

Georgia

In 1996, Georgia had the tenth largest population and the ninth largest utility generating capability. Most of the electricity in Georgia is generated at coal-fired plants. Georgia is also very reliant on nuclear power. Two of the five largest plants in the Nation, Georgia Power's Scherer and Bowen plants, are in Georgia. The Georgia Power Company (GPC), a subsidiary of Atlanta-based Southern Company, the largest utility in the State, is the fifth largest in the Nation. The average price of electricity, 6.43 cents per kilowatt-hour, was twenty-third most expensive in the Nation. Georgia is a net exporter of electricity.

The Clean Air Act Amendments of 1990 specified a number of utility plants to begin compliance with stricter emissions standards for sulfur dioxide (SO₂) and nitrogen oxides (NO_x). Almost eight and one-half gigawatts of nameplate capacity at five Georgia plants were named in the law. Emissions of SO₂ from Georgia utilities declined substantially from 1986 to 1991 and then did so again from 1991 to 1996. NO_x emissions also declined from 1986 to 1991 and again in 1996. Carbon dioxide (CO₂) emissions increased steadily in both periods. In 1996, emissions of SO₂ and CO₂ were ranked tenth in the Nation. It is likely that Georgia will need to design a State implementation plan (SIP) for reducing ground-level ozone in response to a proposal released by the Environmental Protection Agency (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.

GPC operates the five largest plants in the State. Four of the five are coal-fired plants. All five are in the northern two-thirds of the State, of which only Bowen is north of Atlanta. In 1986, utility coal plants represented almost two-thirds of Georgia's generating capability and over four-fifths of total net generation. In 1996, the coal share of capability had fallen to just over half while the net generation share had fallen to just over three-fifths. Between 1986 and 1996, the decline of the coal share was made up for by the increase in the nuclear share which increased from 9.1 percent to 28.7 percent. Vogtle, the third largest plant in the State, is one of the least expensive nuclear plants in the Nation.¹ Vogtle, which came fully on-line in 1989, is in Burke County, near Augusta, along the South Carolina border. After 1986, Georgia's nuclear capacity factor remained higher than the national average capacity factor. The nonutility share of Georgia's generation was stable over the 11 years examined, declining from 5.5 percent of the total to 5.4 percent.

Georgia has not moved as quickly as other States toward deregulation. In January 1998, the Public Service Commission issued a report on restructuring. Recommendations include market-based rates, unbundled services, and stranded cost recovery. A docket has been established for comments.²

¹ Energy Information Administration, *Challenges of Electric Power Industry Restructuring for Fuel Suppliers*, DOE/EIA-0623 (Washington, DC, September 1998), Chapter 2.

