

Patterns and Trends: New York State Energy Profiles, 2003–2017

Final Report | January 2021

NYSERDA's Promise to New Yorkers:

NYSERDA provides resources, expertise, and objective information so New Yorkers can make confident, informed energy decisions.

Our Vision:

New York is a global climate leader building a healthier future with thriving communities; homes and businesses powered by clean energy; and economic opportunities accessible to all New Yorkers.

Our Mission:

Advance clean energy innovation and investments to combat climate change, improving the health, resiliency, and prosperity of New Yorkers and delivering benefits equitably to all.

Patterns and Trends: New York State Energy Profiles, 2003–2017

Prepared by:

New York State Energy Research and Development Authority

Albany, NY

January 2021

Message from the President

Letter from Acting President and CEO—Doreen M. Harris

Dear Partners and Friends,

I am pleased to present NYSERDA's Patterns and Trends: New York Energy Profiles, 2003–2017, providing a 15-year overview of New York State energy-related data. This report analyzes historical trends including energy production, sources of energy supply, fuel prices, and total energy expenditures. It provides us with a deeper understanding of how we have consumed energy over time and helps inform New York State's trajectory moving forward to meet Governor Cuomo's nation-leading climate and clean energy goals as outlined under the Climate Leadership and Community Protection Act (Climate Act).

Important highlights from the report include:

- As of 2017, energy consumption was almost 12 percent lower than at its peak in 2004. New York's Gross State Product (adjusted for inflation) increased 1.9 percent from 2016 to 2017 while energy consumption decreased 1.5 percent over the same time period.
- Energy production from solar resources increased more than 30 percent between 2016 and 2017.
- Compared to other states in 2017, New York State used the lowest amount of energy per person and had the second lowest energy consumption per unit of gross state product in the U.S.

We hope you find the information enclosed is useful in helping build a greener, more sustainable future for all New Yorkers and welcome any feedback on how his report may better meet your needs as a valued stakeholder.

Best,

Doreen M. Harris

Acting President and CEO, NYSERDA

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Patterns and Trends: New York State Energy Profiles, 2003–2017 presents a 15-year, historical overview of energy statistics for the State. It is an objective and reliable source of energy-related information for use by the public, businesses, and government analysts. This report was prepared using the most recent comprehensive data available through the 2017 calendar year. Historical data prior to 2003 are available by clicking on the selected table. The timing of the report’s release is dependent on the timeliness of data availability from the Energy Information Administration and other sources.

For more information, contact Matthew Milford; NYSERDA, 17 Columbia Circle, Albany, NY 12203-6399; 518-862-1090 ext. 3416; or visit nyserdera.ny.gov

1 Overview

Patterns and Trends is organized in the following sections:

Energy Profiles and Comparisons for the United States and New York State compares energy consumption, selected energy prices, sources of petroleum products, and other factors influencing energy demand and expenditures in the U.S. and New York State. National petroleum statistics have been aggregated to represent the same six fuels included in New York State data, specifically gasoline, distillate fuel, kerosene, aviation fuels, residual oil, and liquefied petroleum gases.

New York State Energy Consumption provides historical data for both primary and net energy consumption by fuel type and sector, including residential, commercial, industrial, and transportation. “Primary” represents total consumption of fuels by sector, including the electricity generation sector. “Net” is the end-use consumption by sector, including electricity sales, but excluding losses incurred during generation and distribution of electricity.

New York State Energy Prices presents retail energy price data. Retail energy prices are provided by fuel type for each sector in nominal dollars per physical unit and per million British thermal units (MMBtu).

New York State Energy Expenditures presents the estimated net energy expenditures by sector and fuel type in nominal dollars, as well as in 2017 constant (inflation adjusted prices) dollars. Estimated expenditures were derived by multiplying quantities consumed by their respective retail prices. Out of State energy expenditure estimates by fuel type are also provided in nominal dollars, as well as in 2017 constant (inflation adjusted prices) dollars.

New York State’s Sources of Energy provides information on sources of the State’s energy supplies.

Appendices provide data on greenhouse gas emissions from fuel combustion; household end-use energy consumption and expenditures; gasoline consumption by county; occupied housing units by type of space heating; degree-days; county population; electricity and natural gas prices; customers and sales by sector by utility; weather normalized residential energy consumption; estimated county-level solar capacity and generation; conversion factors; and glossary of energy terms.

2017 NEW YORK STATE ENERGY FAST FACTS

PRIMARY ENERGY CONSUMPTION

1.5% lower than 2016

Primary consumption (4.1% of U.S. total) (trillion Btu).....3,740.9

By sector:

Residential.....	(15.8%)	591.6
Commercial.....	(10.4%)	390.8
Industrial.....	(5.4%)	200.9
Transportation.....	(31.6%)	1,180.7
Electric Generation.....	(36.8%)	1,376.9

By fuel type:

Petroleum.....	(36.0%)	1,348.3
Natural Gas.....	(34.2%)	1,280.1
Nuclear.....	(11.8%)	441.0
Hydro.....	(6.6%)	246.5
Net Imported Electricity.....	(5.8%)	216.7
Other ¹	(5.0%)	188.7
Coal.....	(0.5%)	19.6

Primary consumption per capita (million Btu).....193.1

NET ENERGY CONSUMPTION AND EXPENDITURES

Net Energy Consumption (trillion Btu)	Estimated Expenditures (billion dollars)
--	---

Total:.....2,858.7.....\$53.4

By sector:

Residential.....	(26.6%)	759.1	(30.9%)	\$16.5
Commercial.....	(22.7%)	647.8	(26.2%)	\$14.0
Industrial.....	(9.2%)	261.7	(2.5%)	\$1.3
Transportation.....	(41.6%)	1,190.1	(40.4%)	\$21.6

By fuel type:

Petroleum.....	(47.0%)	1,342.8	(45.2%)	\$24.2
Natural Gas.....	(30.9%)	882.7	(15.5%)	\$8.3
Electricity.....	(17.3%)	494.7	(38.8%)	\$20.7
Other ¹	(4.4%)	125.2	(0.3%)	\$0.2
Coal.....	(0.5%)	13.3	(0.1%)	<\$0.1

Estimated energy expenditures leaving the State (billions).....\$26.6

AVERAGE ENERGY PRICES

	2017	2016
Gasoline - all grades (gallon).....	\$2.42	\$2.18
Heating Oil (gallon).....	\$2.53	\$2.28
Natural Gas (thousand cubic feet)		
Residential.....	\$12.04	\$10.85
Commercial.....	\$6.87	\$ 6.19
Industrial.....	\$7.21	\$ 5.92
Electricity (kilowatt-hour)		
Residential.....	18.0¢	17.6¢
Commercial.....	14.8¢	14.4¢
Industrial.....	5.9¢	6.0¢

GREENHOUSE GAS EMISSIONS FROM FUEL COMBUSTION

Total (million metric tons of CO₂ equivalent).....157.7

By sector:

Residential.....	(20.1%)	31.7
Commercial.....	(13.4%)	21.1
Industrial.....	(5.1%)	8.1
Transportation.....	(43.1%)	68.0
Electric Generation.....	(18.2%)	28.8

By fuel type:

Petroleum.....	(53.8%)
Natural Gas.....	(45.0%)
Coal.....	(1.2%)

Greenhouse gas emissions per capita
(metric tons of CO₂ equivalent).....8.1

¹Ethanol (47.9 Tbtu) is included in "Other" totals and also as a component of motor gasoline. Total consumption and percentages are based on ethanol only as "Other."

ELECTRICITY

Sales decreased 1.9% from 2016

Sales to ultimate consumers (gigawatt-hours)144,992

By sector:

Residential.....	(33.9%)	49,081
Commercial.....	(52.0%)	75,333
Industrial.....	(12.3%)	17,811
Transportation.....	(1.9%)	2,767

In-State Generation (gigawatt-hours).....131,183

By fuel type:

Nuclear.....	(27.0%)	42,175
Natural Gas.....	(32.1%)	50,270
Hydro.....	(19.4%)	30,350
Net Imported Electricity.....	(17.1%)	26,680
Coal.....	(0.4%)	567
Petroleum.....	(0.4%)	636
Other.....	(1.9%)	2,966
Wind.....	(2.7%)	4,219

PETROLEUM

Consumption decreased 2.8% from 2016

Consumption (3.6% of U.S. total) (million barrels).....247.6

By sector:

Residential.....	(8.0%)	20.6
Commercial.....	(4.1%)	10.3
Industrial.....	(5.7%)	12.7
Transportation.....	(81.8%)	203.1
Electric Generation.....	(0.4%)	0.9

In-State production (thousand barrels).....184.0

NATURAL GAS

Consumption decreased 4.3% from 2016

Consumption (4.6% of U.S. total) (billion cubic feet).....1,240.4

By sector:

Residential.....	(34.9%)	446.5
Commercial.....	(25.0%)	320.3
Industrial.....	(6.7%)	85.7
Transportation.....	(2.4%)	30.3
Electric Generation.....	(31.0%)	397.4

In-State production (billion cubic feet).....11.4

ADDITIONAL 2017 STATISTICS

Population (6.1% of U.S. total) (million).....	19.8
Number of housing units (million).....	8.3
Gross State Product (billion 2017 dollars).....	\$1,604.1
Motor vehicle registrations (million).....	10.9
Vehicle miles of travel (billion miles).....	123.7
Heating degree-days (increased 2.6% from 2016).....	5,790
Cooling degree-days (decreased 28.0% from 2016).....	575

Note: Totals may not sum exactly due to rounding.

DATA SOURCE

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

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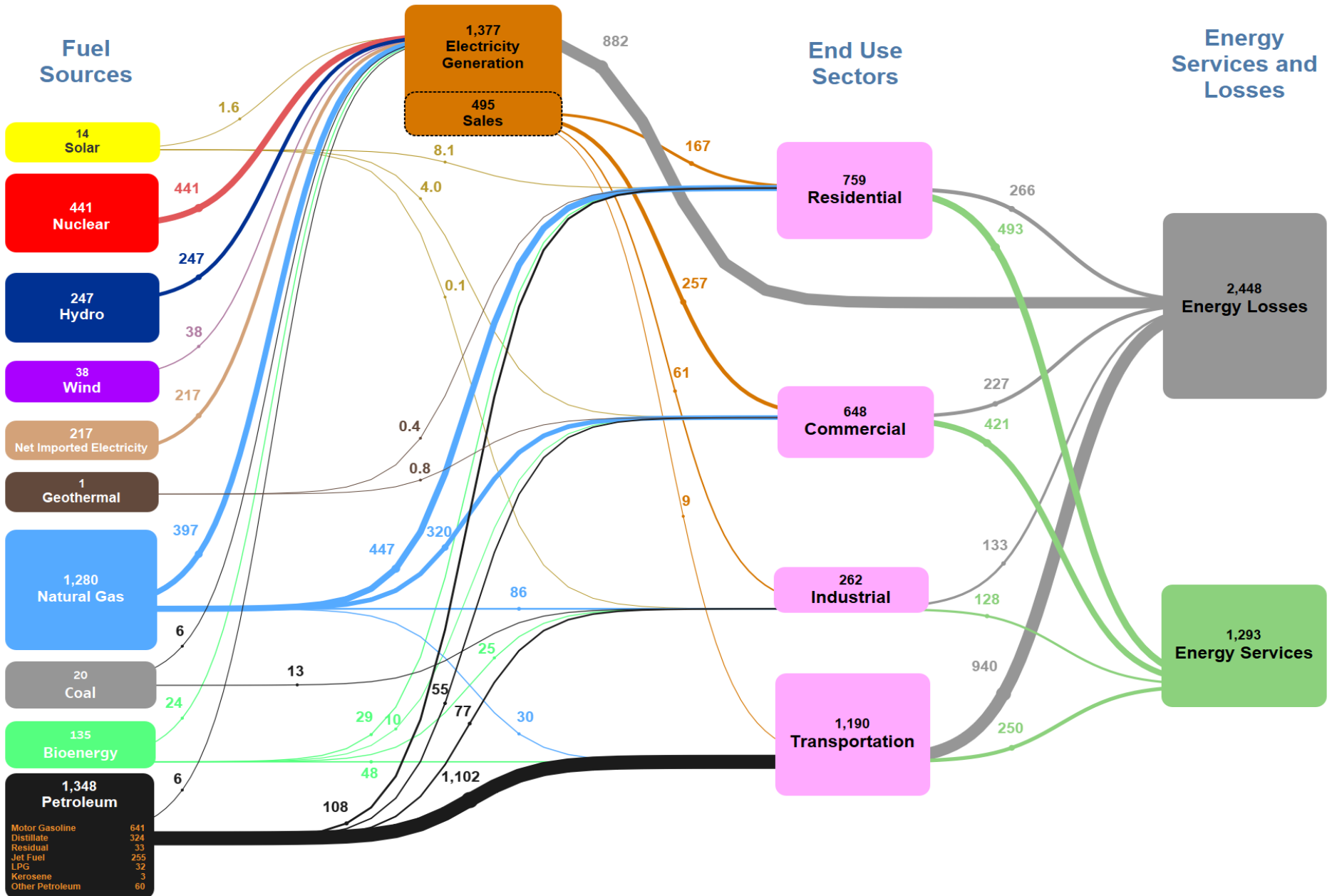


NEW YORK
STATE OF
OPPORTUNITY.

NYSERDA

2017 New York State Energy Flow (TBtu)

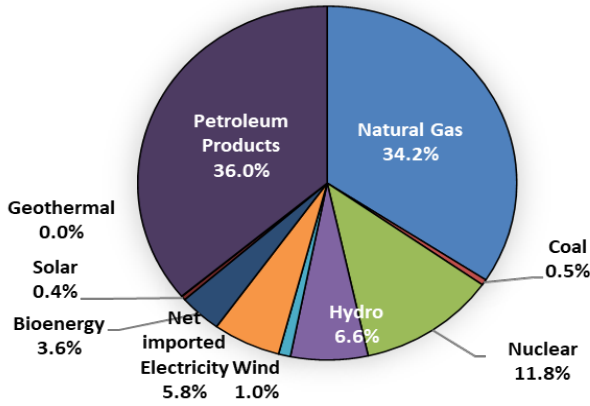
Estimated New York Energy Consumption in 2017: 3,741 TBtu



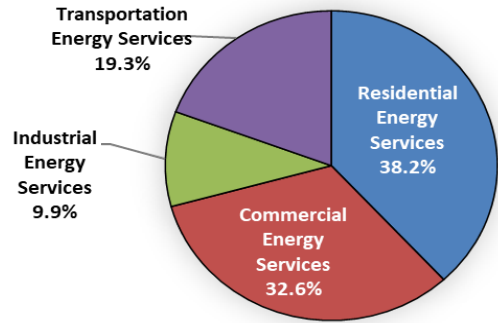
Source: NYSDERDA, Patterns and Trends New York State Energy Profiles: 2003-2017 published September 2020. Motor gasoline includes ethanol which is not included in Total Petroleum so sums may differ from the total. Electricity Sales (495 TBtu) are a part of the total Electricity Generation sector (1,377 TBtu). Bioenergy includes ethanol (48 TBtu), wood (55 TBtu), landfill gas (6 TBtu), and waste (27 TBtu). Geothermal energy in this case represents ground source heat pumps. Electricity losses are calculated as the difference between energy input for electricity generation and energy from retail electricity sales. Energy losses for the end-use sectors are based on the following estimated end-use efficiency factors from the Lawrence Livermore National Laboratory, 65% for the residential sector, 65% for the commercial sector, 49% for the industrial sector, and 21% for the transportation sector. Totals may not equal the sum of components due to rounding.

2017 New York State Energy at a Glance

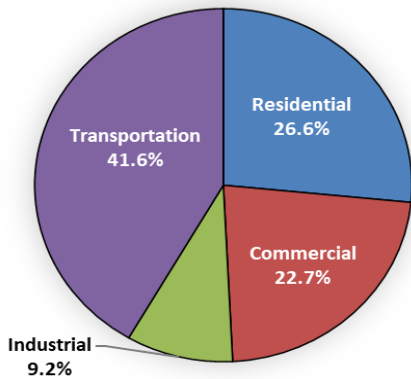
2017 NYS Fuel Sources



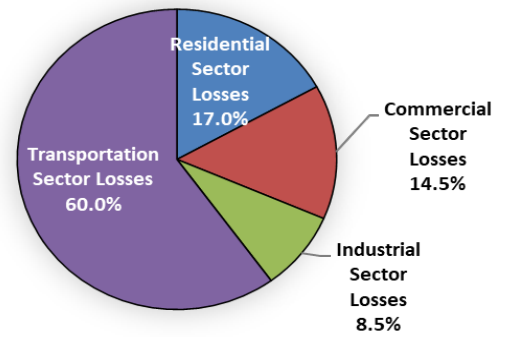
2017 NYS Energy Services



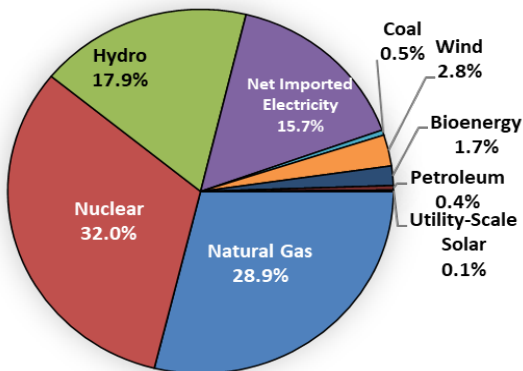
2017 NYS End-Use Sectors



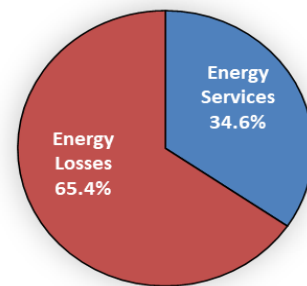
2017 NYS Energy Losses



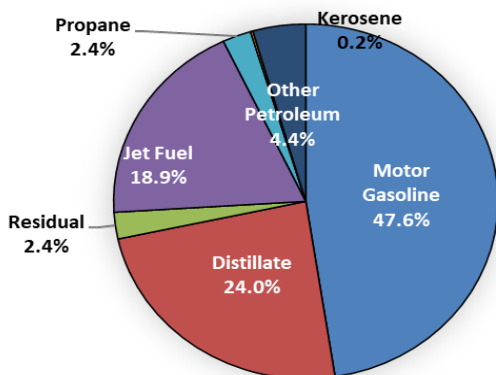
2017 NYS Energy for Electricity Generation



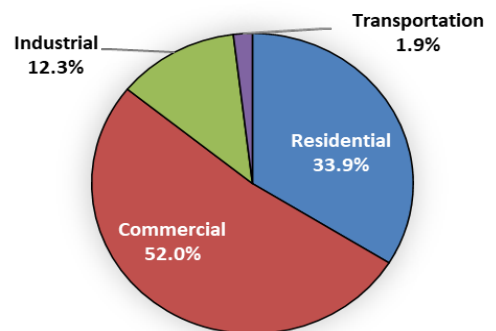
2017 NYS Energy End-Use Services and Losses



2017 NYS Petroleum Products

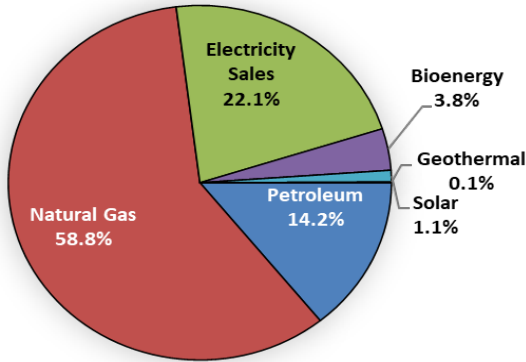


2017 NYS Electricity Sales

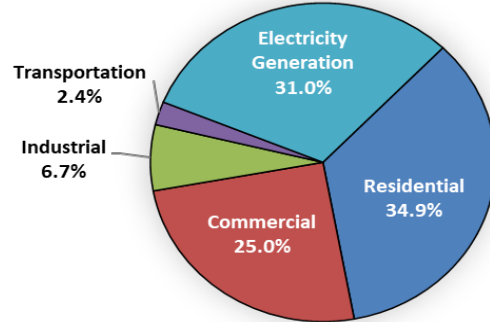


2017 New York State Energy at a Glance

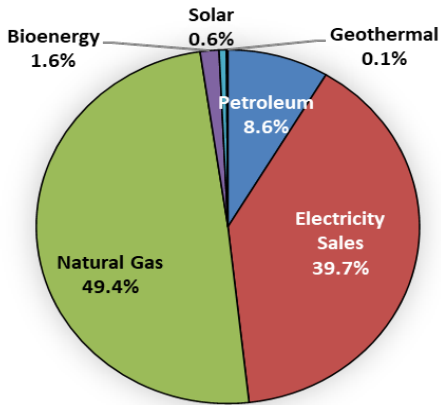
2017 NYS Residential Sector



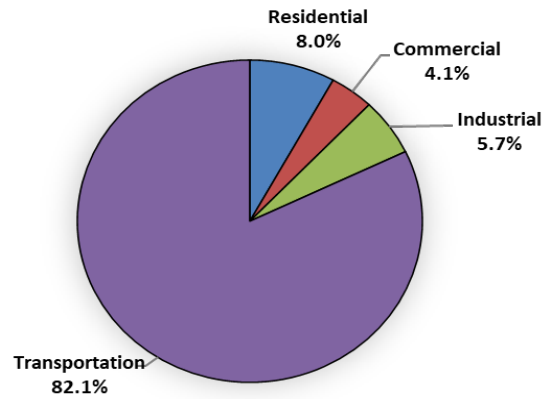
2017 NYS Natural Gas by Sector



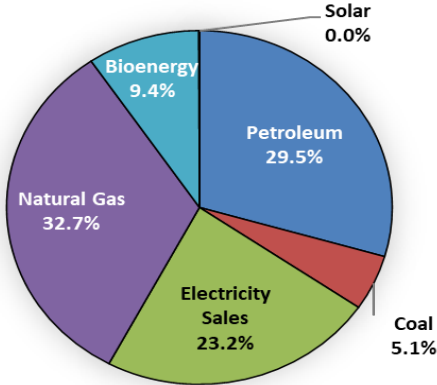
2017 NYS Commercial Sector



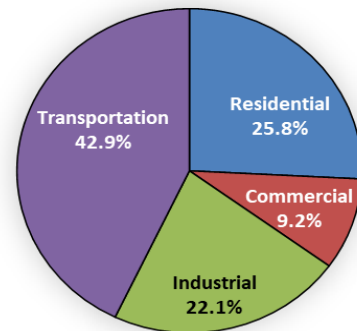
2017 NYS Petroleum by Sector



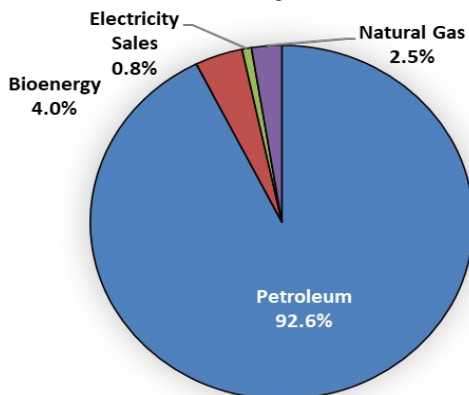
2017 NYS Industrial Sector



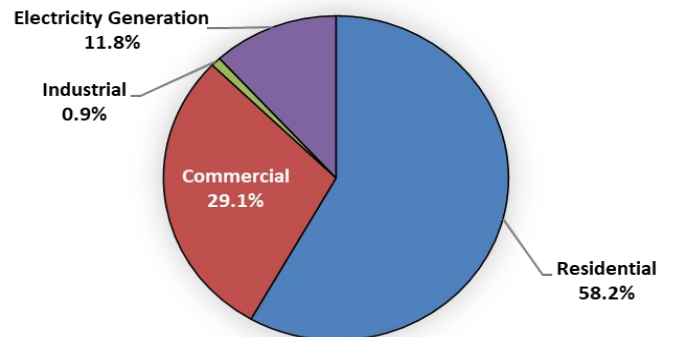
2017 NYS Bioenergy by Sector



2017 NYS Transportation Sector



2017 NYS Solar by Sector



2 Energy Profiles and Comparisons for the United States and New York State

This section compares energy consumption, selected energy prices, sources of petroleum, and factors influencing energy demand and expenditures for the United States and New York State. Additional statistics compare recent energy consumption and expenditure trends among all states. New York State and national data are comparable and exclude petroleum products not used as a form of energy, including propane used in the chemical industry, asphalt, road oil, lubricants, and petrochemical feedstocks.

Selected State and national energy consumption and expenditure data series are presented to illustrate regional differences in energy demand and expenditures. The data are derived from the U.S. Department of Energy's (DOE) Energy Information Administration State Energy Data System and the U.S. Department of Commerce's Statistical Abstract of the United States.

2.1 Key Observations about 2017 New York State Energy Data

- New York State ranks seventh nationally in energy consumption.
- The State has the lowest per capita energy usage in the U.S., accounting for 3.8% of the nation's total primary energy consumption. New York State accounts for 6.1% of the nation's population.
- Renewable resources accounted for 11.3% of the State's primary energy consumption compared to 11.5% for the U.S. in 2017.
- Coal consumption represents 0.5% of the State's energy use compared to 15.4% nationally.
- Net energy demand in the State differs from national demand in several respects (as shown in Tables 2-1 and 2-2):
 - Residential net energy use accounts for 26.6% of total energy demand, compared to 16.4% nationally.
 - Commercial net energy use accounts for 22.7% of total energy demand, compared to 13.7% nationally.
 - Industrial net energy use accounts for 9.2% of total energy demand, compared to 27.6% nationally.
 - Transportation net energy use accounts for 41.6% of total energy demand, compared to 42.3% nationally.

**United States
Primary Consumption of Energy
by Fuel Type and Sector, 2017**

Figure 2-1a. United States Primary Consumption of Energy

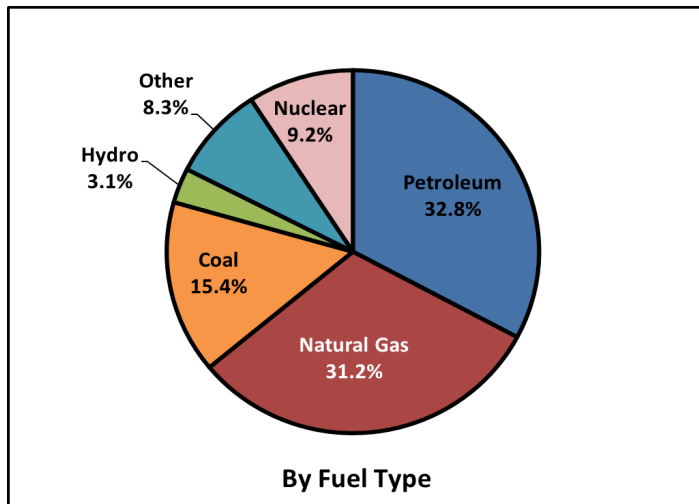


Figure 2-1b. United States Primary Consumption of Energy

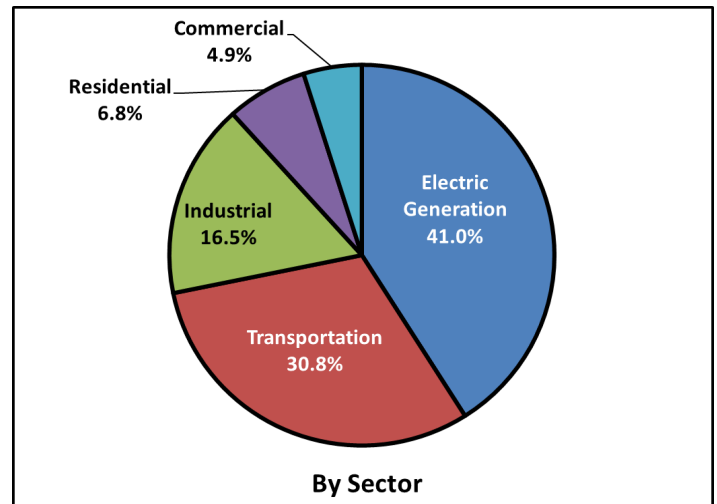


Table 2-1. (In Trillion Btu)

	Residential TBtu	Commercial TBtu	Industrial TBtu	Transportation ¹ TBtu	Net Consumption TBtu	Electric Generation ² TBtu	Primary Consumption ³ TBtu	
Coal	0	21	1,197	0	1,217	12,622	13,840	
Natural Gas	4,592	3,291	9,849	801	18,533	9,578	28,111	
Petroleum Products:	870	843	2,050	25,551	29,314	218	29,532	
Distillate	431	322	1,202	6,253	8,208	55	8,263	
Residual	0	4	50	665	718	66	784	
Kerosene	8	1	1	0	11	0	11	
LPG	431	156	532	7	1,126	0	1,126	
Gasoline	0	361	264	16,576	17,201	0	17,201	
Jet Fuel	0	0	0	3,502	3,502	0	3,502	
Other ⁴	666	230	1,747	1,452	4,095	1,142	5,237	
Electric Sales	4,704	4,616	3,358	26	12,704			
Net Consumption	10,832	9,001	18,201	27,830	65,863			
						Hydro Electricity	2,752	2,752
						Nuclear Electricity	8,337	8,337
						Wind Electricity	2,341	2,341
						Primary Consumption	36,990	90,149

¹ Components of petroleum may not sum to petroleum total because ethanol and biodiesel values (“Other” category in transportation sector) are embedded in motor gasoline and distillate, respectively.
² Hydro and wind are excluded from the “Other” category and listed separately.
³ Excludes petroleum products not used as a form of energy.
⁴ “Other” includes wood, waste, ethanol, landfill gas, solar, geothermal, and biodiesel.

New York State Primary Consumption of Energy by Fuel Type and Sector, 2017

Figure 2-2a. New York State Primary Consumption of Energy

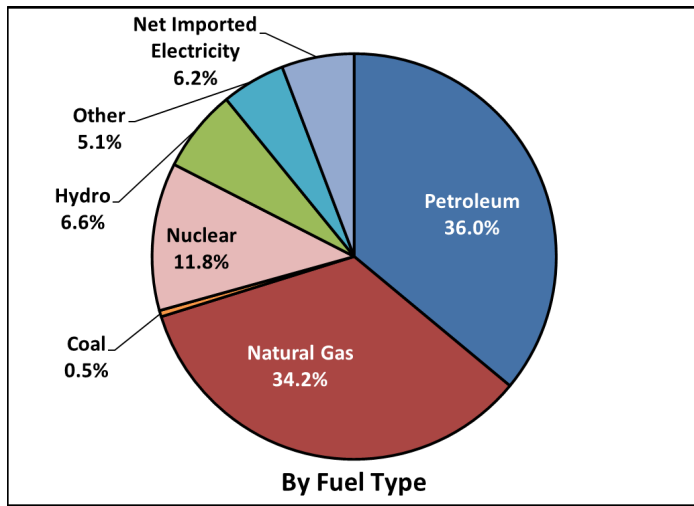


Figure 2-2b. New York State Primary Consumption of Energy

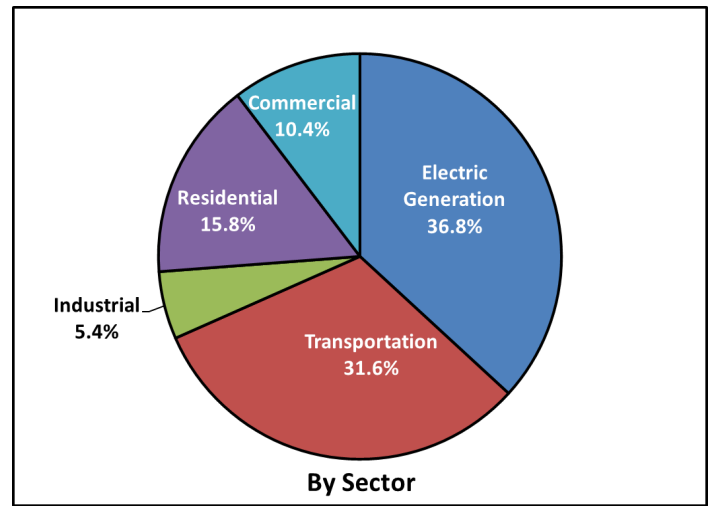


Table 2-2. (In Trillion Btu)

	Residential TBtu	Commercial TBtu	Industrial TBtu	Transportation ¹ TBtu	Net Consumption TBtu	Electric Generation TBtu	Primary Consumption ^{1,2} TBtu	
Coal	0.0	0.0	13.3	0.0	13.3	6.3	19.6	
Natural Gas	446.5	320.3	85.7	30.3	882.7	397.4	1,280.1	
Petroleum Products ³ :	107.7	55.4	77.1	1,102.5	1,342.8	5.6	1,348.3	
Distillate	83.6	45.7	11.0	182.3	322.5	1.5	324.0	
Residual	0.0	1.8	3.4	23.5	28.7	4.0	32.7	
Kerosene	2.3	0.2	0.3	0.0	2.8	0.0	2.8	
LPG	21.9	7.8	2.6	0.3	32.5	0.0	32.5	
Gasoline	0.0	0.0	0.0	689.3	689.3	0.0	689.3	
Jet Fuel	0.0	0.0	0.0	255.1	255.1	0.0	255.1	
Other ⁴	37.4	15.1	24.8	47.9	125.2	25.3	150.6	
Electric Sales	167.5	257.0	60.8	9.4	494.7			
Net Consumption	759.1	647.8	261.7	1,190.1	2,858.7			
						Hydro Electricity	246.5	246.5
						Nuclear Electricity	441.0	441.0
						Net Imported Electricity	216.7	216.7
						Wind Electricity	38.1	38.1
						Primary Consumption	1,376.9	3,740.9

¹ Components of petroleum may not sum to petroleum total because ethanol (“Other” category in transportation sector) is embedded in motor gasoline.

² Excludes petroleum products not used as a form of energy.

³ Petroleum includes petroleum coke used for electric generation.

⁴ “Other” includes wood, waste, ethanol, landfill gas, solar, and geothermal.

**United States and New York State
Selected Energy Prices
in Nominal Dollars, 2003–2017**

Table 2-3a. United States

Year	Motor Gasoline	Residential Distillate	Residential Electricity	Residential Natural Gas	Commercial Electricity	Commercial Natural Gas	Industrial Electricity	Industrial Natural Gas
	cents/gal	cents/gal	cents/kWh	\$/Mcf	cents/kWh	\$/Mcf	cents/kWh	\$/Mcf
2003	152.8	143.1	8.7	9.45	8.0	8.26	5.1	6.34
2004	182.0	162.6	8.9	10.71	8.2	9.40	5.2	7.18
2005	222.0	215.3	9.4	12.62	8.7	11.23	5.7	9.29
2006	251.6	248.1	10.4	13.66	9.5	11.87	6.1	8.97
2007	272.8	272.1	10.7	12.99	9.6	11.24	6.4	8.48
2008	316.0	337.6	11.3	13.83	10.3	12.16	6.9	10.29
2009	229.4	251.6	11.5	12.08	10.2	9.92	6.8	6.61
2010	272.5	296.7	11.5	11.39	10.2	9.41	6.8	6.31
2011	344.3	356.5	11.7	11.03	10.2	8.99	6.8	6.10
2012	354.5	396.8	11.9	10.62	10.1	8.21	6.7	5.02
2013	344.6	388.5	12.1	10.24	10.3	8.25	6.9	5.59
2014	331.0	378.8	12.5	10.84	10.7	9.00	7.1	6.51
2015	243.2	260.9	12.7	10.19	10.6	7.98	6.9	4.97
2016	216.9	222.7	12.5	9.85	10.4	7.36	6.8	4.48
2017	243.6	249.6	12.9	10.71	10.7	7.98	6.9	4.94

Table 2-3b. New York State

Year	Motor Gasoline	Residential Distillate	Residential Electricity	Residential Natural Gas	Commercial Electricity	Commercial Natural Gas	Industrial Electricity	Industrial Natural Gas
	cents/gal	cents/gal	cents/kWh	\$/Mcf	cents/kWh	\$/Mcf	cents/kWh	\$/Mcf
2003	157.2	149.5	14.3	11.60	12.9	8.60	7.1	7.35
2004	187.6	169.6	14.5	12.50	13.0	10.11	7.0	8.05
2005	224.6	219.1	15.7	14.89	14.4	11.80	8.2	10.75
2006	257.0	255.6	16.9	15.35	15.5	11.91	9.4	10.56
2007	276.7	278.0	17.1	15.73	15.9	11.82	8.7	11.43
2008	327.0	342.5	18.3	16.78	16.8	12.87	9.4	12.30
2009	235.9	260.6	17.5	15.05	15.5	10.72	8.4	9.53
2010	277.8	301.1	18.7	14.04	16.3	10.87	8.8	8.54
2011	351.9	355.2	18.3	13.71	15.8	9.33	7.8	8.19
2012	364.1	394.7	17.6	12.96	15.1	7.84	6.7	6.91
2013	354.7	388.8	18.8	12.49	15.4	8.00	6.6	7.44
2014	341.8	379.2	20.1	12.53	16.1	8.31	6.6	8.13
2015	246.6	264.9	18.5	11.20	15.3	6.86	6.3	6.62
2016	218.4	227.6	17.6	10.85	14.4	6.19	6.0	5.92
2017	242.1	252.6	18.0	12.04	14.8	6.87	5.9	7.21

United States Estimated Sources of Petroleum Products, 2003–2017

Figure 2-4. United States Petroleum Net Imports

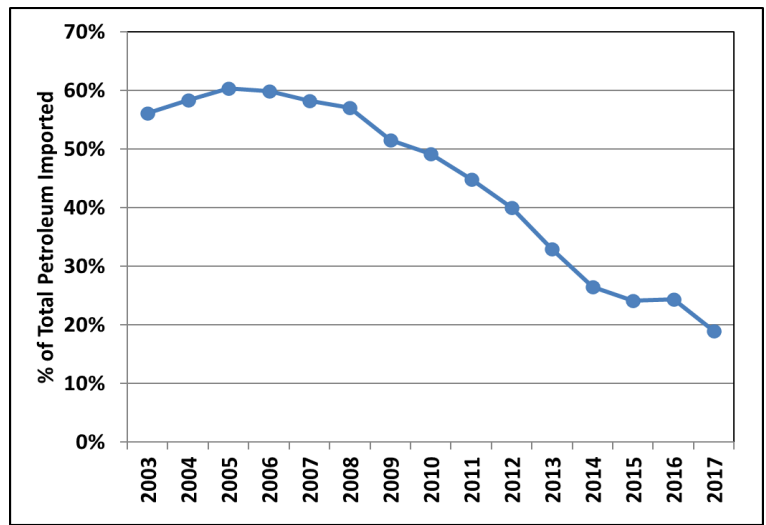


Table 2-4. United States Sources of Petroleum

Year	Total Domestic ¹	Total Foreign	OPEC ²	Non-OPEC ³
	%	%	%	%
2003	43.9%	56.1%	25.7%	30.4%
2004	41.6%	58.4%	27.5%	31.0%
2005	39.7%	60.3%	26.8%	33.6%
2006	40.1%	59.9%	26.5%	33.4%
2007	41.8%	58.2%	28.8%	29.4%
2008	43.0%	57.0%	30.3%	26.8%
2009	48.5%	51.5%	24.9%	26.6%
2010	50.8%	49.2%	25.0%	24.2%
2011	55.2%	44.8%	23.4%	21.4%
2012	60.0%	40.0%	23.1%	16.9%
2013	67.1%	32.9%	19.6%	13.3%
2014	73.5%	26.5%	16.9%	9.6%
2015	75.9%	24.1%	14.8%	9.3%
2016	75.6%	24.4%	17.5%	6.9%
2017	81.1%	18.9%	16.9%	2.0%

¹ Domestic: Oil produced in the United States or from its outer continental shelf.

² OPEC: Largest contributors are Saudi Arabia, Venezuela, Nigeria, Iraq, and Kuwait.

³ Non-OPEC: Largest contributors are Canada, Mexico, United Kingdom, Colombia, Brazil, and Russia.

**United States and New York State
Factors Influencing Energy
Demand and Expenditures, 2003–2017**

Table 2-5a. United States

Year	Population	Housing Units	Non-Manufacturing ¹ Employment	Manufacturing ¹ Employment	GDP ²	Licensed Drivers	Vehicles Registered	Vehicle Miles Traveled
	thousands	thousands	thousands	thousands	B/2017\$	millions	millions	billions
2003	290,108	121,077	115,838	14,509	\$ 14,946	196	231	2,909
2004	292,805	122,825	117,472	14,315	\$ 15,518	199	237	2,982
2005	295,517	124,711	119,824	14,227	\$ 16,021	201	242	3,009
2006	298,380	126,500	122,298	14,155	\$ 16,446	203	244	3,034
2007	301,231	128,132	124,120	13,879	\$ 16,729	206	247	3,049
2008	304,094	129,313	123,835	13,406	\$ 16,401	208	248	2,993
2009	306,772	129,970	119,466	11,847	\$ 16,164	210	246	2,976
2010	308,746	131,705	118,834	11,528	\$ 16,501	210	242	2,985
2011	311,580	132,316	120,206	11,726	\$ 16,584	212	253	2,965
2012	313,874	132,452	122,248	11,927	\$ 16,932	212	254	2,969
2013	316,058	132,808	124,361	12,020	\$ 17,293	212	256	2,988
2014	318,386	133,963	126,773	12,185	\$ 17,764	214	260	3,026
2015	320,743	134,794	129,507	12,336	\$ 18,449	218	264	3,095
2016	323,071	135,703	131,998	12,354	\$ 19,106	222	269	3,174
2017	325,147	137,384	134,172	12,439	\$ 19,391	225	273	3,224

Table 2-5b. New York State

Year	Population	Housing Units	Non-Manufacturing ¹ Employment	Manufacturing ¹ Employment	GSP ³	Licensed Drivers	Vehicles Registered	Vehicle Miles Traveled
	thousands	thousands	thousands	thousands	MM/2017\$	thousands	thousands	billions
2003	19,176	7,799	7,784	612	\$ 1,180,835	11,357	10,802	135.05
2004	19,172	7,836	7,855	596	\$ 1,213,620	11,247	11,099	137.90
2005	19,133	7,853	7,943	579	\$ 1,247,405	11,081	11,863	137.52
2006	19,105	7,908	8,037	566	\$ 1,275,505	11,146	11,284	141.35
2007	19,132	7,940	8,168	552	\$ 1,283,593	11,369	11,495	136.74
2008	19,212	7,977	8,246	532	\$ 1,225,361	11,285	11,089	134.09
2009	19,307	8,018	8,064	476	\$ 1,289,675	11,329	11,245	133.50
2010	19,378	8,108	8,088	457	\$ 1,336,151	11,286	11,082	131.25
2011	19,520	8,120	8,233	459	\$ 1,318,862	11,211	10,085	127.73
2012	19,603	8,124	8,361	459	\$ 1,382,426	11,249	10,449	128.22
2013	19,674	8,126	8,501	456	\$ 1,396,605	11,211	10,674	129.74
2014	19,719	8,192	8,669	454	\$ 1,447,541	11,318	10,904	129.26
2015	19,747	8,207	8,837	455	\$ 1,506,975	11,690	10,639	127.23
2016	19,745	8,232	8,984	451	\$ 1,573,798	11,948	11,122	122.93
2017	19,378	8,327	9,116	445	\$ 1,604,134	12,185	10,857	123.70

¹ Includes nonfarm jobs only.

