



PB99-136285

Patterns and Trends

New York State Energy Profiles: 1983-1997

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New York State Energy Research and Development Authority

The New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation created in 1975 by the New York State Legislature. NYSERDA's responsibilities include:

- Conducting a multifaceted energy and environmental research and development program to meet New York State's diverse needs.
- Helping industries, schools, hospitals, municipalities, not-for-profits, and the residential sector, including low-income residents, implement energy efficiency measures.
- Administering the **New York Energy SmartSM** program, a Statewide public benefit R&D, energy efficiency, and environmental protection program.
- Providing objective, credible, and useful energy analysis to guide decisions made by major energy stakeholders in the private and public sectors.
- Managing the Western New York Nuclear Service Center at West Valley, including: (1) overseeing the State's interests and share of costs at the West Valley Demonstration Project, a federal/State radioactive waste clean-up effort, and (2) managing wastes and maintaining facilities at the shut-down State-Licensed Disposal Area.
- Coordinating the State's activities on nuclear matters, and designing, constructing, and operating State facilities for disposal of low-level radioactive waste, once siting and technology decisions are made by the State.
- Financing energy-related projects, reducing costs for ratepayers.

NYSERDA derives its basic research revenues from an assessment on the intrastate sales of New York State's investor-owned electric and gas utilities, and a voluntary annual contribution by the New York Power Authority. Additional research dollars come from limited corporate funds. More than 250 of NYSERDA's research projects help the State's businesses and municipalities with their energy and environmental problems. Since 1990, NYSERDA has successfully developed and brought into use more than 70 innovative, energy-efficient, and environmentally acceptable products and services. These contributions to the State's economic growth and environmental protection are made at a cost of about 78 cents per New York resident per year.

Federally funded, the Energy Efficiency Services program is working with more than 175 businesses, schools, and municipalities to identify existing technologies and equipment to reduce their energy costs.

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For more information, contact the Technical Communications unit, NYSERDA, Corporate Plaza West, 286 Washington Avenue Extension, Albany, New York 12203-6399; (518) 862-1090, ext. 3250; or on the World Wide Web at <http://www.nyserda.org/>

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13. ABSTRACT (Maximum 200 words) This report presents comprehensive databases of Statewide energy consumption, prices, energy expenditures, and sources of supply for the period 1983-1997. The report is organized into six sections: Section 1 presents a comparison of energy consumption, selected energy prices, source of petroleum products, and other factors influencing energy demand and expenditures for the U.S. and NYS. Section 2 provides historic data for primary and net energy consumption by fuel type and sector (residential, commercial, industrial, and transportation). Section 3 presents retail level energy price data. Retail energy prices are provided by fuel type for each sector in nominal dollar costs per physical unit and per million Btu. Section 4 presents the estimated expenditure on net energy consumption by sector and fuel type in nominal dollars and in 1997 constant dollars (excluding inflation). Estimated costs were derived by multiplying consumption quantities by their respective prices. Section 5 details sources of selected New York State energy supplies. Section 6 provides several appendices, such as tables on household end-use energy consumption and expenditures, gasoline consumption by county, degree-day, conversion factors and a glossary of energy terms.

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1997

NEW YORK STATE – ENERGY FAST FACTS

PETROLEUM

Consumption (5% of U.S. total) (barrels) 286,810,000
 Consumers: transportation 69%, residential 13%,
 commercial 10%, electric generation 6%,
 industrial 2%
 Dependence on foreign oil 80%
 Decline in consumption since 1973 peak 41%
 In-State production (barrels) 276,000

NATURAL GAS

Consumption (6% of U.S. total) (billion cubic feet) 1,253.9
 Consumers: electric generation 41%, residential 30%,
 commercial 18%, industrial 11%
 Rise in consumption since 1975 low point 118%
 In-State production (billion cubic feet) 16.2

COAL

Consumption (2% of U.S. total) (tons) 14,820,000
 Consumers: electric generation 82%, industrial 16%,
 residential 1%, commercial 1%
 Decline in consumption since 1965 peak 42%

ELECTRICITY

Sales to ultimate consumers (gigawatthours) 131,574
 Consumers: commercial 49%, residential 30%,
 industrial 19%, transportation 2%
 Utility generation (gigawatthours) 114,050
 Nuclear (26%) 29,570
 Coal (25%) 28,320
 Hydro (24%) 27,917
 Natural gas (18%) 20,101
 Petroleum (7%) 8,142
 Non-utility generation (gigawatthours) 34,783
 Natural gas (83%) 28,756
 Waste (biofuel) (6%) 2,110
 Hydro (5%) 1,855
 Coal (5%) 1,767
 Wood (biofuel) (1%) 295
 Net exported electricity (gigawatthours) 2,356

PRIMARY ENERGY CONSUMPTION

Primary consumption (5% of U.S. total) (trillion Btu) 4,023.3
 Petroleum (39%) 1,581.9
 Natural gas (32%) 1,286.8
 Coal (9%) 384.8
 Hydro (8%) 316.6
 Nuclear (8%) 314.4
 Biofuels (4%) 164.0
 Primary consumption per capita (million Btu) 221.8
 Consumption per \$ GSP (thousand Btu/1992\$) 7.1
 Average annual decline in primary energy
 consumption per \$ GSP since 1983 1.2%

END-USE ENERGY CONSUMPTION

Total end-use energy consumption (trillion Btu) 2,914.4
 By fuel type:
 Petroleum (51%) 1,495.1
 Natural gas (26%) 763.0
 Electricity (16%) 449.0
 Biofuels (5%) 138.2
 Coal (2%) 69.0
 By sector:
 Buildings (49%) 1,414.1
 Transportation (38%) 1,106.3
 Industries (13%) 394.0
 End-use consumption per capita (million Btu) 160.7

ENERGY-RELATED CO₂ EMISSIONS

	Primary Energy (trillion Btu)	CO ₂ Emissions (million tons)
Total	4,023.3	239.3
Electric generation	1,557.8	69.9
Transportation	1,099.4	85.3
Buildings	1,057.7	66.6
Industries	308.5	17.5

ESTIMATED ENERGY EXPENDITURES

Energy expenditures (5% of GSP) (billion 1997 dollars) \$34.1
 By sector:
 Buildings (63%) \$21.5
 Transportation (30%) 10.4
 Industries (7%) 2.2
 By fuel type:
 Electricity (44%) \$15.1
 Petroleum (38%) 12.9
 Natural gas (17%) 6.0
 Coal (1%) 0.1

AVERAGE ENERGY PRICES

Motor gasoline - all grades (gallon) \$1.36
 Home heating oil (gallon) \$1.12
 Natural gas (thousand cubic feet)
 Residential \$10.32
 Commercial \$6.49
 Industrial \$4.50
 Electricity (kilowatthour)
 Residential 14.2¢
 Commercial 12.2¢
 Industrial 5.3¢

ADDITIONAL NYS STATISTICS

Population (7% of U.S. total) 18,137,000
 Number of households 6,737,000
 Persons per household 2.65
 Labor force 8,639,000
 Gross State Product (billion 1992 dollars) \$569.0
 Personal income (billion 1996 dollars) \$523.4
 Personal income per capita (1996 dollars) \$28,782
 Motor vehicle registrations 10,027,000
 Vehicle miles of travel (billion miles) 118.6
 Heating degree days vs. normal 5,941 vs. 5,932
 Cooling degree days vs. normal 569 vs. 655

ABBREVIATIONS

Btu British thermal unit
 CO₂ Carbon dioxide
 GSP Gross State Product

DATA SOURCES

Patterns and Trends - New York State Energy Profiles, 1983-1997, NYSERDA, Energy Analysis Program
Statistical Abstract of the U.S., 1997
 U.S. Dept. of Commerce, Bureau of the Census

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PATTERNS AND TRENDS

New York State Energy Profiles: 1983-1997

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December 1998

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MESSAGE FROM THE PRESIDENT

Flipping the switch to turn on the lights, hitting the remote to turn on the TV, or pushing up the thermostat to have the heat come on are things we do routinely. Seldom do we ever stop to think about the major influence that energy plays in our everyday life.

New Yorkers spend more than \$34 billion annually on energy, or the equivalent of nearly \$1,900 for every man, woman, and child in the State. The choices we make in spending that money are among the most important decisions we make each day. Our energy choices have a major impact on both our economy, as evidenced by the amount of money we spend on energy, and on our environment. Those choices are becoming even more critical as we focus on issues such as utility deregulation and environmental preservation.

The challenges we face today with respect to energy use and our environment require objective data and analysis. Policy makers and consumers alike must have the best possible information to make informed decisions if we are to have a secure, affordable, and environmentally sound energy future.

NYSERDA publishes *Patterns and Trends* each year to provide a comprehensive energy overview. The report provides information on energy use trends, sources of supply, prices, basic energy consumption, and energy expenditures for the State. It is designed to be understandable to a broad audience so that policy makers, energy analysts, and consumers can easily identify energy use trends. The information is presented in summaries, graphs, and tables to allow comparison among different fuel types.

Providing objective energy use data is important in shaping not only energy policy, but also environmental and economic policy because of the inextricable linkages among energy, the economy, and the environment. We are pleased to provide *Patterns and Trends* to help further our goals of contributing to an affordable and environmentally sound energy future.

F. William Valentino, President
New York State Energy Research and
Development Authority

PATTERNS AND TRENDS

New York State Energy Profiles: 1983-1997

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Patterns and Trends - New York State Energy Profiles: 1983-1997 presents an overview of energy statistics for the State. It is intended to be an objective and reliable source of energy-related information for use by the general public, business, and government analysts. This report was prepared using the most recent comprehensive data available through the 1997 calendar year.

For more information, contact Technical Communications, NYSERDA, Corporate Plaza West, 286 Washington Avenue Extension, Albany, New York 12203-6399; (518) 862-1090, ext. 3250; or visit our web site at www.nyserda.org

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INTRODUCTION

The mission statement of NYSERDA's Energy Analysis Program is to provide objective information and analysis in a responsive manner to meet the needs of New York State energy policy stateholders.

This report presents comprehensive databases of Statewide energy consumption, prices, energy expenditures, and sources of supply for the period 1983-1997.

With 7% of the nation's population, New York is the most energy-efficient State in the continental United States on a per-capita basis, accounting for 5% of the nation's total primary energy. Only 12% of New York's total energy requirements are met by resources produced within the State, mostly from hydroelectric power and biofuels.

While New York reduced its reliance on petroleum from 52% of total primary energy usage in 1983 to 39% in 1997, the State continues to rely on foreign imports of petroleum products more than the nation as a whole. In 1997, New York imported an estimated 80% of its petroleum from foreign sources, while the nation imported 55% of their petroleum.

Moreover, energy prices in New York have been and continue to be higher than the national average. On a total energy-expenditure basis, New York consumers pay at least 30% more for energy than the national average consumer. In 1997, New Yorkers spent \$34 billion for energy, ranking third behind California and Texas in terms of total state expenditures on energy. Adjusting for inflation, New York's energy bill in constant 1997 dollars fell approximately \$7.5 billion from \$41.6 billion in 1983.

The report is organized in six sections:

Section 1 presents a comparison of energy consumption, selected energy prices, source of petroleum products, and other factors influencing energy demand and expenditures for the United States and New York State. The national energy statistics have been modified to ensure comparability with New York data.

Section 2 provides historic data for primary and net energy consumption by fuel type and sector (residential, commercial, industrial, and transportation). "Primary" represents total consumption of fuels by sector, including fuels used for generating electricity. "Net" is the end-use consumption by sector, including electricity sales, but excluding energy losses incurred during electricity generation and distribution.

Section 3 presents retail level energy price data. Retail energy prices are provided by fuel type for each sector in nominal dollar costs per physical unit and per million Btu.

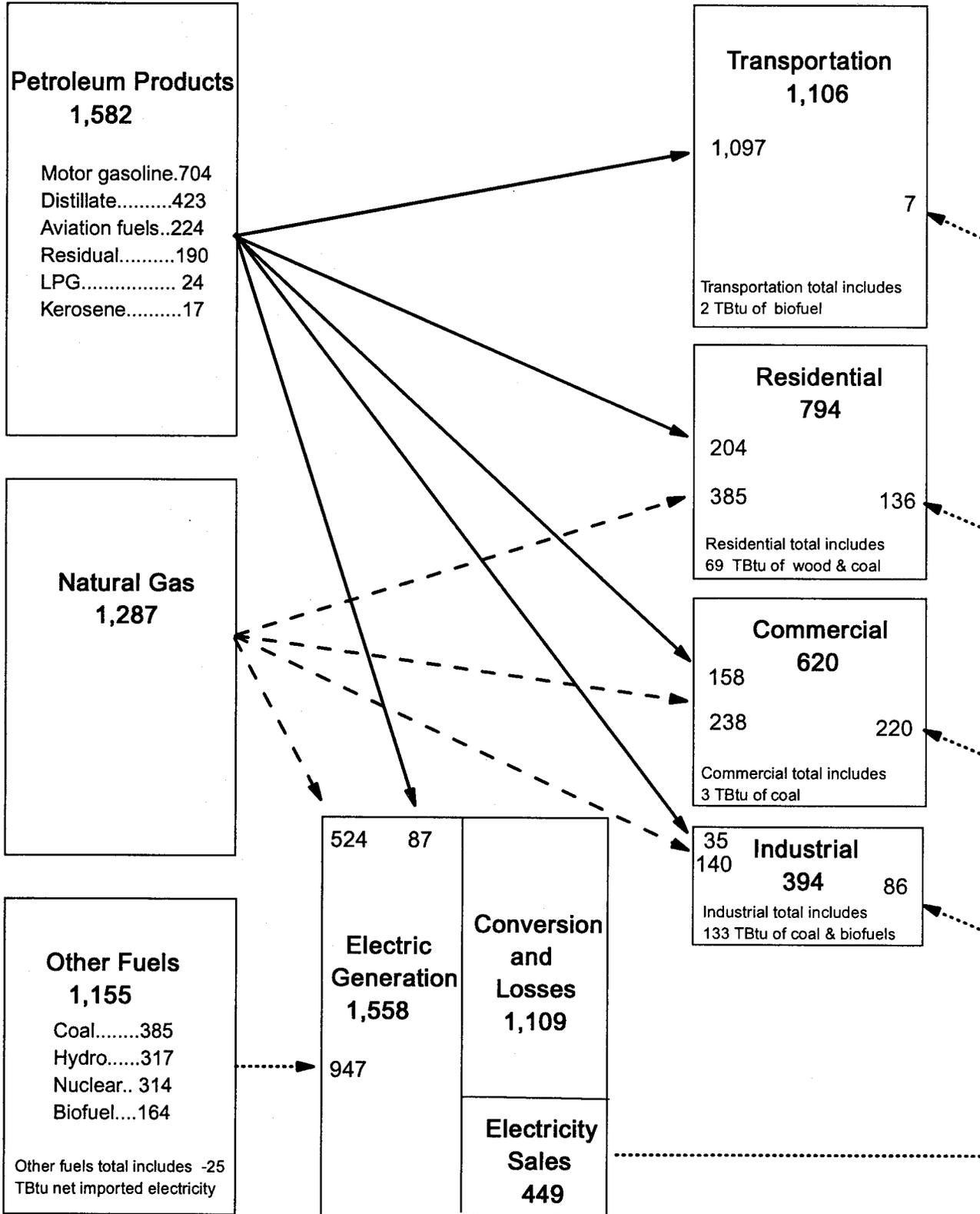
Section 4 presents the estimated expenditure on net energy consumption by sector and fuel type in nominal dollars and in 1997 constant dollars (excluding inflation). Estimated costs were derived by multiplying consumption quantities by their respective prices.

Section 5 details sources of selected New York State energy supplies.

Section 6 provides several appendices, such as tables on household end-use energy consumption and expenditures, gasoline consumption by county, degree-day, conversion factors and a glossary of energy terms.

NYS Energy Flow, 1997

Primary Consumption 4,023 TBtu = Conversion and Losses 1,109 TBtu + Net Consumption 2,914 TBtu



Section 1

ENERGY PROFILES FOR THE UNITED STATES AND NEW YORK STATE

This section presents a comparison of energy consumption, selected energy prices, source-of-petroleum data, and factors influencing energy demand and expenditures for the United States and New York State. All State and national data in the report are comparable and exclude the following:

- Naphtha-based jet fuel, propane used in the chemical industry, asphalt, road oil, lubricants, petrochemical feedstocks, special naphthas, still gas, wax, and miscellaneous non-energy petroleum products.
- Lease, plant, and pipeline fuel from natural gas.

Furthermore, selected New York State data are compiled or estimated from State sources and may differ slightly from statistics reported for New York State in federal energy publications. For example, specific differences occur in the transportation and electric utility sectors:

- Since 1983, aviation-fuel data developed from metered sales at major New York City airports and extrapolated to derive Statewide consumption are much greater than the figures appearing in federal reports.
- Statewide coal statistics for electric utilities include one-half the consumption/generation of the Homer City power plant in Pennsylvania, which through 1997 was jointly owned by a New York State investor-owned utility.

This section has been expanded to incorporate selected State and national energy consumption and expenditure indicators. These data series are presented to quantify changing energy demand trends of the past 15 years. The data used to compile these rankings were from the U.S. Department Of Energy, Energy Information Administration, *State Energy Consumption and Expenditure Report* and the U.S. Department Of Commerce, *Statistical Abstract of the United States*.

Section 1

Key Findings from 1997 New York State Data

- ✓ New York is the most energy-efficient state in the continental United States on a per-capita basis, accounting for 5% of the nation's total primary energy consumption, although New York accounts for 7% of the nation's population.
- ✓ While New York State is the fourth largest energy consumer among all states, only an estimated 12% of total energy requirements are met from in-State resources.
- ✓ On a net energy basis, end use-energy demand in New York State varied from the national pattern, as follows:
 - Residential accounts for 27.2% of total energy demand in New York compared to 17.8% nationally.
 - Commercial accounted for 21.3% of total energy demand in New York compared to 12.4% nationally.
 - Industrial was 13.5% of total energy demand in New York compared to 30.1% nationally.
- ✓ In terms of total energy expenditures, New York ranks third highest among all states, although it ranks among the lowest on energy expenditures on a per-capita basis.
- ✓ New York State's dependence on imported petroleum was 80%, while the United States' was 55%.

New York State Primary Consumption of Energy by Fuel Type and Sector, 1997

Figure 1-2

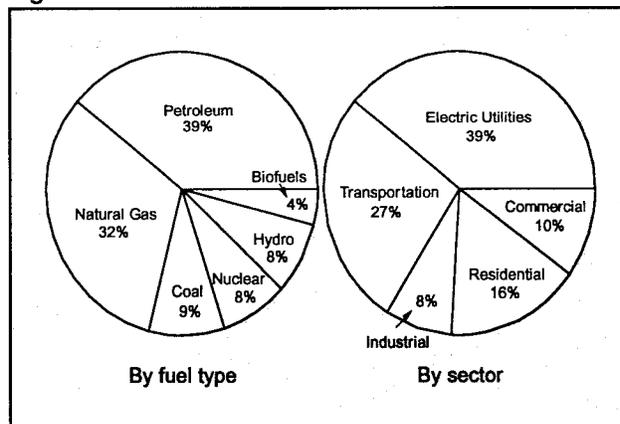


Table 1-2 (in trillion Btu)

	<u>Residential</u> TBtu	<u>Commercial</u> TBtu	<u>Industrial</u> TBtu	<u>Transportation</u> TBtu	<u>Net</u> <u>Consumption</u> TBtu	<u>Electric</u> <u>Generation</u> ¹ TBtu	<u>Primary</u> <u>Consumption</u> TBtu
Coal	2.7	3.3	63.0	0.0	69.0	315.7	384.8
Natural Gas	384.9	238.2	139.9	0.0	763.0	523.7	1,286.8
Petroleum Products	204.4	158.0	35.4	1,097.4	1,495.1	86.6	1,581.9
Distillate	176.7	86.2	17.6	137.6	418.1	5.4	423.4
Residual	0.0	64.5	12.5	31.6	108.6	81.2	189.8
Kerosene	9.9	4.5	2.0	0.0	16.4	0.0	16.5
LPG	17.8	2.8	3.2	0.5	24.3	0.0	24.4
Gasoline	0.0	0.0	0.0	703.8	703.8	0.0	703.8
Jet Fuel	0.0	0.0	0.0	223.9	223.9	0.0	223.9
Biofuels	66.2	0.0	70.1	1.9	138.2	25.8	164.0
Electric Sales	136.2	220.2	85.6	7.0	448.9	N/A	N/A
Net Consumption	794.3	619.8	394.0	1,106.3	2,914.4	N/A	N/A
						316.6	316.6
						314.4	314.4
						-25.1	-25.1
						1,557.8	4,023.3

¹ Includes utility and non-utility generators.

