

Delaware

In 1996, Delaware had both the forty-sixth largest population and utility generating capability. Most of the electricity in the State is generated at coal-fired plants. The largest plant in the State, Indian River, is coal-fired. The State is also reliant on oil-fired and gas-fired power. There are no nuclear generators in the State. The largest utility is the Delmarva Power and Light Company (DPLC), a member of the PJM power pool, which covers portions of Pennsylvania, New Jersey, Maryland, Virginia, and Delaware. The average price of electricity, 6.88 cents per kilowatthour, ranked as nineteenth most expensive in the Nation.

Four of the five largest plants in the State are operated by DPLC. DPLC is by far the largest electric power entity in the State; the company operates 91.7 percent of the utility capability and 84.8 percent of the total generating capability in the State. McKee Run, operated by the City of Dover, is the only plant among the five largest in the State that is not operated by DPLC. The second, third and fifth largest plants are located in the extreme north of the State in the vicinity of Wilmington, Delaware's largest city. The refineries of Philadelphia are not far away from these plants, two of which are oil-fired. Indian River, the largest plant, is in the extreme south of the State, near the beach resorts of Delaware and Maryland.

Delaware ranked third in SO₂ emissions per square mile, while its total emissions were thirty-fifth highest in the United States. Concentrations of nitrogen oxides (NO_x) and CO₂ per square mile ranked sixth and third nationally. No Delaware units were mandated by Title IV of the Clean Air Act Amendments of 1990 to begin emissions reductions in 1995 as part of Phase I of the Environmental Protection Agency's (EPA's) Acid Rain Program. However, all fossil fuel-fired units (both utility and nonutility) will be required to comply with the requirements of Phase II of the program which will commence on January 1, 2000.

It is likely that Delaware will need to design a State implementation plan (SIP) for reducing ground-level ozone in response to a proposal released by the EPA in October 1998. The EPA SIP call proposal does not mandate which sources must reduce pollution. However, EPA states that utilities would be one of the most likely sources of NO_x emissions reductions. Delaware is also in the Ozone Transport Commission (OTC).¹ Each of the 13 OTC members is responsible for enacting regulations in order to achieve region-wide NO_x reductions in a consistent, enforceable manner and for allocating its NO_x Budget Program allowances among NO_x sources in the State. The targets in this program are large industrial boilers and all electricity generating facilities with a rated output of 15 megawatts or more. Delaware is one of seven States to have issued its final rule for the NO_x Budget Program.

In 1986, coal units represented just over half of Delaware's utility generating capability and nearly two-thirds of utility net generation. In 1996, the coal share of capability had fallen to just over two-fifths while the net generation share had fallen to just over half. In 1986, there was no utility gas capability or generation. By 1996, however, gas capability accounted for over a fifth of Delaware's utility capability and a third of its utility net generation as the Hay Road plant, the third largest in the State, came on line unit by unit from 1989 through 1993.

Delaware has not done as much as other States in moving toward a deregulated environment. Although the Public Service Commission has released a report with recommendations including unbundling of rates and stranded cost recovery, the legislature has not passed a restructuring bill. Most recently, a restructuring bill failed when the 1998 session ended in July. The issue is likely to come up again in the 1999 session.² Senator William Roth of Delaware has sponsored a bill in Congress that would give a large tax credit to power plants that burn chicken waste.

¹ The Ozone Transport Region comprises the States of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Maryland, Delaware, the northern counties of Virginia, and the District of Columbia.

