

Indiana

Almost all of the electricity generated by utilities in Indiana, 104.4 billion kilowatthours, comes from coal-fired power plants. The five largest plants in the State are coal-fired and each are operated by a different utility. The largest utility, PSI Energy, operates the largest plant in the State, Tibson. Like Kentucky, Indiana's extensive use of coal is based on its own large reserves which compose the eastern part of the Illinois basin, a large geologic depression that also underlies parts of Illinois and Kentucky. Its proximity to large coal deposits in Ohio, West Virginia, and Pennsylvania make coal an obvious fuel of choice.¹ The Ohio River makes barge deliveries from each of these States possible. It follows that four of the five largest plants are located in the southern part of the State, near the Ohio.

The five largest utilities with capability within the State—PSI Energy, Indiana Michigan Power, Northern Indiana Public Service, Indianapolis Power and Light, and Hoosier Energy REC Inc - operate 80 percent of the net summer capability. Combined, these five investor-owned utilities (IOUs) along with two smaller IOUs accounted for about 84 percent of the retail sales within the State. Together, the IOUs and the State's 72 public utilities and 43 cooperatives generated 105.6 billion kilowatthours of electricity in 1996. In 1996, the average price of electricity was 5.23 cents per kilowatthour, eighth lowest in the Nation.

Over the 11-year period examined in this report, utility electricity retail sales have increased at an average annual growth rate of 3.3 percent, reaching 88.9 billion kilowatthours in 1996. Indiana is an exporter of

electricity with a net difference of 16.7 billion kilowatthours between generation and sales.

Like other States along the Ohio River that use an extensive amount of Illinois Basin coal, Indiana's heavy use of coal comes at a price of high sulfur dioxide (SO₂) emissions. Indiana's coal is high in sulfur content and, depending on its use, must be cleaned to meet air quality standards. Even so, the sulfur content remains relatively high after cleaning, averaging more than 2 percent by weight.² In 1996, Indiana ranked third highest in SO₂ emissions and second for both nitrogen oxides (NO_x) and carbon dioxide. The Clean Air Act Amendments of 1990 required 11,192 megawatts of nameplate capacity at 15 Indiana plants to begin compliance with stricter emissions standards for SO₂ and NO_x. Only Ohio had more affected capability than Indiana. Recently, SO₂ emissions, although still high, declined by an average annual rate of 9.8 percent between 1991 and 1996.

Electricity industry restructuring has been slow for States in this region, and Indiana is no exception. As recently as 1998, a deregulation bill was defeated. Indiana's major utilities and other groups promised to begin meeting this Spring to work out differences over how deregulation should be implemented. New legislation is expected to be written in the 1999 legislative session. Customers of Indianapolis Power and Light were offered three billing options in July 1998. They have the option of a fixed rate, a fixed monthly bill based on last year's average bill, or a "green power" rate under an alternative pricing plan approved in March by the Indiana Utilities Regulatory Commission.³

¹ Energy Information Administration, *State Coal Profiles*, DOE/EIA-0576 (Washington, DC, January 1994), p. 27.

² Energy Information Administration, *State Coal Profiles*, DOE/EIA-0576 (Washington, DC, January 1994), p. 31.

³ Energy Information Administration, Status of State Electric Utility Deregulation Activity, http://www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html.