United States and New York State Selected Energy Prices in Nominal Dollars, 1983-1997

Figure 1-3

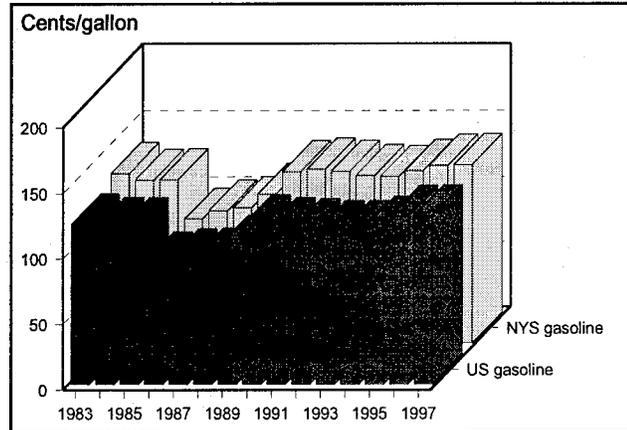


Table 1-3a - United States

Year	Motor Gasoline ¢/gal	Resident. Distillate ¢/gal	Resident. Elec. ¢/kWh	Resident. Nat. Gas \$/Mcf	Comm. Elec. ¢/kWh	Comm. Nat. Gas \$/Mcf	Indus. Elec. ¢/kWh	Indus. Nat. Gas \$/Mcf
1983	122.5	107.8	7.2	6.06	7.0	5.59	5.0	4.18
1984	119.8	109.1	7.2	6.12	7.1	5.55	4.8	4.22
1985	119.6	105.3	7.4	6.12	7.3	5.50	5.0	3.95
1986	93.1	83.6	7.4	5.83	7.2	5.08	4.9	3.23
1987	95.7	80.3	7.5	5.54	7.1	4.77	4.8	2.94
1988	96.3	81.3	7.5	5.47	7.0	4.63	4.7	2.95
1989	106.0	90.0	7.7	5.64	7.2	4.74	4.7	2.96
1990	121.7	106.3	7.8	5.80	7.3	4.83	4.7	2.93
1991	119.6	101.9	8.0	5.82	7.5	4.81	4.8	2.69
1992	119.0	93.4	8.2	5.89	7.7	4.88	4.8	2.84
1993	117.3	91.1	8.3	6.16	7.7	5.22	4.9	3.07
1994	117.4	88.4	8.4	6.41	7.7	5.44	4.8	3.05
1995	120.5	86.7	8.4	6.06	7.7	5.05	4.7	2.71
1996	128.8	98.9	8.4	6.34	7.6	5.40	4.6	3.42
1997	129.1	98.4	8.5	6.95	7.6	5.78	4.6	3.54

Table 1-3b - New York State

Year	Motor Gasoline ¢/gal	Resident. Distillate ¢/gal	Resident. Elec. ¢/kWh	Resident. Nat. Gas \$/Mcf	Comm. Elec. ¢/kWh	Comm. Nat. Gas \$/Mcf	Indus. Elec. ¢/kWh	Indus. Nat. Gas \$/Mcf
1983	129.9	112.7	10.9	7.91	11.3	6.51	5.3	5.71
1984	124.9	114.5	10.6	7.67	10.6	6.28	5.6	5.37
1985	125.2	110.0	10.9	7.77	10.5	6.13	5.2	5.29
1986	95.3	87.6	10.5	7.47	10.1	5.78	4.9	4.91
1987	101.5	88.0	10.5	6.89	9.5	5.18	5.0	4.28
1988	103.9	88.4	10.5	6.50	9.3	5.39	4.9	4.69
1989	114.2	93.9	10.9	7.23	9.6	5.63	5.3	4.84
1990	131.1	114.8	11.4	7.41	10.1	5.60	5.8	4.86
1991	133.2	109.2	12.0	7.38	10.3	5.49	6.2	4.74
1992	131.5	102.9	12.4	7.60	10.7	5.76	6.5	4.94
1993	128.3	101.7	13.2	8.15	11.2	6.16	6.7	5.17
1994	127.6	99.9	13.6	8.77	11.3	6.52	6.8	5.23
1995	131.8	100.5	13.9	8.41	11.5	6.09	5.8	4.68
1996	136.0	113.3	14.0	8.90	12.1	6.88	5.6	5.04
1997	136.4	111.8	14.2	10.32	12.2	6.49	5.3	4.50

United States and New York State Sources of Petroleum Products, 1983-1997

Figure 1-4

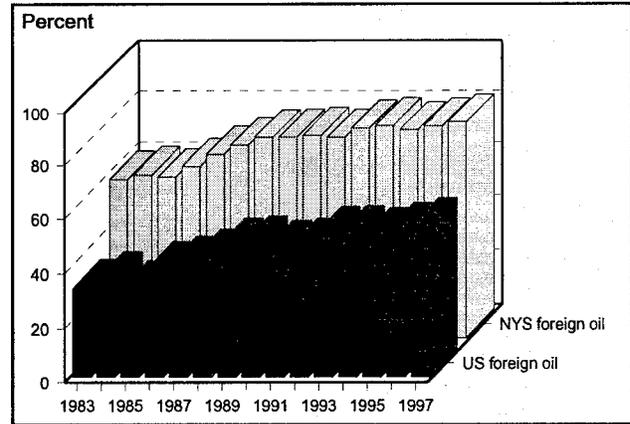


Table 1-4a - United States

Year	Total Domestic %	Total Foreign %	OPEC %	Non-OPEC %
1983	67.4	32.6	14.6	18.0
1984	64.5	35.5	16.3	19.2
1985	67.9	32.1	13.0	19.1
1986	60.9	39.1	19.2	19.8
1987	59.0	41.0	20.2	20.8
1988	56.3	43.7	21.5	22.2
1989	52.3	47.7	26.1	21.6
1990	51.5	48.5	27.6	20.9
1991	53.1	46.9	26.6	20.3
1992	52.4	47.6	26.2	21.4
1993	48.1	51.9	27.8	24.1
1994	47.8	52.2	26.3	25.9
1995	48.5	51.5	25.5	26.0
1996	46.6	53.4	24.7	28.7
1997	45.0	55.0	25.5	29.5

Table 1-4b - New York State

Year	Total Domestic %	Total Foreign %	OPEC %	Non-OPEC %
1983	41.6	58.4	29.8	28.6
1984	39.9	60.1	31.0	29.1
1985	40.7	59.3	27.8	31.5
1986	36.8	63.2	32.5	30.7
1987	32.1	67.9	34.3	33.6
1988	28.7	71.3	37.4	33.9
1989	25.7	74.3	44.3	30.0
1990	25.5	74.5	40.3	34.2
1991	24.8	75.2	47.0	28.2
1992	25.6	74.4	45.3	29.1
1993	22.0	78.0	46.3	31.7
1994	21.1	78.9	45.0	33.9
1995	22.7	77.3	43.8	33.5
1996	21.2	78.8	40.9	37.9
1997	19.7	80.3	41.7	38.6

Factors Influencing Energy Demand and Expenditures in New York & U.S., 1983-1997

Table 1-5a - United States

Year	Population M	Households M	Non-Mfg. Employment M	Mfg. Employment M	GDP ¹ B/92\$	Licensed Drivers M	Vehicle Registrations M	Vehicle Miles Traveled B
1983	233,792	83,918	71,720	18,432	4,810.0	154,389	163,749	1,653
1984	235,825	85,407	75,036	19,372	5,138.2	155,424	166,249	1,720
1985	237,924	86,789	78,139	19,248	5,329.5	156,868	171,654	1,775
1986	240,133	88,458	80,397	18,947	5,489.9	159,487	175,700	1,835
1987	242,289	89,479	82,959	18,999	5,648.4	161,818	178,910	1,921
1988	244,499	91,066	85,895	19,314	5,862.9	162,853	184,393	2,026
1989	246,819	92,830	88,493	19,391	6,062.0	165,555	187,356	2,096
1990	249,440	93,347	90,343	19,076	6,136.3	167,015	188,798	2,144
1991	252,124	94,312	89,850	18,406	6,079.4	168,995	188,136	2,172
1992	255,002	95,669	90,550	18,104	6,244.4	173,125	190,362	2,247
1993	257,753	96,426	92,655	18,075	6,389.6	173,149	194,063	2,296
1994	260,292	97,107	95,851	18,321	6,610.7	175,403	198,045	2,358
1995	262,760	98,990	98,735	18,468	6,761.7	176,628	201,530	2,423
1996	265,179	99,627	101,272	18,282	6,994.8	179,539	206,365	2,482
1997	267,636	101,018	103,722	18,537	7,269.8	na	na	na

Table 1-5b - New York State

Year	Population M	Households M	Non-Mfg. Employment M	Mfg. Employment M	GSP ² MM92\$	Licensed Drivers M	Vehicle Registrations M	Vehicle Miles Traveled B
1983	17,670	6,376	6,010.9	1,302.4	428,167	9,610	8,975	83.77
1984	17,727	6,428	6,244.1	1,326.3	458,480	9,716	9,248	87.03
1985	17,762	6,500	6,458.2	1,293.1	474,138	9,841	9,654	90.85
1986	17,795	6,568	6,656.3	1,251.6	487,064	9,947	10,145	94.95
1987	17,825	6,559	6,841.5	1,217.9	505,203	10,029	10,256	100.10
1988	17,909	6,605	6,974.4	1,212.5	531,329	10,143	10,507	100.37
1989	17,950	6,644	7,057.8	1,189.0	532,307	10,178	10,635	106.60
1990	17,991	6,639	7,081.0	1,131.4	534,515	10,254	10,781	106.90
1991	18,028	6,662	6,827.1	1,059.6	516,050	10,267	10,364	107.66
1992	18,080	6,703	6,715.5	1,014.4	525,555	10,360	8,988	109.89
1993	18,139	6,702	6,771.5	980.5	528,229	10,327	9,110	112.24
1994	18,154	6,684	6,862.6	956.1	544,749	10,377	9,149	112.98
1995	18,146	6,709	6,927.0	944.3	549,299	10,474	9,177	115.09
1996	18,134	6,737	6,995.0	922.0	555,651	10,483	9,235	118.64
1997	18,137	na	na	na	568,993	10,529	10,027	na

¹ Gross Domestic Product in millions of 1992 dollars.

² Gross State Product in millions of 1992 dollars.

Energy Consumption & Expenditure Indicators (1995), State Comparisons

Table 1-6

States	Primary Energy Consumption		Net Energy Expenditure		Petroleum Consumption		Natural Gas Consumption	
	per Capita MMBtu	Ranking	per Capita dollars	Ranking	per Capita MMBtu	Ranking	per Capita MMBtu	Ranking
Alabama	455.32	7	\$2,098.82	14	131.79	25	77.93	19
Alaska	1,138.14	1	\$2,926.70	3	368.49	1	717.74	1
Arizona	245.97	46	\$1,752.68	42	95.03	49	28.87	47
Arkansas	401.57	14	\$2,071.23	17	124.27	30	111.31	8
California	240.04	48	\$1,590.87	49	104.35	44	61.96	30
Colorado	286.87	40	\$1,627.59	48	104.19	45	77.03	21
Connecticut	240.39	47	\$2,024.00	19	113.24	38	41.58	42
Delaware	368.20	21	\$2,105.58	12	171.41	9	87.45	14
DC	320.36	36	\$2,235.32	7	66.85	51	59.82	33
Florida	248.07	43	\$1,526.67	50	114.23	37	37.55	45
Georgia	348.47	26	\$1,911.12	30	133.67	20	52.71	36
Hawaii	216.12	50	\$1,751.15	43	199.15	5	2.46	51
Idaho	391.25	17	\$1,866.21	35	125.21	29	56.35	34
Illinois	322.67	34	\$1,919.58	29	104.89	42	93.31	12
Indiana	447.15	9	\$2,212.25	8	149.08	15	93.44	11
Iowa	375.41	20	\$2,090.75	15	132.99	23	92.72	13
Kansas	405.85	13	\$2,102.38	13	143.45	17	143.95	6
Kentucky	459.01	6	\$2,086.16	16	160.85	10	63.68	29
Louisiana	879.11	2	\$3,070.63	2	340.36	2	409.87	2
Maine	414.29	12	\$2,265.21	6	196.13	6	4.44	50
Maryland	260.35	41	\$1,724.91	45	98.45	48	39.51	43
Massachusetts	246.06	45	\$1,907.43	32	112.45	39	61.23	32
Michigan	330.99	30	\$1,863.81	36	103.90	46	103.52	10
Minnesota	351.48	24	\$1,842.21	38	133.43	21	77.51	20
Mississippi	392.73	16	\$1,959.05	25	148.22	16	109.64	9
Missouri	312.62	38	\$1,853.02	37	131.62	26	52.83	35
Montana	435.52	10	\$2,204.37	9	183.45	8	68.51	27
Nebraska	354.06	23	\$2,000.55	21	133.31	22	81.57	18
Nevada	350.42	25	\$2,021.72	20	132.16	24	74.82	24
New Hampshire	247.82	44	\$1,898.87	34	131.53	27	17.51	48
New Jersey	319.86	37	\$2,162.25	10	155.77	12	76.84	22
New Mexico	340.24	28	\$1,841.95	39	123.20	31	129.82	7
New York	215.13	51	\$1,706.40	46	81.97	50	64.45	28
North Carolina	323.26	32	\$1,899.07	33	117.44	34	29.08	46
North Dakota	545.33	5	\$2,561.68	4	183.80	7	74.14	25
Ohio	362.67	22	\$2,056.03	18	106.88	41	83.54	17
Oklahoma	415.15	11	\$1,969.34	24	136.24	19	176.95	5
Oregon	332.87	29	\$1,755.48	41	114.70	36	48.17	38
Pennsylvania	322.20	35	\$1,952.05	27	110.32	40	61.92	31
Rhode Island	237.00	49	\$1,909.78	31	99.50	47	72.58	26
South Carolina	381.97	18	\$1,975.67	23	118.76	33	42.54	40
South Dakota	323.01	33	\$1,957.12	26	156.85	11	47.67	39
Tennessee	376.44	19	\$1,944.48	28	129.31	28	50.47	37
Texas	559.09	4	\$2,512.97	5	252.45	4	209.73	4
Utah	326.05	31	\$1,511.34	51	119.61	32	85.14	16
Vermont	256.24	42	\$1,978.80	22	137.61	18	12.31	49
Virginia	310.81	39	\$1,792.65	40	116.69	35	38.53	44
Washington	396.22	15	\$1,685.88	47	155.45	13	42.07	41
West Virginia	448.71	8	\$2,114.08	11	149.37	14	86.25	15
Wisconsin	341.49	27	\$1,748.46	44	104.59	43	75.11	23
Wyoming	845.93	3	\$3,491.23	1	285.59	3	216.91	3
U. S.	343.73		\$1,919.42		131.86		84.40	

Note: 1995 represents the latest year that comparable data for all states are available.

Energy Consumption & Expenditure Indicators (1995), State Comparisons for the Residential and Commercial Sectors

Table 1-7

<u>States</u>	Residential Net Energy Consumption <u>per Household</u> MMBtu	<u>Ranking</u>	Residential Net Energy Expenditure <u>per Household</u> dollars	<u>Ranking</u>	Commercial Net Energy Consumption <u>per Employee</u> MMBtu	<u>Ranking</u>	Commercial Net Energy Expenditure <u>per Employee</u> dollars	<u>Ranking</u>
Alabama	99.00	37	\$1,277.23	26	53.97	48	\$740.79	37
Alaska	169.05	1	\$1,482.38	11	176.73	1	\$1,377.55	1
Arizona	65.27	50	\$1,214.35	33	59.75	43	\$997.48	11
Arkansas	105.33	33	\$1,327.72	20	72.59	31	\$809.88	32
California	75.08	48	\$1,059.06	42	56.03	45	\$1,007.39	10
Colorado	110.23	30	\$931.58	49	74.88	27	\$718.33	40
Connecticut	135.18	8	\$1,824.57	1	77.73	19	\$1,225.23	4
Delaware	117.78	24	\$1,584.81	6	62.17	40	\$800.99	33
DC	106.44	32	\$1,109.01	41	83.17	12	\$1,138.41	6
Florida	65.48	49	\$1,199.26	35	51.98	49	\$778.14	35
Georgia	103.84	34	\$1,304.18	22	59.60	44	\$849.03	24
Hawaii	28.39	51	\$883.59	51	26.74	51	\$670.16	46
Idaho	99.28	36	\$995.94	45	82.27	15	\$815.02	31
Illinois	157.96	3	\$1,464.99	12	82.34	14	\$941.86	15
Indiana	132.91	13	\$1,329.84	18	77.44	21	\$744.44	36
Iowa	136.78	6	\$1,320.95	21	79.22	17	\$720.14	39
Kansas	127.28	19	\$1,246.56	31	95.24	4	\$943.61	14
Kentucky	117.57	25	\$1,109.95	40	75.17	25	\$676.75	43
Louisiana	94.87	40	\$1,345.22	17	55.51	47	\$892.31	20
Maine	151.15	4	\$1,570.65	7	65.78	35	\$928.89	17
Maryland	111.82	29	\$1,452.24	13	77.06	23	\$674.71	45
Massachusetts	132.87	14	\$1,613.45	5	83.87	10	\$1,105.14	7
Michigan	160.55	2	\$1,282.82	25	101.43	3	\$1,055.51	9
Minnesota	136.67	7	\$1,159.02	37	71.97	32	\$530.95	50
Mississippi	94.71	41	\$1,249.79	29	62.79	39	\$836.35	26
Missouri	124.08	22	\$1,289.76	23	74.90	26	\$824.33	28
Montana	113.13	28	\$1,008.06	44	81.40	16	\$784.76	34
Nebraska	126.60	20	\$1,154.97	38	95.02	5	\$842.82	25
Nevada	84.77	45	\$1,141.46	39	55.98	46	\$643.48	48
New Hampshire	129.47	17	\$1,643.39	2	65.45	36	\$1,070.48	8
New Jersey	129.03	18	\$1,636.15	3	89.79	7	\$1,274.28	3
New Mexico	83.53	46	\$950.58	47	75.97	24	\$978.76	12
New York	114.73	26	\$1,535.70	10	92.31	6	\$1,291.84	2
North Carolina	96.42	39	\$1,384.66	15	64.65	37	\$867.42	22
North Dakota	134.84	11	\$1,257.38	27	86.48	8	\$725.98	38
Ohio	140.11	5	\$1,419.68	14	82.78	13	\$946.21	13
Oklahoma	109.92	31	\$1,249.20	30	77.53	20	\$855.77	23
Oregon	85.20	44	\$944.15	48	63.41	38	\$686.63	42
Pennsylvania	130.58	16	\$1,540.92	9	77.16	22	\$939.99	16
Rhode Island	135.11	9	\$1,565.16	8	83.43	11	\$1,141.85	5
South Carolina	91.35	43	\$1,329.07	19	61.34	41	\$821.02	29
South Dakota	125.93	21	\$1,238.15	32	74.16	28	\$676.51	44
Tennessee	98.50	38	\$1,203.10	34	42.48	50	\$378.53	51
Texas	83.12	47	\$1,288.52	24	72.70	30	\$904.94	18
Utah	120.13	23	\$976.01	46	69.77	33	\$611.99	49
Vermont	134.98	10	\$1,633.18	4	60.44	42	\$904.44	19
Virginia	101.74	35	\$1,369.10	16	73.74	29	\$834.43	27
Washington	91.46	42	\$917.12	50	66.58	34	\$651.76	47
West Virginia	113.82	27	\$1,197.74	36	84.65	9	\$820.30	30
Wisconsin	133.02	12	\$1,251.07	28	77.84	18	\$688.84	41
Wyoming	132.60	15	\$1,055.25	43	108.10	2	\$876.19	21
U. S.	108.94		\$1,302.68		72.70		\$906.81	

Note: 1995 represents the latest year that comparable data for all states are available.