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

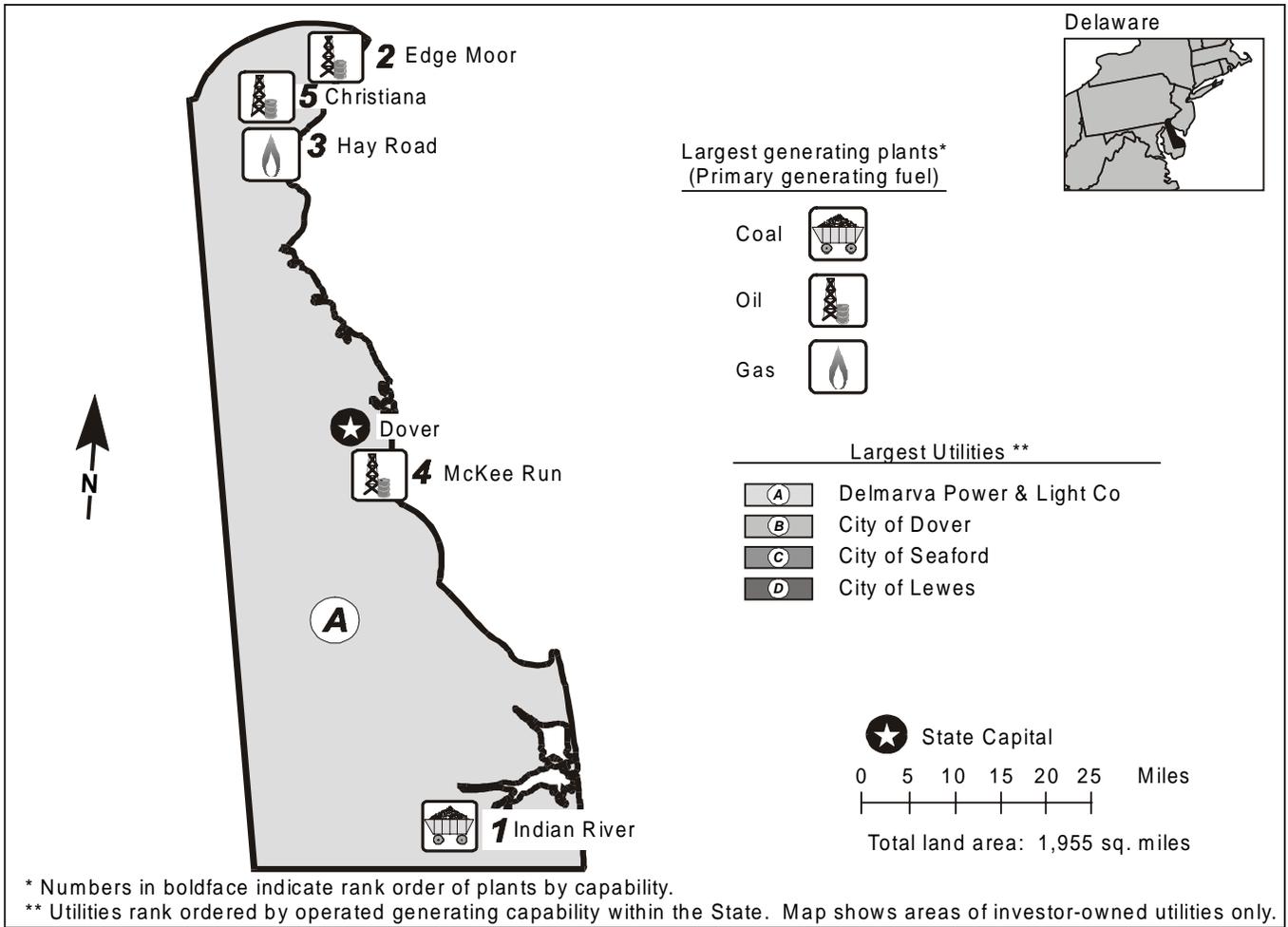


Table 1. 1996 Summary Statistics

Item	Value	U.S. Rank	Item	Value	U.S. Rank
NERC Region(s)		MACC	Utility		
Net Exporter or Importer		Importer	Capability (MWe)	2,239	46
State Primary Generating Fuel		Coal	Generation (MWh)	8,121,853	45
Population (as of 7/96)	723,475	46	Average Age of Coal Plants	24 years	
Average Revenue (cents/kWh)	6.88	^a 33	Average Age of Oil-fired Plants . . .	25 years	
Industry			Average Age of Gas-fired Plants . . .	5 years	
Capability (MWe)	2,421	^b 40	Average Age of Nuclear Plants . . .	--	
Generation (MWh)	8,854,448	^b 41	Average Age of		
Capability/person	3.35	^b 16	Hydroelectric Plants	--	
(KWe/person)			Average Age of Other Plants	--	
Generation/person	12.24	^b 26	Nonutility^c		
(MWh/person)			Capability (MWe)	182	38
Sulfur Dioxide Emissions			Percentage Share of Capability . . .	7.5	21
(Thousand Short Tons)	59	35	Generation (MWh)	732,595	39
Nitrogen Oxide Emissions			Percentage Share of Generation . . .	8.3	22
(Thousand Short Tons)	23	41	-- = Not applicable.		
Carbon Dioxide Emissions					
(Thousand Short Tons)	8,061	43			
Sulfur Dioxide/sq. mile (Tons)	30.08	3			
Nitrogen Oxides/sq. mile (Tons)	11.74	6			
Carbon Dioxide/sq. mile (Tons)	4,123.10	3			

Table 2. Five Largest Utility Plants, 1996