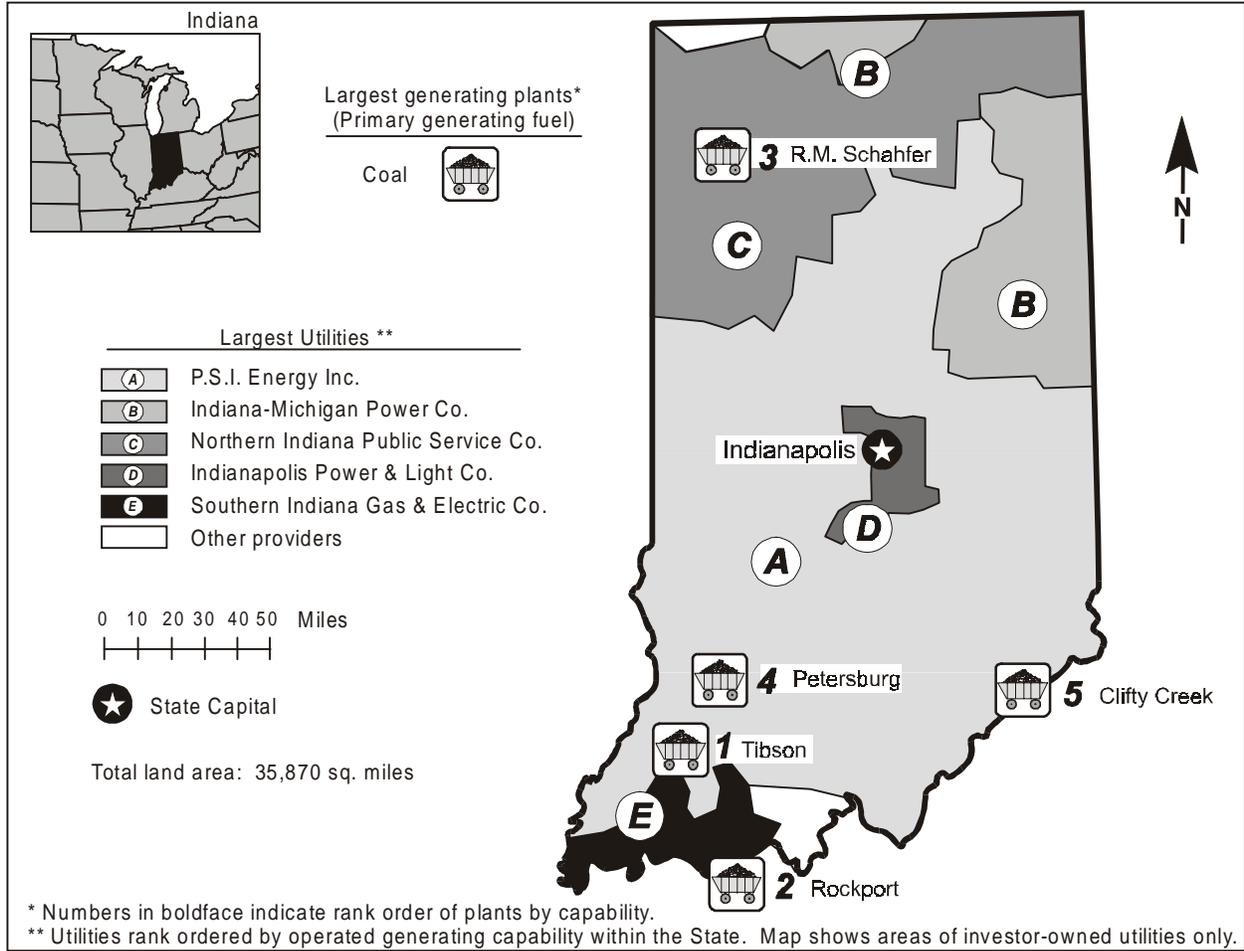


Table 1. 1996 Summary Statistics

Item	Value	U.S. Rank	Item	Value	U.S. Rank
NERC Region(s)		ECAR	Utility		
Net Exporter or Importer		Exporter	Capability (MWe)	20,681	13
State Primary Generating Fuel		Coal	Generation (MWh)	105,557,018	9
Population (as of 7/96)	5,828,090	14	Average Age of Coal Plants	23 years	
Average Revenue (cents/kWh)	5.23	^a 8	Average Age of Oil-fired Plants	35 years	
Industry			Average Age of Gas-fired Plants	18 years	
Capability (MWe)	21,581	^b 13	Average Age of Nuclear Plants	--	
Generation (MWh)	109,971,063	^b 12	Average Age of		
Capability/person			Hydroelectric Plants	38 years	
(KWe/person)	3.70	^b 13	Average Age of Other Plants . . .	--	
Generation/person			Nonutility^c		
(MWh/person)	18.87	^b 6	Capability (MWe)	900	17
Sulfur Dioxide Emissions			Percentage Share of Capability	4.2	31
(Thousand Short Tons)	875	3	Generation (MWh)	4,414,045	19
Nitrogen Oxide Emissions			Percentage Share of Generation	4.0	32
(Thousand Short Tons)	667	2	-- = Not applicable.		
Carbon Dioxide Emissions					
(Thousand Short Tons)	161,442	2			
Sulfur Dioxide/sq. mile (Tons)	24.39	5			
Nitrogen Oxides/sq. mile (Tons)	18.58	1			
Carbon Dioxide/sq. mile (Tons)	4,500.74	1			

