Patterns and Trends: New York State Energy Profiles, 2004–2018

Final Report | May 2022

NEW YORK STATE | NYSERDA

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, 2004–2018

Prepared by:

New York State Energy Research and Development Authority

Albany, NY

May 2022

Message from the President

I am pleased to present NYSERDA's Patterns and Trends: New York State Energy Profiles, 2004–2018, 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 the State's trajectory moving forward to meet Governor Hochul'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 the following:

- As of 2018, energy consumption was almost 7.6 percent lower than at its peak in 2004.
- Energy production from solar resources increased more than 27.1 percent between 2017 and 2018.
- Compared to other states in 2019, New York State used the second lowest amount of energy per person and had the lowest energy consumption per unit of gross state product in the United States.

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

Best,

Doreen M. Harris
President and CEO, NYSERDA

Table of Contents

List of Tables and Figures

Patterns and Trends: New York State Energy Profiles, 2004–2018 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 2018 calendar year. Historical data prior to 2004 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 nyserda.ny.gov

1 Overview

Patterns and Trends is organized into 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 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 2018 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 and in 2018 constant 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 and utility; weather normalized residential energy consumption; estimated county-level solar capacity and generation; conversion factors; and glossary of energy terms.

2018 NEW YORK STATE ENERGY FAST FACTS

PRIMARY ENERGY CONSUMPTION

5.1% higher than 2017

Primary consumption (4.2% of U.S. total) (trillion Btu)		3,914.5
By sector:		
Residential	(17.4%)	682.7
Commercial	(10.6%)	413.7
Industrial	(5.2%)	204.0
Transportation	(30.6%)	1,197.9
Electric Generation	(36.2%)	1,416.3
By fuel type:		
Petroleum	(35.6%)	1,394.7
Natural Gas	(35.6%)	1,393.7
Nuclear	(11.5%)	448.7
Hydro	(6.2%)	240.8
Net Imported Electricity	(5.5%)	215.9
Other[1]	(5.2%)	204.0
Coal	(0.4%)	16.7
Primary consumption per capita (million Btu)		197.2

NET ENERGY CONSUMPTION AND EXPENDITURES

	Net Energy Consumption (trillion Btu)		Estimated Expenditures (billion dollars)	
Total:	3,009.8		$60.8	
By sector:				
Residential	(28.6%)	860.6	(31.4%)	$19.1
Commercial	(22.4%)	675.5	(23.9%)	$14.5
Industrial	(8.8%)	265.7	(3.5%)	$2.1
Transportation	(40.1%)	1,207.9	(41.2%)	$25.0
By fuel type:				
Petroleum	(45.8%)	1,380.0	(47.4%)	$28.8
Natural Gas	(32.1%)	965.7	(15.6%)	$9.5
Electricity	(17.0%)	511.6	(36.6%)	$22.2
Other[1]	(4.7%)	142.9	(0.4%)	$0.2
Coal	(0.3%)	9.7	(0.1%.)	<$0.1
Estimated energy expenditures leaving the State (billions)				$32.0

AVERAGE ENERGY PRICES

	2018	2017
Gasoline - all grades (gallon)	$2.76	$2.42
Heating Oil (gallon)	$2.79	$2.53
Natural Gas (thousand cubic feet)		
Residential	$12.38	$12.04
Commercial	$7.37	$ 6.87
Industrial	$7.83	$ 7.21
Electricity (kilowatt-hour)		
Residential	18.5¢	18.0¢
Commercial	14.5¢	14.8¢
Industrial	6.0¢	5.9¢

GREENHOUSE GAS EMISSIONS FROM FUEL COMBUSTION

Total (million metric tons of CO_2 equivalent)		177.1
By sector:		
Residential	(20.7%)	36.7
Commercial	(12.5%)	22.2
Industrial	(4.7%)	8.2
Transportation	(43.5%)	77.1
Electric Generation	(18.5%)	32.8
By fuel type:		
Petroleum	(55.1%)	
Natural Gas	(44.0%)	
Coal	(0.9%)	
Greenhouse gas emissions per capita (metric tons of CO_2 equivalent)		9.1

[1]Ethanol (48.8 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."

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ELECTRICITY

Sales increased 3.4% from 2017

Sales to ultimate consumers (gigawatt-hours)		149,930
By sector:		
Residential	(34.8%)	52,153
Commercial	(51.2%)	76,745
Industrial	(12.1%)	18,077
Transportation	(2.0%)	2,954
In-State Generation (gigawatt-hours)		135,585
By fuel type:		
Nuclear	(26.5%)	43,003
Natural Gas	(33.0%)	53,593
Hydro	(18.5%)	29,856
Net Imported Electricity	(16.5%)	26,766
Coal	(0.4%)	692
Petroleum	(1.0%)	1,678
Other	(1.7%)	2,778
Wind	(2.5%)	3,985

PETROLEUM

Consumption increased 3.4% from 2017

Consumption (3.4% of U.S. total) (million barrels)		256.2
By sector:		
Residential	(9.8%)	26.2
Commercial	(4.0%)	10.4
Industrial	(5.4%)	12.4
Transportation	(79.7%)	204.7
Electric Generation	(1.1%)	2.4
In-State production (thousand barrels)		221.0

NATURAL GAS

Consumption increased 9.1% from 2017

Consumption (4.5% of U.S. total) (billion cubic feet)		1,350.5
By sector:		
Residential	(36.0%)	485.7
Commercial	(24.5%)	330.2
Industrial	(6.8%)	91.6
Transportation	(2.0%)	27.5
Electric Generation	(30.7%)	415.5
In-State production (billion cubic feet)		11.8

ADDITIONAL 2018 STATISTICS

Population (6.0% of U.S. total) (million)	19.5
Number of housing units (million)	8.4
Gross State Product (billion 2018 dollars)	$1,705.0
Motor vehicle registrations (million)	11.5
Vehicle miles of travel (billion miles)	123.2
Heating degree-days (increased 6.8% from 2017)	6,183
Cooling degree-days (increased 35.0% from 2017)	776

Note: Totals may not sum exactly due to rounding.

DATA SOURCE

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

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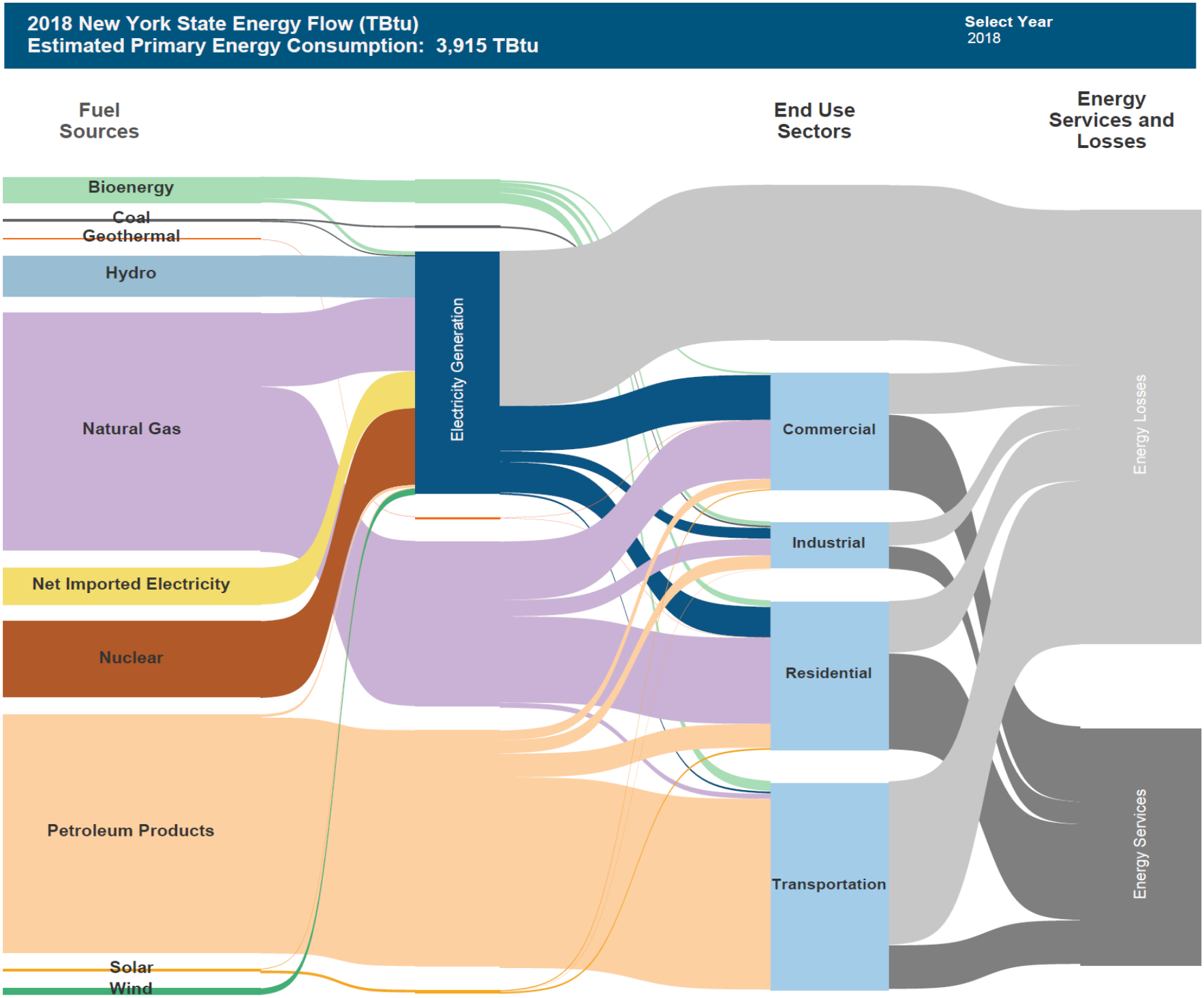
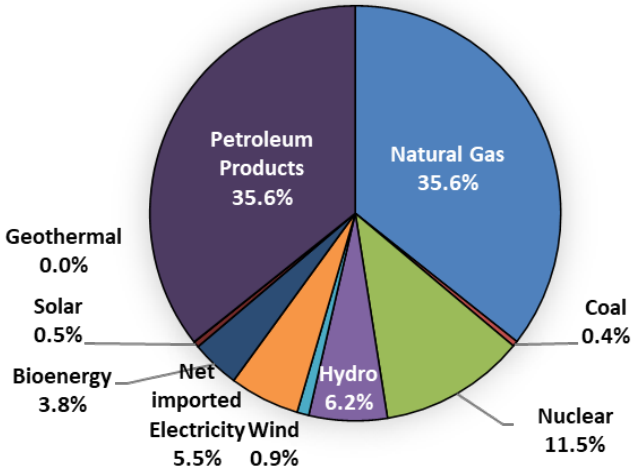
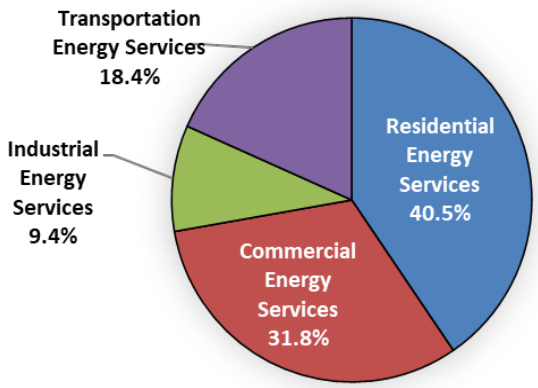

2018 New York State Energy Flow (TBtu)
Estimated Primary Energy Consumption: 3,915 TBtu
Select Year
2018
Fuel Sources
End Use Sectors
Energy Services and Losses
Bioenergy
Coal
Geothermal
Hydro
Natural Gas
Net Imported Electricity
Nuclear
Petroleum Products
Solar
Wind
Electricity Generation
Commercial
Industrial
Residential
Transportation
Energy Losses
Energy Services

2018 New York State Energy at a Glance

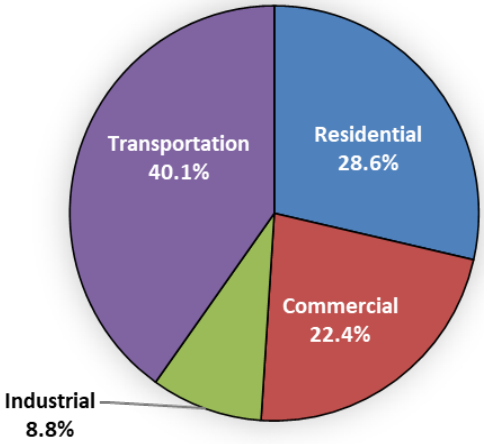
2018 NYS Fuel Sources



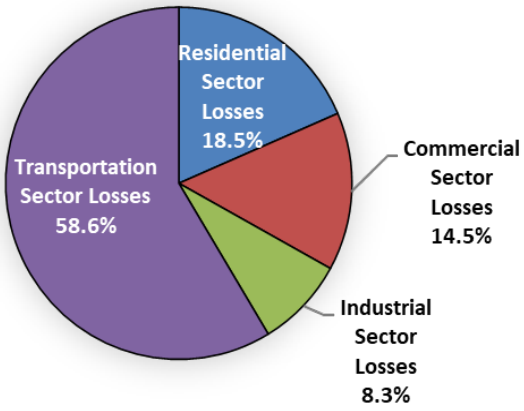
2018 NYS Energy Services



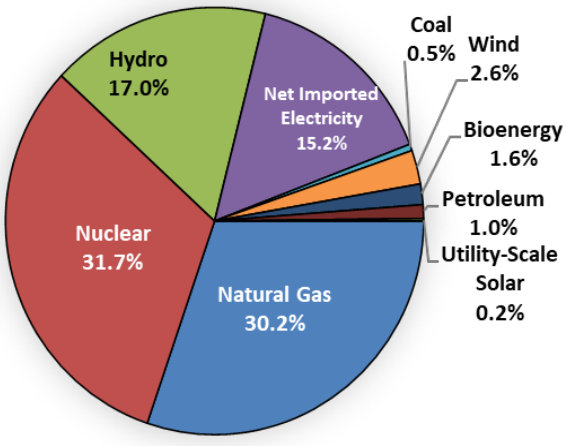
2018 NYS End-Use Sectors



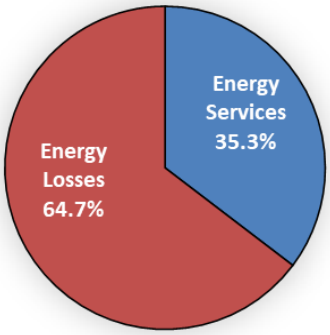
2018 NYS Energy Losses



2018 NYS Energy for Electricity Generation

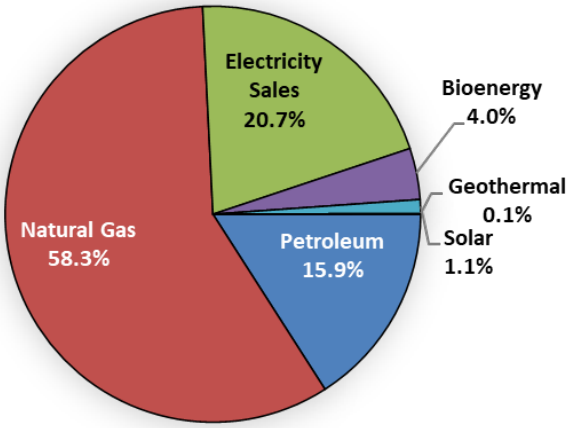


2018 NYS Energy End-Use Services and Losses

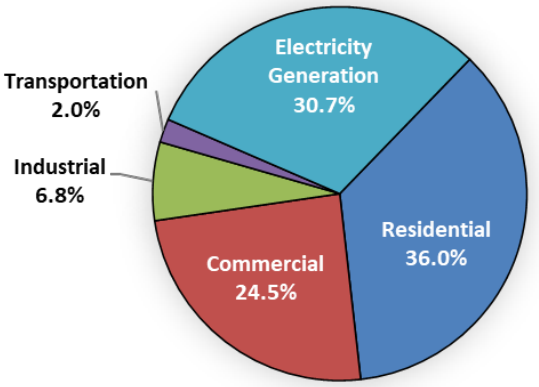


2018 New York State Energy at a Glance

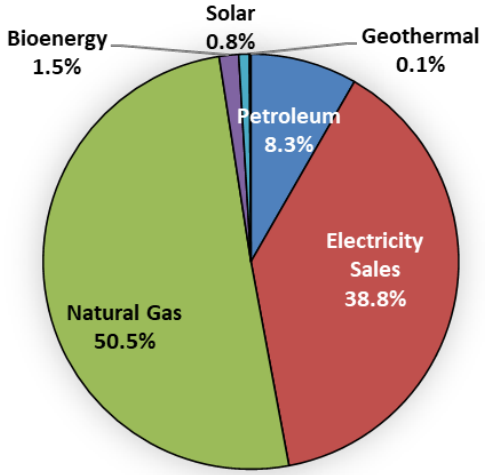
2018 NYS Residential Sector



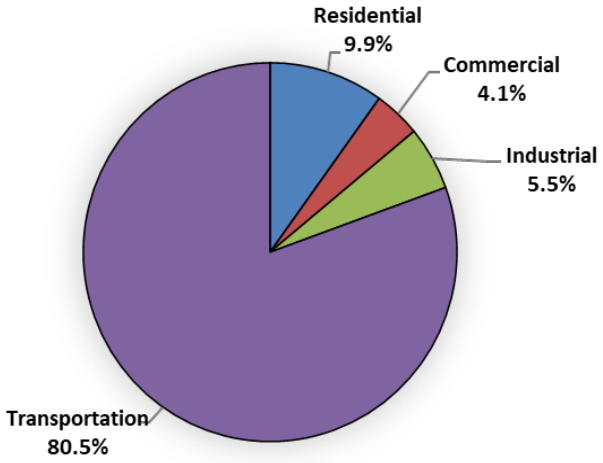
2018 NYS Natural Gas by Sector



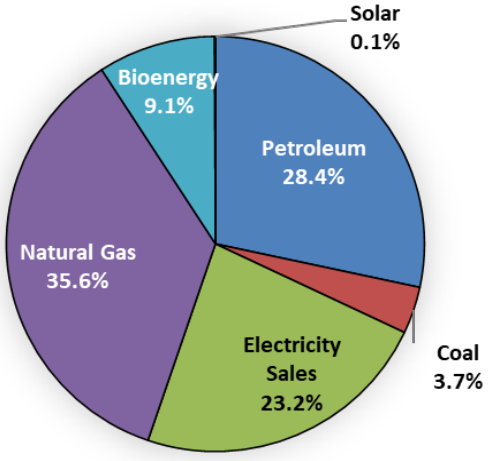
2018 NYS Commercial Sector



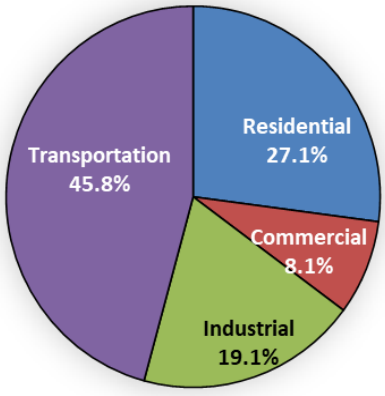
2018 NYS Petroleum by Sector



2018 NYS Industrial Sector

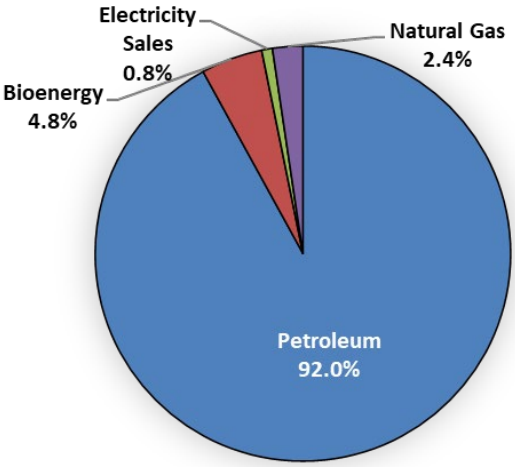


2018 NYS Bioenergy by Sector

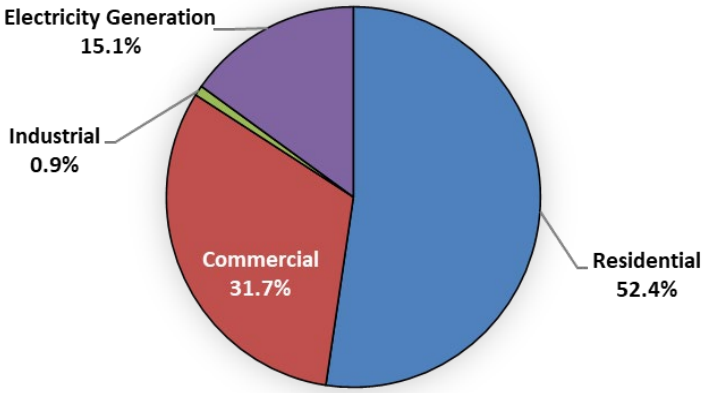


2018 New York State Energy at a Glance

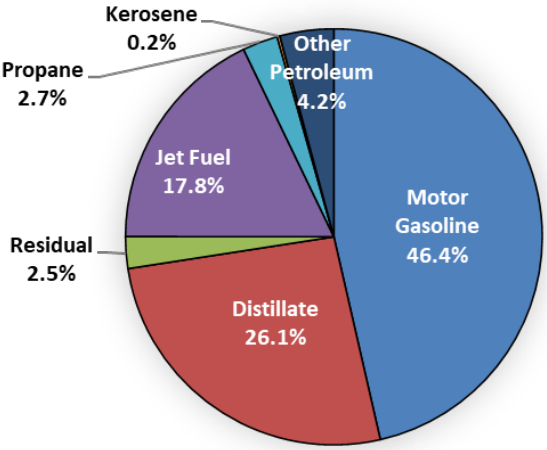
2018 NYS Transportation Sector



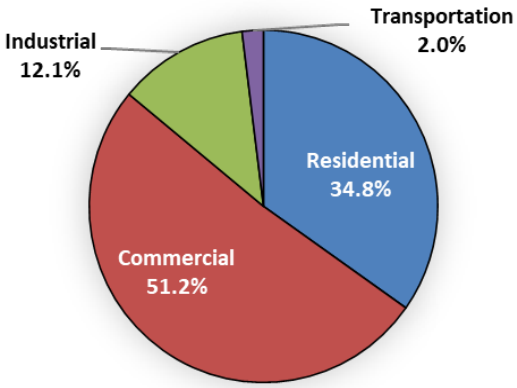
2018 NYS Solar by Sector



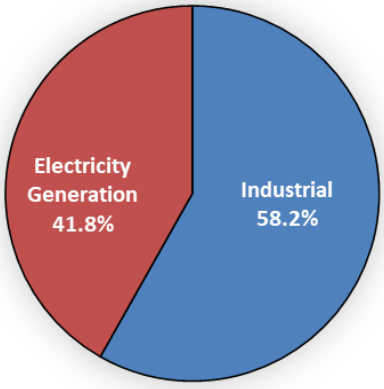
2018 NYS Petroleum Products



2018 NYS Electricity Sales



2018 NYS Coal 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 2018 New York State Energy Data

- New York State ranks seventh nationally in energy consumption.
- The State has the second 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 6.0% of the nation's population.
- Renewable resources accounted for 10.7% of the State's primary energy consumption compared to 11.2% for the U.S. in 2018.
- Coal consumption represents 0.4% of the State's energy use compared to 14.2% 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 28.6% of total energy demand, compared to 17.5% nationally.
    - Commercial net energy use accounts for 22.4% of total energy demand, compared to 13.9% nationally.
    - Industrial net energy use accounts for 8.8% of total energy demand, compared to 27.4% nationally.
    - Transportation net energy use accounts for 40.1% of total energy demand, compared to 41.2% nationally.

United States
Primary Consumption of Energy
by Fuel Type and Sector, 2018

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

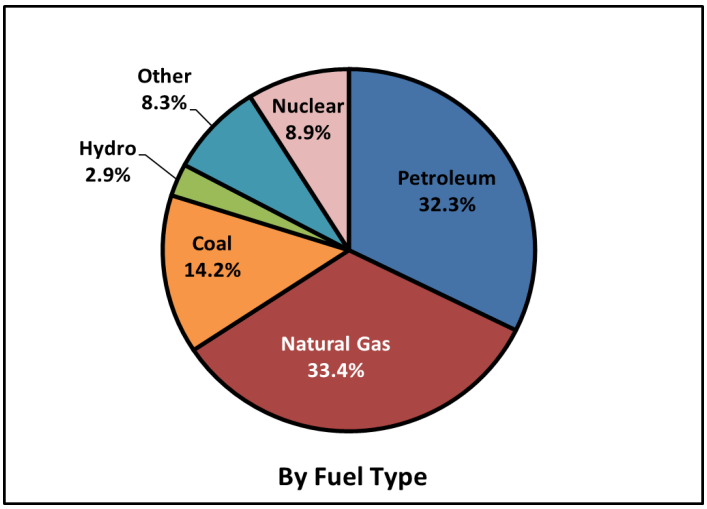


Figure 2-1b. United States Primary Consumption of Energy

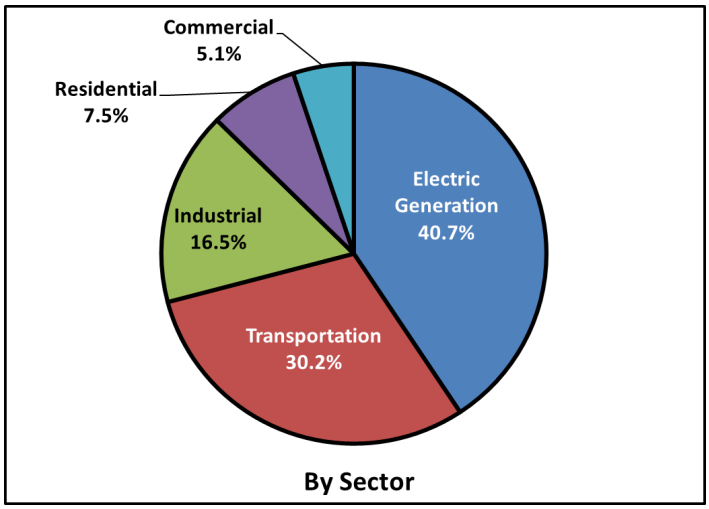


Table 2-1. (In Trillion Btu)

	Residential TBtu	Commercial TBtu	Industrial TBtu	Transportation[1] TBtu	Net Consumption TBtu	Electric Generation[2] TBtu	Primary Consumption[3] TBtu
Coal	0	19	1,178	0	1,197	12,053	13,250
Natural Gas	5,200	3,656	10,413	948	20,218	10,941	31,159
Petroleum Products:	1,021	869	2,120	25,834	29,844	260	30,104
Distillate	506	322	1,251	6,555	8,634	80	8,715
Residual	0	3	43	604	650	78	729
Kerosene	8	1	2	0	11	0	11
LPG	507	176	554	8	1,245	0	1,245
Gasoline	0	366	269	16,573	17,209	0	17,209
Jet Fuel	0	0	0	3,533	3,533	0	3,533
Other[4]	778	248	1,643	1,439	4,107	1,217	5,324
Electric Sales	5,013	4,715	3,417	26	13,171		
Net Consumption	12,012	9,506	18,772	28,247	68,537		
				Hydro Electricity		2,651	2,651
				Nuclear Electricity		8,337	8,337
				Wind Electricity		2,480	2,480
				Primary Consumption		37,939	93,305

1 Components of petroleum may not sum to petroleum total because ethanol values ("Other" category in transportation sector) are embedded in motor gasoline.