Plant Name	Type	Operating Utility	Net Capability (MWe)
1. Indian River	Coal	Delmarva Power & Light Co	760
2. Edge Moor	Oil/Coal	Delmarva Power & Light Co	699
3. Hay Road	Gas/Other	Delmarva Power & Light Co	511
4. McKee Run	Oil	City of Dover	136
5. Christiana	Oil	Delmarva Power & Light Co	45

Table 3. Top Four 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. Delmarva Power & Light Co	2,054	910	633	511	--	--
B. City of Dover	175	--	175	--	--	--
C. City of Seaford	8	--	8	--	--	--
D. City of Lewes	2	--	2	--	--	--
Total	2,239	910	818	511	--	--
Percentage of Industry Capability	92.5	--	--	--	--	--

-- = Not applicable.

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

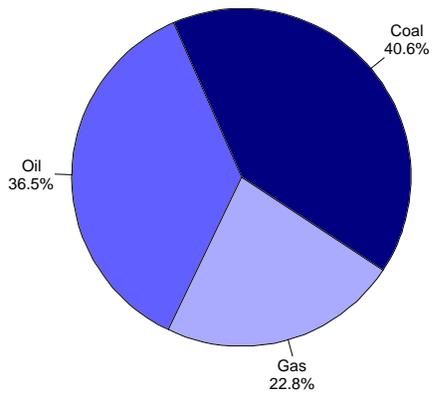


Figure 2. Utility Generation by Primary Energy Source, 1996

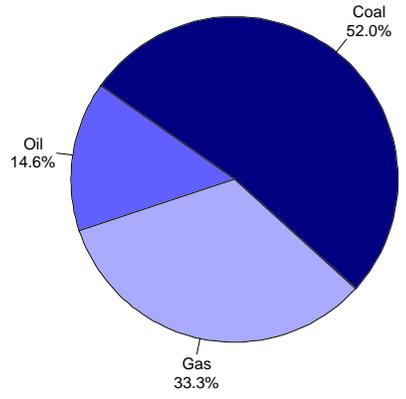


Figure 3. Energy Consumed at Electric Utilities by Primary Energy Source, 1996

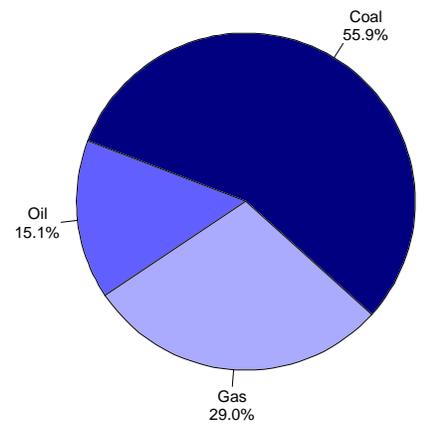


Table 4. Electric Power Industry Generating Capability by Primary Energy Source, 1986, 1991, and 1996
(Megawatts Electric)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	919	931	910	52.0	43.1	40.6
Oil	848	904	818	48.0	41.8	36.5
Gas	--	327	511	--	15.1	22.8
Nuclear	--	--	--	--	--	--
Hydro/Other	--	--	--	--	--	--
Total Utility	1,767	2,162	2,239	100.0	100.0	100.0
Total Nonutility	W	W	182	--	--	--