Energy Consumption & Expenditure Indicators (1995), State Comparisons for the Industrial and Transportation Sectors

Table 1-8

<u>States</u>	Industrial Net Energy Consumption per GSP Btu/92\$	<u>Ranking</u>	Industrial Net Energy Expenditure per GSP ratio	<u>Ranking</u>	Transportation Net Consumption per vehicle registration MMBtu	<u>Ranking</u>	Transportation Net Expenditure per vehicle registration dollars	<u>Ranking</u>
Alabama	8,763.59	8	0.0289	7	129.33	16	\$950.07	17
Alaska	17,955.16	2	0.0071	49	312.36	1	\$1,766.05	1
Arizona	1,541.90	46	0.0107	41	131.57	14	\$1,054.58	9
Arkansas	6,836.44	11	0.0249	15	163.48	6	\$1,267.45	3
California	2,194.51	40	0.0091	45	126.31	20	\$904.12	26
Colorado	2,243.44	39	0.0092	44	115.72	24	\$952.24	16
Connecticut	1,182.17	50	0.0076	47	77.99	50	\$771.13	43
Delaware	3,345.24	29	0.0124	35	102.87	38	\$1,019.34	29
DC	31.32	51	0.0004	51	110.29	29	\$888.68	10
Florida	1,500.99	47	0.0065	50	118.17	23	\$844.20	39
Georgia	3,333.71	30	0.0155	29	130.95	15	\$850.62	37
Hawaii	1,706.05	44	0.0116	39	169.33	3	\$1,216.58	4
Idaho	5,608.70	15	0.0220	18	108.15	30	\$883.13	30
Illinois	3,257.88	32	0.0166	22	90.48	45	\$742.51	48
Indiana	6,748.48	12	0.0297	6	124.88	22	\$877.05	32
Iowa	4,967.84	18	0.0250	13	93.11	44	\$734.83	49
Kansas	5,500.00	16	0.0245	16	134.39	12	\$853.33	34
Kentucky	6,474.76	13	0.0288	8	163.74	5	\$1,192.44	6
Louisiana	23,730.93	1	0.0566	1	230.74	2	\$1,313.36	2
Maine	9,878.05	6	0.0274	9	106.93	35	\$998.35	12
Maryland	1,582.80	45	0.0124	34	96.61	43	\$844.94	38
Massachusetts	1,395.38	48	0.0089	46	90.07	46	\$778.41	42
Michigan	3,662.27	26	0.0174	21	100.59	40	\$758.43	46
Minnesota	3,662.17	27	0.0166	23	113.37	28	\$896.68	27
Mississippi	6,394.19	14	0.0252	11	158.07	8	\$1,015.53	11
Missouri	2,148.60	41	0.0124	36	129.10	17	\$939.91	18
Montana	7,331.25	10	0.0270	10	105.06	37	\$920.76	21
Nebraska	2,989.90	34	0.0156	28	114.25	27	\$919.36	22
Nevada	3,269.88	31	0.0166	24	155.21	9	\$1,197.33	5
New Hampshire	2,135.23	42	0.0107	42	72.82	51	\$627.63	51
New Jersey	2,295.62	38	0.0133	40	146.38	10	\$983.44	13
New Mexico	4,446.58	22	0.0141	32	132.28	13	\$937.06	19
New York	1,292.09	49	0.0073	48	89.20	47	\$760.91	45
North Carolina	3,060.95	33	0.0157	27	107.37	33	\$852.90	35
North Dakota	12,561.54	3	0.0409	3	107.34	34	\$866.33	33
Ohio	4,243.12	23	0.0223	17	88.41	48	\$728.48	50
Oklahoma	7,448.82	9	0.0203	19	128.26	18	\$916.46	23
Oregon	3,602.00	28	0.0147	31	106.75	36	\$906.25	24
Pennsylvania	4,096.82	24	0.0187	20	107.76	31	\$850.82	36
Rhode Island	2,400.88	36	0.0162	25	83.83	49	\$761.23	44
South Carolina	5,385.92	17	0.0249	14	114.26	26	\$881.08	31
South Dakota	2,775.76	35	0.0152	30	114.53	25	\$905.92	25
Tennessee	4,787.90	20	0.0252	12	98.85	41	\$743.57	47
Texas	11,684.94	4	0.0363	4	158.55	7	\$1,131.41	7
Utah	4,947.10	19	0.0136	33	127.51	19	\$921.42	20
Vermont	1,920.63	43	0.0120	37	102.85	39	\$891.26	28
Virginia	2,335.29	37	0.0093	43	107.66	32	\$830.61	40
Washington	3,984.59	25	0.0117	38	141.13	11	\$967.00	15
West Virginia	9,620.90	7	0.0335	5	126.25	21	\$974.74	14
Wisconsin	4,615.71	21	0.0159	26	98.82	42	\$829.08	41
Wyoming	11,461.54	5	0.0410	2	166.39	4	\$1,093.84	8
U. S.	4,182.22		0.0166		119.44		\$892.88	

Note: 1995 represents the latest year that comparable data for all states are available.

Section 2

NEW YORK STATE ENERGY CONSUMPTION

This section presents data on primary and net consumption of energy in New York State by sector and fuel type for the 15-year period from 1983 through 1997. The 1997 data are preliminary estimates.

Primary consumption of energy is shown by fuel type in physical units and in Btu. Total primary energy consumption by sector (residential, commercial, industrial, transportation, and electric generation) is presented for the 15-year period.

New in this edition is a table on carbon dioxide emissions expressed in tons by sector source for the 15-year period (buildings, industries, transportation, and electric generation).

For the first time, this report presents biofuel statistics. Examples of biofuels are fuelwood, waste wood, garbage, and crop waste. Different mixes of biofuels are used by each sector. The data series for biofuels use in New York State begins in 1990.

Electricity generation data exclude station use. Utility losses are primary fuel inputs less the sale of electricity at 3,412 Btu per kWh, and include generation and distribution losses.

Hydro and nuclear electricity, as well as net electricity trade, have been converted to heat by applying an average annual heat rate (Btu per kWh generated) for coal-, oil-, and gas-fired power plants. This rate represents replacement cost in heat of electricity produced by these thermal plants.

All data relating to coal-fired generation through 1997 include New York State Electric & Gas Corporation's half-share of the Homer City Plant in Pennsylvania. All end-use energy consumption in apartment buildings and institutional facilities is included in the commercial sector.

Electricity sales are combined with end-use consumption of coal, petroleum products, and natural gas to derive total net-energy consumption in the residential, commercial, industrial, and transportation sectors. Total net-energy consumption is provided in trillion Btu (Tbtu) and physical units, such as tons, cubic feet, and barrels.

Section 2

Key Findings from 1997 New York State Data

- ✓ Total carbon dioxide emissions were 239 million tons, 12% above the 1983 level of 214 million tons, and more than 1% above the 236 million tons 1996 level.
- ✓ Transportation was the largest source of carbon dioxide emissions (85 million tons).
- ✓ Total carbon dioxide emissions declined by 0.4% from 1990, while total primary energy consumption rose by 5% for the same period.
- ✓ Total primary energy consumption was 4,023 TBtu, down nearly 2% from 1996, but greater than the 1983 consumption level of 3,389 TBtu.
- ✓ Compared to 1996 levels, petroleum product consumption and electricity generated by nuclear plants decreased; conversely, consumption of coal, natural gas, and hydropower increased.
- ✓ Total demand for petroleum products was 1,582 TBtu or 286 million barrels and represented 39% of total primary energy consumption.
- ✓ Consumption of motor gasoline, kerosene, and aviation fuels increased slightly over their respective 1996 levels; however both distillate fuel and residual oil consumption declined.
- ✓ Sales of natural gas, at 1,254 billion cubic feet, were nearly 6% greater than sales in 1996.
- ✓ Consumption of energy for electricity generation represented 39% of primary energy consumption.
- ✓ Natural gas' share of the fuel mix used to generate electricity was 34%.
- ✓ Total residential energy demand was 794 TBtu, 2% below the 1996 level. The residential sector represented 27% of total net energy consumption.
- ✓ Total consumption in the commercial sector was 620 TBtu. While the sector's demand fell 3% below the 1996 level, use of natural gas rose 1%. The commercial sector represented 21% of total end-use consumption.
- ✓ Industrial energy demand was 394 TBtu and represented 14% of total end-use consumption. Sector demand was virtually unchanged from 1996, but coal usage increased by nearly 10%.
- ✓ Transportation energy demand was 1,106 TBtu, which accounted for 38% of total end-use energy consumption.

New York State Energy-Related CO₂ Emissions, 1983-1997

Figure 2-1

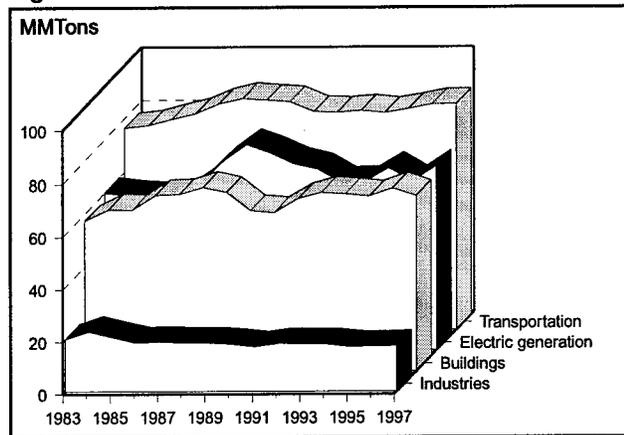


Table 2-1a - CO₂ Emissions (in million tons)

Year	Electric generation MMTons	Buildings MMTons	Industries MMTons	Transportation MMTons	Total MMTons
1983	60.07	57.40	20.15	76.34	213.96
1984	58.90	61.61	23.04	77.32	220.87
1985	58.30	61.49	20.88	79.72	220.39
1986	57.11	66.96	18.82	81.79	224.68
1987	63.28	67.26	19.10	85.42	235.07
1988	71.64	69.95	18.61	87.45	247.65
1989	78.04	68.01	18.69	86.77	251.52
1990	74.82	61.15	18.15	86.19	240.30
1991	70.86	60.39	17.13	82.50	230.88
1992	68.75	65.63	18.35	82.20	234.92
1993	63.85	67.93	18.30	82.93	233.01
1994	64.07	67.33	18.18	82.03	231.61
1995	69.19	66.41	17.21	83.52	236.33
1996	64.22	69.56	17.30	85.18	236.25
1997	69.96	66.55	17.48	85.30	239.29

Table 2-1b - Primary Energy Consumption (in trillion Btu)

Year	Electric generation TBtu	Buildings TBtu	Industries TBtu	Transportation TBtu	Total TBtu
1983	1,307.2	839.2	256.6	985.6	3,388.6
1984	1,349.7	897.6	288.6	998.1	3,534.0
1985	1,357.5	892.6	266.2	1,028.7	3,545.0
1986	1,372.2	962.8	238.4	1,055.0	3,628.4
1987	1,411.7	967.5	241.6	1,101.4	3,722.2
1988	1,452.0	1,014.8	233.7	1,127.1	3,827.6
1989	1,480.2	990.8	240.9	1,119.0	3,830.9
1990	1,473.9	942.9	303.6	1,110.7	3,831.1
1991	1,515.1	935.8	290.9	1,062.5	3,804.3
1992	1,520.3	1,021.7	314.2	1,058.7	3,915.0
1993	1,568.3	1,057.4	312.5	1,067.9	4,006.1
1994	1,565.8	1,055.4	314.5	1,056.4	3,992.0
1995	1,584.0	1,047.6	303.3	1,077.1	4,011.9
1996	1,595.3	1,095.5	305.9	1,097.4	4,094.1
1997	1,557.8	1,057.7	308.5	1,099.4	4,023.3

New York State Primary Consumption of Energy by Fuel Type, 1983-1997

Figure 2-2

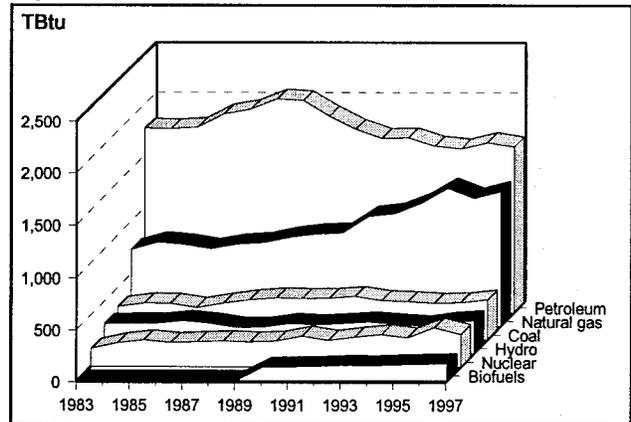


Table 2-2a (in physical units)

Year	Coal MTons	Natural Gas ¹ MMcf	Petroleum Products Mbbbl	Hydro GWh	Nuclear GWh	Net Imported Electricity GWh	Biofuels ² GWh
1983	12,782	707,988	312,518	26,162	16,376	11,888	0
1984	14,109	774,486	311,502	26,586	21,187	10,812	0
1985	13,947	753,777	315,413	26,956	24,092	10,155	0
1986	12,202	715,909	336,889	29,480	22,084	13,204	0
1987	13,795	757,211	345,558	27,546	22,926	11,373	0
1988	15,076	774,455	362,107	23,994	24,176	9,994	0
1989	15,858	821,436	360,555	23,918	22,846	5,539	0
1990	15,572	851,590	333,805	27,555	23,624	1,352	na
1991	15,657	860,739	312,206	26,258	28,448	6,323	na
1992	16,272	1,015,693	298,101	27,281	24,155	10,167	na
1993	14,825	1,043,198	299,061	28,479	26,889	14,280	na
1994	14,378	1,140,027	286,020	26,800	29,231	11,504	na
1995	13,664	1,281,342	282,525	24,990	26,336	7,311	na
1996	13,967	1,187,283	292,716	28,055	35,226	4,806	na
1997	14,820	1,253,928	286,010	29,772	29,570	-2,356	na

Table 2-2b (in trillion Btu)

Year	Coal TBtu	Natural Gas ¹ TBtu	Petroleum Products TBtu	Hydro TBtu	Nuclear TBtu	Net Imported Electricity TBtu	Biofuels ² TBtu	Total ³ TBtu
1983	315.0	729.9	1,760.4	280.4	175.5	127.4	0.0	3,388.6
1984	349.2	798.1	1,753.0	287.6	229.2	117.0	0.0	3,534.0
1985	344.7	778.2	1,769.9	287.3	256.7	108.2	0.0	3,545.0
1986	305.6	737.6	1,901.3	311.3	233.2	139.4	0.0	3,628.4
1987	348.6	780.2	1,946.3	288.2	239.9	119.0	0.0	3,722.2
1988	382.6	796.9	2,047.9	247.6	249.4	103.1	0.0	3,827.6
1989	401.7	846.4	2,036.3	250.0	238.8	57.9	0.0	3,830.9
1990	394.9	877.8	1,880.7	288.0	246.9	14.1	128.6	3,831.1
1991	398.7	887.7	1,750.4	274.3	297.2	66.1	129.9	3,804.3
1992	416.4	1,046.2	1,661.8	288.7	255.6	107.6	138.7	3,915.0
1993	377.6	1,073.4	1,667.2	303.6	286.6	152.2	145.4	4,006.1
1994	367.7	1,173.1	1,589.3	285.0	310.8	122.3	143.9	3,992.0
1995	353.3	1,317.0	1,562.2	266.7	281.1	78.0	153.6	4,011.9
1996	359.5	1,219.8	1,624.1	301.4	378.4	51.6	159.4	4,094.1
1997	384.8	1,286.8	1,581.9	316.6	314.4	-25.1	164.0	4,023.3

¹ Excludes lease, plant, and pipeline fuels.

² Includes primarily wood, waste, and ethanol.

³ Excludes non-fuel uses and steam.

**New York State
Primary Consumption
of Refined Petroleum Products,
1983-1997**

Figure 2-3

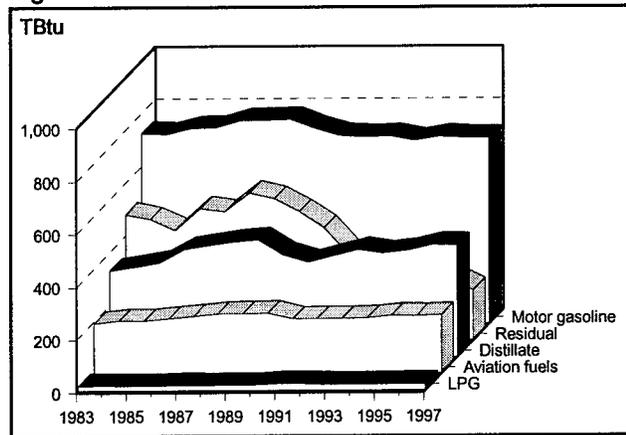


Table 2-3a (in thousand barrels)

Year	Distillate Mbbl	Residual Mbbl	Kerosene Mbbl	LPG ¹ Mbbl	Motor Gasoline Mbbl	Aviation Fuels ² Mbbl	Total Petroleum Products Mbbl
1983	56,586	76,237	3,506	4,906	137,445	33,838	312,518
1984	59,032	73,207	1,776	5,055	136,788	35,644	311,502
1985	61,817	66,532	5,319	4,923	141,249	35,573	315,413
1986	70,359	79,802	3,061	4,878	141,699	37,090	336,889
1987	72,889	77,670	4,158	5,476	146,758	38,607	345,558
1988	75,316	89,115	5,263	5,238	147,000	40,175	362,107
1989	76,497	85,522	4,797	5,579	147,800	40,360	360,555
1990	66,663	77,673	2,283	5,606	140,900	40,680	333,805
1991	61,909	68,034	2,646	7,207	135,660	36,750	312,206
1992	65,954	51,739	1,861	7,077	134,600	36,870	298,101
1993	69,934	48,266	2,422	6,139	135,350	36,950	299,061
1994	67,546	40,595	2,289	6,352	131,988	37,250	286,020
1995	69,315	30,534	2,363	6,377	134,911	39,025	282,525
1996	73,114	37,363	2,883	6,876	133,947	38,533	292,716
1997	72,688	30,196	2,906	6,742	133,985	39,493	286,010

Table 2-3b (in trillion Btu)

Year	Distillate TBtu	Residual TBtu	Kerosene TBtu	LPG ¹ TBtu	Motor Gasoline TBtu	Aviation Fuels ² TBtu	Total Petroleum Products TBtu
1983	329.6	479.3	19.9	17.7	722.0	191.9	1,760.4
1984	343.9	460.3	10.1	18.2	718.5	202.1	1,753.0
1985	360.1	418.3	30.2	17.7	742.0	201.7	1,769.9
1986	409.8	501.7	17.4	17.8	744.3	210.3	1,901.3
1987	424.6	488.3	23.6	20.0	770.9	218.9	1,946.3
1988	438.7	560.3	29.8	19.1	772.2	227.8	2,047.9
1989	445.6	537.7	27.2	20.5	776.4	228.8	2,036.3
1990	388.3	488.3	12.9	20.3	740.1	230.7	1,880.7
1991	360.6	427.7	15.0	26.0	712.6	208.4	1,750.4
1992	384.2	325.3	10.6	25.6	707.1	209.1	1,661.8
1993	407.4	303.4	13.7	22.1	711.0	209.5	1,667.2
1994	393.5	255.2	13.0	23.1	693.3	211.2	1,589.3
1995	403.8	192.0	13.4	23.1	708.7	221.3	1,562.2
1996	425.9	234.9	16.3	24.8	703.6	218.5	1,624.1
1997	423.4	189.8	16.5	24.4	703.8	223.9	1,581.9

¹ Excludes non-fuel uses.

