

South Dakota

South Dakota had the forty-fifth largest population and the forty-second largest utility generating capability in 1996. Most of the electricity in the State is generated at hydroelectric plants. The five largest utilities in South Dakota operated 95 percent of the generating capability in the State in 1996. Three of the four largest plants, including Oahe, the largest, are hydroelectric projects on the Missouri River. All three of these plants are operated by the United States Army Corps of Engineers—Missouri River District, the largest utility in terms of generating capability in the State. Coal, oil, and gas units all contribute to the generating capability mix in the State. The third and fifth largest plants in the State, coal-fired Big Stone and gas-fired Angus Anson, are in the easternmost part of the State. There are no nuclear generating units or nonutility generation. South Dakota is a net exporter of electricity.

In 1986, utility hydroelectric units accounted for 68.6 percent of South Dakota's generating capability and 73.1 percent of its net generation. In 1996, the hydroelectric share of capability had fallen to 61.6 percent, while the net generation share rose to 79.3 percent. Utility coal capability and net generation, on the other hand, were 18.6 percent and 26.8 percent, respectively, in 1986. By 1996, these coal shares had fallen to 16.0 percent and 20.2 percent, respectively. Although gas-fired generation increased substantially between 1986 and 1996, it still represents less than 1 percent of total generation.

There were no South Dakota generating units cited by Title IV of the Clean Air Act Amendments of 1990 to begin compliance with stricter emissions standards for sulfur dioxide (SO₂) and nitrogen oxides (NO_x). Emissions of SO₂, NO_x, and carbon dioxide (CO₂) from South Dakota generators and the concentrations of these

pollutants per square mile were all among the lowest in the United States. Emissions of SO₂ from South Dakota generators increased from 1986 to 1991, but in 1996, they decreased to just a little more than half of what they had been in 1986. NO_x were almost double in 1996 what they had been in 1986 after also rising to the 1991 levels. CO₂ emissions were up from 1986 levels in 1991, but then decreased substantially in 1996, although they were not as low as they had been in 1986.

The average price of electricity, 6.18 cents per kilowatt-hour, ranked it as the twenty-fifth most expensive in the Nation. There were 6 investor-owned utilities, 34 public utilities, 1 federally owned utility, and 34 cooperatives in South Dakota in 1996. The largest utilities in terms of retail sales were three investor-owned utilities: Northern States Power, Northwestern Public Service, and Black Hills Corporation. Together these utilities provided slightly less than half of the retail sales in South Dakota. The federally owned utility, Western Area Power Administration, markets the power produced at the federally owned dams operated by the U.S. Army Corps of Engineers. Most of the power produced and sold by these Federal entities is provided as wholesale power to nonprofit publicly owned and cooperative utilities.

South Dakota has not initiated any formal investigation or study of restructuring the electric power industry in the State. In January 1998, the South Dakota Legislative Research Council hosted an informational forum on developments in utility competition. This was the first time that the South Dakota legislature addressed the restructuring of the State's electricity industry. No significant action, however, was expected. Current South Dakota law allows retail wheeling for new, large customers.¹

¹Energy Information Administration, Status of State Electric Utility Deregulation Activity, http://www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html.