-- = 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	5,581,545	4,598,301	4,225,125	66.4	60.5	52.0
Oil	2,623,152	1,899,201	1,188,294	31.2	25.0	14.6
Gas	205,817	1,106,221	2,708,434	2.4	14.5	33.3
Nuclear	--	--	--	--	--	--
Hydro/Other	--	--	--	--	--	--
Total Utility	8,410,514	7,603,723	8,121,853	100.0	100.0	100.0
Total Nonutility	W	W	732,595	--	--	--

-- = Not applicable. 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	0.063	0.058	0.047	71.3	63.6	55.9
Oil	0.024	0.018	0.013	26.6	19.5	15.1
Gas	0.002	0.015	0.024	2.1	16.9	29.0
Nuclear	--	--	--	--	--	--
Hydro/Other	--	--	--	--	--	--
Total Utility	0.089	0.092	0.083	100.0	100.0	100.0
Total Nonutility	W	W	0.020	--	--	--

-- = Not applicable. W = Withheld.

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

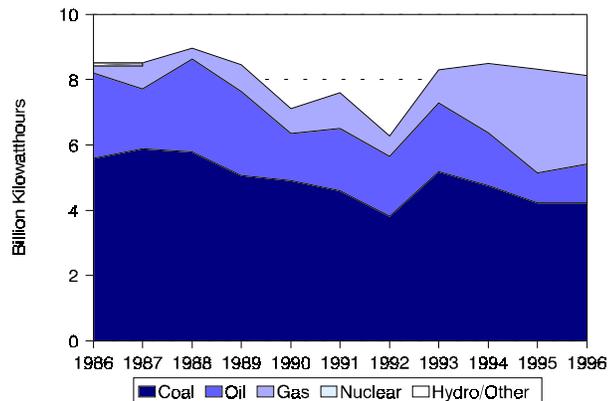


Figure 5. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986-1996
(1996 Dollars)

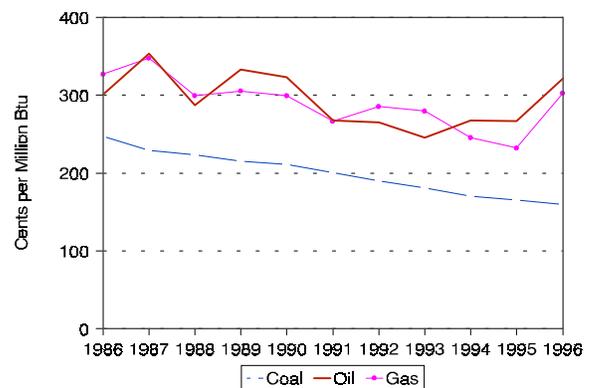


Table 7. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986, 1991, and 1996
(Cents per Million Btu, 1996 Dollars)

Fuel	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Coal	247.0	200.2	159.4	-4.3
Oil	301.0	267.4	321.2	0.7
Gas	326.9	266.3	302.5	-0.8

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	59	55	59	0.0
Nitrogen Oxides ^d . .	32	29	23	-3.4
Carbon Dioxide ^d . .	9,814	9,349	8,061	-1.9