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

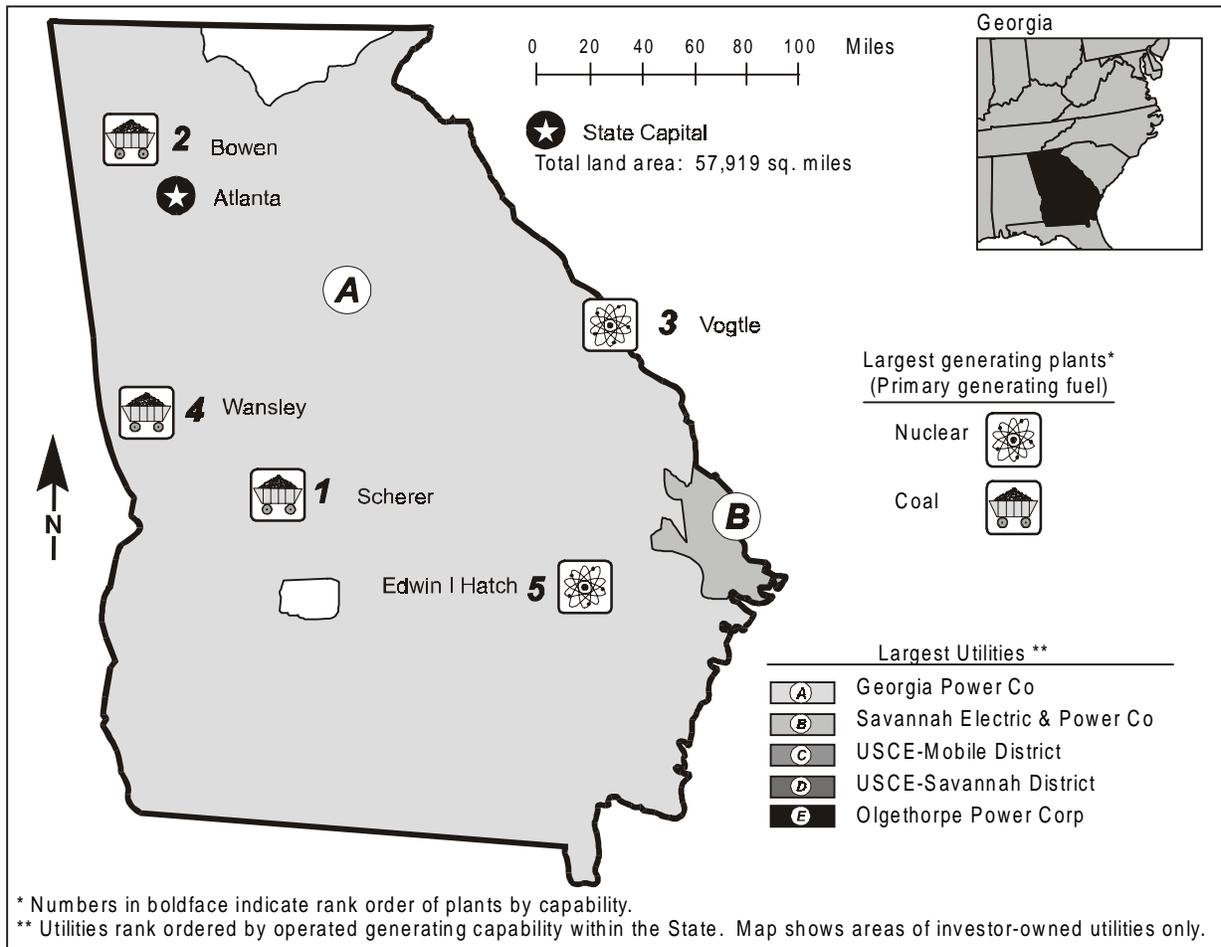


Table 1. 1996 Summary Statistics

Item	Value	U.S. Rank	Item	Value	U.S. Rank
NERC Region(s)		SERC	Utility		
Net Exporter or Importer		Exporter	Capability (MWe)	22,782	9
State Primary Generating Fuel		Coal	Generation (MWh)	98,729,242	12
Population (as of 7/96)	7,334,274	10	Average Age of Coal Plants	23 years	
Average Revenue (cents/kWh)	6.43	^a 29	Average Age of Oil-fired Plants	26 years	
Industry			Average Age of Gas-fired Plants	16 years	
Capability (MWe)	24,190	^b 10	Average Age of Nuclear Plants	13 years	
Generation (MWh)	104,393,589	^b 13	Average Age of		
Capability/person			Hydroelectric Plants	24 years	
(KWe/person)	3.30	^b 18	Average Age of Other Plants . . .	--	
Generation/person			Nonutility^c		
(MWh/person)	14.23	^b 20	Capability (MWe)	1,408	12
Sulfur Dioxide Emissions	499	10	Percentage Share of Capability	5.8	25
(Thousand Short Tons)			Generation (MWh)	5,664,347	15
Nitrogen Oxide Emissions	207	14	Percentage Share of		
(Thousand Short Tons)			Generation	5.4	27
Carbon Dioxide Emissions	81,741	10	-- = Not applicable.		
(Thousand Short Tons)					
Sulfur Dioxide/sq. mile (Tons)	8.62	15			
Nitrogen Oxides/sq. mile (Tons)	3.57	19			
Carbon Dioxide/sq. mile (Tons)	1,411.30	21			

Table 2. Five Largest Utility Plants, 1996

Plant Name	Type	Operating Utility	Net Capability (MWe)
1. Scherer	Coal	Georgia Power Co	3,352
2. Bowen	Coal	Georgia Power Co	3,248
3. Vogtle	Nuclear	Georgia Power Co	2,328
4. Wansley	Coal	Georgia Power Co	1,784
5. Edwin I Hatch	Nuclear	Georgia Power Co	1,622

