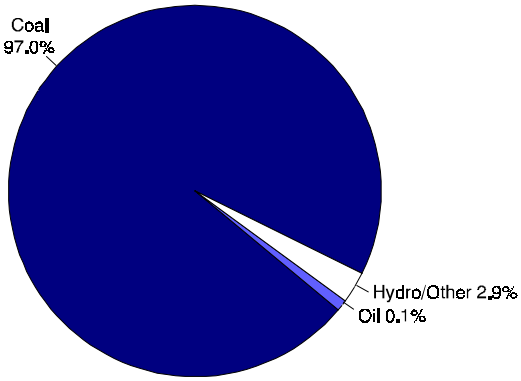


Table 4. Electric Power Industry Generating Capability by Primary Energy Source, 1986, 1991, and 1996
(Megawatts Electric)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	5,410	5,545	5,662	*95.2*	*95.2*	*94.9*
Oil	18	15	10	*0.3*	*0.3*	*0.2*
Gas	--	--	--	--	--	--
Nuclear	--	--	--	--	--	--
Hydro/Other	256	266	294	*4.5*	*4.6*	*4.9*
Total Utility	5,683	5,826	5,966	*100.0*	*100.0*	*100.0*
Total Nonutility	55	95	W	--	--	--

-- = Not applicable. W = Withheld.

Table 5. Electric Power Industry Generation of Electricity by Primary Energy Source, 1986, 1991, and 1996
(Thousand Kilowatthours)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	27,561,690	37,862,584	39,551,555	*95.8*	*97.9*	*96.8*
Oil	59,095	60,850	59,443	*0.2*	*0.2*	*0.1*
Gas	12,044	7,796	8,836	*(s)*	*(s)*	*(s)*
Nuclear	--	--	--	--	--	--
Hydro/Other	1,140,857	735,932	1,231,797	*4.0*	*1.9*	*3.0*
Total Utility	28,773,686	38,667,162	40,851,631	*100.0*	*100.0*	*100.0*
Total Nonutility	370,813	599,938	W	--	--	--

-- = Not applicable. (s) = Nonzero percentage less than 0.05. W = Withheld.

Table 6. Electric Power Industry Consumption by Primary Energy Source, 1986, 1991, and 1996
(Quadrillion Btu)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	0.303	0.406	0.427	*96.0*	*98.0*	*97.0*
Oil	0.001	0.001	0.001	*0.2*	*0.2*	*0.1*
Gas	(s)	(s)	(s)	--	--	--
Nuclear	--	--	--	--	--	--
Hydro/Other	0.012	0.008	0.013	*3.8*	*1.8*	*2.9*
Total Utility	0.316	0.414	0.440	*100.0*	*100.0*	*100.0*
Total Nonutility	0.069	0.015	W	--	--	--

-- = Not applicable. (s) = Nonzero value less than 0.0005. W = Withheld.

Figure 4. Utility Generation of Electricity by Primary Energy Source, 1986-1996

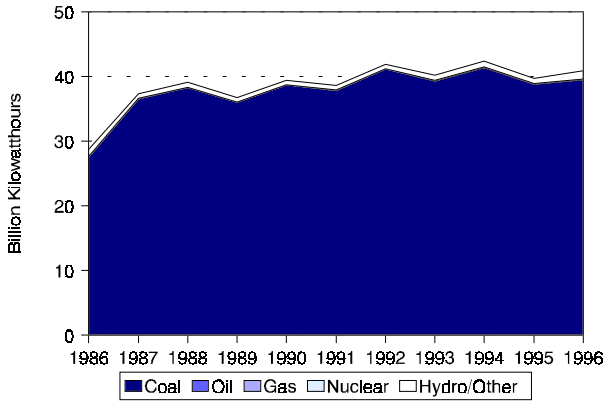


Figure 5. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986-1996
(1996 Dollars)

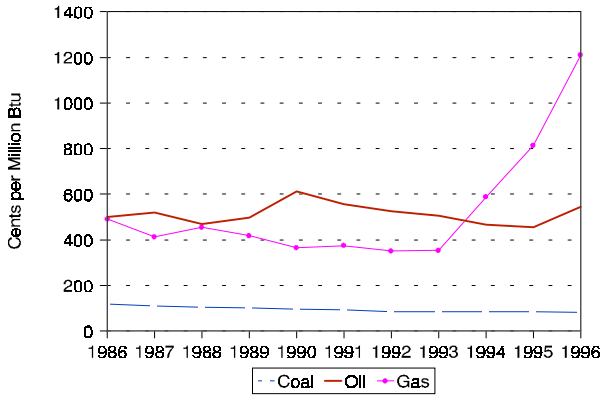


Table 7. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986, 1991, and 1996
(Cents per Million Btu, 1996 Dollars)

Fuel	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Coal	119.1	93.4	82.0	-3.7
Oil	499.5	555.6	545.6	0.9
Gas	491.1	375.0	1,211.2	9.4

Table 8. Electric Power Industry Emissions Estimates, 1986, 1991, and 1996
(Thousand Short Tons)