² Gross domestic product in billions of 2017 dollars.

³ Gross State product in millions of 2017 dollars.

Energy Consumption and Expenditure Indicators, State Comparisons, 2017

Table 2-6.

States	Primary Energy Use		Primary Energy Use		Primary Energy Use		Energy Expenditures	
	Energy Use	Ranking	per Capita	Ranking	per unit GSP	Ranking	per Capita	Ranking
	TBtu		MMBtu		Btu		Dollars	
Alabama	1,901	17	404	12	8,850	7	\$4,192	12
Alaska	608	40	818	4	11,522	4	\$6,910	3
Arizona	1,475	25	211	45	4,412	35	\$2,911	48
Arkansas	1,058	31	376	17	8,458	11	\$3,765	22
California	7,881	2	196	49	2,716	47	\$3,166	40
Colorado	1,463	26	276	34	4,070	39	\$2,919	47
Connecticut	726	36	209	46	2,681	48	\$3,508	28
Delaware	270	48	293	29	3,788	42	\$3,485	29
D.C.	168	50	271	35	1,236	51	\$2,832	49
Florida	4,209	4	207	47	4,182	37	\$2,721	51
Georgia	2,802	9	282	33	4,849	29	\$3,266	35
Hawaii	283	47	198	48	3,121	45	\$3,897	17
Idaho	554	41	318	24	7,454	16	\$3,672	23
Illinois	3,872	5	314	26	4,607	31	\$3,168	39
Indiana	2,701	11	444	9	7,550	15	\$4,069	15
Iowa	1,559	24	496	5	8,504	10	\$4,418	6
Kansas	1,073	30	390	15	6,597	20	\$3,841	20
Kentucky	1,658	21	401	13	8,133	12	\$3,893	18
Louisiana	4,482	3	921	1	18,268	1	\$6,860	4
Maine	392	44	309	27	6,206	21	\$4,213	11
Maryland	1,315	28	234	40	3,278	44	\$3,077	43
Massachusetts	1,424	27	213	44	2,582	49	\$3,381	33
Michigan	2,775	10	291	31	5,410	26	\$3,247	36
Minnesota	1,832	18	350	18	5,145	27	\$3,604	24
Mississippi	1,176	29	386	16	10,503	5	\$4,396	7
Missouri	1,726	20	314	25	5,562	23	\$3,464	30
Montana	421	43	394	14	8,719	8	\$4,347	9
Nebraska	876	33	459	8	7,195	18	\$4,299	10
Nevada	707	37	233	42	4,392	36	\$3,100	42
New Hampshire	318	46	234	41	3,872	41	\$3,847	19
New Jersey	2,135	15	262	37	3,545	43	\$3,323	34
New Mexico	683	38	326	22	7,110	19	\$3,520	27
New York	3,684	7	190	51	2,251	50	\$2,762	50
North Carolina	2,503	12	257	38	4,568	32	\$2,992	45
North Dakota	631	39	865	3	11,841	3	\$7,087	2
Ohio	3,644	8	329	21	5,559	24	\$3,461	31
Oklahoma	1,644	22	433	10	8,537	9	\$3,969	16
Oregon	1,032	32	249	39	4,446	34	\$3,140	41
Pennsylvania	3,808	6	305	28	5,030	28	\$3,434	32
Rhode Island	184	49	194	50	3,097	46	\$3,057	44
South Carolina	1,644	23	338	19	7,245	17	\$3,776	21
South Dakota	385	45	459	7	7,763	14	\$4,393	8
Tennessee	2,167	14	335	20	6,141	22	\$3,591	25
Texas	13,366	1	478	6	7,799	13	\$4,540	5
Utah	829	34	271	36	4,826	30	\$2,990	46
Vermont	135	51	223	43	4,144	38	\$4,145	13
Virginia	2,303	13	292	30	4,453	33	\$3,215	38
Washington	2,097	16	285	32	3,879	40	\$3,224	37
West Virginia	756	35	407	11	10,181	6	\$4,111	14
Wisconsin	1,806	19	325	23	5,534	25	\$3,523	26
Wyoming	512	42	917	2	13,407	2	\$7,672	1
United States	97,622		309		4,931		\$3,495	
NYS as a % of U.S.	3.8%		61%		46%		79%	

Note: Table shows the latest year for which consumption and expenditure data are available for all states at time of publication.

Energy Consumption and Expenditure Indicators, State Comparisons for the Residential and Commercial Sectors, 2017

Table 2-7.

States	Residential Primary		Residential Energy		Commercial Primary		Commercial Energy	
	Energy Use ¹ per		Expenditures per		Energy Use ¹ per		Expenditures Per	
	Housing Unit	Ranking	Housing Unit	Ranking	Non-Manufacturing Employee	Ranking	Non-Manufacturing Employee	Ranking
	MMBtu		Dollars		MMBtu		Dollars	
Alabama	143	36	\$1,923	13	147	23	\$1,790	4
Alaska	168	10	\$2,615	3	184	3	\$2,692	1
Arizona	134	42	\$1,637	38	139	30	\$1,457	22
Arkansas	148	34	\$1,585	46	161	10	\$1,416	26
California	100	50	\$1,597	43	97	49	\$1,478	21
Colorado	144	35	\$1,473	49	118	44	\$1,094	49
Connecticut	151	30	\$2,848	1	124	39	\$1,789	5
Delaware	138	39	\$1,959	12	132	35	\$1,410	28
D.C.	122	47	\$1,464	50	134	34	\$1,435	24
Florida	125	46	\$1,553	47	123	40	\$1,298	37
Georgia	156	25	\$2,013	10	134	33	\$1,383	34
Hawaii	63	51	\$1,521	48	68	51	\$1,590	15
Idaho	186	2	\$1,762	28	147	21	\$1,172	45
Illinois	166	12	\$1,744	30	146	24	\$1,218	42
Indiana	173	6	\$1,826	23	138	32	\$1,278	40
Iowa	158	20	\$1,777	27	140	29	\$1,226	41
Kansas	161	14	\$1,919	15	171	5	\$1,695	7
Kentucky	167	11	\$1,682	36	154	14	\$1,407	30
Louisiana	152	29	\$1,604	42	147	22	\$1,411	27
Maine	134	41	\$2,172	7	116	46	\$1,537	19
Maryland	158	21	\$2,057	9	157	12	\$1,607	13
Massachusetts	141	37	\$2,450	5	121	42	\$1,680	8
Michigan	158	22	\$1,837	20	161	11	\$1,546	18
Minnesota	158	18	\$1,806	26	139	31	\$1,318	36
Mississippi	135	40	\$1,728	32	152	17	\$1,730	6
Missouri	169	8	\$1,835	22	157	13	\$1,398	32
Montana	187	1	\$1,851	19	181	4	\$1,628	11
Nebraska	175	5	\$1,722	34	147	20	\$1,171	46
Nevada	132	43	\$1,592	44	113	47	\$980	51
New Hampshire	157	24	\$2,699	2	117	45	\$1,571	16
New Jersey	148	33	\$1,907	16	146	26	\$1,670	9
New Mexico	119	49	\$1,337	51	152	16	\$1,407	29
New York	127	45	\$1,975	11	125	38	\$1,603	14
North Carolina	140	38	\$1,613	39	146	25	\$1,291	38
North Dakota	184	4	\$1,807	25	215	2	\$1,829	3
Ohio	161	15	\$1,823	24	142	28	\$1,279	39
Oklahoma	158	19	\$1,753	29	164	8	\$1,423	25
Oregon	149	32	\$1,609	41	123	41	\$1,191	44
Pennsylvania	153	28	\$2,082	8	119	43	\$1,101	48
Rhode Island	121	48	\$2,249	6	99	48	\$1,638	10
South Carolina	154	27	\$1,889	17	151	18	\$1,501	20
South Dakota	170	7	\$1,836	21	162	9	\$1,448	23
Tennessee	168	9	\$1,673	37	165	7	\$1,612	12
Texas	150	31	\$1,698	35	143	27	\$1,200	43
Utah	161	17	\$1,588	45	131	36	\$1,093	50
Vermont	129	44	\$2,565	4	87	50	\$1,564	17
Virginia	158	23	\$1,861	18	166	6	\$1,371	35
Washington	162	13	\$1,611	40	128	37	\$1,151	47
West Virginia	161	16	\$1,743	31	154	15	\$1,399	31
Wisconsin	154	26	\$1,727	33	148	19	\$1,387	33
Wyoming	185	3	\$1,922	14	219	1	\$1,863	2
United States	145		\$1,791		135		\$1,397	
NYS as % of U.S.	88%		110%		92%		115%	

Note: Table shows the latest year for which consumption and expenditure data are available for all states at time of publication.

¹ Use figures include electricity and the associated system losses.

Energy Consumption and Expenditure Indicators

State Comparisons for the Industrial and Transportation Sectors, 2017

Table 2-8.

States	Industrial Primary Energy Use ¹		Industrial Energy Expenditures		Transportation Primary Use ¹ per Vehicle Registration		Transportation Expenditures per Vehicle Registration	
	per unit of GSP	Ranking	per unit of GSP	Ranking		Ranking	Dollars	Ranking
	Btu		Dollars		MMBtu		Dollars	
Alabama	3,828	8	\$0.0197	8	99	23	\$1,731	28
Alaska	6,311	4	\$0.0128	17	203	2	\$3,416	2
Arizona	687	39	\$0.0060	40	82	38	\$1,657	35
Arkansas	3,173	13	\$0.0195	9	101	20	\$1,827	24
California	627	41	\$0.0049	43	103	17	\$2,124	10
Colorado	1,132	32	\$0.0068	37	80	41	\$1,473	47
Connecticut	293	47	\$0.0032	48	81	40	\$1,631	37
Delaware	1,174	31	\$0.0062	38	72	48	\$1,483	45
D.C.	42	51	\$0.0004	51	55	51	\$954	51
Florida	490	44	\$0.0039	45	91	31	\$1,656	36
Georgia	1,313	29	\$0.0077	31	100	21	\$1,831	22
Hawaii	660	40	\$0.0104	23	116	10	\$2,201	9
Idaho	2,262	20	\$0.0152	13	87	35	\$1,727	30
Illinois	1,400	27	\$0.0073	34	93	30	\$1,690	34
Indiana	3,444	10	\$0.0203	7	100	22	\$1,828	23
Iowa	4,627	5	\$0.0228	6	80	42	\$1,483	46
Kansas	2,382	18	\$0.0118	19	98	25	\$1,729	29
Kentucky	2,936	15	\$0.0153	12	110	15	\$1,988	15
Louisiana	12,730	1	\$0.0651	1	199	3	\$2,605	3
Maine	1,642	26	\$0.0103	24	113	11	\$2,276	8
Maryland	270	49	\$0.0025	49	95	26	\$1,914	18
Massachusetts	281	48	\$0.0033	47	90	32	\$1,716	32
Michigan	1,396	28	\$0.0090	28	86	36	\$1,595	39
Minnesota	1,764	24	\$0.0099	25	81	39	\$1,540	43
Mississippi	3,587	9	\$0.0183	10	216	1	\$3,437	1
Missouri	971	37	\$0.0075	33	99	24	\$1,818	25
Montana	2,637	16	\$0.0121	18	63	50	\$1,245	50
Nebraska	3,223	12	\$0.0159	11	103	18	\$1,930	17
Nevada	1,069	34	\$0.0089	29	93	29	\$1,856	20
New Hampshire	560	43	\$0.0061	39	77	45	\$1,542	42
New Jersey	426	45	\$0.0035	46	129	6	\$2,330	6
New Mexico	2,385	17	\$0.0098	26	126	8	\$2,322	7
New York	237	50	\$0.0018	50	104	16	\$1,870	19
North Carolina	1,026	35	\$0.0072	35	90	33	\$1,774	27
North Dakota	6,441	3	\$0.0320	3	124	9	\$2,102	11
Ohio	1,826	22	\$0.0115	21	86	37	\$1,591	40
Oklahoma	3,310	11	\$0.0138	15	129	7	\$2,069	13
Oregon	1,126	33	\$0.0076	32	74	47	\$1,574	41
Pennsylvania	1,789	23	\$0.0105	22	89	34	\$1,711	33
Rhode Island	387	46	\$0.0050	42	68	49	\$1,310	49
South Carolina	2,362	19	\$0.0136	16	110	14	\$2,005	14
South Dakota	3,162	14	\$0.0151	14	78	43	\$1,430	48
Tennessee	1,701	25	\$0.0097	27	110	13	\$1,985	16
Texas	3,941	7	\$0.0242	5	152	4	\$2,494	4
Utah	1,293	30	\$0.0070	36	111	12	\$2,093	12
Vermont	572	42	\$0.0088	30	78	44	\$1,609	38
Virginia	841	38	\$0.0052	41	93	28	\$1,724	31
Washington	990	36	\$0.0045	44	94	27	\$1,804	26
West Virginia	4,485	6	\$0.0246	4	102	19	\$1,837	21
Wisconsin	1,840	21	\$0.0118	20	76	46	\$1,514	44
Wyoming	7,488	2	\$0.0378	2	140	5	\$2,383	5
United States	1,588		\$0.0097		104		\$1,679	
NYS as % of U.S.	15%		19%		100%		111%	

Note: Table shows the latest year for which consumption and expenditure data are available for all states at time of publication.

¹ Use figures include electricity and the associated system losses.

United States and New York State Selected Comparisons, 2017

Figure 2-9a. Primary Consumption by Fuel Type, 2017

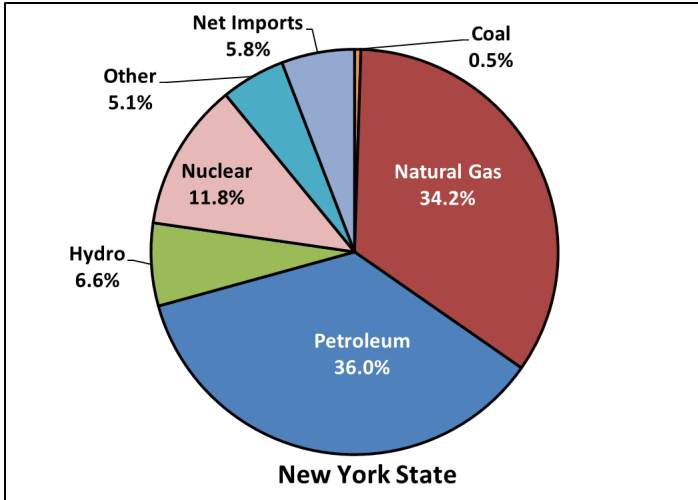


Figure 2-9b. Primary Consumption by Fuel Type, 2017

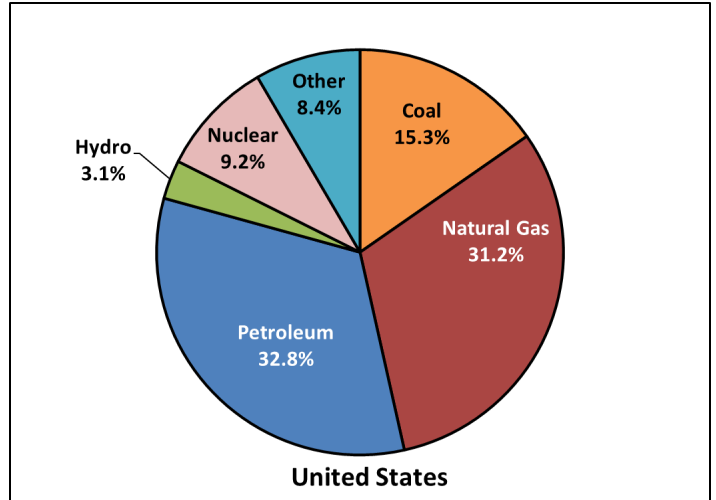


Figure 2-9c. Primary Consumption by Sector, 2017

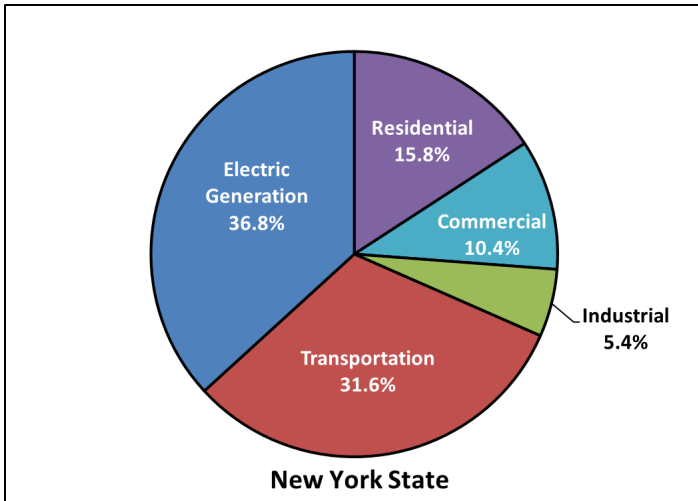
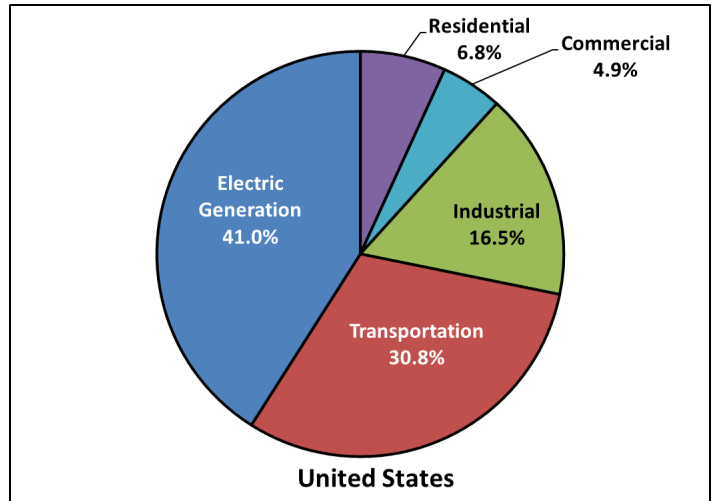


Figure 2-9d. Primary Consumption by Sector, 2017



United States and New York State Selected Comparisons, 2017

Figure 2-10a. Electricity Generation by Fuel Type, 2017

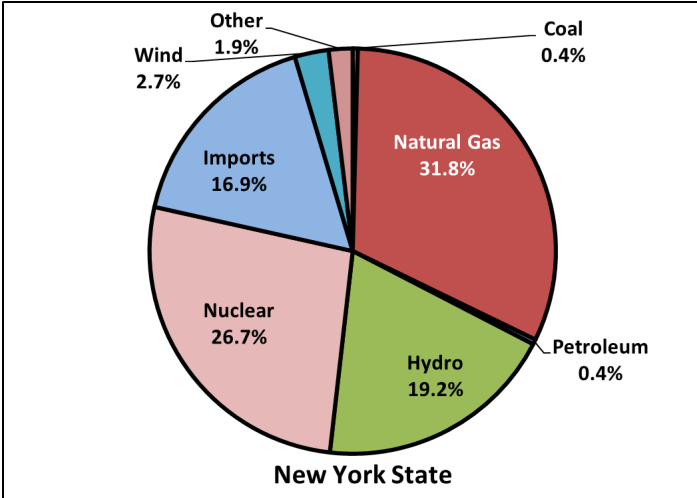


Figure 2-10b. Electricity Generation by Fuel Type, 2017

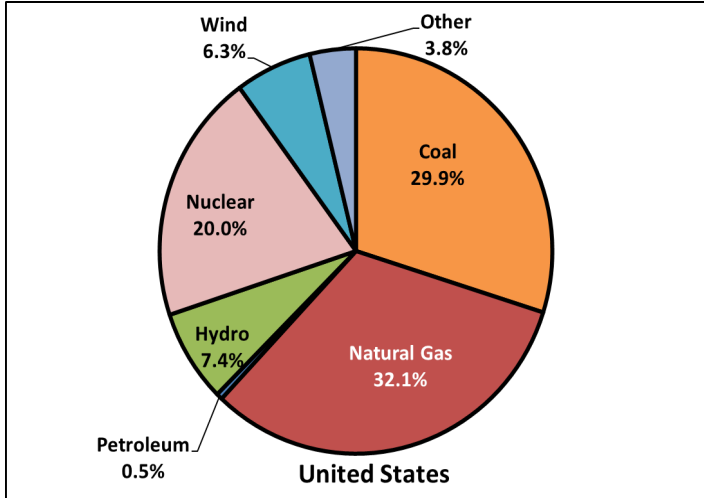


Figure 2-10c. Primary Consumption of Petroleum Products, 2017^{1,2}

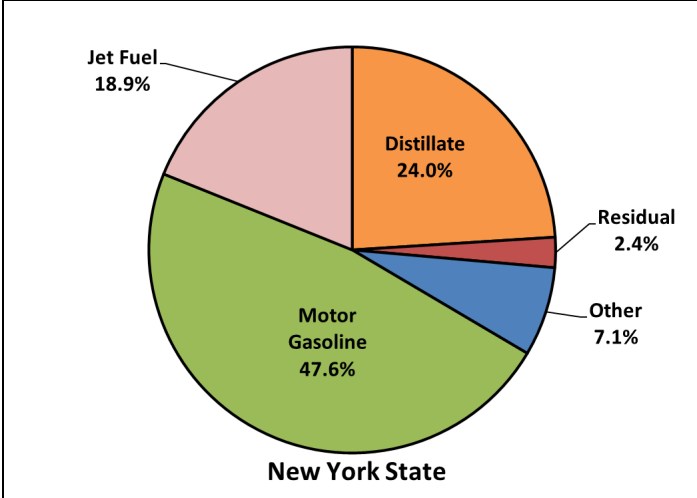
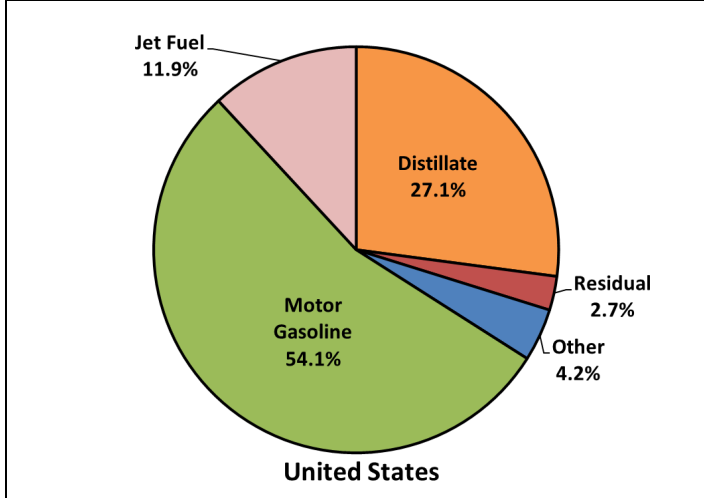


Figure 2-10d. Primary Consumption of Petroleum Products, 2017^{1,2}



¹ Excludes petroleum products not used as a form of energy.

² Motor gasoline percentages do not include ethanol embedded in motor gasoline. Percentages based on petroleum-only fuel.

United States and New York State Selected Comparisons, 2017

Figure 2-11a. Petroleum Consumption by Sector, 2017¹

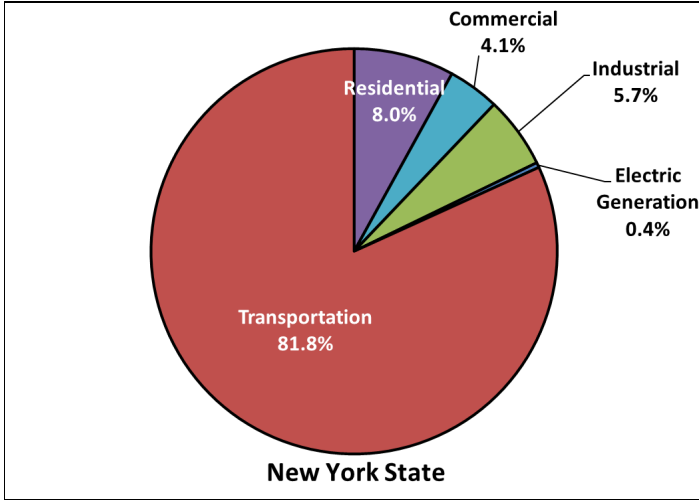


Figure 2-11b. Petroleum Consumption by Sector, 2017¹

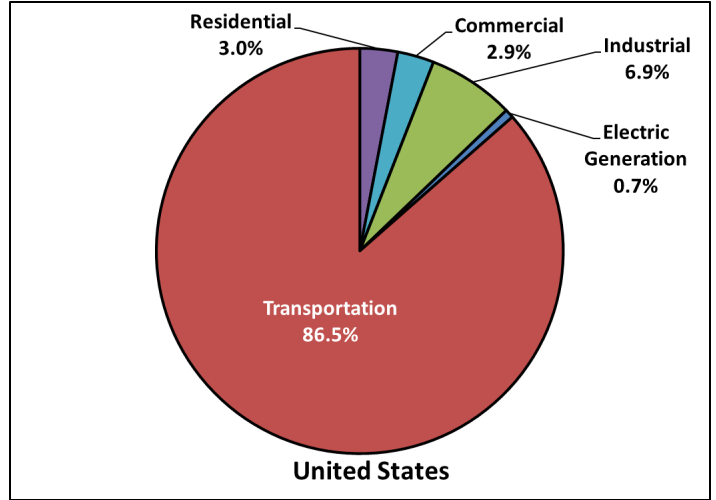


Figure 2-11c. Natural Gas Consumption by Sector, 2017

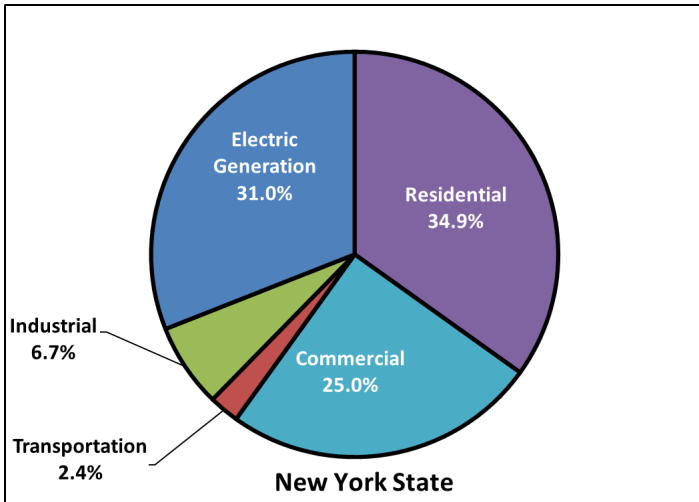
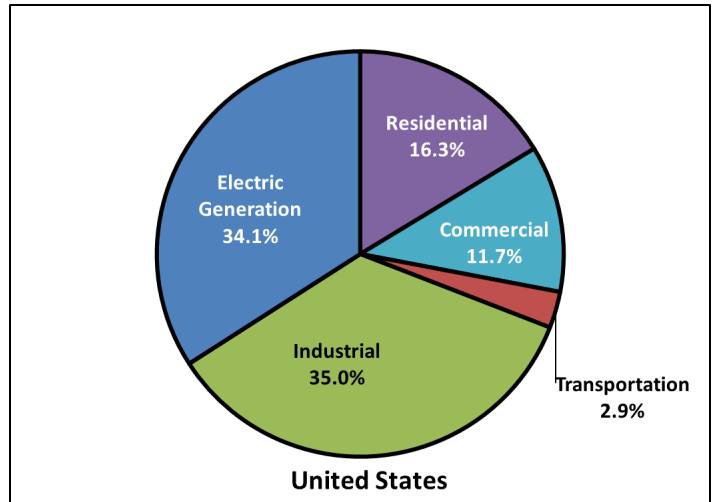


Figure 2-11d. Natural Gas Consumption by Sector, 2017



¹ Excludes petroleum products not used as a form of energy.

United States and New York State Selected Comparisons, 2017

Figure 2-12a. Coal Consumption by Sector, 2017

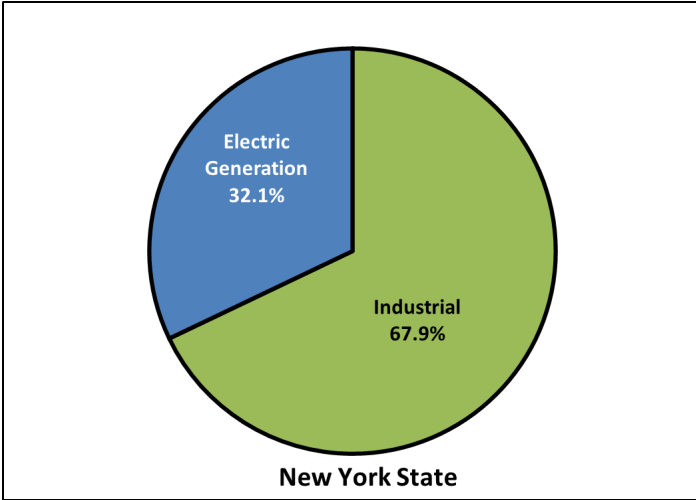


Figure 2-12b. Coal Consumption by Sector, 2017

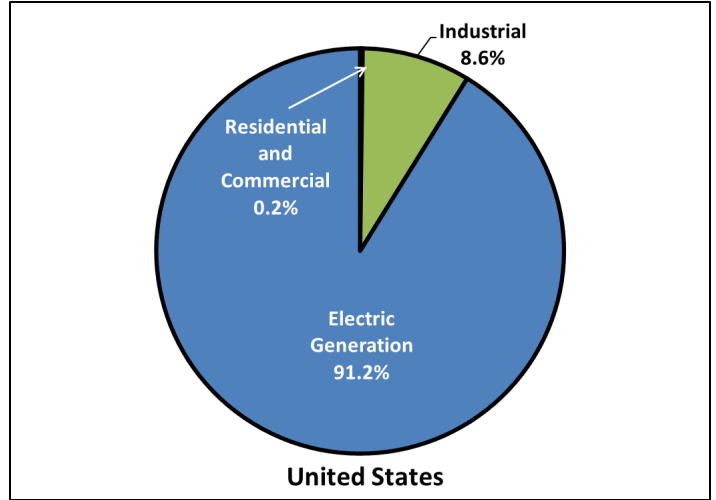


Figure 2-12c. Electricity Sales by Sector, 2017

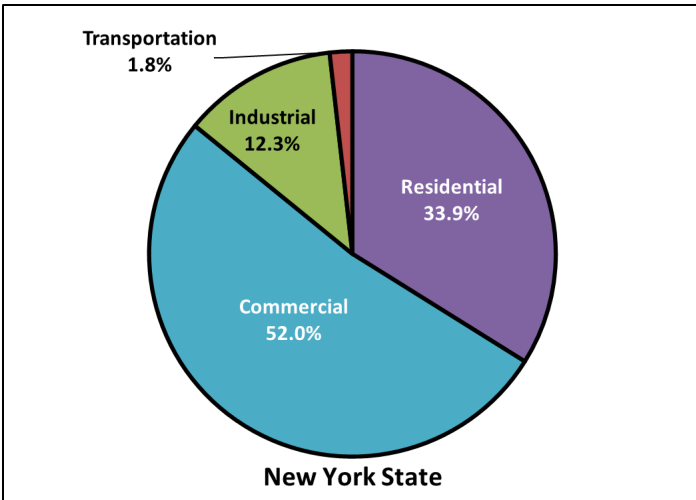
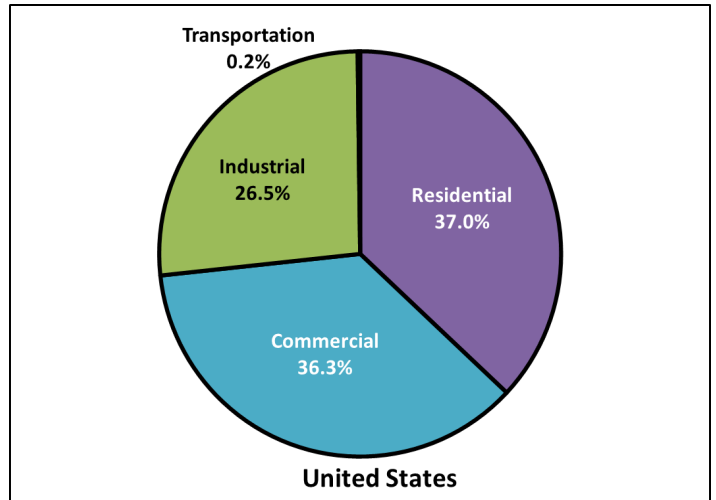


Figure 2-12d. Electricity Sales by Sector, 2017



United States and New York State Selected Energy Indicators, 2003–2017

Table 2-13a. Primary Consumption per Dollar of Gross State Product/Gross Domestic Product

Year	NYS	U.S.
	thousand Btu	thousand Btu
2003	3.52	6.55
2004	3.49	6.45
2005	3.39	6.25
2006	3.15	6.05
2007	3.22	6.04
2008	3.34	6.03
2009	3.00	5.82
2010	2.92	5.90
2011	2.91	5.83
2012	2.67	5.57
2013	2.72	5.61
2014	2.68	5.53
2015	2.59	5.27
2016	2.41	5.09
2017	2.33	5.03

Figure 2-13a. Primary Consumption per Dollar of Gross State Product/Gross Domestic Product

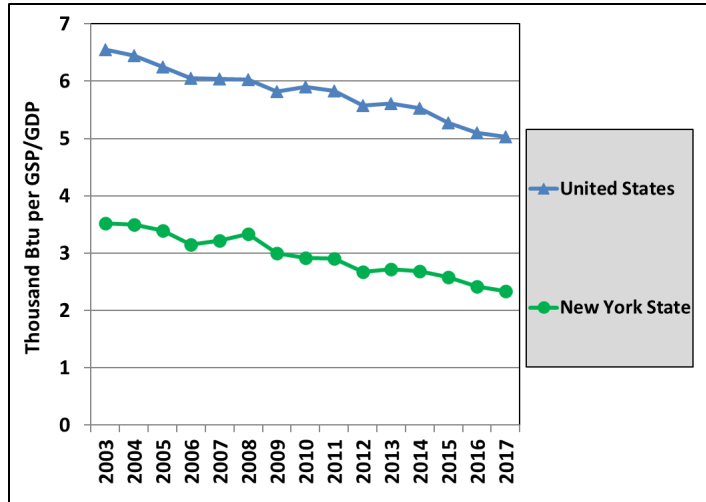
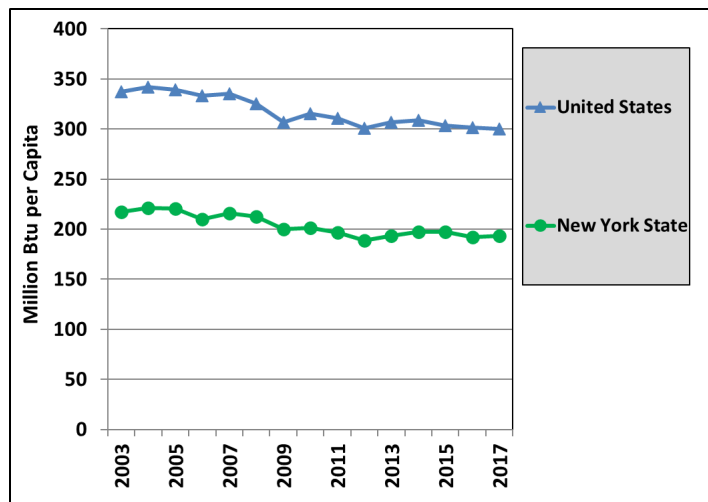


Table 2-13b. Primary Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2003	217.01	337.52
2004	221.12	341.86
2005	220.86	339.01
2006	210.25	333.29
2007	216.20	335.26
2008	212.78	325.10
2009	200.23	306.72
2010	201.27	315.50
2011	196.66	310.56
2012	188.54	300.56
2013	193.23	307.03
2014	197.05	308.53
2015	197.30	303.21
2016	192.36	301.22
2017	193.05	300.24

Figure 2-13b. Primary Consumption per Capita

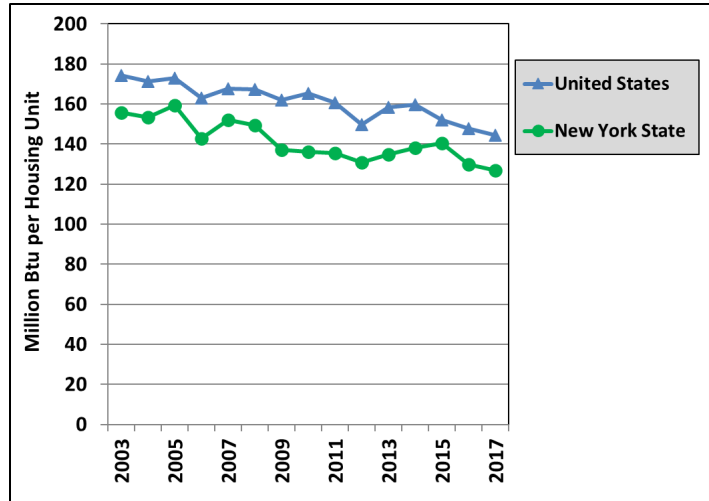


United States and New York State Selected Energy Indicators, 2003–2017

Table 2-14a.
Residential Consumption per Housing Unit

Year	NYS	U.S.
	MMBtu	MMBtu
2003	155.77	174.12
2004	153.31	171.32
2005	159.42	172.96
2006	142.65	163.03
2007	152.02	167.71
2008	149.40	167.30
2009	137.20	161.96
2010	136.22	165.22
2011	135.37	160.71
2012	130.71	149.61
2013	134.87	158.39
2014	138.05	159.76
2015	140.42	151.98
2016	129.80	147.75
2017	127.02	144.59

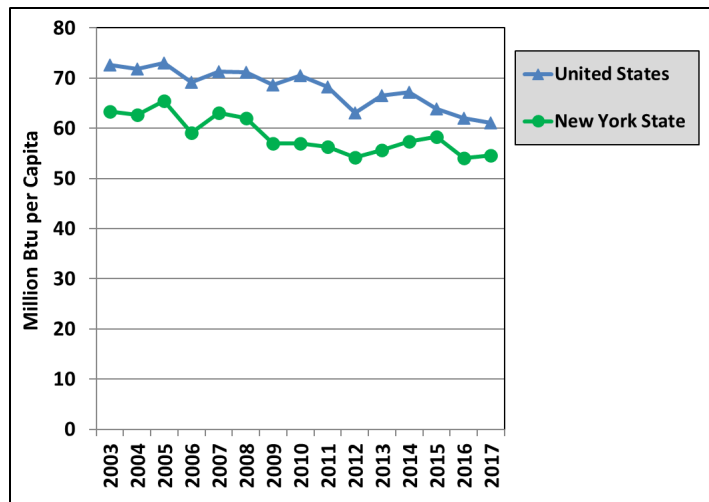
Figure 2-14a. Residential Consumption per Housing Unit



Tablet 2-14b.
Residential Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2003	63.35	72.67
2004	62.66	71.86
2005	65.43	72.99
2006	59.04	69.12
2007	63.09	71.34
2008	62.04	71.14
2009	56.98	68.62
2010	57.00	70.48
2011	56.31	68.25
2012	54.17	63.13
2013	55.71	66.56
2014	57.35	67.22
2015	58.36	63.87
2016	54.11	62.06
2017	54.58	61.09

Figure 2-14b. Residential Consumption per Capita



United States and New York State Selected Energy Indicators, 2003–2017

Table 2-15a. Commercial Consumption per Nonmanufacturing Employee

Year	NYS	U.S.
	MMBtu	MMBtu
2003	170.80	149.65
2004	175.49	150.23
2005	164.88	148.72
2006	157.74	144.49
2007	154.24	146.71
2008	157.76	148.19
2009	152.80	149.44
2010	152.65	151.61
2011	148.78	149.21
2012	139.02	142.04
2013	138.05	143.79
2014	132.89	143.55
2015	130.11	139.83
2016	125.09	136.24
2017	121.35	133.14

Figure 2-15a. Commercial Consumption per Nonmanufacturing Employee

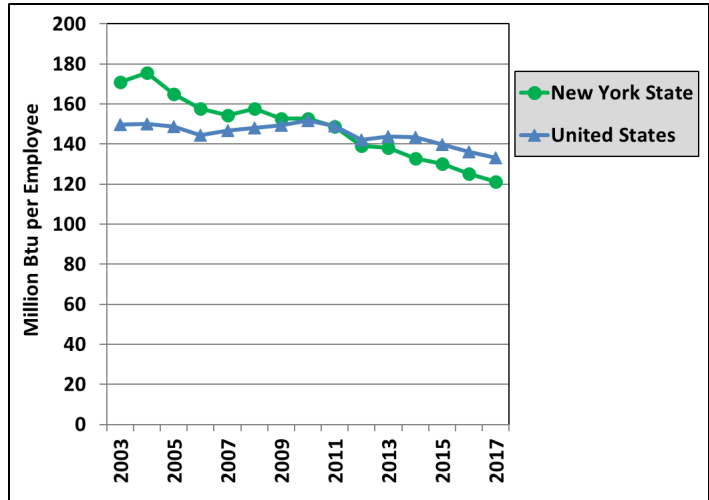
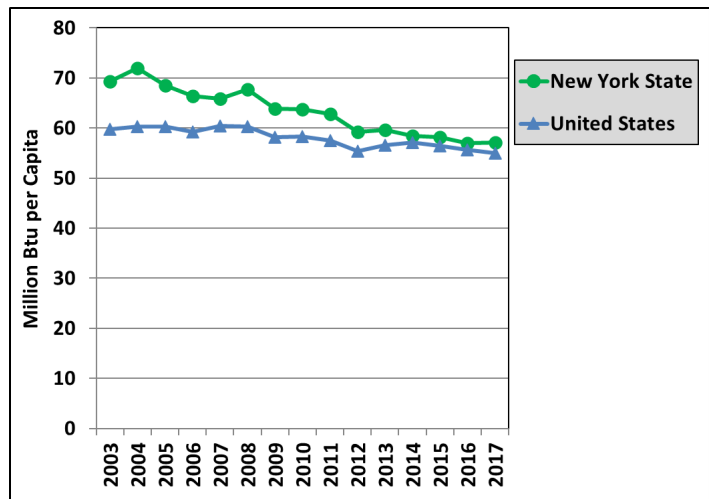