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. Georgia Power Co	19,183	12,832	1,228	341	3,950	832
B. Savannah Electric & Power Co ..	1,317	389	--	928	--	--
C. USCE-Mobile District	965	--	--	--	--	965
D. USCE-Savannah District	684	--	--	--	--	684
E. Oglethorpe Power Corp	566	--	--	--	--	566
Total	22,715	13,221	1,228	1,269	3,950	3,047
Percentage of Industry Capability	93.9	--	--	--	--	--

-- = Not applicable.

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

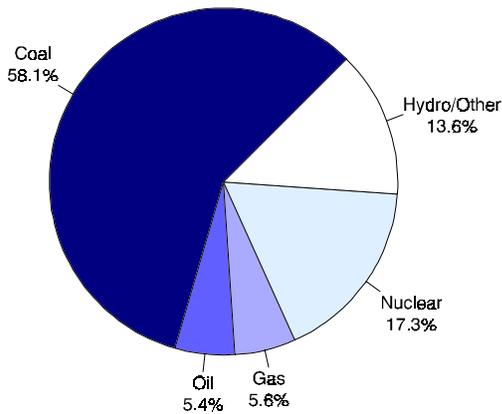


Figure 2. Utility Generation by Primary Energy Source, 1996

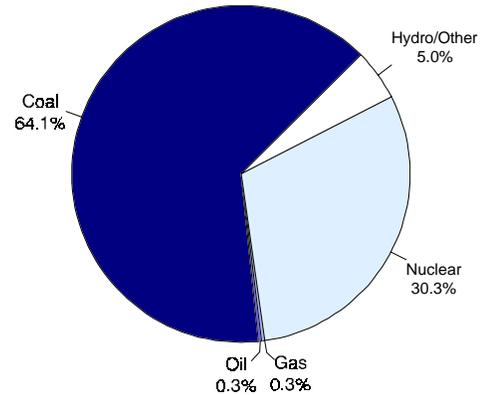


Figure 3. Energy Consumed at Electric Utilities by Primary Energy Source, 1996

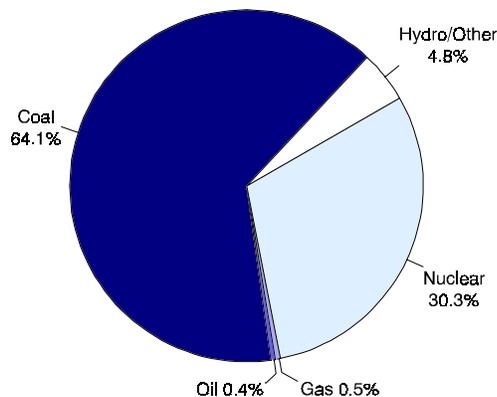


Table 4. Electric Power Industry Generating Capability by Primary Energy Source, 1986, 1991, and 1996
(Megawatts Electric)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	12,095	12,972	13,233	65.7	59.7	54.7
Oil	1,507	1,493	1,228	8.2	6.9	5.1
Gas	67	103	1,276	0.4	0.5	5.3
Nuclear	1,524	3,714	3,950	8.3	17.1	16.3
Hydro/Other	2,485	2,470	3,094	13.5	11.4	12.8
Total Utility	17,678	20,752	22,782	96.0	95.5	94.2
Total Nonutility	742	977	1,408	4.0	4.5	5.8
Industry	18,420	21,729	24,190	100.0	100.0	100.0

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	64,882,947	59,985,395	63,230,856	81.8	62.4	60.6
Oil	269,702	107,662	292,018	0.3	0.1	0.3
Gas	421,281	60,984	344,990	0.5	0.1	0.3
Nuclear	7,238,319	26,016,023	29,925,001	9.1	27.1	28.7
Hydro/Other	2,097,137	4,639,352	4,936,377	2.6	4.8	4.7
Total Utility	74,909,386	90,809,416	98,729,242	94.5	94.4	94.6
Total Nonutility	4,362,363	5,341,740	5,664,347	5.5	5.6	5.4
Industry	79,271,749	96,151,156	104,393,589	100.0	100.0	100.0