² Kerosene-type jet fuel and aviation gasoline.

**New York State
Primary Consumption
of Energy by Sector,
1983-1997**

Figure 2-4

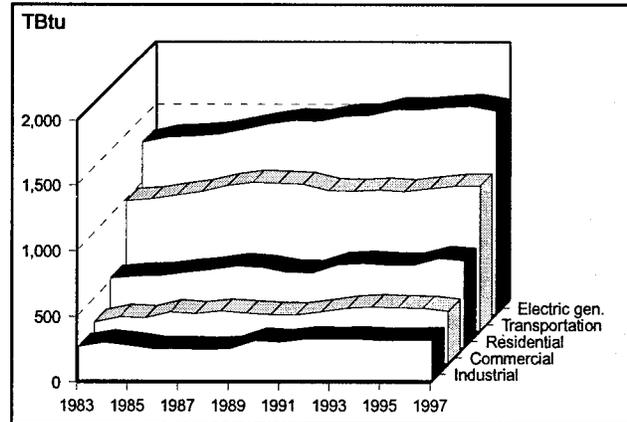


Table 2-4 (in trillion Btu)

<u>Year</u>	<u>Residential</u> TBtu	<u>Commercial</u> TBtu	<u>Industrial</u> TBtu	<u>Transportation</u> TBtu	<u>Electric</u> <u>Generation</u> TBtu	<u>Total</u> TBtu
1983	523.0	316.2	256.6	985.6	1,307.2	3,388.6
1984	540.9	356.7	288.6	998.1	1,349.7	3,534.0
1985	545.5	347.2	266.2	1,028.7	1,357.5	3,545.0
1986	570.0	392.8	238.4	1,055.0	1,372.2	3,628.4
1987	588.3	379.2	241.6	1,101.4	1,411.7	3,722.2
1988	615.9	398.9	233.7	1,127.1	1,452.0	3,827.6
1989	606.0	384.8	240.9	1,119.0	1,480.2	3,830.9
1990	570.1	372.8	303.6	1,110.7	1,473.9	3,831.1
1991	565.2	370.6	290.9	1,062.5	1,515.1	3,804.3
1992	627.2	394.5	314.2	1,058.7	1,520.3	3,915.0
1993	635.2	422.2	312.5	1,067.9	1,568.3	4,006.1
1994	623.2	432.2	314.5	1,056.4	1,565.8	3,992.0
1995	623.7	423.9	303.3	1,077.1	1,584.0	4,011.9
1996	673.6	421.9	305.9	1,097.4	1,595.3	4,094.1
1997	658.1	399.6	308.5	1,099.4	1,557.8	4,023.3

New York State Primary Consumption of Energy for Electric Generation, 1983-1997

Figure 2-5

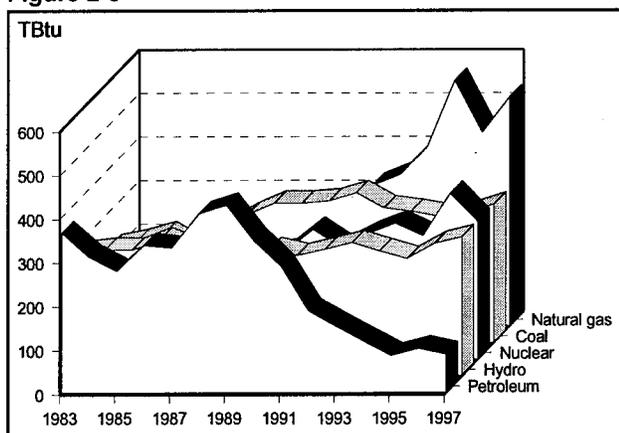


Table 2-5a (in physical units)

Year	Coal ¹ MTons	Natural Gas MMcf	Distillate ² Mbbbl	Residual Mbbbl	Total Petroleum Mbbbl	Hydro GWh	Nuclear GWh	Net Imported Electricity GWh	Biofuels ³ GWh
1983	8,802	135,811	433	57,531	57,964	26,162	16,376	11,888	0
1984	9,247	169,620	617	48,548	49,165	26,586	21,187	10,812	0
1985	9,905	172,631	623	43,418	44,041	26,956	24,092	10,155	0
1986	8,430	133,532	1,166	52,288	53,454	29,480	22,084	13,204	0
1987	10,039	173,328	1,262	51,276	52,538	27,546	22,926	11,373	0
1988	11,380	148,186	2,019	62,983	65,002	23,994	24,176	9,994	0
1989	12,432	182,002	3,525	64,747	68,272	23,918	22,846	5,539	0
1990	12,400	235,909	1,369	53,903	55,272	27,555	23,623	1,352	1,502
1991	12,532	241,478	1,241	44,578	45,819	26,258	28,448	6,323	1,622
1992	13,184	312,516	651	28,963	29,614	27,281	24,155	10,167	1,806
1993	11,907	336,052	432	23,566	23,998	28,479	26,889	14,280	1,993
1994	11,552	398,674	747	17,917	18,664	26,800	29,231	11,504	1,983
1995	11,038	546,116	1,005	12,393	13,398	24,990	26,336	7,311	2,278
1996	11,362	430,445	992	15,006	15,998	28,055	35,226	4,806	2,395
1997	12,047	510,968	927	12,912	13,839	29,772	29,570	-2,356	2,423

Table 2-5b (in trillion Btu)

Year	Coal ¹ TBtu	Natural Gas TBtu	Distillate ² TBtu	Residual TBtu	Total Petroleum TBtu	Hydro TBtu	Nuclear TBtu	Net Imported Electricity TBtu	Biofuels ³ TBtu	Total ⁴ TBtu
1983	219.8	140.0	2.5	361.7	364.2	280.4	175.5	127.4	0.0	1,307.2
1984	232.1	175.0	3.6	305.2	308.8	287.6	229.2	117.0	0.0	1,349.7
1985	249.6	179.0	3.6	273.0	276.6	287.3	256.7	108.2	0.0	1,357.5
1986	214.5	138.3	6.8	328.7	335.5	311.3	233.2	139.4	0.0	1,372.2
1987	256.7	178.2	7.4	322.4	329.7	288.2	239.9	119.0	0.0	1,411.7
1988	291.7	152.5	11.8	396.0	407.7	247.6	249.4	103.1	0.0	1,452.0
1989	318.9	187.1	20.5	407.1	427.6	250.0	238.8	57.9	0.0	1,480.2
1990	318.6	243.7	8.0	338.9	346.9	288.0	246.9	14.1	15.7	1,473.9
1991	323.8	249.2	7.2	280.3	287.5	274.3	297.2	66.1	16.9	1,515.1
1992	342.2	321.3	3.8	182.1	185.9	288.7	255.6	107.6	19.1	1,520.3
1993	307.4	346.5	2.5	148.2	150.7	303.6	286.6	152.2	21.2	1,568.3
1994	299.4	410.2	4.4	112.6	117.0	285.0	310.8	122.3	21.1	1,565.8
1995	288.1	562.0	5.9	77.9	83.8	266.7	281.1	78.0	24.3	1,584.0
1996	295.6	442.5	5.8	94.3	100.1	301.4	378.4	51.6	25.7	1,595.3
1997	315.7	523.7	5.4	81.2	86.6	316.6	314.4	-25.1	25.8	1,557.8

¹ Bituminous coal only.

² Includes small quantities of kerosene-type jet fuel.

³ Includes renewable and indigenous fuels used by non-utility generators.

⁴ Excludes utility consumption of fuels used in the production of steam distributed for space heating.

**New York State
Electric Generation
by Fuel Type,
1983-1997**

Figure 2-6

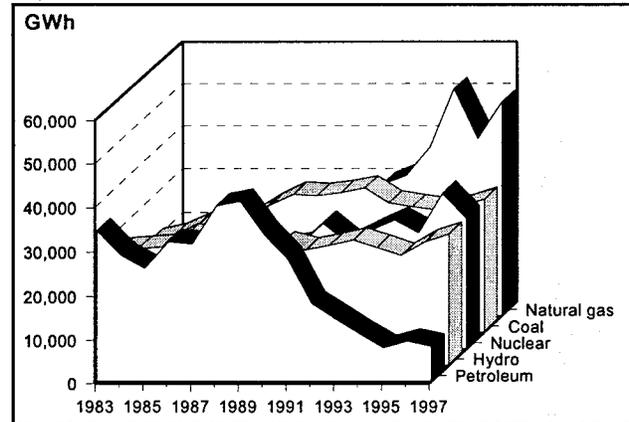


Table 2-6 (in gigawatthours)

Year	Coal GWh	Natural Gas GWh	Petroleum Products GWh	Hydro GWh	Nuclear GWh	Net Imported Electricity GWh	Biofuels ¹ GWh	Total ^{2,3} GWh
1983	20,753	12,428	34,380	26,162	16,376	11,888	0	121,987
1984	21,902	15,395	28,891	26,586	21,187	10,812	0	124,773
1985	24,255	15,995	25,927	26,956	24,092	10,155	0	127,380
1986	20,815	12,471	31,911	29,480	22,084	13,204	0	129,965
1987	25,304	16,385	31,389	27,546	22,926	11,373	0	134,923
1988	28,698	13,936	39,931	23,994	24,176	9,994	0	140,729
1989	31,228	17,141	40,963	23,918	22,846	5,539	0	141,635
1990	30,927	22,483	33,583	27,555	23,623	1,352	1,502	141,025
1991	31,588	22,839	27,935	26,258	28,448	6,323	1,622	145,014
1992	32,648	29,684	17,931	27,281	24,155	10,167	1,806	143,672
1993	29,277	31,761	14,439	28,479	26,889	14,280	1,993	147,118
1994	28,399	38,347	10,998	26,800	29,231	11,504	1,983	147,262
1995	27,667	52,003	7,835	24,990	26,336	7,311	2,278	148,420
1996	28,411	40,297	9,325	28,055	35,226	4,806	2,395	148,515
1997	30,087	48,857	8,142	29,772	29,570	-2,356	2,423	146,495

¹ Includes renewable and indigenous fuels used by non-utility generators.

² Electricity generated by industrial establishments is excluded.

³ Generation data are net of station use.

New York State Sales of Electricity by Sector, 1983-1997

Figure 2-7

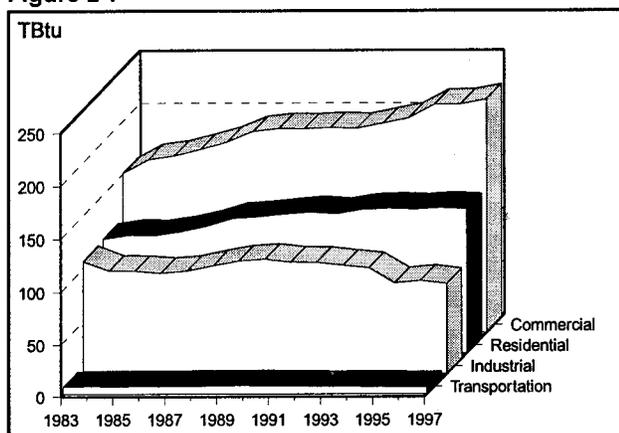


Table 2-7a (in gigawatthours)

Year	Residential GWh	Commercial GWh	Industrial GWh	Transportation GWh	Total GWh
1983	31,803	44,190	31,424	2,081	109,498
1984	32,836	48,026	28,789	2,259	111,910
1985	32,757	49,017	28,659	2,241	112,674
1986	33,771	50,743	28,107	2,287	114,908
1987	35,294	52,732	28,726	2,217	118,969
1988	37,460	55,701	30,155	2,326	125,642
1989	37,878	56,511	31,448	2,365	128,202
1990	38,574	56,393	31,929	2,428	129,324
1991	39,177	56,795	31,112	2,327	129,411
1992	38,720	56,473	31,028	2,250	128,471
1993	39,897	57,922	30,187	2,168	130,174
1994	40,105	59,381	29,467	2,224	131,177
1995	39,887	63,131	25,317	2,135	130,470
1996	40,285	63,231	25,947	2,064	131,527
1997	39,904	64,541	25,087	2,042	131,574

Table 2-7b (in trillion Btu)

Year	Residential TBtu	Commercial TBtu	Industrial TBtu	Transportation TBtu	Total TBtu
1983	108.5	150.8	107.2	7.1	373.6
1984	112.0	163.9	98.2	7.7	381.8
1985	111.8	167.2	97.8	7.6	384.4
1986	115.2	173.1	95.9	7.8	392.1
1987	120.4	179.9	98.0	7.6	405.9
1988	127.8	190.1	102.9	7.9	428.7
1989	129.2	192.8	107.3	8.1	437.4
1990	131.6	192.4	108.9	8.3	441.3
1991	133.7	193.8	106.2	7.9	441.6
1992	132.1	192.7	105.9	7.7	438.3
1993	136.1	197.6	103.0	7.4	444.2
1994	136.8	202.6	100.5	7.6	447.6
1995	136.1	215.4	86.4	7.3	445.2
1996	137.5	215.7	88.5	7.0	448.8
1997	136.2	220.2	85.6	7.0	448.9

New York State Net Consumption of Energy by Sector, 1983-1997

Figure 2-8

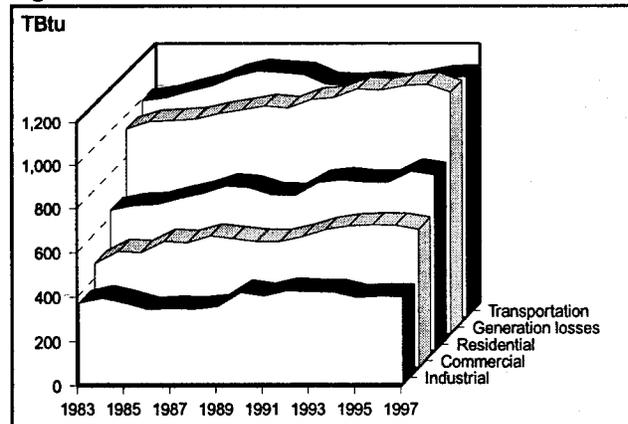


Table 2-8 (in trillion Btu)

Year	Residential TBtu	Commercial TBtu	Industrial TBtu	Transportation TBtu	Net Consumption TBtu	Electric Generation Losses ¹ TBtu	Primary Consumption TBtu
1983	631.5	467.0	363.8	992.7	2,455.0	933.6	3,388.6
1984	652.9	520.5	386.9	1,005.8	2,566.1	967.9	3,534.0
1985	657.2	514.4	364.0	1,036.3	2,572.0	973.1	3,545.0
1986	685.2	565.9	334.3	1,062.8	2,648.2	980.2	3,628.4
1987	708.8	559.1	339.6	1,109.0	2,716.4	1,005.8	3,722.2
1988	743.7	589.0	336.6	1,135.1	2,804.3	1,023.3	3,827.6
1989	735.3	577.6	348.2	1,127.1	2,788.2	1,042.7	3,830.9
1990	701.7	565.3	412.6	1,119.0	2,798.5	1,032.6	3,831.1
1991	698.9	564.4	397.1	1,070.4	2,730.8	1,073.6	3,804.3
1992	759.3	587.2	420.1	1,066.4	2,833.0	1,082.0	3,915.0
1993	771.3	619.9	415.5	1,075.3	2,881.9	1,124.1	4,006.1
1994	760.0	634.8	415.0	1,064.0	2,873.9	1,118.2	3,992.0
1995	759.8	639.3	389.6	1,084.4	2,873.1	1,138.8	4,011.9
1996	811.1	637.6	394.5	1,104.4	2,947.6	1,146.5	4,094.1
1997	794.3	619.8	394.0	1,106.3	2,914.5	1,108.9	4,023.3

¹ Conversion and transmission losses.

New York State Net Residential Consumption of Energy by Fuel Type, 1983-1997

Figure 2-9

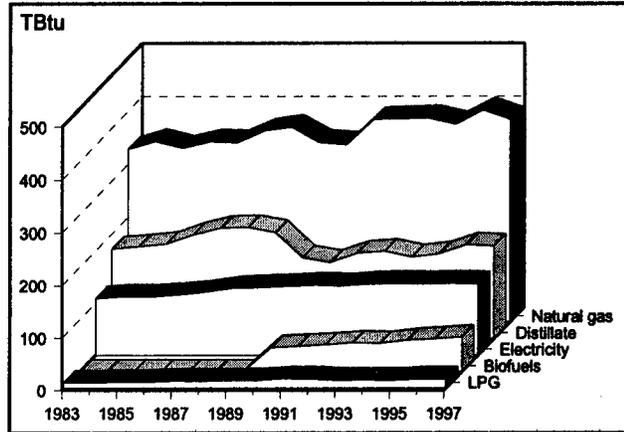


Table 2-9a (in physical units)

Year	Coal ¹ MTons	Natural Gas MMcf	Distillate Mbbbl	Kerosene Mbbbl	LPG Mbbbl	Total Petroleum Mbbbl	Biofuels ² MCords	Electricity GWh
1983	180	318,309	29,404	1,497	2,974	33,875	0	31,803
1984	224	332,991	30,155	1,090	2,963	34,208	0	32,836
1985	207	320,385	30,992	3,219	3,227	37,438	0	32,757
1986	206	332,584	34,065	2,209	3,282	39,556	0	33,771
1987	173	330,508	36,220	3,212	3,834	43,266	0	35,294
1988	139	352,829	36,422	4,163	3,718	44,303	0	37,460
1989	137	358,561	34,788	2,771	3,931	41,490	0	37,878
1990	129	331,157	26,529	1,765	4,079	32,373	2,325	38,574
1991	130	326,974	25,021	2,098	5,051	32,170	2,450	39,177
1992	128	372,862	27,997	1,252	4,965	34,214	2,577	38,720
1993	120	375,093	28,707	1,565	4,293	34,565	2,758	39,897
1994	88	376,444	26,760	1,396	4,350	32,506	2,704	40,105
1995	105	365,847	27,789	1,240	4,561	33,590	3,001	39,887
1996	128	391,617	30,745	1,450	4,995	37,190	3,151	40,285
1997	112	374,755	30,336	1,744	4,930	37,010	3,309	39,904

Table 2-9b (in trillion Btu)

Year	Coal ¹ TBtu	Natural Gas TBtu	Distillate TBtu	Kerosene TBtu	LPG TBtu	Total Petroleum TBtu	Biofuels ² TBtu	Electricity TBtu	Total TBtu
1983	4.3	328.2	171.3	8.5	10.7	190.5	0	108.5	631.5
1984	5.4	343.0	175.7	6.2	10.7	192.5	0	112.0	652.9
1985	4.7	330.3	180.5	18.3	11.6	210.4	0	111.8	657.2
1986	4.9	342.2	198.4	12.5	11.9	222.9	0	115.2	685.2
1987	4.4	340.8	211.0	18.2	14.0	243.2	0	120.4	708.8
1988	3.5	363.1	212.2	23.6	13.6	249.3	0	127.8	743.7
1989	3.5	369.7	202.6	15.7	14.5	232.8	0	129.2	735.3
1990	3.1	341.1	154.5	10.0	14.8	179.3	46.5	131.6	701.7
1991	3.2	337.1	145.7	11.9	18.3	175.9	49.0	133.7	698.9
1992	3.1	384.4	163.1	7.1	18.0	188.2	51.5	132.1	759.3
1993	2.9	385.6	167.2	8.9	15.5	191.6	55.2	136.1	771.3
1994	2.1	387.4	155.9	7.9	15.8	179.6	54.1	136.8	760.0
1995	2.5	375.7	161.9	7.0	16.5	185.4	60.0	136.1	759.8
1996	3.0	402.2	179.1	8.2	18.0	205.4	63.0	137.5	811.1
1997	2.7	384.9	176.7	9.9	17.8	204.4	66.2	136.2	794.3

¹ Anthracite and bituminous.