Table 2-15b. Commercial Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2003	69.33	59.75
2004	71.90	60.27
2005	68.45	60.30
2006	66.36	59.22
2007	65.85	60.45
2008	67.71	60.35
2009	63.82	58.20
2010	63.71	58.35
2011	62.75	57.57
2012	59.29	55.32
2013	59.65	56.58
2014	58.42	57.16
2015	58.22	56.46
2016	56.92	55.66
2017	57.08	54.94

Figure 2-15b. Commercial Consumption per Capita



United States and New York State Selected Energy Indicators, 2003–2017

Table 2-16a. Industrial Consumption per Dollar of Industrial Gross State Product/Gross Domestic Product

Year	NYS Btu	U.S. Btu
2003	3,995	10,852
2004	3,976	10,556
2005	4,055	9,802
2006	3,389	9,435
2007	3,685	9,293
2008	3,309	9,425
2009	2,911	9,540
2010	3,000	10,020
2011	3,325	9,896
2012	3,271	9,824
2013	3,558	9,601
2014	3,419	9,488
2015	3,226	9,520
2016	3,083	9,589
2017	3,021	9,377

Figure 2-16a. Industrial Consumption per Dollar of Industrial Gross State Product/Gross Domestic Product

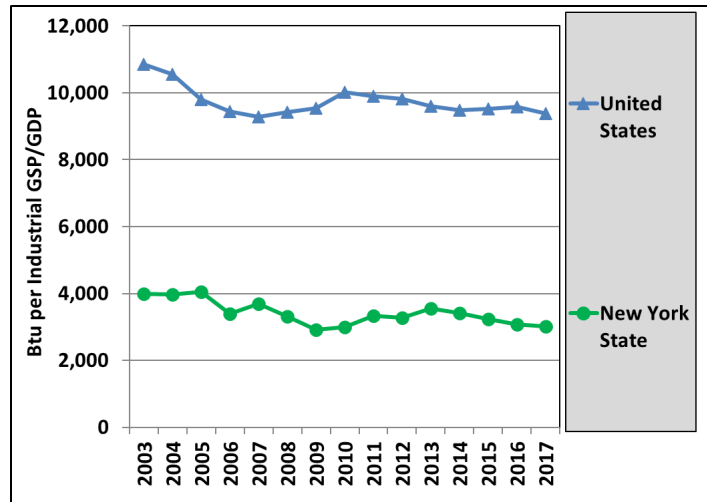
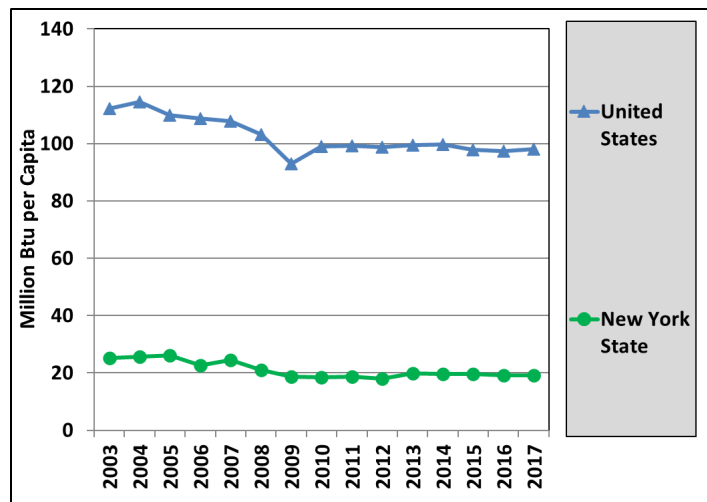


Table 2-16b. Industrial Consumption per Capita

Year	NYS MMBtu	U.S. MMBtu
2003	25.29	112.35
2004	25.55	114.61
2005	26.20	110.02
2006	22.53	108.78
2007	24.53	107.77
2008	21.04	103.28
2009	18.60	93.02
2010	18.37	99.10
2011	18.60	99.27
2012	17.96	98.78
2013	19.81	99.57
2014	19.52	99.63
2015	19.57	97.89
2016	19.12	97.36
2017	19.10	98.03

Figure 2-16b. Industrial Consumption per Capita



United States and New York State Selected Energy Indicators, 2003–2017

Table 2-17a. Transportation Consumption of Gasoline and Diesel per Vehicle Mile Traveled

Year	NYS Btu	U.S. Btu
2003	6,573	7,615
2004	6,603	7,655
2005	6,301	7,652
2006	6,243	7,739
2007	6,374	7,700
2008	6,296	7,452
2009	6,309	7,381
2010	6,476	7,419
2011	6,401	7,379
2012	6,194	7,253
2013	6,048	7,338
2014	6,325	7,393
2015	6,260	7,289
2016	6,776	7,183
2017	6,808	7,081

Figure 2-17a. Transportation Consumption of Gasoline and Diesel per Vehicle Mile Traveled

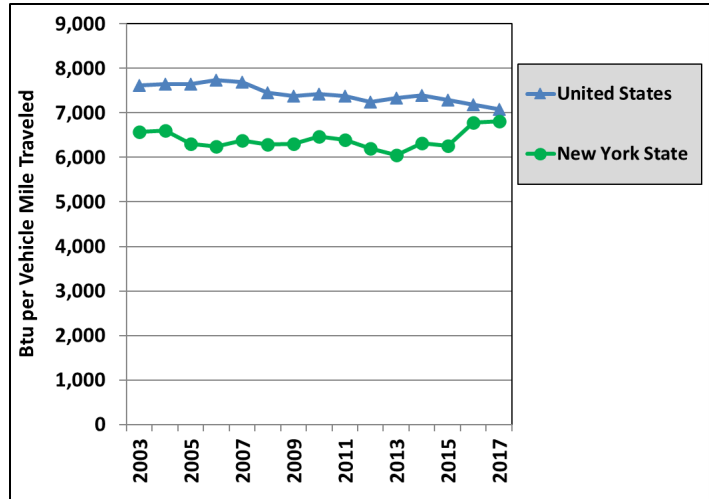
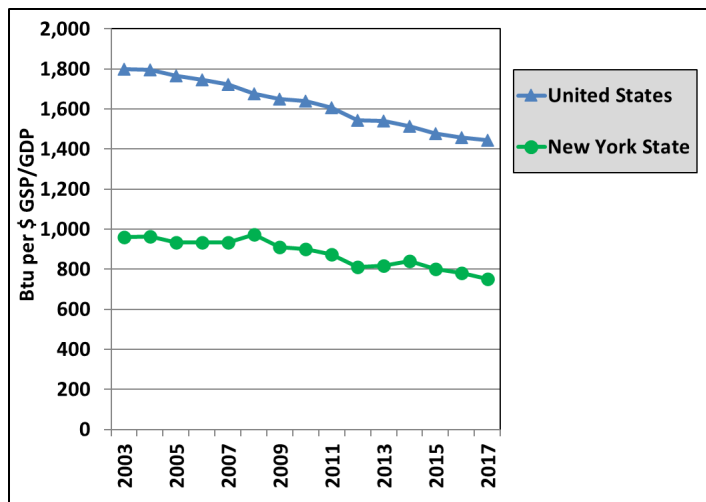


Table 2-17b. Transportation Consumption per Dollar of Gross State/Domestic Product

Year	NYS Btu	U.S. Btu
2003	959	1,800
2004	964	1,795
2005	932	1,765
2006	933	1,745
2007	935	1,723
2008	972	1,675
2009	911	1,649
2010	902	1,639
2011	873	1,606
2012	810	1,545
2013	818	1,541
2014	841	1,515
2015	801	1,478
2016	781	1,457
2017	752	1,445

Figure 2-17b. Transportation Consumption per Dollar of Gross State/Domestic Product



3 New York State Energy Consumption

This section presents data on primary and net energy consumption in New York State by sector and fuel type from 2003 through 2017. Primary consumption of energy is shown by fuel type in physical units, such as tons, cubic feet, gigawatt-hours (GWh), barrels, and trillion Btu (TBtu). Total primary energy consumption by sector, including residential, commercial, industrial, transportation, and electric generation is presented for the 15-year period.

This section also presents statistics on the State's other fuels, including wood, municipal waste, solar, and geothermal energy. Electricity generation reported does not include generator station use. Electricity from hydro as well as wood, waste, landfill gas, wind, solar, and net electricity imports has been converted to primary energy by applying a statewide average annual heat rate (Btu per kilowatt-hour [kWh] generated) for fossil-fueled power plants. The current year heat rate can be found in Appendix G Conversion Factors.

Electricity sale figures are combined with end-use consumption of coal, petroleum products, natural gas, biofuels, solar, and geothermal to derive total net energy consumption in the residential, commercial, industrial, and transportation sectors. Net energy consumption is provided in TBtu and physical units. End-use energy consumption by large multifamily buildings and institutional facilities is included in the commercial sector.

3.1 Key Observations about 2017 New York State Energy Consumption Data

- Total primary energy consumption was 3,741 TBtu, a 1.5% decrease from 2016.
- Primary consumption of petroleum (1,348 TBtu) exceeded natural gas (1,280 TBtu) as the largest energy source for NYS energy consumption, representing 36.0% of total primary energy consumption.
- Cumulative heating degree-days were 2.6% higher in 2017 compared to 2016.
- Primary consumption of energy from solar, hydropower, electricity imports, wind, nuclear, and bioenergy increased 23.3%, 9.3%, 5.9%, 4.5%, 1.4%, and 0.8%, respectively in 2017, while use of coal, natural gas, and petroleum decreased 51.8%, 4.4%, and 2.9%, respectively.
- Total consumption of petroleum products was 1,348 TBtu, or 248 million barrels, representing 36.0% of total primary energy consumption.
- In 2017, statewide distillate oil use decreased by 1.7% from 2016 levels. Statewide motor gasoline use increased 1.1% and residual fuel use decreased by 22.2% from 2016 to 2017. Total statewide petroleum fuels use decreased by 2.8% from 2016 to 2017.

- Sales of natural gas totaled 1,240 billion cubic feet in 2017, which was 4.3% below the 1,296 billion cubic feet sold in 2016.
- Sales of natural gas by sector were 34.9% for the residential sector, 25.0% for the commercial sector, 6.7% for the industrial sector, 2.4% for the transportation sector, and 31.0% for the electric generation sector.
- Natural gas and nuclear power accounted for 31.8% and 26.7% of the State's electricity requirements in 2017, respectively.
- Energy used for electricity generation accounted for 36.8% of primary energy use.
- Sales of electricity to ultimate customers decreased by 1.9% between 2016 and 2017.
- Total residential net energy consumption was 759 TBtu, which was 1.3% higher than 2016 levels. The residential sector accounted for 26.6% of total net energy consumption.
- Total net energy consumption in the commercial sector was 648 TBtu, or 22.7% of total net energy consumption. The sector's total energy use increased 0.6% above the 2016 level.
- Industrial net energy consumption was 262 TBtu, or 9.2% of total net consumption. The sector's total energy use decreased 1.8% from the 2016 level.
- Transportation energy consumption was 1,190 TBtu, down 1.7% from 2016. The sector accounted for 41.6% of total net energy consumption in 2017.

New York State Primary Consumption of Energy by Fuel Type 2003–2017

Figure 3-1

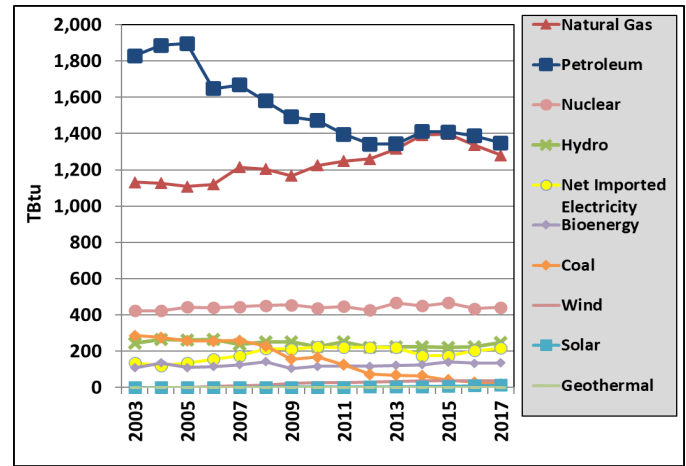


Table 3-1a. (In physical units)

Year	Coal	Natural Gas	Petroleum Products ¹	Hydro	Nuclear	Net Imported Electricity	Solar	Wind
	Mtons	Bcf	Mbbl	GWh	GWh	GWh	GWh	GWh
2003	11,314	1,102	327,543	25,798	40,679	14,379	6	41
2004	11,335	1,098	334,725	28,153	40,640	12,733	7	116
2005	10,739	1,080	338,623	27,583	42,443	14,376	12	103
2006	10,979	1,097	296,964	28,422	42,224	16,743	14	655
2007	11,058	1,187	300,683	25,557	42,453	18,904	16	833
2008	10,157	1,180	285,925	27,501	43,209	23,344	25	1,251
2009	7,032	1,143	270,213	27,945	43,485	23,361	35	2,266
2010	7,367	1,198	266,917	25,103	41,870	24,912	59	2,596
2011	5,604	1,217	253,979	28,355	42,695	24,883	98	2,828
2012	3,137	1,223	244,537	25,303	40,775	25,516	211	2,992
2013	3,041	1,273	244,982	26,397	44,756	25,902	257	3,539
2014	2,867	1,349	257,479	26,823	43,041	20,789	401	3,986
2015	1,761	1,353	257,359	26,704	44,620	21,098	643	3,984
2016	1,175	1,296	254,117	27,150	41,638	24,776	931	3,943
2017	738	1,240	247,550	30,350	42,175	26,680	1,233	4,219

Table 3-1b. (In trillion Btu)

Year	Coal	Natural Gas	Petroleum Products ¹	Hydro	Nuclear	Net Imported Electricity	Solar	Wind	Geothermal	Bioenergy ²	Total ³
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	Tbtu	Tbtu	Tbtu	Tbtu	Tbtu
2003	286.2	1,131.4	1,827.7	244.2	424.0	136.1	0.6	0.4	0.5	109.2	4,160.2
2004	276.5	1,126.6	1,885.8	265.0	423.8	119.9	0.7	1.2	0.5	136.2	4,236.2
2005	256.9	1,107.2	1,895.8	261.5	442.9	136.3	0.8	1.0	0.6	109.6	4,212.8
2006	256.3	1,120.2	1,648.3	265.9	440.6	156.7	1.0	6.5	0.7	115.7	4,011.9
2007	258.5	1,214.4	1,667.2	236.9	445.3	175.2	1.2	8.2	0.7	126.0	4,133.5
2008	229.0	1,205.1	1,579.5	251.2	451.6	213.3	1.3	12.3	0.8	141.7	4,085.9
2009	156.0	1,166.6	1,492.7	252.9	454.8	211.4	1.5	22.1	1.0	105.2	3,864.2
2010	167.1	1,224.5	1,472.0	225.4	437.6	223.7	1.7	25.3	1.1	116.6	3,895.0
2011	125.2	1,247.8	1,396.2	250.7	446.8	220.0	2.1	27.5	1.3	118.4	3,835.9
2012	72.9	1,261.0	1,342.1	220.1	427.3	222.0	3.2	28.5	1.2	117.8	3,696.0
2013	68.7	1,315.3	1,343.4	224.7	467.7	220.5	3.9	33.8	1.2	122.3	3,801.4
2014	64.7	1,392.4	1,410.1	224.3	450.1	173.8	5.3	37.7	1.2	125.9	3,885.6
2015	41.2	1,396.7	1,408.9	221.2	466.5	174.8	7.7	37.1	1.2	140.9	3,896.2
2016	29.7	1,336.5	1,387.2	223.5	434.8	204.0	10.7	36.4	1.2	134.4	3,798.3
2017	19.6	1,280.1	1,348.3	246.5	441.0	216.7	13.9	38.1	1.2	135.5	3,740.9

¹ Includes petroleum coke used for electric generation.

² Includes primarily wood, waste, landfill gas, and ethanol; ethanol values are embedded in motor gasoline, but are excluded from the petroleum products total.

³ Excludes nonfuel uses.

**New York State
Primary Consumption
of Refined Petroleum Products, 2003–2017**

Figure 3-2

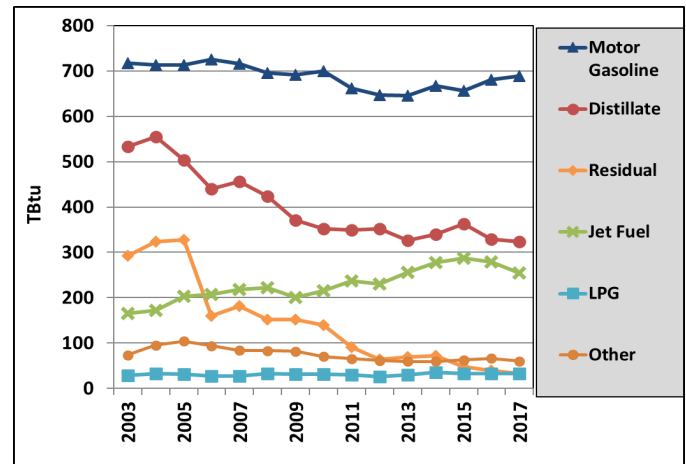


Table 3-2a. (In thousand barrels)

Year	Distillate ¹	Residual	Kerosene	LPG	Motor Gasoline	Jet Fuel ²	Other	Total ³
	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl
2003	91,548	46,578	3,195	7,771	138,010	29,248	11,742	327,543
2004	95,300	51,469	3,182	8,639	137,391	30,476	15,292	334,725
2005	86,630	52,151	3,632	8,261	137,355	35,912	17,004	338,623
2006	75,871	25,526	2,579	7,153	140,020	36,515	15,357	296,964
2007	78,850	28,975	1,777	7,346	139,140	38,588	13,622	300,683
2008	73,289	24,203	830	8,536	136,105	39,293	13,635	285,925
2009	64,154	24,060	1,218	8,344	135,921	35,364	13,175	270,213
2010	60,987	22,233	1,701	8,139	138,087	38,116	11,142	266,917
2011	60,439	14,517	1,058	7,688	130,718	41,919	10,398	253,979
2012	61,030	10,262	569	6,871	127,902	40,740	9,803	244,537
2013	56,594	11,032	506	7,657	127,461	45,066	9,425	244,982
2014	59,002	11,396	879	9,229	131,943	48,903	9,329	257,479
2015	62,971	7,582	613	8,609	129,909	50,634	9,915	257,359
2016	57,242	6,358	835	8,516	134,799	49,288	10,512	254,117
2017	56,280	5,202	491	8,460	136,414	44,997	9,496	247,550

Table 3-2b. (In trillion Btu)

Year	Distillate ¹	Residual	Kerosene	LPG	Motor Gasoline	Jet Fuel ²	Other	Total ³
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2003	532.7	292.8	18.1	29.3	717.2	165.7	73.7	1,827.7
2004	554.5	323.6	18.0	32.5	713.9	172.7	95.0	1,885.8
2005	504.0	327.9	20.6	30.7	713.1	203.5	104.1	1,895.8
2006	440.3	160.5	14.6	26.7	726.0	207.0	94.2	1,648.3
2007	456.1	182.2	10.1	27.7	715.5	218.7	83.6	1,667.2
2008	423.6	152.2	4.7	32.4	695.0	222.7	83.5	1,579.5
2009	370.6	151.3	6.9	31.7	691.7	200.5	81.6	1,492.7
2010	352.2	139.8	9.6	31.3	699.7	216.1	70.1	1,472.0
2011	348.7	91.3	6.0	29.5	661.8	237.6	65.4	1,396.2
2012	352.0	64.5	3.2	26.4	647.4	230.9	61.5	1,342.1
2013	326.1	69.4	2.9	29.4	645.0	255.5	59.5	1,343.4
2014	340.0	71.6	5.0	35.5	667.5	277.2	59.2	1,410.1
2015	362.8	47.7	3.5	33.1	656.9	287.0	62.6	1,408.9
2016	329.5	40.0	4.7	32.7	681.4	279.4	66.0	1,387.2
2017	324.0	32.7	2.8	32.5	689.3	255.1	59.9	1,348.3

¹ Distillate consumption estimates include biodiesel blended into diesel fuel.

² Kerosene-type jet fuel and aviation gasoline.

³ Includes petroleum coke used for electric generation. Ethanol values are embedded in motor gasoline but are excluded from the petroleum products total.

**New York State
Primary Consumption
of Energy by Sector¹
2003–2017**

Figure 3-3a

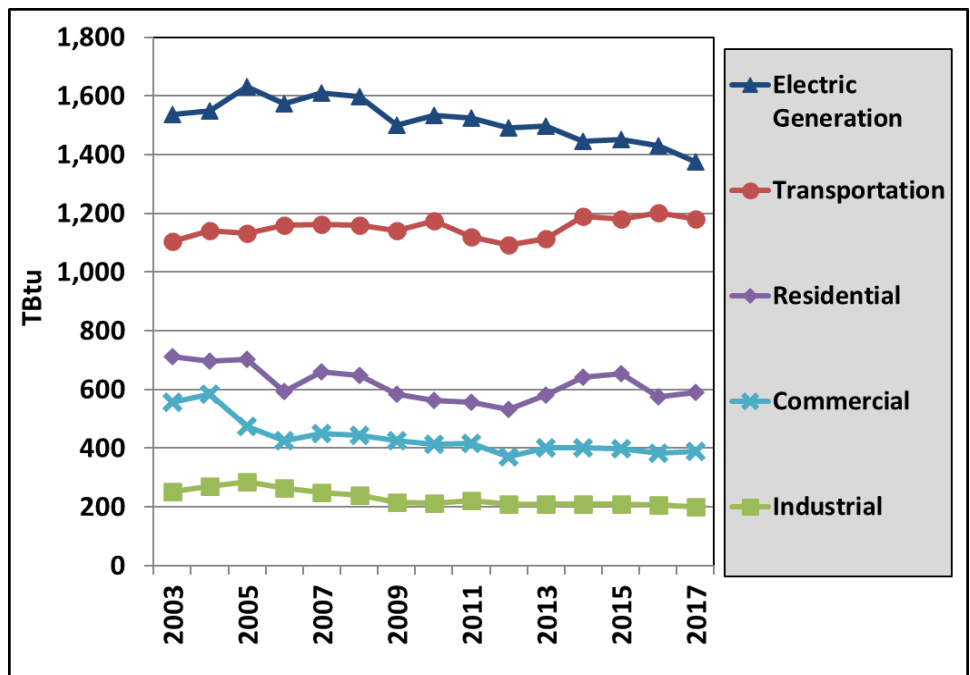


Table 3-3a. (In trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Electric Generation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2003	712.0	555.9	252.8	1,103.5	1,537.1	4,161.3
2004	695.7	584.9	269.2	1,141.3	1,548.1	4,239.2
2005	702.8	475.0	284.6	1,131.8	1,631.5	4,225.7
2006	592.0	426.4	264.7	1,159.5	1,574.1	4,016.8
2007	660.7	451.6	249.6	1,163.3	1,611.2	4,136.4
2008	648.4	442.8	241.4	1,158.8	1,596.5	4,088.0
2009	582.8	424.5	215.3	1,142.0	1,501.3	3,865.9
2010	564.3	415.1	213.0	1,174.2	1,533.7	3,900.2
2011	557.1	416.7	221.1	1,120.0	1,523.8	3,838.6
2012	533.7	370.3	209.3	1,091.2	1,491.5	3,696.0
2013	581.7	400.2	208.4	1,113.2	1,498.0	3,801.4
2014	641.2	402.0	208.4	1,189.8	1,444.2	3,885.6
2015	655.6	399.7	210.3	1,180.2	1,450.5	3,896.1
2016	576.1	382.8	206.1	1,201.7	1,431.7	3,798.3
2017	591.6	390.8	200.9	1,180.7	1,376.9	3,740.9

¹ Customer-sited generation is included in specific end-use sectors. All other electric generation and associated losses are included in the electric generation sector.

**New York State
Primary Consumption
of Energy by Sector¹
2003–2017**

Figure 3-3b

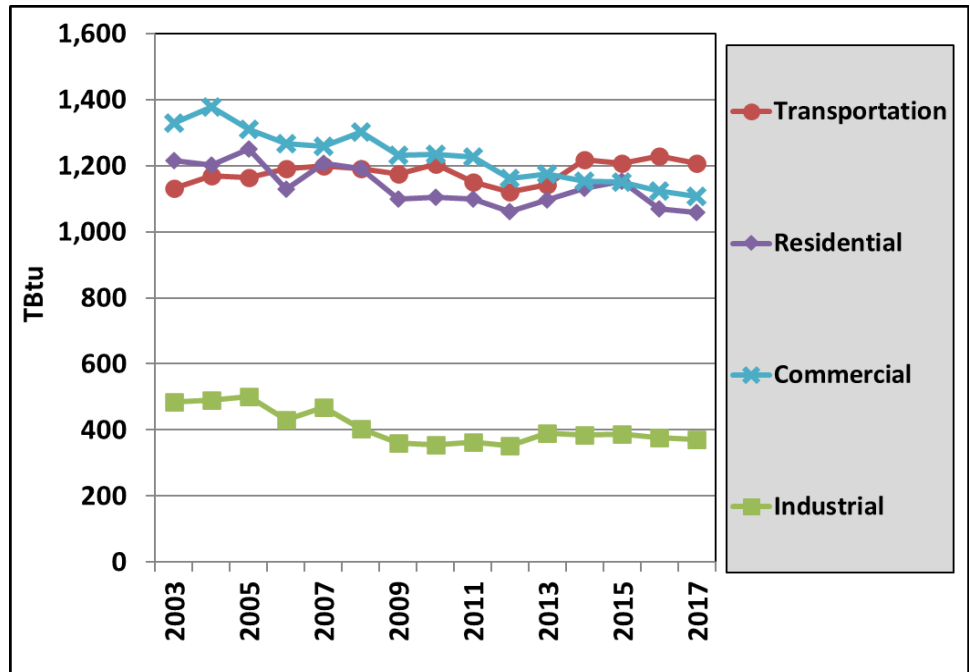


Table 3-3b. (In trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu
2003	1,214.8	1,329.5	484.9	1,132.2	4,161.3
2004	1,201.3	1,378.5	489.8	1,169.5	4,239.2
2005	1,251.9	1,309.7	501.3	1,162.7	4,225.7
2006	1,128.0	1,267.8	430.5	1,190.6	4,016.8
2007	1,207.0	1,259.8	469.4	1,200.2	4,136.4
2008	1,191.8	1,300.8	404.2	1,191.1	4,088.0
2009	1,100.0	1,232.2	359.2	1,174.5	3,865.9
2010	1,104.5	1,234.5	356.0	1,205.2	3,900.2
2011	1,099.1	1,224.9	363.0	1,151.5	3,838.6
2012	1,061.8	1,162.3	352.0	1,119.8	3,696.0
2013	1,096.0	1,173.5	389.8	1,142.2	3,801.4
2014	1,130.9	1,152.1	384.8	1,217.8	3,885.6
2015	1,152.4	1,149.7	386.4	1,207.6	3,896.1
2016	1,068.5	1,123.8	377.6	1,228.4	3,798.3
2017	1,057.7	1,106.2	370.1	1,207.0	3,740.9

¹ All electric generation and associated losses are included in the end-use sectors. Electricity systems losses are apportioned by the percentage of electricity sales for each end-use sector.

New York State Energy Services and Losses of Energy by Sector¹ 2003–2017

Figure 3-3c-1. Energy Services by Sector

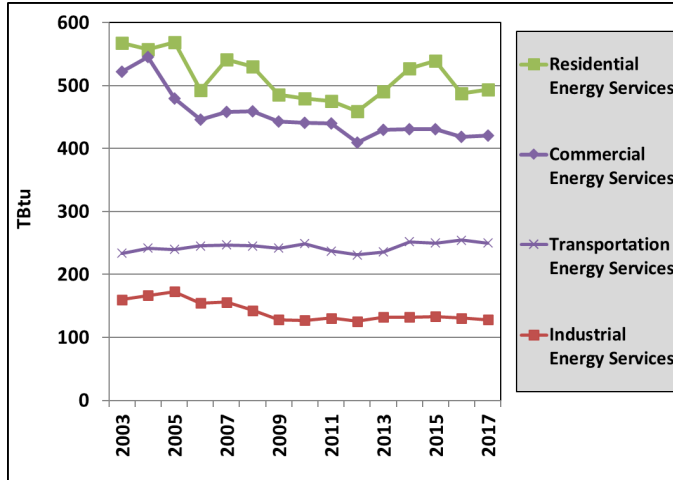


Figure 3-3c-2. Energy Losses by Sector

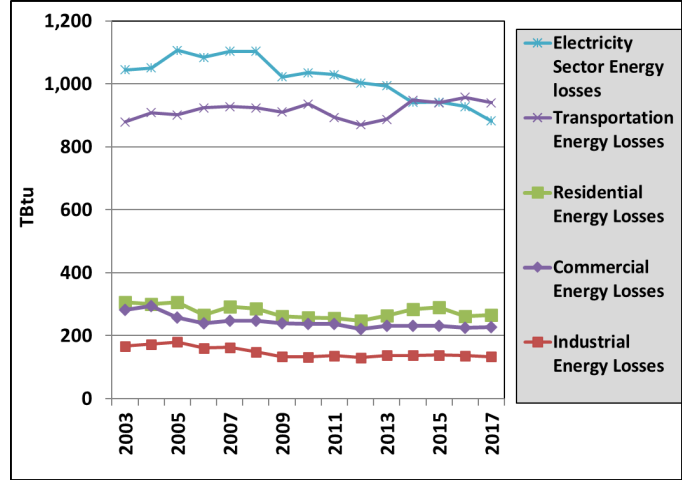


Table 3-3c. (In trillion Btu)

Year	Residential		Commercial		Industrial		Transportation		Elec. Gen.	Total		Energy
	Services	Losses	Services	Losses	Services	Losses	Services	Losses	Losses	Services	Losses	
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2003	567.3	305.5	522.1	281.1	160.2	166.8	233.7	879.0	1,044.4	1,483.3	2,676.8	4,160.2
2004	557.3	300.1	545.1	293.5	166.5	173.3	241.6	908.7	1,050.2	1,510.4	2,725.8	4,236.2
2005	568.9	306.3	479.1	258.0	172.8	179.9	239.7	901.8	1,106.3	1,460.5	2,752.2	4,212.8
2006	492.2	265.0	445.8	240.0	154.8	161.1	245.5	923.6	1,083.9	1,338.3	2,673.6	4,011.9
2007	540.9	291.2	458.4	246.8	156.1	162.4	246.7	928.1	1,102.8	1,402.1	2,731.5	4,133.5
2008	530.2	285.5	459.5	247.4	142.8	148.7	245.4	923.3	1,102.9	1,378.1	2,707.8	4,085.9
2009	485.8	261.6	443.0	238.5	127.9	133.2	242.0	910.4	1,021.8	1,298.8	2,565.4	3,864.2
2010	479.8	258.3	441.2	237.6	126.9	132.1	248.7	935.5	1,035.0	1,296.5	2,598.5	3,895.0
2011	475.8	256.2	440.3	237.1	130.8	136.1	237.3	892.8	1,029.6	1,284.1	2,551.8	3,835.9
2012	459.3	247.3	409.3	220.4	125.5	130.6	231.1	869.4	1,003.1	1,225.2	2,470.8	3,696.0
2013	490.7	264.2	429.5	231.2	132.1	137.4	235.8	887.1	993.4	1,288.0	2,513.4	3,801.4
2014	527.6	284.1	431.0	232.1	132.2	137.6	251.9	947.7	941.3	1,342.8	2,542.8	3,885.6
2015	539.2	290.4	430.6	231.9	133.3	138.7	249.8	939.9	942.4	1,352.9	2,543.2	3,896.2
2016	487.2	262.3	418.5	225.3	130.6	135.9	254.3	956.8	927.4	1,290.6	2,507.7	3,798.3
2017	493.4	265.7	421.1	226.7	128.2	133.5	249.9	940.2	882.2	1,292.6	2,448.3	3,740.9

¹ Electricity losses are calculated as the difference between energy input for electricity generation and energy from retail electricity sales. Energy losses for the end-use sectors are based on the following estimated end-use efficiency factors from the Lawrence Livermore National Laboratory, 65% for the residential sector, 65% for the commercial sector, 49% for the industrial sector, and 21% for the transportation sector. Totals may not equal the sum of components due to rounding. Energy services are the ultimate end-use of mechanical energy to run an appliance, power a light bulb, turn the axle of a vehicle, heat or cool a building, etc. Energy losses are the energy that is not used in these mechanical processes and is burned off or rejected as waste energy. A system or process becomes more energy efficient with a higher percentage of energy services to losses.

**New York State
Primary Consumption of Energy
for Electric Generation
2003–2017**

Figure 3-4

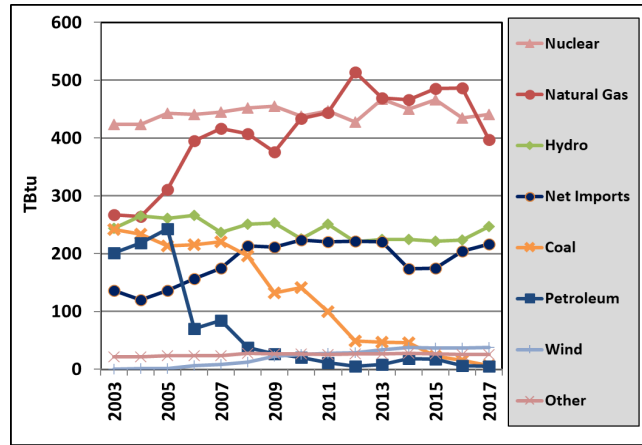


Table 3-4a. (In physical units)

Year	Coal	Natural Gas	Distillate ¹	Residual	Total Petroleum ²	Conventional Hydro ³	Pumped Storage Hydro	Nuclear	Net Imported Electricity	Wind	Solar	Other ⁴
	Mtons	Bcf	Mbbl	Mbbl	Mbbl	GWh	GWh	GWh	GWh	GWh	GWh	GWh
2003	9,646	261	2,410	29,821	32,230	24,207	1,591	40,679	14,379	41	0	2,302
2004	9,702	259	1,740	33,236	34,977	26,745	1,408	40,640	12,733	116	0	2,303
2005	9,069	304	1,574	37,320	38,894	26,204	1,379	42,443	14,376	103	0	2,481
2006	9,417	388	622	10,614	11,236	27,110	1,312	42,224	16,743	655	0	2,488
2007	9,613	408	1,372	12,224	13,596	24,184	1,373	42,453	18,904	833	0	2,555
2008	8,885	399	809	4,935	6,106	25,711	1,790	43,209	23,344	1,251	0	2,996
2009	6,108	368	736	3,261	4,296	26,420	1,525	43,485	23,361	2,266	0	2,888
2010	6,384	425	637	1,790	3,340	24,214	889	41,870	24,912	2,596	0	2,916
2011	4,591	434	331	1,026	1,826	27,634	721	42,695	24,883	2,828	6	2,823
2012	2,228	499	392	459	851	24,572	731	40,775	25,516	2,992	53	2,945
2013	2,225	456	503	882	1,385	25,631	766	44,756	25,902	3,539	67	3,003
2014	2,154	453	833	2,228	3,061	25,974	849	43,041	20,789	3,986	71	3,194
2015	1,038	472	835	1,942	2,778	25,879	825	44,620	21,098	3,984	98	3,028
2016	654	472	344	624	968	26,314	836	41,638	24,776	3,943	137	2,881
2017	242	385	264	642	905	29,554	795	42,175	26,680	4,219	178	2,919

Table 3-4b. (In trillion Btu)

Year	Coal	Natural Gas	Distillate ¹	Residual	Total Petroleum ²	Hydro ³	Nuclear	Net Imports ³	Wind	Solar	Other ^{3,4}	Total ⁵
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2003	242.1	267.1	14.0	186.3	201.5	244.2	424.0	136.1	0.4	0.0	21.8	1537.1
2004	233.6	264.2	10.1	205.7	218.8	265.0	423.8	119.9	1.2	0.0	21.7	1548.1
2005	213.0	310.6	9.2	220.4	242.5	261.5	442.9	136.3	1.0	0.0	23.5	1631.5
2006	215.8	395.5	3.6	61.3	69.9	265.9	440.6	156.7	6.5	0.0	23.3	1574.1
2007	220.6	416.9	7.9	73.7	84.5	236.9	445.3	175.2	8.2	0.0	23.7	1611.2
2008	195.6	407.3	4.7	31.0	37.8	251.2	451.6	213.3	12.3	0.0	27.4	1596.5
2009	131.8	375.6	4.3	20.5	26.5	252.9	454.8	211.4	22.1	0.0	26.1	1501.3
2010	141.6	433.7	3.7	11.3	20.2	225.4	437.6	223.7	25.3	0.0	26.2	1533.7
2011	99.2	443.6	1.9	6.4	11.0	250.7	446.8	220.0	27.5	0.1	25.0	1523.8
2012	48.7	513.6	2.3	2.9	5.1	220.1	427.3	222.0	28.5	0.5	25.6	1491.5
2013	47.2	469.5	2.9	5.5	8.4	224.7	467.7	220.5	33.8	0.6	25.6	1498.0
2014	45.9	466.0	4.8	14.0	18.8	224.3	450.1	173.8	37.7	0.7	26.7	1444.2
2015	22.0	486.0	4.8	12.2	17.0	221.2	466.5	174.8	37.1	0.9	25.1	1450.5
2016	15.6	486.5	2.0	3.9	5.9	223.5	434.8	204.0	36.4	1.3	23.7	1431.7
2017	6.3	397.4	1.5	4.0	5.6	246.5	441.0	216.7	38.1	1.6	23.7	1376.9

¹ Includes small quantities of kerosene-type jet fuel.
² Includes petroleum coke used for electric generation.
³ Converts to TBtu by applying a three-year statewide weighted average annual heat rate for fossil-fueled power plants.
⁴ Includes primarily waste, methane, and wood. See Table 3-5 for a breakout of energy output.
⁵ Excludes utility consumption of fuels used in the production of steam distributed for space heating. Excludes customer-sited generation.

**New York State
Electric Generation
by Fuel Type
2003–2017**

Figure 3-5.

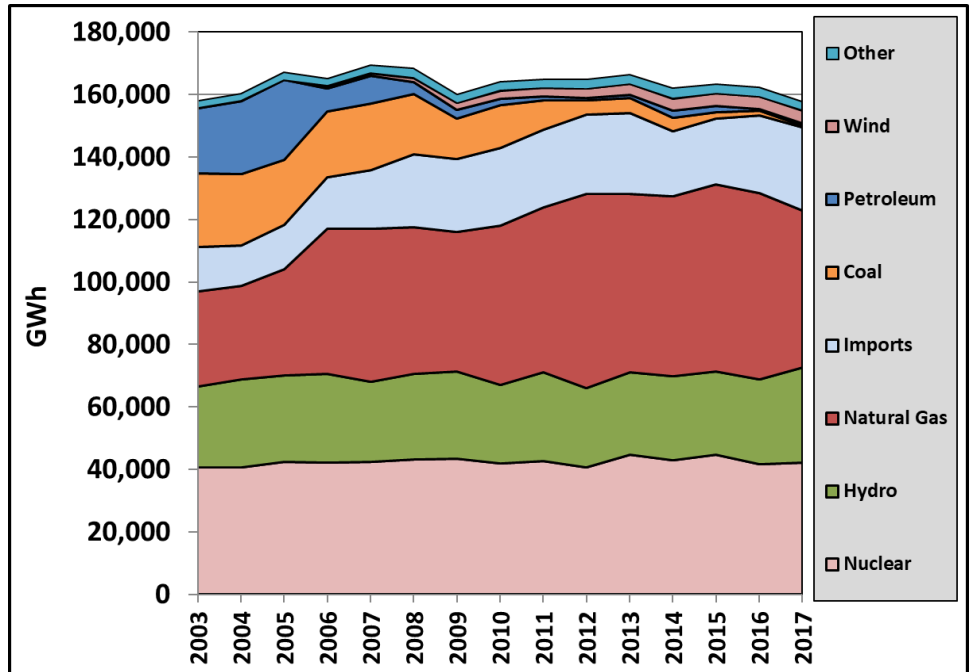


Table 3-5. (In gigawatt-hours)

Year	Natural Gas		Petroleum	Conv.	PS	Nuclear	Other ^{1,2}				Solar ³	In-State Generation	Net Imports	Total Generation	Electricity Requirements
	Coal	Gas	Products	Hydro	Hydro		Waste	LFG	Wood	Wind					
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
2003	23,581	30,402	20,830	24,207	1,591	40,679	1,905	205	192	41	0	143,633	14,379	158,012	158,012
2004	22,853	30,059	23,353	26,745	1,408	40,640	1,883	209	211	116	0	147,478	12,733	160,211	160,211
2005	20,598	34,005	25,619	26,204	1,379	42,443	1,899	329	253	103	0	152,832	14,376	167,208	167,208
2006	20,968	46,253	7,441	27,110	1,312	42,224	1,902	326	260	655	0	148,451	16,743	165,194	162,238
2007	21,406	48,893	8,780	24,184	1,373	42,453	1,902	397	256	833	0	150,477	18,904	169,381	167,341
2008	19,154	46,845	4,001	25,711	1,790	43,209	1,903	533	560	1,251	0	144,957	23,344	168,300	165,612
2009	12,759	44,625	2,829	26,420	1,525	43,485	1,900	648	340	2,266	0	136,797	23,361	160,158	158,780
2010	13,583	51,077	2,094	24,214	889	41,870	1,893	708	315	2,596	0	139,238	24,912	164,150	163,505
2011	9,426	52,713	1,234	27,634	721	42,695	1,878	735	210	2,828	7	140,081	24,883	164,964	163,329
2012	4,551	62,073	606	24,572	731	40,775	1,897	736	311	2,992	53	139,296	25,516	164,813	162,840
2013	4,697	57,039	1,057	25,631	766	44,756	1,799	828	377	3,539	52	140,540	25,902	166,441	163,514
2014	4,325	57,507	2,259	25,974	849	43,041	1,866	789	539	3,986	51	141,187	20,789	161,976	160,059
2015	2,046	59,919	1,992	25,879	825	44,620	1,862	745	422	3,984	52	142,346	21,098	163,444	161,572
2016	1,493	59,698	676	26,314	836	41,638	1,841	748	293	3,943	54	137,532	24,776	162,308	160,798
2017	567	50,270	636	29,554	795	42,175	1,900	730	288	4,219	47	131,183	26,680	157,862	156,370

¹ Includes primarily waste, landfill gas, and wood.