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	0.645	0.592	0.673	69.7	51.8	52.1
Oil	0.003	0.001	0.004	0.3	0.1	0.3
Gas	0.006	0.001	0.005	0.6	0.1	0.4
Nuclear	0.078	0.279	0.318	8.5	24.4	24.6
Hydro/Other	0.022	0.048	0.051	2.4	4.2	3.9
Total Utility	0.754	0.921	1.050	81.5	80.6	81.3
Total Nonutility	0.171	0.222	0.241	18.5	19.4	18.7
Industry	0.925	1.143	1.292	100.0	100.0	100.0

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

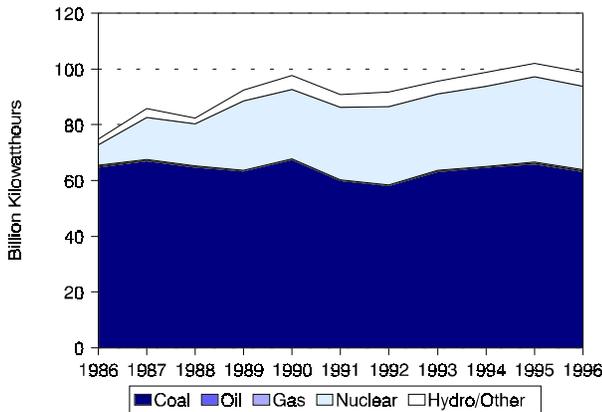


Figure 5. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986-1996
(1996 Dollars)

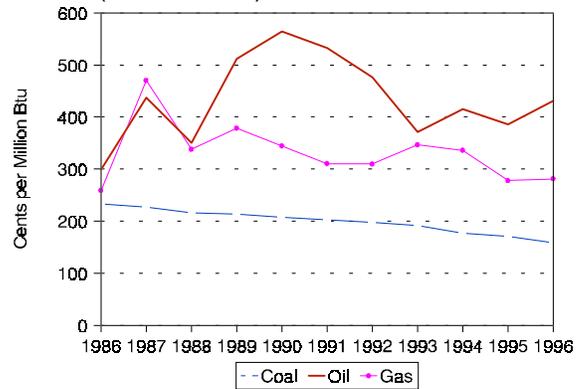


Table 7. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986, 1991, and 1996
(Cents per Million Btu, 1996 Dollars)

Fuel	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Coal	233.6	202.2	157.8	-3.8
Oil	299.2	532.5	430.5	3.7
Gas	258.7	310.5	281.3	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	919	808	499	-5.9
Nitrogen Oxides ^d . .	229	218	207	-1.0
Carbon Dioxide ^d . .	67,078	70,351	81,741	2.0