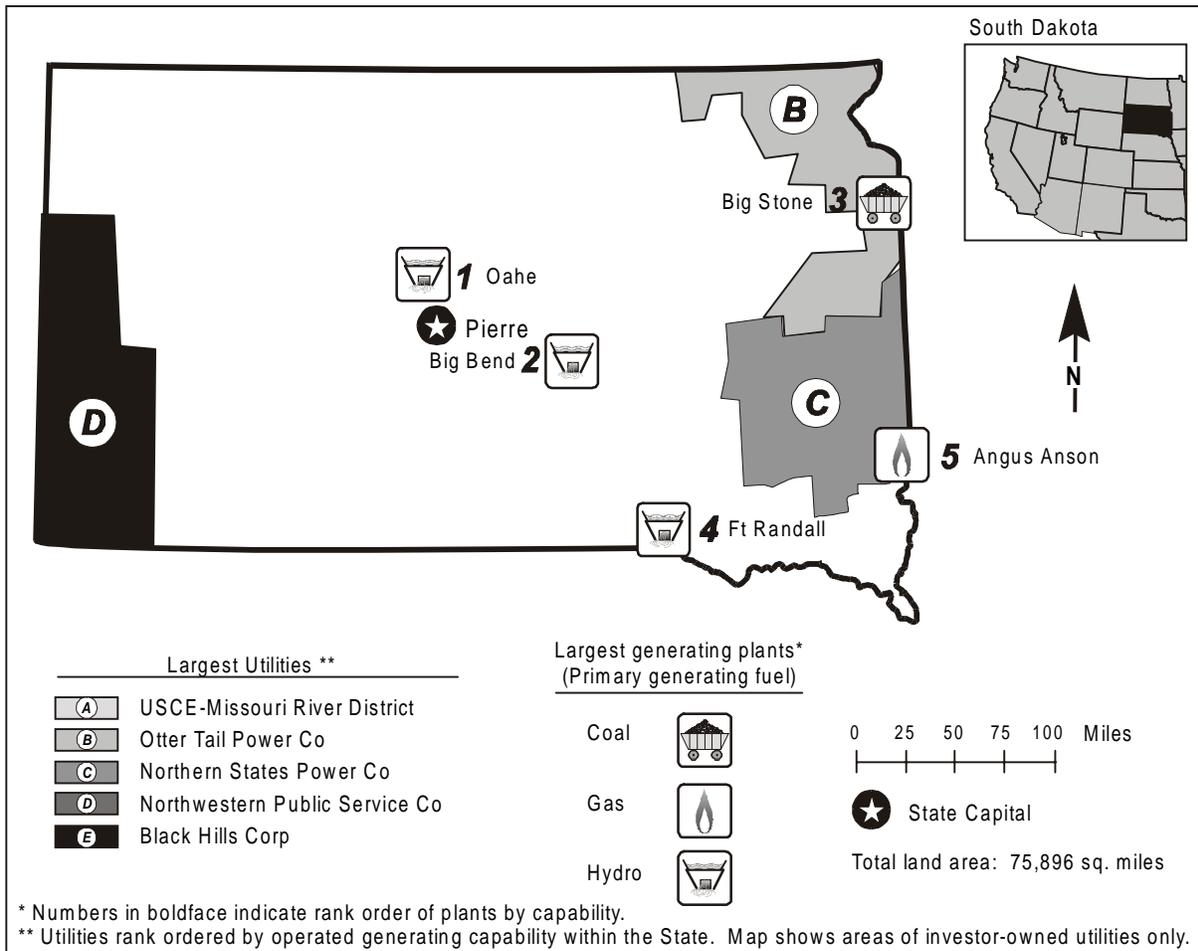


Table 1. 1996 Summary Statistics

Item	Value	U.S. Rank	Item	Value	U.S. Rank
NERC Region(s)		WSCC/MAPP	Utility		
Net Exporter or Importer		Exporter	Capability (MWe)	2,954	42
State Primary Generating Fuel		Hydro	Generation (MWh)	10,066,274	44
Population (as of 7/96)	737,561	45	Average Age of Coal Plants	22 years	
Average Revenue (cents/kWh)	6.18	^a 27	Average Age of Oil-fired Plants	19 years	
Industry			Average Age of Gas-fired Plants	11 years	
Capability (MWe)	2,954	^b 38	Average Age of Nuclear Plants	--	
Generation (MWh)	10,066,274	^b 40	Average Age of Hydroelectric Plants	35 years	
Capability/person (KWe/person)	4.01	^b 8	Average Age of Other Plants	--	
Generation/person (MWh/person)	13.65	^b 21	Nonutility^c		
Sulfur Dioxide Emissions (Thousand Short Tons)	14	45	Capability (MWe)	--	44
Nitrogen Oxide Emissions (Thousand Short Tons)	13	47	Percentage Share of Capability	--	44
Carbon Dioxide Emissions (Thousand Short Tons)	2,828	48	Generation (MWh)	--	44
Sulfur Dioxide/sq. mile (Tons)	0.18	46	Percentage Share of Generation	--	44
Nitrogen Oxides/sq. mile (Tons)	0.17	47			
Carbon Dioxide/sq. mile (Tons)	37.26	49			

-- = Not applicable.