² Data for disaggregation prior to 2001 are not available.

³ Solar powered electric generation is utility-scale solar electric and does not include customer-sited solar electric energy. Estimated customer-sited solar photovoltaic generation for 2017 was 1,186 GWh (87.0% of total solar) with 733 GWh (61.8%) in the residential sector, 439 GWh (37.0%) in the commercial sector, and 14 GWh (1.2%) in the industrial sector.

**New York State
Fossil Fuel¹ for Electric Generation Trends
2003–2017**

Figure 3-6a. Fossil Fuel Used per kWh of in-State Generation

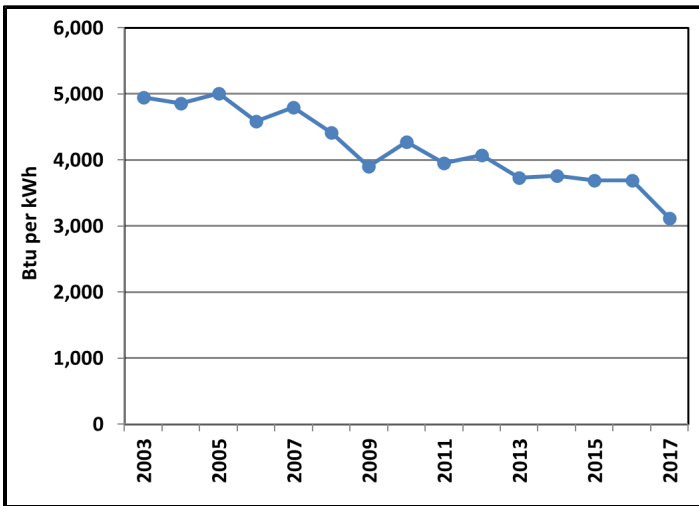


Figure 3-6b. Metric Tons Emitted of CO₂ Equivalent per GWh of in-State Generation

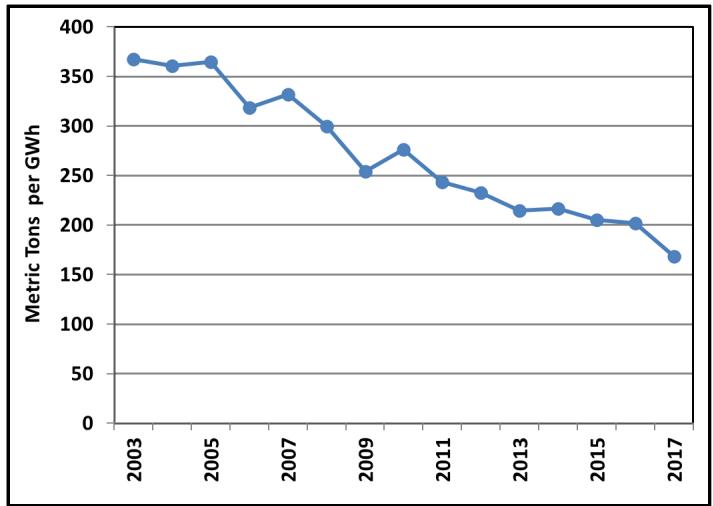


Table 3-6. Fossil Fuel Use for Electricity Trends

Year	Total Fossil Fuel Use	Fossil Fuel per kWh of in-State Generation	CO _{2e} Emitted per GWh of in-State Generation
	TBtu	Btu	Metric Tons of CO _{2e}
2003	711	4,948	368
2004	717	4,859	361
2005	766	5,013	365
2006	681	4,588	318
2007	722	4,798	332
2008	641	4,420	300
2009	534	3,903	254
2010	595	4,276	276
2011	554	3,953	243
2012	568	4,074	233
2013	525	3,736	215
2014	531	3,759	217
2015	525	3,688	205
2016	508	3,694	202
2017	409	3,119	169

¹ Fossil Fuel includes natural gas, coal, and all petroleum products used for electric generation.

**New York State
Sales of Electricity
to Ultimate Consumers
2003–2017**

Figure 3-7.

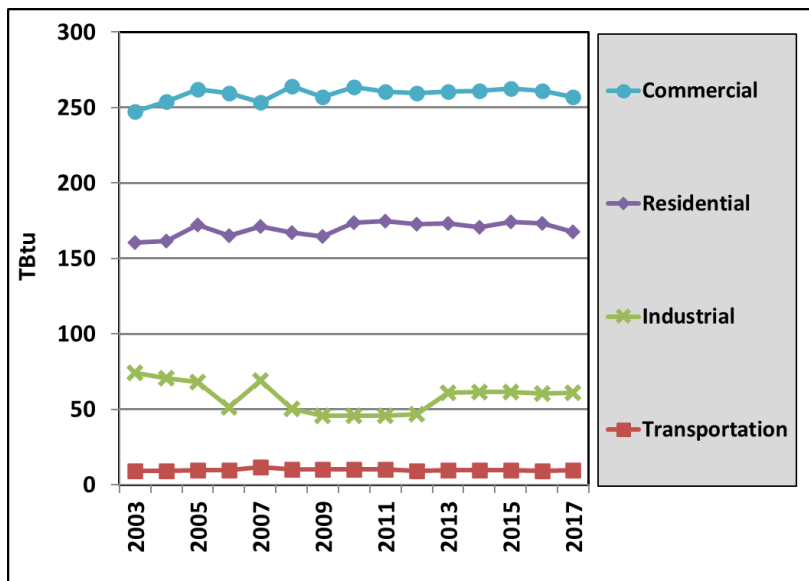


Table 3-7a. (In gigawatt-hours)

Year	Residential	Commercial	Industrial	Transportation	Total
	GWh	GWh	GWh	GWh	GWh
2003	47,116	72,495	21,745	2,689	144,045
2004	47,379	74,378	20,675	2,650	145,082
2005	50,533	76,822	19,947	2,846	150,148
2006	48,427	76,029	14,976	2,806	142,238
2007	50,241	74,326	20,213	3,397	148,178
2008	49,034	77,416	14,685	2,918	144,053
2009	48,246	75,347	13,417	3,025	140,034
2010	50,946	77,276	13,480	2,922	144,624
2011	51,240	76,406	13,420	2,981	144,047
2012	50,692	76,018	13,705	2,748	143,163
2013	50,777	76,342	17,911	2,864	147,895
2014	49,975	76,541	18,003	2,853	147,372
2015	51,013	77,006	18,079	2,816	148,914
2016	50,831	76,507	17,709	2,756	147,803
2017	49,081	75,333	17,811	2,767	144,992

Table 3-7b. (In trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu
2003	160.8	247.4	74.2	9.2	491.5
2004	161.7	253.8	70.5	9.0	495.0
2005	172.4	262.1	68.1	9.7	512.3
2006	165.2	259.4	51.1	9.6	485.3
2007	171.4	253.6	69.0	11.6	505.6
2008	167.3	264.1	50.1	10.0	491.5
2009	164.6	257.1	45.8	10.3	477.8
2010	173.8	263.7	46.0	10.0	493.5
2011	174.8	260.7	45.8	10.2	491.5
2012	173.0	259.4	46.8	9.4	488.5
2013	173.3	260.5	61.1	9.8	504.6
2014	170.5	261.2	61.4	9.7	502.8
2015	174.1	262.7	61.7	9.6	508.1
2016	173.4	261.0	60.4	9.4	504.3
2017	167.5	257.0	60.8	9.4	494.7

**New York State
Net Consumption
of Energy by Sector
2003–2017**

Figure 3-8.

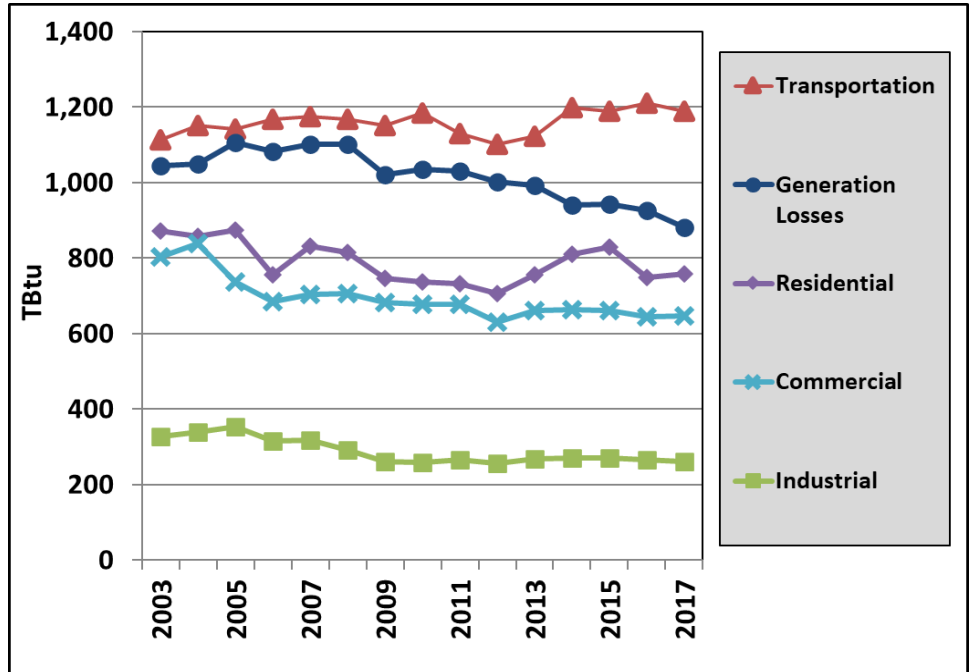


Table 3-8. (In trillion Btu)

Year	Residential TBtu	Commercial TBtu	Industrial TBtu	Transportation TBtu	Net Consumption TBtu	Generation Losses ¹ TBtu	Primary Consumption TBtu
2003	872.8	803.3	327.0	1,112.7	3,115.7	1,044.4	4,160.2
2004	857.3	838.6	339.8	1,150.3	3,186.0	1,050.2	4,236.2
2005	875.3	737.1	352.7	1,141.5	3,106.5	1,106.3	4,212.8
2006	757.3	685.8	315.8	1,169.1	2,928.0	1,083.9	4,011.9
2007	832.1	705.2	318.5	1,174.9	3,030.7	1,102.8	4,133.5
2008	815.7	707.0	291.5	1,168.8	2,983.0	1,102.9	4,085.9
2009	747.4	681.5	261.1	1,152.4	2,842.4	1,021.8	3,864.2
2010	738.1	678.7	259.0	1,184.2	2,860.0	1,035.0	3,895.0
2011	731.9	677.4	266.8	1,130.2	2,806.3	1,029.6	3,835.9
2012	706.7	629.7	256.0	1,100.6	2,692.9	1,003.1	3,696.0
2013	755.0	660.7	269.5	1,122.9	2,808.1	993.4	3,801.4
2014	811.7	663.2	269.8	1,199.6	2,944.2	941.3	3,885.6
2015	829.6	662.4	272.0	1,189.8	2,953.8	942.4	3,896.2
2016	749.5	643.8	266.5	1,211.1	2,870.9	927.4	3,798.3
2017	759.1	647.8	261.7	1,190.1	2,858.7	882.2	3,740.9

¹ Conversion and transmission losses.

**New York State
Net Residential Consumption
of Energy by Fuel Type
2003–2017**

Figure 3-9.

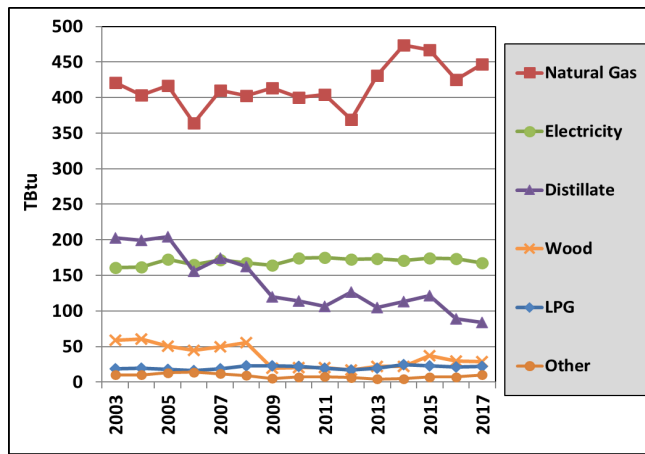


Table 3-9a. (In physical units)

Year	Coal Mtons	Natural Gas Bcf	Distillate ¹ Mbbbl	Kerosene Mbbbl	LPG Mbbbl	Total Petroleum Mbbbl	Wood Mcords	Utility-Scale Electricity GWh	Customer-Sited Solar PV GWh
2004	16	393	34,262	2,065	5,119	41,446	3,017	47,379	4
2005	13	406	35,054	2,203	4,661	41,918	2,518	50,533	7
2006	13	356	26,797	1,803	4,155	32,755	2,233	48,427	7
2007	13	400	30,101	1,318	4,771	36,190	2,468	50,241	9
2008	0	394	28,139	661	5,885	34,685	2,762	49,034	16
2009	0	405	20,755	973	5,940	27,668	967	48,246	21
2010	0	390	19,781	999	5,781	26,561	1,037	50,946	32
2011	0	394	18,454	726	5,146	24,326	1,006	51,240	42
2012	0	358	21,943	365	4,381	26,689	841	50,692	56
2013	0	416	18,199	394	5,051	23,644	1,097	50,777	77
2014	0	458	19,682	672	6,463	26,817	1,110	49,975	162
2015	0	452	21,140	458	5,849	27,447	1,849	51,013	319
2016	0	412	15,511	602	5,529	21,642	1,490	50,831	547
2017	0	432	14,519	402	5,698	20,619	1,442	49,081	733

Table 3-9b. (In trillion Btu)

Year	Coal TBtu	Natural Gas TBtu	Distillate ¹ TBtu	Kerosene TBtu	LPG TBtu	Total Petroleum TBtu	Wood TBtu	Electricity TBtu	Solar ² TBtu	Geothermal TBtu	Total TBtu
2004	0.4	403.5	199.3	11.7	19.7	230.7	60.3	161.7	0.7	0.1	857.3
2005	0.3	416.9	203.9	12.5	17.9	234.3	50.4	172.4	0.8	0.1	875.3
2006	0.3	364.3	155.5	10.2	16.0	181.7	44.7	165.2	1.0	0.1	757.3
2007	0.3	409.9	174.1	7.5	18.3	199.9	49.4	171.4	1.1	0.2	832.1
2008	0.0	402.7	162.6	3.7	22.6	189.0	55.2	167.3	1.3	0.2	815.7
2009	0.0	413.6	119.9	5.5	22.8	148.2	19.3	164.6	1.3	0.2	747.4
2010	0.0	399.7	114.2	5.7	22.2	142.1	20.7	173.8	1.5	0.3	738.1
2011	0.0	404.3	106.5	4.1	19.8	130.4	20.1	174.8	1.6	0.7	731.9
2012	0.0	369.2	126.5	2.1	16.8	145.4	16.8	173.0	1.8	0.4	706.7
2013	0.0	430.8	104.9	2.2	19.4	126.5	21.9	173.3	2.0	0.4	755.0
2014	0.0	473.6	113.4	3.8	24.8	142.1	22.2	170.5	2.8	0.4	811.7
2015	0.0	467.0	121.8	2.6	22.5	146.9	37.0	174.1	4.3	0.4	829.6
2016	0.0	425.6	89.3	3.4	21.2	113.9	29.8	173.4	6.4	0.4	749.5
2017	0.0	446.5	83.6	2.3	21.9	107.7	28.8	167.5	8.1	0.4	759.1

¹ Distillate consumption estimates include biodiesel blended into diesel fuel.

² Includes customer-sited solar electric and thermal energy.

**New York State
Net Commercial Consumption
of Energy by Fuel Type
2003–2017**

Figure 3-10.

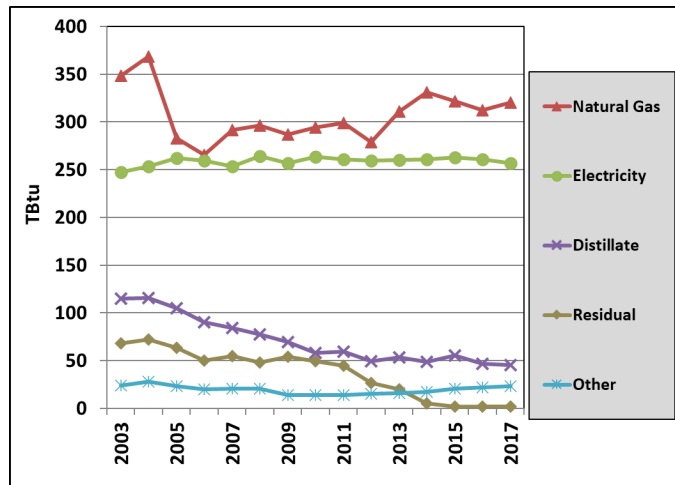


Table 3-10a. (In physical units)

Year	Coal	Natural Gas	Distillate ¹	Residual	Kerosene	LPG	Total Petroleum	Wood	Utility-Scale Electricity	Customer-Sited Solar PV
	MTons	Bcf	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mcords	GWh	GWh
2003	73	339	19,782	10,784	665	1,408	32,639	517	72,495	2
2004	145	359	19,907	11,441	745	1,893	33,986	505	74,378	2
2005	147	276	18,086	10,066	759	1,108	30,019	404	76,822	4
2006	127	260	15,602	7,941	354	1,145	25,042	375	76,029	7
2007	119	285	14,606	8,723	244	1,276	24,849	398	74,326	7
2008	68	290	13,447	7,685	128	1,641	22,901	420	77,416	9
2009	22	281	12,062	8,571	169	1,724	22,526	137	75,347	14
2010	3	287	10,050	7,835	154	1,718	19,757	135	77,276	26
2011	4	291	10,310	7,089	168	1,797	19,364	130	76,406	48
2012	0	270	8,602	4,237	60	1,558	14,457	114	76,018	99
2013	0	301	9,223	3,139	28	1,693	14,083	132	76,342	125
2014	0	320	8,434	846	54	1,776	11,110	137	76,541	183
2015	0	311	9,634	312	28	1,892	11,866	271	77,006	262
2016	0	303	8,095	312	57	2,061	10,525	262	76,507	317
2017	0	310	7,935	285	31	2,023	10,274	262	75,333	439

Table 3-10b. (In trillion Btu)

Year	Coal	Natural Gas	Distillate ¹	Residual	Kerosene	LPG	Total Petroleum	Wood	Waste	Electricity	Solar ²	Geothermal	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2003	1.8	348.8	115.1	67.8	3.8	5.4	192.1	10.3	2.4	247.4	0.0	0.4	803.3
2004	3.6	368.9	115.8	71.9	4.2	7.3	199.2	10.1	2.5	253.8	0.0	0.4	838.6
2005	3.7	283.0	105.2	63.3	4.3	4.3	177.1	8.1	2.6	262.1	0.0	0.5	737.1
2006	3.2	265.7	90.5	49.9	2.0	4.4	146.9	7.5	2.6	259.4	0.1	0.5	685.8
2007	3.0	291.9	84.5	54.8	1.4	4.9	145.6	8.0	2.5	253.6	0.1	0.6	705.2
2008	1.7	296.4	77.7	48.3	0.7	6.3	133.1	8.4	2.5	264.1	0.1	0.6	707.0
2009	0.6	286.8	69.7	53.9	1.0	6.6	131.2	2.7	2.3	257.1	0.1	0.7	681.5
2010	0.1	294.1	58.0	49.3	0.9	6.6	114.8	2.7	2.3	263.7	0.3	0.8	678.7
2011	0.1	298.9	59.5	44.6	1.0	6.9	111.9	2.6	2.1	260.7	0.5	0.6	677.4
2012	0.0	278.9	49.6	26.6	0.3	6.0	82.6	2.3	4.9	259.4	0.9	0.8	629.7
2013	0.0	311.2	53.2	19.7	0.2	6.5	79.6	2.6	4.9	260.5	1.2	0.8	660.7
2014	0.0	330.9	48.6	5.3	0.3	6.8	61.1	2.7	4.8	261.2	1.7	0.8	663.2
2015	0.0	321.4	55.5	2.0	0.2	7.3	64.9	5.4	4.8	262.7	2.4	0.8	662.4
2016	0.0	312.2	46.6	2.0	0.3	7.9	56.8	5.2	4.9	261.0	2.9	0.8	643.8
2017	0.0	320.3	45.7	1.8	0.2	7.8	55.4	5.2	5.0	257.0	4.0	0.8	647.8

¹ Distillate consumption estimates include biodiesel blended into diesel fuel.

² Includes customer-sited solar electric and thermal energy.

**New York State
Net Industrial Consumption
of Energy by Fuel Type
2003–2017**

Figure 3-11.

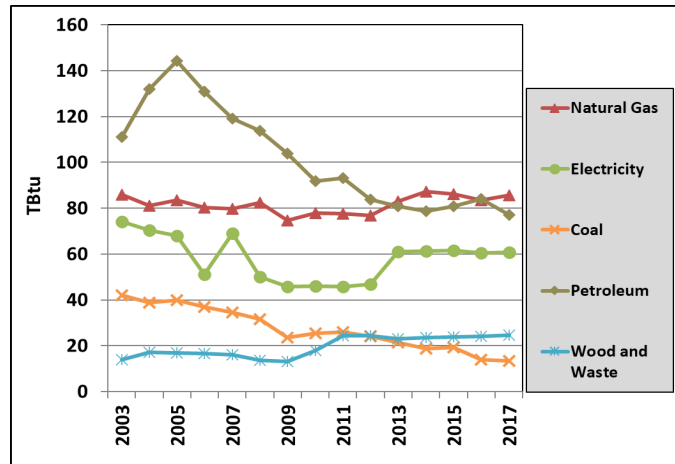


Table 3-11a. (In physical units)

Year	Coal	Natural Gas	Distillate ¹	Residual	Kerosene	LPG	Other Petroleum	Total Petroleum	Wood	Utility-Scale Electricity	Customer-Sited Electricity
	MTons	Bcf	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mcords	GWh	GWh
2003	1,583	84	3,050	1,584	891	1,375	11,742	18,642	669	21,745	0
2004	1,472	79	3,481	1,483	372	1,561	15,292	22,189	837	20,675	1
2005	1,510	81	3,371	1,337	670	2,417	17,004	24,799	822	19,947	1
2006	1,422	78	3,463	1,301	422	1,754	15,357	22,297	771	14,976	0
2007	1,313	78	3,625	1,461	215	1,243	13,622	20,166	735	20,213	0
2008	1,205	81	3,409	1,247	41	753	13,635	19,085	614	14,685	0
2009	902	73	2,931	485	76	583	13,175	17,250	579	13,417	0
2010	979	76	2,274	514	548	593	11,142	15,071	818	13,480	1
2011	1,008	76	2,809	1,244	164	701	10,398	15,316	925	13,420	1
2012	909	75	2,502	578	144	887	9,803	13,914	953	13,705	3
2013	816	80	2,274	711	84	869	9,425	13,363	939	17,911	3
2014	714	85	2,001	552	153	951	9,329	12,986	930	18,003	5
2015	723	83	2,031	431	127	834	9,915	13,338	926	18,079	10
2016	521	81	1,872	457	176	891	10,512	13,908	936	17,709	13
2017	496	83	1,904	539	58	665	9,496	12,662	914	17,811	14

Table 3-11b. (In trillion Btu)

Year	Coal	Natural Gas	Distillate ¹	Residual	Kerosene	LPG	Other Petroleum	Total Petroleum	Wood	Waste	Electricity	Solar ²	Total ³
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2003	41.9	85.8	17.7	10.0	5.0	4.7	73.7	111.2	13.4	0.5	74.2	0.0	327.0
2004	38.9	81.1	20.3	9.3	2.1	5.4	95.0	132.1	16.7	0.5	70.5	0.0	339.8
2005	39.9	83.6	19.6	8.4	3.8	8.3	104.1	144.2	16.4	0.5	68.1	0.0	352.7
2006	37.1	80.2	20.1	8.2	2.4	6.0	94.2	130.9	15.4	1.2	51.1	0.0	315.8
2007	34.6	79.8	21.0	9.2	1.2	4.2	83.6	119.2	14.7	1.3	69.0	0.0	318.5
2008	31.6	82.4	19.7	7.8	0.2	2.5	83.5	113.8	12.3	1.3	50.1	0.0	291.5
2009	23.6	74.8	16.9	3.0	0.4	1.9	81.6	104.0	11.6	1.5	45.8	0.0	261.1
2010	25.4	77.8	13.1	3.2	3.1	2.3	70.1	91.9	16.4	1.5	46.0	0.0	259.0
2011	25.9	77.7	16.2	7.8	0.9	2.7	65.4	93.1	18.5	5.9	45.8	0.0	266.8
2012	24.2	77.0	14.4	3.6	0.8	3.4	61.5	83.7	19.1	5.3	46.8	0.0	256.0
2013	21.6	82.9	13.1	4.5	0.5	3.3	59.5	80.9	18.8	4.2	61.1	0.0	269.5
2014	18.7	87.4	11.5	3.5	0.9	3.7	59.2	78.7	18.6	5.0	61.4	0.0	269.8
2015	19.3	86.1	11.7	2.7	0.7	3.2	62.6	80.9	18.5	5.4	61.7	0.1	272.0
2016	14.0	83.6	10.8	2.9	1.0	3.4	66.0	84.1	18.7	5.4	60.4	0.1	266.5
2017	13.3	85.7	11.0	3.4	0.3	2.6	59.9	77.1	18.3	6.4	60.8	0.1	261.7

¹ Distillate consumption estimates include biodiesel blended into diesel fuel.

² Includes customer-sited solar electric and thermal energy.

³ Includes fuels used by industry to generate electricity and process steam.

**New York State
Net Transportation Consumption
of Energy by Fuel Type
2003–2017**

Figure 3-12.

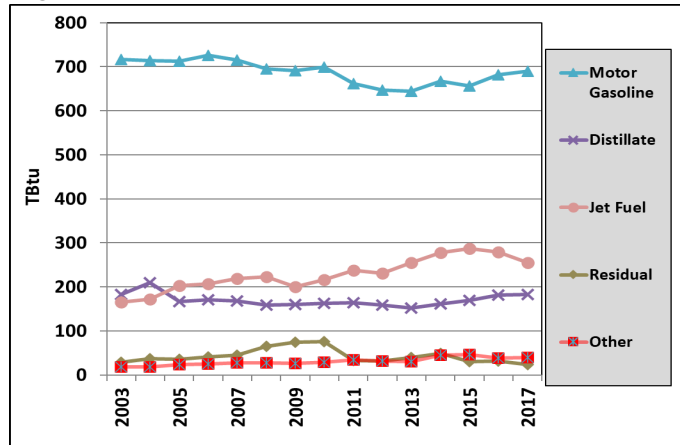


Table 3-12a. (In physical units)

Year	Natural Gas	Distillate ¹	Residual	Motor Gasoline	Jet Fuel ²	LPG	Total Petroleum	Ethanol	Electricity
	Bcf	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	GWh
2003	8	31,431	4,583	138,010	29,248	55	202,778	549	2,689
2004	9	35,910	5,823	137,391	30,476	66	202,642	7,024	2,650
2005	13	28,545	5,684	137,355	35,912	75	205,249	2,322	2,846
2006	14	29,388	6,530	140,020	36,515	99	206,495	6,057	2,806
2007	16	29,146	7,063	139,140	38,588	56	206,378	7,615	3,397
2008	16	27,485	10,336	136,105	39,293	257	203,510	9,966	2,918
2009	15	27,670	11,743	135,921	35,364	97	198,772	12,023	3,025
2010	19	28,245	12,094	138,087	38,116	47	203,101	13,488	2,922
2011	23	28,534	5,158	130,718	41,919	44	193,615	12,758	2,981
2012	21	27,591	4,988	127,902	40,740	45	188,626	12,640	2,748
2013	20	26,395	6,300	127,461	45,066	44	192,507	12,759	2,864
2014	33	28,052	7,770	131,943	48,903	39	203,505	13,202	2,853
2015	35	29,331	4,897	129,909	50,634	34	201,931	12,874	2,816
2016	28	31,420	4,965	134,799	49,288	35	207,074	13,433	2,756
2017	29	31,659	3,736	136,414	44,997	74	203,090	13,790	2,767

Table 3-12b. (In trillion Btu)

Year	Natural Gas	Distillate ¹	Residual	Motor Gasoline	Jet Fuel ²	LPG	Total Petroleum	Ethanol ³	Electricity	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2003	8.6	182.9	28.8	717.2	165.7	0.2	1,093.0	1.9	9.2	1,112.7
2004	8.9	208.9	36.6	713.9	172.7	0.3	1,108.0	24.4	9.0	1,150.3
2005	13.1	166.1	35.7	713.1	203.5	0.3	1,110.6	8.1	9.7	1,141.5
2006	14.5	170.5	41.1	726.0	207.0	0.4	1,124.0	21.0	9.6	1,169.1
2007	16.0	168.6	44.4	715.5	218.7	0.2	1,120.9	26.4	11.6	1,174.9
2008	16.3	158.9	65.0	695.0	222.7	1.0	1,107.9	34.6	10.0	1,168.8
2009	15.8	159.8	73.8	691.7	200.5	0.4	1,084.6	41.6	10.3	1,152.4
2010	19.2	163.1	76.0	699.7	216.1	0.2	1,108.3	46.8	10.0	1,184.2
2011	23.3	164.6	32.4	661.8	237.6	0.2	1,052.5	44.2	10.2	1,130.2
2012	22.2	159.1	31.4	647.4	230.9	0.2	1,025.2	43.8	9.4	1,100.6
2013	20.8	152.1	39.6	645.0	255.5	0.2	1,048.0	44.3	9.8	1,122.9
2014	34.5	161.7	48.8	667.5	277.2	0.1	1,109.5	45.8	9.7	1,199.6
2015	36.2	169.0	30.8	656.9	287.0	0.1	1,099.2	44.7	9.6	1,189.8
2016	28.6	180.9	31.2	681.4	279.4	0.1	1,126.4	46.6	9.4	1,211.1
2017	30.3	182.3	23.5	689.3	255.1	0.3	1,102.5	47.9	9.4	1,190.1

¹ Distillate consumption estimates include biodiesel blended into diesel fuel.

² Consists of aviation gasoline and kerosene-type jet fuel.

³ Ethanol values are embedded in motor gasoline but are excluded from the petroleum products total.

4 New York Energy Prices

This section presents data on retail energy prices for the 15-year period from 2003 through 2017. Energy prices are provided by fuel type in nominal dollars per physical unit and per MMBtu for the residential, commercial, industrial, and transportation sectors.

The section includes a column in the price tables displaying gross domestic product (GDP) price deflators for converting nominal (current year) dollars into constant 2017 (real) dollars. To convert energy prices from nominal to constant 2017 dollars, divide the nominal energy price by the GDP price deflator for that particular year.

Historical petroleum, electricity, coal, and natural gas prices were compiled primarily from various reports from the DOE's Energy Information Administration.

4.1 Key Observations about 2017 New York State Energy Price Data

- Residential sector statewide average nominal fuel prices:
 - Home heating oil prices increased by 11.0% from an average \$2.28 per gallon in 2016 to \$2.53 per gallon in 2017.
 - Natural gas prices increased by 11.0% from an average \$10.85 per thousand cubic feet in 2016 to \$12.04 per thousand cubic feet in 2017.
 - Electricity prices increased by 2.6% from 17.6¢ per kWh in 2016 to 18.0¢ in 2017.
- Commercial sector statewide average nominal fuel prices:
 - Distillate fuel prices averaged \$1.87 per gallon in 2017, which was a 18.8% increase from 2016 prices.
 - Residual oil prices averaged \$49.04 per barrel in 2017, which was a 27.9% increase from 2016 prices.
 - Electricity prices averaged 14.8¢ per kWh, which was a 2.1% increase from 2016 prices.
 - Natural gas prices averaged \$6.87 per thousand cubic feet, which was a 10.9% increase from 2016 prices.
- Industrial sector statewide average nominal fuel prices:
 - Residual oil prices averaged \$49.04 per barrel in 2016, which was a 27.9% increase from 2016 prices.
 - Natural gas prices averaged \$7.21 per thousand cubic feet, which was a 21.7% increase from 2016 prices.
 - Electricity prices averaged 5.9¢ per kWh, which was a 1.8% decrease from 2016 prices.
- The average retail price for all grades of gasoline was \$2.42 per gallon, up \$0.24 per gallon (10.8%) from the average price in 2016.

**New York State
Residential Energy Prices
in Nominal Dollars
2003–2017**

Figure 4-1.

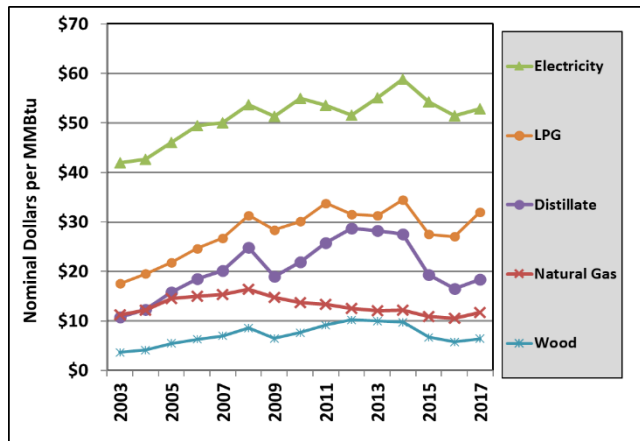


Table 4-1a. (In physical units)

Year	Coal	Distillate ¹	Kerosene	Propane	Natural Gas	Electricity	Wood	GDP Deflator ²
	\$/Ton	Cents/Gal.	Cents/Gal.	Cents/Gal.	\$/Mcf	Cents/kWh	\$/Cord	2017=1
2003	86.19	149.49	134.60	151.73	11.60	14.31	72.80	0.751
2004	89.97	169.55	162.14	168.06	12.50	14.54	82.80	0.771
2005	129.55	219.14	214.92	188.07	14.89	15.72	109.60	0.797
2006	118.33	255.61	260.15	211.43	15.35	16.89	126.20	0.822
2007	118.61	278.05	289.85	244.32	15.73	17.10	139.40	0.846
2008	N/A	342.53	365.31	286.15	16.78	18.31	171.80	0.878
2009	N/A	260.56	281.21	259.39	15.05	17.50	129.00	0.875
2010	N/A	301.14	320.90	274.73	14.04	18.74	152.20	0.890
2011	N/A	355.22	379.76	308.52	13.71	18.26	183.00	0.918
2012	N/A	394.69	399.87	288.07	12.96	17.62	203.80	0.937
2013	N/A	388.78	400.68	285.42	12.49	18.79	199.60	0.950
2014	N/A	379.23	402.84	315.01	12.53	20.07	194.60	0.966
2015	N/A	264.87	224.78	251.44	11.20	18.54	134.20	0.967
2016	N/A	227.64	179.15	246.97	10.85	17.58	114.60	0.979
2017	N/A	252.62	224.10	293.10	12.04	18.03	128.20	1.000

Table 4-1b. (In \$/million Btu)

Year	Coal	Distillate ¹	Kerosene	Propane	Natural Gas	Electricity	Wood	GDP Deflator ²
	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	2017=1
2003	3.42	10.79	9.97	17.56	11.28	41.94	3.64	0.751
2004	3.60	12.24	12.01	19.51	12.17	42.62	4.14	0.771
2005	5.18	15.82	15.92	21.82	14.51	46.08	5.48	0.797
2006	4.76	18.50	19.27	24.64	15.02	49.51	6.31	0.822
2007	4.76	20.19	21.47	26.75	15.36	50.11	6.97	0.846
2008	N/A	24.89	27.06	31.33	16.42	53.66	8.59	0.878
2009	N/A	18.93	20.83	28.40	14.73	51.29	6.45	0.875
2010	N/A	21.89	23.77	30.08	13.72	54.93	7.61	0.890
2011	N/A	25.83	28.13	33.78	13.35	53.52	9.15	0.918
2012	N/A	28.71	29.62	31.54	12.56	51.63	10.19	0.937
2013	N/A	28.28	29.68	31.25	12.07	55.08	9.98	0.950
2014	N/A	27.59	29.84	34.49	12.13	58.83	9.73	0.966
2015	N/A	19.28	16.65	27.53	10.84	54.33	6.71	0.967
2016	N/A	16.57	13.27	27.04	10.51	51.51	5.73	0.979
2017	N/A	18.43	16.60	32.05	11.66	52.84	6.41	1.000

¹ Home heating oil.

² To convert prices to 2017 dollars, divide the selected price by the deflator factor in the same row.

**New York State
Commercial Energy Prices
in Nominal Dollars
2003–2017**

Figure 4-2.

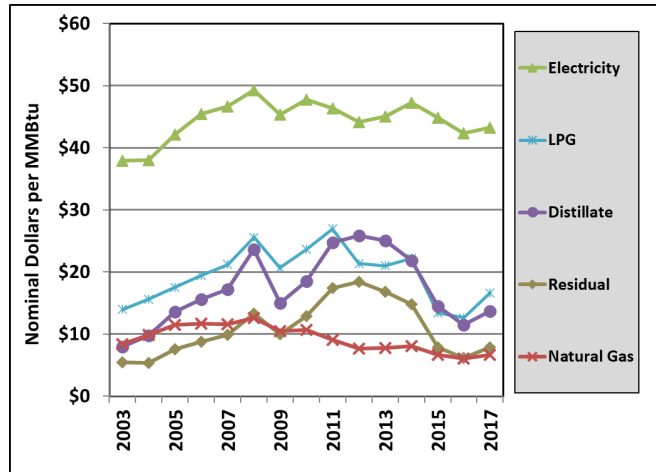


Table 4-2a. (In physical units)

Year	Coal	Distillate ¹	Residual	Kerosene	Propane	Natural Gas	Electricity	GDP Deflator ²
	\$/Ton	Cents/Gal.	\$/bbl	Cents/Gal.	Cents/Gal.	\$/Mcf	Cents/kWh	2017=1
2003	41.35	109.87	34.20	134.60	120.53	8.60	12.93	0.751
2004	43.94	134.78	33.70	162.14	134.47	10.11	12.98	0.771
2005	48.87	188.53	47.59	214.92	151.09	11.80	14.36	0.797
2006	67.67	215.40	55.26	260.15	166.73	11.91	15.51	0.822
2007	64.85	236.32	61.74	289.85	193.44	11.82	15.92	0.846
2008	105.50	324.51	83.43	365.31	233.36	12.87	16.79	0.878
2009	136.28	206.88	62.49	281.21	188.33	10.72	15.48	0.875
2010	138.86	254.64	81.10	320.90	215.46	10.87	16.31	0.890
2011	135.81	340.37	109.46	379.76	245.69	9.33	15.81	0.918
2012	N/A	354.69	115.43	399.87	194.81	7.84	15.06	0.937
2013	N/A	344.38	105.87	400.68	191.89	8.00	15.35	0.950
2014	N/A	299.78	92.73	402.84	202.94	8.31	16.12	0.966
2015	N/A	199.34	49.23	224.78	122.39	6.86	15.31	0.967
2016	N/A	157.58	38.35	179.15	115.08	6.19	14.45	0.979
2017	N/A	187.24	49.04	224.10	152.18	6.87	14.75	1.000

Table 4-2b. (In \$/million Btu)

Year	Coal	Distillate ¹	Residual	Kerosene	Propane	Natural Gas	Electricity	GDP Deflator ²
	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	2017=1
2003	1.76	7.93	5.44	9.97	13.95	8.37	37.89	0.751
2004	1.87	9.73	5.36	12.01	15.61	9.84	38.04	0.771
2005	2.08	13.61	7.57	15.92	17.53	11.50	42.08	0.797
2006	2.88	15.59	8.79	19.27	19.43	11.65	45.46	0.822
2007	2.76	17.16	9.82	21.47	21.18	11.54	46.65	0.846
2008	4.49	23.58	13.27	27.06	25.55	12.59	49.22	0.878
2009	5.80	15.03	9.94	20.83	20.62	10.49	45.36	0.875
2010	5.91	18.51	12.90	23.77	23.59	10.63	47.79	0.890
2011	5.78	24.75	17.41	28.13	26.90	9.08	46.33	0.918
2012	N/A	25.80	18.36	29.62	21.33	7.60	44.13	0.937
2013	N/A	25.05	16.84	29.68	21.01	7.73	45.00	0.950
2014	N/A	21.81	14.75	29.84	22.22	8.04	47.25	0.966
2015	N/A	14.51	7.83	16.65	13.40	6.64	44.86	0.967
2016	N/A	11.47	6.10	13.27	12.60	6.00	42.35	0.979
2017	N/A	13.66	7.80	16.60	16.64	6.65	43.23	1.000

¹ Home heating oil.

² To convert prices to 2017 dollars, divide the selected price by the deflator factor in the same row.

**New York State
Industrial Energy Prices
in Nominal Dollars
2003–2017**

Figure 4-3.