Figure 6. Estimated Sulfur Dioxide Emissions, 1986-1996

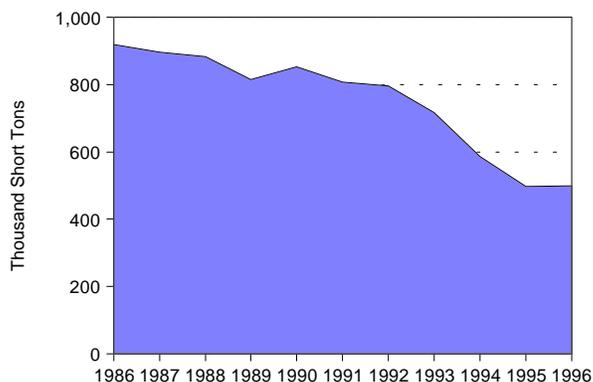


Figure 7. Estimated Nitrogen Oxide Emissions, 1986-1996

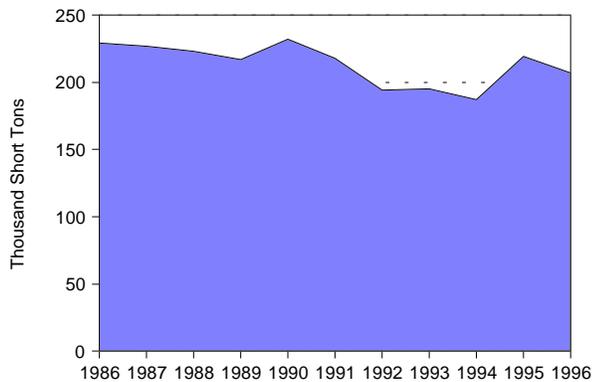


Figure 8. Estimated Carbon Dioxide Emissions, 1986-1996

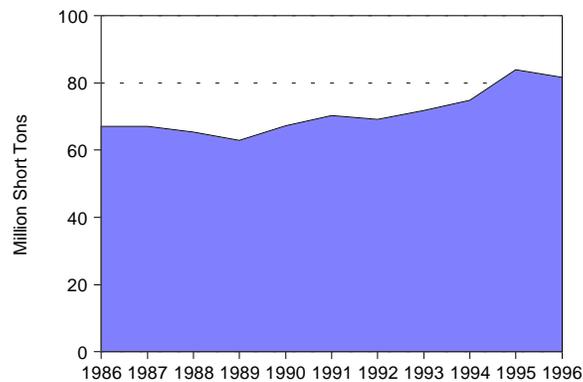


Table 9. Utility Retail Sales by Sector, 1986, 1991, and 1996
(Megawatthours)

Sector	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Residential . .	25,807,775	30,186,631	37,762,979	3.9	37.7	37.0	37.3
Commercial	17,511,855	23,240,750	29,139,733	5.2	25.6	28.5	28.8
Industrial . . .	24,366,764	27,193,100	33,175,253	3.1	35.6	33.3	32.7
Other	803,783	918,605	1,229,171	4.3	1.2	1.1	1.2
Total	68,490,178	81,539,086	101,307,136	4.0	100.0	100.0	100.0

Figure 9. Nuclear Power Capacity Factor Comparison, 1986-1996

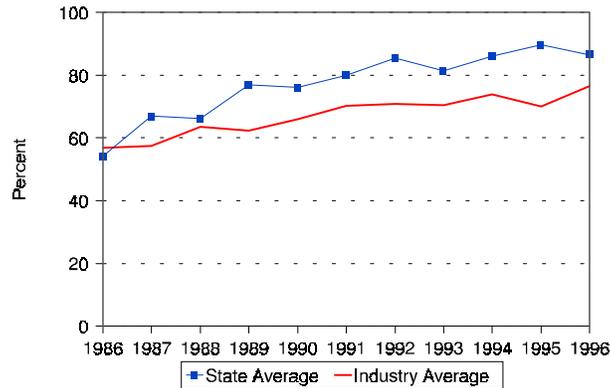


Table 10. Utility Retail Sales Statistics, 1986, 1991, and 1996

Item	Investor-Owned Utility	Public	Federal	Cooperative	Total
	1986				
Number of Utilities	2	53	--	43	98
Number of Retail Customers	1,525,097	284,115	--	845,272	2,654,484
Retail Sales (MWh)	49,277,379	6,808,911	--	12,403,888	68,490,178
Percentage of Retail Sales	72.0	9.9	--	18.1	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	3,652,506	491,410	--	1,090,188	5,234,104
Percentage of Revenue	69.8	9.4	--	20.8	100.0
1991					
Number of Utilities	2	53	--	43	98
Number of Retail Customers	1,690,820	295,054	--	1,039,738	3,025,612
Retail Sales (MWh)	57,481,308	7,935,575	--	16,122,203	81,539,086
Percentage of Retail Sales	70.5	9.7	--	19.8	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	4,087,622	577,484	--	1,351,210	6,016,316
Percentage of Revenue	67.9	9.6	--	22.5	100.0
1996					
Number of Utilities	2	53	--	43	98
Number of Retail Customers	1,851,335	311,829	--	1,255,884	3,419,048
Retail Sales (MWh)	68,940,249	10,102,676	--	22,264,211	101,307,136
Percentage of Retail Sales	68.1	10.0	--	22.0	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	4,245,990	620,999	--	1,646,703	6,513,692
Percentage of Revenue	65.2	9.5	--	25.3	100.0

-- = Not applicable.