² Wood

New York State Net Commercial Consumption of Energy by Fuel Type, 1983-1997

Figure 2-10

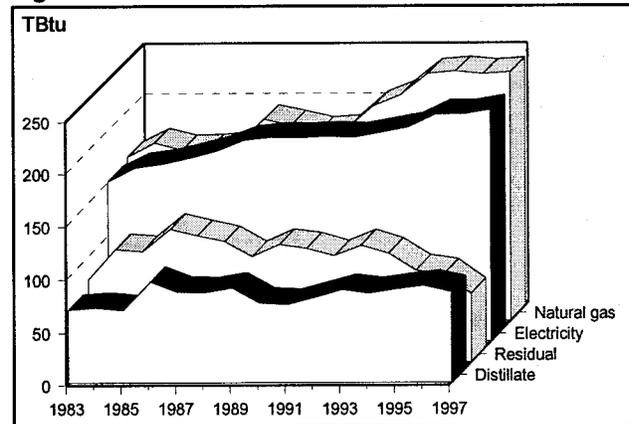


Table 2-10 (in physical units)

Year	Coal ¹ MTons	Natural Gas MMcf	Distillate Mbbl	Residual Mbbl	Kerosene Mbbl	LPG Mbbl	Total Petroleum Mbbl	Electricity GWh
1983	210	149,782	11,928	12,442	1,289	525	26,184	44,190
1984	265	163,125	12,233	16,986	437	523	30,179	48,026
1985	226	156,457	11,835	16,677	862	569	29,943	49,017
1986	258	157,370	16,471	19,955	228	579	37,233	50,743
1987	198	159,626	14,782	18,987	318	677	34,764	52,732
1988	170	185,939	14,720	18,154	207	656	33,737	55,701
1989	162	179,759	15,473	15,878	519	694	32,564	56,511
1990	144	173,560	12,947	17,643	269	720	31,606	56,393
1991	148	175,372	12,758	17,102	213	891	30,964	56,795
1992	147	198,189	13,899	15,951	408	876	31,134	56,473
1993	112	209,193	15,123	17,531	616	758	34,028	57,922
1994	97	229,893	14,592	16,301	538	768	32,199	59,381
1995	115	232,709	15,227	13,766	714	797	30,504	63,131
1996	155	230,089	15,762	13,185	751	825	30,523	63,231
1997	142	231,969	14,791	10,265	801	774	26,631	64,541

Table 2-10 (in trillion Btu)

Year	Coal ¹ TBtu	Natural Gas TBtu	Distillate TBtu	Residual TBtu	Kerosene TBtu	LPG TBtu	Total Petroleum TBtu	Electricity TBtu	Total TBtu
1983	4.9	154.4	69.5	78.2	7.3	1.9	156.9	150.8	467.0
1984	6.3	168.0	71.3	106.8	2.5	1.9	182.4	163.9	520.5
1985	5.1	161.3	68.9	104.8	4.9	2.1	180.7	167.2	514.4
1986	6.0	161.9	95.9	125.5	1.3	2.1	224.8	173.1	565.9
1987	4.8	164.6	86.1	119.4	1.8	2.5	209.8	179.9	559.1
1988	4.1	191.3	85.7	114.1	1.2	2.4	203.4	190.1	589.0
1989	4.0	185.3	90.1	99.8	2.9	2.6	195.5	192.8	577.6
1990	3.4	178.8	75.6	110.9	1.5	2.6	190.6	192.4	565.3
1991	3.5	180.8	74.3	107.5	1.2	3.2	186.3	193.8	564.4
1992	3.5	204.3	81.0	100.3	2.3	3.2	186.7	192.7	587.2
1993	2.6	215.1	88.1	110.2	3.5	2.7	204.5	197.6	619.9
1994	2.3	236.6	85.0	102.5	3.1	2.8	193.3	202.6	634.8
1995	2.7	239.0	88.7	86.5	4.0	2.9	182.2	215.4	639.3
1996	3.7	236.3	91.8	82.9	4.3	3.0	181.9	215.7	637.6
1997	3.3	238.2	86.2	64.5	4.5	2.8	158.0	220.2	619.8

¹ Anthracite and bituminous.

New York State Net Industrial Consumption of Energy by Fuel Type, 1983-1997

Figure 2-11

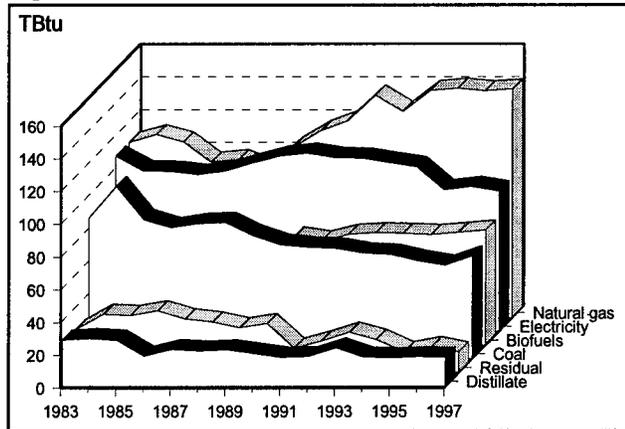


Table 2-11a (in physical units)

Year	Coal ^{1,2} MTons	Natural Gas ³ MMcf	Distillate Mbbi	Residual Mbbi	Kero Mbbi	LPG Mbbi	Total Petroleum Mbbi	Biofuels	Electricity GWh
1983	3,590	104,086	4,883	4,164	720	1,240	11,007	0	31,424
1984	4,373	108,750	5,008	5,685	249	1,359	12,301	0	28,789
1985	3,609	104,304	4,816	5,553	1,238	980	12,587	0	28,659
1986	3,308	92,423	3,148	6,033	624	909	10,714	0	28,107
1987	3,385	93,749	3,866	5,232	628	878	10,604	0	28,726
1988	3,387	87,501	3,705	4,919	893	742	10,259	0	30,155
1989	3,127	101,114	3,846	4,366	1,507	801	10,520	0	31,448
1990	2,899	110,964	3,428	4,750	249	655	9,082	na	31,929
1991	2,847	116,915	3,043	2,383	335	1,107	6,868	na	31,112
1992	2,813	132,126	3,117	3,095	201	1,092	7,505	na	31,028
1993	2,686	122,860	4,047	3,911	241	962	9,161	na	30,187
1994	2,641	135,016	3,066	3,208	355	948	7,577	na	29,467
1995	2,406	136,670	2,976	2,021	409	881	6,287	na	25,317
1996	2,322	135,132	3,098	2,532	682	917	7,229	na	25,947
1997	2,519	136,236	3,015	1,996	361	892	6,264	na	25,087

Table 2-11b (in trillion Btu)

Year	Coal ^{1,2} TBtu	Natural Gas ³ TBtu	Distillate TBtu	Residual TBtu	Kero TBtu	LPG TBtu	Total Petroleum TBtu	Biofuels TBtu	Electricity TBtu	Total ^{4,5} TBtu
1983	86.1	107.3	28.4	26.2	4.1	4.5	63.2	0	107.2	363.8
1984	105.4	112.0	29.2	35.7	1.4	4.9	71.2	0	98.2	386.9
1985	85.1	107.5	28.1	34.9	7.0	3.5	73.5	0	97.8	364.0
1986	80.2	95.1	18.3	37.9	3.5	3.3	63.1	0	95.9	334.3
1987	82.7	96.7	22.5	32.9	3.6	3.2	62.2	0	98.0	339.6
1988	83.3	90.0	21.6	30.9	5.1	2.7	60.3	0	102.9	336.6
1989	75.3	104.2	22.4	27.4	8.5	3.0	61.3	0	107.3	348.2
1990	69.7	114.3	20.0	29.9	1.4	2.4	53.6	66.0	108.9	412.6
1991	68.2	120.5	17.7	15.0	1.9	4.0	38.6	63.6	106.2	397.1
1992	67.7	136.2	18.2	19.5	1.1	4.0	42.7	67.6	105.9	420.1
1993	64.7	126.3	23.6	24.6	1.4	3.5	53.0	68.5	103.0	415.5
1994	63.9	138.9	17.9	20.2	2.0	3.4	43.5	68.2	100.5	415.0
1995	59.9	140.4	17.3	12.7	2.3	3.2	35.6	67.4	86.4	389.6
1996	57.3	138.8	18.0	15.9	3.9	3.3	41.1	68.7	88.5	394.5
1997	63.0	139.9	17.6	12.5	2.0	3.2	35.4	70.1	85.6	394.0

¹ Anthracite and bituminous.

² Includes deliveries to cokeries.

³ Excludes lease and plant fuels.

⁴ Excludes non-fuel uses (e.g., feedstock).

⁵ Includes those fuels used by industry to generate electricity and process steam.

New York State Net Transportation Consumption of Energy by Fuel Type, 1983-1997

Figure 2-12

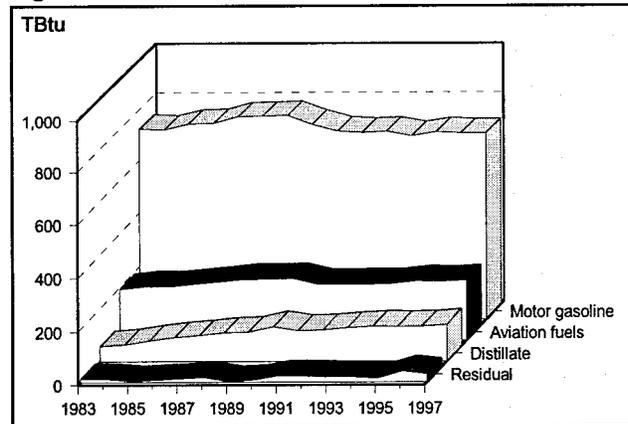


Table 2-12a (in physical units)

Year	Distillate Mbbbl	Residual Mbbbl	Motor Gasoline Mbbbl	Aviation Fuels ¹ Mbbbl	LPG Mbbbl	Total Petroleum Mbbbl	Biofuels ² Mbbbl	Electricity GWh
1983	9,938	2,100	137,445	33,838	167	183,488	0	2,081
1984	11,019	1,988	136,788	35,644	210	185,649	0	2,259
1985	13,551	884	141,249	35,573	147	191,404	0	2,241
1986	15,509	1,526	141,699	37,090	108	195,932	0	2,287
1987	16,759	2,175	146,758	38,607	87	204,386	0	2,217
1988	18,450	3,059	147,000	40,175	122	208,806	0	2,326
1989	18,865	531	147,800	40,360	153	207,709	0	2,365
1990	22,363	1,377	140,900	40,680	152	205,472	139	2,428
1991	19,846	3,971	135,660	36,750	158	196,385	110	2,327
1992	20,290	3,730	134,600	36,870	144	195,634	134	2,250
1993	21,625	3,258	135,350	36,950	126	197,309	149	2,168
1994	22,381	3,169	131,988	37,250	286	195,074	166	2,224
1995	22,318	2,354	134,911	39,025	138	198,746	574	2,135
1996	22,517	6,640	133,947	38,533	139	201,776	586	2,064
1997	23,619	5,023	133,985	39,493	146	202,266	597	2,042

Table 2-11b (in trillion Btu)

Year	Distillate TBtu	Residual TBtu	Motor Gasoline TBtu	Aviation Fuels ¹ TBtu	LPG TBtu	Total Petroleum TBtu	Biofuels ² TBtu	Electricity TBtu	Total TBtu
1983	57.9	13.2	722.0	191.9	0.6	985.6	0	7.1	992.7
1984	64.2	12.5	718.5	202.1	0.8	998.1	0	7.7	1,005.8
1985	78.9	5.6	742.0	201.7	0.5	1,028.7	0	7.6	1,036.3
1986	90.3	9.6	744.3	210.3	0.4	1,055.0	0	7.8	1,062.8
1987	97.6	13.7	770.9	218.9	0.3	1,101.4	0	7.6	1,109.0
1988	107.5	19.2	772.2	227.8	0.4	1,127.1	0	7.9	1,135.1
1989	109.9	3.3	776.4	228.8	0.6	1,119.0	0	8.1	1,127.1
1990	130.3	8.7	740.1	230.7	0.6	1,110.3	0.4	8.3	1,119.0
1991	115.6	25.0	712.6	208.4	0.6	1,062.1	0.4	7.9	1,070.4
1992	118.2	23.5	707.1	209.1	0.5	1,058.3	0.4	7.7	1,066.4
1993	126.0	20.5	711.0	209.5	0.5	1,067.4	0.5	7.4	1,075.3
1994	130.4	19.9	693.3	211.2	1.0	1,055.9	0.5	7.6	1,064.0
1995	130.0	14.8	708.7	221.3	0.5	1,075.3	1.8	7.3	1,084.4
1996	131.2	41.7	703.6	218.5	0.5	1,095.5	1.9	7.0	1,104.4
1997	137.6	31.6	703.8	223.9	0.5	1,097.4	1.9	7.0	1,106.3

¹ Aviation gasoline and kerosene-type jet fuel.

² Ethanol blended into motor gasoline.

Section 3

NEW YORK STATE ENERGY PRICES

This section presents data on retail energy prices for the 15-year period, 1983-1997. Energy prices are provided by fuel type for the residential, commercial, industrial, and transportation sectors in nominal dollar cost per physical unit and per million Btu.

This year's *Patterns and Trends* contains some minor revisions from last year's edition. The U. S. Department of Energy (U.S. DOE) revised the historical liquefied petroleum gas series for New York State.

Historical petroleum, electricity, coal, and natural gas prices were compiled from U.S. DOE's *State Energy Price and Expenditure Report*. For those years in which New York State conducted price surveys for home heating oil and motor gasoline, these results are provided.

Section 3

Key Findings from 1997 New York State Data

- ✓ Residential sector nominal prices over the years declined 1.3% from \$1.13 to \$1.12/gallon for home heating oil; increased 16% from \$8.90 to \$10.32/thousand cubic feet for natural gas; and increased 1.4% from 14.0¢ to 14.2¢/kilowatt-hour for electricity.
- ✓ Average prices for commercial distillate and residual fuel oils were 79.3¢/gallon and \$22.61/barrel, down 5% and 7% over the year, respectively.
- ✓ Average prices for commercial electricity and natural gas were 12.2¢/kilowatt-hour, up nearly 1% compared to 1996, and \$6.49/thousand cubic feet, a 6% decrease over the year, respectively.
- ✓ In the past year, industrial sector residual fuel oil prices declined 7% from \$24.32 to \$22.61/barrel; natural gas prices decreased 11%, from \$5.04 to \$4.50/thousand cubic feet; and electricity prices fell 5% from 5.6¢ to 5.3¢/kilowatt-hour.
- ✓ The average retail price for all grades of gasoline was \$1.36/gallon, virtually unchanged from 1996.
- ✓ The price of jet fuel and residual fuel oil for water-vessel use were 61.8¢/gallon and \$18.01/barrel, down 6% and 7% over the year, respectively.

New York State Residential Energy Prices in Nominal Dollars, 1983-1997

Figure 3-1

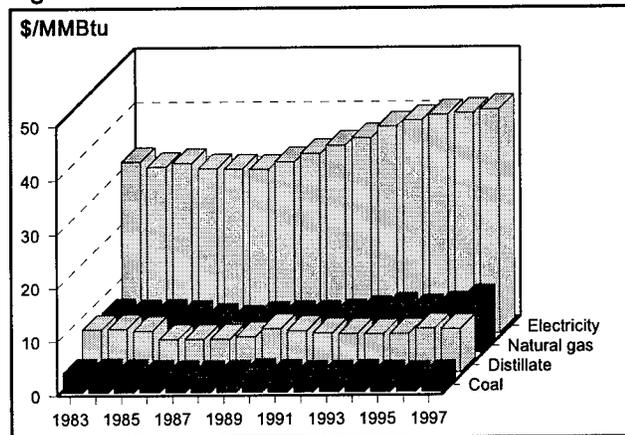


Table 3-1a (in physical units)

Year	Coal ¹ \$/Ton	Distillate ² ¢/gal	Kerosene ¢/gal	LPG ³ ¢/gal	Natural Gas \$/Mcf	Electricity ¢/kWh
1983	90.21	112.65	130.81	90.78	7.91	10.95
1984	93.82	114.53	130.27	85.95	7.67	10.64
1985	83.22	110.03	125.53	95.39	7.77	10.86
1986	82.76	87.64	102.75	86.30	7.47	10.53
1987	86.09	88.00	96.10	84.00	6.89	10.51
1988	85.57	88.39	97.34	82.88	6.50	10.46
1989	91.39	93.94	108.05	101.19	7.23	10.93
1990	90.35	114.82	126.89	117.68	7.41	11.44
1991	87.00	109.18	125.53	125.55	7.38	11.97
1992	79.09	102.90	115.95	124.54	7.60	12.43
1993	78.35	101.72	112.90	114.59	8.15	13.17
1994	82.37	99.85	108.95	126.01	8.77	13.55
1995	78.53	100.50	107.73	123.10	8.41	13.90
1996	74.98	113.30	131.00	115.10	8.90	14.00
1997	77.60	111.80	131.65	120.10	10.32	14.20

Table 3-1b (in \$/million Btu)

Year	Coal ¹ \$/MMBtu	Distillate ² \$/MMBtu	Kerosene \$/MMBtu	LPG ³ \$/MMBtu	Natural Gas \$/MMBtu	Electricity \$/MMBtu
1983	3.68	8.12	9.69	10.55	7.67	32.08
1984	3.73	8.26	9.65	10.03	7.45	31.17
1985	3.61	7.93	9.30	11.12	7.54	31.84
1986	3.39	6.32	7.61	9.96	7.26	30.86
1987	3.27	6.35	7.12	9.64	6.68	30.81
1988	3.29	6.37	7.21	9.53	6.32	30.67
1989	3.36	6.77	8.00	11.54	7.01	32.03
1990	3.59	8.28	9.40	13.64	7.19	33.54
1991	3.44	7.87	9.30	14.59	7.16	35.09
1992	3.21	7.42	8.59	14.43	7.37	36.43
1993	3.25	7.33	8.36	13.35	7.92	38.61
1994	3.29	7.20	8.07	14.56	8.52	39.72
1995	3.18	7.25	7.98	14.27	8.19	40.73
1996	3.04	8.17	9.70	13.38	8.67	41.03
1997	3.15	8.06	9.75	13.95	10.05	41.62

¹ Anthracite only.