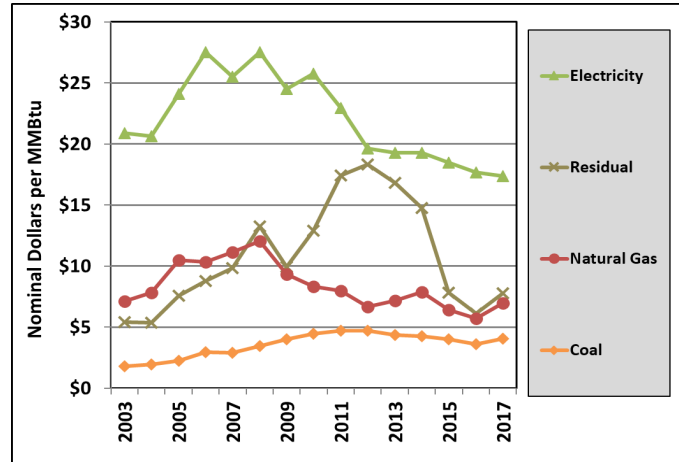


Table 4-3a. (In physical units)

Year	Coal	Distillate ¹	Residual	Kerosene	Propane	Natural Gas	Electricity	GDP Deflator ²
	\$/Ton	Cents/Gal.	\$/bbl	Cents/Gal.	Cents/Gal.	\$/Mcf	Cents/kWh	2017=1
2003	48.42	107.93	34.20	109.76	130.56	7.35	7.14	0.751
2004	52.50	127.44	33.70	137.97	147.39	8.05	7.04	0.771
2005	59.97	190.19	47.59	181.85	160.92	10.75	8.23	0.797
2006	77.95	218.86	55.26	213.17	177.71	10.56	9.39	0.822
2007	76.91	238.52	61.74	243.27	220.66	11.43	8.71	0.846
2008	90.61	327.12	83.43	306.86	264.41	12.30	9.39	0.878
2009	105.75	197.79	62.49	204.39	217.46	9.53	8.37	0.875
2010	116.04	263.72	81.10	251.24	225.23	8.54	8.79	0.890
2011	123.02	324.69	109.46	331.56	260.03	8.19	7.83	0.918
2012	133.00	342.18	115.43	346.55	200.48	6.91	6.69	0.937
2013	120.89	332.69	105.87	351.41	197.01	7.44	6.59	0.950
2014	117.10	313.25	92.73	332.64	209.98	8.13	6.58	0.966
2015	110.68	206.76	49.23	194.54	115.54	6.62	6.31	0.967
2016	100.05	154.97	38.35	152.28	106.95	5.92	6.03	0.979
2017	112.85	201.63	49.04	192.92	150.44	7.21	5.92	1.000

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

Year	Coal	Distillate ¹	Residual	Kerosene	Propane	Natural Gas	Electricity	GDP Deflator ²
	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	2017=1
2003	1.81	7.79	5.44	8.13	15.11	7.15	20.92	0.751
2004	1.96	9.20	5.36	10.22	17.11	7.84	20.63	0.771
2005	2.27	13.73	7.57	13.47	18.67	10.48	24.11	0.797
2006	2.97	15.84	8.79	15.79	20.71	10.33	27.53	0.822
2007	2.91	17.32	9.82	18.02	24.16	11.16	25.53	0.846
2008	3.44	23.77	13.27	22.73	28.95	12.04	27.53	0.878
2009	4.01	14.37	9.94	15.14	23.81	9.32	24.54	0.875
2010	4.44	19.17	12.90	18.61	24.66	8.35	25.76	0.890
2011	4.74	23.61	17.41	24.56	28.47	7.97	22.96	0.918
2012	4.73	24.89	18.36	25.67	21.95	6.70	19.62	0.937
2013	4.37	24.20	16.84	26.03	21.57	7.19	19.30	0.950
2014	4.24	22.79	14.75	24.64	22.99	7.87	19.28	0.966
2015	4.02	15.05	7.83	14.41	12.65	6.41	18.49	0.967
2016	3.60	11.28	6.10	11.28	11.71	5.74	17.67	0.979
2017	4.08	14.71	7.80	14.29	16.45	6.98	17.36	1.000

¹ Home heating oil.

² To convert prices to 2017 dollars, divide the selected price by the deflator factor in the same row.

**New York State
Transportation Energy Prices
in Nominal Dollars
2003–2017**

Figure 4-4.

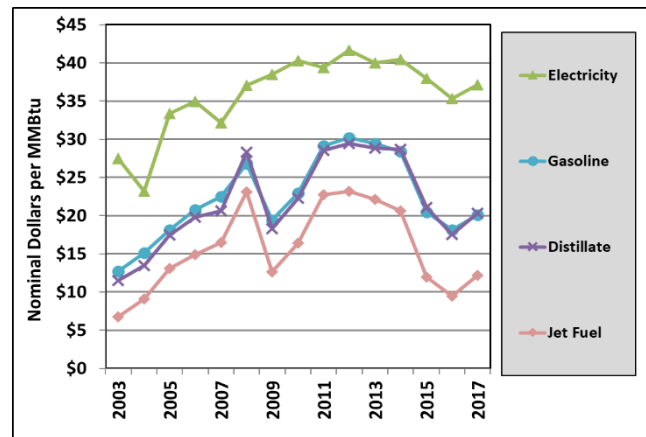


Table 4-4a. (In physical units)

Year	Motor Gasoline	Distillate ¹	Jet Fuel ²	Residual ³	Electricity ⁴	GDP Deflator ⁵
	Cents/Gal.	Cents/Gal.	Cents/Gal.	\$/bbl	Cents/kWh	2017=1
2003	157.20	159.19	91.26	28.48	9.38	0.751
2004	187.61	186.73	122.31	29.61	7.92	0.771
2005	224.63	242.14	176.85	42.63	11.40	0.797
2006	256.95	273.29	201.02	49.10	11.94	0.822
2007	276.65	284.38	222.21	49.35	10.97	0.846
2008	326.97	389.19	312.26	75.95	12.64	0.878
2009	235.86	251.47	170.64	51.80	13.13	0.875
2010	277.84	307.06	221.81	68.28	13.74	0.890
2011	351.86	392.22	307.40	93.11	13.45	0.918
2012	364.05	404.87	312.66	96.82	14.20	0.937
2013	354.70	396.34	299.03	97.57	13.65	0.950
2014	341.79	393.94	278.24	82.93	13.82	0.966
2015	246.61	289.05	161.87	46.90	12.96	0.967
2016	218.38	240.97	128.12	35.21	12.05	0.979
2017	242.06	278.39	164.84	47.47	12.67	1.000

Table 4-4b. (In \$/million Btu)

Year	Motor Gasoline	Distillate ¹	Jet Fuel ²	Residual ³	Electricity ⁴	GDP Deflator ⁵
	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	2017=1
2003	12.69	11.49	6.76	4.53	27.49	0.751
2004	15.15	13.48	9.06	4.71	23.21	0.771
2005	18.15	17.48	13.10	6.78	33.40	0.797
2006	20.79	19.78	14.89	7.81	34.98	0.822
2007	22.54	20.65	16.46	7.85	32.14	0.846
2008	26.79	28.28	23.13	12.08	37.05	0.878
2009	19.42	18.27	12.64	8.24	38.49	0.875
2010	22.98	22.32	16.43	10.86	40.28	0.890
2011	29.16	28.52	22.77	14.81	39.41	0.918
2012	30.20	29.45	23.16	15.40	41.63	0.937
2013	29.43	28.83	22.15	15.52	40.01	0.950
2014	28.37	28.66	20.61	13.19	40.49	0.966
2015	20.47	21.04	11.99	7.46	37.97	0.967
2016	18.13	17.54	9.49	5.60	35.33	0.979
2017	20.12	20.31	12.21	7.55	37.12	1.000

1 Diesel
 2 Kerosene-based
 3 Bunker fuel
 4 Railroad use
 5 To convert prices to 2017 dollars, divide the selected price by the deflator factor in the same row

5 New York State Energy Expenditures

This section presents the estimated costs of net energy consumed by sector and fuel type in nominal and constant 2017 dollars for the following selected years: 2003, 2008, and 2013 through 2017.

Estimated costs were derived by multiplying quantities of fuels consumed in TBtu by their respective prices. Out-of-State energy expenditure estimates by fuel type are provided for 2003 through 2017 in both nominal and constant 2017 dollars.

5.1 Key Observations about 2017 New York State Energy Expenditures Data

- Cumulative heating degree-days were 2.6% higher in 2017 compared to 2016.
- In nominal dollars, the State's 2017 estimated energy bill of \$53.4 billion increased 7.9% from 2016, and it is 27.0% more than the \$42.1 billion spent in 2003.
- In constant 2017 dollars, the State's estimated energy bill increased \$2.9 billion (5.7%) from 2016 and was \$2.6 billion (4.7%) less than the energy bill in 2003.
- State residents spent \$16.5 billion for household energy, which was a 5.4% increase from the 2016 level in nominal dollars and 3.2% higher in constant 2017 dollars.
- The total commercial customer energy bill was \$14.0 billion, which was 3.2% higher than 2016 in nominal dollars and 1.0% higher in constant 2017 dollars.
- Industrial customers paid \$1.3 billion for energy, which was a 14.6% increase from 2016 levels in nominal dollars and 12.2% higher in constant 2017 dollars.
- The annual energy bill for transporting people and goods was \$21.6 billion, a 13.0% increase from 2016 levels in nominal dollars and 10.6% higher in constant 2017 dollars.
- From 2016 to 2017 statewide expenditures increased 13.4% for petroleum, 14.5% for natural gas, and decreased by less than 0.1% for electricity in nominal dollars.
- In nominal dollars, the 2017 out-of-State estimated energy bill of \$26.6 billion increased 15.0% from 2016, and the estimate is 22.5% more than the \$21.7 billion spent in 2003.
- In constant 2017 dollars, the out-of-State estimated energy bill increased \$3.0 billion (12.6%) from 2016 and was \$2.3 billion (8.0%) less than in 2003.

**New York State
Energy Expenditure Estimates
by Fuel Type and Sector
in Nominal Dollars
2003–2017**

Figure 5-1

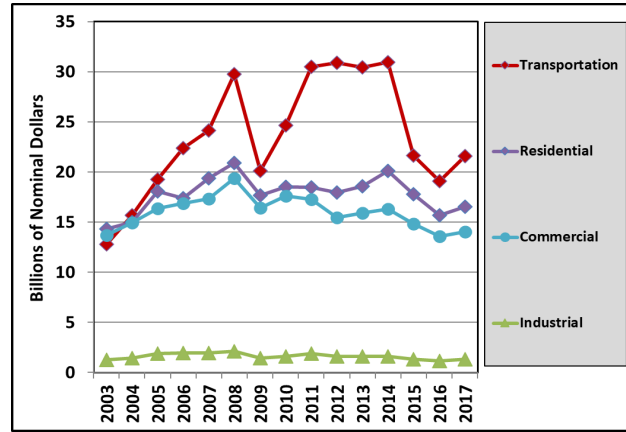
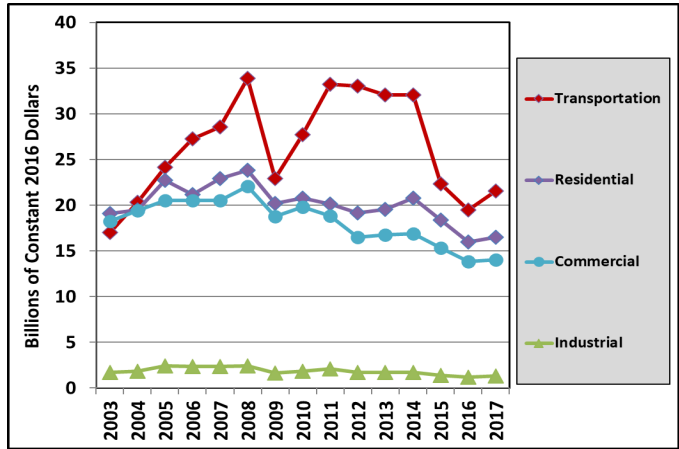


Table 5-1. (In million dollars)

	2003	2008	2013	2014	2015	2016	2017
Residential							
Coal	\$0.9	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Petroleum	\$2,615.1	\$4,857.7	\$3,638.6	\$4,099.3	\$3,010.2	\$2,099.2	\$2,279.7
Distillate	\$2,189.7	\$4,048.2	\$2,966.0	\$3,129.5	\$2,348.5	\$1,479.6	\$1,540.5
Kerosene	\$92.6	\$101.3	\$66.4	\$113.6	\$43.2	\$45.3	\$37.8
LPG	\$332.7	\$708.2	\$606.3	\$856.2	\$618.5	\$574.3	\$701.4
Natural Gas	\$4,749.2	\$6,612.9	\$5,199.9	\$5,745.0	\$5,062.2	\$4,472.7	\$5,206.4
Electricity	\$6,742.2	\$8,977.5	\$9,542.7	\$10,031.3	\$9,456.4	\$8,933.7	\$8,848.8
Wood	\$214.3	\$474.6	\$219.0	\$216.0	\$248.1	\$170.7	\$184.8
Total	\$14,321.8	\$20,922.7	\$18,600.2	\$20,091.7	\$17,777.0	\$15,676.3	\$16,519.7
Commercial							
Coal	\$3.3	\$7.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Petroleum	\$1,394.7	\$2,654.6	\$1,805.2	\$1,299.2	\$920.8	\$650.5	\$770.2
Distillate	\$912.8	\$1,832.8	\$1,331.5	\$1,060.1	\$805.4	\$534.5	\$624.0
Residual	\$368.8	\$641.2	\$332.3	\$78.5	\$15.4	\$12.0	\$14.0
Kerosene	\$37.6	\$19.6	\$4.7	\$9.1	\$2.6	\$4.3	\$2.9
LPG	\$75.4	\$161.0	\$136.7	\$151.6	\$97.4	\$99.7	\$129.3
Natural Gas	\$2,919.4	\$3,732.1	\$2,405.7	\$2,660.1	\$2,134.2	\$1,873.1	\$2,130.0
Electricity	\$9,372.2	\$13,001.1	\$11,721.6	\$12,339.7	\$11,786.7	\$11,055.1	\$11,111.8
Total	\$13,689.6	\$19,395.5	\$15,932.5	\$16,299.0	\$14,841.6	\$13,578.7	\$14,011.9
Industrial							
Coal	\$75.9	\$108.8	\$94.2	\$79.3	\$77.5	\$50.6	\$54.2
Petroleum	\$305.1	\$651.1	\$476.9	\$419.4	\$248.2	\$190.5	\$234.4
Distillate	\$138.2	\$468.4	\$317.1	\$262.8	\$176.1	\$121.6	\$161.2
Residual	\$54.2	\$104.1	\$75.3	\$51.2	\$21.2	\$17.5	\$26.4
Kerosene	\$41.0	\$5.2	\$12.4	\$21.4	\$10.4	\$11.3	\$4.7
LPG	\$71.6	\$73.4	\$72.0	\$84.0	\$40.5	\$40.1	\$42.0
Natural Gas	\$613.8	\$992.1	\$596.3	\$687.9	\$551.7	\$480.1	\$597.9
Electricity	\$290.1	\$374.4	\$443.4	\$454.3	\$442.5	\$426.7	\$429.0
Total	\$1,284.9	\$2,126.4	\$1,610.8	\$1,640.9	\$1,319.9	\$1,147.8	\$1,315.5
Transportation							
Petroleum	\$12,457.4	\$29,074.9	\$29,643.6	\$29,931.4	\$20,676.5	\$18,354.6	\$20,866.9
Distillate	\$2,101.5	\$4,492.6	\$4,385.4	\$4,633.3	\$3,555.8	\$3,172.7	\$3,701.7
Residual	\$130.5	\$785.0	\$614.7	\$644.3	\$229.7	\$174.8	\$177.3
Motor Gasoline	\$9,101.8	\$18,617.8	\$18,980.9	\$18,936.9	\$13,447.7	\$12,353.9	\$13,868.7
Jet Fuel	\$1,120.4	\$5,150.9	\$5,658.9	\$5,713.4	\$3,441.6	\$2,651.6	\$3,114.6
LPG	\$3.2	\$28.6	\$3.6	\$3.4	\$1.7	\$1.6	\$4.7
Natural Gas	\$60.9	\$296.2	\$414.6	\$625.2	\$582.0	\$412.4	\$355.4
Electricity	\$252.2	\$368.9	\$391.1	\$394.2	\$364.8	\$332.2	\$350.4
Total	\$12,770.5	\$29,740.0	\$30,449.2	\$30,950.8	\$21,623.4	\$19,099.2	\$21,572.7
Total							
Coal	\$80.1	\$116.5	\$94.2	\$79.3	\$77.5	\$50.6	\$54.2
Petroleum	\$16,772.2	\$37,238.4	\$35,564.2	\$35,749.3	\$24,855.7	\$21,294.9	\$24,151.2
Distillate	\$5,342.3	\$10,842.0	\$9,000.1	\$9,085.7	\$6,885.9	\$5,308.4	\$6,027.4
Residual	\$553.5	\$1,530.2	\$1,022.3	\$774.0	\$266.2	\$204.3	\$217.8
Motor Gasoline	\$9,101.8	\$18,617.8	\$18,980.9	\$18,936.9	\$13,447.7	\$12,353.9	\$13,868.7
Kerosene	\$171.3	\$126.2	\$83.5	\$144.1	\$56.2	\$60.9	\$45.5
Jet Fuel	\$1,120.4	\$5,150.9	\$5,658.9	\$5,713.4	\$3,441.6	\$2,651.6	\$3,114.6
LPG	\$483.0	\$971.3	\$818.5	\$1,095.2	\$758.0	\$715.7	\$877.4
Natural Gas	\$8,343.3	\$11,633.3	\$8,616.4	\$9,718.2	\$8,330.1	\$7,238.2	\$8,289.6
Electricity	\$16,656.8	\$22,721.8	\$22,098.8	\$23,219.5	\$22,050.4	\$20,747.7	\$20,740.0
Wood	\$214.3	\$474.6	\$219.0	\$216.0	\$248.1	\$170.7	\$184.8
Total	\$42,066.7	\$72,184.6	\$66,592.6	\$68,982.4	\$55,561.8	\$49,502.1	\$53,419.8

Figure 5-2.



**New York State
Energy Expenditure Estimates
by Fuel Type and Sector
in Constant 2017 Dollars
2003–2017**

Table 5-2. (In million dollars)

	2003	2008	2013	2014	2015	2016	2017
Residential							
Coal	\$1.3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Petroleum	\$3,483.8	\$5,530.5	\$3,828.6	\$4,244.5	\$3,113.2	\$2,143.9	\$2,279.7
Distillate	\$2,917.1	\$4,608.8	\$3,120.9	\$3,240.3	\$2,428.8	\$1,511.2	\$1,540.5
Kerosene	\$123.4	\$115.4	\$69.8	\$117.7	\$44.7	\$46.3	\$37.8
LPG	\$443.3	\$806.3	\$637.9	\$886.5	\$639.6	\$586.5	\$701.4
Natural Gas	\$6,326.8	\$7,528.7	\$5,471.4	\$5,948.5	\$5,235.3	\$4,568.0	\$5,206.4
Electricity	\$8,981.8	\$10,220.8	\$10,041.0	\$10,386.6	\$9,779.7	\$9,124.0	\$8,848.8
Wood	\$285.5	\$540.3	\$230.4	\$223.7	\$256.6	\$174.4	\$184.8
Total	\$19,079.1	\$23,820.3	\$19,571.3	\$20,803.2	\$18,384.7	\$16,010.3	\$16,519.7
Commercial							
Coal	\$4.3	\$8.7	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Petroleum	\$1,857.9	\$3,022.2	\$1,899.4	\$1,345.2	\$952.3	\$664.4	\$770.2
Distillate	\$1,216.0	\$2,086.6	\$1,401.0	\$1,097.6	\$833.0	\$545.9	\$624.0
Residual	\$491.3	\$730.0	\$349.7	\$81.3	\$15.9	\$12.2	\$14.0
Kerosene	\$50.1	\$22.4	\$5.0	\$9.4	\$2.7	\$4.4	\$2.9
LPG	\$100.5	\$183.3	\$143.8	\$157.0	\$100.7	\$101.9	\$129.3
Natural Gas	\$3,889.2	\$4,249.0	\$2,531.3	\$2,754.3	\$2,207.1	\$1,913.0	\$2,130.0
Electricity	\$12,485.5	\$14,801.6	\$12,333.6	\$12,776.7	\$12,189.6	\$11,290.6	\$11,111.8
Total	\$18,236.9	\$22,081.5	\$16,764.3	\$16,876.2	\$15,349.0	\$13,868.0	\$14,011.9
Industrial							
Coal	\$101.1	\$123.9	\$99.1	\$82.2	\$80.2	\$51.7	\$54.2
Petroleum	\$406.4	\$741.3	\$501.8	\$434.3	\$256.7	\$194.5	\$234.4
Distillate	\$184.2	\$533.3	\$333.7	\$272.1	\$182.1	\$124.2	\$161.2
Residual	\$72.2	\$118.5	\$79.2	\$53.0	\$21.9	\$17.9	\$26.4
Kerosene	\$54.7	\$6.0	\$13.0	\$22.1	\$10.7	\$11.5	\$4.7
LPG	\$95.4	\$83.6	\$75.8	\$87.0	\$41.9	\$40.9	\$42.0
Natural Gas	\$817.7	\$1,129.5	\$627.4	\$712.2	\$570.6	\$490.3	\$597.9
Electricity	\$386.5	\$426.2	\$466.6	\$470.4	\$457.6	\$435.8	\$429.0
Total	\$1,711.7	\$2,420.8	\$1,694.9	\$1,699.0	\$1,365.0	\$1,172.3	\$1,315.5
Transportation							
Petroleum	\$16,595.4	\$33,101.5	\$31,191.3	\$30,991.5	\$21,383.4	\$18,745.7	\$20,866.9
Distillate	\$2,799.6	\$5,114.8	\$4,614.4	\$4,797.4	\$3,677.4	\$3,240.3	\$3,701.7
Residual	\$173.9	\$893.7	\$646.8	\$667.1	\$237.5	\$178.5	\$177.3
Motor Gasoline	\$12,125.1	\$21,196.1	\$19,972.0	\$19,607.6	\$13,907.5	\$12,617.1	\$13,868.7
Jet Fuel	\$1,492.6	\$5,864.2	\$5,954.4	\$5,915.8	\$3,559.3	\$2,708.1	\$3,114.6
LPG	\$4.2	\$32.6	\$3.8	\$3.5	\$1.7	\$1.6	\$4.7
Natural Gas	\$81.1	\$337.2	\$436.2	\$647.3	\$601.9	\$421.2	\$355.4
Electricity	\$336.0	\$420.0	\$411.5	\$408.1	\$377.3	\$339.2	\$350.4
Total	\$17,012.5	\$33,858.7	\$32,039.0	\$32,046.9	\$22,362.6	\$19,506.1	\$21,572.7
Total							
Coal	\$106.7	\$132.6	\$99.1	\$82.2	\$80.2	\$51.7	\$54.2
Petroleum	\$22,343.5	\$42,395.5	\$37,421.1	\$37,015.4	\$25,705.5	\$21,748.5	\$24,151.2
Distillate	\$7,116.9	\$12,343.5	\$9,470.0	\$9,407.5	\$7,121.3	\$5,421.5	\$6,027.4
Residual	\$737.4	\$1,742.2	\$1,075.7	\$801.4	\$275.3	\$208.6	\$217.8
Motor Gasoline	\$12,125.1	\$21,196.1	\$19,972.0	\$19,607.6	\$13,907.5	\$12,617.1	\$13,868.7
Kerosene	\$228.2	\$143.7	\$87.8	\$149.2	\$58.2	\$62.2	\$45.5
Jet Fuel	\$1,492.6	\$5,864.2	\$5,954.4	\$5,915.8	\$3,559.3	\$2,708.1	\$3,114.6
LPG	\$643.4	\$1,105.8	\$861.3	\$1,134.0	\$783.9	\$730.9	\$877.4
Natural Gas	\$11,114.7	\$13,244.4	\$9,066.3	\$10,062.3	\$8,614.9	\$7,392.4	\$8,289.6
Electricity	\$22,189.7	\$25,868.5	\$23,252.6	\$24,041.8	\$22,804.2	\$21,189.7	\$20,740.0
Wood	\$285.5	\$540.3	\$230.4	\$223.7	\$256.6	\$174.4	\$184.8
Total	\$56,040.2	\$82,181.3	\$70,069.5	\$71,425.4	\$57,461.4	\$50,556.7	\$53,419.8

**New York Out-of-State
Energy Expenditure Estimates
by Fuel Type
in Nominal and
Constant 2017 Dollars
2003–2017**

Figure 5-3.

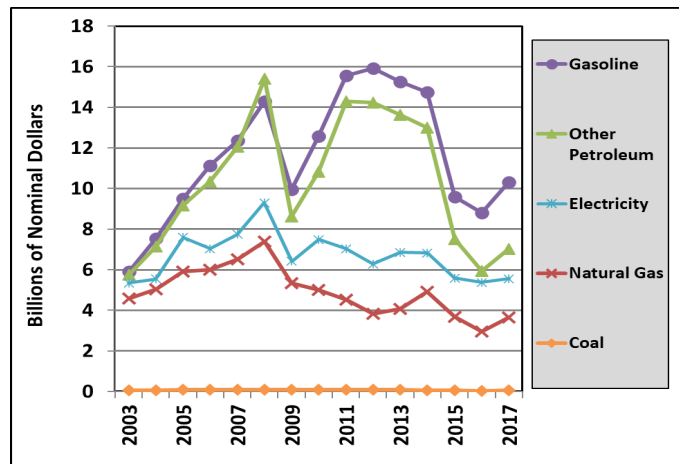


Table 5-3a. (In million nominal dollars)

Year	Coal	Natural Gas	Gasoline	Other Petroleum	Electricity	Total
2003	\$ 68.1	\$ 4,598.2	\$ 5,916.4	\$ 5,752.8	\$ 5,347.9	\$ 21,683.5
2004	\$ 71.8	\$ 5,032.0	\$ 7,551.4	\$ 7,160.8	\$ 5,544.8	\$ 25,360.7
2005	\$ 84.8	\$ 5,909.0	\$ 9,496.0	\$ 9,168.7	\$ 7,595.6	\$ 32,254.0
2006	\$ 102.6	\$ 6,007.9	\$ 11,137.1	\$ 10,342.0	\$ 7,034.8	\$ 34,624.3
2007	\$ 93.8	\$ 6,515.4	\$ 12,378.7	\$ 12,047.2	\$ 7,747.0	\$ 38,782.1
2008	\$ 99.0	\$ 7,376.8	\$ 14,285.9	\$ 15,406.1	\$ 9,298.7	\$ 46,466.5
2009	\$ 83.1	\$ 5,346.1	\$ 9,942.9	\$ 8,630.4	\$ 6,419.6	\$ 30,422.0
2010	\$ 96.4	\$ 5,016.8	\$ 12,588.0	\$ 10,829.9	\$ 7,489.5	\$ 36,020.6
2011	\$ 104.8	\$ 4,521.4	\$ 15,569.7	\$ 14,304.3	\$ 7,033.9	\$ 41,534.1
2012	\$ 97.2	\$ 3,819.3	\$ 15,910.1	\$ 14,240.5	\$ 6,285.2	\$ 40,352.3
2013	\$ 80.1	\$ 4,062.9	\$ 15,248.9	\$ 13,623.3	\$ 6,850.5	\$ 39,865.7
2014	\$ 67.4	\$ 4,905.5	\$ 14,750.4	\$ 12,991.1	\$ 6,821.7	\$ 39,536.1
2015	\$ 65.9	\$ 3,680.2	\$ 9,576.6	\$ 7,510.6	\$ 5,591.2	\$ 26,424.4
2016	\$ 43.0	\$ 2,943.0	\$ 8,801.9	\$ 5,933.0	\$ 5,381.8	\$ 23,102.7
2017	\$ 46.1	\$ 3,643.3	\$ 10,299.7	\$ 7,017.7	\$ 5,560.6	\$ 26,567.4

Table 5-3b. (In million constant 2017 dollars)

Year	Coal	Natural Gas	Gasoline	Other Petroleum	Electricity	Total
2003	\$ 90.7	\$ 6,125.6	\$ 7,881.7	\$ 7,663.8	\$ 7,124.4	\$ 28,886.2
2004	\$ 93.1	\$ 6,529.7	\$ 9,798.8	\$ 9,292.0	\$ 7,195.0	\$ 32,908.5
2005	\$ 106.4	\$ 7,416.3	\$ 11,918.3	\$ 11,507.6	\$ 9,533.2	\$ 40,481.9
2006	\$ 124.7	\$ 7,304.9	\$ 13,541.3	\$ 12,574.6	\$ 8,553.4	\$ 42,098.8
2007	\$ 110.9	\$ 7,702.5	\$ 14,634.1	\$ 14,242.2	\$ 9,158.5	\$ 45,848.3
2008	\$ 112.7	\$ 8,398.4	\$ 16,264.4	\$ 17,539.6	\$ 10,586.4	\$ 52,901.6
2009	\$ 94.9	\$ 6,108.2	\$ 11,360.3	\$ 9,860.6	\$ 7,334.8	\$ 34,758.8
2010	\$ 108.4	\$ 5,639.5	\$ 14,150.4	\$ 12,174.0	\$ 8,419.1	\$ 40,491.3
2011	\$ 114.2	\$ 4,927.1	\$ 16,966.5	\$ 15,587.7	\$ 7,664.9	\$ 45,260.5
2012	\$ 103.8	\$ 4,077.5	\$ 16,986.0	\$ 15,203.5	\$ 6,710.2	\$ 43,081.1
2013	\$ 84.2	\$ 4,275.0	\$ 16,045.1	\$ 14,334.6	\$ 7,208.2	\$ 41,947.1
2014	\$ 69.8	\$ 5,079.2	\$ 15,272.8	\$ 13,451.2	\$ 7,063.3	\$ 40,936.3
2015	\$ 68.1	\$ 3,806.0	\$ 9,904.0	\$ 7,767.4	\$ 5,782.3	\$ 27,327.8
2016	\$ 43.9	\$ 3,005.7	\$ 8,989.4	\$ 6,059.4	\$ 5,496.4	\$ 23,594.8
2017	\$ 46.1	\$ 3,643.3	\$ 10,299.7	\$ 7,017.7	\$ 5,560.6	\$ 26,567.4

6 New York State's Sources of Energy

On the national level, New York State is the seventh largest energy user. Nevertheless, households, businesses, industries, and electric utilities in the State rely largely on fuels produced elsewhere. More than 11% of the total primary energy requirements were met from in-State resources in 2017. Hydroelectric power is produced at various locations throughout the State and in 2017, New York produced more hydroelectric power than any other state east of the Rocky Mountains. New York is currently the 14th largest state in the U.S. in installed wind power through the end of 2017 with a capacity of more than 1,830 MW. Crude oil and natural gas production are found in the western region of the State. The “other” category described in this section primarily consists of wood, waste, landfill gas, solar, geothermal, and ethanol.

6.1 Key Observations about New York State Sources of Energy in 2017

- In-State resources produced 11.3% of the State's total primary energy requirement, including 6.6% from hydropower and 3.0% from biofuels including ethanol, waste, wood, and landfill gas, collectively. Wind, solar, and geothermal renewable resources met 1.4% of the State's total primary energy requirement. Petroleum and natural gas production accounted for 0.3% of the total primary energy requirement.
- Hydroelectric power and energy collectively from biofuels including ethanol, waste, wood, and landfill gas account for 58.2% and 26.3%, respectively, of the State's primary energy production. Wind, solar, and geothermal resources accounted for 12.6% of the primary energy production while crude oil and natural gas constitute the remaining 3.0%.
- In-state crude oil and natural gas production represent less than 0.1% and 0.9%, respectively, of the State's use of these fuels. Consumers rely on external sources for 100% of refined petroleum fuel products because there are no petroleum refineries in the State.
- Production of natural gas decreased 15.7% from 2016 to 2017. In 2017, natural gas production was 11.4 billion cubic feet, and accounted for 0.3% of the State's total primary energy use.
- Energy production from solar resources increased 30.5% from 2016 to 2017 while collective production of biofuels including ethanol, waste, wood, and landfill gas increased 0.3%.

**New York State
Primary Energy Production
by Fuel Type¹
2003–2017**

Figure 6-1.

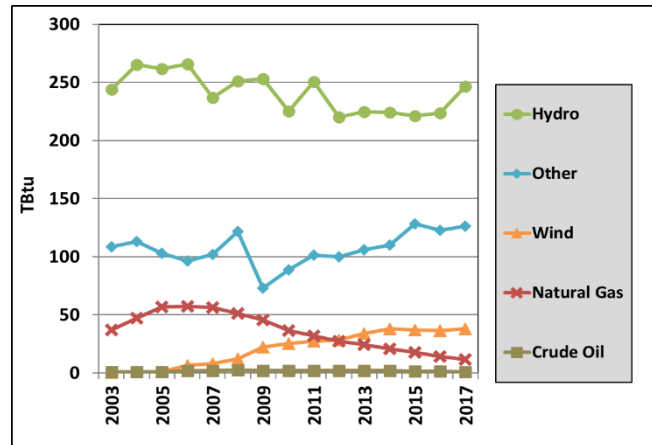


Table 6-1a. (In physical units)

Year	Hydro Electricity ²	Natural Gas	Crude Oil	Ethanol	Distributed Solar	Utility Solar	Total Solar
	GWh	Bcf	Mbbl	Mbbl	GWh	GWh	GWh
2003	25,798	36.1	143	0	6	n.a.	n.a.
2004	28,153	46.1	170	0	7	n.a.	n.a.
2005	27,583	55.2	202	0	12	n.a.	n.a.
2006	28,422	56.0	312	0	14	n.a.	n.a.
2007	25,557	54.9	379	100	16	n.a.	n.a.
2008	27,501	50.3	387	2,064	25	n.a.	n.a.
2009	27,945	44.8	333	1,189	35	n.a.	n.a.
2010	25,103	35.8	381	2,672	59	n.a.	n.a.
2011	28,355	31.1	375	4,011	91	6	97
2012	25,303	26.4	362	3,798	158	53	211
2013	26,397	23.5	366	3,991	205	67	272
2014	26,823	20.2	356	4,086	350	71	421
2015	26,704	17.3	286	4,062	591	98	689
2016	27,150	13.5	225	4,110	877	137	1,014
2017	30,350	11.4	184	4,227	1,186	178	1,364

Table 6-1b. (In trillion Btu)

Year	Hydro Electricity ²	Natural Gas	Crude Oil	Biofuels ^{3,4,5}	Wind	Solar ⁴	Geothermal ⁴	Total Production
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu		TBtu
2003	244.2	37.1	0.8	107.3	0.4	0.6	0.5	390.9
2004	265.0	47.2	1.0	111.9	1.2	0.7	0.5	427.5
2005	261.5	56.6	1.2	101.5	1.0	0.8	0.6	423.3
2006	265.9	57.2	1.8	94.7	6.5	1.0	0.7	427.8
2007	236.9	56.2	2.2	100.2	8.2	1.2	0.7	405.6
2008	251.2	51.4	2.2	119.5	12.3	1.3	0.8	438.8
2009	252.9	45.8	1.9	70.5	22.1	1.5	1.0	395.7
2010	225.4	36.6	2.2	85.7	25.3	1.7	1.1	378.1
2011	250.7	31.9	2.2	98.1	27.5	2.1	1.3	413.8
2012	220.1	27.2	2.1	95.7	28.5	3.2	1.2	378.0
2013	224.7	24.2	2.1	100.8	33.8	3.9	1.2	390.7
2014	224.3	20.8	2.1	103.3	37.7	5.3	1.2	394.7
2015	221.2	17.9	1.6	119.2	37.1	7.7	1.2	405.9
2016	223.5	13.9	1.3	111.0	36.4	10.7	1.2	398.0
2017	246.5	11.8	1.1	111.3	38.1	13.9	1.2	423.9

¹ Includes energy produced from resources indigenous to New York State.

² Includes both conventional and pumped storage hydro.

³ Includes primarily wood, waste, landfill gas, and ethanol.

⁴ Consumption used as proxy.

⁵ Ethanol TBtu are based on biomass inputs (feedstock) to produce fuel ethanol.

7 Appendices

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Appendix A-1

New York State Estimated Greenhouse Gas Emissions¹ from Fuel Combustion 2003–2017

Figure A-1. Annual New York State GHG Emissions from Fuel Combustion

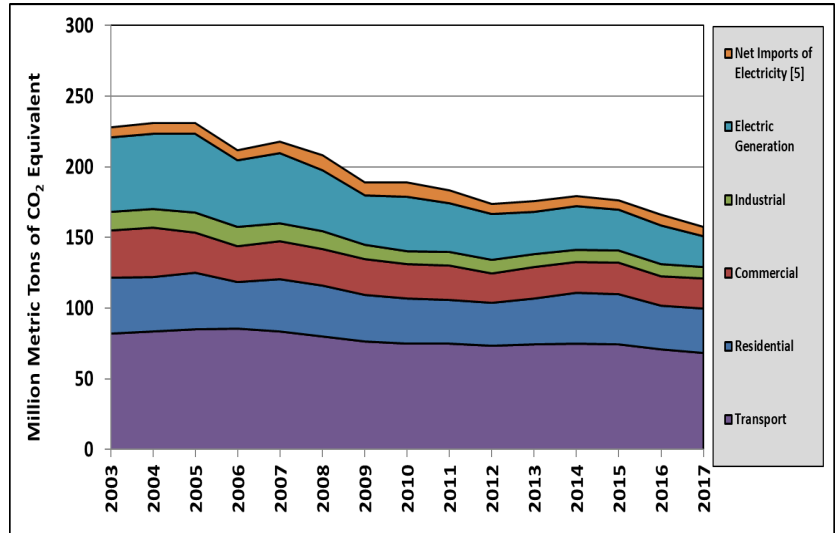


Table A-1. GHG Emissions by Sector (In million metric tons carbon dioxide equivalent)^{2,3}

Year	Residential	Commercial	Industrial	Transportation	Electric Generation	Net Imports of Electricity ⁴	Total ⁵
2003	39.9	33.1	13.4	81.7	52.8	6.8	227.7
2004	39.0	34.9	13.2	83.2	53.2	7.4	230.9
2005	39.9	28.7	14.0	85.0	55.7	7.9	231.1
2006	33.1	25.4	13.5	85.4	47.3	6.9	211.5
2007	36.9	26.7	12.8	83.5	49.9	7.7	217.6
2008	35.7	25.9	12.5	80.1	43.5	10.5	208.1
2009	32.9	25.1	10.3	76.6	34.8	9.1	188.8
2010	31.8	24.2	9.1	75.1	38.4	10.3	188.9
2011	31.2	24.2	9.7	74.9	34.1	9.3	183.4
2012	30.4	21.0	9.4	73.4	32.4	7.2	173.8
2013	32.3	22.4	8.9	74.5	30.2	7.5	175.7
2014	35.6	22.1	8.6	75.0	30.6	7.4	179.3
2015	35.8	21.8	8.8	74.3	29.2	6.5	176.4
2016	31.1	20.7	8.4	70.6	27.8	7.2	165.9
2017	31.7	21.1	8.1	68.0	22.1	6.7	157.7

¹ Total greenhouse gas (GHG) emissions from fuel combustion include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) and are expressed in carbon dioxide equivalent using a 100-year global warming potential based on the Intergovernmental Panel on Climate Change Forth Assessment Report. Carbon dioxide emissions from biogenic fuels are not included in this appendix.

² Total GHG emissions are expressed in millions of metric tons. One ton equals approximately 2,204 pounds. To convert emissions to short tons, multiply by a factor of 1.1023.

³ All data is subject to revision. The Department of Environmental Conservation is expected to publish a statewide greenhouse gas emissions report based on the provisions of the Climate Leadership and Community Protection Act in 2021.

⁴ GHG emissions from Net Imports of Electricity are based on estimated emissions factors for neighboring electric service territories and emissions from power plants electrically connected to the New York Control Area but located in New Jersey. These values are not based upon any environmental attribute tracking system or reporting data.

⁵ Totals do not include GHG emissions from sectors other than fuel combustion, including agriculture, waste, and industrial process, and natural gas systems.

Appendix A-2

New York State Estimated CO₂ Emissions by Fuel Type^{1,2} from Fuel Combustion, 2017

Figure A-2. CO₂ Emissions from Fuel Combustion by Fuel Type^{1,2}

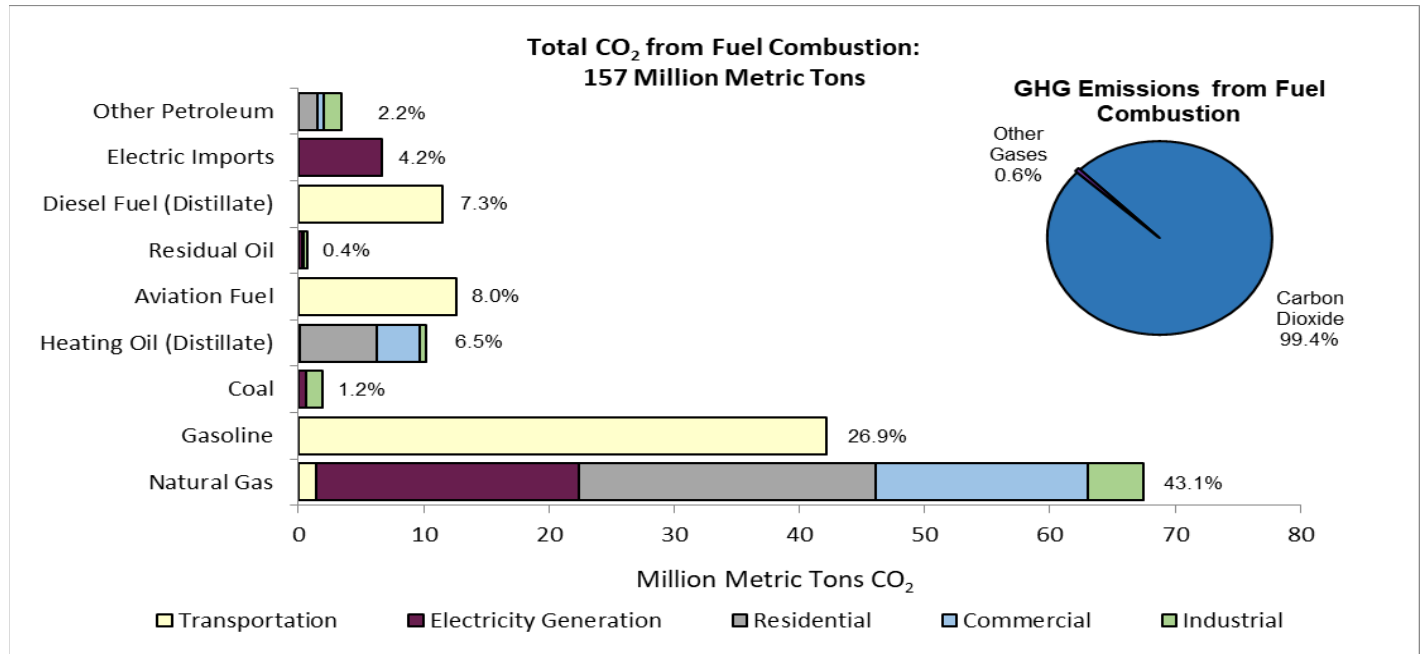


Table A-2. CO₂ Emissions from Fuel Combustion by Fuel Type (In million metric tons carbon dioxide)^{3,4}

Fuel Type	Transportation	Electricity Generation	Residential	Commercial	Industrial	Total CO ₂ Emissions	Percent of Total CO ₂ Emissions
	(million metric tons CO ₂)						(%)
Other Petroleum	N/A	N/A	1.52	0.49	1.47	3.48	2.2
Net Imports of Electricity	N/A	6.64	N/A	N/A	N/A	6.64	4.2
Diesel Fuel (Distillate)	11.50	N/A	N/A	N/A	N/A	11.50	7.3
Residual Oil	N/A	0.30	N/A	0.13	0.25	0.69	0.4
Jet Fuel	12.57	N/A	N/A	N/A	N/A	12.57	8.0
Heating Oil (Distillate)	N/A	0.11	6.18	3.38	0.56	10.23	6.5
Coal	N/A	0.60	N/A	N/A	1.29	1.89	1.2
Gasoline	42.20	N/A	N/A	N/A	N/A	42.20	26.9
Natural Gas	1.40	21.03	23.63	16.95	4.44	67.44	43.1

¹ This appendix only includes carbon dioxide emissions from fuel combustion by fuel type. These emissions comprise 99% of total GHG emissions from fuel combustion. This appendix does not include GHG emissions from sectors other than fuel combustion, including agriculture, waste, and industrial process, and natural gas systems.