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, 2018

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

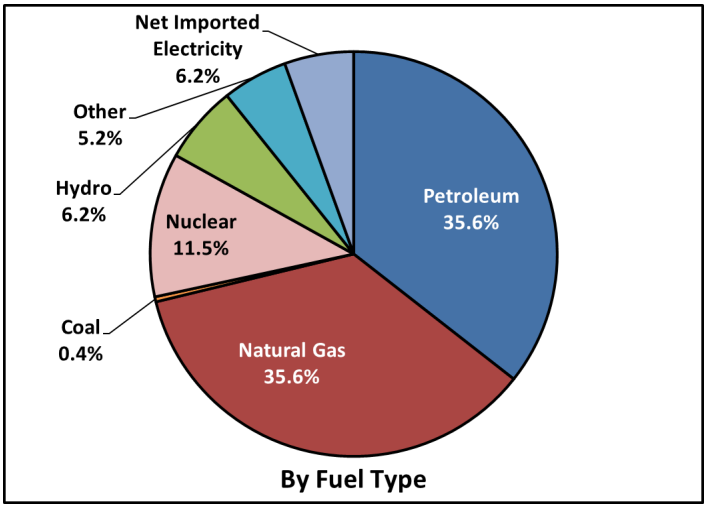


Figure 2-2b. New York State Primary Consumption of Energy

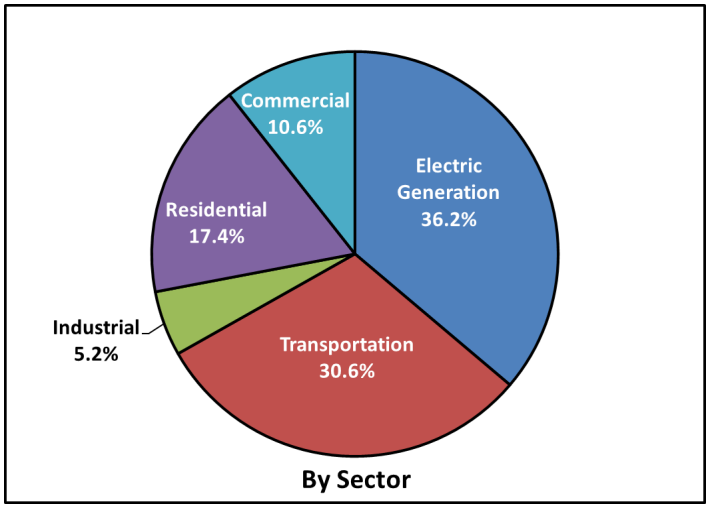


Table 2-2. (In Trillion Btu)

	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	9.7	0.0	9.7	7.0	16.7
Natural Gas	501.6	341.0	94.6	28.4	965.7	428.1	1,393.7
Petroleum Products[3]:	137.1	56.1	75.4	1,111.5	1,380.0	14.7	1,394.7
Distillate	107.7	46.7	11.2	194.4	360.0	4.5	364.5
Residual	0.0	1.0	2.6	20.7	24.3	10.2	34.4
Kerosene	2.1	0.2	0.7	0.0	3.1	0.0	3.1
LPG	27.3	8.1	2.7	0.2	38.2	0.0	38.2
Gasoline	0.0	0.0	0.0	696.2	696.2	0.0	696.2
Jet Fuel	0.0	0.0	0.0	248.8	248.8	0.0	248.8
Other Petroleum	0.0	0.0	58.2	0.0	58.2	0.0	58.2
Other[4]	44.0	16.6	24.3	58.0	142.9	24.7	167.6
Electric Sales	177.9	261.9	61.7	10.1	511.6		
Net Consumption	860.6	675.5	265.7	1,207.9	3,009.8		
					Hydro Electricity	240.8	240.8
					Nuclear Electricity	448.7	448.7
					Net Imported Electricity	215.9	215.9
					Wind Electricity	36.4	36.4
					Primary Consumption	1,416.3	3,914.5

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, 2004–2018

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
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
2018	279.9	276.1	12.9	10.30	10.7	7.88	6.9	4.96

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
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	235.7	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	12.54	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	10.84	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
2018	276.4	278.9	18.5	12.38	14.5	7.37	6.0	7.83

United States Estimated Sources of Petroleum Products, 2004–2018

Figure 2-4. United States Petroleum Net Imports

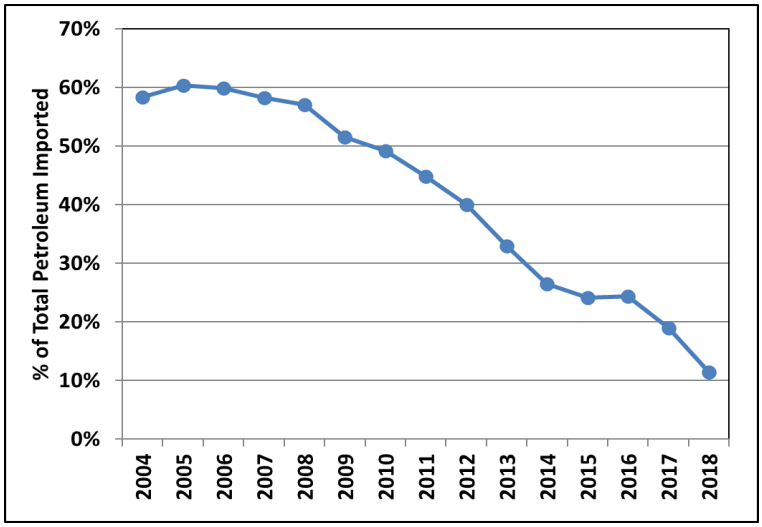


Table 2-4. United States Sources of Petroleum

Year	Total Domestic[1]	Total Foreign	OPEC[2]	Non-OPEC[3]
	%	%	%	%
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%
2018	88.6%	11.4%	14.1%	-2.7%

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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. Negative values indicate U.S. net exports were greater than net imports to Non-OPEC countries.

United States and New York State
Factors Influencing Energy Demand and Expenditures, 2004–2018

Table 2-5a. United States

Year	Population	Housing Units	Non-Manufacturing Employment[1]	Manufacturing Employment[1]	GDP[2]	Licensed Drivers	Vehicles Registered	Vehicle Miles Traveled
	thousands	thousands	thousands	thousands	B/2018$	millions	millions	billions
2004	292,805	122,825	117,472	14,315	$ 15,523	199	237	2,982
2005	295,517	124,711	119,824	14,227	$ 16,024	201	242	3,009
2006	298,380	126,500	122,298	14,155	$ 16,448	203	244	3,034
2007	301,231	128,132	124,120	13,879	$ 16,755	206	247	3,049
2008	304,094	129,313	123,835	13,406	$ 16,465	208	248	2,993
2009	306,772	129,970	119,466	11,847	$ 16,197	210	246	2,976
2010	308,746	131,705	118,834	11,528	$ 16,564	210	242	2,985
2011	311,557	132,316	120,206	11,726	$ 16,645	212	253	2,965
2012	313,831	132,452	122,248	11,927	$ 16,991	212	254	2,969
2013	315,994	132,808	124,361	12,020	$ 17,353	212	256	2,988
2014	318,301	133,963	126,773	12,185	$ 17,793	214	260	3,026
2015	320,635	134,794	129,507	12,336	$ 18,436	218	264	3,095
2016	322,941	135,703	131,998	12,354	$ 19,093	222	269	3,174
2017	324,986	137,384	134,172	12,439	$ 19,955	225	273	3,224
2018	326,688	138,516	136,220	12,688	$ 20,527	228	274	3,255

Table 2-5b. New York State

Year	Population	Housing Units	Non-Manufacturing Employment[1]	Manufacturing Employment[1]	GSP[3]	Licensed Drivers	Vehicles Registered	Vehicle Miles Traveled
	thousands	thousands	thousands	thousands	MM/2018$	thousands	thousands	billions
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	$ 1,643,314	12,185	10,857	123.70
2018	19,542	8,364	9,242	443	$ 1,705,010	12,194	11,482	123.21

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1 Includes nonfarm jobs only.

2 Gross domestic product in billions of 2018 dollars.

3 Gross State product in millions of 2018 dollars.

Energy Consumption and Expenditure Indicators, State Comparisons, 2018

Table 2-6.

States	Primary Energy Use	Ranking	Primary Energy Use per Capita	Ranking	Primary Energy Use per unit GSP	Ranking	Energy Expenditures per Capita	Ranking
	TBtu		MMBtu		Btu		Dollars	
Alabama	1,955	17	400	14	9,802	7	$4,491	15
Alaska	610	40	830	4	11,496	5	$8,060	3
Arizona	1,488	26	208	46	4,697	36	$3,189	48
Arkansas	1,120	31	372	17	9,554	8	$4,156	21
California	7,967	2	202	48	2,914	48	$3,522	38
Colorado	1,513	25	266	34	4,367	40	$3,238	47
Connecticut	753	36	211	45	3,031	47	$3,960	25
Delaware	290	48	301	28	4,571	37	$3,867	30
D.C.	175	50	249	38	1,419	51	$3,058	50
Florida	4,281	4	202	49	4,535	39	$2,941	51
Georgia	2,876	10	274	33	5,297	29	$3,397	42
Hawaii	293	47	206	47	3,559	46	$4,658	12
Idaho	553	42	316	24	7,543	18	$3,951	27
Illinois	4,012	5	315	25	5,200	30	$3,522	38
Indiana	2,838	11	424	11	8,492	13	$4,486	16
Iowa	1,616	24	513	5	9,360	9	$4,955	6
Kansas	1,135	30	390	16	7,160	20	$4,328	19
Kentucky	1,744	21	391	15	9,242	11	$4,420	17
Louisiana	4,403	3	945	2	18,589	1	$7,537	4
Maine	395	45	295	29	6,897	22	$4,617	13
Maryland	1,361	28	226	42	3,689	44	$3,295	44
Massachusetts	1,459	27	212	44	2,855	49	$3,902	29
Michigan	2,894	9	290	30	6,183	24	$3,605	36
Minnesota	1,914	18	341	18	5,647	27	$3,966	24
Mississippi	1,193	29	400	13	11,657	4	$4,829	9
Missouri	1,848	20	302	27	6,481	23	$3,853	31
Montana	435	43	410	12	9,249	10	$4,787	10
Nebraska	915	33	475	7	7,907	17	$4,785	11
Nevada	727	37	240	40	4,788	34	$3,418	41
New Hampshire	325	46	240	41	4,265	41	$4,313	20
New Jersey	2,241	15	252	36	4,050	42	$3,709	34
New Mexico	703	38	336	19	7,389	19	$3,954	26
New York	3,854	7	197	50	2,629	50	$3,111	49
North Carolina	2,616	12	252	37	5,179	31	$3,290	45
North Dakota	661	39	872	3	12,275	3	$8,097	2
Ohio	3,756	8	322	23	6,157	26	$3,792	32
Oklahoma	1,707	22	433	10	8,711	12	$4,331	18
Oregon	1,012	32	242	39	4,567	38	$3,388	43
Pennsylvania	3,962	6	310	26	5,549	28	$3,787	33
Rhode Island	197	49	187	51	3,685	45	$3,686	35
South Carolina	1,672	23	329	21	7,908	16	$4,003	22
South Dakota	397	44	452	9	8,400	14	$4,888	7
Tennessee	2,256	14	333	20	6,932	21	$4,001	23
Texas	14,259	1	498	6	8,222	15	$5,345	5
Utah	835	34	265	35	5,090	32	$3,261	46
Vermont	139	51	223	43	4,700	35	$4,555	14
Virginia	2,401	13	283	31	4,988	33	$3,601	37
Washington	2,079	16	276	32	3,920	43	$3,498	40
West Virgina	833	35	462	8	11,414	6	$4,859	8
Wisconsin	1,886	19	325	22	6,173	25	$3,909	28
Wyoming	559	41	967	1	14,376	2	$8,651	1
United States	101,084		309		5,374		$3,891	
NYS as a % of U.S.	**3.8%**		**64%**		**49%**		**80%**	

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, 2018

Table 2-7.

States	Residential Primary Energy Use[1] per Housing Unit	Ranking	Residential Energy Expenditures per Housing Unit	Ranking	Commercial Primary Energy Use[1] per Non-Manufacturing Employee	Ranking	Commercial Energy Expenditures Per Non-Manufacturing Employee	Ranking
	MMBtu		Dollars		MMBtu		Dollars	
Alabama	157	32	$2,075	14	148	22	$1,795	8
Alaska	155	34	$2,563	6	182	4	$2,780	1
Arizona	134	46	$1,693	41	131	35	$1,413	31
Arkansas	170	21	$1,758	38	167	9	$1,384	34
California	101	50	$1,601	44	95	50	$1,462	26
Colorado	149	39	$1,515	49	114	47	$1,076	49
Connecticut	163	26	$3,242	1	126	36	$1,926	2
Delaware	157	33	$2,111	12	144	29	$1,500	21
D.C.	131	47	$1,571	46	135	33	$1,490	23
Florida	125	49	$1,585	45	118	44	$1,254	41
Georgia	171	20	$2,079	13	133	34	$1,345	36
Hawaii	63	51	$1,701	40	66	51	$1,733	13
Idaho	176	15	$1,675	42	136	32	$1,104	48
Illinois	184	10	$1,868	33	149	21	$1,239	43
Indiana	192	5	$2,020	18	144	27	$1,347	35
Iowa	175	17	$2,000	19	146	24	$1,334	38
Kansas	183	12	$2,143	11	177	5	$1,746	12
Kentucky	185	7	$1,837	35	159	15	$1,469	24
Louisiana	161	29	$1,720	39	145	25	$1,429	30
Maine	143	41	$2,497	7	122	39	$1,786	9
Maryland	169	23	$2,167	10	155	17	$1,593	18
Massachusetts	149	38	$2,844	4	121	41	$1,875	4
Michigan	171	19	$1,993	20	163	13	$1,583	19
Minnesota	176	16	$1,982	23	143	30	$1,336	37
Mississippi	151	37	$1,927	26	156	16	$1,818	6
Missouri	198	3	$2,066	17	164	12	$1,450	27
Montana	195	4	$1,873	32	187	3	$1,656	16
Nebraska	199	2	$1,878	31	160	14	$1,254	42
Nevada	135	45	$1,621	43	115	45	$1,008	51
New Hampshire	168	24	$3,014	2	120	43	$1,774	11
New Jersey	162	28	$2,073	16	149	20	$1,706	15
New Mexico	127	48	$1,391	51	150	19	$1,396	33
New York	140	42	$2,272	9	125	38	$1,611	17
North Carolina	155	35	$1,801	37	146	23	$1,311	40
North Dakota	200	1	$1,944	25	226	1	$1,886	3
Ohio	177	13	$1,987	21	145	26	$1,326	39
Oklahoma	176	14	$1,879	30	166	11	$1,436	28
Oregon	138	43	$1,547	47	114	46	$1,145	46
Pennsylvania	169	22	$2,311	8	120	42	$1,155	45
Rhode Island	137	44	$2,839	5	104	48	$1,869	5
South Carolina	163	27	$1,965	24	144	28	$1,431	29
South Dakota	185	8	$1,985	22	166	10	$1,491	22
Tennessee	188	6	$1,888	28	173	6	$1,716	14
Texas	160	30	$1,863	34	142	31	$1,203	44
Utah	160	31	$1,540	48	125	37	$1,035	50
Vermont	144	40	$2,851	3	96	49	$1,775	10
Virginia	172	18	$2,074	15	169	8	$1,463	25
Washington	152	36	$1,508	50	121	40	$1,118	47
West Virgina	183	11	$1,918	27	169	7	$1,513	20
Wisconsin	164	25	$1,810	36	151	18	$1,405	32
Wyoming	184	9	$1,888	29	214	2	$1,804	7
United States	155		$1,927		135		$1,418	
NYS as % of U.S.	**91%**		**118%**		**92%**		**114%**	

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

[1] Energy use figures include electricity and the associated system losses.

Energy Consumption and Expenditure Indicators
State Comparisons for the Industrial and Transportation Sectors, 2018

Table 2-8.

States	Industrial Primary Energy Use[1] per unit of GSP	Ranking	Industrial Energy Expenditures per unit of GSP	Ranking	Transportation Primary Use[1] per Vehicle Registration	Ranking	Transportation Expenditures per Vehicle Registration	Ranking
	Btu		Dollars		MMBtu		Dollars	
Alabama	4,219	7	$0.0221	9	93	29	$1,817	40
Alaska	6,302	4	$0.0125	23	210	1	$4,443	1
Arizona	717	39	$0.0068	40	86	36	$2,023	27
Arkansas	3,509	11	$0.0224	8	103	19	$2,105	22
California	676	41	$0.0055	43	102	20	$2,508	10
Colorado	1,225	32	$0.0081	35	81	41	$1,716	45
Connecticut	314	47	$0.0038	48	81	42	$1,846	39
Delaware	1,354	30	$0.0076	38	73	48	$1,660	47
D.C.	46	51	$0.0006	51	58	51	$1,131	51
Florida	518	44	$0.0044	45	92	30	$1,863	37
Georgia	1,419	29	$0.0086	33	96	25	$1,934	34
Hawaii	684	40	$0.0129	22	126	9	$2,773	6
Idaho	2,330	20	$0.0166	14	86	37	$1,983	30
Illinois	1,536	28	$0.0086	32	96	26	$2,008	28
Indiana	3,872	10	$0.0234	7	99	23	$2,076	24
Iowa	5,025	5	$0.0267	6	82	40	$1,723	43
Kansas	2,491	18	$0.0136	18	106	17	$2,057	25
Kentucky	3,236	15	$0.0181	11	114	12	$2,328	14
Louisiana	12,947	1	$0.0746	1	188	3	$2,888	5
Maine	1,881	25	$0.0131	21	98	24	$2,249	17
Maryland	281	49	$0.0027	49	103	18	$2,220	18
Massachusetts	296	48	$0.0040	47	91	33	$1,997	29
Michigan	1,542	27	$0.0104	29	91	32	$1,899	36
Minnesota	1,890	24	$0.0114	25	86	38	$1,848	38
Mississippi	4,017	9	$0.0214	10	205	2	$3,772	2
Missouri	1,084	36	$0.0088	31	101	21	$2,092	23
Montana	2,801	16	$0.0136	17	64	50	$1,470	50
Nebraska	3,345	14	$0.0168	13	108	16	$2,307	15
Nevada	1,137	34	$0.0103	30	91	31	$2,142	21
New Hampshire	553	43	$0.0068	39	76	46	$1,722	44
New Jersey	478	45	$0.0043	46	133	7	$2,706	8
New Mexico	2,434	19	$0.0111	26	125	10	$2,614	9
New York	268	50	$0.0023	50	99	22	$2,049	26
North Carolina	1,121	35	$0.0085	34	90	34	$1,971	31
North Dakota	6,572	3	$0.0359	3	154	5	$3,002	4
Ohio	1,977	22	$0.0132	20	84	39	$1,777	42
Oklahoma	3,359	12	$0.0139	16	131	8	$2,390	12
Oregon	1,153	33	$0.0080	36	80	44	$1,945	33
Pennsylvania	1,965	23	$0.0120	24	87	35	$1,904	35
Rhode Island	429	46	$0.0064	41	71	49	$1,568	49
South Carolina	2,534	17	$0.0154	15	108	15	$2,203	19
South Dakota	3,347	13	$0.0174	12	79	45	$1,652	48
Tennessee	1,776	26	$0.0107	27	112	14	$2,305	16
Texas	4,199	8	$0.0297	4	160	4	$3,011	3
Utah	1,327	31	$0.0078	37	113	13	$2,471	11
Vermont	608	42	$0.0105	28	73	47	$1,715	46
Virginia	910	38	$0.0060	42	94	28	$1,954	32
Washington	1,023	37	$0.0049	44	95	27	$2,163	20
West Virgina	4,958	6	$0.0282	5	114	11	$2,343	13
Wisconsin	1,995	21	$0.0134	19	80	43	$1,793	41
Wyoming	8,501	2	$0.0427	2	140	6	$2,766	7
United States	1,756		$0.0113		104		$2,186	
NYS as % of U.S.	**15%**		**20%**		**95%**		**94%**	

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

[1] Energy use figures include electricity and the associated system losses.

United States and New York State
Selected Comparisons, 2018

Figure 2-9a. Primary Consumption by Fuel Type, 2018

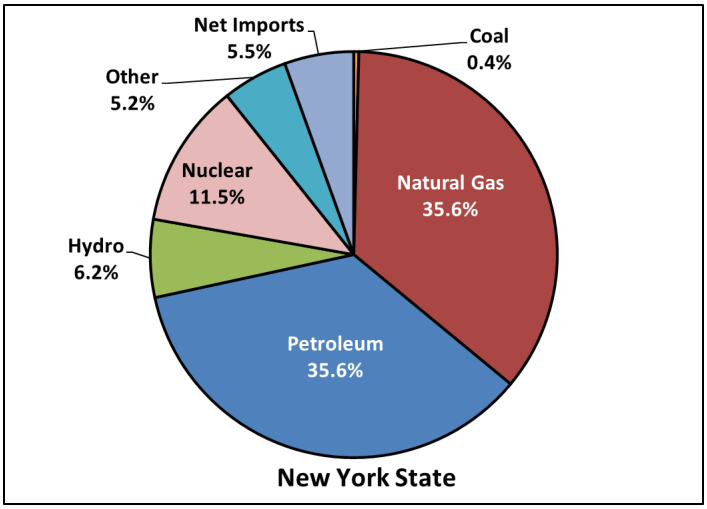


Figure 2-9b. Primary Consumption by Fuel Type, 2018

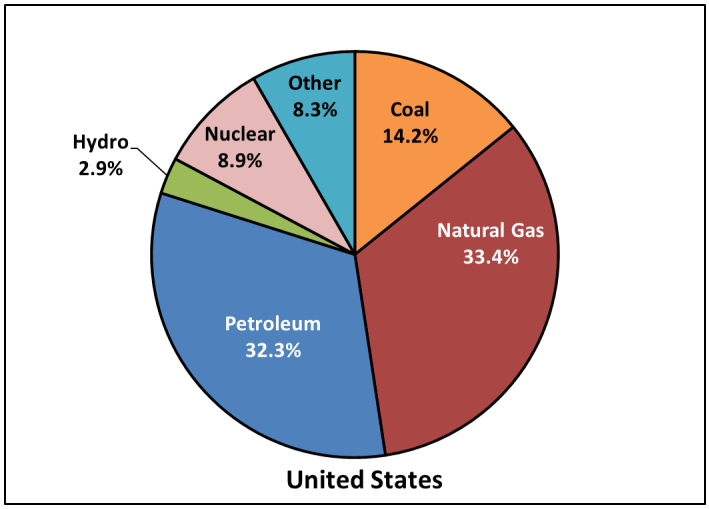


Figure 2-9c. Primary Consumption by Sector, 2018

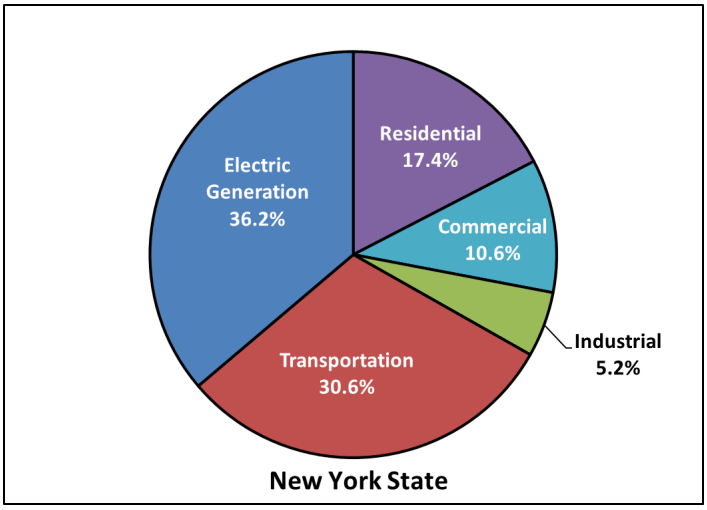
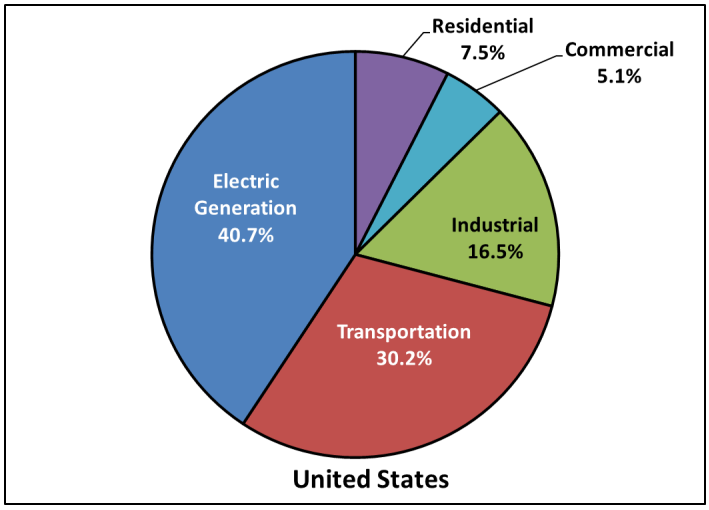


Figure 2-9d. Primary Consumption by Sector, 2018



United States and New York State
Selected Comparisons, 2018

Figure 2-10a. Electricity Generation by Fuel Type, 2018

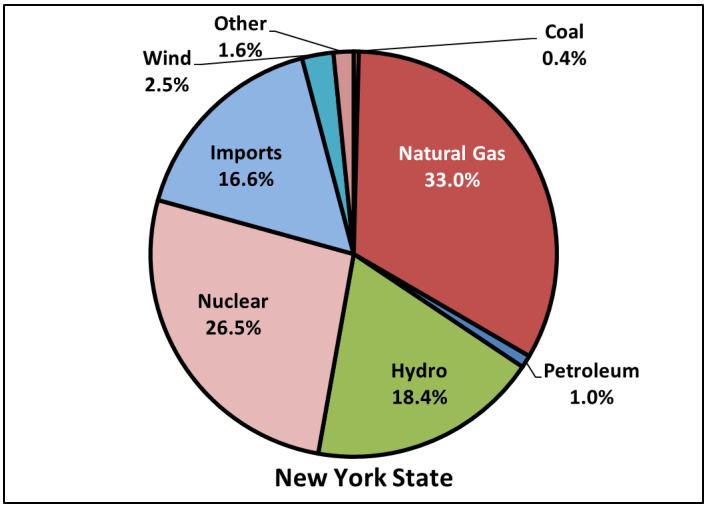


Figure 2-10b. Electricity Generation by Fuel Type, 2018

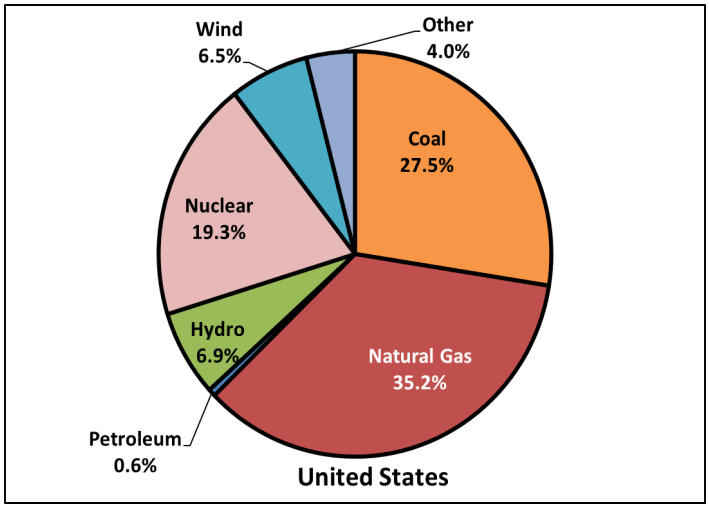


Figure 2-10c. Primary Consumption of Petroleum Products, 2018[1,2]