Figure 6. Estimated Sulfur Dioxide Emissions, 1986-1996

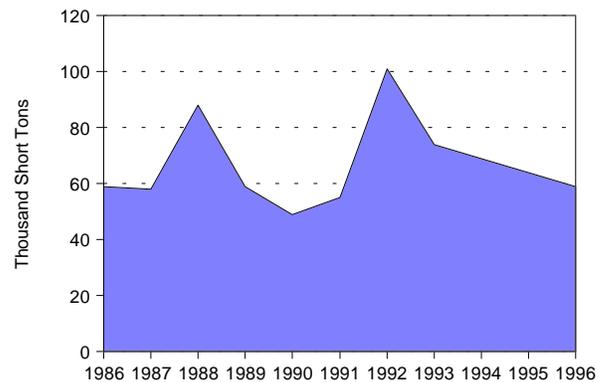


Figure 7. Estimated Nitrogen Oxide Emissions, 1986-1996

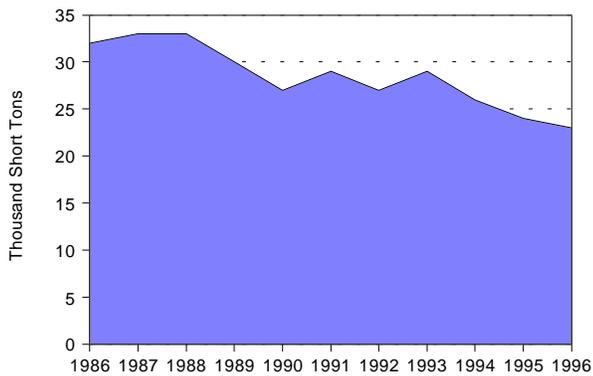


Figure 8. Estimated Carbon Dioxide Emissions, 1986-1996

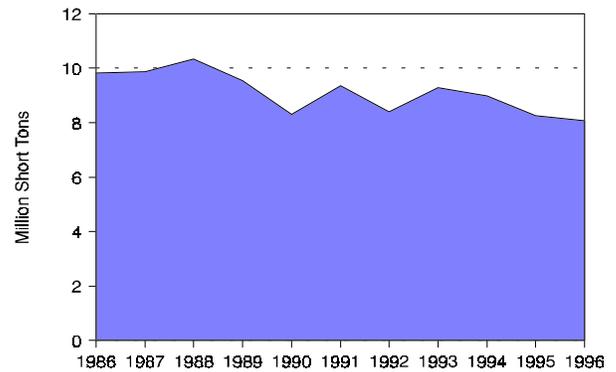


Table 9. Utility Retail Sales by Sector, 1986, 1991, and 1996
(Megawatthours)

Sector	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Residential .	2,121,154	2,824,340	3,271,209	4.4	31.1	33.1	33.9
Commercial	1,818,581	2,419,529	2,910,775	4.8	26.6	28.3	30.2
Industrial . .	2,838,708	3,240,945	3,399,404	1.8	41.6	38.0	35.3
Other	45,820	51,050	59,312	2.6	0.7	0.6	0.6
Total	6,824,261	8,535,864	9,640,700	3.5	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	1	9	--	1	11
Number of Retail Customers	202,009	39,016	--	36,942	277,967
Retail Sales (MWh)	5,574,173	873,050	--	377,038	6,824,261
Percentage of Retail Sales	81.7	12.8	--	5.5	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	446,964	82,061	--	39,774	568,799
Percentage of Revenue	78.6	14.4	--	7.0	100.0
1991					
Number of Utilities	1	9	--	1	11
Number of Retail Customers	231,698	43,724	--	45,398	320,820
Retail Sales (MWh)	6,918,170	1,094,806	--	522,888	8,535,864
Percentage of Retail Sales	81.1	12.8	--	6.1	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	501,981	91,347	--	49,893	643,221
Percentage of Revenue	78.0	14.2	--	7.8	100.0
1996					
Number of Utilities	1	9	--	1	11
Number of Retail Customers	251,580	48,167	--	52,212	351,959
Retail Sales (MWh)	7,667,461	1,299,123	--	674,116	9,640,700
Percentage of Retail Sales	79.5	13.5	--	7.0	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	506,857	97,407	--	59,347	663,611
Percentage of Revenue	76.4	14.7	--	8.9	100.0

-- = Not applicable.