² All data is subject to revision. The Department of Environmental Conservation is expected to publish a statewide greenhouse gas emissions report based on the provisions of the Climate Leadership and Community Protection Act in 2021.

³ CO₂ emissions are expressed in millions of metric tons. One ton equals approximately 2,204 pounds. To convert emissions to short tons, multiply by a factor of 1.1023.

⁴ GHG emissions from Net Imports of Electricity are based on estimated emissions factors for neighboring electric service territories and emissions from power plants electrically connected to the New York Control Area but located in New Jersey. These values are not based on any environmental attribute tracking system or reporting data.

Appendix B

New York State Household Consumption and Expenditures by End Use, 2015¹

Table B-1. Total Household Energy

	Households ² (MM)	Average per household using the fuel	
		Consumption	Expenditure
Electricity	7.2	6,716 kWh	\$1,186
Natural Gas	5.8	61 Mcf	\$671
Fuel Oil/Kerosene	1.9	434 gallons	\$1,146
Propane/LPG	0.5	198 gallons	\$552
Wood	0.4	Q	Q

Table B-2. Space-Heating³

	Households ² (MM)	Average per Household using the fuel as main heating source	
		Consumption	Expenditure
Electricity	0.6	2,449 kWh	\$431
Natural Gas	4.4	55 Mcf	\$600
Fuel Oil/Kerosene	1.6	374 gallons	\$1,147
Propane	0.1	463 gallons	\$1,196

Table B-3. Water-Heating

	Households ² (MM)	Average per Household using the fuel as water heating source	
		Consumption	Expenditure
Electricity	1.6	2,894 kWh	\$489
Natural Gas	4.2	18 Mcf	\$206
Fuel Oil	1	144 gallons	\$391
Propane/LPG	0.2	178 gallons	\$519

Table B-4. Electric Air Conditioning

	Households ² (MM)	Average per Household	
		Consumption	Expenditure
Central Air	1.4	765 kWh	\$154
Room/Wall	4.9		

¹ Data in these tables represent site or delivered energy. Consumption and expenditures for biomass (e.g., wood), coal, solar, and outdoor propane grills are excluded. See RECS Terminology (<http://www.eia.gov/consumption/residential/terminology.cfm>) for further explanation of these terms.

² The 7.2 million households represent New York single-family, mobile home, and multifamily housing units. Vacant housing units, seasonal units, second homes, military housing, and group quarters are excluded.

³ Some households may use multiple heating fuels. Averages include main (primary) and secondary space heating applications. See Appendix D-1 and D-2 for estimate of number of households using the fuel as a primary heating source.

Q = Data not reported by the DOE's Energy Information Administration's Residential Energy Consumption Survey.

Appendix C

Estimated Annual Gasoline Sales by County in New York State, 2015–2017

Table C-1. (In thousand gallons)

County	2015	2016	2017
New York State	5,520,551	5,734,254	5,801,060
New York City	1,029,969	1,101,658	1,115,126
Rest of State	4,490,582	4,632,596	4,685,934
Albany	129,617	131,898	135,013
Alleghany	14,875	15,542	15,015
Broome	97,336	100,367	107,975
Cattaraugus	23,698	23,157	21,184
Cayuga	33,368	31,577	26,398
Chautauqua	36,371	44,023	47,611
Chemung	32,924	33,869	38,369
Chenango	21,586	23,591	23,888
Clinton	45,980	44,217	48,120
Columbia	33,670	40,589	47,642
Cortland	26,840	25,931	26,939
Delaware	20,985	20,794	20,738
Dutchess	101,794	106,405	119,653
Erie	360,650	364,977	344,070
Essex	20,356	20,640	19,880
Franklin	17,338	17,924	17,780
Fulton	22,611	25,509	18,818
Genesee	54,576	53,029	54,205
Greene	27,843	28,123	29,901
Hamilton	3,191	3,139	3,181
Herkimer	28,236	28,319	28,003
Jefferson	54,744	57,906	58,162
Lewis	12,377	14,129	13,205
Livingston	36,266	34,593	34,740
Madison	19,897	19,753	17,938
Monroe	274,338	275,923	280,586
Montgomery	36,850	38,330	37,875
Nassau	496,762	528,544	543,284
Niagara	71,696	71,759	71,567
Oneida	99,762	103,976	88,131
Onondaga	227,662	223,439	233,878
Ontario	60,388	59,779	65,358
Orange	159,407	158,057	192,214
Orleans	11,541	11,138	11,648
Oswego	49,358	50,450	46,156
Otsego	28,859	29,829	30,325
Putnam	45,616	49,024	52,152
Rensselaer	71,457	71,066	72,265
Rockland	51,801	56,006	69,414
St. Lawrence	44,359	43,818	45,857
Saratoga	102,139	100,677	114,934
Schenectady	70,208	70,892	72,337
Schoharie	13,276	13,875	14,574
Schuyler	8,598	8,680	8,829
Seneca	28,691	32,571	34,644
Steuben	53,224	54,810	57,731
Suffolk	655,777	689,418	689,424
Sullivan	30,692	31,623	35,212
Tioga	19,697	21,345	24,835
Tompkins	32,868	33,335	28,678
Ulster	82,308	83,068	86,325
Warren	39,783	38,009	44,766
Washington	15,393	15,935	19,540
Wayne	40,230	39,883	40,761
Westchester	266,018	293,600	229,716
Wyoming	16,943	16,211	16,483
Yates	7,757	7,528	8,005

Note: Individual county data for New York City are not available.

Estimated Annual Residential Energy Consumption by County in New York State, 2003–2017

Table C-2.

Residential Energy Consumption	Natural Gas		Propane		Electricity		Distillate		Kerosene		Wood	
	Bcf		Mbbbl		GWh		Mbbbl		Mbbbl		MCords	
County	2017	2003	2017	2003	2017	2003	2017	2003	2017	2003	2017	2003
Albany	11.6	9.8	65	51	1,620	1,247	128	274	4	13	19	36
Allegany	1.5	1.2	49	41	164	155	14	33	0	2	26	66
Bronx	12.6	11.7	81	83	1,724	1,952	1,241	3,255	34	153	1	3
Broome	8.0	6.4	137	108	951	668	130	188	4	9	31	65
Cattaraugus	2.5	2.1	99	93	354	358	29	53	1	2	35	91
Cayuga	2.5	1.9	106	90	317	261	62	109	2	5	25	55
Chautauqua	5.4	4.8	96	87	623	578	16	33	0	2	28	73
Chemung	4.2	3.3	48	33	342	255	31	47	1	2	15	32
Chenango	0.5	0.4	79	51	329	242	98	151	3	7	30	66
Clinton	0.6	0.3	42	24	954	715	208	271	6	13	37	56
Columbia	0.5	0.4	71	49	338	335	177	284	5	13	21	44
Cortland	1.4	1.1	37	32	187	175	32	58	1	3	16	31
Delaware	0.4	0.3	66	46	246	184	121	187	3	9	41	79
Dutchess	4.1	3.2	133	94	1,297	1,072	698	1,092	19	51	32	49
Erie	48.3	39.4	161	147	2,045	1,734	66	136	2	6	25	91
Essex	0.1	0.1	60	36	233	247	133	170	4	8	33	52
Franklin	0.2	0.2	58	30	289	232	158	212	4	10	40	52
Fulton	1.4	1.1	49	37	151	140	90	140	2	7	20	45
Genesee	2.1	1.7	83	64	200	190	36	63	1	3	10	28
Greene	0.2	0.1	51	43	212	180	124	226	3	11	18	34
Hamilton	0.0	0.0	9	11	7	17	8	23	0	1	3	12
Herkimer	2.0	1.4	50	35	301	262	96	145	3	7	29	52
Jefferson	3.0	2.1	150	104	843	575	100	175	3	8	39	66
Kings	47.4	52.0	199	233	2,536	2,511	559	2,347	15	110	2	12
Lewis	0.3	0.1	46	27	83	72	54	94	1	4	35	73
Livingston	1.7	1.4	92	79	284	284	36	65	1	3	17	46
Madison	1.8	1.4	81	55	281	251	88	142	2	7	24	46
Monroe	34.4	29.1	115	107	3,652	2,887	81	194	2	9	19	49
Montgomery	1.3	1.1	27	22	137	125	64	112	2	5	13	26
Nassau	25.9	27.0	107	94	1,403	1,969	1,470	4,017	41	189	6	16
New York	18.0	17.5	128	143	6,158	6,548	1,090	3,554	30	167	1	3
Niagara	10.4	8.4	109	98	606	543	64	125	2	6	14	37
Oneida	8.0	6.5	122	88	925	782	198	352	5	17	45	67
Onondaga	20.3	16.8	131	110	3,013	2,055	99	195	3	9	25	55
Ontario	3.8	3.1	119	119	552	417	46	95	1	4	20	47
Orange	6.1	7.1	100	123	707	958	342	837	9	39	15	45
Orleans	1.1	0.8	76	62	162	151	33	62	1	3	13	30
Oswego	3.0	2.4	207	192	459	359	83	141	2	7	54	101
Otsego	0.6	0.5	88	82	226	229	118	210	3	10	37	74
Putnam	0.3	0.3	25	33	433	623	204	464	6	22	8	17
Queens	42.1	46.2	204	203	2,029	2,699	751	2,837	21	133	3	9
Rensselaer	4.3	3.4	104	86	715	606	192	326	5	15	32	64
Richmond	12.8	15.6	34	39	346	384	78	254	2	12	1	1
Rockland	8.1	10.4	15	21	478	530	28	67	1	3	2	5
St. Lawrence	2.7	1.7	109	70	522	385	186	282	5	13	78	132
Saratoga	7.6	5.8	230	172	1,010	823	181	319	5	15	34	78
Schenectady	5.6	5.1	35	33	563	504	54	127	1	6	7	14
Schoharie	0.1	0.1	46	30	152	167	72	135	2	6	23	46
Schuyler	0.2	0.2	43	41	85	75	19	35	1	2	10	21
Seneca	0.8	0.7	58	60	153	116	26	41	1	2	7	13
Steuben	3.1	2.7	115	113	378	306	36	74	1	3	40	94
Suffolk	19.9	22.4	195	216	2,057	2,999	2,344	5,613	65	264	26	61
Sullivan	0.2	0.1	102	106	430	349	232	321	6	15	32	57
Tioga	1.0	0.8	68	48	208	143	91	148	3	7	21	44
Tompkins	2.9	2.2	106	89	651	532	52	78	1	4	25	43
Ulster	2.1	1.6	192	131	740	619	440	765	12	36	51	81
Warren	2.1	1.6	87	58	332	292	92	154	3	7	22	35
Washington	0.8	0.7	73	62	270	207	147	210	4	10	43	75
Wayne	2.9	2.4	117	98	418	420	56	107	2	5	26	57
Westchester	14.3	16.2	102	108	1,874	2,095	980	2,583	27	121	6	19
Wyoming	0.4	0.9	51	42	129	191	18	39	0	2	13	42
Yates	0.4	0.4	51	54	129	138	18	30	0	1	13	28
New York State	432.5	409.6	5,698	4,933	49,081	47,116	14,519	34,876	402	1,639	1,442	2,943

Estimated Annual Residential Energy Consumption by County in New York State (TBtu), 2003–2017

Table C-3.

Residential Energy Consumption	Natural Gas		Propane		Electricity		Distillate		Kerosene		Wood		Solar	
	(TBtu)		(TBtu)		(TBtu)		(TBtu)		(TBtu)		(TBtu)		(TBtu)	
County	2017	2003	2017	2003	2017	2003	2017	2003	2017	2003	2017	2003	2017	2003
Albany	12.0	10.1	0.2	0.2	5.5	4.3	0.7	1.6	0.0	0.1	0.4	0.7	0.3	0.0
Allegany	1.5	1.2	0.2	0.2	0.6	0.5	0.1	0.2	0.0	0.0	0.5	1.3	0.0	0.0
Bronx	13.0	12.0	0.3	0.3	5.9	6.7	7.1	18.9	0.2	0.9	0.0	0.1	0.2	0.0
Broome	8.2	6.6	0.5	0.4	3.2	2.3	0.7	1.1	0.0	0.1	0.6	1.3	0.0	0.0
Cattaraugus	2.5	2.2	0.4	0.4	1.2	1.2	0.2	0.3	0.0	0.0	0.7	1.8	0.0	0.0
Cayuga	2.5	2.0	0.4	0.3	1.1	0.9	0.4	0.6	0.0	0.0	0.5	1.1	0.0	0.0
Chautauqua	5.6	4.9	0.4	0.3	2.1	2.0	0.1	0.2	0.0	0.0	0.6	1.5	0.1	0.0
Chemung	4.3	3.3	0.2	0.1	1.2	0.9	0.2	0.3	0.0	0.0	0.3	0.6	0.1	0.0
Chenango	0.5	0.4	0.3	0.2	1.1	0.8	0.6	0.9	0.0	0.0	0.6	1.3	0.0	0.0
Clinton	0.6	0.4	0.2	0.1	3.3	2.4	1.2	1.6	0.0	0.1	0.7	1.1	0.0	0.0
Columbia	0.5	0.4	0.3	0.2	1.2	1.1	1.0	1.7	0.0	0.1	0.4	0.9	0.1	0.0
Cortland	1.4	1.1	0.1	0.1	0.6	0.6	0.2	0.3	0.0	0.0	0.3	0.6	0.0	0.0
Delaware	0.4	0.3	0.3	0.2	0.8	0.6	0.7	1.1	0.0	0.0	0.8	1.6	0.0	0.0
Dutchess	4.2	3.3	0.5	0.4	4.4	3.7	4.0	6.4	0.1	0.3	0.6	1.0	0.3	0.0
Erie	49.8	40.4	0.6	0.6	7.0	5.9	0.4	0.8	0.0	0.0	0.5	1.8	0.3	0.0
Essex	0.1	0.1	0.2	0.1	0.8	0.8	0.8	1.0	0.0	0.0	0.7	1.0	0.1	0.0
Franklin	0.2	0.2	0.2	0.1	1.0	0.8	0.9	1.2	0.0	0.1	0.8	1.0	0.0	0.0
Fulton	1.4	1.1	0.2	0.1	0.5	0.5	0.5	0.8	0.0	0.0	0.4	0.9	0.0	0.0
Genesee	2.2	1.8	0.3	0.2	0.7	0.6	0.2	0.4	0.0	0.0	0.2	0.6	0.1	0.0
Greene	0.2	0.1	0.2	0.2	0.7	0.6	0.7	1.3	0.0	0.1	0.4	0.7	0.1	0.0
Hamilton	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0
Herkimer	2.0	1.4	0.2	0.1	1.0	0.9	0.6	0.8	0.0	0.0	0.6	1.0	0.0	0.0
Jefferson	3.1	2.2	0.6	0.4	2.9	2.0	0.6	1.0	0.0	0.0	0.8	1.3	0.0	0.0
Kings	48.9	53.4	0.8	0.9	8.7	8.6	3.2	13.7	0.1	0.6	0.0	0.2	0.3	0.1
Lewis	0.3	0.1	0.2	0.1	0.3	0.2	0.3	0.5	0.0	0.0	0.7	1.5	0.0	0.0
Livingston	1.8	1.5	0.4	0.3	1.0	1.0	0.2	0.4	0.0	0.0	0.3	0.9	0.0	0.0
Madison	1.8	1.5	0.3	0.2	1.0	0.9	0.5	0.8	0.0	0.0	0.5	0.9	0.0	0.0
Monroe	35.5	30.0	0.4	0.4	12.5	9.8	0.5	1.1	0.0	0.1	0.4	1.0	0.2	0.0
Montgomery	1.3	1.1	0.1	0.1	0.5	0.4	0.4	0.7	0.0	0.0	0.3	0.5	0.0	0.0
Nassau	26.7	27.8	0.4	0.4	4.8	6.7	8.5	23.4	0.2	1.1	0.1	0.3	0.7	0.0
New York	18.6	18.0	0.5	0.5	21.0	22.3	6.3	20.7	0.2	0.9	0.0	0.1	0.3	0.1
Niagara	10.8	8.6	0.4	0.4	2.1	1.9	0.4	0.7	0.0	0.0	0.3	0.7	0.1	0.0
Oneida	8.3	6.7	0.5	0.3	3.2	2.7	1.1	2.0	0.0	0.1	0.9	1.3	0.4	0.0
Onondaga	21.0	17.2	0.5	0.4	10.3	7.0	0.6	1.1	0.0	0.1	0.5	1.1	0.2	0.0
Ontario	3.9	3.2	0.5	0.5	1.9	1.4	0.3	0.6	0.0	0.0	0.4	0.9	0.0	0.0
Orange	6.3	7.3	0.4	0.5	2.4	3.3	2.0	4.9	0.1	0.2	0.3	0.9	0.2	0.0
Orleans	1.1	0.9	0.3	0.2	0.6	0.5	0.2	0.4	0.0	0.0	0.3	0.6	0.0	0.0
Oswego	3.1	2.5	0.8	0.7	1.6	1.2	0.5	0.8	0.0	0.0	1.1	2.0	0.1	0.0
Otsego	0.6	0.5	0.3	0.3	0.8	0.8	0.7	1.2	0.0	0.1	0.7	1.5	0.1	0.0
Putnam	0.3	0.3	0.1	0.1	1.5	2.1	1.2	2.7	0.0	0.1	0.2	0.3	0.0	0.0
Queens	43.5	47.5	0.8	0.8	6.9	9.2	4.3	16.5	0.1	0.8	0.1	0.2	0.2	0.0
Rensselaer	4.4	3.5	0.4	0.3	2.4	2.1	1.1	1.9	0.0	0.1	0.6	1.3	0.2	0.0
Richmond	13.2	16.0	0.1	0.2	1.2	1.3	0.4	1.5	0.0	0.1	0.0	0.0	0.3	0.0
Rockland	8.4	10.7	0.1	0.1	1.6	1.8	0.2	0.4	0.0	0.0	0.0	0.1	0.1	0.0
St. Lawrence	2.8	1.7	0.4	0.3	1.8	1.3	1.1	1.6	0.0	0.1	1.6	2.6	0.0	0.0
Saratoga	7.9	5.9	0.9	0.7	3.4	2.8	1.0	1.9	0.0	0.1	0.7	1.6	0.2	0.0
Schenectady	5.8	5.2	0.1	0.1	1.9	1.7	0.3	0.7	0.0	0.0	0.1	0.3	0.2	0.0
Schoharie	0.1	0.1	0.2	0.1	0.5	0.6	0.4	0.8	0.0	0.0	0.5	0.9	0.0	0.0
Schuyler	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.2	0.0	0.0	0.2	0.4	0.0	0.0
Seneca	0.9	0.7	0.2	0.2	0.5	0.4	0.1	0.2	0.0	0.0	0.1	0.3	0.0	0.0
Steuben	3.2	2.8	0.4	0.4	1.3	1.0	0.2	0.4	0.0	0.0	0.8	1.9	0.1	0.0
Suffolk	20.6	23.1	0.7	0.8	7.0	10.2	13.5	32.7	0.4	1.5	0.5	1.2	0.7	0.0
Sullivan	0.2	0.1	0.4	0.4	1.5	1.2	1.3	1.9	0.0	0.1	0.6	1.1	0.1	0.0
Tioga	1.0	0.8	0.3	0.2	0.7	0.5	0.5	0.9	0.0	0.0	0.4	0.9	0.0	0.0
Tompkins	3.0	2.2	0.4	0.3	2.2	1.8	0.3	0.5	0.0	0.0	0.5	0.9	0.2	0.0
Ulster	2.1	1.7	0.7	0.5	2.5	2.1	2.5	4.5	0.1	0.2	1.0	1.6	0.5	0.0
Warren	2.2	1.6	0.3	0.2	1.1	1.0	0.5	0.9	0.0	0.0	0.4	0.7	0.0	0.0
Washington	0.9	0.7	0.3	0.2	0.9	0.7	0.8	1.2	0.0	0.1	0.9	1.5	0.2	0.0
Wayne	3.0	2.5	0.4	0.4	1.4	1.4	0.3	0.6	0.0	0.0	0.5	1.1	0.0	0.0
Westchester	14.8	16.7	0.4	0.4	6.4	7.1	5.6	15.0	0.2	0.7	0.1	0.4	0.2	0.0
Wyoming	0.4	1.0	0.2	0.2	0.4	0.7	0.1	0.2	0.0	0.0	0.3	0.8	0.0	0.0
Yates	0.4	0.4	0.2	0.2	0.4	0.5	0.1	0.2	0.0	0.0	0.3	0.6	0.0	0.0
New York State	446.5	421.0	21.9	18.9	167.5	160.8	83.6	202.9	2.3	9.3	28.8	58.9	8.1	0.6

Appendix D-1

Occupied Housing Units by Type of Space Heating Fuel by County in New York State, 2013–2017, Five-Year Estimates

Table D-1. (In housing units)

County	Total Occupied Units	Utility Gas	Bottled Tank or LP Gas	Electricity	Fuel Oil or Kerosene	Coal or Coke	Wood	Solar Energy	Other	No Fuel Used
New York State	7,302,710	4,228,093	274,348	820,554	1,663,074	18,375	139,739	4,179	81,024	73,324
New York City	3,142,405	1,955,936	60,070	355,364	659,980	1,898	1,570	1,222	47,906	58,459
Bronx	495,356	198,394	7,941	47,801	223,324	506	144	187	6,289	10,770
Kings	944,650	731,085	19,054	68,909	98,732	275	490	302	10,436	15,367
New York	758,345	303,327	13,390	182,711	209,945	634	238	318	23,922	23,860
Queens	777,904	578,265	17,317	49,047	117,907	370	573	196	6,699	7,530
Richmond	166,150	144,865	2,368	6,896	10,072	113	125	219	560	932
Rest of State	4,160,305	2,272,157	214,278	465,190	1,003,094	16,477	138,169	2,957	33,118	14,865
Albany	125,376	86,281	2,982	21,240	10,937	123	2,110	113	947	643
Alleghany	18,124	9,744	2,000	1,911	1,083	489	2,576	0	296	25
Broome	78,821	49,473	5,256	10,394	9,245	513	2,828	5	745	362
Cattaraugus	31,723	16,599	4,121	4,203	2,256	368	3,482	14	597	83
Cayuga	31,428	15,631	4,185	3,552	4,535	484	2,334	12	550	145
Chautauqua	52,983	36,367	3,992	7,378	1,217	118	2,827	44	854	186
Chemung	34,664	25,044	1,796	3,598	2,129	375	1,378	18	221	105
Chenango	20,373	2,909	3,040	3,575	6,931	636	2,808	13	429	32
Clinton	31,680	3,388	1,487	9,561	13,554	103	3,114	7	347	119
Columbia	25,470	3,063	2,866	3,866	13,133	56	2,035	42	379	30
Cortland	17,925	9,326	1,522	2,192	2,414	564	1,599	8	203	97
Delaware	19,098	2,107	2,363	2,499	7,954	233	3,517	16	388	21
Dutchess	107,384	27,722	5,569	15,447	53,998	141	3,205	129	839	334
Erie	386,371	342,557	7,101	25,572	5,388	188	2,682	108	1,517	1,258
Essex	15,257	570	1,904	2,116	7,822	96	2,501	31	189	28
Franklin	18,956	989	1,905	2,718	9,626	198	3,194	4	288	34
Fulton	22,535	9,140	2,014	1,781	6,869	83	2,034	17	556	41
Genesee	23,951	13,703	3,365	2,314	2,730	233	1,006	29	468	103
Greene	17,106	1,367	2,050	2,396	9,094	87	1,739	37	313	23
Hamilton	1,095	36	273	64	449	4	242	0	27	0
Herkimer	25,187	11,041	1,738	2,994	6,211	247	2,468	4	437	47
Jefferson	43,206	17,724	5,556	8,856	6,829	50	3,500	9	492	190
Lewis	10,236	1,507	1,544	781	3,291	66	2,840	0	199	8
Livingston	24,432	11,749	3,901	3,410	2,804	346	1,683	11	487	41
Madison	26,307	10,900	3,105	3,085	6,255	449	2,214	12	240	47
Monroe	300,496	238,595	4,939	44,659	6,417	160	1,944	96	2,196	1,490
Montgomery	19,700	9,196	1,183	1,720	5,181	335	1,389	20	512	164
Nassau	444,136	248,566	6,349	23,753	161,618	119	814	423	1,354	1,140
Niagara	87,978	69,400	4,481	7,117	4,895	96	1,396	28	436	129
Oneida	90,472	53,175	5,034	10,823	15,049	251	4,484	149	1,076	431
Onondaga	185,840	132,555	5,275	34,609	7,356	802	2,413	75	1,653	1,102
Ontario	44,269	25,825	5,033	6,627	3,609	386	2,063	15	501	210
Orange	126,460	62,717	6,391	12,802	40,216	289	2,369	128	895	653
Orleans	16,214	7,024	3,125	1,902	2,484	47	1,332	11	241	48
Oswego	45,881	19,604	8,283	5,227	6,168	425	5,242	31	757	144
Ostego	23,627	4,146	3,608	2,642	8,994	150	3,633	23	345	86
Putnam	34,316	2,363	1,438	7,136	21,863	31	1,096	0	349	40
Rensselaer	64,456	30,533	4,627	9,015	15,686	82	3,435	69	865	144
Rockland	99,935	85,476	996	8,858	3,427	48	324	37	366	403
St. Lawrence	41,638	14,751	3,628	4,942	11,428	68	6,262	5	422	132
Saratoga	93,129	52,258	9,731	12,178	14,156	185	3,472	72	757	320
Schenectady	53,825	39,610	1,557	7,035	4,378	20	753	96	244	132
Schoharie	12,539	673	1,873	1,752	5,424	118	2,252	6	356	85
Schuyler	7,444	1,396	1,820	1,018	1,436	543	994	4	177	56
Seneca	13,536	5,707	2,452	1,830	2,007	507	674	0	279	80
Steuben	40,351	21,441	4,928	4,589	2,810	1,735	4,159	45	537	107
Suffolk	489,328	186,468	11,310	33,874	250,696	321	3,649	379	1,614	1,017
Sullivan	27,679	951	3,690	4,416	15,465	152	2,775	30	173	27
Tioga	19,996	6,000	2,490	2,166	6,188	947	1,884	10	248	63
Tompkins	38,986	19,295	4,334	7,530	3,920	606	2,458	92	432	319
Ulster	69,662	13,687	7,862	8,614	33,264	117	5,014	197	608	299
Warren	27,249	12,115	3,132	3,393	6,137	104	1,916	13	333	106
Washington	23,988	4,732	2,608	2,723	9,648	215	3,640	81	253	88
Wayne	36,578	19,347	4,805	4,877	4,224	294	2,571	6	371	83
Westchester	345,885	165,509	7,296	38,126	129,469	434	1,041	112	2,178	1,720
Wyoming	15,686	7,443	2,320	2,265	1,427	241	1,546	12	408	24
Yates	9,338	2,662	2,045	1,469	1,300	399	1,259	9	174	21

Appendix D-2

Occupied Housing Units by Type of Space Heating Fuel by County in New York State, 2017, One-Year Estimates¹

Table D-2. (In housing units)

County	Total Occupied Units	Utility Gas	Bottled Tank or LP Gas	Electricity	Fuel Oil or Kerosene	Coal or Coke	Wood	Solar Energy	Other	No Fuel Used
New York State	7,304,332	4,339,349	294,973	867,925	1,496,843	17,881	122,088	5,988	77,386	81,899
New York City	3,159,674	2,053,895	68,471	380,175	540,055	1,401	843	1,934	45,890	67,010
Bronx	503,985	219,158	12,178	55,025	195,023	298	0	65	6,775	15,463
Kings	956,223	755,644	21,933	75,722	75,061	362	325	435	11,254	15,487
New York	764,218	335,200	15,405	194,144	170,207	235	213	555	20,375	27,884
Queens	769,258	597,416	16,257	49,062	91,119	506	182	488	6,724	7,504
Richmond	165,990	146,477	2,698	6,222	8,645	0	123	391	762	672
Rest of State	4,144,658	2,285,454	226,502	487,750	956,788	16,480	121,245	4,054	31,496	14,889
Albany	124,144	81,934	3,579	24,607	9,839	251	2,223	51	993	667
Broome	78,604	48,555	5,950	12,309	8,210	678	2,140	0	297	465
Cattaraugus	32,360	17,589	4,303	4,648	1,632	457	3,181	41	473	36
Cayuga	30,870	15,540	4,404	3,464	4,565	410	1,746	0	653	88
Chautauqua	51,985	34,893	4,204	7,570	1,135	102	2,820	132	801	328
Chemung	32,247	23,436	2,005	4,000	1,425	373	745	0	133	130
Clinton	31,493	3,260	1,754	10,991	12,469	75	2,146	0	602	196
Dutchess	106,043	28,523	5,745	14,312	54,174	193	2,164	51	651	230
Erie	386,396	344,223	6,764	25,296	4,138	256	2,410	286	1,905	1,118
Jefferson	41,548	15,216	6,095	10,253	6,754	104	2,472	37	333	284
Livingston	24,725	12,686	3,938	3,340	2,618	401	1,377	0	284	81
Madison	26,024	10,778	3,089	3,442	6,219	387	1,733	0	331	45
Monroe	301,619	234,403	4,783	50,359	5,711	113	2,257	157	2,461	1,375
Nassau	446,978	261,493	6,640	24,642	150,948	159	461	536	1,504	595
Niagara	88,659	72,586	3,944	6,173	4,550	53	1,063	98	192	0
Oneida	88,790	52,147	4,599	12,115	13,367	361	4,462	23	1,203	513
Onondaga	185,709	130,718	5,441	37,351	6,282	854	2,645	89	1,483	846
Ontario	44,414	26,413	5,426	6,297	3,698	327	1,684	53	429	87
Orange	127,517	60,958	7,271	14,136	41,619	219	2,277	29	799	209
Oswego	45,971	18,478	9,536	5,460	5,982	492	5,032	76	807	108
Putnam	34,549	2,151	1,733	7,172	22,359	0	949	0	145	40
Rensselaer	66,127	31,739	5,833	8,723	15,979	104	2,864	144	596	145
Rockland	100,167	83,839	1,242	9,680	4,076	204	279	41	329	477
St. Lawrence	41,008	16,128	3,890	4,282	10,146	175	5,916	0	336	135
Saratoga	97,021	54,455	10,889	13,587	14,899	140	1,970	0	643	438
Schenectady	49,022	35,049	1,943	6,391	4,306	28	805	70	299	131
Steuben	38,382	21,540	3,404	4,486	2,679	1,208	4,353	0	570	142
Suffolk	482,099	186,785	11,131	36,066	239,734	364	3,710	796	1,970	1,543
Sullivan	25,916	1,142	3,304	4,734	14,081	96	2,348	98	98	15
Tompkins	40,230	18,533	4,413	8,698	3,648	1,055	2,514	186	398	785
Ulster	68,822	15,872	9,148	7,449	31,344	105	4,011	177	488	228
Warren	27,595	11,486	3,308	3,582	6,933	149	1,684	46	342	65
Wayne	36,715	19,488	5,087	5,229	4,129	605	1,702	0	459	16
Westchester	350,919	182,090	7,448	37,606	118,335	164	1,101	293	2,229	1,653

¹ Counties with populations of less than 65,000 were not part of the American Community Survey One-Year Estimates.

Appendix D-3

New York State Population Estimates by County, 2007–2017

Table D-3.

County	July 2007	July 2008	July 2009	July 2010	July 2011	July 2012	July 2013	July 2014	July 2015	July 2016	July 2017
New York State	19,132,335	19,212,436	19,307,066	19,399,878	19,499,241	19,572,932	19,624,447	19,651,049	19,654,666	19,633,428	19,589,572
Albany	303,858	303,739	304,733	304,086	304,596	305,723	306,589	307,151	307,433	307,597	307,717
Allegghany	49,079	49,177	48,969	48,971	48,800	48,210	47,900	47,652	47,334	47,044	46,639
Bronx	1,354,056	1,363,488	1,376,261	1,387,298	1,397,335	1,411,496	1,421,928	1,430,942	1,440,005	1,444,417	1,440,625
Broome	200,877	201,029	200,935	200,481	199,363	198,667	197,914	197,251	195,928	194,498	193,100
Cattaraugus	81,056	80,761	80,491	80,218	79,815	79,348	78,996	78,677	77,926	77,658	77,176
Cayuga	80,629	80,482	80,172	79,895	79,693	79,505	79,088	78,762	78,298	77,674	77,457
Chautauqua	135,481	135,229	135,197	134,725	134,209	133,304	132,852	131,751	130,529	129,206	128,372
Chemung	88,634	88,503	88,849	88,895	88,899	89,137	88,199	87,177	86,705	85,644	84,736
Chenango	51,463	51,326	50,639	50,399	50,182	49,883	49,477	49,319	48,772	48,315	47,805
Clinton	82,556	82,401	82,280	82,096	81,728	81,714	81,523	81,463	80,718	80,500	80,531
Columbia	63,430	63,253	63,023	63,036	62,528	62,449	62,170	61,942	61,434	60,835	60,338
Cortland	49,624	49,537	49,358	49,279	49,380	49,023	48,905	48,740	48,290	47,915	47,815
Deleware	48,450	48,363	48,182	47,888	47,584	47,215	46,803	46,562	45,891	45,393	45,028
Dutchess	295,319	296,267	296,887	297,728	298,133	297,023	296,268	295,127	294,039	293,029	293,545
Erie	921,887	920,571	919,334	919,152	919,843	919,906	920,869	921,755	920,644	918,678	919,034
Essex	39,373	39,435	39,478	39,360	39,271	38,875	38,601	38,323	37,965	37,671	37,487
Franklin	51,782	51,907	51,706	51,645	51,545	51,791	51,212	51,096	50,540	51,081	50,465
Fulton	55,489	55,584	55,558	55,455	55,112	54,845	54,345	53,932	53,801	53,610	53,802
Genesee	59,930	59,895	59,932	59,928	59,880	59,672	59,112	58,725	58,462	58,013	57,798
Greene	49,537	49,467	49,372	49,139	48,857	48,587	48,308	47,964	47,616	47,494	47,442
Hamilton	4,969	4,893	4,858	4,851	4,826	4,803	4,766	4,700	4,699	4,556	4,471
Herkimer	64,343	64,404	64,381	64,470	64,386	64,227	63,883	63,384	62,652	62,436	62,163
Jefferson	115,059	115,033	115,023	116,592	117,752	120,235	118,490	117,971	116,371	112,980	113,157
Kings	2,441,324	2,460,361	2,487,751	2,509,828	2,540,817	2,568,450	2,587,684	2,601,513	2,608,794	2,608,423	2,594,676
Lewis	27,086	26,878	27,047	27,077	27,027	27,196	27,098	27,089	26,827	26,647	26,605
Livingston	65,460	65,637	65,420	65,240	64,849	64,796	64,627	64,585	64,344	64,000	63,483
Madison	72,709	73,075	73,169	73,440	72,887	72,414	72,457	72,210	71,636	71,387	70,942
Monroe	739,249	741,018	743,386	744,580	746,751	747,344	748,290	747,364	745,577	743,770	742,724
Montgomery	49,798	49,951	50,001	50,307	49,911	49,829	49,743	49,679	49,564	49,169	49,163
Nassau	1,322,048	1,325,129	1,332,088	1,341,669	1,346,223	1,349,616	1,352,193	1,354,705	1,354,840	1,355,952	1,357,293
New York	1,581,402	1,587,022	1,583,431	1,588,767	1,608,293	1,623,911	1,627,491	1,630,678	1,636,063	1,635,443	1,630,698
Niagara	215,791	215,793	216,043	216,475	215,719	214,713	214,105	213,305	212,358	211,554	210,848
Oneida	234,488	234,482	234,619	234,756	234,218	233,765	233,347	232,598	231,264	230,375	230,011
Onondaga	461,287	463,472	465,633	467,533	467,614	467,030	468,146	467,285	466,277	464,109	461,795
Ontario	105,216	106,302	107,214	108,176	108,599	108,611	109,044	109,334	109,271	109,229	109,538
Orange	368,464	370,201	372,079	373,445	374,097	373,699	374,320	374,845	375,803	377,799	379,758
Orleans	43,342	43,254	42,975	42,851	42,648	42,391	42,229	41,861	41,481	41,247	40,786
Oswego	122,213	122,366	122,055	122,137	121,981	121,458	121,170	120,590	119,735	118,895	118,427
Ostego	62,914	62,561	62,280	62,259	61,971	61,747	61,614	60,950	60,504	60,132	59,920
Putnam	99,454	99,537	99,666	99,667	99,827	99,625	99,572	99,438	99,185	98,761	98,856
Queens	2,177,351	2,193,623	2,217,166	2,234,701	2,255,482	2,272,222	2,287,185	2,298,736	2,305,838	2,306,830	2,295,808
Rensselaer	158,243	159,011	159,150	159,340	159,589	159,437	159,545	159,666	159,436	159,294	159,200
Richmond	459,642	463,701	466,965	469,615	471,021	470,614	471,803	471,937	472,349	474,040	475,671
Rockland	301,668	305,413	308,652	312,499	315,452	317,196	319,284	321,119	322,919	323,258	324,622
St. Lawrence	111,586	111,684	112,169	111,812	112,277	112,355	111,931	111,437	110,348	109,449	108,699
Saratoga	215,798	217,282	218,652	220,109	221,111	222,483	224,087	224,513	226,078	227,122	229,276
Schenectady	152,275	153,360	154,050	154,861	154,864	155,016	154,944	155,016	154,733	154,475	154,710
Schoharie	32,894	32,890	32,776	32,686	32,618	32,039	31,900	31,767	31,405	31,304	31,255
Schuyler	18,707	18,644	18,398	18,334	18,413	18,498	18,382	18,176	18,027	17,967	17,913
Seneca	35,469	35,370	35,286	35,266	35,380	35,388	35,250	34,879	34,801	34,710	34,246
Steuben	98,541	98,726	98,949	99,005	99,148	98,925	98,843	98,165	97,551	96,958	96,360
Suffolk	1,475,255	1,480,218	1,487,206	1,494,339	1,498,892	1,496,982	1,497,346	1,495,525	1,491,967	1,486,406	1,483,358
Sullivan	77,991	77,755	77,647	77,476	77,053	76,931	76,945	75,634	74,832	74,922	74,994
Tioga	51,565	51,498	51,236	51,008	50,875	50,278	50,103	49,824	49,355	48,824	48,609
Tompkins	99,910	100,383	101,497	101,740	101,821	102,726	103,553	103,391	103,006	102,942	102,664
Ulster	182,818	183,174	182,638	182,418	182,448	181,538	180,698	180,400	179,658	179,042	178,635
Warren	65,740	65,848	65,694	65,665	65,736	65,417	65,083	64,866	64,420	64,438	64,365
Washington	63,054	63,252	63,077	63,356	63,091	63,003	62,765	62,475	62,246	61,795	61,559
Wayne	93,539	93,739	93,643	93,751	93,256	93,029	92,339	91,801	91,291	90,758	90,429
Westchester	933,414	937,449	944,201	950,601	956,262	959,585	964,567	967,044	968,773	970,267	969,689
Wyoming	42,515	42,281	42,236	42,126	41,849	41,700	41,359	41,134	40,930	40,432	40,282
Yates	25,234	25,352	25,303	25,376	25,454	25,337	25,207	25,149	25,128	25,059	25,002

Appendix E

New York State Heating and Cooling Degree-Days, 2003–2017

Figure E-1

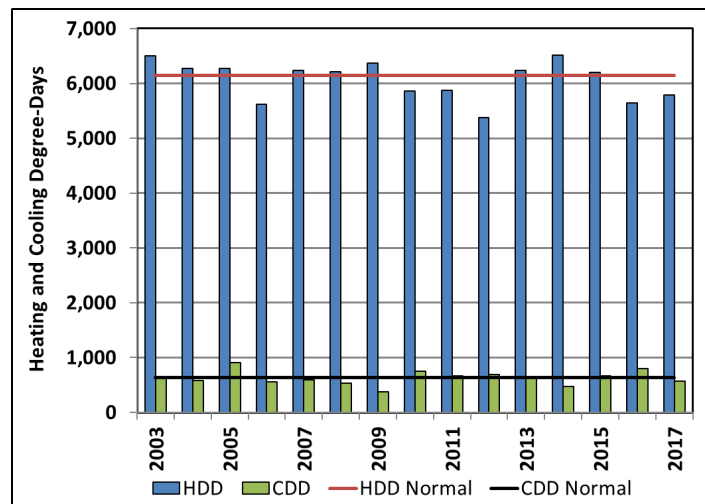


Table E-1. (Monthly heating degree-days)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
2003	1,375	1,164	898	597	277	62	1	5	64	438	610	1,012	6,503
2004	1,441	1,103	818	500	148	57	3	15	49	384	675	1,080	6,273
2005	1,277	1,011	1,029	456	325	18	0	3	35	365	622	1,130	6,271
2006	951	997	886	487	254	53	1	15	136	442	571	828	5,621
2007	1,054	1,213	939	622	218	40	16	23	74	243	752	1,045	6,239
2008	1,085	1,053	930	450	315	22	1	18	107	455	743	1,031	6,210
2009	1,367	997	890	497	240	71	18	16	140	476	583	1,073	6,368
2010	1,183	1,021	715	386	175	35	6	5	91	394	693	1,153	5,857
2011	1,292	1,051	910	490	193	33	0	4	70	381	569	876	5,869
2012	1,038	894	601	508	146	51	0	7	117	347	775	889	5,373
2013	1,102	1,028	936	540	230	54	3	9	166	350	771	1,042	6,231
2014	1,313	1,150	1,087	568	207	25	7	16	116	335	768	925	6,517
2015	1,304	1,378	1,073	542	133	64	5	6	47	429	560	662	6,203
2016	1,124	970	711	579	265	34	0	0	33	284	639	1,003	5,642
2017	1,010	843	994	406	281	64	2	25	85	235	716	1,129	5,790
Normal*	1,207	1,021	892	516	232	46	1	13	105	397	679	1,038	6,147

Table E-2. (Monthly cooling degree-days)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
2003	0	0	0	0	1	90	233	269	58	0	1	0	652
2004	0	0	0	0	35	103	197	174	70	0	0	0	579
2005	0	0	0	0	0	196	285	296	120	12	0	0	909
2006	0	0	0	0	24	104	251	170	14	0	0	0	563
2007	0	0	0	0	26	104	169	188	76	28	0	0	591
2008	0	0	0	0	3	144	224	96	65	0	0	0	532
2009	0	0	0	9	5	43	107	191	20	0	0	0	375
2010	0	0	0	0	42	142	295	196	75	1	0	0	751
2011	0	0	0	0	39	97	280	169	84	1	0	0	670
2012	0	0	0	4	44	105	271	203	59	2	0	0	688
2013	0	0	0	0	32	113	301	135	57	6	0	0	644
2014	0	0	0	0	13	93	183	106	69	7	0	0	471
2015	0	0	0	0	56	82	213	200	119	0	0	0	670
2016	0	0	0	0	43	86	253	279	123	15	0	0	799
2017	0	0	0	4	19	111	197	136	89	19	0	0	575
Normal*	0	0	0	0	18	119	233	200	64	3	0	0	637

* Note: Normal is a 30-year degree-day average value from 1981 to 2010.