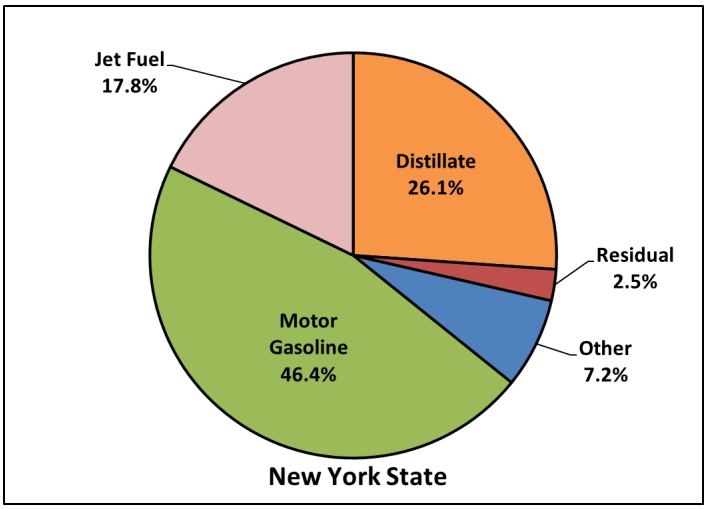
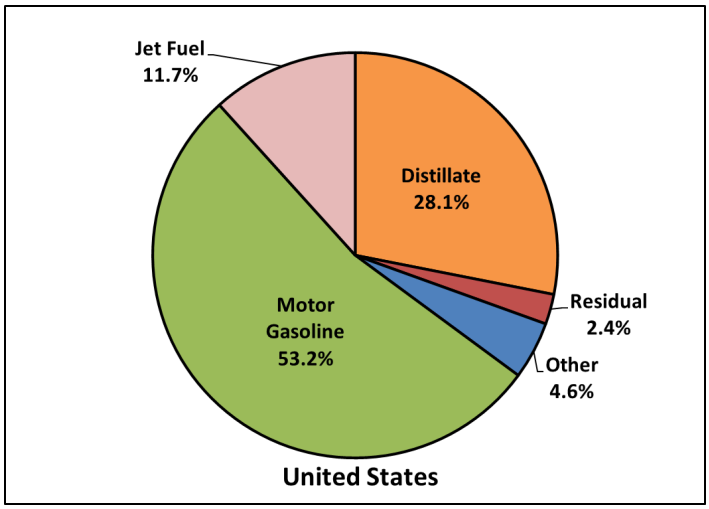


Figure 2-10d. Primary Consumption of Petroleum Products, 2018[1,2]



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, 2018

Figure 2-11a. Petroleum Consumption by Sector, 2018[1]

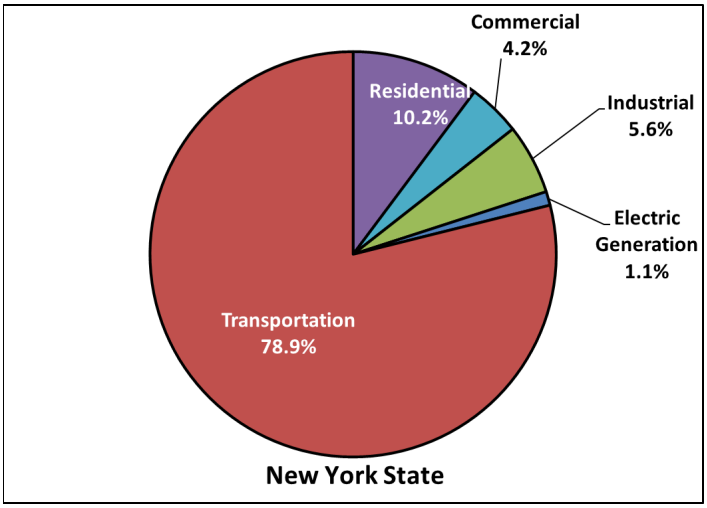


Figure 2-11b. Petroleum Consumption by Sector, 2018[1]

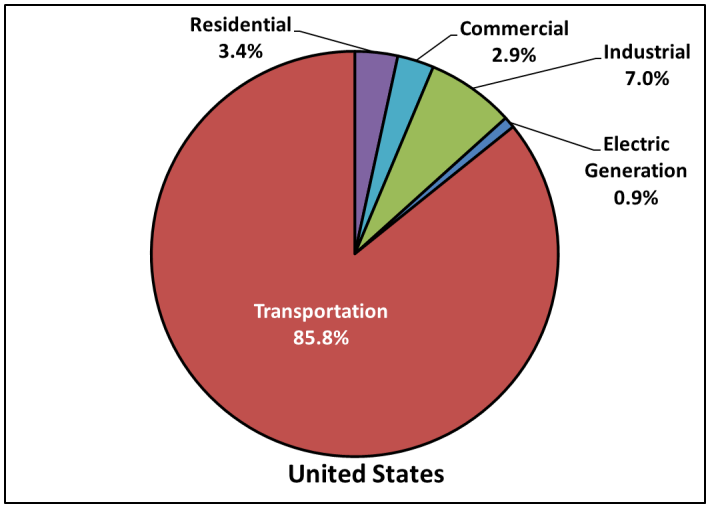


Figure 2-11c. Natural Gas Consumption by Sector, 2018

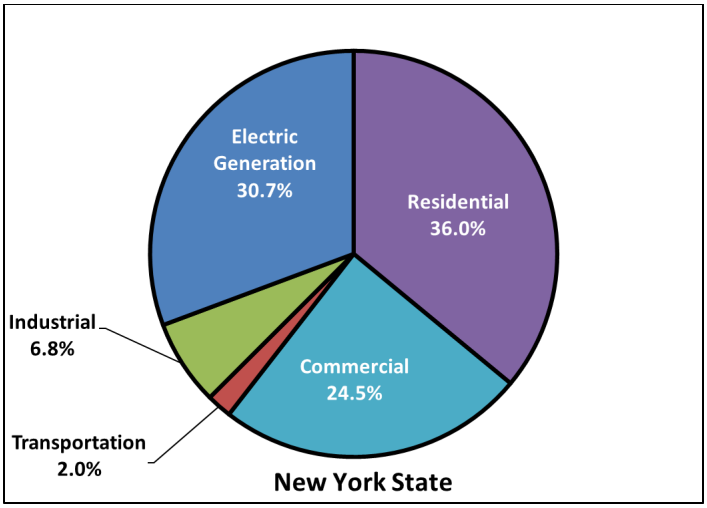
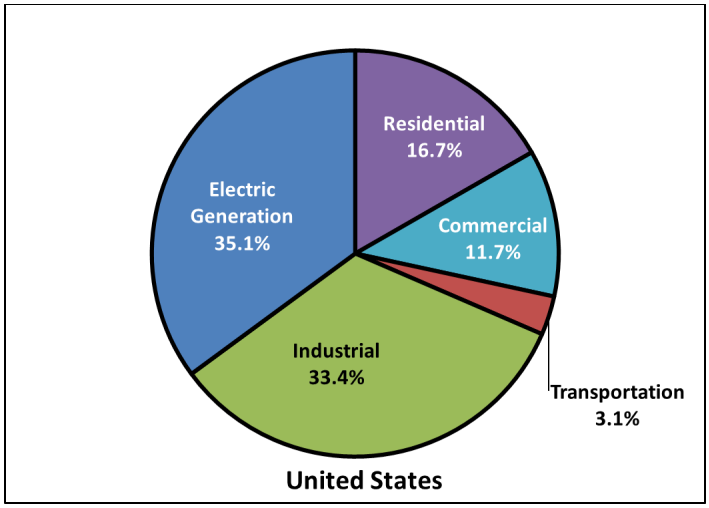


Figure 2-11d. Natural Gas Consumption by Sector, 2018



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

United States and New York State
Selected Comparisons, 2018

Figure 2-12a. Coal Consumption by Sector, 2018

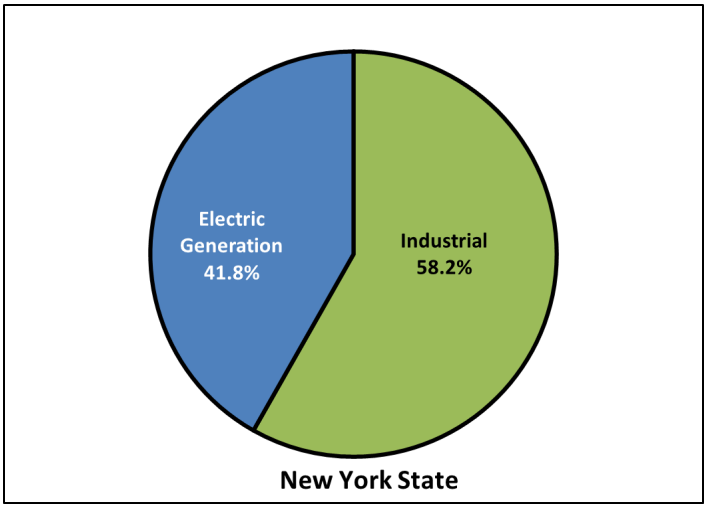


Figure 2-12b. Coal Consumption by Sector, 2018

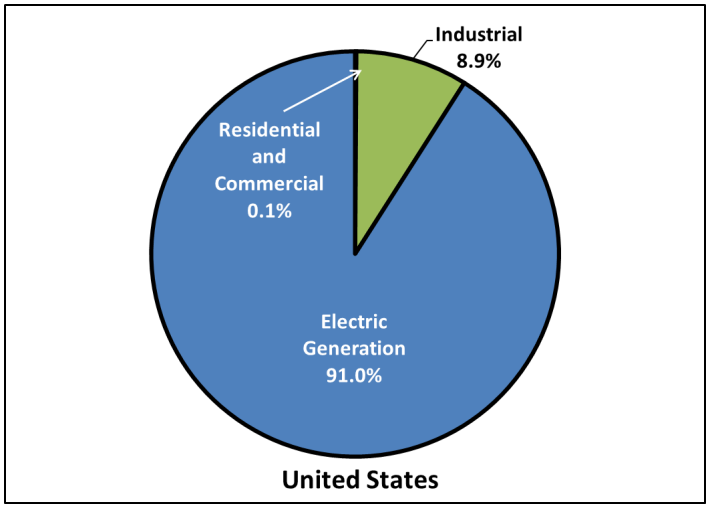


Figure 2-12c. Electricity Sales by Sector, 2018

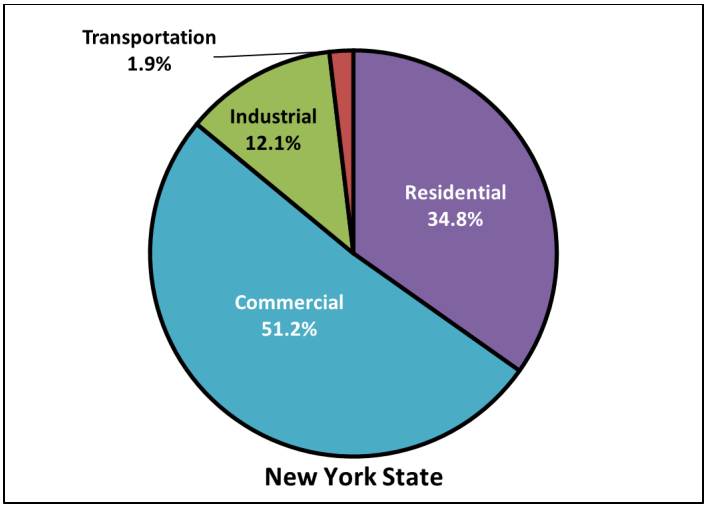
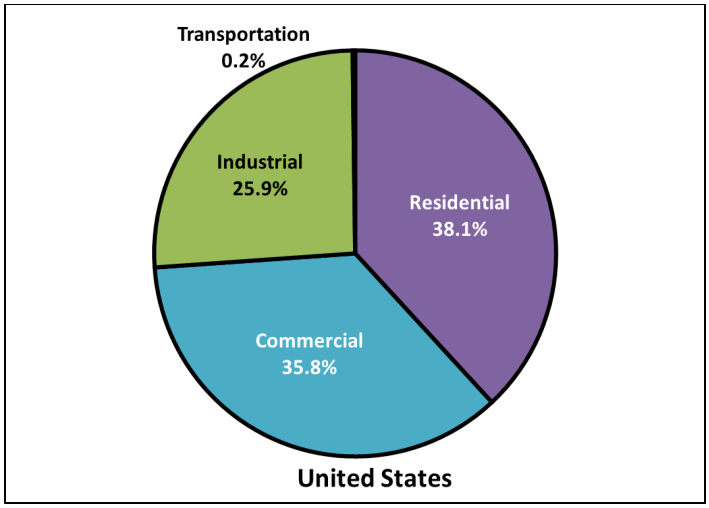


Figure 2-12d. Electricity Sales by Sector, 2018



United States and New York State
Selected Energy Indicators, 2004–2018

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

Year	NYS	U.S.
	thousand Btu	thousand Btu
2004	3.49	6.45
2005	3.39	6.25
2006	3.15	6.05
2007	3.22	6.03
2008	3.34	6.00
2009	3.00	5.81
2010	2.92	5.88
2011	2.92	5.81
2012	2.68	5.55
2013	2.73	5.59
2014	2.69	5.52
2015	2.58	5.28
2016	2.41	5.10
2017	2.27	4.89
2018	2.26	4.92

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

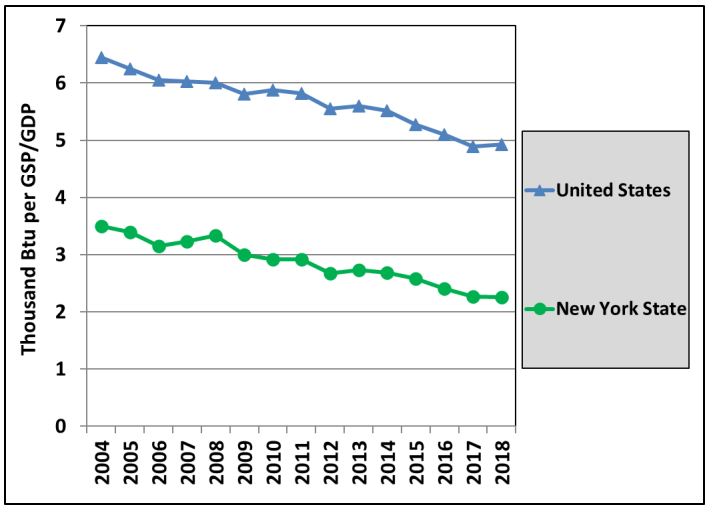
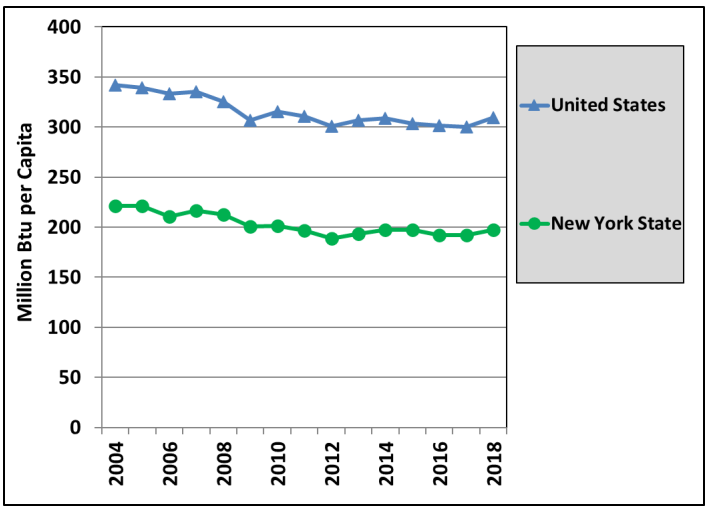


Table 2-13b. Primary Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2004	221.13	341.86
2005	220.90	339.01
2006	210.35	333.29
2007	216.33	335.26
2008	212.89	325.10
2009	200.36	306.72
2010	201.37	315.50
2011	196.99	310.58
2012	188.88	300.60
2013	193.53	307.10
2014	197.37	308.61
2015	197.10	303.31
2016	191.73	301.34
2017	192.28	300.39
2018	197.22	309.42

Figure 2-13b. Primary Consumption per Capita

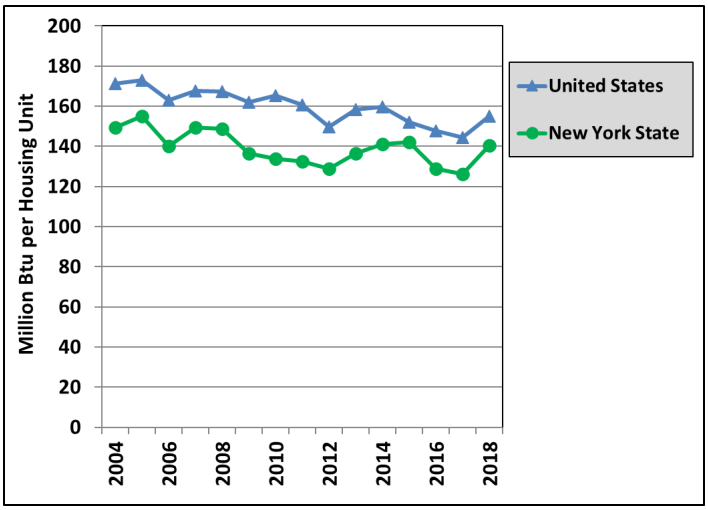


United States and New York State
Selected Energy Indicators, 2004–2018

Table 2-14a.
Residential Consumption per Housing Unit

Year	NYS	U.S.
	MMBtu	MMBtu
2004	149.40	171.32
2005	154.96	172.96
2006	139.98	163.03
2007	149.48	167.71
2008	148.64	167.30
2009	136.43	161.96
2010	133.73	165.22
2011	132.49	160.71
2012	128.95	149.61
2013	136.52	158.39
2014	140.98	159.76
2015	141.99	151.98
2016	128.82	147.75
2017	126.29	144.59
2018	140.38	155.03

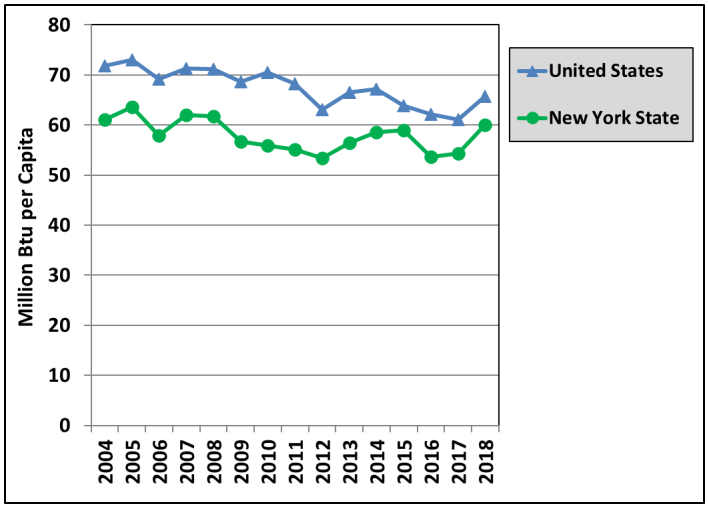
Figure 2-14a. Residential Consumption per Housing Unit



Tablet 2-14b.
Residential Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2004	61.06	71.86
2005	63.60	72.99
2006	57.94	69.12
2007	62.04	71.34
2008	61.72	71.14
2009	56.66	68.62
2010	55.95	70.48
2011	55.11	68.25
2012	53.44	63.14
2013	56.39	66.57
2014	58.57	67.24
2015	59.01	63.89
2016	53.71	62.09
2017	54.27	61.12
2018	60.08	65.73

Figure 2-14b. Residential Consumption per Capita



United States and New York State
Selected Energy Indicators, 2004–2018

Table 2-15a. Commercial Consumption per Nonmanufacturing Employee

Year	NYS	U.S.
	MMBtu	MMBtu
2004	172.67	150.23
2005	161.76	148.72
2006	151.62	144.49
2007	156.42	146.71
2008	152.77	148.19
2009	152.14	149.44
2010	146.44	151.61
2011	150.07	149.21
2012	140.28	142.04
2013	141.24	143.79
2014	134.73	143.55
2015	131.74	139.83
2016	123.71	136.24
2017	120.24	133.14
2018	124.68	135.18

Figure 2-15a. Commercial Consumption per Nonmanufacturing Employee

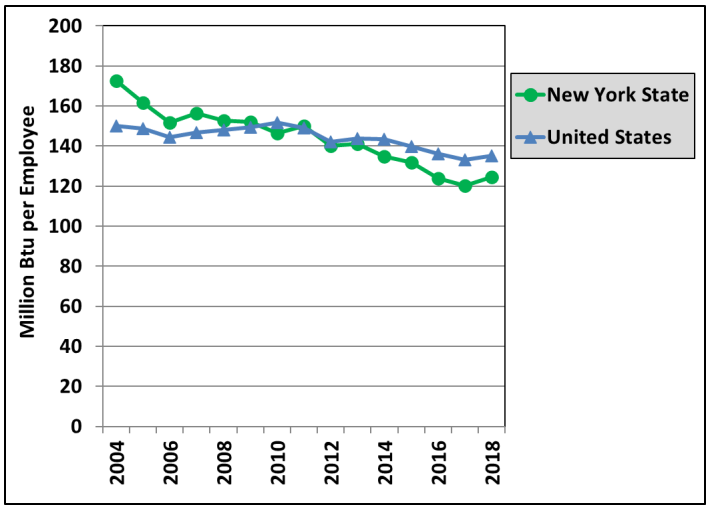
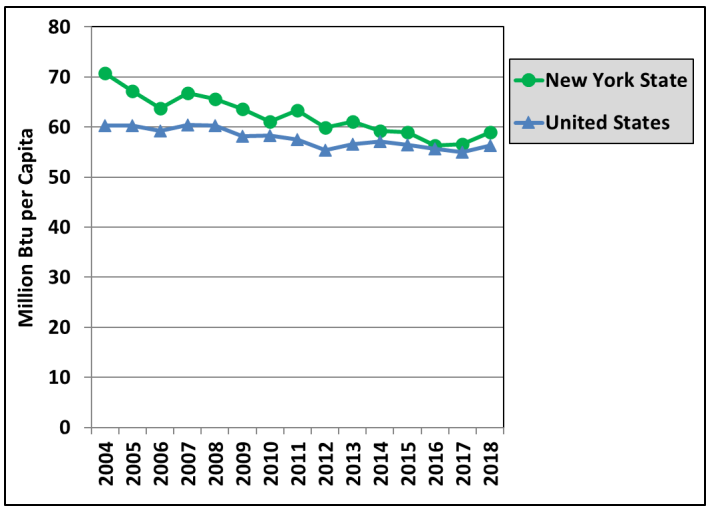


Table 2-15b. Commercial Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2004	70.75	60.27
2005	67.16	60.30
2006	63.79	59.22
2007	66.78	60.45
2008	65.57	60.35
2009	63.55	58.20
2010	61.12	58.35
2011	63.30	57.57
2012	59.83	55.33
2013	61.03	56.59
2014	59.23	57.17
2015	58.96	56.48
2016	56.29	55.69
2017	56.56	54.97
2018	58.96	56.37

Figure 2-15b. Commercial Consumption per Capita



United States and New York State Selected Energy Indicators, 2004–2018

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

Year	NYS	U.S.
	Btu	Btu
2004	4,403	10,554
2005	4,552	9,803
2006	3,955	9,433
2007	3,762	9,283
2008	3,712	9,423
2009	3,027	9,550
2010	3,558	10,010
2011	3,448	9,873
2012	3,272	9,792
2013	3,176	9,582
2014	3,047	9,461
2015	2,907	9,487
2016	3,078	9,521
2017	2,922	9,011
2018	3,114	8,904

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

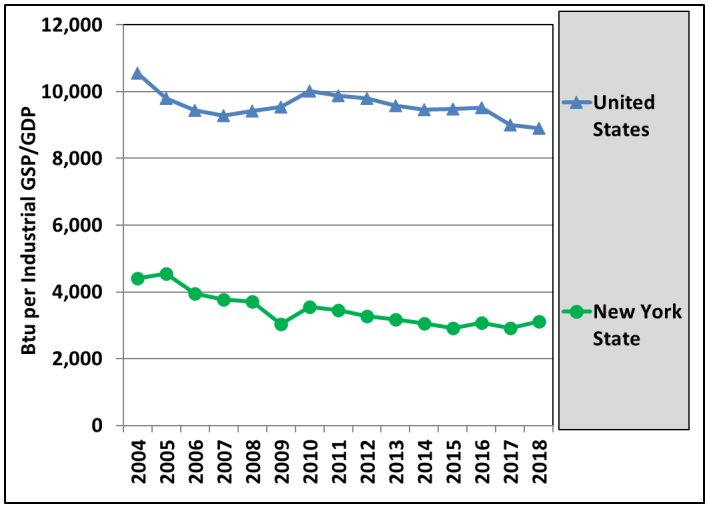
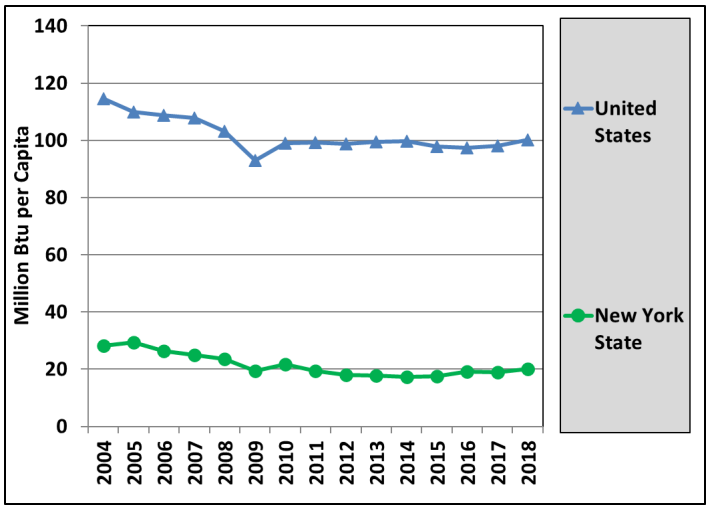


Table 2-16b. Industrial Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2004	28.30	114.61
2005	29.42	110.02
2006	26.29	108.78
2007	25.05	107.77
2008	23.60	103.28
2009	19.34	93.02
2010	21.79	99.10
2011	19.28	99.28
2012	17.96	98.79
2013	17.69	99.60
2014	17.39	99.66
2015	17.63	97.92
2016	19.10	97.39
2017	18.93	98.08
2018	20.10	100.22

Figure 2-16b. Industrial Consumption per Capita



United States and New York State
Selected Energy Indicators, 2004–2018

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

Year	NYS	U.S.
	Btu	Btu
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
2018	6,987	7,105

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

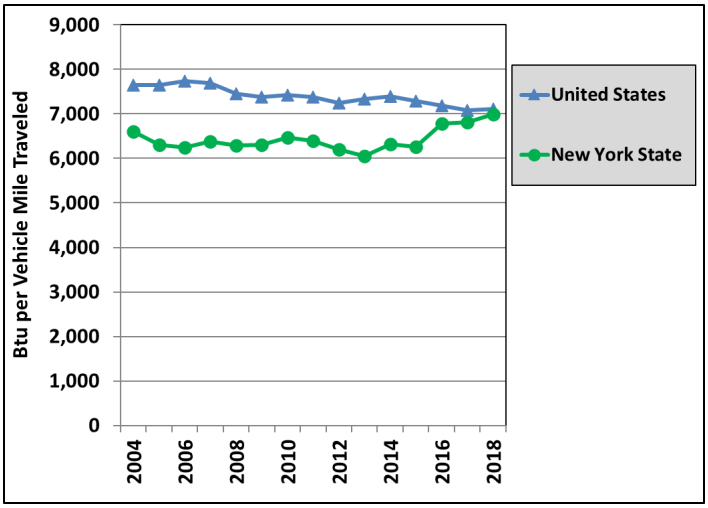
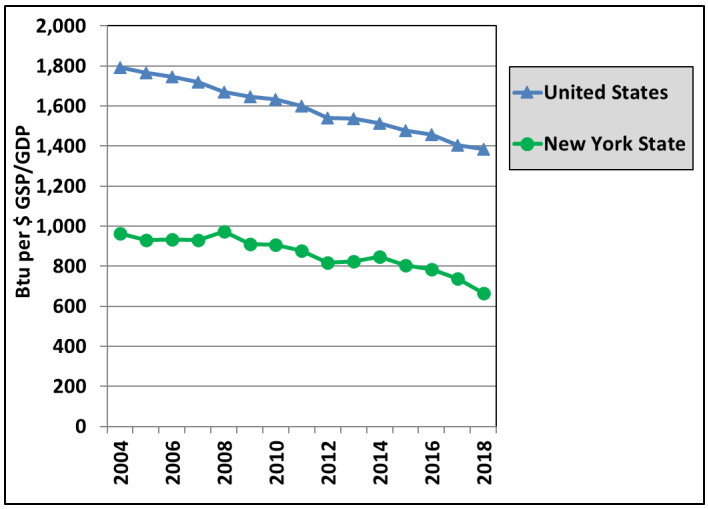


Table 2-17b. Transportation Consumption per Dollar of Gross State/Domestic Product

Year	NYS	U.S.
	Btu	Btu
2004	964	1,794
2005	931	1,765
2006	934	1,745
2007	931	1,721
2008	972	1,668
2009	910	1,646
2010	907	1,632
2011	878	1,600
2012	817	1,539
2013	823	1,536
2014	847	1,512
2015	806	1,479
2016	786	1,457
2017	737	1,404
2018	666	1,386

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 2004 through 2018. 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.