Table 2. Five Largest Plants, 1996

Plant Name	Type	Operating Utility	Net Capacity (MWe)
1. Tibson	Coal	PSI Energy Inc	3,124
2. Rockport	Coal	Indiana Michigan Power Co	2,600
3. R M Schahfer	Coal	Northern Indiana Pub Serv Co	1,780
4. Petersburg	Coal	Indianapolis Power & Light Co	1,672
5. Clifty Creek	Coal	Indiana-Kentucky Electric Corp	1,217

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. PSI Energy Inc	6,144	5,764	236	99	--	45
B. Indiana Michigan Power Co	3,602	3,580	15	--	--	7
C. Northern Indiana Pub Serv Co	3,392	2,934	--	448	--	10
D. Indianapolis Power & Light Co	2,973	2,594	222	157	--	--
E. Hoosier Energy REC Inc.	1,243	1,243	--	--	--	--
Total	17,354	16,115	473	704	--	62
Percentage of Industry Capability	80.4	--	--	--	--	--

-- = Not applicable.

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

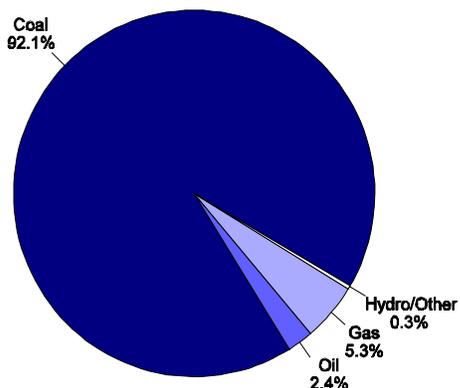


Figure 2. Utility Generation by Primary Energy Source, 1996

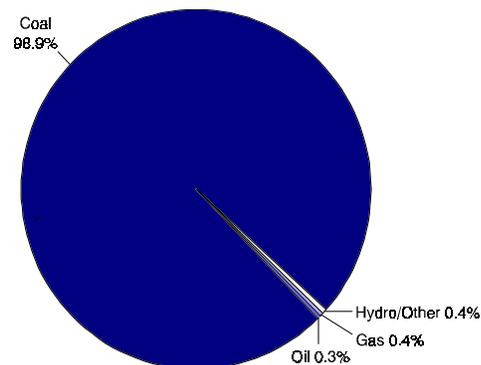


Figure 3. Energy Consumed at Electric Utilities by Primary Energy Source, 1996

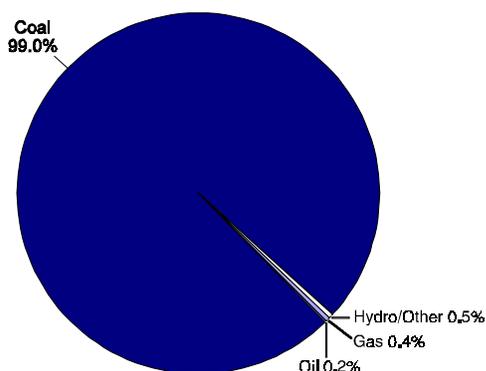


Table 4. Electric Power Industry Generating Capability by Primary Energy Source, 1986, 1991, and 1996
(Megawatts Electric)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	18,330	19,588	19,045	95.1	94.3	92.1
Oil	662	490	487	3.4	2.4	2.4
Gas	210	628	1,087	1.1	3.0	5.3
Nuclear	--	--	--	--	--	--
Hydro/Other	74	66	62	0.4	0.3	0.3
Total Utility	19,276	20,773	20,681	100.0	100.0	100.0
Total Nonutility	W	755	900	--	--	--