² Home heating oil.

³ Propane.

**New York State
Commercial Energy Prices
in Nominal Dollars,
1983-1997**

Figure 3-2

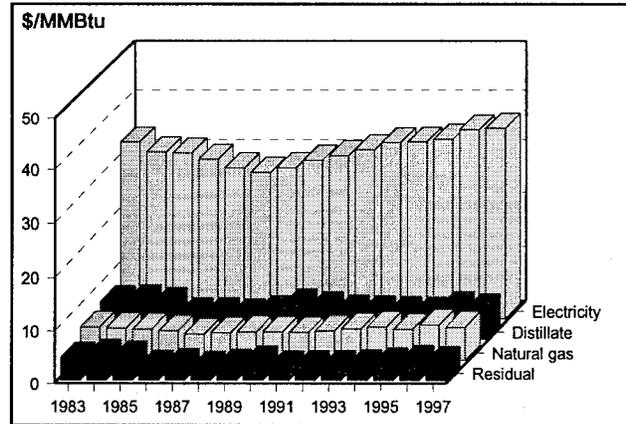


Table 3-2a (in physical units)

Year	Coal \$/Ton	Distillate ¢/gal	Residual \$/bbl	Kerosene ¢/gal	Natural Gas \$/Mcf	Electricity ¢/kWh
1983	44.54	98.61	28.23	97.81	6.51	11.26
1984	42.04	100.27	31.62	96.89	6.28	10.59
1985	42.11	94.17	29.18	90.45	6.13	10.53
1986	38.70	67.68	18.39	60.62	5.78	10.11
1987	39.31	67.96	20.22	68.31	5.18	9.54
1988	38.08	65.88	16.82	62.91	5.39	9.26
1989	39.17	73.23	19.61	69.80	5.63	9.55
1990	39.45	90.70	23.59	99.77	5.60	10.05
1991	39.08	83.35	17.78	82.49	5.49	10.34
1992	38.82	75.86	18.17	81.14	5.76	10.74
1993	36.93	73.37	18.13	74.66	6.16	11.21
1994	36.85	71.43	19.36	74.79	6.52	11.25
1995	36.66	70.18	21.00	71.15	6.09	11.45
1996	35.33	83.93	24.32	86.51	6.88	12.10
1997	36.56	79.32	22.61	86.94	6.49	12.20

Table 3-2b (in \$/million Btu)

Year	Coal \$/MMBtu	Distillate \$/MMBtu	Residual \$/MMBtu	Kerosene \$/MMBtu	Natural Gas \$/MMBtu	Electricity \$/MMBtu
1983	1.96	7.11	4.49	7.25	6.31	33.00
1984	1.87	7.23	5.03	7.18	6.10	31.04
1985	1.91	6.79	4.64	6.70	5.95	30.86
1986	1.74	4.88	2.92	4.49	5.61	29.62
1987	1.76	4.90	3.22	5.06	5.02	27.96
1988	1.70	4.75	2.67	4.66	5.24	27.13
1989	1.75	5.28	3.12	5.17	5.46	27.99
1990	1.76	6.54	3.75	7.39	5.43	29.44
1991	1.74	6.01	2.83	6.11	5.33	30.31
1992	1.74	5.47	2.89	6.01	5.59	31.48
1993	1.67	5.29	2.88	5.53	5.99	32.87
1994	1.67	5.15	3.08	5.54	6.34	32.98
1995	1.67	5.06	3.34	5.27	5.93	33.57
1996	1.60	6.05	3.87	6.41	6.70	35.46
1997	1.65	5.72	3.60	6.44	6.32	35.76

**New York State
Industrial Energy Prices
in Nominal Dollars,
1983-1997**

Figure 3-3

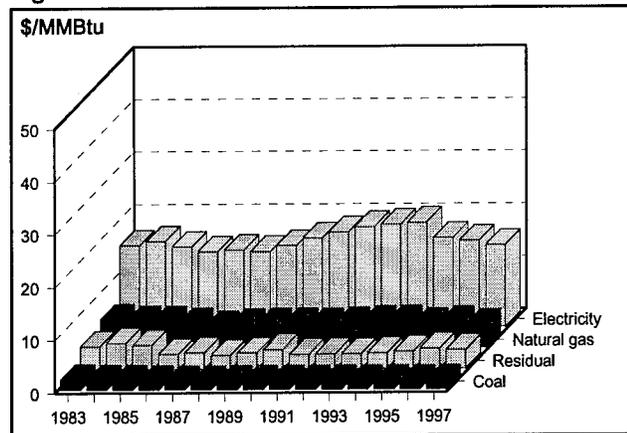


Table 3-3a (in physical units)

Year	Coal \$/Ton	Distillate ¢/gal	Residual \$/bbl	Kerosene ¢/gal	LPG ¢/gal	Natural Gas \$/Mcf	Electricity ¢/kWh
1983	50.04	96.67	27.65	97.81	65.00	5.71	5.34
1984	47.35	91.26	31.62	96.89	69.39	5.37	5.60
1985	46.45	85.16	29.18	90.45	106.63	5.29	5.24
1986	42.90	57.10	18.39	60.62	104.69	4.91	4.92
1987	41.27	64.35	20.22	68.31	102.36	4.28	5.03
1988	40.71	59.22	16.82	62.91	101.39	4.69	4.94
1989	42.12	65.74	19.61	69.80	88.74	4.84	5.29
1990	42.79	94.03	23.59	99.77	94.70	4.86	5.78
1991	42.68	77.67	17.78	82.49	99.21	4.74	6.17
1992	42.68	76.42	18.17	81.14	85.25	4.94	6.50
1993	41.50	70.32	18.11	74.66	83.28	5.17	6.67
1994	41.54	70.45	19.36	74.79	74.69	5.23	6.78
1995	41.44	67.13	21.00	71.15	73.93	4.68	5.79
1996	40.47	80.28	24.32	86.51	93.04	5.04	5.60
1997	41.67	75.87	22.61	86.94	84.92	4.50	5.30

Table 3-3b (in \$/million Btu)

Year	Coal \$/MMBtu	Distillate \$/MMBtu	Residual \$/MMBtu	Kerosene \$/MMBtu	LPG \$/MMBtu	Natural Gas \$/MMBtu	Electricity \$/MMBtu
1983	2.02	6.97	4.40	7.25	7.55	5.54	15.66
1984	1.92	6.58	5.03	7.18	8.10	5.22	16.41
1985	1.90	6.14	4.64	6.70	12.43	5.13	15.34
1986	1.75	4.12	2.92	4.49	12.08	4.78	14.43
1987	1.68	4.64	3.22	5.06	11.75	4.16	14.74
1988	1.66	4.27	2.67	4.66	11.66	4.56	14.47
1989	1.71	4.74	3.12	5.17	10.12	4.69	15.52
1990	1.74	6.78	3.75	7.39	10.74	4.72	16.95
1991	1.73	5.60	2.83	6.11	11.53	4.60	18.07
1992	1.74	5.51	2.89	6.01	9.88	4.79	19.06
1993	1.70	5.07	2.88	5.53	9.70	5.03	19.53
1994	1.70	5.08	3.08	5.54	8.63	5.08	19.86
1995	1.70	4.84	3.34	5.27	8.57	4.56	16.97
1996	1.67	5.79	3.87	6.41	10.82	4.91	16.41
1997	1.70	5.47	3.60	6.44	9.86	4.38	15.53

New York State Transportation Energy Prices in Nominal Dollars, 1983-1997

Figure 3-4

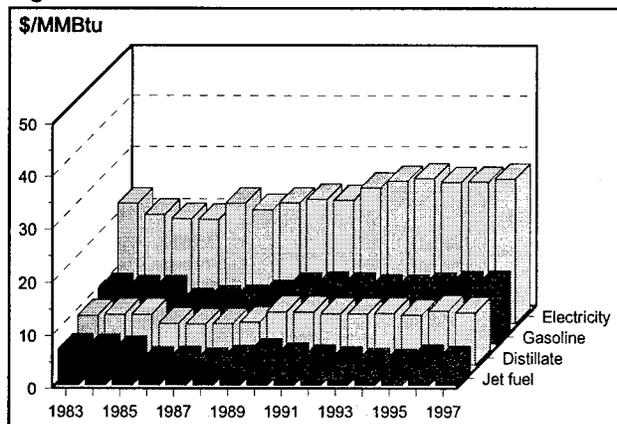


Table 3-4a (in physical units)

Year	Motor Gasoline ¢/gal	Distillate ¹ ¢/gal	Jet Fuel ² ¢/gal	Residual ³ \$/bbl	Electricity ⁴ ¢/kWh
1983	129.88	130.03	93.69	26.59	7.71
1984	124.94	133.59	92.75	28.63	6.98
1985	125.16	133.51	87.90	25.68	6.70
1986	95.30	109.66	59.70	14.25	6.66
1987	101.54	107.42	61.40	17.87	7.71
1988	103.85	108.68	56.00	13.74	7.30
1989	114.16	113.05	63.40	16.50	7.73
1990	131.09	140.33	81.40	19.70	7.96
1991	133.20	139.73	69.90	14.94	7.89
1992	131.46	135.26	65.30	14.64	8.71
1993	128.26	134.75	60.30	14.41	9.14
1994	127.58	136.81	55.89	15.09	9.31
1995	131.81	131.16	54.54	16.72	9.07
1996	136.00	142.61	65.78	19.37	9.10
1997	136.40	137.97	61.83	18.01	9.30

Table 3-4b (in \$/million Btu)

Year	Motor Gasoline \$/MMBtu	Distillate ¹ \$/MMBtu	Jet Fuel ² \$/MMBtu	Residual ³ \$/MMBtu	Electricity ⁴ \$/MMBtu
1983	10.38	9.38	6.94	4.23	22.59
1984	9.99	9.63	6.87	4.55	20.47
1985	10.01	9.63	6.51	4.08	19.65
1986	7.62	7.91	4.42	2.27	19.51
1987	8.12	7.75	4.55	2.84	22.59
1988	8.30	7.84	4.15	2.18	21.39
1989	9.13	8.15	4.70	2.63	22.65
1990	10.48	10.12	6.03	3.13	23.33
1991	10.65	10.07	5.18	2.38	23.12
1992	10.51	9.75	4.84	2.33	25.54
1993	10.25	9.72	4.47	2.29	26.78
1994	10.20	9.86	4.14	2.40	27.28
1995	10.54	9.46	4.04	2.66	26.59
1996	10.87	10.28	4.87	3.08	26.67
1997	10.91	9.95	4.58	2.86	27.26

¹ Diesel.

² Kerosene-based.

³ Bunker fuel.

⁴ Railroad use.

Section 4

NEW YORK STATE ENERGY EXPENDITURES

This section presents the estimated cost of net energy consumption in nominal dollars and in constant 1997 dollars by sector and fuel type for 1983, 1988, and 1993 through 1997. Estimated costs of net energy consumption were derived by multiplying consumption quantities (TBtu) by their respective prices.

This year's *Patterns and Trends* contains several series revised from last year's edition. U.S. DOE's revisions of historical data series for New York State are also reflected.

Section 4

Key Findings from 1997 New York State Data

- ✓ New York State's energy bill in nominal dollars totaled \$34.1 billion, up less than 1% from 1996, but 27% higher than the \$26.9 billion expended in 1983.
- ✓ Adjusting for inflation, New York's energy bill in constant 1997 dollars, declined by \$7.5 billion from \$41.6 billion in 1983. Compared to a year earlier, constant dollars expenditures fell \$500 million.
- ✓ New Yorkers spent \$11.3 billion for energy used in their homes. The residential sector was the only end-use category to show an increase, which totalled 4% over the 1996 level.
- ✓ The total energy bill paid by commercial customers was \$10.2 billion, virtually unchanged from 1996.
- ✓ Industrial customers paid \$2.2 billion for energy, a decline of 9% from year earlier.
- ✓ The annual energy bill for transporting people and goods was \$10.4 billion, virtually unchanged from the previous year.

New York State Energy Expenditure Estimates by Fuel Type and Sector in Nominal Dollars, 1983-1997

Figure 4-1

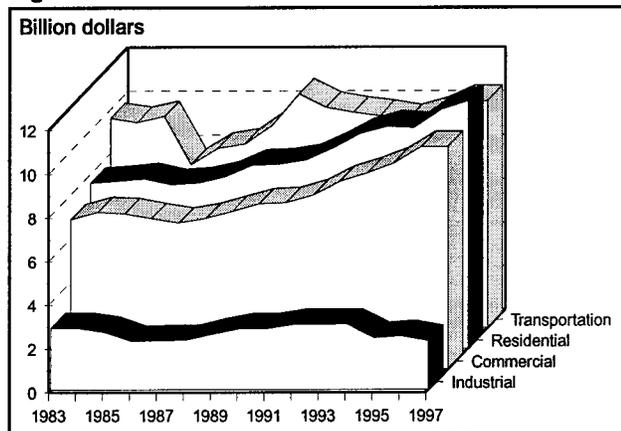


Table 4-1 (in million dollars)

	1983	1988	1993	1994	1995	1996	1997
RESIDENTIAL							
Coal	\$15.8	\$11.2	\$9.4	\$7.2	\$8.3	\$9.4	\$8.5
Petroleum	1,586.2	1,651.5	1,506.9	1,416.3	1,465.1	1,783.6	1,769.0
Distillate	1,391.0	1,351.7	1,225.6	1,122.5	1,173.8	1,463.2	1,424.2
Kerosene	82.4	170.2	74.4	63.8	55.9	79.5	96.5
LPG	112.9	129.6	206.9	230.0	235.5	240.8	248.3
Natural Gas	2,517.3	2,294.8	3,054.0	3,300.6	3,077.0	3,487.1	3,868.2
Electricity	3,480.7	3,919.6	5,254.8	5,433.7	5,543.4	5,641.6	5,668.6
Total	\$7,600.0	\$7,877.1	\$9,825.1	\$10,157.9	\$10,093.7	\$10,921.8	\$11,314.4
COMMERCIAL							
Coal	\$9.6	\$7.1	\$4.3	\$3.8	\$4.5	\$5.8	\$5.4
Petroleum	912.5	745.3	829.0	794.8	783.7	936.2	781.9
Distillate	494.1	407.1	466.0	437.8	448.8	555.4	493.1
Residual	351.1	304.6	317.4	315.7	288.9	320.8	232.2
Kerosene	52.9	5.6	19.4	17.2	21.1	27.6	29.0
LPG	14.3	28.0	26.2	24.2	24.9	32.5	27.6
Natural Gas	974.3	1,002.4	1,288.4	1,500.0	1,417.3	1,583.2	1,505.4
Electricity	4,976.4	5,157.4	6,495.1	6,681.7	7,231.0	7,648.7	7,874.4
Total	\$6,872.8	\$6,912.3	\$8,616.9	\$8,980.4	\$9,436.4	\$10,173.9	\$10,167.1
INDUSTRIAL							
Coal	\$173.9	\$138.3	\$110.0	\$108.5	\$102.0	\$95.5	\$107.1
Petroleum	376.9	230.0	232.2	193.6	165.7	226.5	185.7
Distillate	197.9	92.2	119.7	90.9	83.7	104.2	96.3
Residual	115.3	82.5	70.8	62.2	42.4	61.5	45.0
Kerosene	29.7	23.8	7.7	11.1	12.1	25.0	12.9
LPG	34.0	31.5	34.0	29.3	27.4	35.7	31.6
Natural Gas	594.4	410.4	635.3	705.6	640.2	681.5	612.8
Electricity	1,678.8	1,489.0	2,011.6	1,995.9	1,466.2	1,452.3	1,329.4
Total	\$2,824.0	\$2,267.6	\$2,989.1	\$3,003.6	\$2,374.1	\$2,455.8	\$2,234.9
TRANSPORTATION							
Petroleum	\$9,429.6	\$8,244.0	\$9,500.7	\$9,288.2	\$9,637.2	\$10,194.8	\$10,168.3
Distillate	543.1	842.8	1,224.7	1,285.7	1,229.8	1,348.7	1,369.1
Residual	55.8	41.9	46.9	47.8	39.4	128.4	90.4
Motor Gasoline	7,494.4	6,409.3	7,287.8	7,071.7	7,469.7	7,648.1	7,678.5
Aviation	1,331.8	945.4	936.5	874.4	894.1	1,064.1	1,025.5
LPG	4.5	4.7	4.9	8.6	4.3	5.4	4.9
Electricity	160.4	169.0	198.2	207.3	194.1	186.7	190.8
Total	\$9,590.0	\$8,412.9	\$9,698.8	\$9,495.5	\$9,831.3	\$10,381.5	\$10,359.2
TOTAL							
Coal	\$199.4	\$156.6	\$123.8	\$119.5	\$114.8	\$110.7	\$121.1
Petroleum	12,305.3	10,870.7	12,068.8	11,692.8	12,051.7	13,141.1	12,904.9
Distillate	2,626.2	2,693.8	3,036.0	2,936.9	2,936.1	3,471.6	3,382.7
Residual	522.2	429.0	435.2	425.7	370.7	510.8	367.6
Motor Gasoline	7,494.4	6,409.3	7,287.8	7,071.7	7,469.7	7,648.1	7,678.5
Kerosene	165.0	199.5	101.5	92.0	89.1	132.1	138.4
Aviation	1,331.8	945.4	936.5	874.4	894.1	1,064.1	1,025.5
LPG	165.7	193.7	271.9	292.2	292.0	314.4	312.4
Natural Gas	4,086.0	3,707.6	4,977.7	5,506.3	5,134.5	5,751.8	5,986.4
Electricity	10,296.2	10,735.0	13,959.7	14,318.7	14,434.6	14,929.3	15,063.2
Total	\$26,886.9	\$25,469.9	\$31,129.9	\$31,637.3	\$31,735.6	\$33,933.0	\$34,075.6

New York State Energy Expenditure Estimates by Fuel Type and Sector in Constant 1997 Dollars, 1983-1997

Figure 4-2

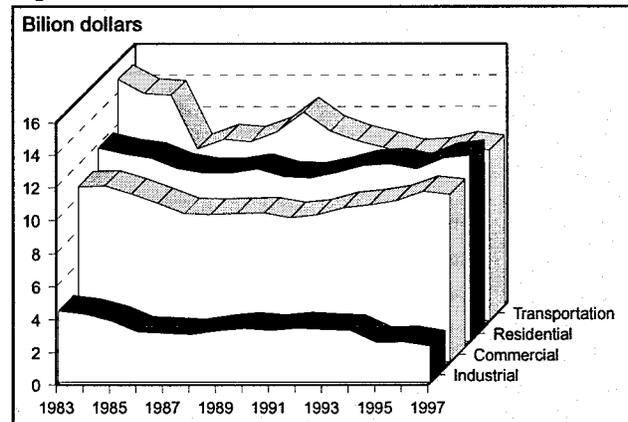


Table 4-2 (in million dollars)