Table 2. Five Largest Plants, 1996

Plant Name	Type	Operating Utility	Net Capability (MWe)
1. Oahe	Hydro	USCE-Missouri River District	784
2. Big Bend	Hydro	USCE-Missouri River District	536
3. Big Stone	Coal	Otter Tail Power Co	453
4. Ft Randall	Hydro	USCE-Missouri River District	368
5. Angus Anson	Gas	Northern States Power Co	232

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

Utility	Net Summer Capability	Net Coal Capability	Net Oil Capability	Net Gas Capability	Net Nuclear Capability	Net Hydro/Other Capability
A. USCE-Missouri River District	1,820	--	--	--	--	1,820
B. Otter Tail Power Co	496	452	43	--	--	--
C. Northern States Power Co	293	--	--	293	--	--
D. Northwestern Public Service Co	107	--	37	70	--	--
E. Black Hills Corp	100	22	78	--	--	--
Total	2,816	474	158	363	--	1,820
Percentage of Industry Capability	95.3	--	--	--	--	--

-- = Not applicable.

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

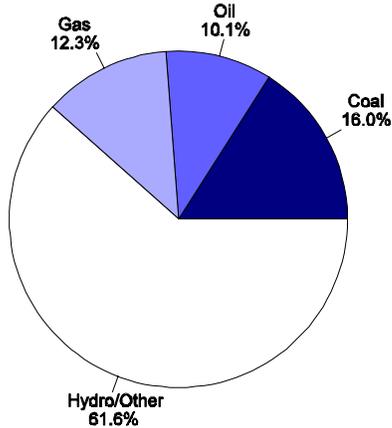


Figure 2. Utility Generation by Primary Energy Source, 1996

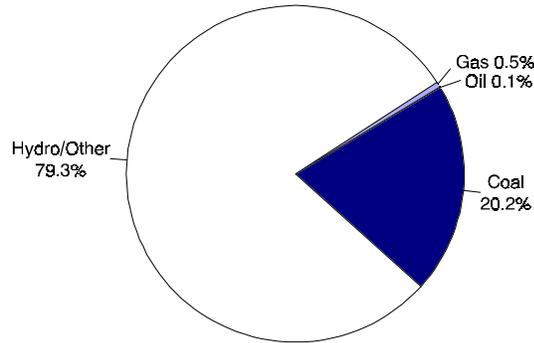


Figure 3. Energy Consumed at Electric Utilities by Primary Energy Source, 1996

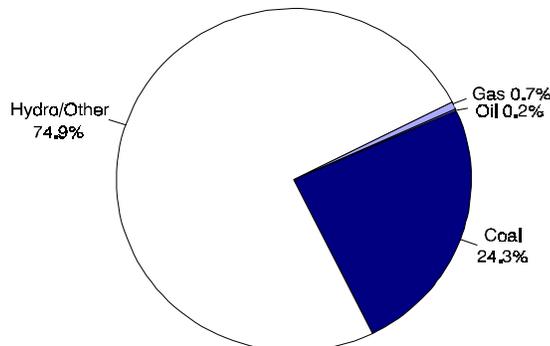


Table 4. Electric Power Industry Generating Capability by Primary Energy Source, 1986, 1991, and 1996
(Megawatts Electric)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	490	484	474	18.6	17.9	16.0
Oil	246	296	297	9.4	10.9	10.1
Gas	89	110	363	3.4	4.1	12.3
Nuclear	--	--	--	--	--	--
Hydro/Other	1,805	1,821	1,820	68.6	67.2	61.6
Total Utility	2,631	2,711	2,954	100.0	100.0	100.0
Total Nonutility	--	--	--	--	--	--
Industry	2,631	2,710	2,954	100.0	100.0	100.0

-- = Not applicable.