-- = 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	76,445,671	96,526,976	104,413,600	98.8	98.3	98.9
Oil	294,674	354,297	320,566	0.4	0.4	0.3
Gas	95,595	919,662	374,488	0.1	0.9	0.4
Nuclear	--	--	--	--	--	--
Hydro/Other	505,967	399,051	448,364	0.7	0.4	0.4
Total Utility	77,341,908	98,199,986	105,557,018	100.0	100.0	100.0
Total Nonutility	W	3,733,459	4,414,045	--	--	--

-- = 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	0.798	1.009	1.098	99.0	98.4	99.0
Oil	0.002	0.002	0.002	0.2	0.2	0.2
Gas	0.001	0.010	0.004	0.1	1.0	0.4
Nuclear	--	--	--	--	--	--
Hydro/Other	0.005	0.004	0.005	0.7	0.4	0.4
Total Utility	0.806	1.025	1.110	100.0	100.0	100.0
Total Nonutility	W	0.116	0.140	--	--	--

-- = Not applicable. W = Withheld.

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

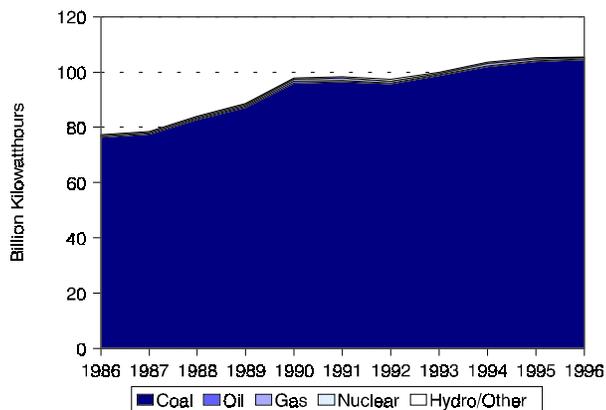


Figure 5. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986-1996
(1996 Dollars)

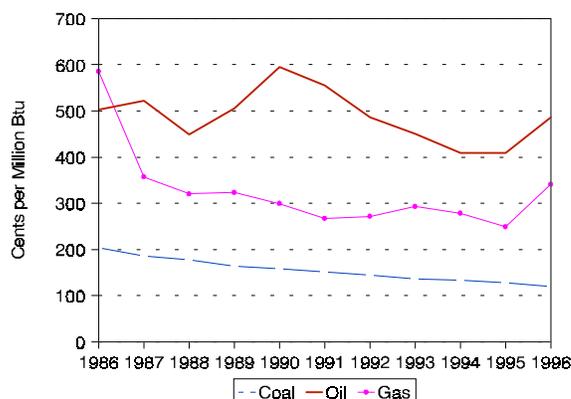


Table 7. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986, 1991, and 1996
(Cents per Million Btu, 1996 Dollars)

Fuel	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Coal	203.7	151.0	119.1	-5.2
Oil	502.3	555.1	486.9	-0.3
Gas	585.6	267.2	341.2	-5.3

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	1,459	1,462	875	-5.0
Nitrogen Oxides ^d . .	404	632	667	5.1
Carbon Dioxide ^d . . .	85,621	143,177	161,442	6.5