The 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 I. 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 2018 New York State Energy Consumption Data

- Total primary energy consumption was 3,915 TBtu, a 5.1% increase from 2017.
- Primary consumption of petroleum (1,395 TBtu) exceeded natural gas (1,394 TBtu) as the largest energy source for NYS energy consumption, representing 35.6% of total primary energy consumption.
- Cumulative heating degree-days were 6.8% higher in 2018 compared to 2017. Cumulative cooling degree-days were 35.0% higher in 2018 compared to 2017.
- Primary consumption of energy from solar, electricity imports, natural gas, bioenergy, petroleum, and nuclear increased 27.1%, 9.3%, 9.1%, 4.0%, 3.4%, and 1.7%, respectively in 2018, while use of coal, wind, and hydro decreased 14.5%, 4.5%, and 2.3%, respectively.
- Total consumption of petroleum products was 1,395 TBtu, or 256 million barrels, representing 35.6% of total primary energy consumption.
- In 2017, statewide distillate oil use increased by 12.5% from 2017 levels. Statewide motor gasoline use increased 1.0% and residual fuel use increased by 5.2% from 2017 to 2018. Total statewide petroleum fuels use increased by 3.4% from 2017 to 2018.

- Sales of natural gas totaled 1,351 billion cubic feet in 2018, which was 9.1% above the 1,237 billion cubic feet sold in 2017.
- Sales of natural gas by sector were 36.0% for the residential sector, 24.5% for the commercial sector, 6.8% for the industrial sector, 2.0% for the transportation sector, and 30.7% for the electric generation sector.
- Natural gas and nuclear power accounted for 33.3% and 26.7% of the State's electricity requirements in 2018, respectively.
- Energy used for electricity generation accounted for 36.2% of primary energy use.
- Sales of electricity to ultimate customers increased by 3.4% between 2017 and 2018.
- Total residential net energy consumption was 861 TBtu, which was 13.4% higher than 2017 levels. The residential sector accounted for 28.6% of total net energy consumption.
- Total net energy consumption in the commercial sector was 676 TBtu, or 22.4% of total net energy consumption. The sector's total energy use increased 4.3% above the 2017 level.
- Industrial net energy consumption was 266 TBtu, or 8.8% of total net consumption. The sector's total energy use increased 1.5% from the 2017 level.
- Transportation energy consumption was 1,208 TBtu, up 1.1% from 2017. The sector accounted for 40.1% of total net energy consumption in 2018.

New York State Primary Consumption of Energy by Fuel Type 2004–2018

Figure 3-1

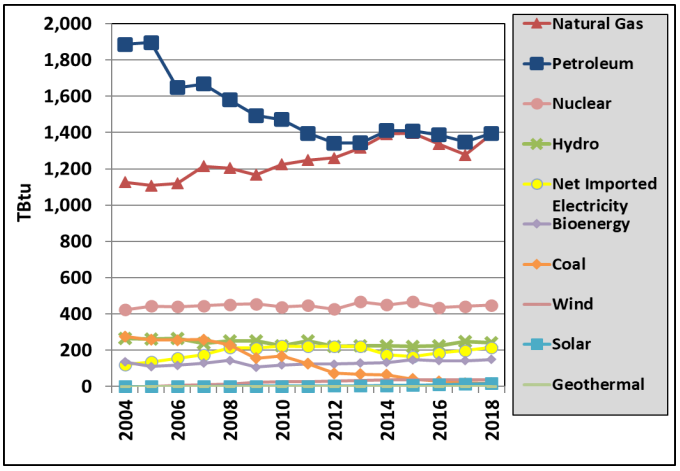


Table 3-1a. (In Physical Units)

Year	Coal	Natural Gas	Petroleum Products[1]	Hydro	Nuclear	Net Imported Electricity	Solar	Wind
	Mtons	Bcf	Mbbl	GWh	GWh	GWh	GWh	GWh
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	244,536	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	257,550	26,823	43,041	20,789	401	3,986
2015	1,761	1,353	257,348	26,704	44,620	19,809	643	3,984
2016	1,175	1,296	254,124	27,150	41,638	22,358	931	3,943
2017	738	1,237	247,535	30,350	42,175	24,319	1,233	4,219
2018	635	1,351	256,167	29,856	43,003	26,766	1,550	3,985

Table 3-1b. (In Trillion Btu)

Year	Coal	Natural Gas	Petroleum Products[1]	Hydro	Nuclear	Net Imported Electricity	Solar	Wind	Geothermal	Bioenergy[2]	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	Tbtu	Tbtu	Tbtu	Tbtu	Tbtu
2004	276.5	1,126.6	1,885.8	265.0	423.8	119.9	0.7	1.2	0.5	136.4	4,236.4
2005	256.9	1,107.2	1,895.8	261.5	442.9	136.3	0.8	1.0	0.6	110.2	4,213.4
2006	256.3	1,120.2	1,648.3	265.9	440.6	156.7	1.0	6.5	0.7	117.6	4,013.8
2007	258.5	1,214.4	1,667.2	236.9	445.3	175.2	1.2	8.2	0.7	128.6	4,136.1
2008	229.0	1,205.1	1,579.5	251.2	451.6	213.3	1.3	12.3	0.8	143.9	4,088.1
2009	156.0	1,166.6	1,492.8	252.9	454.8	211.4	1.5	22.1	1.0	107.6	3,866.7
2010	167.1	1,224.5	1,472.0	225.4	437.6	223.7	1.7	25.3	1.1	118.5	3,896.9
2011	125.2	1,247.8	1,396.2	250.7	446.8	220.0	2.1	27.5	1.3	124.9	3,842.4
2012	72.9	1,261.0	1,342.1	220.1	427.3	222.0	3.2	28.5	1.2	124.3	3,702.5
2013	68.7	1,315.3	1,343.4	224.7	467.7	220.5	3.9	33.8	1.2	128.3	3,807.5
2014	64.7	1,392.4	1,410.4	224.3	450.1	173.8	5.3	37.7	1.2	132.0	3,891.9
2015	41.2	1,396.7	1,408.9	221.2	466.5	164.1	7.7	37.1	1.2	147.6	3,892.2
2016	29.7	1,336.5	1,387.2	223.5	434.8	184.1	10.7	36.4	1.2	141.7	3,785.8
2017	19.6	1,276.9	1,348.2	246.5	441.0	197.5	13.9	38.1	1.2	142.9	3,726.0
2018	16.7	1,393.7	1,394.7	240.8	448.7	215.9	17.7	36.4	1.2	148.7	3,914.5

[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.

New York State Primary Consumption of Refined Petroleum Products, 2004–2018

Figure 3-2

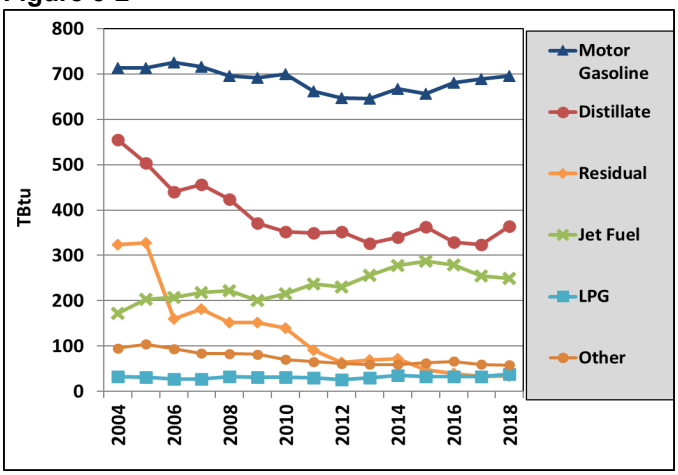


Table 3-2a. (In Thousand Barrels)

Year	Distillate	Residual	Kerosene	LPG	Motor Gasoline	Jet Fuel[1]	Other	Total[2]
	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl
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	6,870	127,902	40,740	9,803	244,536
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	9,327	257,550
2015	62,971	7,582	613	8,608	129,909	50,625	9,914	257,348
2016	57,242	6,358	835	8,517	134,799	49,291	10,515	254,124
2017	56,280	5,202	491	8,459	136,414	45,000	9,479	247,535
2018	63,298	5,474	541	9,953	137,758	43,898	9,250	256,167

Table 3-2b. (In Trillion Btu)

Year	Distillate	Residual	Kerosene	LPG	Motor Gasoline	Jet Fuel[1]	Other	Total[2]
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
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	691.8	200.5	81.6	1,492.8
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	59.1	1,410.4
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	66.1	1,387.2
2017	324.0	32.7	2.8	32.5	689.3	255.1	59.8	1,348.2
2018	364.5	34.4	3.1	38.2	696.2	248.8	58.2	1,394.7

[1] Kerosene-type jet fuel and aviation gasoline.

[2] Includes petroleum coke used for electric generation. Ethanol values are embedded in motor gasoline but are excluded from the petroleum product's total.

New York State Primary Consumption of Energy by Sector[1] 2004–2018

Figure 3-3a

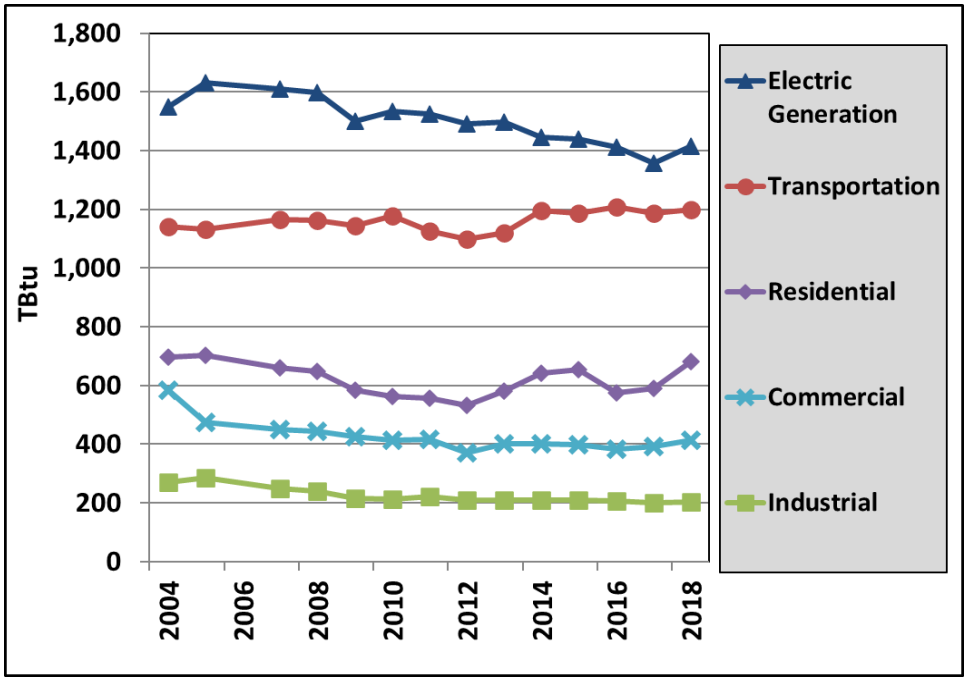


Table 3-3a. (In Trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Electric Generation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2004	695.7	584.9	269.2	1,141.5	1,548.1	4,239.4
2005	702.8	475.0	284.6	1,132.5	1,631.5	4,226.3
2006	592.0	426.4	264.7	1,161.4	1,574.1	4,018.7
2007	660.7	451.6	249.6	1,165.9	1,611.2	4,139.0
2008	648.4	442.8	241.4	1,161.0	1,596.5	4,090.2
2009	582.8	424.5	215.3	1,144.5	1,501.3	3,868.4
2010	564.3	415.1	213.0	1,176.1	1,533.7	3,902.1
2011	557.1	416.7	221.1	1,126.5	1,523.8	3,845.1
2012	533.7	370.3	209.3	1,097.7	1,491.5	3,702.5
2013	581.7	400.2	208.4	1,119.2	1,498.0	3,807.5
2014	641.2	402.0	208.4	1,196.2	1,444.2	3,891.9
2015	655.6	399.7	210.3	1,186.9	1,439.8	3,892.2
2016	575.7	382.8	206.1	1,209.4	1,411.8	3,785.8
2017	591.2	390.9	200.9	1,185.2	1,357.8	3,726.0
2018	682.7	413.7	204.0	1,197.9	1,416.3	3,914.5

[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 Sector[1] 2004–2018

Figure 3-3b

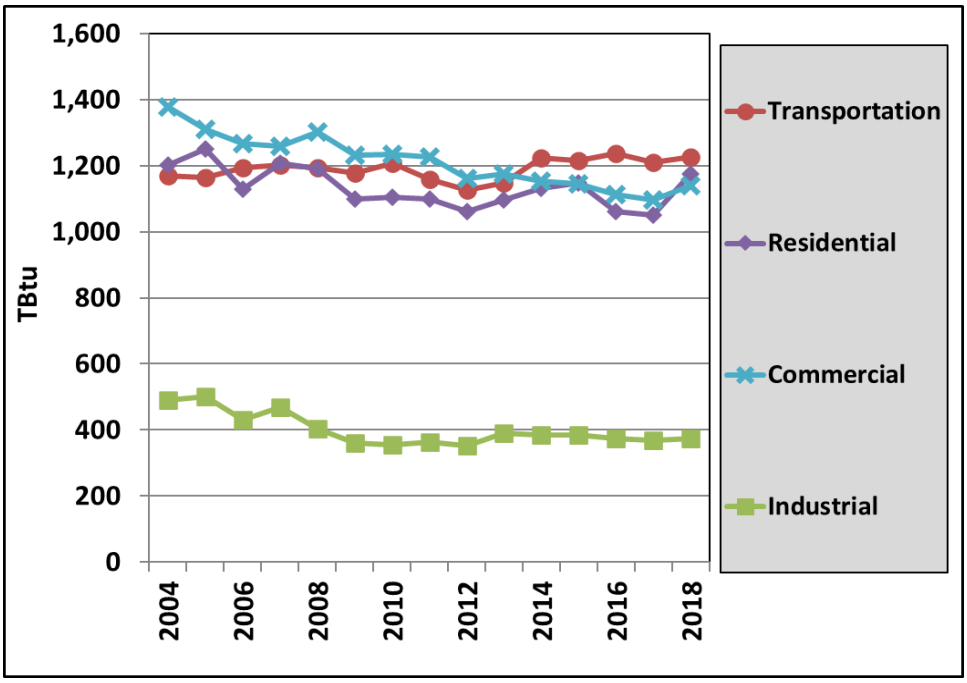


Table 3-3b. (In Trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu
2004	1,201.3	1,378.5	489.8	1,169.7	4,239.4
2005	1,251.9	1,309.7	501.3	1,163.4	4,226.3
2006	1,128.0	1,267.8	430.5	1,192.5	4,018.7
2007	1,207.0	1,259.8	469.4	1,202.8	4,139.0
2008	1,191.8	1,300.8	404.2	1,193.4	4,090.2
2009	1,100.0	1,232.2	359.2	1,177.0	3,868.4
2010	1,104.5	1,234.5	356.0	1,207.1	3,902.1
2011	1,099.1	1,224.9	363.0	1,158.0	3,845.1
2012	1,061.8	1,162.3	352.0	1,126.4	3,702.5
2013	1,096.0	1,173.5	389.8	1,148.2	3,807.5
2014	1,130.9	1,152.1	384.8	1,224.1	3,891.9
2015	1,148.8	1,144.2	385.1	1,214.1	3,892.2
2016	1,061.3	1,113.5	375.2	1,235.7	3,785.8
2017	1,050.8	1,096.3	367.7	1,211.1	3,726.0
2018	1,175.3	1,138.6	374.8	1,225.8	3,914.5

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

New York State
Energy Services and Losses of Energy by Sector[1]
2004–2018

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

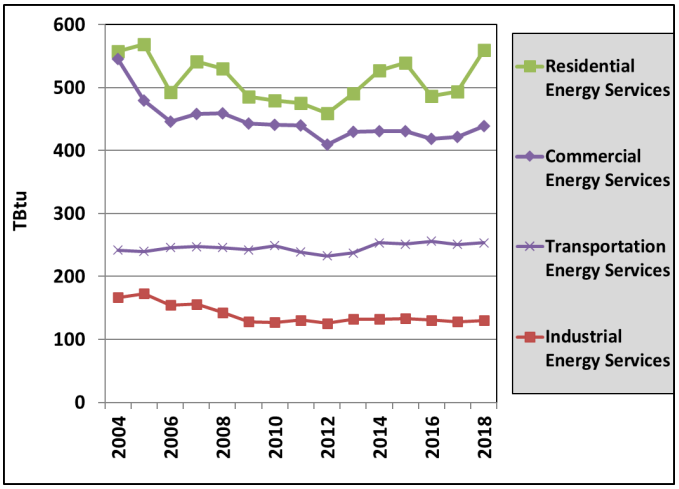


Figure 3-3c-2. Energy Losses by Sector

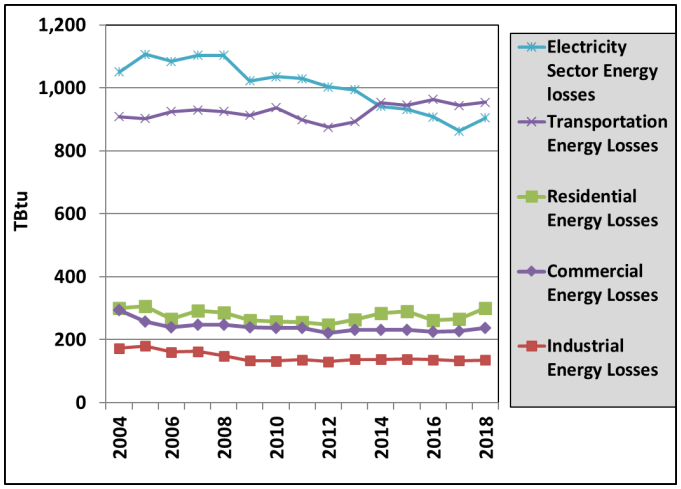


Table 3-3c. (In Trillion Btu)

Year	Residential		Commercial		Industrial		Transportation		Elec. Gen.	Total		
	Services	Losses	Services	Losses	Services	Losses	Services	Losses	Losses	Services	Losses	Energy
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2004	557.3	300.1	545.1	293.5	166.5	173.3	241.6	908.9	1,050.2	1,510.5	2,725.9	4,236.4
2005	568.9	306.3	479.1	258.0	172.8	179.9	239.9	902.3	1,106.3	1,460.7	2,752.8	4,213.4
2006	492.2	265.0	445.8	240.0	154.8	161.1	245.9	925.1	1,083.9	1,338.7	2,675.1	4,013.8
2007	540.9	291.2	458.4	246.8	156.1	162.4	247.3	930.2	1,102.8	1,402.6	2,733.5	4,136.1
2008	530.2	285.5	459.5	247.4	142.8	148.7	245.9	925.1	1,102.9	1,378.5	2,709.6	4,088.1
2009	485.8	261.6	443.0	238.5	127.9	133.2	242.5	912.3	1,021.8	1,299.3	2,567.4	3,866.7
2010	479.8	258.3	441.2	237.6	126.9	132.1	249.1	937.0	1,035.0	1,296.9	2,600.0	3,896.9
2011	475.8	256.2	440.3	237.1	130.8	136.1	238.7	898.0	1,029.6	1,285.5	2,556.9	3,842.4
2012	459.3	247.3	409.3	220.4	125.5	130.6	232.5	874.6	1,003.1	1,226.6	2,476.0	3,702.5
2013	490.7	264.2	429.5	231.2	132.1	137.4	237.1	891.9	993.4	1,289.3	2,518.2	3,807.5
2014	527.6	284.1	431.0	232.1	132.2	137.6	253.2	952.7	941.3	1,344.1	2,547.8	3,891.9
2015	539.3	290.4	430.6	231.9	133.3	138.7	251.3	945.2	931.7	1,354.4	2,537.8	3,892.2
2016	487.0	262.2	418.5	225.3	130.6	135.9	255.9	962.9	907.5	1,292.0	2,493.8	3,785.8
2017	493.2	265.5	421.1	226.8	128.2	133.4	250.9	943.8	863.0	1,293.4	2,432.6	3,726.0
2018	559.4	301.2	439.1	236.4	130.2	135.5	253.7	954.3	904.7	1,382.4	2,532.2	3,914.5

[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 loss is 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 ratio of energy services to losses.

New York State
Primary Consumption of Energy for Electric Generation
2004–2018

Figure 3-4

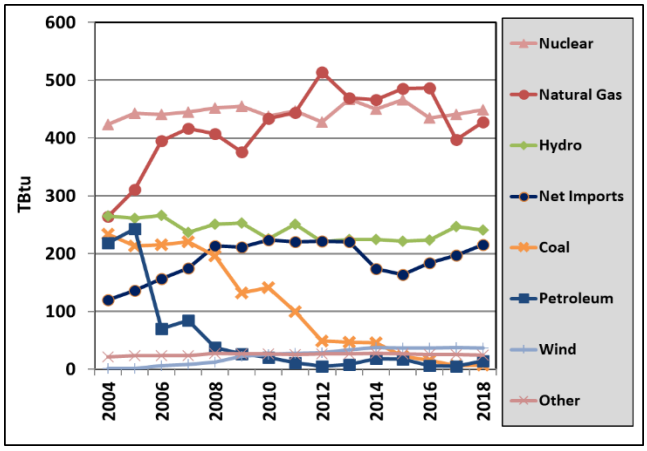


Table 3-4a. (In Physical Units)

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
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	19,809	3,984	98	3,028
2016	654	472	344	624	968	26,314	836	41,638	22,358	3,943	137	2,881
2017	242	385	264	642	905	29,554	795	42,175	24,319	4,219	178	2,919
2018	272	415	790	1,616	2,405	29,045	811	43,003	26,766	3,985	294	2,729

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
2004	233.6	264.2	10.1	205.7	218.8	13.3	423.8	119.9	1.2	0.0	21.7	1548.1
2005	213.0	310.6	9.2	220.4	242.5	13.1	442.9	136.3	1.0	0.0	23.5	1631.5
2006	215.8	395.5	3.6	61.3	69.9	12.3	440.6	156.7	6.5	0.0	23.3	1574.1
2007	220.6	416.9	7.9	73.7	84.5	12.7	445.3	175.2	8.2	0.0	23.7	1611.2
2008	195.6	407.3	4.7	31.0	37.8	16.4	451.6	213.3	12.3	0.0	27.4	1596.5
2009	131.8	375.6	4.3	20.5	26.5	13.8	454.8	211.4	22.1	0.0	26.1	1501.3
2010	141.6	433.7	3.7	11.3	20.2	8.0	437.6	223.7	25.3	0.0	26.2	1533.7
2011	99.2	443.6	1.9	6.4	11.0	6.4	446.8	220.0	27.5	0.1	25.0	1523.8
2012	48.7	513.6	2.3	2.9	5.1	6.4	427.3	222.0	28.5	0.5	25.6	1491.5
2013	47.2	469.5	2.9	5.5	8.4	6.5	467.7	220.5	33.8	0.6	25.6	1498.0
2014	45.9	466.0	4.8	14.0	18.8	7.1	450.1	173.8	37.7	0.7	26.7	1444.2
2015	22.0	486.0	4.8	12.2	17.0	6.8	466.5	164.1	37.1	0.9	25.1	1439.8
2016	15.6	486.5	2.0	3.9	5.9	6.9	434.8	184.1	36.4	1.3	23.7	1411.8
2017	6.3	397.4	1.5	4.0	5.6	6.5	441.0	197.5	38.1	1.6	23.7	1357.8
2018	7.0	428.1	4.5	10.2	14.7	6.5	448.7	215.9	36.4	2.7	22.0	1416.3

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 2004–2018

Figure 3-5.

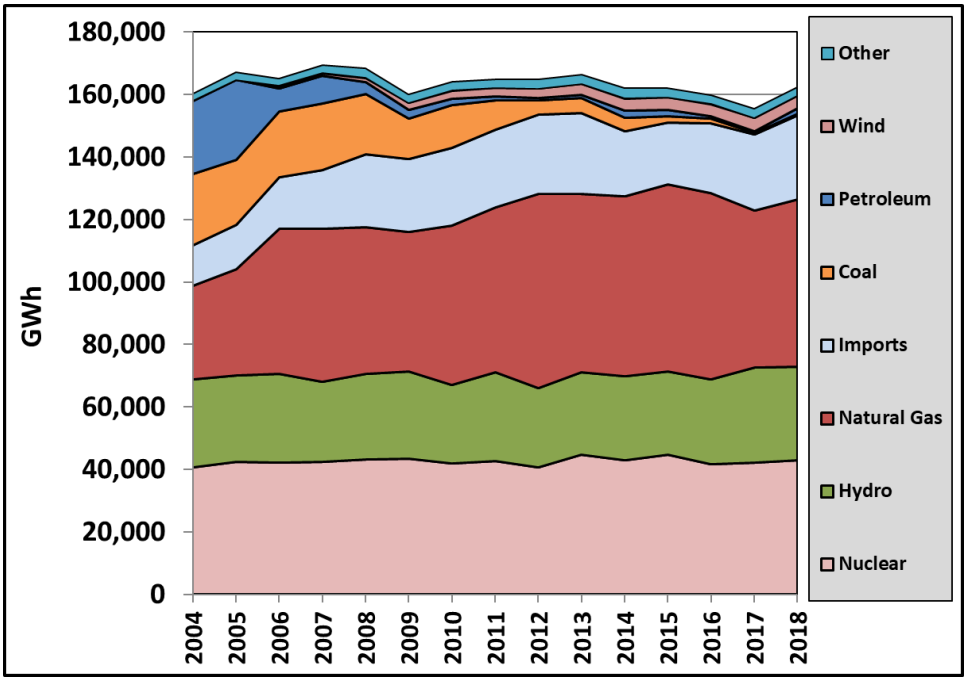


Table 3-5. (In Gigawatt-Hours)

Year	Coal	Natural Gas	Petroleum Products	Conv. Hydro	PS Hydro	Nuclear	Other[1,2]			Wind	Solar[3]	In-State Generation	Net Imports	Total Generation	Electricity Requirements
							Waste	LFG	Wood						
	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh	GWh
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	19,809	162,155	161,572
2016	1,493	59,698	676	26,314	836	41,638	1,841	748	293	3,943	54	137,532	22,358	159,889	160,798
2017	567	50,270	636	29,554	795	42,175	1,900	730	288	4,219	47	131,183	24,319	155,502	156,370
2018	692	53,593	1,678	29,045	811	43,003	1,878	648	203	3,985	49	135,585	26,766	162,351	161,114

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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 2018 was 1,501 GWh (83.6% of total solar) with 868 GWh (57.8%) in the residential sector, 616 GWh (41.0%) in the commercial sector, and 17 GWh (1.2%) in the industrial sector.