Appendix F-1

New York State Electricity Prices by Sector by Utility¹ in Nominal Dollars, 2003–2017

Table F-1a. Residential Sector Electricity Prices by Utility (Nominal Cents/kWh)

Year	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric
2003	10.39	19.37	14.66	12.37	12.26	13.95	10.72
2004	10.43	18.93	16.05	12.43	12.83	13.84	10.38
2005	12.61	21.07	17.50	13.59	12.74	15.20	10.58
2006	12.83	20.90	20.11	13.78	14.98	15.40	11.71
2007	14.00	21.58	19.08	13.40	15.56	16.60	11.46
2008	16.28	24.18	19.67	13.19	15.45	18.12	11.85
2009	15.81	23.58	18.56	11.90	14.95	17.63	11.52
2010	16.51	25.85	20.75	11.14	15.57	18.88	12.34
2011	15.96	25.59	19.81	10.83	15.16	18.60	12.06
2012	16.22	25.65	19.03	10.70	12.91	16.85	12.21
2013	16.86	26.99	20.65	11.68	14.18	19.46	13.31
2014	18.78	28.85	20.52	13.01	15.85	23.24	14.22
2015	17.67	26.30	19.19	12.00	13.31	20.82	13.07
2016	16.48	24.91	18.94	11.50	12.08	19.40	12.72
2017	17.04	25.34	19.77	11.93	12.61	22.24	13.51

Table F-1b. Commercial Sector Electricity Prices by Utility (Nominal Cents/kWh)

Year	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric
2003	7.61	16.36	12.50	11.28	11.79	10.89	9.78
2004	7.67	16.05	13.87	11.06	12.24	10.63	9.10
2005	10.11	18.61	15.82	12.22	13.12	12.27	9.58
2006	10.12	18.37	18.75	12.25	14.35	12.09	11.23
2007	11.26	19.27	17.76	12.05	15.38	13.53	11.00
2008	13.28	21.20	18.59	12.46	16.84	14.70	11.36
2009	12.12	19.64	17.39	9.23	12.66	13.01	10.12
2010	12.64	20.38	19.27	10.21	13.69	14.31	11.88
2011	12.13	20.70	18.12	9.62	13.13	13.64	11.39
2012	12.47	20.04	17.23	9.40	10.69	12.29	11.72
2013	13.21	20.61	18.62	11.52	12.06	14.61	13.04
2014	15.53	22.16	18.82	13.05	13.33	17.36	13.50
2015	13.94	20.57	17.46	11.41	10.89	15.29	12.31
2016	12.67	19.13	16.72	10.36	9.49	13.40	11.80
2017	12.89	19.73	18.75	10.27	9.73	14.65	12.26

Table F-1c. Industrial Sector Electricity Prices by Utility (Nominal Cents/kWh)

Year	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric
2003	7.50	15.08	N/A	7.70	14.12	7.88	6.79
2004	7.16	14.81	N/A	6.58	13.27	7.28	7.10
2005	10.05	17.41	N/A	7.34	17.44	8.88	7.33
2006	7.66	16.82	N/A	7.25	18.31	8.54	8.17
2007	8.53	18.02	N/A	6.81	17.05	9.85	7.99
2008	12.47	19.56	N/A	7.19	20.44	11.94	8.26
2009	10.52	18.05	N/A	5.53	15.36	7.59	6.47
2010	11.15	18.92	N/A	6.04	15.00	8.08	8.90
2011	10.01	18.65	N/A	5.84	15.47	7.04	8.50
2012	10.27	17.26	N/A	5.47	10.58	5.80	9.36
2013	10.69	18.30	N/A	5.98	8.10	8.03	11.71
2014	13.02	20.18	N/A	8.81	8.65	11.09	12.07
2015	10.92	16.70	N/A	7.21	6.35	8.73	10.50
2016	9.76	16.68	N/A	6.56	5.34	8.39	9.82
2017	10.41	17.18	N/A	6.56	5.78	7.18	10.90

¹ Annual average electricity prices by sector by utility are based on bundled electricity sales.

Appendix F-2

New York State Electricity Customers by Sector by Utility, 2003–2017

Table F-2a. Residential Sector Electricity Customers by Utility

Year	Category	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric	Municipal	Cooperative	Behind the Meter	Adjustment/ Other	Total
2003	Bundled	243,689	2,691,906	967,606	708,149	1,357,582	131,739	278,996	137,764	16,395	0	4,005	6,537,831
2003	Delivery	34	100,061	2,352	32,366	71,042	53,025	38,430	0	0	0	0	297,310
2003	Total	243,723	2,791,967	969,958	740,515	1,428,624	184,764	317,426	137,764	16,395	0	4,005	6,835,141
2004	Bundled	245,088	2,626,379	977,980	706,360	1,348,800	130,148	282,578	138,793	16,604	0	3,976	6,476,706
2004	Delivery	906	69,818	2	36,539	81,494	56,211	35,776	0	0	0	0	280,746
2004	Total	245,994	2,696,197	977,982	742,899	1,430,294	186,359	318,354	138,793	16,604	0	3,976	6,757,452
2005	Bundled	248,409	2,625,628	981,532	696,362	1,349,917	131,200	264,873	139,283	16,086	0	3,959	6,457,249
2005	Delivery	2,089	84,216	11	48,266	84,004	56,991	54,556	0	0	0	0	330,133
2005	Total	250,498	2,709,844	981,543	744,628	1,433,921	188,191	319,429	139,283	16,086	0	3,959	6,787,382
2006	Bundled	246,921	2,527,297	988,501	701,371	1,343,802	137,776	258,345	139,591	17,061	0	3,966	6,364,631
2006	Delivery	2,698	201,652	22	50,960	94,454	51,982	61,026	0	0	0	0	462,794
2006	Total	249,619	2,728,949	988,523	752,331	1,438,256	189,758	319,371	139,591	17,061	0	3,966	6,827,425
2007	Bundled	248,621	2,403,262	989,705	679,298	1,308,819	138,326	264,226	140,145	17,176	0	3,959	6,193,537
2007	Delivery	3,227	344,996	22	77,757	133,645	52,626	55,598	0	0	0	0	667,871
2007	Total	251,848	2,748,258	989,727	757,055	1,442,464	190,952	319,824	140,145	17,176	0	3,959	6,861,408
2008	Bundled	244,470	2,312,650	991,385	653,965	1,271,407	138,899	261,889	140,970	17,341	0	3,954	6,036,930
2008	Delivery	9,240	456,629	7	104,749	175,420	53,345	58,923	0	0	0	0	858,313
2008	Total	253,710	2,769,279	991,392	758,714	1,446,827	192,244	320,812	140,970	17,341	0	3,954	6,895,243
2009	Bundled	240,551	2,280,223	995,350	636,962	1,245,334	140,244	259,569	141,014	17,692	0	3,963	5,960,902
2009	Delivery	12,358	500,463	1	120,867	204,921	52,623	62,434	0	0	0	0	953,667
2009	Total	252,909	2,780,686	995,351	757,829	1,450,255	192,867	322,003	141,014	17,692	0	3,963	6,914,569
2010	Bundled	237,920	2,288,286	997,361	611,712	1,224,605	132,344	256,607	141,325	17,601	0	3,962	5,911,723
2010	Delivery	15,555	519,200	1	149,116	230,164	61,103	68,054	0	0	0	0	1,043,193
2010	Total	253,475	2,807,486	997,362	760,828	1,454,769	193,447	324,661	141,325	17,601	0	3,962	6,954,916
2011	Bundled	235,742	2,263,566	997,520	587,353	1,199,358	128,238	249,138	141,530	17,566	0	3,973	5,823,984
2011	Delivery	18,413	569,199	1	174,488	258,822	65,413	77,311	0	0	0	0	1,163,647
2011	Total	254,155	2,832,765	997,521	761,841	1,458,180	193,651	326,449	141,530	17,566	0	3,973	6,987,631
2012	Bundled	225,159	2,161,397	998,404	576,672	1,174,731	120,892	245,761	87,856	6,056	0	69,578	5,666,506
2012	Delivery	28,250	688,186	71	184,793	286,703	73,344	82,820	0	0	0	67	1,344,234
2012	Total	253,409	2,849,583	998,475	761,465	1,461,434	194,236	328,581	87,856	6,056	0	69,645	7,010,740
2013	Bundled	217,523	2,113,173	996,217	574,429	1,165,012	117,183	246,295	87,961	6,067	0	69,867	5,593,727
2013	Delivery	36,370	746,375	215	187,235	301,568	78,084	83,885	0	0	0	407	1,434,139
2013	Total	253,893	2,859,548	996,432	761,664	1,466,580	195,267	330,180	87,961	6,067	0	70,274	7,027,866
2014	Bundled	213,187	2,135,972	996,453	583,185	1,164,691	117,671	253,092	87,775	6,060	7,650	62,556	5,628,292
2014	Delivery	41,162	733,909	63	180,404	306,231	78,179	78,275	0	0	0	314	1,418,537
2014	Total	254,349	2,869,881	996,516	763,589	1,470,922	195,850	331,367	87,775	6,060	7,650	62,870	7,046,829
2015	Bundled	213,731	2,196,201	1,002,930	597,341	1,189,904	121,745	261,440	87,923	6,064	17,014	53,368	5,747,661
2015	Delivery	42,047	689,832	27	166,909	285,904	75,159	71,316	0	0	0	242	1,331,436
2015	Total	255,778	2,886,033	1,002,957	764,250	1,475,808	196,904	332,756	87,923	6,064	17,014	53,610	7,079,097
2016	Bundled	226,402	2,187,429	1,005,734	608,584	1,220,352	128,099	270,864	87,954	7,925	30,846	39,213	5,813,402
2016	Delivery	39,659	708,600	25	158,370	264,515	70,232	63,886	0	0	0	212	1,305,499
2016	Total	266,061	2,896,029	1,005,759	766,954	1,484,867	198,331	334,750	87,954	7,925	30,846	39,425	7,118,901
2017	Bundled	222,189	2,211,235	1,008,452	622,558	1,243,100	132,675	279,183	88,007	7,921	42,502	28,115	5,885,937
2017	Delivery	35,122	699,045	41	148,970	250,597	66,670	57,853	0	0	0	178	1,258,476
2017	Total	257,311	2,910,280	1,008,493	771,528	1,493,697	199,345	337,036	88,007	7,921	42,502	28,293	7,144,413

Table F-2b. Commercial Sector Electricity Customers by Utility

Year	Category	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric	Municipal	Cooperative	Behind the Meter	Adjustment/ Other	Total
2003	Bundled	44,571	445,078	115,170	85,555	141,499	20,713	28,457	21,078	419	0	550	903,090
2003	Delivery	90	22,416	715	8,459	18,370	8,444	8,919	0	0	0	0	67,413
2003	Total	44,661	467,494	115,885	94,014	159,869	29,157	37,376	21,078	419	0	550	970,503
2004	Bundled	44,092	423,526	112,431	95,739	137,116	19,659	28,225	20,900	431	0	551	882,670
2004	Delivery	902	31,977	923	14,779	22,937	9,735	9,725	0	0	0	0	90,978
2004	Total	44,994	455,503	113,354	110,518	160,053	29,394	37,950	20,900	431	0	551	973,648
2005	Bundled	44,673	410,162	112,638	89,068	124,672	20,037	23,527	20,978	444	0	567	846,766
2005	Delivery	1,346	55,680	1,377	23,510	35,777	9,748	14,686	0	0	0	0	142,124
2005	Total	46,019	465,842	114,015	112,578	160,449	29,785	38,213	20,978	444	0	567	988,890
2006	Bundled	42,938	390,897	117,700	86,541	123,449	21,335	23,640	21,242	448	0	576	828,766
2006	Delivery	1,762	82,833	2,198	26,467	38,815	8,725	15,378	0	0	0	0	176,178
2006	Total	44,700	473,730	119,898	113,008	162,264	30,060	39,018	21,242	448	0	576	1,004,944
2007	Bundled	43,399	391,071	117,844	81,786	117,655	21,622	24,108	20,900	472	0	575	819,432
2007	Delivery	1,870	95,745	2,200	30,200	45,916	8,768	14,732	0	0	0	0	199,431
2007	Total	45,269	486,816	120,044	111,986	163,571	30,390	38,840	20,900	472	0	575	1,018,863
2008	Bundled	42,761	391,694	117,966	76,284	109,098	21,563	23,916	21,025	480	0	570	805,357
2008	Delivery	2,990	99,653	2,544	36,222	55,040	9,051	15,326	0	0	0	0	220,826
2008	Total	45,751	491,347	120,510	112,506	164,138	30,614	39,242	21,025	480	0	570	1,026,183
2009	Bundled	40,613	391,850	118,095	75,082	104,171	20,769	22,832	21,016	483	0	564	795,475
2009	Delivery	4,969	104,455	2,917	39,945	60,354	9,920	16,779	0	0	0	0	239,339
2009	Total	45,582	496,305	121,012	115,027	164,525	30,689	39,611	21,016	483	0	564	1,034,814
2010	Bundled	39,196	388,876	118,320	71,547	101,607	19,322	22,285	21,191	487	0	564	783,395
2010	Delivery	6,222	110,876	2,547	43,011	63,113	11,424	17,672	0	0	0	0	254,865
2010	Total	45,418	499,752	120,867	114,558	164,720	30,746	39,957	21,191	487	0	564	1,038,260
2011	Bundled	37,576	371,054	117,917	68,473	98,730	18,672	21,372	21,381	491	0	554	756,220
2011	Delivery	7,726	124,704	2,762	46,158	67,587	12,185	18,647	0	0	0	3	279,772
2011	Total	45,302	495,758	120,679	114,631	166,317	30,857	40,019	21,381	491	0	557	1,035,992
2012	Bundled	35,638	349,340	117,568	67,874	98,886	17,759	20,516	12,276	202	0	10,019	730,078
2012	Delivery	9,485	144,982	2,959	47,984	70,541	13,188	19,047	0	0	0	4	308,190
2012	Total	45,123	494,322	120,527	115,858	169,427	30,947	39,563	12,276	202	0	10,023	1,038,268
2013	Bundled	34,217	341,327	116,388	69,136	97,955	16,935	20,991	12,255	210	0	9,971	719,385
2013	Delivery	11,044	152,969	3,755	48,703	71,720	14,154	18,639	0	0	0	29	321,013
2013	Total	45,261	494,296	120,143	117,839	169,675	31,089	39,630	12,255	210	0	10,000	1,040,398
2014	Bundled	33,384	342,181	116,293	69,443	94,509	16,848	21,250	12,093	213	23	9,902	716,139
2014	Delivery	11,856	156,644	4,881	48,422	74,452	14,381	18,759	0	0	0	37	329,432
2014	Total	45,240	498,825	121,174	117,865	168,961	31,229	40,009	12,093	213	23	9,939	1,045,571
2015	Bundled	33,288	349,478	112,610	70,993	98,408	16,322	21,193	12,124	207	27	9,829	724,479
2015	Delivery	12,324	161,479	3,536	47,146	71,998	15,099	19,022	0	0	0	53	330,657
2015	Total	45,612	510,957	116,146	118,139	170,406	31,421	40,215	12,124	207	27	9,882	1,055,136
2016	Bundled	34,264	358,352	112,922	73,348	102,502	16,542	21,958	11,870	232	132	9,744	741,866
2016	Delivery	12,206	164,550	3,544	46,882	70,240	15,168	18,375	0	0	0	65	331,030
2016	Total	46,470	522,902	116,466	120,230	172,742	31,710	40,333	11,870	232	132	9,809	1,072,896
2017	Bundled	34,900	372,504	115,173	74,565	105,040	17,103	22,538	12,109	234	87	9,953	764,206
2017	Delivery	11,158	162,548	3,978	45,768	69,264	14,860	18,031	0	0	0	76	325,683
2017	Total	46,058	535,052	119,151	120,333	174,304	31,963	40,569	12,109	234	87	10,029	1,089,889

Table F-2c. Industrial Sector Electricity Customers by Utility

Year	Category	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric	Municipal	Cooperative	Behind the Meter	Adjustment/ Other	Total
2003	Bundled	1,026	298	N/A	12,580	1,218	80	809	1,431	2	0	12	17,456
2003	Delivery	15	474	N/A	3,712	583	36	356	0	0	0	0	5,176
2003	Total	1,041	772	N/A	16,292	1,801	116	1,165	1,431	2	0	12	22,632
2004	Bundled	981	305	N/A	2,191	1,071	73	744	1,445	2	0	11	6,823
2004	Delivery	15	512	N/A	543	796	43	397	2	0	0	0	2,308
2004	Total	996	817	N/A	2,734	1,867	116	1,141	1,447	2	0	11	9,131
2005	Bundled	988	324	N/A	1,858	890	78	618	1,586	2	0	11	6,355
2005	Delivery	82	552	N/A	800	859	40	525	2	0	0	0	2,860
2005	Total	1,070	876	N/A	2,658	1,749	118	1,143	1,588	2	0	11	9,215
2006	Bundled	959	259	N/A	1,644	874	78	493	1,539	2	0	13	5,861
2006	Delivery	89	585	N/A	1,040	932	33	568	2	0	0	0	3,249
2006	Total	1,048	844	N/A	2,684	1,806	111	1,061	1,541	2	0	13	9,110
2007	Bundled	1,181	247	N/A	1,415	817	73	472	1,406	2	0	11	5,624
2007	Delivery	89	612	N/A	1,170	958	36	548	2	0	0	0	3,415
2007	Total	1,270	859	N/A	2,585	1,775	109	1,020	1,408	2	0	11	9,039
2008	Bundled	1,027	238	N/A	1,215	768	71	438	1,401	2	0	10	5,170
2008	Delivery	134	620	N/A	1,299	973	36	544	2	0	0	0	3,608
2008	Total	1,161	858	N/A	2,514	1,741	107	982	1,403	2	0	10	8,778
2009	Bundled	905	223	N/A	1,056	755	67	406	1,385	2	0	10	4,809
2009	Delivery	191	625	N/A	1,375	975	38	540	2	0	0	0	3,746
2009	Total	1,096	848	N/A	2,431	1,730	105	946	1,387	2	0	10	8,555
2010	Bundled	864	184	N/A	939	748	57	364	1,411	2	0	10	4,579
2010	Delivery	214	625	N/A	1,409	952	43	539	2	0	0	0	3,784
2010	Total	1,078	809	N/A	2,348	1,700	100	903	1,413	2	0	10	8,363
2011	Bundled	834	130	N/A	853	702	52	325	1,406	2	0	10	4,314
2011	Delivery	246	636	N/A	1,425	983	47	556	2	0	0	0	3,895
2011	Total	1,080	766	N/A	2,278	1,685	99	881	1,408	2	0	10	8,209
2012	Bundled	789	97	N/A	796	655	48	333	448	0	0	969	4,135
2012	Delivery	272	666	N/A	1,414	1,017	49	587	2	0	0	0	4,007
2012	Total	1,061	763	N/A	2,210	1,672	97	920	450	0	0	969	8,142
2013	Bundled	799	85	N/A	758	630	47	314	442	0	1	886	3,962
2013	Delivery	272	679	N/A	1,397	1,026	43	579	2	0	0	0	3,998
2013	Total	1,071	764	N/A	2,155	1,656	90	893	444	0	1	886	7,960
2014	Bundled	763	93	N/A	725	588	42	293	441	0	1	895	3,841
2014	Delivery	295	675	N/A	1,377	1,048	55	568	2	0	0	1	4,021
2014	Total	1,058	768	N/A	2,102	1,636	97	861	443	0	1	896	7,862
2015	Bundled	727	81	N/A	682	569	42	282	429	0	0	887	3,699
2015	Delivery	316	679	N/A	1,266	1,054	54	559	2	0	0	1	3,931
2015	Total	1,043	760	N/A	1,948	1,623	96	841	431	0	0	888	7,630
2016	Bundled	745	69	N/A	700	560	45	300	427	0	0	890	3,736
2016	Delivery	304	693	N/A	1,280	1,045	56	529	2	0	0	1	3,910
2016	Total	1,049	762	N/A	1,980	1,605	101	829	429	0	0	891	7,646
2017	Bundled	724	67	N/A	687	556	50	294	414	0	0	376	3,168
2017	Delivery	291	700	N/A	1,235	1,036	55	510	1	0	0	1	3,829
2017	Total	1,015	767	N/A	1,922	1,592	105	804	415	0	0	377	6,997

Electricity Customers by Sector by Power Marketer—Top 10 Power Marketers in each sector and total of all Power Marketers

Table F-2d. Residential Sector Electricity Customers by Power Marketers

Year	Ambit Energy Holdings, LLC	Constellation New Energy, Inc	Direct Energy Services	Just Energy New York Corp.	IDT Energy, Inc.	Green Mountain Energy Company	Family Energy, Inc. New York	Major Energy Electric Services	Agway Energy Services, LLC	Viridian Energy NY LLC	Total All Power Marketers
2003	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34,379	N/A	291,310
2004	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34,789	N/A	440,760
2005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34,000	N/A	304,969
2006	N/A	N/A	18,216	N/A	N/A	N/A	N/A	N/A	36,827	N/A	422,016
2007	N/A	N/A	26,713	N/A	164,717	N/A	N/A	N/A	33,575	N/A	737,923
2008	75,395	N/A	51,501	35,872	183,116	N/A	N/A	N/A	29,304	N/A	940,815
2009	70,935	N/A	71,100	59,501	199,349	N/A	N/A	N/A	30,445	N/A	967,457
2010	103,237	N/A	60,497	86,396	182,071	N/A	N/A	9,788	32,943	N/A	1,039,714
2011	166,899	N/A	43,973	112,900	186,311	N/A	N/A	17,170	37,015	N/A	1,126,903
2012	210,320	N/A	38,325	136,535	135,729	35,735	N/A	24,693	41,209	9,115	1,150,844
2013	209,393	N/A	186,139	143,969	121,764	49,030	N/A	24,790	40,437	20,051	1,141,026
2014	193,934	N/A	177,777	120,742	110,185	51,708	37,160	29,062	37,921	40,528	1,785,034
2015	165,468	N/A	159,084	100,350	101,066	59,964	56,639	37,035	36,262	39,564	1,331,839
2016	150,267	1,442	137,925	84,650	83,580	71,261	56,170	34,571	37,286	35,540	1,215,960
2017	142,814	110,293	109,393	70,021	68,465	75,096	49,503	33,868	36,228	30,933	1,147,381

Table F-2e. Commercial Sector Electricity Customers by Power Marketers

Year	Constellation New Energy, Inc	Strategic Energy LLC	ENGIE Resources LLC	Calpine Energy Solutions, LLC	Hudson Energy Services	Consolidated Edison Sol Inc	Champion Energy Services	Plymouth Rock Energy, LLC	Agera Energy LLC	Bluerock Energy, Inc.	Total All Power Marketers
2003	35,079	4,211	46	5	N/A	3,700	N/A	N/A	N/A	N/A	104,704
2004	3,643	611	168	10	N/A	3,622	N/A	N/A	N/A	N/A	98,738
2005	6,373	963	133	12	N/A	6,184	N/A	N/A	N/A	N/A	91,728
2006	597	3,614	226	18	N/A	7,045	N/A	N/A	N/A	N/A	155,423
2007	630	4,630	2,664	31	4,500	7,282	N/A	N/A	N/A	1,829	196,494
2008	1,079	3,391	4,079	46	11,966	6,524	N/A	N/A	N/A	3,507	237,883
2009	847	3,391	388	56	8,415	9,018	N/A	N/A	N/A	5,912	211,908
2010	799	3,208	384	47	9,458	9,572	N/A	N/A	N/A	6,537	208,409
2011	812	2,612	513	46	16,763	12,128	N/A	245	N/A	7,841	210,580
2012	777	2,282	660	37	16,148	9,980	N/A	7,048	N/A	7,939	220,440
2013	742	4,238	631	42	15,066	8,378	N/A	12,468	N/A	8,327	212,607
2014	1,148	4,680	613	76	13,624	9,028	60	7,353	N/A	8,666	243,802
2015	2,074	9,895	604	169	11,477	14,972	188	6,021	669	10,627	246,574
2016	2,584	9,920	741	172	10,480	14,830	276	5,377	3,002	10,947	227,226
2017	30,647	20,773	999	194	9,002	4,979	351	5,904	3,963	10,716	243,995

Table F-2f. Industrial Sector Electricity Customers by Power Marketers

Year	Constellation New Energy, Inc	Strategic Energy LLC	Constellation Energy Services NY, Inc.	ENGIE Resources LLC	TransCanada Power Marketing, Ltd.	EDF Energy Services, LLC	Calpine Energy Solutions, LLC	EnergyMark, LLC	Great Eastern Energy	Linde Energy Services, Inc.	Total All Power Marketers
2003	88	269	414	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,232
2004	8	39	5,455	N/A	N/A	N/A	1	N/A	N/A	N/A	9,441
2005	8	61	397	N/A	N/A	N/A	1	N/A	N/A	N/A	2,955
2006	1	231	414	N/A	N/A	N/A	1	N/A	N/A	N/A	10,222
2007	3	296	531	264	N/A	N/A	1	N/A	N/A	N/A	7,175
2008	5	216	534	403	N/A	N/A	2	N/A	N/A	N/A	6,413
2009	4	216	456	95	N/A	N/A	6	N/A	N/A	N/A	7,044
2010	73	205	420	107	6	N/A	9	N/A	N/A	1	6,305
2011	90	167	421	184	91	N/A	9	N/A	N/A	1	7,144
2012	92	146	438	155	116	N/A	7	5	N/A	3	9,777
2013	82	271	463	74	95	N/A	7	42	N/A	3	17,085
2014	84	299	509	89	116	N/A	6	65	N/A	3	8,776
2015	103	5,085	592	89	89	4	6	89	4,801	3	11,017
2016	117	4,628	568	93	56	5	6	93	2,750	3	8,407
2017	819	1,443	589	114	47	10	6	97	2,107	3	5,397

Appendix F-3

New York State Electricity Sales by Sector by Utility, 2003–2017

Table F-3a. Residential Sector Electricity Sales by Utility (GWh)

Year	Category	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric	Municipal	Cooperative	Behind the Meter	Adjustment/Other	Total
2003	Bundled	1,978	12,441	8,998	5,574	10,232	1,038	1,997	1,855	159	0	33	44,305
2003	Delivery	1	610	13	403	659	436	345	0	0	0	0	2,466
2003	Total	1,979	13,051	9,010	5,977	10,891	1,474	2,341	1,855	159	0	33	46,771
2004	Bundled	2,003	12,673	9,183	5,607	10,169	986	2,144	1,825	160	0	33	44,783
2004	Delivery	5	496	0	367	746	514	334	0	0	0	0	2,463
2004	Total	2,008	13,169	9,183	5,974	10,915	1,500	2,478	1,825	160	0	33	47,246
2005	Bundled	2,147	13,690	9,706	5,732	10,750	1,070	2,223	1,858	166	0	35	47,376
2005	Delivery	18	579	0	540	866	602	551	0	0	0	0	3,157
2005	Total	2,165	14,269	9,706	6,272	11,616	1,672	2,774	1,858	166	0	35	50,533
2006	Bundled	2,005	12,590	9,278	5,649	10,248	1,035	1,983	1,832	164	0	34	44,817
2006	Delivery	26	1,045	0	500	899	537	594	0	0	0	0	3,602
2006	Total	2,030	13,635	9,278	6,149	11,146	1,572	2,577	1,832	164	0	34	48,419
2007	Bundled	2,087	12,312	9,508	5,659	10,140	1,131	2,097	1,879	168	0	35	45,017
2007	Delivery	31	1,796	0	640	1,228	515	568	0	0	0	0	4,778
2007	Total	2,118	14,108	9,508	6,299	11,368	1,646	2,665	1,879	168	0	35	49,795
2008	Bundled	2,004	11,720	9,512	5,297	9,637	1,130	2,013	1,880	166	0	35	43,394
2008	Delivery	80	2,333	0	976	1,155	529	560	0	0	0	0	5,633
2008	Total	2,084	14,053	9,512	6,273	10,792	1,659	2,573	1,880	166	0	35	49,027
2009	Bundled	1,916	10,952	9,211	5,107	9,361	1,076	1,987	1,876	166	0	36	41,689
2009	Delivery	107	2,497	0	1,115	1,771	485	575	0	0	0	0	6,550
2009	Total	2,023	13,449	9,211	6,223	11,132	1,561	2,562	1,876	166	0	36	48,239
2010	Bundled	1,959	11,518	9,972	5,121	9,543	1,115	2,035	1,849	169	0	36	43,315
2010	Delivery	139	2,837	0	1,398	2,039	575	642	0	0	0	0	7,630
2010	Total	2,098	14,355	9,972	6,519	11,582	1,690	2,677	1,849	169	0	36	50,946
2011	Bundled	1,945	11,404	9,849	4,984	9,367	1,025	1,999	1,926	171	0	38	42,707
2011	Delivery	164	3,045	0	1,648	2,302	644	729	0	0	0	0	8,533
2011	Total	2,109	14,449	9,849	6,632	11,669	1,669	2,729	1,926	171	0	38	51,240
2012	Bundled	1,801	10,718	9,734	4,848	9,036	955	1,927	1,136	63	0	825	41,042
2012	Delivery	249	3,619	1	1,749	2,559	711	762	0	0	0	1	9,650
2012	Total	2,049	14,337	9,735	6,597	11,595	1,665	2,688	1,136	63	0	825	50,692
2013	Bundled	1,760	10,273	9,533	4,950	9,012	927	1,921	1,189	66	0	909	40,540
2013	Delivery	327	3,884	3	1,802	2,702	750	765	0	0	0	4	10,237
2013	Total	2,087	14,157	9,536	6,752	11,715	1,678	2,686	1,189	66	0	912	50,777
2014	Bundled	1,685	9,869	9,389	5,015	8,915	877	1,947	1,229	67	31	967	39,991
2014	Delivery	362	3,698	1	1,719	2,747	748	706	0	0	0	3	9,984
2014	Total	2,047	13,568	9,390	6,734	11,661	1,626	2,653	1,229	67	31	970	49,975
2015	Bundled	1,712	10,534	9,611	5,167	9,158	913	2,016	1,213	66	133	962	41,486
2015	Delivery	369	3,602	0	1,595	2,561	750	648	0	0	0	2	9,527
2015	Total	2,081	14,136	9,611	6,762	11,719	1,663	2,664	1,213	66	133	965	51,013
2016	Bundled	1,784	10,400	9,463	5,124	9,292	972	2,152	1,133	72	245	931	41,569
2016	Delivery	334	3,822	0	1,495	2,308	711	590	0	0	0	2	9,263
2016	Total	2,118	14,221	9,463	6,619	11,600	1,683	2,742	1,133	72	245	933	50,831
2017	Bundled	1,698	9,924	9,087	5,161	9,134	933	2,132	1,132	71	310	914	40,496
2017	Delivery	282	3,646	2	1,406	2,113	624	511	0	0	0	2	8,584
2017	Total	1,980	13,570	9,089	6,566	11,247	1,556	2,643	1,132	71	310	915	49,081

Table F-3b. Commercial Sector Electricity Sales by Utility (GWh)

Year	Category	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric	Municipal	Cooperative	Behind the Meter	Adjustment/ Other	Total
2003	Bundled	1,935	17,766	9,593	2,474	8,075	1,296	1,618	1,154	19	0	17	43,948
2003	Delivery	33	19,270	182	1,319	4,488	539	1,408	0	0	0	0	27,240
2003	Total	1,968	37,037	9,775	3,793	12,563	1,835	3,027	1,154	19	0	17	71,188
2004	Bundled	1,890	16,804	9,666	3,178	6,964	1,129	1,386	1,127	20	0	18	42,181
2004	Delivery	116	20,931	420	2,260	5,722	768	1,661	0	0	0	0	31,879
2004	Total	2,007	37,734	10,087	5,438	12,686	1,896	3,047	1,127	20	0	18	74,060
2005	Bundled	1,801	15,272	9,199	2,714	5,887	1,138	1,097	1,146	21	0	19	38,293
2005	Delivery	292	23,563	1,088	2,817	7,535	833	2,167	0	0	0	0	38,295
2005	Total	2,092	38,835	10,287	5,531	13,422	1,970	3,264	1,146	21	0	19	76,587
2006	Bundled	1,521	13,230	8,825	2,532	5,075	1,133	897	1,149	20	0	18	34,399
2006	Delivery	469	25,435	1,242	2,968	7,964	789	2,161	0	0	0	0	41,029
2006	Total	1,989	38,665	10,067	5,500	13,040	1,922	3,058	1,149	20	0	18	75,428
2007	Bundled	1,615	12,743	8,969	2,447	4,691	1,189	931	1,188	23	0	18	33,814
2007	Delivery	455	27,333	1,342	3,226	8,530	778	2,367	0	0	0	0	44,030
2007	Total	2,070	40,077	10,310	5,672	13,221	1,967	3,298	1,188	23	0	18	77,844
2008	Bundled	1,576	12,679	8,542	2,280	4,135	1,152	846	1,160	24	0	18	32,412
2008	Delivery	453	27,604	1,552	3,405	8,742	841	2,345	0	0	0	0	44,942
2008	Total	2,029	40,282	10,094	5,684	12,877	1,993	3,191	1,160	24	0	18	77,354
2009	Bundled	1,297	12,324	8,305	2,002	4,016	981	711	1,119	27	0	17	30,801
2009	Delivery	684	26,821	1,474	3,518	8,726	934	2,387	0	0	0	0	44,545
2009	Total	1,981	39,145	9,779	5,521	12,742	1,916	3,098	1,119	27	0	17	75,346
2010	Bundled	1,183	12,417	8,854	1,774	3,873	833	657	1,109	26	0	18	30,745
2010	Delivery	820	28,053	1,274	3,759	8,972	1,130	2,523	0	0	0	0	46,531
2010	Total	2,003	40,470	10,128	5,534	12,845	1,963	3,180	1,109	26	0	18	77,276
2011	Bundled	1,052	11,082	8,771	1,581	3,453	696	612	1,138	30	0	17	28,432
2011	Delivery	946	28,600	1,223	3,999	9,353	1,270	2,582	0	0	0	0	47,974
2011	Total	1,998	39,683	9,994	5,581	12,806	1,967	3,193	1,138	30	0	17	76,406
2012	Bundled	900	9,788	8,661	1,522	3,232	601	576	833	18	0	302	26,433
2012	Delivery	1,066	29,604	1,292	4,220	9,461	1,335	2,607	0	0	0	0	49,585
2012	Total	1,966	39,392	9,953	5,742	12,693	1,935	3,183	833	18	0	302	76,018
2013	Bundled	849	9,744	8,499	1,438	3,290	571	602	846	19	0	429	26,288
2013	Delivery	1,118	29,832	1,578	4,310	9,316	1,357	2,542	0	0	0	1	50,055
2013	Total	1,967	39,576	10,077	5,748	12,606	1,928	3,144	846	19	0	430	76,342
2014	Bundled	802	9,783	8,344	1,413	3,220	524	612	858	21	7	676	26,261
2014	Delivery	1,149	29,810	1,633	4,201	9,504	1,417	2,564	0	0	0	2	50,280
2014	Total	1,951	39,593	9,977	5,614	12,724	1,941	3,176	858	21	7	678	76,541
2015	Bundled	774	9,585	8,221	1,365	2,945	501	542	866	22	11	675	25,507
2015	Delivery	1,209	30,204	1,774	4,453	9,771	1,476	2,608	0	0	0	4	51,498
2015	Total	1,983	39,789	9,995	5,818	12,716	1,977	3,149	866	22	11	679	77,006
2016	Bundled	771	9,424	8,083	1,416	3,113	517	538	841	19	15	818	25,555
2016	Delivery	1,177	30,081	1,747	4,363	9,470	1,479	2,629	0	0	0	6	50,952
2016	Total	1,949	39,505	9,830	5,779	12,583	1,997	3,166	841	19	15	824	76,507
2017	Bundled	792	9,242	7,821	1,490	3,142	520	534	841	18	12	838	25,252
2017	Delivery	1,143	29,516	1,820	4,279	9,347	1,408	2,563	0	0	0	6	50,081
2017	Total	1,934	38,758	9,641	5,769	12,488	1,928	3,097	841	18	12	845	75,333

Table F-3c. Industrial Sector Electricity Sales by Utility (GWh)

Year	Category	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric	Municipal	Cooperative	Behind the Meter	Adjustment/ Other	Total
2003	Bundled	553	403	N/A	3,314	2,627	242	1,197	1,694	8	0	19	10,056
2003	Delivery	880	179	N/A	1,578	8,056	431	428	0	0	0	0	11,551
2003	Total	1,433	582	N/A	4,891	10,683	673	1,625	1,694	8	0	19	21,607
2004	Bundled	478	372	N/A	2,176	2,445	252	823	1,704	8	0	14	8,273
2004	Delivery	999	405	N/A	1,153	8,373	442	653	19	0	0	0	12,044
2004	Total	1,477	778	N/A	3,329	10,818	694	1,476	1,723	8	0	14	20,317
2005	Bundled	328	366	N/A	1,815	1,881	432	748	1,670	9	0	15	7,264
2005	Delivery	1,154	586	N/A	1,453	8,442	242	782	19	0	0	0	12,679
2005	Total	1,482	952	N/A	3,268	10,323	674	1,531	1,690	9	0	15	19,943
2006	Bundled	511	268	N/A	1,745	1,589	305	641	1,668	9	0	13	6,748
2006	Delivery	968	458	N/A	1,677	3,722	240	908	19	0	0	0	7,992
2006	Total	1,480	725	N/A	3,422	5,312	545	1,549	1,687	9	0	13	14,741
2007	Bundled	1,048	246	N/A	1,609	1,635	340	612	1,642	9	0	12	7,153
2007	Delivery	396	458	N/A	1,772	3,774	181	983	19	0	0	0	7,582
2007	Total	1,444	704	N/A	3,381	5,409	522	1,595	1,661	9	0	12	14,735
2008	Bundled	148	230	N/A	1,236	1,346	282	589	1,659	9	0	9	5,509
2008	Delivery	1,161	432	N/A	2,156	4,131	219	831	19	0	0	0	8,949
2008	Total	1,309	662	N/A	3,392	5,477	501	1,420	1,678	9	0	9	14,458
2009	Bundled	106	200	N/A	843	1,155	249	396	1,552	10	0	9	4,521
2009	Delivery	1,065	482	N/A	2,105	3,735	188	1,034	19	0	0	0	8,628
2009	Total	1,170	682	N/A	2,949	4,890	438	1,430	1,570	10	0	9	13,149
2010	Bundled	95	201	N/A	585	1,490	219	343	1,564	9	0	11	4,517
2010	Delivery	1,019	430	N/A	2,383	3,595	202	1,084	18	0	0	0	8,731
2010	Total	1,114	631	N/A	2,968	5,085	421	1,427	1,582	9	0	11	13,248
2011	Bundled	93	131	N/A	481	1,254	167	230	1,587	10	0	11	3,963
2011	Delivery	984	464	N/A	2,517	3,855	246	1,136	18	0	0	0	9,220
2011	Total	1,077	595	N/A	2,998	5,109	412	1,366	1,605	10	0	11	13,184
2012	Bundled	72	114	N/A	372	1,515	113	111	1,083	0	0	521	3,901
2012	Delivery	986	591	N/A	2,534	3,797	301	1,249	18	0	0	0	9,477
2012	Total	1,058	705	N/A	2,906	5,312	415	1,360	1,101	0	0	521	13,378
2013	Bundled	102	99	N/A	323	1,085	90	71	1,067	0	0	778	3,616
2013	Delivery	953	579	N/A	2,634	8,552	307	1,254	16	0	0	0	14,295
2013	Total	1,055	678	N/A	2,957	9,637	398	1,325	1,083	0	0	778	17,911
2014	Bundled	83	102	N/A	192	1,018	66	62	1,035	0	3	700	3,261
2014	Delivery	940	548	N/A	2,713	8,936	350	1,239	15	0	0	1	14,742
2014	Total	1,023	650	N/A	2,905	9,953	416	1,301	1,050	0	3	701	18,003
2015	Bundled	68	86	N/A	173	933	49	48	1,021	0	0	659	3,038
2015	Delivery	946	576	N/A	2,853	9,062	339	1,248	15	0	0	2	15,041
2015	Total	1,014	663	N/A	3,026	9,995	388	1,296	1,036	0	0	661	18,079
2016	Bundled	83	61	N/A	164	906	59	49	1,015	0	0	632	2,968
2016	Delivery	916	556	N/A	2,872	8,807	343	1,234	11	0	0	3	14,741
2016	Total	999	617	N/A	3,036	9,713	402	1,283	1,026	0	0	634	17,709
2017	Bundled	71	60	N/A	149	903	56	43	1,028	0	0	645	2,955
2017	Delivery	863	537	N/A	2,828	9,055	332	1,231	7	0	0	3	14,856
2017	Total	934	597	N/A	2,977	9,958	388	1,275	1,035	0	0	648	17,811

Electricity Sales by Sector by Power Marketer—Top 10 Power Marketers in each sector and total of all Power Marketers

Table F-3d. Residential Sector Electricity Sales by Power Marketers (GWh)

Year	Ambit Energy Holdings, LLC	Constellation New Energy, Inc	Direct Energy Services	Just Energy New York Corp.	IDT Energy, Inc.	Green Mountain Energy Company	Family Energy, Inc. New York	Major Energy Electric Services	Agway Energy Services, LLC	Viridian Energy NY LLC	Total All Power Marketers
2003	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	354	N/A	2,382
2004	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	374	N/A	2,426
2005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	385	N/A	2,798
2006	N/A	N/A	79	N/A	N/A	N/A	N/A	N/A	348	N/A	3,026
2007	N/A	N/A	200	N/A	787	N/A	N/A	N/A	300	N/A	5,218
2008	227	N/A	340	213	845	N/A	N/A	N/A	264	N/A	5,887
2009	437	N/A	489	345	950	N/A	N/A	N/A	249	N/A	6,607
2010	749	N/A	576	566	1,034	N/A	N/A	74	273	N/A	8,264
2011	1,363	N/A	368	746	1,009	N/A	N/A	168	295	N/A	8,720
2012	1,865	N/A	260	935	696	45	N/A	297	323	67	8,524
2013	2,039	N/A	1,634	1,008	632	194	N/A	210	320	198	8,570
2014	1,880	N/A	1,522	844	521	222	227	245	292	357	8,859
2015	1,497	N/A	1,383	708	489	271	355	278	286	355	8,849
2016	1,324	1	1,146	582	400	297	350	276	281	302	8,726
2017	1,195	1,019	871	483	352	321	301	294	275	236	8,294