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	2,095,449	2,727,087	2,029,901	26.8	41.5	20.2
Oil	7,096	8,427	8,975	0.1	0.1	0.1
Gas	1,091	9,036	49,728	(s)	0.1	0.5
Nuclear	--	--	--	--	--	--
Hydro/Other	5,704,151	3,828,116	7,977,670	73.1	58.2	79.3
Total Utility	7,807,787	6,572,666	10,066,274	100.0	100.0	100.0
Total Nonutility	--	--	--	--	--	--
Industry	7,807,787	6,572,666	10,066,274	100.0	100.0	100.0

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

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	0.026	0.034	0.027	30.4	45.6	24.3
Oil	(s)	(s)	(s)	0.3	0.3	0.2
Gas	(s)	(s)	0.001	--	0.2	0.7
Nuclear	--	--	--	--	--	--
Hydro/Other	0.060	0.040	0.082	69.2	53.9	74.9
Total Utility	0.086	0.074	0.110	100.0	100.0	100.0
Total Nonutility	--	--	--	--	--	--
Industry	0.086	0.074	0.110	100.0	100.0	100.0

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

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

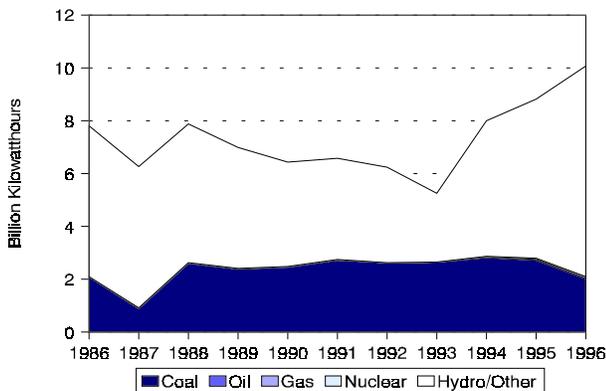


Figure 5. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986-1996
(1996 Dollars)

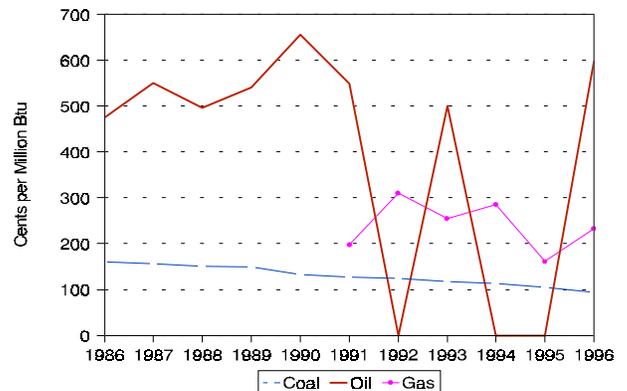


Table 7. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986, 1991, and 1996
(Cents per Million Btu, 1996 Dollars)

Fuel	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Coal	160.1	127.3	93.7	-5.2
Oil	475.0	548.4	597.9	2.3
Gas	--	197.6	233.0	--

-- = Not applicable.

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	27	33	14	-6.5
Nitrogen Oxides ^d . .	16	20	13	-1.9
Carbon Dioxide ^d . .	2,747	3,515	2,828	0.3