New York State
Fossil Fuel[1] for Electric Generation Trends
2004–2018

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

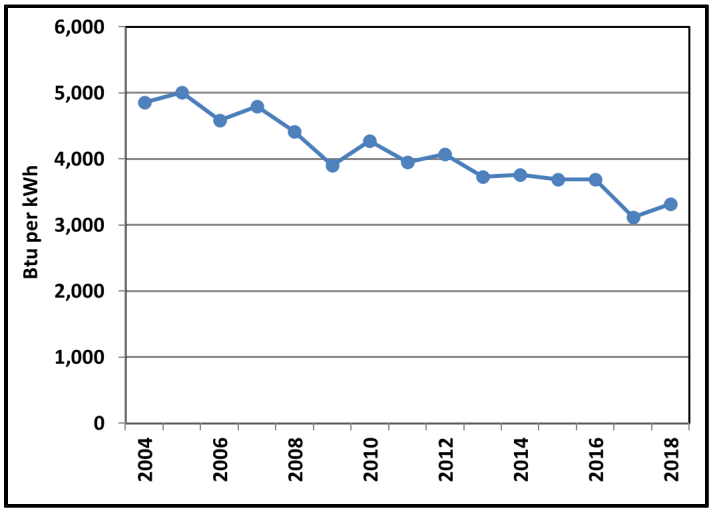

Figure 3-6b. Metric Tons Emitted of CO_2 Equivalent per GWh of in-State Generation

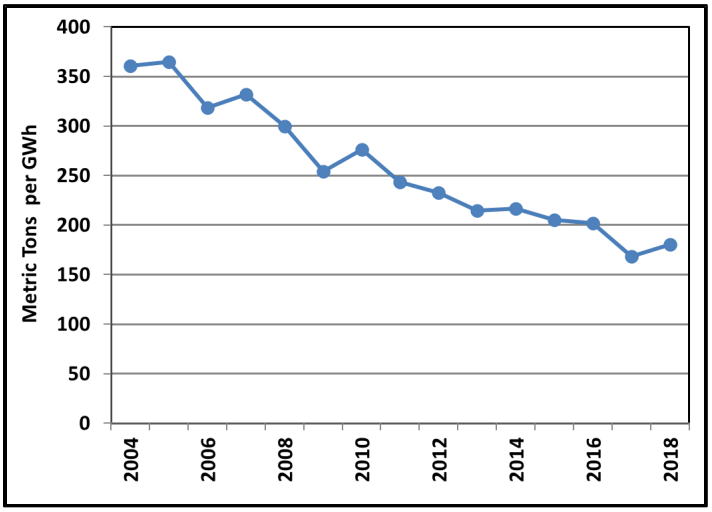

Table 3-6. Fossil Fuel Use for Electricity Trends

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}
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
2018	450	3,317	181

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

New York State Sales of Electricity to Ultimate Consumers 2004–2018

Figure 3-7.

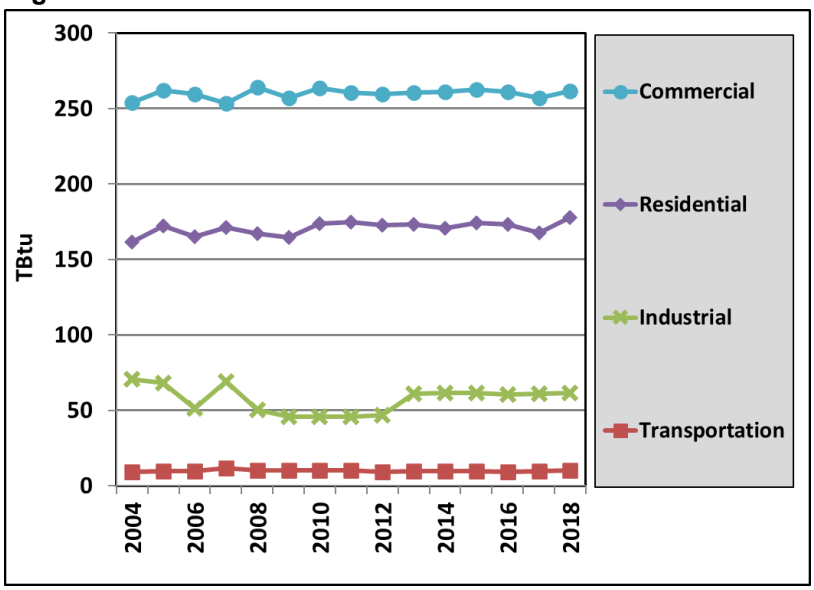

Table 3-7a. (In Gigawatt-Hours)

Year	Residential	Commercial	Industrial	Transportation	Total
	GWh	GWh	GWh	GWh	GWh
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
2018	52,153	76,745	18,077	2,954	149,930

Table 3-7b. (In Trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu
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
2018	177.9	261.9	61.7	10.1	511.6

New York State Net Consumption of Energy by Sector 2004–2018

Figure 3-8.

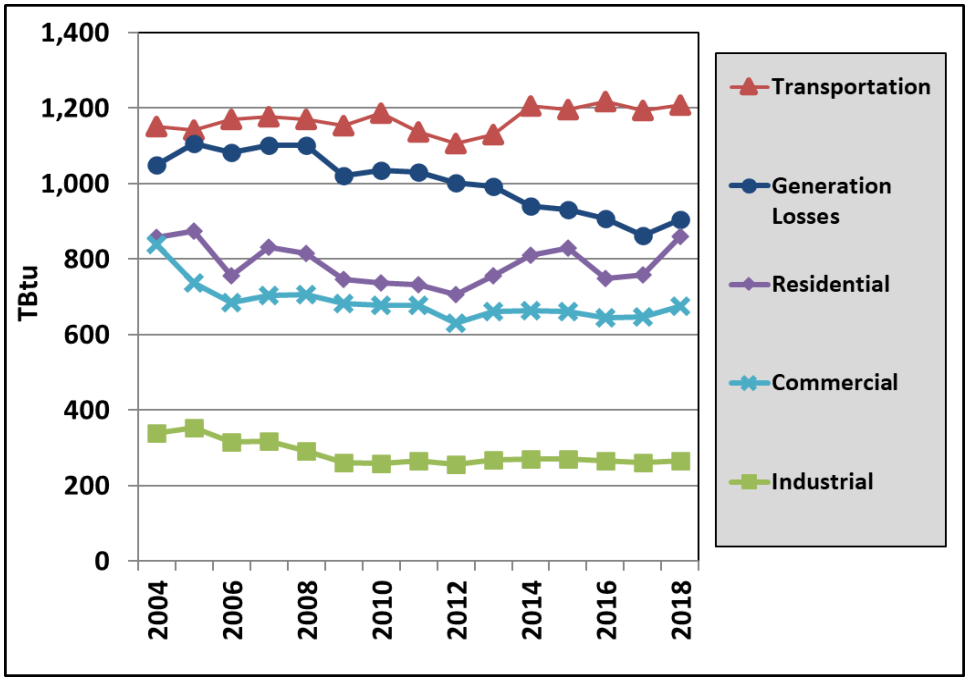

Table 3-8. (In Trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Net Consumption	Generation Losses[1]	Primary Consumption
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2004	857.3	838.6	339.8	1,150.5	3,186.2	1,050.2	4,236.4
2005	875.3	737.1	352.7	1,142.2	3,107.2	1,106.3	4,213.4
2006	757.3	685.8	315.8	1,171.0	2,929.9	1,083.9	4,013.8
2007	832.1	705.2	318.5	1,177.5	3,033.3	1,102.8	4,136.1
2008	815.7	707.0	291.5	1,171.0	2,985.2	1,102.9	4,088.1
2009	747.4	681.5	261.1	1,154.8	2,844.9	1,021.8	3,866.7
2010	738.1	678.7	259.0	1,186.1	2,861.9	1,035.0	3,896.9
2011	731.9	677.4	266.8	1,136.7	2,812.8	1,029.6	3,842.4
2012	706.7	629.7	256.0	1,107.1	2,699.5	1,003.1	3,702.5
2013	755.0	660.7	269.5	1,129.0	2,814.1	993.4	3,807.5
2014	811.7	663.2	269.8	1,205.9	2,950.5	941.3	3,891.9
2015	829.6	662.4	272.0	1,196.5	2,960.5	931.7	3,892.2
2016	749.2	643.8	266.5	1,218.8	2,878.3	907.5	3,785.8
2017	758.7	647.9	261.7	1,194.7	2,863.0	863.0	3,726.0
2018	860.6	675.5	265.7	1,207.9	3,009.8	904.7	3,914.5

[1] Conversion and transmission losses.

New York State
Net Residential Consumption of Energy by Fuel Type
2004–2018

Figure 3-9.

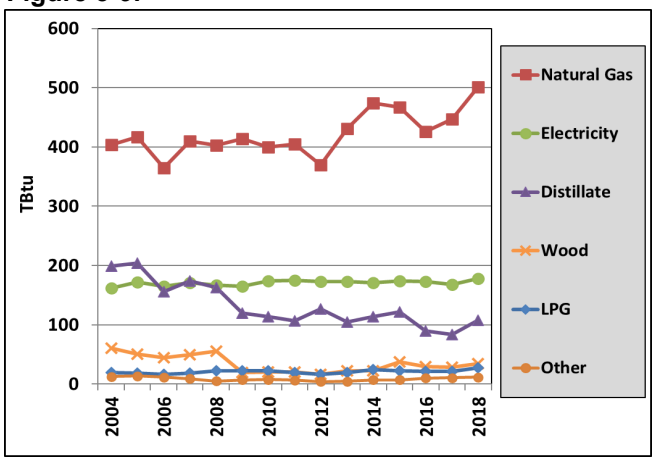

Table 3-9a. (In Physical Units)

Year	Coal	Natural Gas	Distillate	Kerosene	LPG	Total Petroleum	Wood	Utility-Scale Electricity	Customer-Sited Solar PV
	Mtons	Bcf	Mbbl	Mbbl	Mbbl	Mbbl	Mcords	GWh	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	1,471	50,831	547
2017	0	433	14,519	402	5,698	20,619	1,416	49,081	733
2018	0	486	18,696	376	7,098	26,170	1,716	52,153	868

Table 3-9b. (In Trillion Btu)

Year	Coal	Natural Gas	Distillate	Kerosene	LPG	Total Petroleum	Wood	Electricity	Solar[1]	Geothermal	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	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	29.4	173.4	6.4	0.4	749.2
2017	0.0	446.6	83.6	2.3	21.9	107.7	28.3	167.5	8.1	0.4	758.7
2018	0.0	501.6	107.7	2.1	27.3	137.1	34.3	177.9	9.3	0.4	860.6

[1] Includes customer-sited solar electric and thermal energy.

New York State
Net Commercial Consumption of Energy by Fuel Type 2004–2018

Figure 3-10.

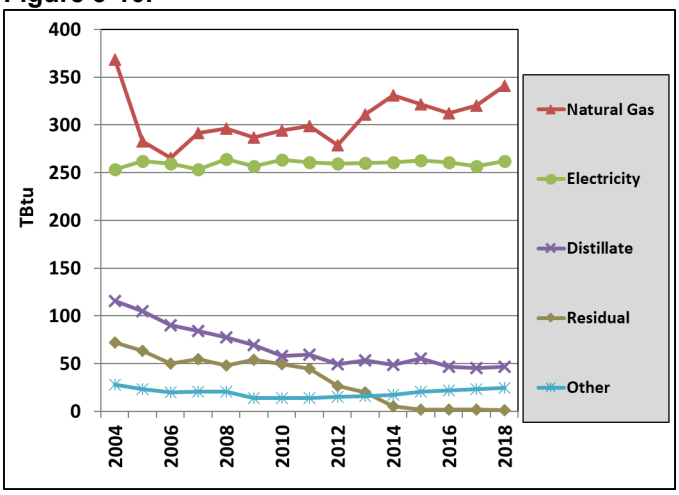

Table 3-10a. (In Physical Units)

Year	Coal	Natural Gas	Distillate	Residual	Kerosene	LPG	Total Petroleum	Wood	Utility-Scale Electricity	Customer-Sited Solar PV
	MTons	Bcf	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mcords	GWh	GWh
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
2018	0	330	8,111	156	41	2,118	10,426	261	76,745	616

Table 3-10b. (In Trillion Btu)

Year	Coal	Natural Gas	Distillate	Residual	Kerosene	LPG	Total Petroleum	Wood	Waste	Electricity	Solar[1]	Geothermal	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
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	320.4	45.7	1.8	0.2	7.8	55.4	5.2	5.0	257.0	4.0	0.8	647.9
2018	0.0	341.0	46.7	1.0	0.2	8.1	56.1	5.2	5.0	261.9	5.6	0.8	675.5

[1] Includes customer-sited solar electric and thermal energy.

New York State
Net Industrial Consumption of Energy by Fuel Type 2004–2018

Figure 3-11.

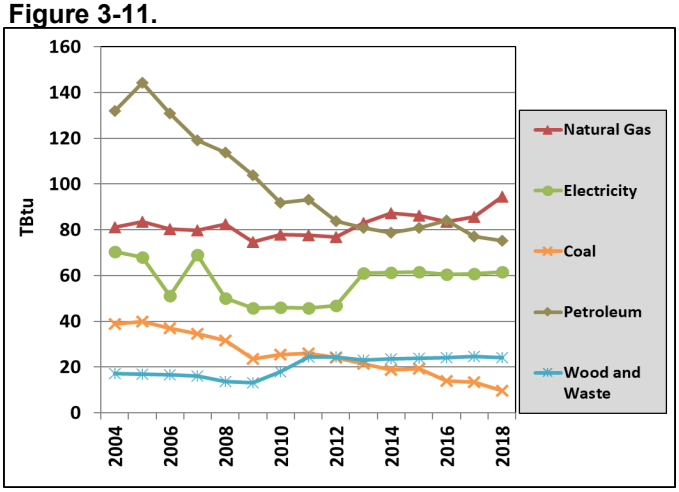

Table 3-11a. (In Physical Units)

Year	Coal	Natural Gas	Distillate	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
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	886	9,803	13,913	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	9,327	12,984	930	18,003	5
2015	723	83	2,031	431	127	833	9,914	13,336	926	18,079	10
2016	521	81	1,872	457	176	891	10,515	13,911	936	17,709	13
2017	496	83	1,904	539	58	663	9,479	12,643	914	17,811	14
2018	364	92	1,953	406	124	693	9,250	12,426	919	18,077	17

Table 3-11b. (In Trillion Btu)

Year	Coal	Natural Gas	Distillate	Residual	Kerosene	LPG	Other Petroleum	Total Petroleum	Wood	Waste	Electricity	Solar[1]	Total[2]
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
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	59.1	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	66.1	84.1	18.7	5.4	60.4	0.1	266.5
2017	13.3	85.7	11.0	3.4	0.3	2.5	59.8	77.0	18.3	6.4	60.8	0.1	261.7
2018	9.7	94.6	11.2	2.6	0.7	2.7	58.2	75.4	18.4	5.8	61.7	0.2	265.7

[1] Includes customer-sited solar electric and thermal energy.

[2] Includes fuels used by industry to generate electricity and process steam.

New York State
Net Transportation Consumption of Energy by Fuel Type
2004–2018

Figure 3-12.

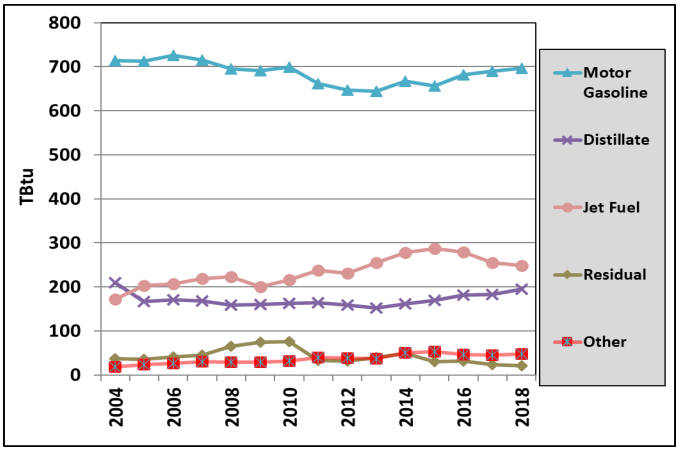

Table 3-12a. (In Physical Units)

Year	Natural Gas	Distillate	Residual	Motor Gasoline	Jet Fuel[1]	LPG	Total Petroleum	Ethanol[2]	Biodiesel[3]	Electricity
	Bcf	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	GWh
2004	9	35,910	5,823	137,391	30,476	66	202,642	7,024	37	2,650
2005	13	28,545	5,684	137,355	35,912	75	205,249	2,322	124	2,846
2006	14	29,388	6,530	140,020	36,515	99	206,495	6,057	356	2,806
2007	16	29,146	7,063	139,140	38,588	56	206,378	7,615	482	3,397
2008	16	27,485	10,336	136,105	39,293	257	203,510	9,966	414	2,918
2009	15	27,670	11,743	135,921	35,364	97	198,772	12,023	439	3,025
2010	19	28,245	12,094	138,087	38,116	47	203,101	13,488	355	2,922
2011	23	28,534	5,158	130,718	41,919	44	193,615	12,758	1,209	2,981
2012	21	27,591	4,988	127,902	40,740	45	188,626	12,640	1,221	2,748
2013	20	26,395	6,300	127,461	45,066	44	192,507	12,759	1,132	2,864
2014	33	28,052	7,770	131,943	48,903	39	203,578	13,129	1,180	2,853
2015	35	29,331	4,897	129,909	50,625	34	201,922	12,874	1,259	2,816
2016	28	31,420	4,965	134,799	49,291	36	207,078	13,433	1,438	2,756
2017	26	31,659	3,736	136,414	45,000	75	203,094	13,790	1,495	2,767
2018	27	33,748	3,296	137,758	43,898	44	204,739	14,005	1,709	2,954

Table 3-12b. (In Trillion Btu)

Year	Natural Gas	Distillate	Residual	Motor Gasoline	Jet Fuel[1]	LPG	Total Petroleum	Ethanol[2]	Biodiesel[3]	Electricity	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2004	8.9	208.9	36.6	713.9	172.7	0.3	1,108.0	24.4	0.2	9.0	1,150.5
2005	13.1	166.1	35.7	713.1	203.5	0.3	1,110.6	8.1	0.7	9.7	1,142.2
2006	14.5	170.5	41.1	726.0	207.0	0.4	1,124.0	21.0	1.9	9.6	1,171.0
2007	16.0	168.6	44.4	715.5	218.7	0.2	1,120.9	26.4	2.6	11.6	1,177.5
2008	16.3	158.9	65.0	695.0	222.7	1.0	1,107.9	34.6	2.2	10.0	1,171.0
2009	15.8	159.8	73.8	691.8	200.5	0.4	1,084.7	41.6	2.4	10.3	1,154.8
2010	19.2	163.1	76.0	699.7	216.1	0.2	1,108.3	46.8	1.9	10.0	1,186.1
2011	23.3	164.6	32.4	661.8	237.6	0.2	1,052.5	44.2	6.5	10.2	1,136.7
2012	22.2	159.1	31.4	647.4	230.9	0.2	1,025.2	43.8	6.5	9.4	1,107.1
2013	20.8	152.1	39.6	645.0	255.5	0.2	1,048.0	44.3	6.1	9.8	1,129.0
2014	34.5	161.7	48.8	667.5	277.2	0.2	1,109.8	45.6	6.3	9.7	1,205.9
2015	36.2	169.0	30.8	656.9	287.0	0.1	1,099.2	44.7	6.7	9.6	1,196.5
2016	28.6	180.9	31.2	681.4	279.4	0.1	1,126.4	46.6	7.7	9.4	1,218.8
2017	26.8	182.3	23.5	689.3	255.1	0.3	1,102.5	47.9	8.0	9.4	1,194.7
2018	28.4	194.4	20.7	696.2	248.8	0.2	1,111.5	48.8	9.2	10.1	1,207.9

[1] Consists of aviation gasoline and kerosene-type jet fuel.

[2] Ethanol values are embedded in motor gasoline but are excluded from the petroleum products' total.

[3] Biodiesel includes biodiesel used in all four end-use sectors including residential, commercial, industrial, and transportation. No sectoral breakout is provided for biodiesel estimates.

4 New York State Energy Prices

This section presents data on retail energy prices for the 15-year period from 2004 through 2018. Energy prices are provided by fuel type in nominal dollars per physical unit and per million British thermal units 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 2018 (real) dollars. To convert energy prices from nominal to constant 2018 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 2018 New York State Energy Price Data

- Residential sector statewide average nominal fuel prices:
  - Home heating oil prices increased by 10.4% from an average $2.53 per gallon in 2017 to $2.79 per gallon in 2018.
  - Natural gas prices increased by 2.7% from an average $12.04 per thousand cubic feet in 2017 to $12.38 per thousand cubic feet in 2018.
  - Electricity prices increased by 2.7% from 18.0¢ per kWh in 2017 to 18.5¢ in 2018.
- Commercial sector statewide average nominal fuel prices:
  - Distillate fuel prices averaged $2.35 per gallon in 2018, which was a 25.4% increase from 2017 prices.
  - Residual oil prices averaged $64.50 per barrel in 2018, which was a 31.5% increase from 2017 prices.
  - Electricity prices averaged 14.5¢ per kWh, which was a 1.7% decrease from 2017 prices.
  - Natural gas prices averaged $7.37 per thousand cubic feet, which was a 7.2% increase from 2017 prices.
- Industrial sector statewide average nominal fuel prices:
  - Residual oil prices averaged $64.50 per barrel in 2018, which was a 31.5% increase from 2017 prices.
  - Natural gas prices averaged $7.83 per thousand cubic feet, which was an 8.6% increase from 2017 prices.
  - Electricity prices averaged 6.0¢ per kWh, which was a 1.6% increase from 2017 prices.
- The average retail price for all grades of gasoline was $2.76 per gallon, up $0.34 per gallon (14.2%) from the average price in 2017.

New York State Residential Energy Prices in Nominal Dollars 2004–2018

Figure 4-1.

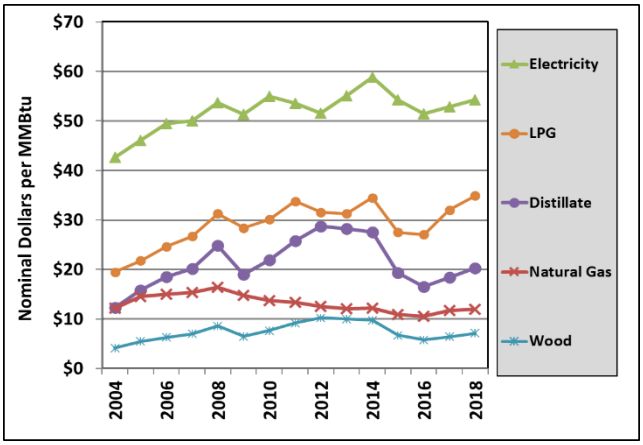

Table 4-1a. (In Physical Units)

Year	Coal	Distillate[1]	Kerosene	Propane	Natural Gas	Electricity	Wood	GDP Deflator[2]
	$/Ton	Cents/Gal.	Cents/Gal.	Cents/Gal.	$/Mcf	Cents/kWh	$/Cord	2018=1
2004	89.97	169.55	162.14	167.81	12.50	14.54	82.80	0.752
2005	129.55	219.14	214.92	187.81	14.89	15.72	109.60	0.778
2006	118.33	255.61	260.15	211.18	15.35	16.89	126.20	0.803
2007	118.61	278.05	289.85	243.95	15.73	17.10	139.40	0.826
2008	0.00	342.53	365.31	285.69	16.78	18.31	171.80	0.857
2009	0.00	260.56	281.21	259.02	15.05	17.50	129.00	0.854
2010	0.00	301.14	320.90	274.73	14.04	18.74	152.20	0.868
2011	0.00	355.22	379.76	308.52	13.71	18.26	183.00	0.896
2012	0.00	394.69	399.87	288.07	12.96	17.62	203.80	0.914
2013	0.00	388.78	400.68	285.42	12.49	18.79	199.60	0.928
2014	0.00	379.23	402.84	315.01	12.54	20.07	194.60	0.943
2015	0.00	264.87	224.78	251.44	11.20	18.54	134.20	0.944
2016	0.00	227.64	179.15	246.97	10.84	17.58	114.60	0.956
2017	0.00	252.62	224.10	293.10	12.04	18.03	128.20	0.976
2018	0.00	278.88	316.85	318.99	12.38	18.52	141.80	1.000

Table 4-1b. (In Trillion Btu)

Year	Coal	Distillate[1]	Kerosene	Propane	Natural Gas	Electricity	Wood	GDP Deflator[2]
	$/MMBtu	$/MMBtu	$/MMBtu	$/MMBtu	$/MMBtu	$/MMBtu	$/MMBtu	2018=1
2004	3.60	12.24	12.01	19.48	12.17	42.62	4.14	0.752
2005	5.18	15.82	15.92	21.79	14.51	46.08	5.48	0.778
2006	4.76	18.50	19.27	24.61	15.02	49.51	6.31	0.803
2007	4.76	20.19	21.47	26.71	15.36	50.11	6.97	0.826
2008	0.00	24.89	27.06	31.28	16.42	53.66	8.59	0.857
2009	0.00	18.93	20.83	28.36	14.73	51.29	6.45	0.854
2010	0.00	21.89	23.77	30.08	13.72	54.93	7.61	0.868
2011	0.00	25.83	28.13	33.78	13.35	53.52	9.15	0.896
2012	0.00	28.71	29.62	31.54	12.56	51.63	10.19	0.914
2013	0.00	28.28	29.68	31.25	12.07	55.08	9.98	0.928
2014	0.00	27.59	29.84	34.49	12.13	58.83	9.73	0.943
2015	0.00	19.28	16.65	27.53	10.84	54.33	6.71	0.944
2016	0.00	16.57	13.27	27.04	10.51	51.51	5.73	0.956
2017	0.00	18.43	16.60	32.05	11.66	52.84	6.41	0.976
2018	0.00	20.30	23.47	34.88	11.98	54.28	7.09	1.000

[1] Home heating oil.

[2] To convert prices to 2018 dollars, divide the selected price by the deflator factor in the same row.

New York State Commercial Energy Prices in Nominal Dollars 2004–2018

Figure 4-2.