Figure 6. Estimated Sulfur Dioxide Emissions, 1986-1996

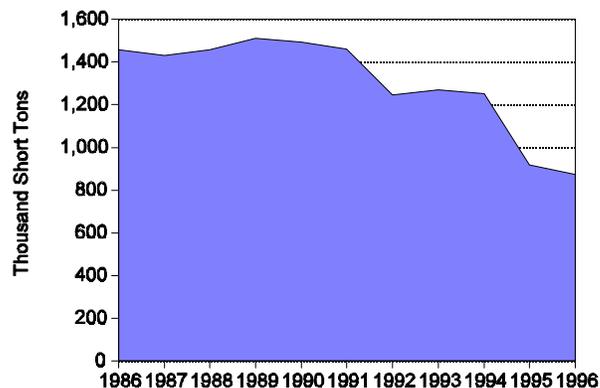


Figure 7. Estimated Nitrogen Oxide Emissions, 1986-1996

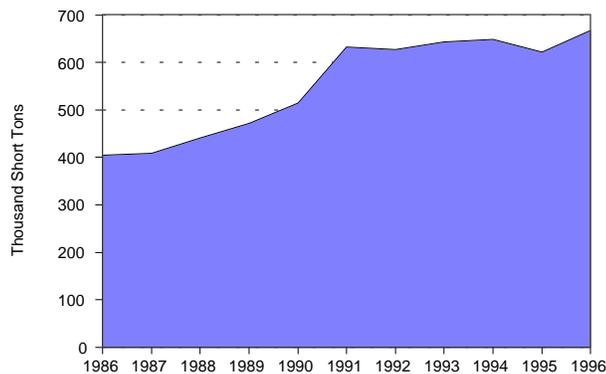


Figure 8. Estimated Carbon Dioxide Emissions, 1986-1996

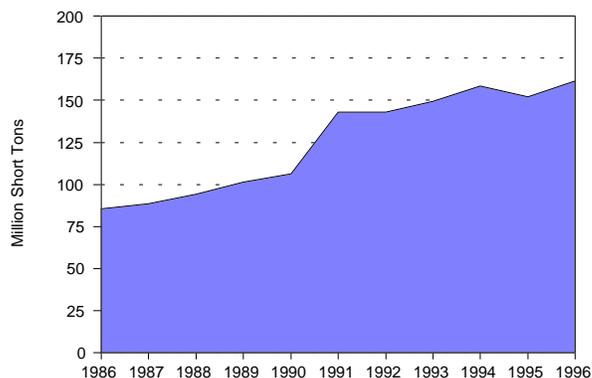


Table 9. Utility Retail Sales by Sector, 1986, 1991, and 1996
(Megawatthours)

Sector	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Residential . . .	20,507,830	24,220,121	26,860,496	2.7	31.8	31.4	30.2
Commercial . .	12,291,204	16,381,408	18,291,938	4.1	19.1	21.3	20.6
Industrial	30,950,223	35,786,821	43,203,154	3.4	48.1	46.5	48.6
Other	641,442	645,386	545,784	-1.6	1.0	0.8	0.6
Total	64,390,702	77,033,736	88,901,372	3.3	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	71	--	44	122
Number of Retail Customers	1,760,678	219,677	--	338,266	2,318,621
Retail Sales (MWh)	54,964,626	4,439,253	--	4,986,823	64,390,702
Percentage of Retail Sales	85.4	6.9	--	7.7	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	4,063,605	326,453	--	479,626	4,869,683
Percentage of Revenue	83.5	6.7	--	9.9	100.0
1991					
Number of Utilities	7	72	--	44	123
Number of Retail Customers	1,885,623	232,561	--	373,690	2,491,874
Retail Sales (MWh)	65,463,074	5,408,848	--	6,161,814	77,033,736
Percentage of Retail Sales	85.0	7.0	--	8.0	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	3,777,474	334,445	--	496,779	4,608,698
Percentage of Revenue	82.0	7.3	--	10.8	100.0
1996					
Number of Utilities	7	72	--	43	122
Number of Retail Customers	2,020,028	243,155	--	416,364	2,679,547
Retail Sales (MWh)	74,675,170	6,669,957	--	7,556,245	88,901,372
Percentage of Retail Sales	84.0	7.5	--	8.5	100.0
Revenue from Retail Sales (thousand 1996 \$) ^e	3,806,905	356,087	--	488,228	4,651,220
Percentage of Revenue	81.9	7.7	--	10.5	100.0

-- = Not applicable.