Figure 6. Estimated Sulfur Dioxide Emissions, 1986-1996

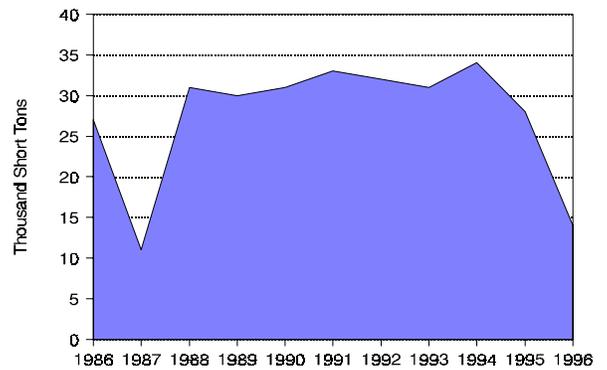


Figure 7. Estimated Nitrogen Oxide Emissions, 1986-1996

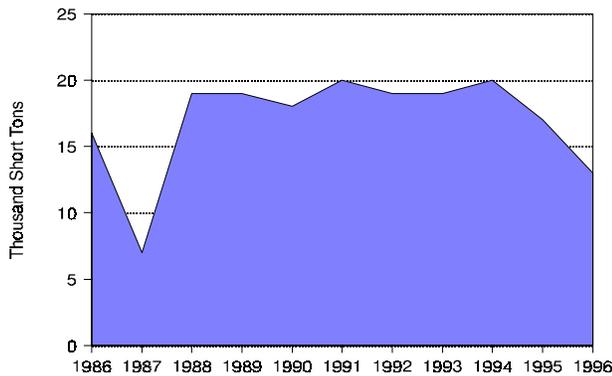


Figure 8. Estimated Carbon Dioxide Emissions, 1986-1996

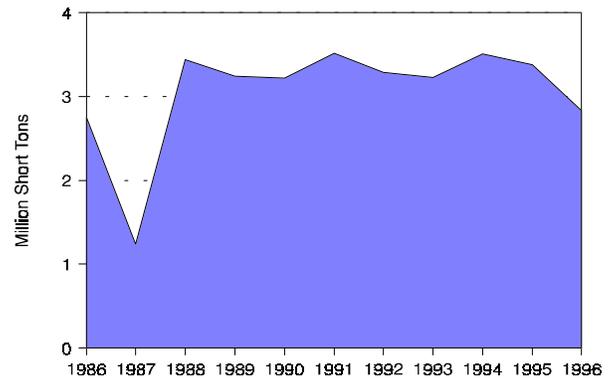


Table 9. Utility Retail Sales by Sector, 1986, 1991, and 1996
(Megawatthours)

Sector	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Residential . .	2,754,236	3,039,891	3,426,185	2.2	48.5	45.5	44.3
Commercial	1,223,032	1,521,975	2,179,182	5.9	21.6	22.8	28.2
Industrial . . .	1,316,395	1,726,158	1,784,753	3.1	23.2	25.8	23.1
Other	379,963	397,116	346,042	-0.9	6.7	5.9	4.5
Total	5,673,627	6,685,140	7,736,162	3.1	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	6	34	1	36	77
Number of Retail Customers	169,746	44,908	15	104,979	319,648
Retail Sales (MWh)	2,997,674	814,627	164,492	1,696,834	5,673,627
Percentage of Retail Sales	52.8	14.4	2.9	29.9	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	248,932	41,058	1,319	147,839	439,531
Percentage of Revenue	56.6	9.3	0.4	33.6	100.0
	1991				
Number of Utilities	6	34	1	36	77
Number of Retail Customers	180,904	50,020	15	109,323	340,262
Retail Sales (MWh)	3,670,477	961,188	150,703	1,902,772	6,685,140
Percentage of Retail Sales	54.9	14.4	2.3	28.5	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	261,632	46,027	1,461	151,145	460,447
Percentage of Revenue	56.8	10.0	0.4	32.8	100.0
	1996				
Number of Utilities	6	34	1	34	75
Number of Retail Customers	194,987	52,622	11	117,687	365,307
Retail Sales (MWh)	4,237,504	1,114,605	144,113	2,239,940	7,736,162
Percentage of Retail Sales	54.8	14.4	1.9	29.0	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	272,025	51,503	2,133	152,710	478,371
Percentage of Revenue	56.9	10.8	0.5	31.9	100.0