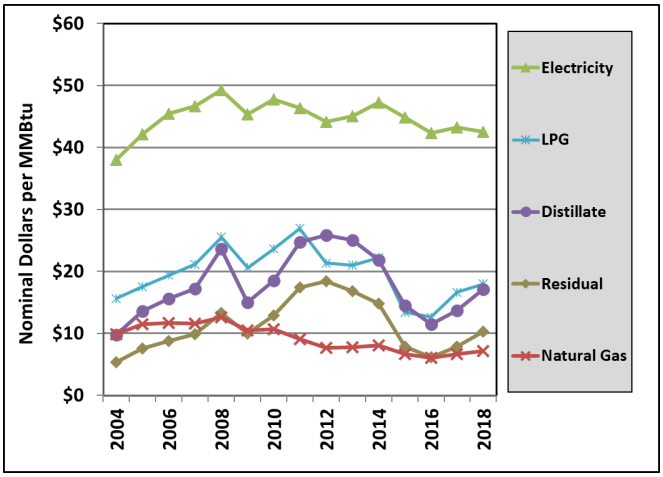

Table 4-2a. (In Physical Units)

Year	Coal	Distillate[1]	Residual	Kerosene	Propane	Natural Gas	Electricity	GDP Deflator[2]
	$/Ton	Cents/Gal.	$/bbl	Cents/Gal.	Cents/Gal.	$/Mcf	Cents/kWh	2018=1
2004	43.94	134.78	33.70	162.14	134.30	10.11	12.98	0.752
2005	48.87	188.53	47.59	214.92	150.92	11.80	14.36	0.778
2006	67.67	215.40	55.26	260.15	166.47	11.91	15.51	0.803
2007	64.85	236.32	61.74	289.85	193.17	11.82	15.92	0.826
2008	105.50	324.51	83.43	365.31	233.08	12.87	16.79	0.857
2009	136.28	206.88	62.49	281.21	188.06	10.72	15.48	0.854
2010	138.86	254.64	81.10	320.90	215.46	10.87	16.31	0.868
2011	135.81	340.37	109.46	379.76	245.69	9.33	15.81	0.896
2012	0.00	354.69	115.43	399.87	194.81	7.84	15.06	0.914
2013	0.00	344.38	105.87	400.68	191.89	8.00	15.35	0.928
2014	0.00	299.78	92.73	402.84	202.94	8.31	16.12	0.943
2015	0.00	199.34	49.23	224.78	122.39	6.86	15.31	0.944
2016	0.00	157.58	38.35	179.15	115.08	6.19	14.45	0.956
2017	0.00	187.24	49.04	224.10	152.18	6.87	14.75	0.976
2018	0.00	234.78	64.50	316.85	164.43	7.37	14.50	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	2018=1
2004	1.87	9.73	5.36	12.01	15.59	9.84	38.04	0.752
2005	2.08	13.61	7.57	15.92	17.51	11.50	42.08	0.778
2006	2.88	15.59	8.79	19.27	19.40	11.65	45.46	0.803
2007	2.76	17.16	9.82	21.47	21.15	11.54	46.65	0.826
2008	4.49	23.58	13.27	27.06	25.52	12.59	49.22	0.857
2009	5.80	15.03	9.94	20.83	20.59	10.49	45.36	0.854
2010	5.91	18.51	12.90	23.77	23.59	10.63	47.79	0.868
2011	5.78	24.75	17.41	28.13	26.90	9.08	46.33	0.896
2012	0.00	25.80	18.36	29.62	21.33	7.60	44.13	0.914
2013	0.00	25.05	16.84	29.68	21.01	7.73	45.00	0.928
2014	0.00	21.81	14.75	29.84	22.22	8.04	47.25	0.943
2015	0.00	14.51	7.83	16.65	13.40	6.64	44.86	0.944
2016	0.00	11.47	6.10	13.27	12.60	6.00	42.35	0.956
2017	0.00	13.66	7.80	16.60	16.64	6.65	43.23	0.976
2018	0.00	17.09	10.26	23.47	17.98	7.13	42.50	1.000

[1] Home heating oil.

[2] To convert prices to 2018 dollars, divide the selected price by the deflator factor in the same row.

New York State Industrial Energy Prices in Nominal Dollars 2004–2018

Figure 4-3.

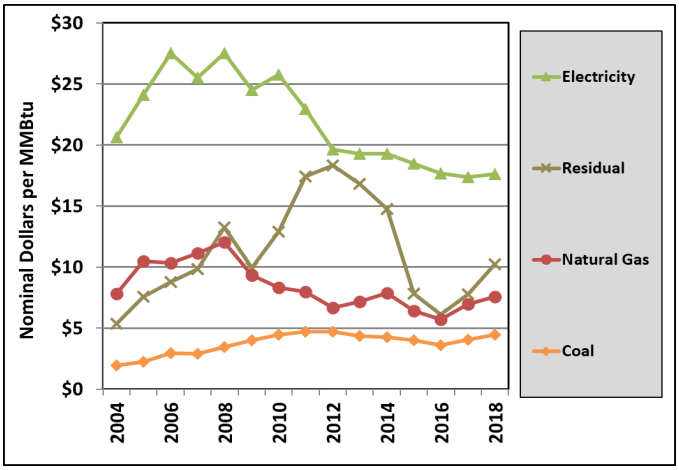

Table 4-3a. (In Physical Units)

Year	Coal	Distillate[1]	Residual	Kerosene	Propane	Natural Gas	Electricity	GDP Deflator[2]
	$/Ton	Cents/Gal.	$/bbl	Cents/Gal.	Cents/Gal.	$/Mcf	Cents/kWh	2018=1
2004	52.50	127.44	33.70	137.97	152.56	8.05	7.04	0.752
2005	59.97	190.19	47.59	181.85	166.52	10.75	8.23	0.778
2006	77.95	218.86	55.26	213.17	184.23	10.56	9.39	0.803
2007	76.91	238.52	61.74	243.27	229.25	11.43	8.71	0.826
2008	90.61	327.12	83.43	306.86	275.46	12.30	9.39	0.857
2009	105.75	197.79	62.49	204.39	227.51	9.53	8.37	0.854
2010	116.04	263.72	81.10	251.24	225.23	8.54	8.79	0.868
2011	123.02	324.69	109.46	331.56	260.03	8.19	7.83	0.896
2012	133.00	342.18	115.43	346.55	200.48	6.91	6.69	0.914
2013	120.89	332.69	105.87	351.41	197.01	7.44	6.59	0.928
2014	117.10	313.25	92.73	332.64	209.98	8.13	6.58	0.943
2015	110.68	206.76	49.23	194.54	115.54	6.62	6.31	0.944
2016	100.05	154.97	38.35	152.28	106.95	5.92	6.03	0.956
2017	112.85	201.63	49.04	192.92	150.44	7.21	5.92	0.976
2018	123.61	238.08	64.50	241.92	164.80	7.83	6.02	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	2018=1
2004	1.96	9.20	5.36	10.22	17.71	7.84	20.63	0.752
2005	2.27	13.73	7.57	13.47	19.32	10.48	24.11	0.778
2006	2.97	15.84	8.79	15.79	21.47	10.33	27.53	0.803
2007	2.91	17.32	9.82	18.02	25.10	11.16	25.53	0.826
2008	3.44	23.77	13.27	22.73	30.16	12.04	27.53	0.857
2009	4.01	14.37	9.94	15.14	24.91	9.32	24.54	0.854
2010	4.44	19.17	12.90	18.61	24.66	8.35	25.76	0.868
2011	4.74	23.61	17.41	24.56	28.47	7.97	22.96	0.896
2012	4.73	24.89	18.36	25.67	21.95	6.70	19.62	0.914
2013	4.37	24.20	16.84	26.03	21.57	7.19	19.30	0.928
2014	4.24	22.79	14.75	24.64	22.99	7.87	19.28	0.943
2015	4.02	15.05	7.83	14.41	12.65	6.41	18.49	0.944
2016	3.60	11.28	6.10	11.28	11.71	5.74	17.67	0.956
2017	4.08	14.71	7.80	14.29	16.45	6.98	17.36	0.976
2018	4.48	17.33	10.26	17.92	18.02	7.58	17.64	1.000

[1] Home heating oil.

[2] To convert prices to 2018 dollars, divide the selected price by the deflator factor in the same row.

New York State Transportation Energy Prices in Nominal Dollars 2004–2018

Figure 4-4.

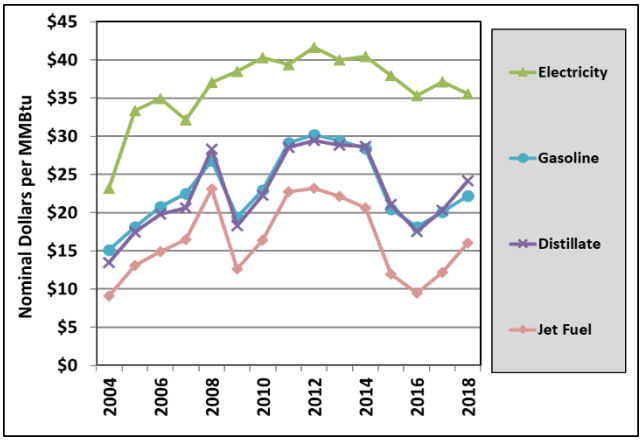

Table 4-4a. (In Physical Units)

Year	Motor Gasoline	Distillate[1]	Jet Fuel[2]	Residual[3]	Electricity[4]	GDP Deflator[5]
	Cents/Gal.	Cents/Gal.	Cents/Gal.	$/bbl	Cents/kWh	2018=1
2004	187.61	186.73	122.31	29.61	7.92	0.752
2005	224.63	242.14	176.85	42.63	11.40	0.778
2006	256.95	273.29	201.02	49.10	11.94	0.803
2007	276.65	284.38	222.21	49.35	10.97	0.826
2008	326.97	389.19	312.26	75.95	12.64	0.857
2009	235.74	251.47	170.64	51.80	13.13	0.854
2010	277.84	307.06	221.81	68.28	13.74	0.868
2011	351.86	392.22	307.40	93.11	13.45	0.896
2012	364.05	404.87	312.66	96.82	14.20	0.914
2013	354.70	396.34	299.03	97.57	13.65	0.928
2014	341.79	393.94	278.24	82.93	13.82	0.943
2015	246.61	289.05	161.87	46.90	12.96	0.944
2016	218.38	240.97	128.12	35.21	12.05	0.956
2017	242.06	278.39	164.84	47.47	12.67	0.976
2018	276.39	332.19	216.00	62.81	12.14	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	2018=1
2004	15.15	13.48	9.06	4.71	23.21	0.752
2005	18.15	17.48	13.10	6.78	33.40	0.778
2006	20.79	19.78	14.89	7.81	34.98	0.803
2007	22.54	20.65	16.46	7.85	32.14	0.826
2008	26.79	28.28	23.13	12.08	37.05	0.857
2009	19.41	18.27	12.64	8.24	38.49	0.854
2010	22.98	22.32	16.43	10.86	40.28	0.868
2011	29.16	28.52	22.77	14.81	39.41	0.896
2012	30.20	29.45	23.16	15.40	41.63	0.914
2013	29.43	28.83	22.15	15.52	40.01	0.928
2014	28.37	28.66	20.61	13.19	40.49	0.943
2015	20.47	21.04	11.99	7.46	37.97	0.944
2016	18.13	17.54	9.49	5.60	35.33	0.956
2017	20.12	20.31	12.21	7.55	37.12	0.976
2018	22.23	24.18	16.00	9.99	35.57	1.000

1 Diesel
2 Kerosene-based
3 Bunker fuel
4 Railroad use
5 To convert prices to 2018 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 2018 dollars for the following selected years: 2004, 2009, and 2014 through 2018. 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 2004 through 2018 in both nominal and constant 2018 dollars.

5.1 Key Observations about 2018 New York State Energy Expenditures Data

- Cumulative heating degree-days were 6.8% higher in 2018 compared to 2017.
- In nominal dollars, the State's 2018 estimated energy bill of $60.8 billion increased 12.5% from 2017, and it is 26.2% more than the $48.2 billion spent in 2004.
- In constant 2018 dollars, the State's estimated energy bill increased $5.5 billion (9.9%) from 2017 and was $3.2 billion (5.1%) less than the energy bill in 2004.
- State residents spent $19.1 billion for household energy, which was a 15.6% increase from the 2017 level in nominal dollars and 12.9% higher in constant 2018 dollars.
- The total commercial customer energy bill was $14.5 billion, which was 3.6% higher than 2017 in nominal dollars and 1.2% higher in constant 2018 dollars.
- Industrial customers paid $2.1 billion for energy, which was a 9.7% increase from 2017 levels in nominal dollars and 7.1% higher in constant 2018 dollars.
- The annual energy bill for transporting people and goods was $25.0 billion, a 16.2% increase from 2017 levels in nominal dollars and 13.5% higher in constant 2018 dollars.
- From 2017 to 2018 statewide expenditures increased 19.2% for petroleum, 14.7% for natural gas, and 4.1% for electricity in nominal dollars.
- In nominal dollars, the 2018 out-of-State estimated energy bill of $32.0 billion increased 20.0% from 2017, and the estimate is 25.5% more than the $25.5 billion spent in 2004.
- In constant 2018 dollars, the out-of-State estimated energy bill increased $4.7 billion (17.1%) from 2017 and was $1.9 billion (5.6%) less than in 2004.

New York State
Energy Expenditure Estimates
by Fuel Type and Sector
in Nominal Dollars
2004–2018

Figure 5-1

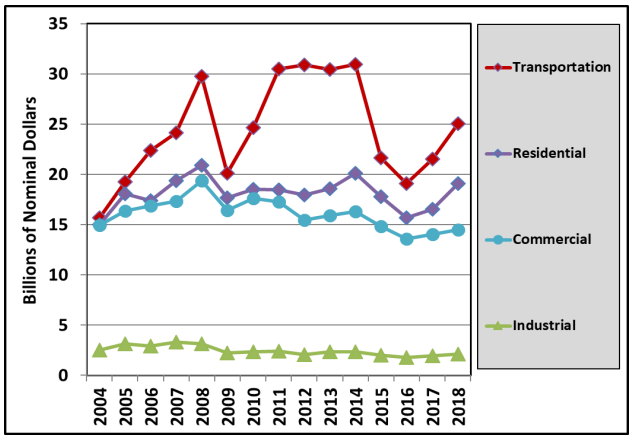

Table 5-1. (In Million Dollars)

	2004	2009	2014	2015	2016	2017	2018
Residential							
Coal	$1.4	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Petroleum	$2,963.6	$3,031.7	$4,099.3	$3,010.2	$2,099.2	$2,279.7	$3,186.7
Distillate	$2,439.9	$2,269.8	$3,129.5	$2,348.5	$1,479.6	$1,540.5	$2,185.7
Kerosene	$140.6	$114.9	$113.6	$43.2	$45.3	$37.8	$50.0
LPG	$383.0	$647.0	$856.2	$618.5	$574.3	$701.4	$951.0
Natural Gas	$4,910.3	$6,092.8	$5,745.0	$5,062.2	$4,472.7	$5,207.7	$6,009.3
Electricity	$6,889.8	$8,443.1	$10,031.3	$9,456.4	$8,933.7	$8,848.8	$9,659.0
Wood	$249.8	$124.8	$216.0	$248.1	$168.6	$181.5	$243.3
Total	$15,015.0	$17,692.3	$20,091.7	$17,777.0	$15,674.2	$16,517.7	$19,098.3
Commercial							
Coal	$6.8	$3.2	$0.0	$0.0	$0.0	$0.0	$0.0
Petroleum	$1,676.5	$1,739.3	$1,299.2	$920.8	$650.5	$770.2	$960.2
Distillate	$1,126.9	$1,047.3	$1,060.1	$805.4	$534.5	$624.0	$798.3
Residual	$385.5	$535.6	$78.5	$15.4	$12.0	$14.0	$10.1
Kerosene	$50.7	$20.0	$9.1	$2.6	$4.3	$2.9	$5.5
LPG	$113.4	$136.4	$151.6	$97.4	$99.7	$129.3	$146.3
Natural Gas	$3,629.9	$3,008.9	$2,660.1	$2,134.2	$1,873.1	$2,130.7	$2,431.6
Electricity	$9,653.7	$11,661.3	$12,339.7	$11,786.7	$11,055.1	$11,111.8	$11,128.9
Total	$14,966.9	$16,412.8	$16,299.0	$14,841.6	$13,578.7	$14,012.6	$14,520.6
Industrial							
Coal	$76.2	$94.5	$79.3	$77.5	$50.6	$54.2	$43.6
Petroleum	$352.8	$328.2	$419.4	$248.2	$190.5	$234.3	$281.6
Distillate	$186.3	$243.3	$262.8	$176.1	$121.6	$161.2	$194.9
Residual	$50.0	$30.3	$51.2	$21.2	$17.5	$26.4	$26.2
Kerosene	$21.6	$6.5	$21.4	$10.4	$11.3	$4.7	$12.6
LPG	$94.9	$48.1	$84.0	$40.5	$40.1	$41.9	$48.0
Natural Gas	$635.5	$696.7	$687.9	$551.7	$480.1	$598.4	$717.2
Electricity	$1,455.3	$1,123.4	$1,184.3	$1,140.6	$1,067.7	$1,055.0	$1,088.0
Total	$2,519.8	$2,242.8	$2,370.9	$2,018.0	$1,788.8	$1,941.9	$2,130.4
Transportation							
Petroleum	$15,372.8	$19,500.6	$29,931.5	$20,675.9	$18,354.8	$20,867.2	$24,368.2
Distillate	$2,816.3	$2,920.4	$4,633.3	$3,555.8	$3,172.7	$3,701.7	$4,699.6
Residual	$172.4	$608.4	$644.3	$229.7	$174.8	$177.3	$207.0
Motor Gasoline	$10,815.3	$13,428.6	$18,936.9	$13,447.7	$12,353.9	$13,868.7	$15,477.1
Jet Fuel	$1,564.3	$2,534.0	$5,713.4	$3,441.0	$2,651.8	$3,114.7	$3,981.5
LPG	$4.5	$9.3	$3.4	$1.7	$1.6	$4.8	$3.0
Natural Gas	$73.4	$183.7	$625.2	$582.0	$412.4	$314.6	$302.9
Electricity	$209.8	$397.3	$394.2	$364.8	$332.2	$350.4	$358.5
Total	$15,656.0	$20,081.6	$30,950.8	$21,622.8	$19,099.4	$21,532.2	$25,029.7
Total							
Coal	$84.4	$97.7	$79.3	$77.5	$50.6	$54.2	$43.6
Petroleum	$20,365.7	$24,599.8	$35,749.3	$24,855.1	$21,295.0	$24,151.3	$28,796.7
Distillate	$6,569.4	$6,480.8	$9,085.7	$6,885.9	$5,308.4	$6,027.4	$7,878.4
Residual	$607.9	$1,174.3	$774.0	$266.2	$204.3	$217.8	$243.3
Motor Gasoline	$10,815.3	$13,428.6	$18,936.9	$13,447.7	$12,353.9	$13,868.7	$15,477.1
Kerosene	$212.9	$141.4	$144.1	$56.2	$60.9	$45.5	$68.1
Jet Fuel	$1,564.3	$2,534.0	$5,713.4	$3,441.0	$2,651.8	$3,114.7	$3,981.5
LPG	$595.8	$840.8	$1,095.2	$758.0	$715.7	$877.4	$1,148.2
Natural Gas	$9,249.2	$9,982.1	$9,718.2	$8,330.1	$7,238.2	$8,251.4	$9,461.1
Electricity	$18,208.6	$21,625.1	$23,949.5	$22,748.4	$21,388.7	$21,366.0	$22,234.4
Wood	$249.8	$124.8	$216.0	$248.1	$168.6	$181.5	$243.3
Total	**$48,157.7**	**$56,429.5**	**$69,712.4**	**$56,259.3**	**$50,141.1**	**$54,004.4**	**$60,779.1**

New York State
Energy Expenditure Estimates
by Fuel Type and Sector
in Constant 2018 Dollars
2004–2018

Figure 5-2.

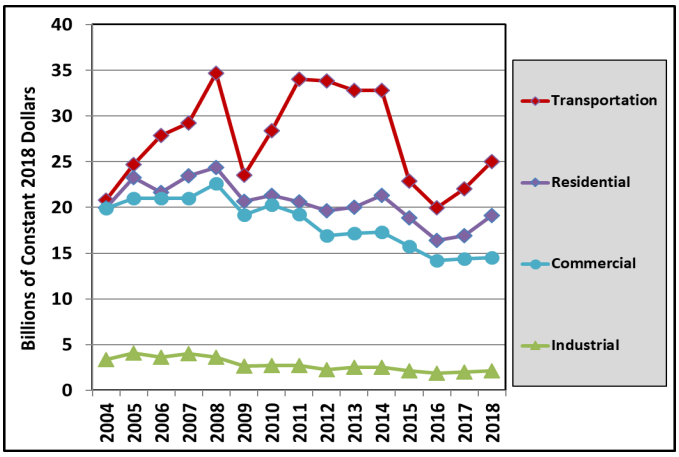

Table 5-2. (In Million Dollars)

	2004	2009	2014	2015	2016	2017	2018
Residential							
Coal	$1.9	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Petroleum	$3,939.5	$3,548.5	$4,348.1	$3,189.2	$2,196.3	$2,335.4	$3,186.7
Distillate	$3,243.4	$2,656.7	$3,319.5	$2,488.1	$1,548.1	$1,578.1	$2,185.7
Kerosene	$187.0	$134.5	$120.5	$45.8	$47.4	$38.8	$50.0
LPG	$509.1	$757.3	$908.2	$655.3	$600.8	$718.5	$951.0
Natural Gas	$6,527.4	$7,131.3	$6,093.8	$5,363.1	$4,679.5	$5,334.9	$6,009.3
Electricity	$9,158.7	$9,882.3	$10,640.3	$10,018.6	$9,346.9	$9,064.9	$9,659.0
Wood	$332.1	$146.0	$229.2	$262.9	$176.4	$185.9	$243.3
Total	$19,959.6	$20,708.2	$21,311.4	$18,833.8	$16,399.1	$16,921.1	$19,098.3
Commercial							
Coal	$9.0	$3.7	$0.0	$0.0	$0.0	$0.0	$0.0
Petroleum	$2,228.7	$2,035.8	$1,378.1	$975.5	$680.6	$789.0	$960.2
Distillate	$1,498.0	$1,225.8	$1,124.4	$853.3	$559.2	$639.2	$798.3
Residual	$512.5	$626.9	$83.2	$16.3	$12.5	$14.3	$10.1
Kerosene	$67.4	$23.4	$9.6	$2.8	$4.5	$3.0	$5.5
LPG	$150.7	$159.6	$160.8	$103.2	$104.3	$132.5	$146.3
Natural Gas	$4,825.3	$3,521.8	$2,821.6	$2,261.0	$1,959.7	$2,182.7	$2,431.6
Electricity	$12,832.7	$13,649.1	$13,088.7	$12,487.3	$11,566.4	$11,383.2	$11,128.9
Total	$19,895.6	$19,210.5	$17,288.4	$15,723.9	$14,206.7	$14,354.9	$14,520.6
Industrial							
Coal	$101.3	$110.6	$84.2	$82.1	$52.9	$55.5	$43.6
Petroleum	$468.9	$384.1	$444.8	$262.9	$199.3	$240.0	$281.6
Distillate	$247.7	$284.8	$278.8	$186.6	$127.2	$165.2	$194.9
Residual	$66.4	$35.5	$54.3	$22.5	$18.3	$27.1	$26.2
Kerosene	$28.7	$7.6	$22.7	$11.0	$11.8	$4.8	$12.6
LPG	$126.2	$56.3	$89.1	$42.9	$41.9	$42.9	$48.0
Natural Gas	$844.8	$815.5	$729.6	$584.5	$502.3	$613.0	$717.2
Electricity	$1,934.6	$1,314.9	$1,256.2	$1,208.4	$1,117.1	$1,080.8	$1,088.0
Total	$3,349.6	$2,625.1	$2,514.8	$2,137.9	$1,871.5	$1,989.3	$2,130.4
Transportation							
Petroleum	$20,435.2	$22,824.7	$31,748.4	$21,905.0	$19,203.7	$21,376.9	$24,368.2
Distillate	$3,743.7	$3,418.2	$4,914.6	$3,767.2	$3,319.4	$3,792.1	$4,699.6
Residual	$229.2	$712.1	$683.4	$243.3	$182.9	$181.7	$207.0
Motor Gasoline	$14,376.9	$15,717.6	$20,086.5	$14,247.2	$12,925.3	$14,207.4	$15,477.1
Jet Fuel	$2,079.4	$2,966.0	$6,060.3	$3,645.6	$2,774.4	$3,190.8	$3,981.5
LPG	$6.0	$10.8	$3.7	$1.8	$1.7	$4.9	$3.0
Natural Gas	$97.6	$215.0	$663.1	$616.6	$431.5	$322.2	$302.9
Electricity	$278.9	$465.0	$418.1	$386.5	$347.5	$359.0	$358.5
Total	$20,811.8	$23,504.7	$32,829.7	$22,908.2	$19,982.7	$22,058.1	$25,029.7
Total							
Coal	$112.2	$114.4	$84.2	$82.1	$52.9	$55.5	$43.6
Petroleum	$27,072.3	$28,793.1	$37,919.5	$26,332.7	$22,279.9	$24,741.2	$28,796.7
Distillate	$8,732.8	$7,585.5	$9,637.2	$7,295.2	$5,553.9	$6,174.6	$7,878.4
Residual	$808.1	$1,374.4	$820.9	$282.1	$213.7	$223.1	$243.3
Motor Gasoline	$14,376.9	$15,717.6	$20,086.5	$14,247.2	$12,925.3	$14,207.4	$15,477.1
Kerosene	$283.1	$165.5	$152.8	$59.6	$63.8	$46.6	$68.1
Jet Fuel	$2,079.4	$2,966.0	$6,060.3	$3,645.6	$2,774.4	$3,190.8	$3,981.5
LPG	$792.0	$984.1	$1,161.7	$803.1	$748.8	$898.8	$1,148.2
Natural Gas	$12,295.0	$11,683.6	$10,308.1	$8,825.3	$7,573.0	$8,452.9	$9,461.1
Electricity	$24,205.0	$25,311.3	$25,403.3	$24,100.8	$22,377.9	$21,887.8	$22,234.4
Wood	$332.1	$146.0	$229.2	$262.9	$176.4	$185.9	$243.3
Total	**$64,016.6**	**$66,048.4**	**$73,944.3**	**$59,603.8**	**$52,460.1**	**$55,323.4**	**$60,779.1**

New York Out-of-State Energy Expenditure Estimates by Fuel Type in Nominal and Constant 2018 Dollars 2004–2018

Figure 5-3.