	1983	1988	1993	1994	1995	1996	1997
RESIDENTIAL							
Coal	\$24.5	\$14.5	\$10.2	\$7.7	\$8.6	\$9.6	\$8.5
Petroleum	2,455.4	2,139.2	1,637.9	1,503.5	1,519.8	1,816.3	1,769.0
Distillate	2,153.2	1,750.9	1,332.1	1,191.6	1,217.6	1,490.1	1,424.2
Kerosene	127.5	220.4	80.9	67.7	57.9	81.0	96.5
LPG	174.7	167.9	224.9	244.2	244.2	245.3	248.3
Natural Gas	3,896.7	2,972.5	3,319.5	3,503.9	3,191.9	3,551.0	3,868.2
Electricity	5,388.0	5,077.2	5,711.8	5,768.3	5,750.4	5,745.0	5,668.6
Total	\$11,764.7	\$10,203.5	\$10,679.5	\$10,783.3	\$10,470.6	\$11,121.9	\$11,314.4
COMMERCIAL							
Coal	\$14.9	\$9.2	\$4.7	\$4.1	\$4.7	\$5.9	\$5.4
Petroleum	1,412.6	965.4	901.1	843.7	812.9	953.4	781.9
Distillate	764.9	527.3	506.6	464.7	465.6	565.6	493.1
Residual	543.5	394.6	345.0	335.1	299.7	326.7	232.2
Kerosene	81.9	7.2	21.0	18.2	21.9	28.1	29.0
LPG	22.2	36.2	28.5	25.7	25.8	33.1	27.6
Natural Gas	1,508.1	1,298.5	1,400.5	1,592.4	1,470.2	1,612.2	1,505.4
Electricity	7,703.4	6,680.6	7,059.9	7,093.2	7,501.0	7,788.9	7,874.4
Total	\$10,639.0	\$8,953.7	\$9,366.2	\$9,533.4	\$9,788.8	\$10,360.4	\$10,167.1
INDUSTRIAL							
Coal	\$269.2	\$179.1	\$119.6	\$115.1	\$105.8	\$97.3	\$107.1
Petroleum	583.5	297.9	252.4	205.5	171.9	230.6	185.7
Distillate	306.4	119.5	130.1	96.5	86.9	106.1	96.3
Residual	178.5	106.9	77.0	66.0	44.0	62.7	45.0
Kerosene	46.0	30.8	8.4	11.8	12.6	25.5	12.9
LPG	52.6	40.8	36.9	31.1	28.4	36.4	31.6
Natural Gas	920.2	531.6	690.5	749.1	664.1	694.0	612.8
Electricity	2,598.7	1,928.7	2,186.5	2,118.8	1,521.0	1,478.9	1,329.4
Total	\$4,371.6	\$2,937.3	\$3,249.0	\$3,188.5	\$2,462.8	\$2,500.8	\$2,234.9
TRANSPORTATION							
Petroleum	\$14,596.9	\$10,678.7	\$10,326.9	\$9,860.0	\$9,997.1	\$10,381.7	\$10,168.3
Distillate	840.7	1,091.7	1,331.2	1,364.9	1,275.7	1,373.5	1,369.1
Residual	86.4	54.2	51.0	50.7	40.8	130.8	90.4
Motor Gasoline	11,601.2	8,302.2	7,921.5	7,507.1	7,748.6	7,788.3	7,678.5
Aviation	2,061.6	1,224.6	1,017.9	928.2	927.4	1,083.6	1,025.5
LPG	7.0	6.0	5.3	9.2	4.4	5.5	4.9
Electricity	248.3	218.9	215.4	220.1	201.4	190.1	190.8
Total	\$14,845.2	\$10,897.6	\$10,542.3	\$10,080.1	\$10,198.5	\$10,571.8	\$10,359.2
TOTAL							
Coal	\$308.6	\$202.9	\$134.5	\$126.9	\$119.1	\$112.7	\$121.1
Petroleum	19,048.4	14,081.2	13,118.3	12,412.7	12,501.7	13,382.0	12,904.9
Distillate	4,065.2	3,489.4	3,300.0	3,117.7	3,045.8	3,535.2	3,382.7
Residual	808.4	555.7	473.0	451.9	384.5	520.2	367.6
Motor Gasoline	11,601.2	8,302.2	7,921.5	7,507.1	7,748.6	7,788.3	7,678.5
Kerosene	255.4	258.4	110.3	97.7	92.4	134.5	138.4
Aviation	2,061.6	1,224.6	1,017.9	928.2	927.4	1,083.6	1,025.5
LPG	256.6	251.0	295.6	310.2	302.9	320.2	312.4
Natural Gas	6,325.1	4,802.6	5,410.5	5,845.3	5,326.2	5,857.2	5,986.4
Electricity	15,938.4	13,905.4	15,173.6	15,200.3	14,973.7	15,203.0	15,063.2
Total	\$41,620.5	\$32,992.1	\$33,836.9	\$33,585.3	\$32,920.7	\$34,554.9	\$34,075.6

Section 5

NEW YORK STATE SOURCES OF ENERGY SUPPLIES

While New York State is the fourth largest energy consumer of all states, only a small percentage of its total energy requirements are met from in-State resources. Hydroelectric power is produced at various locations throughout New York. Crude oil and natural gas production, are primarily located in the western region of the State. Biofuels consumption figures, which include primarily wood, wastes, and ethanol, are presented for the 1990-97 period.

Households, businesses, industries, and electric utilities in New York State rely largely on fuels that originate elsewhere in the United States or abroad. In developing New York State sources of petroleum products, State-level data on shipments of domestic crude, refined oil, and final destination of imported oil are unavailable. Consequently, New York State oil dependence is estimated by applying Petroleum Administration for Defense Districts 1 (PADD I), which includes all East Coast states, reliance estimates to the New York State petroleum-product mix.

Section 5

Key Findings from 1997 New York State Data

- ✓ Twelve percent of total primary energy requirements were met from in-State resources. This share was unchanged from 1996, but was one-third larger than the comparable 9% level in 1993.
- ✓ Hydro-electricity production and biofuels consumption figures accounts for 63% and 33% of New York's primary energy production, respectively.
- ✓ Indigenous crude oil and natural gas production amounts to 0.1% and 1.3% of the State's use of these fuels, respectively.
- ✓ Production of hydro-electricity and the use of biofuels increased by 5% and 3%, respectively, from 1996; natural gas and crude oil production both declined by 11%.
- ✓ New York's reliance on imported oil as a proportion of total petroleum consumption increased from 79% in 1996 to 80%, which was approximately one-third greater than the 56% import level of 1983.
- ✓ The Organization of Petroleum Exporting Countries' (OPEC) share increased from 41% in 1996 to 42%, compared with 30% in 1983.

New York State Primary Energy Production by Fuel Type, 1983-1997

Figure 5-1

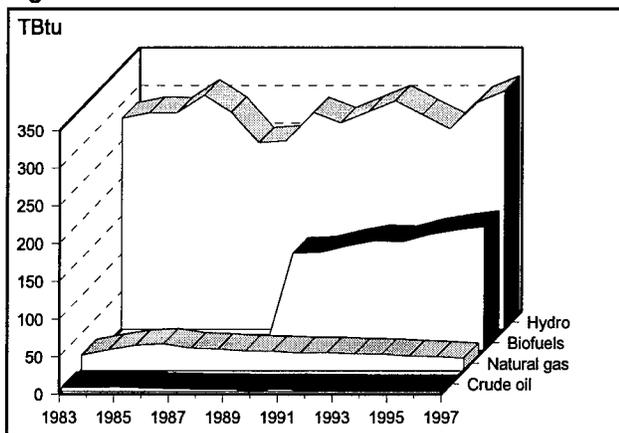


Table 5-1a (in physical units)

Year	Hydro Electricity GWh	Natural Gas MMcf	Crude Oil Mbbbl	Biofuels ¹
1983	26,162	20,455	902	na
1984	26,586	27,414	952	na
1985	26,956	33,061	1,071	na
1986	29,480	34,796	853	na
1987	27,546	29,549	710	na
1988	23,994	28,125	567	na
1989	23,918	25,673	496	na
1990	27,555	25,112	417	na
1991	26,258	23,438	426	na
1992	27,281	23,582	406	na
1993	28,479	22,145	341	na
1994	26,800	21,543	299	na
1995	24,990	19,291	304	na
1996	28,055	18,238	309	na
1997	29,772	16,193	276	na

Table 5-1b (in trillion Btu)

Year	Hydro Electricity TBtu	Natural Gas TBtu	Crude Oil TBtu	Biofuels ¹ TBtu	Energy Production TBtu
1983	280.4	21.1	5.2	0.0	306.7
1984	287.6	28.3	5.5	0.0	321.4
1985	287.3	34.1	6.2	0.0	327.6
1986	311.3	35.8	4.9	0.0	352.0
1987	288.2	30.5	4.1	0.0	322.8
1988	247.6	28.9	3.3	0.0	279.8
1989	250.0	26.5	2.9	0.0	279.3
1990	288.0	25.9	2.4	128.6	444.9
1991	274.3	24.1	2.5	129.9	430.9
1992	288.7	24.3	2.4	138.7	454.0
1993	303.6	22.7	2.0	145.4	473.7
1994	285.0	22.1	1.7	143.9	452.7
1995	266.7	19.8	1.8	153.6	441.9
1996	301.4	18.7	1.8	159.4	481.3
1997	316.6	16.6	1.6	164.0	498.8

¹ Includes primarily wood, wastes, and ethanol. Data prior to 1990 are not available.

New York State Sources of Petroleum Products, 1983-1997

Figure 5-2

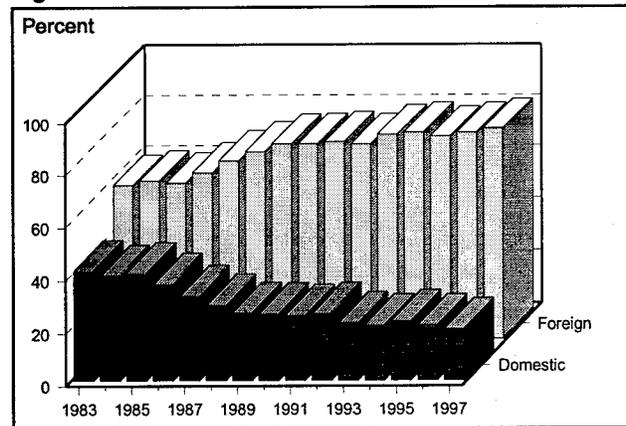


Table 5-2 - New York State

Year	Total Domestic %	Total Foreign %	OPEC %	Non-OPEC %
1983	41.6	58.4	29.8	28.6
1984	39.9	60.1	31.0	29.1
1985	40.7	59.3	27.8	31.5
1986	36.8	63.2	32.5	30.7
1987	32.1	67.9	34.3	33.6
1988	28.7	71.3	37.4	33.9
1989	25.7	74.3	44.3	30.0
1990	25.5	74.5	40.3	34.2
1991	24.8	75.2	47.0	28.2
1992	25.6	74.4	45.3	29.1
1993	22.0	78.0	46.3	31.7
1994	21.1	78.9	45.0	33.9
1995	22.7	77.3	43.8	33.5
1996	21.2	78.8	40.9	37.9
1997	19.7	80.3	41.7	38.6

Section 6

APPENDICES

Appendix A	Household Consumption and Expenditures	A-1
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Appendix A

New York State

Household Consumption and Expenditures by End-Use, 1993

Table A-1 Main Space Heating

	Households (MM)	Average per Household	
		Consumption	Expenditure
Electricity	1.1	4,360 kWh	\$516
Natural Gas	3.6	78.5 Mcf	\$647
Fuel Oil	2.5	579 gal.	\$517
Wood	0.2	9 cords	Q

Table A-2 Main Water Heating

	Households (MM)	Average per Household	
		Consumption	Expenditure
Electricity	1.1	2,822 kWh	\$328
Natural Gas	3.8	25.4 Mcf	\$220
Fuel Oil	1.8	200 gal.	\$155
LPG	Q	222 gal.	\$282

Table A-3 Appliances

	Households (MM)	Average per Household	
		Consumption	Expenditure
Electricity	6.8	3,542 kWh	\$493
Natural Gas	4.5	7.1 Mcf	\$83
LPG	0.3	52 gal.	\$91

Table A-4 Refrigerators

	Households (MM)	Average per Household	
		Consumption	Expenditure
Electricity	6.8	1,022 kWh	\$149

Table A-5 Room Air-Conditioning

	Households (MM)	Average per Household	
		Consumption	Expenditure
Electricity	2.8	518 kWh	\$81

Table A-6 Central Air-Conditioning

	Households (MM)	Average per Household	
		Consumption	Expenditure
Electricity	1.1	1,732 kWh	\$248

Q = Data withheld.

Source: US DOE/EIA, "1993 Residential Energy Consumption Survey."

Appendix B

Estimated Annual Gasoline Consumption by County, 1983-1997

Table B-1 (in thousand gallons)

County	1983	1988	1993	1994	1995	1996	1997
New York State	5,772,674	6,176,006	5,684,656	5,543,476	5,666,246	5,625,772	5,627,351
New York City	1,077,758	1,285,331	1,066,257	1,078,415	1,104,719	1,067,582	1,072,005
Rest of State	4,694,916	4,890,675	4,618,399	4,465,061	4,561,527	4,558,190	4,555,346
Albany	135,802	135,715	147,953	148,652	151,496	153,965	151,215
Allegany	20,493	25,499	19,264	20,926	20,829	21,978	22,634
Broome	94,960	106,536	88,391	96,411	106,822	105,179	106,428
Cattaraugus	43,151	37,604	27,932	27,596	29,629	31,781	30,932
Cayuga	25,668	36,096	41,681	37,513	45,766	48,124	49,662
Chautauqua	66,386	62,258	47,098	45,766	48,124	47,856	49,662
Chemung	37,955	41,920	36,688	34,898	35,433	34,953	32,938
Chenango	14,432	21,056	24,698	23,628	22,909	23,040	23,855
Clinton	29,729	43,938	47,738	43,145	40,409	40,925	39,672
Columbia	28,286	34,356	32,425	33,926	35,553	36,916	36,078
Cortland	21,936	28,170	33,351	30,462	27,441	30,108	29,640
Delaware	28,430	25,939	17,643	17,290	17,873	17,720	17,804
Dutchess	117,474	63,386	108,544	99,578	103,968	103,397	104,202
Erie	384,749	489,276	403,184	383,443	388,960	398,705	389,595
Essex	17,751	18,991	18,076	18,014	16,609	18,681	18,378
Franklin	14,287	20,795	16,845	16,156	16,054	18,769	19,210
Fulton	20,204	22,693	21,071	20,259	21,099	21,687	21,446
Genesee	34,203	42,157	37,804	35,773	44,469	46,963	46,394
Greene	19,771	24,228	25,619	26,914	27,393	27,686	28,978
Hamilton	1,587	2,999	2,783	3,074	3,215	3,336	3,093
Herkimer	26,699	21,583	25,235	24,181	30,516	29,977	30,746
Jefferson	48,490	53,196	48,868	48,317	48,636	53,331	52,054
Lewis	10,391	10,071	10,937	10,748	11,513	11,986	12,438
Livingston	32,616	38,102	30,436	30,406	31,575	37,990	37,478
Madison	26,410	28,712	24,411	23,313	23,824	22,102	23,660
Monroe	309,993	322,283	304,516	307,817	309,842	312,186	306,444
Montgomery	26,121	27,927	33,610	33,054	32,495	34,260	34,689
Nassau	677,856	678,779	592,823	558,582	568,006	550,216	555,507
Niagara	70,715	114,548	94,350	77,418	71,566	72,475	75,509
Oneida	137,823	105,114	111,348	111,470	108,442	106,005	105,837
Onondaga	208,538	217,045	189,889	192,762	188,941	196,103	202,664
Ontario	42,285	59,231	55,123	50,971	53,916	57,215	58,163
Orange	135,369	123,774	137,523	137,061	135,332	134,308	134,804
Orleans	9,092	19,275	14,504	15,321	16,304	16,584	16,345
Oswego	50,655	62,995	57,984	56,543	57,796	57,383	45,505
Otsego	16,308	22,481	28,551	27,338	27,592	27,925	28,363
Putnam	34,347	28,561	38,034	34,249	36,185	37,031	39,095
Rensselaer	60,180	57,222	59,487	58,862	60,737	63,112	61,935
Rockland	81,106	51,900	65,374	60,270	57,282	54,826	56,274
St. Lawrence	30,451	44,988	40,203	39,369	39,902	42,134	40,578
Saratoga	80,673	75,977	80,908	79,897	82,282	85,187	85,752
Schenectady	83,704	69,171	61,010	58,072	61,303	59,622	69,618
Schoharie	12,700	11,521	12,105	12,517	12,832	13,077	12,741
Schuyler	6,206	8,189	6,820	6,262	6,604	7,275	7,344
Seneca	18,328	18,200	16,722	15,478	14,832	14,183	14,081
Steuben	40,409	57,834	48,099	48,363	49,003	52,496	47,380
Suffolk	554,465	665,647	675,803	648,614	674,864	634,638	628,699
Sullivan	35,213	46,070	34,551	36,707	35,809	35,067	35,197
Tioga	17,714	24,774	21,817	20,624	21,200	20,448	19,861
Tompkins	32,760	38,931	39,566	36,818	36,874	36,087	37,548
Ulster	74,035	78,619	64,356	72,638	78,646	79,534	77,801
Warren	33,770	40,940	36,995	36,347	35,584	37,601	37,996
Washington	17,751	24,443	20,779	19,277	19,101	19,396	21,072
Wayne	31,894	49,119	45,127	41,920	43,272	42,893	43,334
Westchester	437,280	260,965	268,200	242,298	257,127	253,515	260,562
Wyoming	17,318	18,152	15,766	19,909	18,050	18,863	18,786
Yates	8,515	30,724	7,781	7,845	8,006	9,177	8,601

Appendix C

Occupied Housing Units by Type of Space Heating Fuel by County, 1990

Table C-1 (in housing units)