Table F-3e. Commercial Sector Electricity Sales by Power Marketers (GWh)

Year	Constellation New Energy, Inc	Strategic Energy LLC	ENGIE Resources LLC	Calpine Energy Solutions, LLC	Hudson Energy Services	Consolidated Edison Sol Inc	Champion Energy Services	Plymouth Rock Energy, LLC	Agera Energy LLC	Bluerock Energy, Inc.	Total All Power Marketers
2003	4,330	1,143	472	956	N/A	5,232	N/A	N/A	N/A	N/A	18,979
2004	5,117	1,326	1,667	519	N/A	5,176	N/A	N/A	N/A	N/A	21,388
2005	6,380	1,240	2,641	358	N/A	6,198	N/A	N/A	N/A	N/A	25,630
2006	6,232	2,035	2,370	283	N/A	6,214	N/A	N/A	N/A	N/A	26,255
2007	5,838	2,532	2,349	475	1,863	6,464	N/A	N/A	N/A	201	32,859
2008	4,382	2,157	2,728	706	2,034	5,087	N/A	N/A	N/A	293	32,015
2009	5,037	1,958	2,754	734	1,978	5,115	N/A	N/A	N/A	428	31,829
2010	5,490	2,769	2,621	658	2,456	4,919	N/A	N/A	N/A	624	33,426
2011	4,751	3,422	3,199	632	2,513	4,457	N/A	119	N/A	639	33,639
2012	4,264	4,741	3,461	606	2,697	3,675	N/A	522	N/A	602	34,189
2013	3,849	5,800	3,354	560	2,204	3,110	N/A	817	N/A	582	34,634
2014	4,682	5,936	3,299	640	1,845	3,265	146	759	N/A	593	35,179
2015	6,648	9,826	4,544	966	1,399	3,669	482	785	65	600	39,126
2016	7,614	9,281	5,185	1,331	1,262	3,067	847	781	243	666	39,621
2017	10,679	7,855	4,574	1,901	1,200	1,059	915	852	767	668	38,443

Table F-3f. Industrial Sector Electricity Sales by Power Marketers (GWh)

Year	Constellation New Energy, Inc	Strategic Energy LLC	Constellation Energy Services NY, Inc.	ENGIE Resources LLC	TransCanada Power Marketing, Ltd.	EDF Energy Services, LLC	Calpine Energy Solutions, LLC	EnergyMark, LLC	Great Eastern Energy	Linde Energy Services, Inc.	Total All Power Marketers
2003	474	73	786	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,752
2004	415	85	891	N/A	N/A	N/A	394	N/A	N/A	N/A	5,800
2005	491	79	963	N/A	N/A	N/A	4	N/A	N/A	N/A	5,897
2006	480	130	1,140	N/A	N/A	N/A	15	N/A	N/A	N/A	8,601
2007	453	162	1,535	232	N/A	N/A	13	N/A	N/A	N/A	7,750
2008	341	138	1,531	270	N/A	N/A	24	N/A	N/A	N/A	8,171
2009	392	124	1,231	675	N/A	N/A	41	N/A	N/A	N/A	8,748
2010	1,070	177	1,227	726	16	N/A	224	N/A	N/A	6	9,467
2011	1,135	218	1,351	1,147	219	N/A	218	N/A	N/A	66	10,129
2012	1,368	303	1,442	812	319	N/A	217	3	N/A	96	10,665
2013	1,334	370	1,334	393	281	N/A	167	51	N/A	77	9,429
2014	1,269	379	1,320	481	452	N/A	110	96	N/A	42	8,802
2015	1,529	4,491	1,529	673	581	66	139	118	148	45	9,549
2016	1,664	3,446	1,562	648	539	253	137	128	128	45	8,639
2017	3,185	2,369	524	520	498	381	192	125	116	43	8,030

Appendix F-4

New York State Natural Gas Prices by Sector by Utility in Nominal Dollars, 2003–2017

Table F-4a. Residential Sector Natural Gas Prices by Utility (Nominal Dollars per Thousand Cubic Feet)

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	12.61	11.77	13.35	9.21	12.80	11.51	9.68	10.43	10.84	10.83	7.61
2004	12.91	12.30	14.05	10.64	13.35	11.97	11.95	11.06	12.26	11.56	9.44
2005	15.30	14.27	16.80	11.97	15.16	14.51	13.59	13.05	14.54	13.51	11.02
2006	13.15	16.23	18.72	14.91	16.11	15.70	14.04	14.35	17.95	14.32	12.30
2007	16.12	16.46	20.05	13.40	16.47	14.36	13.88	13.12	17.95	13.86	13.33
2008	17.21	18.25	21.40	14.95	17.07	15.39	14.56	14.08	18.26	14.95	13.84
2009	14.36	17.44	20.24	12.04	15.69	13.40	13.65	12.81	17.39	12.66	12.04
2010	13.66	16.89	19.98	12.25	14.22	10.85	12.44	11.81	15.64	11.89	11.94
2011	13.10	17.72	18.49	11.33	13.90	10.89	12.70	12.14	15.33	11.63	12.84
2012	11.84	16.39	17.78	11.33	13.11	10.34	12.35	11.26	14.52	11.34	13.22
2013	11.61	15.35	17.96	11.70	12.66	9.62	11.07	10.50	13.82	10.38	12.73
2014	11.87	17.01	16.78	11.40	12.83	10.11	10.84	9.66	13.41	9.95	12.29
2015	10.94	14.67	13.95	9.57	12.42	7.84	9.74	8.41	10.35	8.67	12.45
2016	11.11	14.51	13.97	8.78	11.88	6.83	9.49	8.18	11.03	8.26	10.96
2017	12.99	16.28	15.46	9.52	13.29	8.07	10.43	8.98	14.27	9.08	11.64

Table F-4b. Commercial Sector Natural Gas Prices by Utility (Nominal Dollars per Thousand Cubic Feet)

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	7.74	9.22	10.53	9.68	10.21	10.24	9.54	9.77	10.40	9.50	7.23
2004	8.86	10.08	7.24	10.48	10.89	9.94	10.42	10.11	11.67	10.14	8.71
2005	14.02	12.31	10.42	11.13	13.01	13.15	12.30	11.78	13.81	12.05	10.43
2006	12.76	13.20	10.97	13.94	13.12	13.96	12.97	12.81	17.03	12.54	11.44
2007	13.83	13.13	11.21	12.38	13.92	13.24	12.82	12.23	16.97	12.26	12.00
2008	14.96	14.46	10.54	13.70	14.95	14.04	13.54	14.35	17.15	13.23	12.53
2009	11.79	12.85	9.68	10.47	12.98	12.66	12.38	11.50	16.10	11.11	10.18
2010	11.61	11.72	8.83	10.54	11.36	10.17	11.24	10.18	13.94	10.13	9.70
2011	11.22	12.08	7.80	9.68	11.86	9.63	11.17	10.55	13.69	9.68	10.56
2012	9.23	9.74	6.79	9.28	10.71	9.31	10.39	9.34	12.47	9.25	10.47
2013	9.83	9.49	7.46	9.95	11.12	8.79	9.36	8.79	12.01	8.48	10.09
2014	10.08	11.68	8.17	9.56	10.59	9.20	9.70	8.28	11.68	8.06	10.28
2015	9.22	9.45	6.43	7.79	10.05	7.00	8.48	6.51	8.47	6.85	10.17
2016	8.98	7.80	6.28	7.77	8.99	6.10	7.78	5.88	8.45	6.26	8.59
2017	10.46	9.97	7.27	8.62	10.04	7.40	8.46	7.21	11.64	7.02	9.11

Table F-4c. Industrial Sector Natural Gas Prices by Utility (Nominal Dollars per Thousand Cubic Feet)

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	N/A	8.65	9.78	8.84	N/A	6.67	6.89	7.92	10.08	8.95	6.70
2004	N/A	9.67	8.52	9.98	N/A	7.35	8.01	8.49	11.04	9.56	7.82
2005	12.56	11.67	10.19	11.97	N/A	9.34	9.64	10.61	14.19	11.30	10.22
2006	10.43	12.03	10.70	12.83	N/A	10.64	10.57	11.24	16.24	11.74	13.94
2007	13.33	12.45	10.79	0.74	N/A	10.78	11.03	10.71	16.85	11.42	11.57
2008	14.75	14.00	10.35	0.65	N/A	12.14	12.06	11.55	16.40	12.42	11.38
2009	10.66	11.92	9.49	0.69	N/A	11.89	11.07	9.26	15.36	10.62	7.81
2010	9.59	10.16	8.31	N/A	N/A	7.35	9.22	8.36	12.69	9.42	7.81
2011	9.41	10.44	7.56	N/A	N/A	8.81	8.36	9.20	11.97	8.74	8.55
2012	7.50	7.94	6.71	N/A	N/A	7.42	7.85	8.12	10.55	8.11	8.58
2013	8.65	7.69	7.18	N/A	N/A	8.05	8.36	7.80	10.83	7.51	7.36
2014	9.19	10.31	7.93	N/A	N/A	8.29	8.37	7.43	10.54	7.25	8.54
2015	8.09	7.45	6.33	N/A	N/A	6.26	7.86	4.77	6.77	5.89	7.23
2016	7.75	6.10	5.64	N/A	N/A	5.06	6.45	4.21	6.90	5.13	5.79
2017	9.37	8.29	6.75	N/A	N/A	6.14	7.30	4.98	9.16	5.70	6.62

Appendix F-5

New York State Natural Gas Customers by Sector by Utility, 2003–2017

Table F-5a. Residential Sector Natural Gas Customers by Utility

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	1,140,775	58,158	919,562	17,064	461,842	486,322	222,655	512,652	111,060	269,182	13,764
2004	1,108,132	59,132	928,106	17,064	460,013	485,786	223,262	516,042	112,452	270,515	13,779
2005	1,120,046	60,489	934,272	17,061	466,673	484,083	223,977	521,491	112,760	271,828	13,819
2006	1,133,240	61,623	1,004,285	16,987	472,250	472,042	226,301	522,562	113,810	272,655	13,630
2007	1,139,533	62,605	1,045,956	13,468	477,395	479,539	227,350	526,036	114,657	273,882	13,714
2008	1,146,761	63,403	947,502	13,517	480,968	481,568	229,176	530,636	115,837	275,075	13,651
2009	1,147,105	63,570	936,894	13,531	488,324	482,209	229,805	534,864	116,773	276,202	13,782
2010	1,158,412	64,129	939,586	13,621	491,658	483,378	231,286	538,042	117,367	278,398	13,833
2011	1,165,043	64,538	942,468	13,699	495,067	483,214	231,032	540,759	117,963	280,057	13,829
2012	1,168,014	64,811	944,233	13,790	499,683	485,321	230,355	544,544	118,250	275,602	13,891
2013	1,170,112	65,652	944,930	13,744	503,537	487,184	231,138	549,251	118,997	282,576	13,955
2014	1,174,315	65,881	943,359	13,746	510,359	489,345	232,106	552,921	119,655	283,820	14,091
2015	1,219,393	67,648	944,522	13,697	518,708	461,086	232,595	557,797	117,814	285,216	14,218
2016	1,214,526	68,859	944,108	13,614	525,826	492,981	233,880	563,241	118,970	286,902	14,441
2017	1,203,713	69,401	943,155	13,688	531,365	495,996	235,590	568,790	120,239	289,133	14,615

Table F-5b. Commercial Sector Natural Gas Customers by Utility

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	49,159	9,445	131,466	1,014	54,811	32,635	29,300	43,937	10,956	21,586	1,683
2004	46,781	9,647	113,292	896	55,533	32,596	29,469	44,249	11,051	21,910	1,672
2005	44,997	9,925	120,593	942	56,463	33,830	29,709	44,678	11,284	21,920	1,667
2006	42,579	10,111	144,164	854	57,062	33,784	29,197	44,622	11,369	21,837	1,606
2007	44,129	10,326	138,194	1,004	57,810	33,555	28,849	44,587	11,506	21,745	1,621
2008	40,479	10,477	121,107	1,009	58,274	33,448	28,949	44,527	11,492	21,886	1,638
2009	41,012	10,515	121,391	997	58,557	33,006	29,681	44,553	11,605	22,133	1,652
2010	41,634	10,544	122,432	1,015	58,600	33,452	29,237	44,624	11,599	22,121	1,651
2011	41,619	10,608	122,435	1,011	58,610	33,669	29,241	44,729	11,635	22,227	1,653
2012	42,372	10,639	123,369	1,023	58,714	34,213	29,160	44,438	11,600	21,672	1,658
2013	42,201	10,811	123,942	1,119	59,145	34,365	29,849	44,426	10,693	22,437	1,666
2014	40,721	10,898	131,144	1,066	60,045	34,715	29,931	44,585	11,820	22,687	1,682
2015	41,376	11,189	133,403	1,091	60,488	35,091	30,247	44,899	14,779	22,830	1,696
2016	43,755	11,376	132,994	1,079	61,231	35,503	30,345	45,365	14,897	23,071	1,726
2017	41,590	11,461	134,148	1,052	61,634	34,847	30,178	45,683	14,812	23,283	1,748

Table F-5c. Industrial Sector Natural Gas Customers by Utility

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	N/A	310	50	22	N/A	594	696	256	85	918	24
2004	N/A	301	55	22	N/A	595	708	251	74	909	22
2005	827	299	56	22	N/A	584	707	256	54	899	22
2006	784	288	54	24	N/A	550	712	261	44	882	20
2007	4,686	279	48	65	N/A	536	679	266	37	844	21
2008	4,318	278	51	61	N/A	530	691	254	34	817	22
2009	3,960	264	48	61	N/A	507	673	255	29	795	20
2010	3,622	259	46	N/A	N/A	500	654	251	26	771	20
2011	4,053	253	48	N/A	N/A	490	626	252	20	754	21
2012	3,428	251	48	N/A	N/A	493	615	234	20	704	21
2013	3,864	245	48	N/A	N/A	491	618	214	20	727	21
2014	3,885	251	48	N/A	N/A	482	624	215	18	709	22
2015	3,657	259	48	N/A	N/A	439	616	221	19	689	22
2016	4,133	273	48	N/A	N/A	419	592	227	22	668	21
2017	4,348	279	48	38	N/A	412	577	233	27	646	21

Appendix F-6

New York State Natural Gas Sales by Sector by Utility, 2003–2017

Table F-6a. Residential Sector Natural Gas Sales by Utility (Millions of Cubic Feet)

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	102,811	5,482	63,541	2,443	48,061	57,548	26,145	56,790	15,241	29,138	1,892
2004	100,666	5,221	60,779	2,279	47,514	54,012	24,081	53,500	14,595	27,761	1,811
2005	115,538	5,282	63,140	2,261	47,901	52,013	22,924	52,801	14,541	27,522	1,710
2006	100,274	4,707	56,736	1,955	40,747	45,242	22,263	46,300	12,409	23,793	1,545
2007	114,790	5,096	64,811	1,577	46,735	51,096	22,597	50,427	14,063	26,905	1,637
2008	114,362	5,177	64,012	1,549	46,046	49,736	22,561	49,217	13,535	26,008	1,527
2009	116,866	5,173	68,572	1,551	49,791	49,436	22,394	49,495	13,625	25,899	1,562
2010	115,924	4,802	66,362	1,507	47,017	47,028	21,017	47,256	13,143	24,532	1,433
2011	114,278	5,169	67,670	1,551	45,917	48,404	22,057	49,170	12,823	24,776	1,471
2012	105,504	4,314	63,773	1,349	41,990	42,457	19,203	42,725	11,973	22,635	1,346
2013	120,933	5,106	75,286	1,634	49,709	50,022	21,887	49,305	13,853	26,551	1,490
2014	131,329	5,706	86,791	1,783	54,763	54,928	24,132	54,315	14,821	27,450	1,649
2015	126,900	5,697	91,835	1,439	55,978	51,484	23,156	53,255	13,794	26,460	1,564
2016	114,764	5,088	89,463	1,471	49,527	45,965	20,027	46,524	13,044	24,603	1,435
2017	122,036	5,119	94,778	1,549	52,031	47,351	20,752	48,188	13,166	25,585	1,459

Table F-6b. Commercial Sector Natural Gas Sales by Utility (Millions of Cubic Feet)

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	59,784	6,521	124,436	442	37,362	26,440	20,511	36,210	9,846	15,762	1,681
2004	104,493	6,758	103,119	414	37,592	24,764	19,255	34,785	10,173	15,726	1,656
2005	23,640	6,922	100,877	399	38,078	24,868	19,148	34,281	9,382	16,198	1,569
2006	20,434	6,147	100,158	345	34,749	23,212	18,825	31,045	8,685	14,598	1,411
2007	23,539	6,831	107,971	3,826	38,377	24,551	19,148	33,440	9,343	16,050	1,544
2008	23,477	6,875	114,868	3,631	38,551	24,291	19,307	32,439	8,767	16,065	1,550
2009	23,515	6,826	105,843	3,371	40,413	23,679	19,288	31,960	8,140	15,673	1,605
2010	24,033	6,240	117,023	4,230	39,211	22,636	18,232	30,917	7,681	15,193	1,542
2011	23,910	6,848	117,774	4,312	39,091	23,474	18,874	31,692	7,506	15,616	1,490
2012	22,154	6,038	112,420	3,759	35,432	20,195	17,250	29,391	7,228	14,516	1,410
2013	24,537	6,831	127,190	724	39,108	23,809	19,079	32,929	7,874	16,682	1,580
2014	26,639	7,460	128,894	768	44,811	26,509	20,708	35,925	8,477	17,644	1,855
2015	25,543	7,351	123,328	425	45,133	25,160	20,855	35,815	8,494	16,846	1,798
2016	23,862	7,040	119,415	374	51,348	21,779	18,744	33,042	8,067	16,635	1,848
2017	24,441	7,083	123,629	384	51,172	23,111	19,527	33,895	8,117	16,499	1,924

Table F-6c. Industrial Sector Natural Gas Sales by Utility (Millions of Cubic Feet)

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
2003	N/A	3,389	2,918	2,253	N/A	22,004	14,489	16,373	3,172	9,260	5,922
2004	N/A	3,529	1,309	2,460	N/A	20,000	13,827	16,375	3,073	9,233	6,006
2005	4,682	3,125	1,451	2,579	N/A	19,257	13,056	17,545	2,999	8,597	5,730
2006	3,696	3,082	1,387	2,745	N/A	16,765	12,561	20,317	2,609	7,286	5,867
2007	4,345	2,904	1,534	352	N/A	17,166	13,254	20,703	2,635	7,275	5,680
2008	4,422	2,987	1,668	335	N/A	16,282	13,739	23,289	2,555	8,233	5,124
2009	3,914	2,819	1,599	394	N/A	13,919	13,155	21,348	2,393	7,200	3,546
2010	4,277	2,922	1,684	N/A	N/A	14,672	12,666	23,651	2,450	6,998	3,710
2011	3,720	2,903	1,764	N/A	N/A	14,145	12,643	24,440	2,281	6,967	3,805
2012	3,107	2,574	1,601	N/A	N/A	13,929	12,594	25,622	2,358	6,548	3,378
2013	3,279	2,896	1,847	N/A	N/A	14,379	13,160	26,296	2,327	6,826	3,426
2014	3,534	3,053	1,913	N/A	N/A	16,993	13,606	26,660	2,176	7,030	3,577
2015	3,201	3,153	1,776	N/A	N/A	16,358	12,476	27,671	2,266	6,689	3,402
2016	3,169	2,791	1,784	N/A	N/A	16,236	11,863	26,781	2,081	6,879	3,429
2017	3,519	2,974	1,799	3,791	N/A	17,175	12,297	25,657	2,138	8,313	3,393

Appendix G-1

New York State Weather Normalized Residential Energy Consumption, 1980–2017

Figure G-1

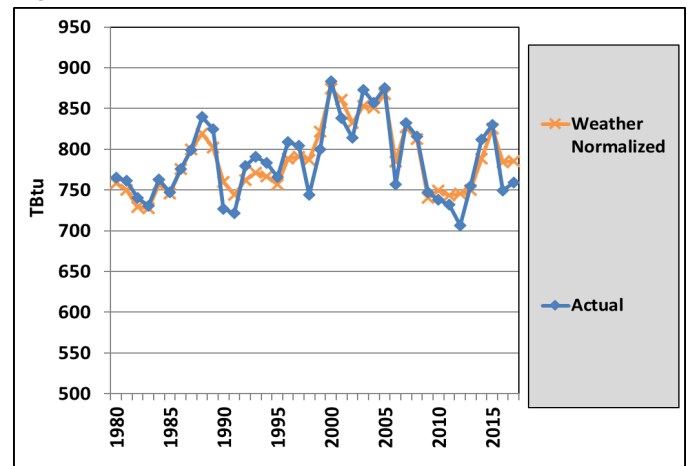


Table G-1. (In trillion Btu)

Year	Coal	Natural Gas	Distillate ¹	Kerosene	LPG	Total Petroleum	Wood	Electricity	Solar ²	Geothermal	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
1980	1.8	339.2	216.8	9.8	9.1	235.6	77.8	104.1	0.0	0.0	758.4
1981	2.1	338.2	199.4	8.5	9.8	217.7	87.0	104.8	0.0	0.0	749.8
1982	2.6	345.8	180.4	10.4	9.1	199.8	76.4	104.9	0.0	0.0	729.5
1983	1.5	329.3	170.4	8.5	10.5	189.4	99.2	108.2	0.0	0.0	727.7
1984	2.3	343.3	199.2	20.1	10.5	229.9	69.7	112.1	0.0	0.0	757.3
1985	2.3	328.1	201.0	18.2	11.4	230.6	72.7	112.0	0.0	0.0	745.8
1986	2.6	345.9	221.1	12.5	11.6	245.2	66.6	115.4	0.0	0.0	775.7
1987	2.2	344.9	241.4	18.2	13.5	273.1	59.4	120.4	0.0	0.0	799.9
1988	1.7	358.6	235.3	23.6	13.3	272.2	59.9	127.4	0.0	0.0	819.8
1989	1.6	363.8	217.1	15.7	14.0	246.8	60.1	129.3	0.3	0.1	802.0
1990	1.4	365.8	195.0	10.0	14.2	219.1	41.9	131.6	0.3	0.0	760.1
1991	1.3	361.3	176.0	11.8	17.7	205.5	42.5	133.1	0.3	0.0	744.0
1992	1.2	379.1	184.0	7.1	17.5	208.6	40.1	132.8	0.3	0.1	762.1
1993	1.0	384.0	173.0	8.9	15.1	197.0	53.0	136.0	0.3	0.1	771.4
1994	0.7	385.8	168.7	8.0	15.2	191.9	50.7	136.8	0.4	0.1	766.4
1995	0.7	381.0	164.3	7.1	15.8	187.2	51.6	135.9	0.4	0.1	756.9
1996	0.8	400.8	170.8	8.3	17.2	196.3	52.8	137.7	0.5	0.1	788.9
1997	0.7	377.4	167.6	10.0	15.3	192.9	82.6	136.9	0.5	0.1	791.1
1998	0.4	377.7	165.5	10.3	15.8	191.6	78.5	138.2	0.5	0.0	787.0
1999	0.6	396.2	170.2	13.0	16.9	200.1	78.3	145.8	0.5	0.1	821.5
2000	0.3	406.9	202.5	13.4	21.7	237.6	82.0	147.1	0.5	0.1	874.4
2001	0.3	404.4	218.8	13.3	17.0	249.1	55.9	150.7	0.5	0.1	861.0
2002	0.1	392.1	196.3	9.2	19.6	225.1	56.4	157.7	0.6	0.1	832.2
2003	0.3	407.0	198.0	9.5	18.5	226.0	58.5	160.7	0.6	0.1	853.1
2004	0.4	398.5	197.6	11.8	19.5	228.9	60.3	161.8	0.7	0.1	850.7
2005	0.3	411.8	202.2	12.6	17.7	232.5	50.4	171.5	0.8	0.1	867.3
2006	0.5	384.9	161.3	9.9	16.7	187.9	44.5	165.5	1.0	0.1	784.4
2007	0.3	406.0	173.0	7.5	18.2	198.7	49.3	171.6	1.1	0.2	827.3
2008	0.0	400.1	161.9	3.8	22.5	188.2	55.4	167.7	1.3	0.2	812.7
2009	0.0	404.2	118.1	5.6	22.3	146.1	23.3	165.5	1.3	0.2	740.6
2010	0.0	412.5	116.6	5.5	22.9	145.0	16.5	173.4	1.5	0.3	749.1
2011	0.0	416.9	108.6	4.0	20.4	133.0	16.7	174.7	1.6	0.7	743.6
2012	0.0	403.3	134.0	1.9	18.5	154.4	13.1	172.8	1.8	0.4	745.7
2013	0.0	426.9	104.2	2.3	19.2	125.7	22.1	173.2	2.0	0.4	750.3
2014	0.0	455.0	110.3	4.1	23.8	138.2	21.3	171.1	2.8	0.4	788.9
2015	0.0	464.1	121.3	2.6	22.3	146.2	36.5	173.9	4.3	0.4	825.5
2016	0.0	450.9	93.4	2.9	22.7	119.0	35.8	172.8	5.3	0.4	784.2
2017	0.0	465.0	86.5	2.0	22.9	111.4	34.4	167.7	6.3	0.4	785.2

¹ Distillate consumption estimates include biodiesel blended into diesel fuel.

² Includes customer-sited solar electric and thermal energy.

Appendix G-2

New York State Weather Normalized Residential Energy Intensity Indicators, 1990–2017

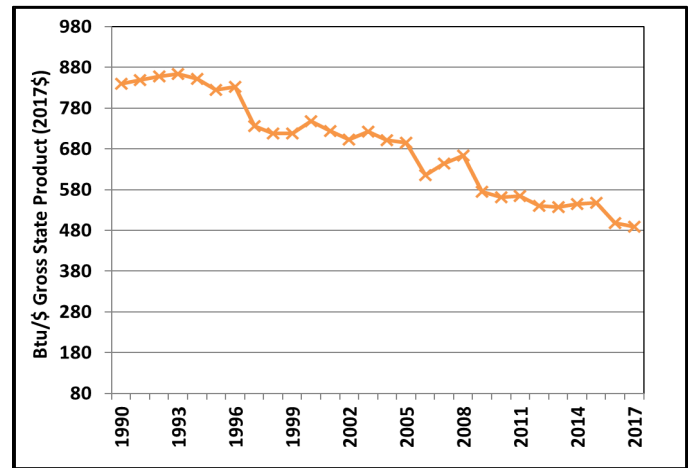
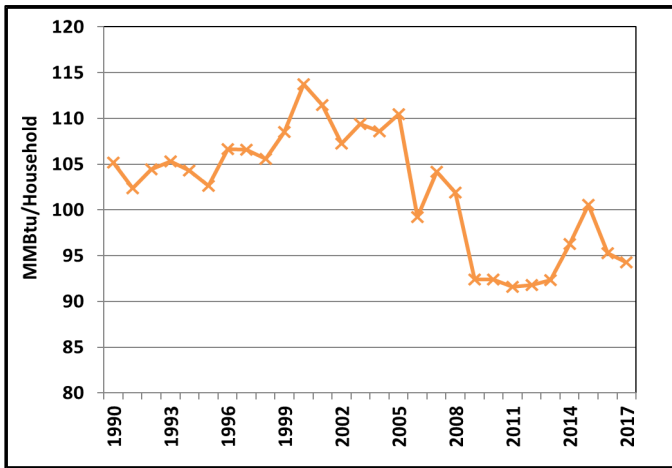


Table G-2. (In trillion Btu)

Year	Weather Normalized Residential Total Energy	Households	Energy Usage/Household	Gross State Product	Res Energy Usage Per GSP (2017\$)
	Tbtu	Thousands	(MMBtu/Household)	Million (2017\$)	(Btu/\$)
1990	760.1	7,227	105.2	\$905,658	839.3
1991	744.0	7,270	102.3	\$876,389	849.0
1992	762.1	7,297	104.4	\$889,042	857.3
1993	771.4	7,324	105.3	\$892,766	864.1
1994	766.4	7,346	104.3	\$899,333	852.2
1995	756.9	7,374	102.6	\$917,595	824.9
1996	788.9	7,397	106.7	\$948,636	831.6
1997	791.1	7,423	106.6	\$1,074,158	736.5
1998	787.0	7,455	105.6	\$1,097,294	717.2
1999	821.5	7,572	108.5	\$1,143,449	718.4
2000	874.4	7,689	113.7	\$1,168,899	748.0
2001	861.0	7,724	111.5	\$1,188,718	724.3
2002	832.2	7,760	107.2	\$1,183,082	703.4
2003	853.1	7,799	109.4	\$1,180,835	722.4
2004	850.7	7,836	108.6	\$1,213,620	700.9
2005	867.3	7,853	110.4	\$1,247,405	695.3
2006	784.4	7,908	99.2	\$1,275,505	615.0
2007	827.3	7,940	104.2	\$1,283,593	644.5
2008	812.7	7,977	101.9	\$1,225,361	663.3
2009	740.6	8,018	92.4	\$1,289,675	574.3
2010	749.1	8,108	92.4	\$1,336,151	560.6
2011	743.6	8,120	91.6	\$1,318,862	563.8
2012	745.7	8,124	91.8	\$1,382,426	539.4
2013	750.3	8,126	92.3	\$1,396,605	537.2
2014	788.9	8,192	96.3	\$1,447,541	545.0
2015	825.5	8,207	100.6	\$1,506,975	547.8
2016	784.2	8,232	95.3	\$1,573,798	498.3
2017	785.2	8,327	94.3	\$1,604,134	489.5

Appendix H

New York State Estimated Customer-Sited Solar Capacity and Generation by County, 2007–2017

Table H-1. Solar Installed Capacity (kW)

County	2007	2012	2017
New York State	11,272	121,240	975,703
Albany	139	4,049	30,246
Alleghany	7	133	3,268
Bronx	59	2,253	15,028
Broome	22	943	3,721
Cattaraugus	0	195	8,480
Cayuga	11	366	8,934
Chautauqua	0	622	4,605
Chemung	14	151	5,265
Chenango	10	152	1,316
Clinton	165	604	2,055
Columbia	214	2,305	15,563
Cortland	23	214	6,345
Deleware	63	314	1,441
Dutchess	774	4,046	29,443
Erie	50	6,627	29,820
Essex	66	378	1,499
Franklin	23	93	1,027
Fulton	4	131	4,421
Genesee	2	193	1,704
Greene	68	621	4,544
Hamilton	12	39	189
Herkimer	6	164	3,135
Jefferson	10	664	5,335
Kings	188	3,519	22,868
Lewis	0	26	471
Livingston	27	287	3,175
Madison	19	401	4,870
Monroe	83	1,635	15,370
Montgomery	6	838	7,374
Nassau	1,761	14,544	74,758
New York	98	1,011	3,720
Niagara	2	889	4,867
Oneida	26	881	21,365
Onondaga	41	1,620	19,687
Ontario	18	496	19,351
Orange	193	3,372	57,620
Orleans	2	125	1,396
Oswego	17	619	3,798
Ostego	63	234	2,182
Putnam	17	465	7,240
Queens	176	6,052	39,807
Rensselaer	149	2,850	23,603
Richmond	7	1,446	46,004
Rockland	187	1,074	25,966
St. Lawrence	141	2,260	31,436
Saratoga	71	1,546	22,993
Schenectady	36	327	3,180
Schoharie	21	135	1,370
Schuyler	18	195	2,794
Seneca	33	392	10,213
Steuben	7	137	1,829
Suffolk	4,743	34,645	162,346
Sullivan	70	920	8,663
Tioga	46	231	1,518
Tompkins	379	1,642	17,670
Ulster	475	3,855	25,838
Warren	41	603	11,586
Washington	63	635	12,453
Wayne	15	407	10,576
Westchester	286	5,349	53,793
Wyoming	2	154	3,135
Yates	3	168	1,434

Table H-2. Solar Estimated Annual Generation (MWh)

County	2007	2012	2017
New York State	12,512	137,670	1,087,227
Albany	141	4,653	34,166
Alleghany	3	136	3,250
Bronx	62	2,607	17,717
Broome	22	1,014	4,214
Cattaraugus	0	196	9,875
Cayuga	11	410	10,285
Chautauqua	0	631	4,693
Chemung	14	160	5,423
Chenango	10	168	1,496
Clinton	137	659	2,362
Columbia	215	2,513	17,732
Cortland	20	235	7,061
Deleware	61	331	1,600
Dutchess	833	4,476	30,696
Erie	48	6,564	31,676
Essex	69	397	1,632
Franklin	23	98	1,168
Fulton	4	150	5,044
Genesee	0	211	1,932
Greene	69	710	5,171
Hamilton	11	43	198
Herkimer	4	189	3,435
Jefferson	6	647	5,618
Kings	201	4,107	26,687
Lewis	0	27	481
Livingston	27	322	3,657
Madison	20	429	5,536
Monroe	85	1,735	16,746
Montgomery	5	945	8,611
Nassau	2,067	17,072	86,620
New York	104	1,160	4,345
Niagara	0	882	5,153
Oneida	27	928	21,570
Onondaga	38	1,804	21,648
Ontario	16	529	22,370
Orange	204	3,873	62,637
Orleans	2	145	1,598
Oswego	15	707	4,330
Ostego	64	237	2,391
Putnam	16	488	7,969
Queens	195	7,216	45,669
Rensselaer	158	3,316	27,333
Richmond	8	1,742	52,060
Rockland	205	1,208	27,186
St. Lawrence	148	2,637	34,655
Saratoga	77	1,786	26,526
Schenectady	39	380	3,813
Schoharie	22	148	1,518
Schuyler	19	208	2,871
Seneca	29	426	11,329
Steuben	8	142	1,994
Suffolk	5,567	40,667	185,219
Sullivan	72	975	9,323
Tioga	40	246	1,661
Tompkins	363	1,708	18,508
Ulster	482	4,227	27,027
Warren	42	633	12,180
Washington	66	690	13,640
Wayne	12	436	11,889
Westchester	303	5,963	58,884
Wyoming	0	162	3,646
Yates	3	169	1,500

Appendix I

Abbreviations

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

Conversion Factors

Approximate heat content of various fuels (2017)

Coal

Electric generation	25,892,000 Btu/ton
Industrial end use sector	26,069,000 Btu/ton

Natural Gas

Electric generation	1,031 Btu/cf
Other end use sectors	1,033 Btu/cf

Wood 20,000,000 Btu/cord

Electricity Sales 3,412 Btu/kWh

Electricity Generation 8,123 Btu/kWh

(Three-year statewide weighted average annual heat rate for fossil-fueled power plants)

Petroleum Products (one barrel equals 42 gallons)

Distillate fuel oil	5,757,000 Btu/barrel
Ethanol	3,556,000 Btu/barrel
Jet fuel, kerosene-type	5,670,000 Btu/barrel
Kerosene	5,670,000 Btu/barrel
Motor gasoline	5,053,000 Btu/barrel
LPG (propane)	3,841,000 Btu/barrel
Residual fuel oil	6,287,000 Btu/barrel

Appendix J

Glossary

Anthracite coal – The highest ranked coal, used primarily for residential and commercial space heating. It is a hard, brittle, and black lustrous coal, often referred to as hard coal, containing a high percentage of fixed carbon and a low percentage of volatile matter.

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

Biofuels – Liquids derived from non-fossil biomass energy sources through chemical, thermal, and biological processes and used to produce thermal energy or electricity. Examples are fuel wood, 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 and biodiesel blended with diesel fuel. 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 commonly 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, this unit provides a common denominator for quantifying all types of energy on an equivalent energy content basis. One Btu is equal to 252 calories of heat energy.

Coke – A solid carbonaceous residue derived from low-ash, low-sulfur bituminous coal. The volatile constituents are driven off by baking in an oven at temperatures as high as 2,000 degrees Fahrenheit so that the fixed carbon and residual ash are fused together. Coke is used as a fuel and as a reducing agent in smelting iron ore in a blast furnace.

Combined heat and power (CHP) – Includes plants designed to produce both heat and electricity from a single heat source.

Commercial sector – The part of the energy-using sector of the economy that engages primarily in providing goods and services other than manufacturing. The commercial sector includes both private and public entities, and is made up of apartment and office buildings, governmental units, schools, institutions, churches, hotels, restaurants, and retail stores are included.

Constant Dollars – Values that have been adjusted to remove the effect of changes in inflation. The price paid for a product or service in the present value of the constant dollar year. Also referred to as real dollars.

Cord of wood – A cord of wood measures 4-feet by 4-feet by 8-feet, or 128 cubic feet.

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

Degree-days, cooling – 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 – 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 more than 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 higher number of heating degree-days implies cooler temperatures.

Dekatherm – One dekatherm equals 10 therms or 1,000,000 Btu. Unit commonly used to measure amount of natural gas, based on its heat content in Btu rather than its volume in cubic feet.

Distillate fuel – A general classification for one of the petroleum fractions produced in conventional distillation operations. It includes diesel fuels and fuel oils. Products known as No. 1, No. 2, and No. 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as No. 1, No. 2, and No. 4 fuel oils are used primarily for space heating and electric power generation.

Electric generation - Includes both publicly and privately-owned generating plants in the State.

End-use – Any ultimate consumption of any type of energy source including fossil fuels (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 industrial process. Fossil fuels sometimes are used as feedstocks for their chemical properties, rather than their energy value (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 0.083 times the imperial gallon. Also equal to 4 quarts (231 cubic inches), commonly used to measure petroleum products such as gasoline and heating oil. One U.S. gallon of water weighs 8.3 pounds.

Geothermal energy – Thermal energy generated and stored in the Earth. Water or steam extracted from geothermal reservoirs can be used for geothermal heat pumps, water heating, or electricity generation.

Gigawatt (GW) – One million kilowatts, or one billion watts.

Gigawatt-hour (GWh) – One million kilowatt-hours, or one billion watt-hours. Unit of measure for amount of electricity generated or used.

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

Industrial Sector – That section of the energy-using economy involved in or associated with 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. A unit of power usually used for electricity.

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

Liquefied petroleum gas (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.

Mcf – One thousand cubic feet. Measure of volume commonly used for natural gas.

Megawatt (MW) – One thousand kilowatts or one million watts.

Megawatt hour (MWh) – One thousand kilowatt-hours, or one million watt-hours.

Metric Ton – A unit of weight equal to approximately 2,204 pounds.

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. Leaded and unleaded refinery products are included.

Natural gas – An odorless, colorless, tasteless, non-toxic clean-burning fossil fuel, widely used to generate electricity and used directly by end-use customers to provide space heat, water heating, and cooking.

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

Net Energy Consumption – The energy consumed at the end-use location (e.g., building or vehicle), including electricity as well as the fuels burned to provide space heat, water heat, etc. “Net” energy accounts for electricity based on the heat content of energy at the plug (3,412 Btu per kWh), and excludes the heat losses incurred during generation, transmission, and distribution of electricity. Adding the heat losses associated with electricity use to “net” energy results in “primary” energy.

Nominal dollars – Values that have not been adjusted to remove the effect of changes in inflation. The price paid for a product or service at the time of the transaction.

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

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

Petroleum – A general term applied to oil and oil products in all forms, such as crude oil, lease condensate, unfinished oil, and refined non-hydrocarbon compounds blended into finished petroleum products such as gasoline, diesel fuel, jet fuel, and heating oil.

Primary Energy Consumption – The total consumption of fuels, including the fuels used to generate electricity. “Primary” energy accounts for electricity based on the equivalent heat content of fuel at the generator. Subtracting the heat losses associated with electricity generation, transmission, and distribution from “primary” energy results in “net” energy.

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 as a fuel for transportation and industrial uses, including petrochemical feedstocks. Propane is the first product refined from crude petroleum. Propane is often used at customer locations where natural gas is not available, as it can be easily transported by truck and stored at the customer site.

Real dollars – Values that have been adjusted to remove the effect of inflation or changes in the purchasing power of the dollar. Also referred to as constant dollars because the adjustments equalize and make the cost of commodities comparable over time.

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, still gas and miscellaneous products.

Residential sector – The part of the economy having to do with the places people stay or live. The residential sector is made up of homes, apartments, condominiums, etc. including 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 No. 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.

Short Ton (Coal) – A unit of weight equal to 2,000 pounds. A long ton or metric ton is equal to 2,204 pounds.

Solar Electric – A technology that directly converts light energy radiated by the sun as electromagnetic waves (electromagnetic radiation) into electricity by means of solar electric (also known as photovoltaic or PV) panels or concentrating (focusing) collectors.

Solar Thermal – A technology that collects heat energy from the sun to heat water. Solar thermal energy is used for space heating; domestic hot water heating; and heating swimming pools, hot tubs, or spas.

Therm – 100,000 Btu.

Transportation Sector – An energy-consuming sector that consists of all vehicles whose primary purpose is transporting people and/or goods from one physical location to another. Included are automobiles, trucks, buses, motorcycles, trains, subways, other rail vehicles, aircraft, ships, barges, and other waterborne vehicles. Vehicles whose primary purpose is not transportation (e.g., construction cranes, bulldozers, farming vehicles, and warehouse tractors and forklifts) are classified in the sector of their primary use.

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, often used to measure amounts of coal and air emissions of various pollutants. The American ton is often called the “short.” The metric or “long ton” equals 2,204 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 K

Data Sources

State Energy Data System – U.S. Department of Energy, Energy Information Administration (DOE/EIA)

State Energy Price and Expenditure Report – DOE/EIA

Annual and Monthly Energy Review – DOE/EIA

Electric Power Annual – DOE/EIA

Retail Motor Gasoline Price Report – DOE/EIA

Residential Energy Consumption Survey – DOE/EIA

Detailed Population Characteristics – U.S. Bureau of the Census

Detailed Housing Characteristics – U.S. Bureau of the Census

Heating and Cooling Degree-day Report – U.S. National Climatic Data Center

Employment and Earnings – U.S. Bureau of Labor Statistics

Survey of Current Business – U.S. Bureau of Economic Analysis

United States Highway Statistics – U.S. Federal Highway Administration

Motor Gasoline Reported by State – U.S. Federal Highway Administration

New York State, Gas and Mineral Resources – NYS Department of Environmental Conservation

Highway Statistics for New York State – NYS Department of Motor Vehicles

Motor Fuel Volume and Revenue Report – NYS Department of Taxation & Finance

Population and Housing Estimates – NYS Empire State Development

New York State Renewable Portfolio Standard Annual Performance Report – NYSERDA

Load and Capacity Data Report – New York Independent System Operator

NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and support to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York State since 1975.

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