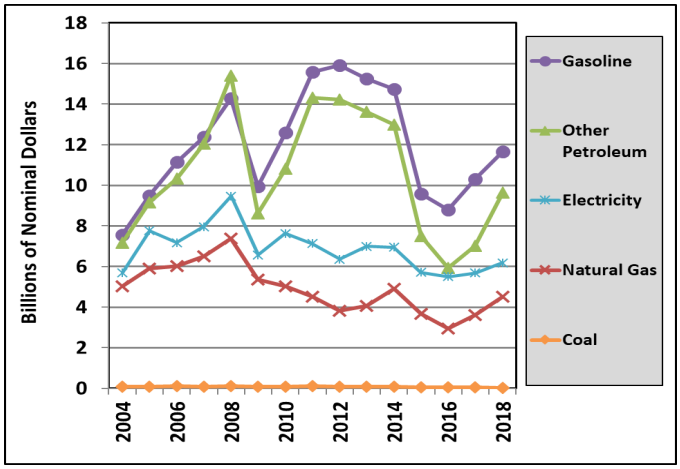

Table 5-3a. (In Million Nominal Dollars)

Year	Coal	Natural Gas	Gasoline	Other Petroleum	Electricity	Total
2004	$ 71.8	$ 5,033.1	$ 7,551.4	$ 7,162.8	$ 5,699.0	$ 25,518.0
2005	$ 84.8	$ 5,910.1	$ 9,496.0	$ 9,172.4	$ 7,766.1	$ 32,429.4
2006	$ 102.6	$ 6,008.6	$ 11,137.1	$ 10,345.4	$ 7,171.9	$ 34,765.6
2007	$ 93.8	$ 6,516.4	$ 12,378.7	$ 12,050.0	$ 7,954.7	$ 38,993.6
2008	$ 99.0	$ 7,374.9	$ 14,285.9	$ 15,408.5	$ 9,473.9	$ 46,642.2
2009	$ 83.1	$ 5,344.9	$ 9,939.7	$ 8,631.5	$ 6,570.3	$ 30,569.4
2010	$ 96.4	$ 5,019.0	$ 12,588.0	$ 10,829.9	$ 7,628.7	$ 36,162.0
2011	$ 104.8	$ 4,520.3	$ 15,569.7	$ 14,304.3	$ 7,124.4	$ 41,623.6
2012	$ 97.2	$ 3,820.5	$ 15,910.1	$ 14,240.6	$ 6,369.0	$ 40,437.4
2013	$ 80.1	$ 4,062.2	$ 15,248.9	$ 13,623.3	$ 6,988.3	$ 40,002.8
2014	$ 67.4	$ 4,906.3	$ 14,750.4	$ 12,991.1	$ 6,944.4	$ 39,659.6
2015	$ 65.9	$ 3,680.7	$ 9,576.6	$ 7,510.2	$ 5,708.4	$ 26,541.8
2016	$ 43.0	$ 2,942.6	$ 8,801.9	$ 5,933.1	$ 5,505.1	$ 23,225.7
2017	$ 46.1	$ 3,625.6	$ 10,299.7	$ 7,017.8	$ 5,686.2	$ 26,675.4
2018	$ 37.0	$ 4,506.0	$ 11,657.5	$ 9,636.4	$ 6,176.4	$ 32,013.3

Table 5-3b. (In Million Constant 2018 Dollars)

Year	Coal	Natural Gas	Gasoline	Other Petroleum	Electricity	Total
2004	$ 95.4	$ 6,690.6	$ 10,038.1	$ 9,521.5	$ 7,575.7	$ 33,921.3
2005	$ 109.0	$ 7,598.9	$ 12,209.4	$ 11,793.5	$ 9,985.2	$ 41,696.1
2006	$ 127.8	$ 7,484.1	$ 13,872.0	$ 12,886.0	$ 8,933.1	$ 43,303.0
2007	$ 113.6	$ 7,891.9	$ 14,991.5	$ 14,593.4	$ 9,633.7	$ 47,224.2
2008	$ 115.5	$ 8,601.4	$ 16,661.6	$ 17,970.9	$ 11,049.3	$ 54,398.7
2009	$ 97.2	$ 6,255.9	$ 11,634.0	$ 10,102.8	$ 7,690.3	$ 35,780.2
2010	$ 111.0	$ 5,779.7	$ 14,496.0	$ 12,471.4	$ 8,785.0	$ 41,643.1
2011	$ 117.0	$ 5,046.2	$ 17,381.0	$ 15,968.4	$ 7,953.2	$ 46,465.8
2012	$ 106.3	$ 4,178.5	$ 17,400.8	$ 15,574.9	$ 6,965.8	$ 44,226.4
2013	$ 86.3	$ 4,378.7	$ 16,437.0	$ 14,684.7	$ 7,532.7	$ 43,119.5
2014	$ 71.5	$ 5,204.1	$ 15,645.9	$ 13,779.7	$ 7,365.9	$ 42,067.1
2015	$ 69.8	$ 3,899.5	$ 10,145.9	$ 7,956.7	$ 6,047.7	$ 28,119.6
2016	$ 45.0	$ 3,078.7	$ 9,209.0	$ 6,207.5	$ 5,759.7	$ 24,299.9
2017	$ 47.2	$ 3,714.2	$ 10,551.3	$ 7,189.2	$ 5,825.1	$ 27,326.9
2018	$ 37.0	$ 4,506.0	$ 11,657.5	$ 9,636.4	$ 6,176.4	$ 32,013.3

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 2018. Hydroelectric power is produced at various locations throughout the State, and in 2018, it produced more hydroelectric power than any other state east of the Rocky Mountains. The State is currently the 14th largest in the U.S. in installed wind power through the end of 2018 with a capacity of more than 1,991 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 2018

- In-State resources produced 11.0% of the State's total primary energy requirement, including 6.2% from hydropower and 3.1% 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 55.8% and 28.3%, respectively, of the State's primary energy production. Wind, solar, and geothermal resources accounted for 12.8% of the primary energy production, while crude oil and natural gas constitute the remaining 3.1%.
- In-State crude oil and natural gas production represent less than 0.1% and 0.9%, respectively, of its 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 increased 3.5% from 2017 to 2018. In 2018, natural gas production was 11.8 billion cubic feet, and accounted for 0.3% of the State's total primary energy use.
- Energy production from solar resources increased 27.1% from 2017 to 2018 while collective production of biofuels including ethanol, waste, wood, and landfill gas increased 2.8%.

New York State
Primary Energy Production
by Fuel Type[1]
2004–2018

Figure 6-1.

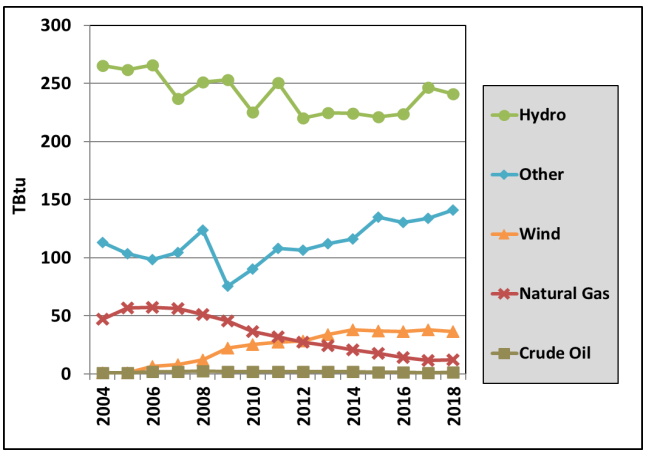

Table 6-1a. (In Physical Units)

Year	Hydro Electricity[2]	Natural Gas	Crude Oil	Ethanol	Distributed Solar	Utility Solar	Total Solar
	GWh	Bcf	Mbbl	Mbbl	GWh	GWh	GWh
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
2018	29,856	11.8	221	3,958	1,501	294	1,795

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
2004	265.0	47.2	1.0	112.1	1.2	0.7	0.5	427.7
2005	261.5	56.6	1.2	102.2	1.0	0.8	0.6	423.9
2006	265.9	57.2	1.8	96.6	6.5	1.0	0.7	429.7
2007	236.9	56.2	2.2	102.8	8.2	1.2	0.7	408.2
2008	251.2	51.4	2.2	121.7	12.3	1.3	0.8	441.0
2009	252.9	45.8	1.9	72.9	22.1	1.5	1.0	398.1
2010	225.4	36.6	2.2	87.6	25.3	1.7	1.1	380.0
2011	250.7	31.9	2.2	104.6	27.5	2.1	1.3	420.2
2012	220.1	27.2	2.1	102.2	28.5	3.2	1.2	384.6
2013	224.7	24.2	2.1	106.8	33.8	3.9	1.2	396.8
2014	224.3	20.8	2.1	109.6	37.7	5.3	1.2	401.1
2015	221.2	17.9	1.6	126.0	37.1	7.7	1.2	412.7
2016	223.5	13.9	1.3	118.3	36.4	10.7	1.2	405.3
2017	246.5	11.8	1.1	118.8	38.1	13.9	1.2	431.4
2018	240.8	12.2	1.3	122.2	36.4	17.7	1.2	431.8

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.

Appendices

Appendix A-1

New York State Estimated Greenhouse Gas Emissions[1] from Fuel Combustion 2004–2018

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

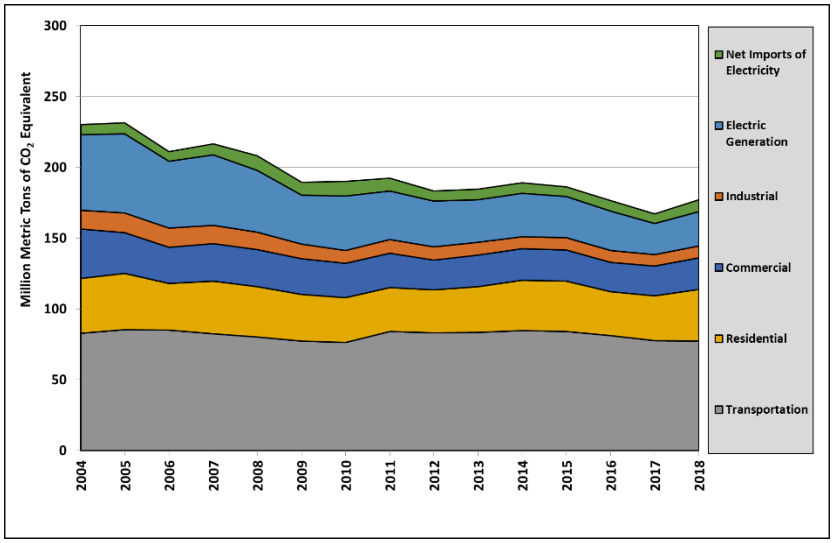

Table A-1. GHG Emissions by Sector (In Million Metric Tons Carbon Dioxide Equivalent)[2,3]

Year	Residential	Commercial	Industrial	Transportation	Electric Generation	Net Imports of Electricity[4]	Total[5]
2004	39.0	34.9	13.2	82.6	53.2	7.4	230.3
2005	39.9	28.7	14.0	85.3	55.7	7.9	231.5
2006	33.1	25.4	13.5	84.9	47.3	6.9	211.1
2007	36.9	26.7	12.8	82.6	49.9	7.7	216.6
2008	35.7	25.9	12.5	80.2	43.5	10.5	208.2
2009	32.9	25.1	10.3	77.3	34.8	9.1	189.5
2010	31.8	24.2	9.1	76.3	38.4	10.3	190.1
2011	31.2	24.2	9.7	83.9	34.1	9.3	192.5
2012	30.4	21.0	9.4	82.9	32.4	7.2	183.3
2013	32.3	22.4	8.9	83.4	30.2	7.5	184.7
2014	35.6	22.1	8.6	84.8	30.6	7.4	189.0
2015	35.8	21.8	8.8	84.0	29.2	6.5	186.1
2016	31.1	20.7	8.4	81.1	27.8	7.2	176.4
2017	31.7	21.1	8.1	77.5	22.1	6.7	167.1
2018	36.7	22.2	8.2	77.1	24.5	8.3	177.1

1 Total greenhouse gas (GHG) emissions from fuel combustion include carbon dioxide (CO_2), 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 HG 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 as well as natural gas systems.

Appendix A-2

New York State Estimated CO_2 Emissions by Fuel Type[1,2] from Fuel Combustion, 2018

Figure A-2. CO_2 Emissions from Fuel Combustion by Fuel Type[1,2]

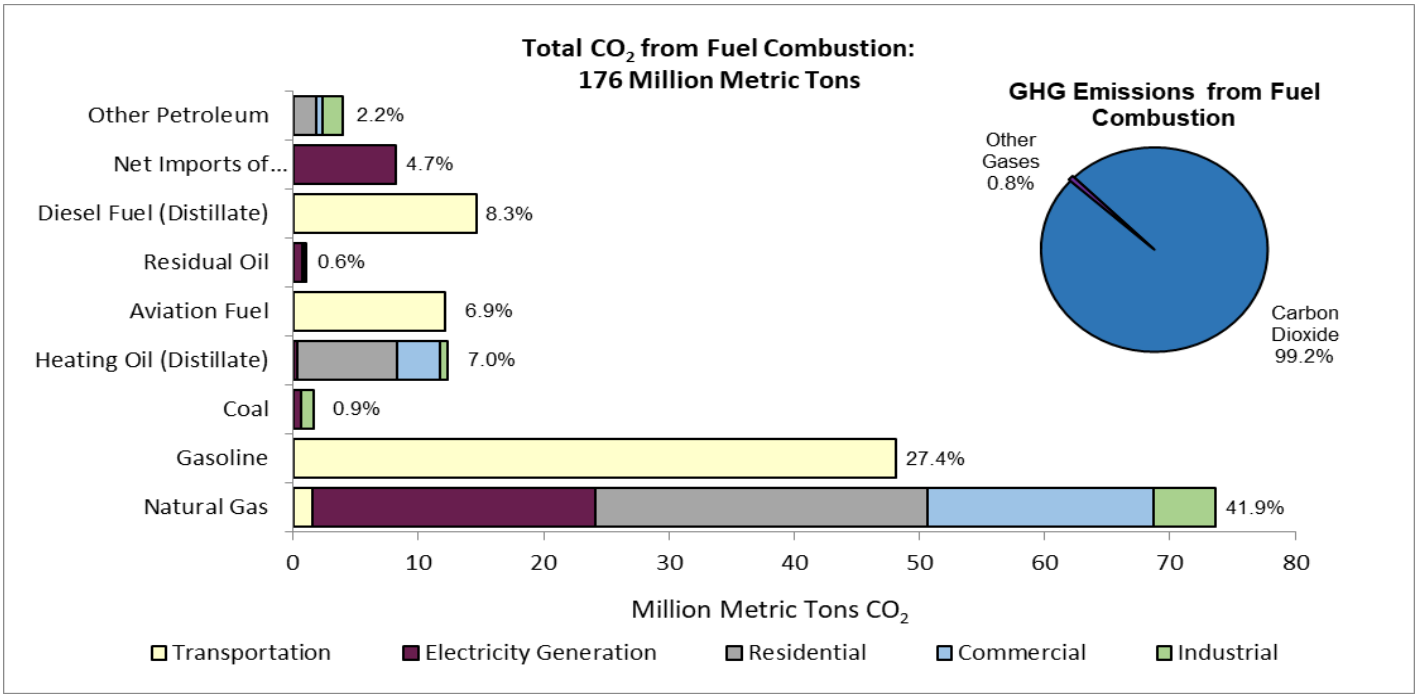

Table A-2. CO_2 Emissions from Fuel Combustion by Fuel Type (In Million Metric Tons Carbon Dioxide)[3,4]

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	1.84	0.52	1.58	3.94	2.2
Net Imports of Electricity	N/A	6.64	N/A	N/A	N/A	8.24	4.7
Diesel Fuel (Distillate)	11.50	N/A	N/A	N/A	N/A	14.66	8.3
Residual Oil	N/A	0.76	N/A	0.07	0.19	1.03	0.6
Jet Fuel	12.15	N/A	N/A	N/A	N/A	12.15	6.9
Heating Oil (Distillate)	N/A	0.34	7.96	3.45	0.58	12.33	7.0
Coal	N/A	0.67	N/A	N/A	0.95	1.61	0.9
Gasoline	48.13	N/A	N/A	N/A	N/A	48.13	27.4
Natural Gas	1.51	22.65	26.54	18.04	4.90	73.64	41.9

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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 as well as 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 CO_2 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 Greenhouse gas 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, 2015[1]

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-Heating[3]

	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		

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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 State 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, 2016–2018

Table C-1. (In Thousand Gallons)

County	2016	2017	2018
New York State	**5,734,254**	**5,801,060**	**5,840,676**
New York City	**1,101,658**	**1,115,126**	**1,119,201**
Rest of State	**4,632,596**	**4,685,934**	**4,721,475**
Albany	131,898	135,013	130,851
Alleghany	15,542	15,015	14,957
Broome	100,367	107,975	106,999
Cattaraugus	23,157	21,184	24,407
Cayuga	31,577	26,398	32,814
Chautauqua	44,023	47,611	47,720
Chemung	33,869	38,369	37,973
Chenango	23,591	23,888	24,161
Clinton	44,217	48,120	48,535
Columbia	40,589	47,642	49,212
Cortland	25,931	26,939	25,728
Delaware	20,794	20,738	20,415
Dutchess	106,405	119,653	118,228
Erie	364,977	344,070	329,057
Essex	20,640	19,880	18,700
Franklin	17,924	17,780	17,252
Fulton	25,509	18,818	25,594
Genesee	53,029	54,205	53,771
Greene	28,123	29,901	28,624
Hamilton	3,139	3,181	3,054
Herkimer	28,319	28,003	27,392
Jefferson	57,906	58,162	53,933
Lewis	14,129	13,205	12,097
Livingston	34,593	34,740	37,237
Madison	19,753	17,938	20,202
Monroe	275,923	280,586	268,037
Montgomery	38,330	37,875	37,580
Nassau	528,544	543,284	530,167
Niagara	71,759	71,567	67,537
Oneida	103,976	88,131	98,102
Onondaga	223,439	233,878	226,778
Ontario	59,779	65,358	64,408
Orange	158,057	192,214	187,511
Orleans	11,138	11,648	11,410
Oswego	50,450	46,156	50,619
Otsego	29,829	30,325	30,224
Putnam	49,024	52,152	50,142
Rensselaer	71,066	72,265	72,759
Rockland	56,006	69,414	70,850
St. Lawrence	43,818	45,857	42,040
Saratoga	100,677	114,934	119,491
Schenectady	70,892	72,337	69,375
Schoharie	13,875	14,574	14,738
Schuyler	8,680	8,829	8,329
Seneca	32,571	34,644	32,139
Steuben	54,810	57,731	60,049
Suffolk	689,418	689,424	680,480
Sullivan	31,623	35,212	36,646
Tioga	21,345	24,835	29,260
Tompkins	33,335	28,678	33,002
Ulster	83,068	86,325	89,560
Warren	38,009	44,766	46,692
Washington	15,935	19,540	19,467
Wayne	39,883	40,761	40,496
Westchester	293,600	229,716	299,999
Wyoming	16,211	16,483	16,896
Yates	7,528	8,005	7,780

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

Estimated Annual Residential Energy Consumption by County in New York State, 2004–2018

Table C-2.

Residential Energy Consumption	Natural Gas		Propane		Electricity		Distillate		Kerosene		Wood	
	Bcf		Mbbl		GWh		Mbbl		Mbbl		MCords	
County	2018	2004	2018	2004	2018	2004	2018	2004	2018	2004	2018	2004
Albany	12.4	9.4	84	53	1,712	1,254	157	269	3	16	23	37
Allegany	1.6	1.2	61	42	183	156	20	33	0	2	32	68
Bronx	15.1	11.2	113	86	2,009	1,963	1,608	3,197	32	193	1	4
Broome	8.4	6.1	158	112	1,016	672	162	185	3	11	36	66
Cattaraugus	2.7	2.0	125	97	362	360	36	52	1	3	42	93
Cayuga	2.6	1.9	134	93	321	263	81	107	2	6	29	56
Chautauqua	5.9	4.6	117	90	661	581	20	32	0	2	34	75
Chemung	4.4	3.1	61	34	374	256	38	47	1	3	18	33
Chenango	0.5	0.3	93	52	337	244	125	149	3	9	37	68
Clinton	0.7	0.3	54	25	982	719	258	267	5	16	43	58
Columbia	0.5	0.4	95	50	341	337	219	279	4	17	24	45
Cortland	1.5	1.0	48	33	182	176	44	57	1	3	18	32
Delaware	0.4	0.3	85	48	237	185	152	184	3	11	48	81
Dutchess	4.4	3.0	159	98	1,324	1,078	892	1,073	18	65	34	51
Erie	53.1	37.7	199	153	2,195	1,744	84	134	2	8	32	93
Essex	0.1	0.1	80	38	227	248	173	167	3	10	39	54
Franklin	0.2	0.2	73	31	310	233	204	208	4	13	48	54
Fulton	1.4	1.0	57	39	159	140	117	137	2	8	24	46
Genesee	2.3	1.7	96	67	217	191	44	62	1	4	13	29
Greene	0.2	0.1	66	44	225	181	154	222	3	13	21	35
Hamilton	0.0	0.0	12	11	7	17	11	22	0	1	4	13
Herkimer	2.0	1.3	61	36	272	264	124	142	2	9	36	53
Jefferson	3.1	2.0	192	108	857	578	127	172	3	10	47	68
Kings	54.7	49.8	255	242	2,803	2,525	717	2,306	14	139	2	12
Lewis	0.3	0.1	59	28	82	72	68	92	1	6	41	74
Livingston	1.8	1.4	117	82	286	285	44	64	1	4	21	47
Madison	1.9	1.4	101	57	277	253	111	139	2	8	28	48
Monroe	37.3	27.9	139	111	3,764	2,903	108	191	2	12	22	50
Montgomery	1.4	1.1	32	23	151	126	81	110	2	7	15	27
Nassau	30.3	25.9	150	97	1,527	1,980	1,925	3,946	39	238	6	16
New York	21.5	16.8	173	148	6,749	6,584	1,357	3,491	27	210	1	3
Niagara	11.5	8.1	126	102	646	546	82	122	2	7	19	38
Oneida	8.6	6.2	156	91	953	786	255	346	5	21	52	69
Onondaga	21.9	16.1	160	114	3,118	2,067	131	192	3	12	29	56
Ontario	4.1	3.0	144	124	546	419	56	94	1	6	25	48
Orange	7.1	6.8	128	127	789	963	460	822	9	50	19	46
Orleans	1.1	0.8	96	65	158	151	43	61	1	4	17	31
Oswego	3.3	2.3	257	199	523	361	102	139	2	8	68	104
Otsego	0.7	0.4	102	85	221	230	148	206	3	12	43	76
Putnam	0.3	0.3	36	34	486	626	276	456	6	27	10	18
Queens	49.3	44.3	251	210	2,186	2,714	916	2,787	18	168	3	10
Rensselaer	4.6	3.3	130	89	699	610	246	320	5	19	39	65
Richmond	14.8	14.9	46	41	377	386	93	249	2	15	1	1
Rockland	9.3	10.0	20	22	507	533	38	66	1	4	3	5
St. Lawrence	3.0	1.6	136	73	507	388	242	277	5	17	93	136
Saratoga	8.3	5.5	279	178	1,046	827	224	313	5	19	37	80
Schenectady	5.8	4.9	46	34	582	507	65	125	1	8	9	15
Schoharie	0.1	0.1	60	31	159	168	89	133	2	8	26	47
Schuyler	0.2	0.2	52	43	94	76	25	34	1	2	12	21
Seneca	0.9	0.7	72	62	165	117	32	40	1	2	9	14
Steuben	3.4	2.6	133	117	403	308	46	73	1	4	50	96
Suffolk	23.1	21.5	256	225	2,280	3,016	3,114	5,514	63	332	31	63
Sullivan	0.2	0.1	128	110	423	351	297	316	6	19	38	59
Tioga	1.1	0.7	82	50	233	144	114	145	2	9	25	45
Tompkins	3.1	2.1	124	92	692	535	61	77	1	5	30	44
Ulster	2.3	1.5	227	136	742	622	547	751	11	45	62	83
Warren	2.3	1.5	111	60	357	294	122	151	2	9	26	36
Washington	0.9	0.7	96	64	307	208	192	206	4	12	50	77
Wayne	3.2	2.3	142	102	442	422	66	105	1	6	29	58
Westchester	16.7	15.6	127	113	2,031	2,107	1,310	2,537	26	153	8	20
Wyoming	1.3	0.9	68	44	202	192	25	38	1	2	21	43
Yates	0.4	0.3	61	56	131	139	21	30	0	2	15	29
New York State	**485.7**	**392.7**	**7,098**	**5,119**	**52,153**	**47,379**	**18,696**	**34,262**	**376**	**2,065**	**1,716**	**3,017**

Estimated Annual Residential Energy Consumption by County in New York State (TBtu), 2004–2018

Table C-3.