County	Utility Gas	Bottled Tank or LP Gas	Electricity	Fuel Oil, Kerosene, etc.	Coal or Coke	Wood	Solar Energy	Other	No Fuel Used
New York State	3,033,958	159,380	567,513	2,629,898	13,265	132,404	1,926	67,315	33,663
New York City	1,232,390	62,931	179,752	1,259,142	3,877	348	943	52,501	27,517
Bronx	143,267	9,358	33,948	222,362	686	21	143	8,841	5,486
Kings	408,691	25,414	29,875	343,736	1,026	57	418	10,646	8,336
New York	229,988	11,454	80,876	356,368	1,413	102	284	26,655	9,282
Queens	354,347	15,211	31,426	308,493	636	76	98	5,908	3,954
Richmond	96,097	1,494	3,627	28,183	116	92	-	451	459
Rest of State	1,801,568	96,449	387,761	1,370,756	9,388	132,056	983	14,814	6,146
Albany	64,857	1,702	21,785	25,210	30	1,628	57	383	172
Allegany	9,911	714	1,357	1,866	50	3,044	-	49	20
Broome	52,208	2,419	8,847	14,421	318	3,234	13	293	90
Cattaraugus	17,361	1,440	3,116	4,005	60	4,367	-	101	6
Cayuga	13,670	1,714	3,255	8,039	100	2,153	17	120	7
Chautauqua	40,310	1,705	4,595	3,003	59	3,700	4	302	18
Chemung	26,890	684	2,558	2,787	90	2,082	2	115	67
Chenango	2,554	1,209	2,837	9,380	118	2,976	9	38	20
Clinton	117	877	11,299	12,818	55	3,372	27	346	212
Columbia	2,677	500	4,569	14,142	78	1,619	15	42	54
Cortland	8,562	670	2,098	3,915	60	1,851	-	60	31
Delaware	1,888	1,321	1,961	9,298	133	2,981	11	45	8
Dutchess	17,405	1,769	10,474	56,900	699	1,843	69	235	173
Erie	338,150	3,495	18,267	11,539	85	3,905	21	1,099	433
Essex	19	735	2,534	8,256	78	2,060	3	21	15
Franklin	43	719	3,137	9,740	51	2,512	3	37	42
Fulton	8,404	709	1,944	7,886	15	1,907	28	29	73
Genesee	12,344	965	2,570	4,513	77	983	28	131	3
Greene	661	714	2,327	11,407	56	1,397	-	17	17
Hamilton	7	267	231	1,169	4	475	-	-	-
Herkimer	10,429	816	2,552	8,994	43	2,029	3	42	28
Jefferson	14,241	1,667	7,248	10,619	124	3,432	17	403	100
Lewis	54	406	1,023	4,953	47	2,720	3	41	6
Livingston	8,194	1,590	3,669	5,668	77	1,894	8	69	28
Madison	7,983	1,022	3,521	8,582	79	2,250	4	84	42
Monroe	212,154	3,318	31,474	19,553	99	2,528	10	2,042	766
Montgomery	9,242	574	1,996	6,992	68	1,249	8	34	22
Nassau	126,029	4,349	17,504	280,897	757	375	59	1,269	276
Niagara	58,246	1,712	8,194	14,564	161	1,592	4	254	82
Oneida	51,241	2,442	10,440	23,861	115	3,804	24	474	161
Onondaga	127,963	2,501	28,577	13,154	197	3,351	6	1,566	583
Ontario	17,362	2,137	5,719	6,922	216	2,281	10	225	57
Orange	44,127	3,419	7,019	44,007	388	1,936	38	364	208
Orleans	5,076	816	2,316	4,964	82	1,128	11	24	11
Oswego	16,300	3,550	5,832	11,449	69	4,985	-	149	100
Otsego	3,003	1,482	2,353	11,678	132	2,935	10	74	58
Putnam	149	616	7,089	19,428	126	642	-	36	8
Rensselaer	21,936	1,609	9,472	21,479	50	2,892	42	60	72
Rockland	75,158	922	4,044	4,021	64	193	-	262	210
St. Lawrence	10,549	1,580	4,293	15,370	26	5,885	27	158	76
Saratoga	22,727	2,913	16,329	20,334	160	3,551	115	207	89
Schenectady	38,852	754	6,667	11,692	51	877	22	166	100
Schoharie	23	661	2,222	6,547	51	1,697	17	4	35
Schuyler	1,527	943	762	2,192	160	1,214	-	15	5
Seneca	5,012	1,379	1,687	3,126	276	724	8	59	14
Steuben	19,990	3,210	3,519	5,884	179	4,455	7	38	17
Suffolk	97,024	7,010	27,731	288,585	1,272	1,715	59	830	493
Sullivan	159	2,169	3,847	16,298	176	1,757	-	86	84
Tioga	4,321	986	2,516	8,358	242	2,357	-	47	11
Tompkins	15,750	1,646	6,770	5,822	394	2,789	22	90	55
Ulster	8,750	3,821	6,157	37,991	462	3,372	60	76	118
Warren	6,743	815	4,632	7,874	78	2,354	16	24	23
Washington	3,855	823	2,934	9,614	152	2,826	17	27	8
Wayne	14,676	1,968	4,519	7,989	96	2,644	-	69	16
Westchester	115,309	4,903	20,185	176,105	332	585	49	1,853	709
Wyoming	7,133	651	1,673	2,462	37	1,843	-	84	14
Yates	2,243	941	1,515	2,434	134	1,106	-	46	-

Appendix D

New York State Degree-Days, 1983-1997

Figure D-1

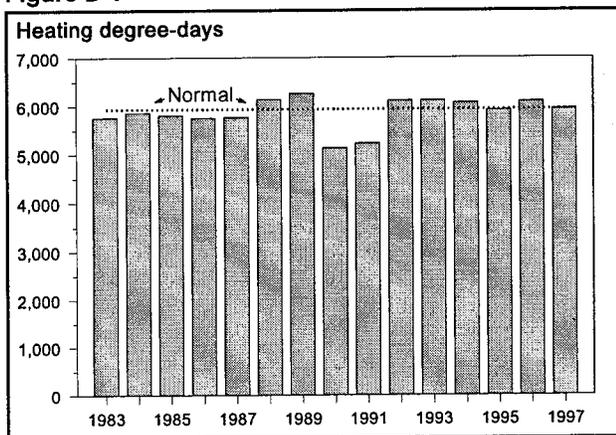


Table D-1 (in heating degree-days)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1983	1,097	937	782	517	281	21	1	8	54	350	625	1,090	5,763
1984	1,264	819	1,045	528	286	20	8	7	131	266	657	828	5,859
1985	1,279	979	780	434	172	70	7	16	62	328	580	1,101	5,808
1986	1,116	1,052	789	444	145	44	5	23	108	368	722	939	5,755
1987	1,153	1,056	775	444	189	16	1	20	92	463	634	922	5,765
1988	1,229	995	843	531	198	43	1	5	113	507	621	1,048	6,134
1989	1,018	1,024	880	571	221	23	3	16	84	342	699	1,377	6,258
1990	895	864	779	479	281	29	4	12	97	260	590	845	5,135
1991	1,115	856	764	404	100	14	3	7	104	307	627	924	5,225
1992	1,079	942	940	581	246	56	18	26	97	464	685	978	6,112
1993	1,037	1,143	966	501	185	36	2	8	106	427	675	1,027	6,113
1994	1,388	1,135	915	448	269	15	1	21	101	375	532	869	6,069
1995	969	1,078	760	564	248	19	1	5	111	259	761	1,136	5,911
1996	1,196	1,008	963	535	258	21	9	9	75	377	786	858	6,095
1997	1,157	846	862	552	316	27	7	19	100	379	728	948	5,941
Normal	1,158	1,015	870	515	220	32	4	13	88	348	651	1,018	5,932

Table D-2 (in cooling degree-days)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1983	0	0	0	0	6	139	302	246	105	4	0	0	802
1984	0	0	0	0	10	156	186	252	35	12	0	0	651
1985	0	0	0	0	29	59	227	201	87	6	0	0	609
1986	0	0	0	0	40	99	226	158	47	4	0	0	574
1987	0	0	0	0	21	143	283	168	57	0	0	0	672
1988	0	0	0	0	19	99	303	281	43	0	0	0	745
1989	0	0	0	0	15	132	220	195	64	4	0	0	630
1990	0	0	0	15	7	110	240	217	54	16	0	0	659
1991	0	0	0	0	71	164	260	258	50	13	0	0	816
1992	0	0	0	0	11	69	163	143	51	0	0	0	437
1993	0	0	0	0	23	113	295	231	51	0	0	0	713
1994	0	0	0	0	7	162	317	153	50	0	0	0	689
1995	0	0	0	0	9	127	301	262	49	13	0	0	761
1996	0	0	0	0	8	128	179	203	68	0	0	0	586
1997	0	0	0	0	3	108	227	177	54	0	0	0	569
Normal	0	0	0	0	19	111	244	209	67	5	0	0	655

Note: Normal is a 30-year average value for the period 1961-1990.

Appendix E

Abbreviations and Conversion Factors

ABBREVIATIONS

M	thousand or 10 ³
MM	million or 10 ⁶
B	billion or 10 ⁹
T	trillion or 10 ¹²
bbbl	barrel
Btu	British thermal unit
cf	cubic foot
CO ₂	carbon dioxide
gal	gallon
GWh	gigawatt-hour or million kWh
kWh	kilowatt-hour
LPG	liquefied petroleum gas
OPEC	Organization of Petroleum Exporting Countries
N/A	Not applicable
n.a.	Not available

CONVERSION FACTORS

Approximate heat content of various fuels (1998)

Anthracite coal			
Non-utility	24,638,000	Btu/short ton	
Bituminous coal			
Electric utility	26,208,000	Btu/short ton	
Residential/commercial	23,011,000	Btu/short ton	
Industrial	22,105,000	Btu/short ton	
Metallurgical	26,800,000	Btu/short ton	
Natural gas			
Electric utility	1,025	Btu/cf	
Non-utility	1,027	Btu/cf	
Wood	20,000,000	Btu/cord	
Hydro	10,634	Btu/kWh	
Nuclear	10,634	Btu/kWh	
Electricity	3,412	Btu/kWh	
Petroleum products			
Distillate fuel oil	5,825,000	Btu/barrel	
Ethanol	3,208,800	Btu/barrel	
Jet fuel, kerosene-type	5,670,000	Btu/barrel	
Kerosene	5,670,000	Btu/barrel	
Motor gasoline	5,253,000	Btu/barrel	
LPG (propane)	3,616,000	Btu/barrel	
Residual fuel oil	6,287,000	Btu/barrel	

Appendix F

Glossary

GLOSSARY

Anthracite - Often referred to as "hard coal," is hard, black, lustrous coal that does not burn easily. It has a heating value of 8,500-15,000 Btu per pound.

Barrel (bbl) - Liquid volume measure equal to 42 gallons, commonly used in expressing quantities of petroleum or petroleum products.

Biofuels - Nonfossil biomass energy sources that are essentially unprocessed; they are burned or gasified, to produce thermal energy or electricity. Examples are fuelwood, waste wood, garbage, and crop waste. Different mixes of biofuels are used by each consuming sector. The residential sector burns wood for space heating. The transportation sector uses ethanol as an additive to motor gasoline. Some electric generation uses wood or municipal waste as co-firing or primary fuels.

Bituminous coal - Often referred to as "soft coal," is more volatile than anthracite, and has a higher heat content than lignite. It has a heating value of 11,450-13,010 Btu per pound and is the most used coal.

British thermal unit (Btu) - The quantity of heat necessary to raise the temperature of one pound of water one degree Fahrenheit. Because different energy types use different standards of measurement, they often are converted into Btu to facilitate comparison. One Btu is equal to 252 calories of heat energy.

Commercial sector - The sector of the economy that engages primarily in providing services and goods. Apartment and office buildings, governmental units, schools, institutions, churches, restaurants, and retail stores are included.

Crude oil - A mixture of hydrocarbons that exists in the liquid phase in natural underground reservoirs. Refined crude oil produces a number of different fuels, including residual fuel, motor gasoline, and distillate fuels.

Degree-days, cooling - This statistic is a measure of temperature as it affects energy demand for space cooling. It is similar to heating degree-days, although the relationship is not as precise. If the average of a day's high and low temperature extremes is below 65°F, then the cooling degree-days for that day are zero; otherwise, they are equal to the difference between the average and 65°F.

Degree-days, heating - This statistic is a measure of temperature as it affects energy demand for space heating. It is based on the fact that most buildings require no heat to maintain an inside temperature of at least 70°F when the daily mean is 65°F or higher. If the average of a day's high and low temperature extremes is above 65°F, the heating degree-days for that day are taken to be zero; otherwise, they are equal to the difference between the average and 65°F. Note that a larger number of heating degree-days implies cooler temperatures.

Distillate fuel - Usually means "home heating oil." Its products are actually No. 1 and 2 heating oils, diesel fuels, and No. 4 fuel oil. These products are used primarily for space heating, on- and off-highway diesel engine fuel (including railroad engine fuel), and electric power generation.

Electric utility - Includes both publicly and privately owned utilities in New York State.

End-use - Any ultimate consumption of any type of fossil fuel (petroleum, coal, natural gas) or electricity, whether generated by fossil fuel or other energy sources. End-users are often classified by economic sector, such as residential, commercial, industrial, and transportation.

Feedstock - The raw material furnished to a machine or process. Fossil fuels sometimes are used as feedstocks for their chemical properties, rather than their values as fuel (e.g., oil used to produce plastics and synthetic fabrics).

Gallon (gal) - A unit of volume, the U.S. gallon contains 3.785 liters and is .083 times the imperial gallon. One U.S. gallon of water weighs 8.3 pounds.

Gigawatt (GW) - 1,000,000 kilowatts, or 1 billion watts.

Gigawatt-hour (GWh) - One billion watthours.

Hydro - A prefix used to identify a type of generating station, power, or energy output in which the prime mover is water.

Industrial sector - That section of the economy involved in either mining, construction, or manufacturing.

Jet fuel - Includes both naphtha- and kerosene-type jet fuels that meet standards for use in aircraft turbine engines. Some jet fuel is used for generating electricity in gas turbines.

Kerosene - A petroleum middle distillate with burning properties suitable for use as an illuminant when burned in wick lamps. Kerosene also is used in space heaters, cooking stoves, and water heaters and to reduce viscosity of distillate fuels during winter.

Kilowatt (kW) - One thousand watts.

Kilowatt-hour (kWh) - The amount of electrical energy involved with a one-kilowatt demand over a period of one hour. One kilowatthour is equivalent to 3,412 Btu of heat energy.

Liquefied petroleum gases (LPG) - Propane, propylene, butane, and propane-butane mixtures produced at a refinery or natural gas-processing plant, including plants that fractionate raw natural gas-processing plant liquids. These are derived by refining and processing natural gas, crude oil, or unfinished oil.

Megawatt (MW) - 1,000 kilowatts or 1 million watts.

Megawatt-hour (MWh) - One million watthours.

Motor gasoline - A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark-ignition engines. Included are leaded and unleaded and refinery products.

Natural gas - A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in the gaseous phase ("gas well" gas) or in solution with crude oil ("oil well" gas) in natural underground reservoirs at reservoir conditions. It comes from the ground with or without accompanying crude oil and is generally much higher in heat content than manufactured gas. It is used by the petrochemical industry as a raw material for manufacturing fertilizer and cellophane.

Naphtha - A generic term applied to a petroleum fraction with an approximate boiling range between 122 and 400° F.

Nuclear - The energy liberated by fission, fusion, or radioactive decay.

Organization of Petroleum Exporting Countries (OPEC) - OPEC includes Algeria, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Petroleum - A generic term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oil, and refined nonhydrocarbon compounds blended into finished petroleum products.

Propane - A colorless, highly volatile hydrocarbon that is readily recovered as a liquefied gas at natural gas-processing plants and refineries. It is used primarily for residential and commercial heating and cooling, and also as a fuel for transportation and industrial uses, including petrochemical feedstocks. Propane is the first product refined from crude petroleum.

Refined petroleum - Products made from processing crude oil, unfinished oils, natural gas liquids, and other miscellaneous hydrocarbon compounds. Includes aviation gasoline, motor gasoline, naphtha- and kerosene-type jet fuels, kerosene, distillate fuel oil, residual fuel oil, ethane, liquefied petroleum gases, petrochemical feedstocks, special naphthas, lubricants, paraffin wax, petroleum coke, asphalt, road oil, till gas, and miscellaneous products.

Residential sector - Includes private households. Specifically included are the following end-uses: space heating and cooling, water heating, cooking, lighting, clothes drying, and refrigeration.

Residual fuel - The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are products known as Nos. 5 and 6 fuel oil, heavy diesel oil, Navy Special Fuel Oil, Bunker C oil, and acid sludge and pitch used as refinery fuels. Residual fuel oil is used for production of electric power, space heating, vessel bunkering, and various industrial purposes.

Therm - 100,000 Btu.

Trillion (T) - 1,000,000,000,000, or 10^{12} .

Ton - In the United States, Canada, and Union of South Africa, a unit of weight equal to 2,000 pounds. The American ton is often called the short ton. The metric long ton equals 2,204.62 pounds.

Watt (W) - The unit of measure for electric power or rate of doing work. The rate of energy transfer equivalent to one ampere flowing under a pressure of one volt at unity power factor. It is analogous to horsepower or foot-pounds per minute of mechanical power. One horsepower is equivalent to approximately 746 watts.

Watt-hour (Wh) - An electrical energy unit of measure equal to one watt of power supplied to, or taken from, an electrical circuit operating continuously for one hour.

Appendix G

Data Sources

ANTHRACITE, BITUMINOUS, AND METALLURGICAL COAL

- Coal Distribution, U.S. Dept. of Energy, Energy Information Administration (U.S. DOE/EIA)
- Quarterly Coal Report (U.S. DOE/EIA)
- State Energy Price and Expenditure Report (U.S. DOE/EIA)

NATURAL GAS

- Natural Gas Annual (U.S.DOE/EIA)
- New York Gas Report, Long Range Plan (New York Gas Group)
- Central Hudson Gas & Electric Corp., Annual Reports to the State of New York Public Service Commission (PSC Reports)
- Consolidated Edison Co. of New York, Inc. (PSC Reports)
- Long Island Lighting Company (PSC Reports)
- New York State Electric & Gas Corp. (PSC Reports)
- Niagara Mohawk Power Corp. (PSC Reports)
- Orange and Rockland Utilities, Inc. (PSC Reports)
- Rochester Gas and Electric Corp. (PSC Reports)
- National Fuel Gas Corporation (PSC Reports)
- Brooklyn Union Gas Company (PSC Reports)
- Corning Natural Gas Corp. (PSC Reports)
- St. Lawrence Gas Company, Inc. (PSC Reports)
- Financial Statistics of the Major Privately Owned Utilities in New York State (New York State Dept. of Public Service)
- State Energy Price and Expenditure Report (U.S.DOE/EIA)

CRUDE PETROLEUM AND PETROLEUM PRODUCTS

- Sales of Fuel Oil and Kerosene (U.S.DOE/EIA)
- Petroleum Supply Annual (U.S.DOE/EIA)
- Petroleum Marketing Monthly (U.S.DOE/EIA)
- Motor Fuel Monthly Gallonage & Revenue Report (New York State Dept. of Taxation and Finance)
- Monthly Motor Gasoline Reported by States (U.S. Dept. of Transportation, Federal Highway Administration)
- State Energy Price and Expenditure Report (U.S.DOE/EIA)

ELECTRICITY

- Report of the Member Systems of the New York Power Pool, Long-Range Plan (New York Power Pool)
- Central Hudson Gas & Electric Corp. (PSC Reports)
- Consolidated Edison Co. of New York, Inc. (PSC Reports)
- Long Island Lighting Company (PSC Reports)
- New York State Electric & Gas Corp. (PSC Reports)
- Niagara Mohawk Power Corp. (PSC Reports)
- Orange and Rockland Utilities, Inc. (PSC Reports)
- Rochester Gas and Electric Corp. (PSC Reports)
- Annual Reports of the New York Power Authority to the Federal Energy Regulatory Commission
- Power System Statements made by the New York Power Authority to the Energy Information Administration, U.S. Dept. of Energy
- Electric Power Annual (U.S.DOE/EIA)
- Electric Power Quarterly (U.S.DOE/EIA)
- Electric Power Monthly (U.S.DOE/EIA)
- Cost and Quality of Fuels for Electric Utility Plants (U.S.DOE/EIA)
- Statistics of Privately Owned Electric Utilities in the United States (U.S.DOE/EIA)
- Statistics of Publicly Owned Electric Utilities in the United States (U.S.DOE/EIA)
- State Energy Price and Expenditure Report (U.S.DOE/EIA)

UNITED STATES ENERGY DATA

- Annual Energy Review (U.S.DOE/EIA)
- Monthly Energy Review (U.S.DOE/EIA)
- State Energy Data Review (U.S.DOE/EIA)

GENERAL

- Climatological Data (National Oceanic and Atmospheric Administration)
- Economic Indicators (Joint Economic Committee)
- Production Data (NYS Dept. of Environmental Conservation, Bureau of Mineral Resources)
- Census Data (U.S. Bureau of the Census)