Emission Type	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Sulfur Dioxide	96	77	87	-0.9
Nitrogen Oxides[d] . .	130	167	177	3.2
Carbon Dioxide[d] . . .	31,256	42,687	45,319	3.8

Figure 6. Estimated Sulfur Dioxide Emissions, 1986-1996

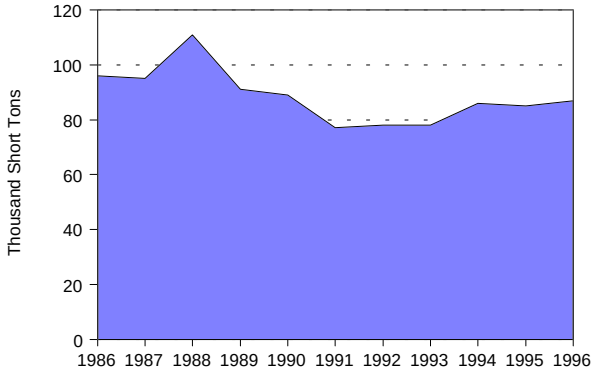


Figure 7. Estimated Nitrogen Oxide Emissions, 1986-1996

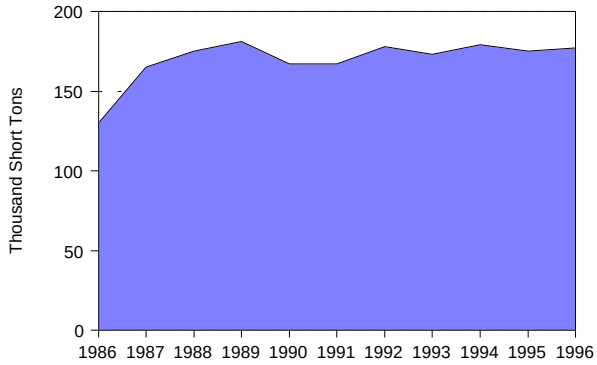


Figure 8. Estimated Carbon Dioxide Emissions, 1986-1996

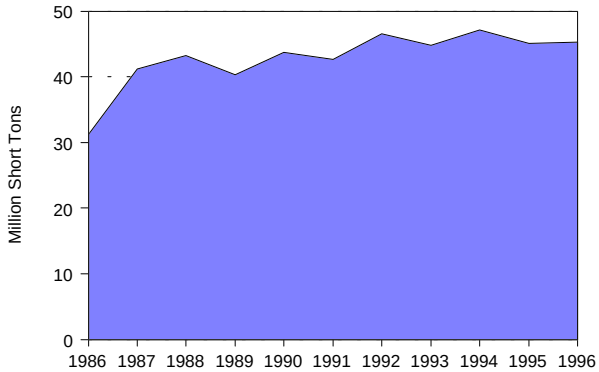


Table 9. Utility Retail Sales by Sector, 1986, 1991, and 1996
(Megawatthours)

Sector	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Residential . .	1,677,662	1,819,415	2,022,027	1.9	16.8	15.5	17.6
Commercial	2,074,873	2,310,467	2,424,519	1.6	20.8	19.7	21.1
Industrial . . .	6,047,462	7,498,103	6,890,808	1.3	60.6	63.8	60.1
Other	173,366	128,863	137,715	-2.3	1.7	1.1	1.2
Total	9,973,362	11,756,848	11,475,069	1.4	100.0	100.0	100.0

Table 10. Utility Retail Sales Statistics, 1986, 1991, and 1996

Item	Investor-Owned Utility	Public	Federal	Cooperative	Total
			1986		
Number of Utilities	7	12	1	18	38
Number of Retail Customers	169,517	21,614	7	50,174	241,312
Retail Sales (MWh)	7,557,382	335,434	36,083	2,044,463	9,973,362
Percentage of Retail Sales	75.8	3.4	0.4	20.5	100.0
Revenue from Retail Sales (thousand 1996 $)[e]	392,407	23,415	600	155,953	572,549
Percentage of Revenue	68.5	4.1	0.1	27.2	100.0
			1991		
Number of Utilities	6	13	1	16	36
Number of Retail Customers	170,903	22,635	7	48,698	242,243
Retail Sales (MWh)	9,223,346	393,766	28,000	2,111,736	11,756,848
Percentage of Retail Sales	78.5	3.4	0.2	18.0	100.0
Revenue from Retail Sales (thousand 1996 $)[e]	403,994	23,906	268	133,001	561,202
Percentage of Revenue	72.0	4.3	0.1	23.7	100.0
			1996		
Number of Utilities	5	13	1	18	37
Number of Retail Customers	166,175	24,274	4	70,882	261,335
Retail Sales (MWh)	8,340,349	436,765	17,849	2,680,106	11,475,069
Percentage of Retail Sales	72.7	3.8	0.2	23.4	100.0
Revenue from Retail Sales (thousand 1996 $)[e]	328,872	25,512	309	139,871	494,564
Percentage of Revenue	66.5	5.2	0.1	28.3	100.0