Residential Energy Consumption	Natural Gas (TBtu)		Propane (TBtu)		Electricity (TBtu)		Distillate (TBtu)		Kerosene (TBtu)		Wood (TBtu)		Solar (TBtu)	
County	2018	2004	2018	2004	2018	2004	2018	2004	2018	2004	2018	2004	2018	2004
Albany	12.8	9.7	0.3	0.2	5.8	4.3	0.9	1.6	0.0	0.1	0.5	0.7	0.3	0.0
Allegany	1.6	1.2	0.2	0.2	0.6	0.5	0.1	0.2	0.0	0.0	0.6	1.4	0.0	0.0
Bronx	15.6	11.5	0.4	0.3	6.9	6.7	9.3	18.6	0.2	1.1	0.0	0.1	0.2	0.0
Broome	8.7	6.3	0.6	0.4	3.5	2.3	0.9	1.1	0.0	0.1	0.7	1.3	0.0	0.0
Cattaraugus	2.8	2.1	0.5	0.4	1.2	1.2	0.2	0.3	0.0	0.0	0.8	1.9	0.0	0.0
Cayuga	2.7	1.9	0.5	0.4	1.1	0.9	0.5	0.6	0.0	0.0	0.6	1.1	0.0	0.0
Chautauqua	6.1	4.7	0.5	0.3	2.3	2.0	0.1	0.2	0.0	0.0	0.7	1.5	0.1	0.0
Chemung	4.5	3.2	0.2	0.1	1.3	0.9	0.2	0.3	0.0	0.0	0.4	0.7	0.1	0.0
Chenango	0.5	0.4	0.4	0.2	1.2	0.8	0.7	0.9	0.0	0.1	0.7	1.4	0.0	0.0
Clinton	0.7	0.3	0.2	0.1	3.3	2.5	1.5	1.6	0.0	0.1	0.9	1.2	0.0	0.0
Columbia	0.5	0.4	0.4	0.2	1.2	1.1	1.3	1.6	0.0	0.1	0.5	0.9	0.2	0.0
Cortland	1.6	1.0	0.2	0.1	0.6	0.6	0.3	0.3	0.0	0.0	0.4	0.6	0.1	0.0
Delaware	0.4	0.3	0.3	0.2	0.8	0.6	0.9	1.1	0.0	0.1	1.0	1.6	0.1	0.0
Dutchess	4.5	3.1	0.6	0.4	4.5	3.7	5.1	6.2	0.1	0.4	0.7	1.0	0.4	0.0
Erie	54.9	38.8	0.8	0.6	7.5	6.0	0.5	0.8	0.0	0.0	0.6	1.9	0.2	0.0
Essex	0.1	0.1	0.3	0.1	0.8	0.8	1.0	1.0	0.0	0.1	0.8	1.1	0.2	0.0
Franklin	0.2	0.2	0.3	0.1	1.1	0.8	1.2	1.2	0.0	0.1	1.0	1.1	0.0	0.0
Fulton	1.5	1.1	0.2	0.1	0.5	0.5	0.7	0.8	0.0	0.0	0.5	0.9	0.1	0.0
Genesee	2.4	1.7	0.4	0.3	0.7	0.7	0.3	0.4	0.0	0.0	0.3	0.6	0.1	0.0
Greene	0.2	0.1	0.3	0.2	0.8	0.6	0.9	1.3	0.0	0.1	0.4	0.7	0.0	0.0
Hamilton	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0
Herkimer	2.1	1.4	0.2	0.1	0.9	0.9	0.7	0.8	0.0	0.0	0.7	1.1	0.0	0.0
Jefferson	3.2	2.1	0.7	0.4	2.9	2.0	0.7	1.0	0.0	0.1	0.9	1.4	0.0	0.0
Kings	56.5	51.2	1.0	0.9	9.6	8.6	4.1	13.4	0.1	0.8	0.0	0.2	0.4	0.1
Lewis	0.3	0.1	0.2	0.1	0.3	0.2	0.4	0.5	0.0	0.0	0.8	1.5	0.0	0.0
Livingston	1.9	1.4	0.4	0.3	1.0	1.0	0.3	0.4	0.0	0.0	0.4	0.9	0.1	0.0
Madison	2.0	1.4	0.4	0.2	0.9	0.9	0.6	0.8	0.0	0.0	0.6	1.0	0.0	0.0
Monroe	38.5	28.7	0.5	0.4	12.8	9.9	0.6	1.1	0.0	0.1	0.4	1.0	0.2	0.0
Montgomery	1.4	1.1	0.1	0.1	0.5	0.4	0.5	0.6	0.0	0.0	0.3	0.5	0.1	0.0
Nassau	31.3	26.6	0.6	0.4	5.2	6.8	11.1	23.0	0.2	1.3	0.1	0.3	0.8	0.0
New York	22.2	17.2	0.7	0.6	23.0	22.5	7.8	20.3	0.2	1.2	0.0	0.1	0.4	0.1
Niagara	11.8	8.3	0.5	0.4	2.2	1.9	0.5	0.7	0.0	0.0	0.4	0.8	0.1	0.0
Oneida	8.9	6.4	0.6	0.4	3.3	2.7	1.5	2.0	0.0	0.1	1.0	1.4	0.3	0.0
Onondaga	22.6	16.5	0.6	0.4	10.6	7.1	0.8	1.1	0.0	0.1	0.6	1.1	0.2	0.0
Ontario	4.3	3.1	0.6	0.5	1.9	1.4	0.3	0.5	0.0	0.0	0.5	1.0	0.1	0.0
Orange	7.3	7.0	0.5	0.5	2.7	3.3	2.6	4.8	0.1	0.3	0.4	0.9	0.1	0.0
Orleans	1.2	0.8	0.4	0.2	0.5	0.5	0.2	0.4	0.0	0.0	0.3	0.6	0.0	0.0
Oswego	3.4	2.4	1.0	0.8	1.8	1.2	0.6	0.8	0.0	0.0	1.4	2.1	0.1	0.0
Otsego	0.7	0.4	0.4	0.3	0.8	0.8	0.9	1.2	0.0	0.1	0.9	1.5	0.1	0.0
Putnam	0.3	0.3	0.1	0.1	1.7	2.1	1.6	2.7	0.0	0.2	0.2	0.4	0.0	0.0
Queens	50.9	45.5	1.0	0.8	7.5	9.3	5.3	16.2	0.1	1.0	0.1	0.2	0.3	0.0
Rensselaer	4.7	3.4	0.5	0.3	2.4	2.1	1.4	1.9	0.0	0.1	0.8	1.3	0.2	0.0
Richmond	15.2	15.3	0.2	0.2	1.3	1.3	0.5	1.4	0.0	0.1	0.0	0.0	0.4	0.0
Rockland	9.6	10.2	0.1	0.1	1.7	1.8	0.2	0.4	0.0	0.0	0.1	0.1	0.1	0.0
St. Lawrence	3.1	1.6	0.5	0.3	1.7	1.3	1.4	1.6	0.0	0.1	1.9	2.7	0.0	0.0
Saratoga	8.6	5.7	1.1	0.7	3.6	2.8	1.3	1.8	0.0	0.1	0.7	1.6	0.2	0.0
Schenectady	6.0	5.0	0.2	0.1	2.0	1.7	0.4	0.7	0.0	0.0	0.2	0.3	0.3	0.0
Schoharie	0.1	0.1	0.2	0.1	0.5	0.6	0.5	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	0.3	0.2	0.6	0.4	0.2	0.2	0.0	0.0	0.2	0.3	0.0	0.0
Steuben	3.5	2.7	0.5	0.5	1.4	1.1	0.3	0.4	0.0	0.0	1.0	1.9	0.1	0.0
Suffolk	23.9	22.1	1.0	0.9	7.8	10.3	17.9	32.1	0.4	1.9	0.6	1.3	0.9	0.1
Sullivan	0.2	0.1	0.5	0.4	1.4	1.2	1.7	1.8	0.0	0.1	0.8	1.2	0.1	0.0
Tioga	1.1	0.7	0.3	0.2	0.8	0.5	0.7	0.8	0.0	0.0	0.5	0.9	0.2	0.0
Tompkins	3.3	2.1	0.5	0.4	2.4	1.8	0.4	0.4	0.0	0.0	0.6	0.9	0.2	0.0
Ulster	2.4	1.6	0.9	0.5	2.5	2.1	3.2	4.4	0.1	0.3	1.2	1.7	0.5	0.0
Warren	2.4	1.5	0.4	0.2	1.2	1.0	0.7	0.9	0.0	0.1	0.5	0.7	0.0	0.0
Washington	0.9	0.7	0.4	0.2	1.0	0.7	1.1	1.2	0.0	0.1	1.0	1.5	0.2	0.0
Wayne	3.3	2.4	0.5	0.4	1.5	1.4	0.4	0.6	0.0	0.0	0.6	1.2	0.0	0.0
Westchester	17.2	16.0	0.5	0.4	6.9	7.2	7.5	14.8	0.1	0.9	0.2	0.4	0.2	0.0
Wyoming	1.3	0.9	0.3	0.2	0.7	0.7	0.1	0.2	0.0	0.0	0.4	0.9	0.1	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	**501.6**	**403.5**	**27.3**	**19.7**	**177.9**	**161.7**	**107.7**	**199.3**	**2.1**	**11.7**	**34.3**	**60.3**	**9.3**	**0.7**

Appendix D-1

Occupied Housing Units by Type of Space Heating Fuel by County in New York State, 2014–2018, 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	7,316,537	4,286,403	283,653	840,252	1,592,482	17,851	133,515	4,953	81,233	76,195
New York City	3,154,103	2,002,700	62,000	365,295	610,509	1,846	1,404	1,424	47,824	61,101
Bronx	499,728	207,664	8,757	51,705	211,687	576	103	189	6,662	12,385
Kings	950,856	739,755	19,366	70,994	92,871	381	405	333	10,677	16,074
New York	758,133	317,211	14,341	186,360	191,568	542	239	436	22,968	24,468
Queens	779,234	592,108	16,966	49,254	105,576	329	505	218	6,856	7,422
Richmond	166,152	145,962	2,570	6,982	8,807	18	152	248	661	752
Rest of State	4,162,434	2,283,703	221,653	474,957	981,973	16,005	132,111	3,529	33,409	15,094
Albany	126,008	86,037	3,270	22,312	10,430	107	2,058	149	961	684
Alleghany	18,009	9,479	2,056	2,067	1,142	495	2,461	6	274	29
Broome	78,594	48,793	5,156	11,055	9,035	559	2,709	6	872	409
Cattaraugus	31,433	16,403	4,313	4,170	2,110	390	3,391	14	567	75
Cayuga	31,251	15,178	4,434	3,533	4,528	494	2,217	8	681	178
Chautauqua	52,572	35,896	4,037	7,575	1,152	100	2,687	38	902	185
Chemung	34,373	24,498	1,933	3,923	2,049	298	1,319	26	222	105
Chenango	20,616	3,008	3,044	3,665	6,926	640	2,812	15	448	58
Clinton	31,395	3,726	1,585	9,642	12,960	58	2,951	7	346	120
Columbia	25,243	2,974	3,235	3,882	12,792	37	1,878	67	329	49
Cortland	17,685	9,147	1,631	2,074	2,577	592	1,388	21	188	67
Delaware	19,030	2,153	2,581	2,392	7,838	251	3,366	22	401	26
Dutchess	107,347	27,776	5,659	15,677	54,021	111	2,747	150	846	360
Erie	387,847	343,237	7,223	26,579	5,180	154	2,664	100	1,500	1,210
Essex	15,425	514	2,160	2,036	7,927	79	2,410	58	189	52
Franklin	19,088	1,013	2,019	2,866	9,627	184	3,044	7	279	49
Fulton	22,439	8,953	1,988	1,861	6,989	135	1,972	27	462	52
Genesee	23,681	13,673	3,222	2,432	2,536	253	982	32	467	84
Greene	17,117	1,410	2,211	2,532	8,822	88	1,621	18	391	24
Hamilton	1,124	33	304	61	469	4	215	3	35	0
Herkimer	24,583	10,629	1,799	2,685	6,229	278	2,449	8	453	53
Jefferson	43,267	17,368	6,027	8,954	6,809	50	3,425	7	452	175
Lewis	10,242	1,548	1,675	776	3,290	73	2,660	0	201	19
Livingston	24,383	11,606	4,143	3,372	2,682	291	1,729	26	471	63
Madison	26,026	10,877	3,231	2,967	6,056	468	2,101	12	283	31
Monroe	300,796	238,422	4,985	45,124	6,626	127	1,791	76	2,175	1,470
Montgomery	19,665	9,148	1,192	1,902	5,209	338	1,281	23	392	180
Nassau	445,517	255,267	7,097	24,068	155,194	113	655	478	1,637	1,008
Niagara	88,211	69,597	4,299	7,352	4,752	104	1,526	27	405	149
Oneida	90,014	52,794	5,365	10,922	14,955	268	4,108	130	1,108	364
Onondaga	185,624	131,876	5,396	35,145	7,524	684	2,264	68	1,465	1,202
Ontario	44,286	26,083	5,096	6,453	3,399	440	2,081	46	476	212
Orange	126,776	63,516	6,421	13,243	39,461	260	2,255	74	939	607
Orleans	16,333	6,944	3,314	1,813	2,521	84	1,381	13	210	53
Oswego	46,032	19,331	8,595	5,824	5,802	390	5,249	35	697	109
Ostego	23,556	4,372	3,577	2,581	8,850	188	3,490	23	355	120
Putnam	34,847	2,666	1,647	7,467	21,655	21	1,029	5	308	49
Rensselaer	64,563	30,721	4,897	8,750	15,757	72	3,346	108	754	158
Rockland	100,005	85,626	1,056	8,759	3,329	52	308	90	359	426
St. Lawrence	41,669	14,795	3,808	4,747	11,597	76	6,006	9	418	213
Saratoga	93,876	53,114	10,039	12,549	13,737	187	3,032	89	819	310
Schenectady	53,295	38,868	1,726	7,285	4,136	24	762	135	239	120
Schoharie	12,559	770	2,093	1,839	5,229	126	2,085	8	331	78
Schuyler	7,304	1,300	1,807	1,101	1,492	479	959	0	155	11
Seneca	13,522	5,572	2,521	1,913	1,896	536	711	1	298	74
Steuben	40,183	21,363	4,755	4,815	2,813	1,605	4,116	43	566	107
Suffolk	487,981	189,709	11,823	35,035	244,728	281	3,270	526	1,636	973
Sullivan	27,890	973	3,923	4,317	15,504	189	2,684	39	228	33
Tioga	20,045	5,940	2,562	2,420	6,066	916	1,800	85	201	55
Tompkins	39,326	19,384	4,291	7,989	3,623	679	2,426	96	509	329
Ulster	69,539	14,196	7,893	8,619	32,483	92	4,952	220	751	333
Warren	27,553	12,120	3,298	3,543	6,212	67	1,804	12	358	139
Washington	24,009	4,573	2,837	3,013	9,625	196	3,396	65	232	72
Wayne	36,504	19,563	4,890	5,060	3,858	297	2,300	6	415	115
Westchester	347,332	168,983	7,235	38,548	127,150	281	1,040	141	2,149	1,805
Wyoming	15,815	7,612	2,230	2,218	1,429	243	1,591	21	445	26
Yates	9,029	2,576	2,049	1,455	1,185	401	1,157	10	159	37

Appendix D-2

Occupied Housing Units by Type of Space Heating Fuel by County in New York State, 2018, One-Year Estimates[1]

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	All Other Fuels	No Fuel Used
New York State	7,367,015	4,397,917	308,020	890,554	1,459,976	16,943	208,802	84,803
New York City	3,184,496	2,101,345	68,918	380,044	510,997	2,744	51,358	69,090
Bronx	507,370	229,492	10,838	60,902	179,811	1,285	7,854	17,188
Kings	969,317	763,411	22,744	79,362	74,886	565	10,497	17,852
New York	752,258	355,487	15,472	183,951	147,565	517	24,582	24,684
Queens	788,110	604,188	17,498	48,658	101,601	377	7,039	8,749
Richmond	167,441	148,767	2,366	7,171	7,134	0	1,386	617
Rest of State	4,182,519	2,296,572	239,102	510,510	948,979	14,199	157,444	15,713
Albany	126,578	83,097	3,939	26,209	10,030	24	2,691	588
Broome	75,539	45,644	5,409	11,448	8,591	690	3,324	433
Cattaraugus	32,079	16,826	4,957	4,372	1,828	288	3,777	31
Cayuga	30,083	13,833	4,734	3,724	4,331	431	2,897	133
Chautauqua	53,429	34,002	4,801	9,449	1,382	67	3,678	50
Chemung	34,325	24,183	1,794	4,461	1,991	95	1,644	157
Clinton	31,392	5,047	2,259	9,539	11,379	116	2,921	131
Dutchess	108,071	27,462	5,971	16,449	54,271	48	3,468	402
Erie	390,341	345,305	6,992	28,199	4,768	211	4,036	830
Jefferson	44,657	17,944	6,908	9,042	7,638	50	2,943	132
Livingston	23,746	10,706	5,078	3,138	2,335	199	2,070	220
Madison	26,127	11,828	2,869	2,804	5,274	558	2,778	16
Monroe	301,668	238,990	5,380	45,179	7,366	0	3,123	1,630
Nassau	447,123	264,360	6,748	27,400	143,289	203	4,225	898
Niagara	89,765	69,899	4,150	9,152	4,028	139	2,106	291
Oneida	88,871	51,953	6,252	11,105	15,239	349	3,460	513
Onondaga	185,046	129,015	6,728	36,104	7,799	660	3,175	1,565
Ontario	44,079	25,935	4,911	7,279	2,827	312	2,618	197
Orange	128,259	62,528	6,632	16,601	39,031	144	2,953	370
Oswego	46,270	19,509	9,173	7,190	4,393	396	5,528	81
Putnam	35,425	3,990	1,946	7,362	20,953	0	1,112	62
Rensselaer	64,614	31,516	5,299	8,091	15,125	12	4,432	139
Rockland	99,502	85,097	1,531	8,546	2,811	0	929	588
St. Lawrence	94,156	53,284	10,560	13,041	13,669	115	3,401	86
Saratoga	55,262	38,208	2,484	8,960	4,120	0	1,387	103
Schenectady	41,680	13,747	4,481	5,235	12,300	54	5,166	697
Steuben	40,578	21,407	4,566	5,057	3,137	1,546	4,807	58
Suffolk	496,784	201,021	13,991	39,719	235,860	155	5,040	998
Sullivan	28,900	790	5,243	4,825	14,835	145	3,038	24
Tompkins	40,250	20,290	4,969	8,727	2,719	715	2,706	124
Ulster	69,154	13,929	8,620	10,102	29,664	0	6,760	79
Warren	28,007	12,971	3,547	3,802	5,847	85	1,658	97
Wayne	35,927	19,774	4,724	4,877	3,587	234	2,558	173
Westchester	352,498	175,075	6,420	37,912	127,748	0	3,100	2,243

[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, 2008–2018

Table D-3.

County	July 2008	July 2009	July 2010	July 2011	July 2012	July 2013	July 2014	July 2015	July 2016	July 2017	July 2018
New York State	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	19,530,351
Albany	303,739	304,733	304,086	304,596	305,723	306,589	307,151	307,433	307,597	307,717	306,585
Alleghany	49,177	48,969	48,971	48,800	48,210	47,900	47,652	47,334	47,044	46,639	46,332
Bronx	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	1,432,087
Broome	201,029	200,935	200,481	199,363	198,667	197,914	197,251	195,928	194,498	193,100	191,925
Cattaraugus	80,761	80,491	80,218	79,815	79,348	78,996	78,677	77,926	77,658	77,176	76,726
Cayuga	80,482	80,172	79,895	79,693	79,505	79,088	78,762	78,298	77,674	77,457	77,121
Chautauqua	135,229	135,197	134,725	134,209	133,304	132,852	131,751	130,529	129,206	128,372	127,472
Chemung	88,503	88,849	88,895	88,899	89,137	88,199	87,177	86,705	85,644	84,736	83,935
Chenango	51,326	50,639	50,399	50,182	49,883	49,477	49,319	48,772	48,315	47,805	47,445
Clinton	82,401	82,280	82,096	81,728	81,714	81,523	81,463	80,718	80,500	80,531	80,679
Columbia	63,253	63,023	63,036	62,528	62,449	62,170	61,942	61,434	60,835	60,338	59,785
Cortland	49,537	49,358	49,279	49,380	49,023	48,905	48,740	48,290	47,915	47,815	47,722
Deleware	48,363	48,182	47,888	47,584	47,215	46,803	46,562	45,891	45,393	45,028	44,526
Dutchess	296,267	296,887	297,728	298,133	297,023	296,268	295,127	294,039	293,029	293,545	293,939
Erie	920,571	919,334	919,152	919,843	919,906	920,869	921,755	920,644	918,678	919,034	919,717
Essex	39,435	39,478	39,360	39,271	38,875	38,601	38,323	37,965	37,671	37,487	37,288
Franklin	51,907	51,706	51,645	51,545	51,791	51,212	51,096	50,540	51,081	50,465	50,279
Fulton	55,584	55,558	55,455	55,112	54,845	54,345	53,932	53,801	53,610	53,802	53,633
Genesee	59,895	59,932	59,928	59,880	59,672	59,112	58,725	58,462	58,013	57,798	57,487
Greene	49,467	49,372	49,139	48,857	48,587	48,308	47,964	47,616	47,494	47,442	47,381
Hamilton	4,893	4,858	4,851	4,826	4,803	4,766	4,700	4,699	4,556	4,471	4,432
Herkimer	64,404	64,381	64,470	64,386	64,227	63,883	63,384	62,652	62,436	62,163	61,713
Jefferson	115,033	115,023	116,592	117,752	120,235	118,490	117,971	116,371	112,980	113,157	111,866
Kings	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	2,578,074
Lewis	26,878	27,047	27,077	27,027	27,196	27,098	27,089	26,827	26,647	26,605	26,486
Livingston	65,637	65,420	65,240	64,849	64,796	64,627	64,585	64,344	64,000	63,483	63,213
Madison	73,075	73,169	73,440	72,887	72,414	72,457	72,210	71,636	71,387	70,942	71,117
Monroe	741,018	743,386	744,580	746,751	747,344	748,290	747,364	745,577	743,770	742,724	742,864
Montgomery	49,951	50,001	50,307	49,911	49,829	49,743	49,679	49,564	49,169	49,163	49,394
Nassau	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	1,357,534
New York	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	1,629,055
Niagara	215,793	216,043	216,475	215,719	214,713	214,105	213,305	212,358	211,554	210,848	210,060
Oneida	234,482	234,619	234,756	234,218	233,765	233,347	232,598	231,264	230,375	230,011	229,474
Onondaga	463,472	465,633	467,533	467,614	467,030	468,146	467,285	466,277	464,109	461,795	461,649
Ontario	106,302	107,214	108,176	108,599	108,611	109,044	109,334	109,271	109,229	109,538	109,738
Orange	370,201	372,079	373,445	374,097	373,699	374,320	374,845	375,803	377,799	379,758	382,126
Orleans	43,254	42,975	42,851	42,648	42,391	42,229	41,861	41,481	41,247	40,786	40,655
Oswego	122,366	122,055	122,137	121,981	121,458	121,170	120,590	119,735	118,895	118,427	117,515
Ostego	62,561	62,280	62,259	61,971	61,747	61,614	60,950	60,504	60,132	59,920	59,810
Putnam	99,537	99,666	99,667	99,827	99,625	99,572	99,438	99,185	98,761	98,856	98,814
Queens	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	2,274,605
Rensselaer	159,011	159,150	159,340	159,589	159,437	159,545	159,666	159,436	159,294	159,200	159,283
Richmond	463,701	466,965	469,615	471,021	470,614	471,803	471,937	472,349	474,040	475,671	476,260
Rockland	305,413	308,652	312,499	315,452	317,196	319,284	321,119	322,919	323,258	324,622	325,522
St. Lawrence	111,684	112,169	111,812	112,277	112,355	111,931	111,437	110,348	109,449	108,699	108,327
Saratoga	217,282	218,652	220,109	221,111	222,483	224,087	224,513	226,078	227,122	229,276	230,170
Schenectady	153,360	154,050	154,861	154,864	155,016	154,944	155,016	154,733	154,475	154,710	155,079
Schoharie	32,890	32,776	32,686	32,618	32,039	31,900	31,767	31,405	31,304	31,255	31,146
Schuyler	18,644	18,398	18,334	18,413	18,498	18,382	18,176	18,027	17,967	17,913	17,884
Seneca	35,370	35,286	35,266	35,380	35,388	35,250	34,879	34,801	34,710	34,246	34,179
Steuben	98,726	98,949	99,005	99,148	98,925	98,843	98,165	97,551	96,958	96,360	95,860
Suffolk	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	1,480,830
Sullivan	77,755	77,647	77,476	77,053	76,931	76,945	75,634	74,832	74,922	74,994	75,399
Tioga	51,498	51,236	51,008	50,875	50,278	50,103	49,824	49,355	48,824	48,609	48,441
Tompkins	100,383	101,497	101,740	101,821	102,726	103,553	103,391	103,006	102,942	102,664	102,419
Ulster	183,174	182,638	182,418	182,448	181,538	180,698	180,400	179,658	179,042	178,635	178,418
Warren	65,848	65,694	65,665	65,736	65,417	65,083	64,866	64,420	64,438	64,365	64,215
Washington	63,252	63,077	63,356	63,091	63,003	62,765	62,475	62,246	61,795	61,559	61,274
Wayne	93,739	93,643	93,751	93,256	93,029	92,339	91,801	91,291	90,758	90,429	90,200
Westchester	937,449	944,201	950,601	956,262	959,585	964,567	967,044	968,773	970,267	969,689	968,213
Wyoming	42,281	42,236	42,126	41,849	41,700	41,359	41,134	40,930	40,432	40,282	40,023
Yates	25,352	25,303	25,376	25,454	25,337	25,207	25,149	25,128	25,059	25,002	24,951

Appendix E

New York State Heating and Cooling Degree-Days 2004–2018

Figure E-1

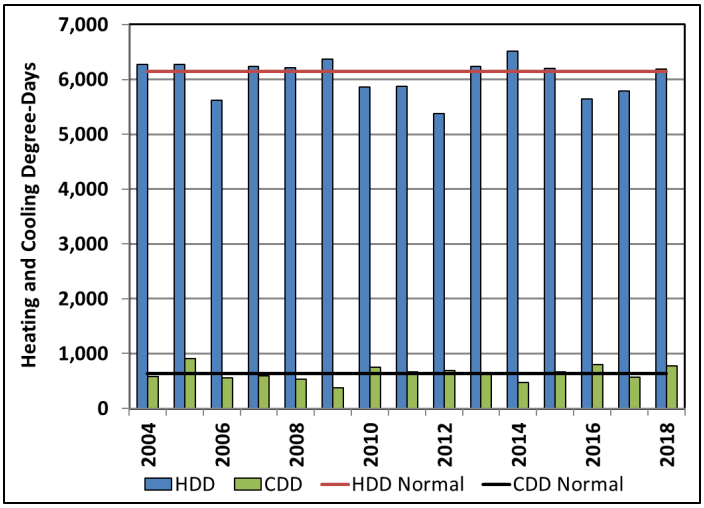

Table E-1. (Monthly Heating Degree-Days)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
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
2018	1,236	854	911	702	182	49	1	0	76	417	795	960	6,183
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
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
2018	0	0	0	0	25	86	260	267	121	17	0	0	776
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 Utility[1] in Nominal Dollars 2004–2018

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
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
2018	18.59	26.36	20.68	12.53	12.59	20.53	13.98

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
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
2018	14.01	19.30	18.79	11.13	9.99	13.66	13.17

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
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
2018	11.13	16.72	N/A	9.34	6.44	7.78	13.06

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

Appendix F-2

New York State Electricity Customers by Sector by Utility
2004–2018

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
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**
2018	Bundled	227,332	2,315,745	1,011,494	642,348	1,269,781	140,570	290,274	88,394	7,917	52,792	17,974	6,064,621
2018	Delivery	31,996	618,530	40	133,673	231,640	60,588	49,651	0	0	0	167	1,126,285
2018	**Total**	**259,328**	**2,934,275**	**1,011,534**	**776,021**	**1,501,421**	**201,158**	**339,925**	**88,394**	**7,917**	**52,792**	**18,141**	**7,190,906**

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
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**
2018	Bundled	36,284	386,512	116,181	75,867	107,628	17,760	22,898	11,967	237	211	9,851	785,396
2018	Delivery	10,372	161,119	4,060	44,946	68,421	14,523	17,727	0	0	0	86	321,254
2018	**Total**	**46,656**	**547,631**	**120,241**	**120,813**	**176,049**	**32,283**	**40,625**	**11,967**	**237**	**211**	**9,937**	**1,106,650**

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
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**
2018	Bundled	766	59	N/A	653	560	48	289	419	0	0	350	3,144
2018	Delivery	275	694	N/A	1,199	1,026	57	487	1	0	0	1	3,740
2018	**Total**	**1,041**	**753**	**N/A**	**1,852**	**1,586**	**105**	**776**	**420**	**0**	**0**	**351**	**6,884**

Electricity Customers by Sector and 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
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
2018	131,112	129,450	99,388	60,017	47,574	78,173	45,891	34,738	32,338	20,545	1,126,285

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
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
2018	47,379	N/A	1,100	194	8,258	NA	483	7,189	3,703	9,087	321,254

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
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
2018	1,220	NA	NA	137	14	33	6	104	34	N/A	3,740

Appendix F-3

New York State Electricity Sales by Sector by Utility, 2004–2018

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
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**
2018	Bundled	1,889	10,797	9,538	5,637	9,953	1,047	2,352	1,222	75	355	999	43,863
2018	Delivery	277	3,467	1	1,337	2,116	621	470	0	0	0	0	8,288
2018	**Total**	**2,166**	**14,264**	**9,539**	**6,973**	**12,069**	**1,668**	**2,822**	**1,222**	**75**	**355**	**999**	**52,152**

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

Year	Category	Central Hudson	Consolidated Edison	Long Island Pow er Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric	Municipal	Cooperative	Behind the Meter	Adjustment/ Other	Total
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**
2018	Bundled	843	9,598	7,875	1,540	3,393	561	579	852	21	24	873	26,158
2018	Delivery	1,156	29,808	1,877	4,326	9,391	1,434	2,589	0	0	0	0	50,581
2018	**Total**	**1,998**	**39,406**	**9,752**	**5,866**	**12,784**	**1,996**	**3,167**	**852**	**21**	**24**	**873**	**76,739**

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
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**
2018	Bundled	72	57	N/A	102	917	60	37	1,096	0	0	607	2,948
2018	Delivery	845	515	N/A	2,735	9,519	318	1,193	5	0	0	3	15,133
2018	**Total**	**917**	**572**	**0**	**2,837**	**10,435**	**378**	**1,231**	**1,101**	**0**	**0**	**610**	**18,081**

Electricity Sales by Sector and 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
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
2018	1,179	1,272	724	1,179	248	350	311	N/A	261	166	8,290

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
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
2018	11,411	N/A	4,463	1,816	1,031	NA	1,029	1,137	828	612	50,587

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
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
2018	3,814	N/A	N/A	557	132	558	250	198	44	NA	15,134

Appendix F-4

New York State Natural Gas Prices by Sector and by Utility in Nominal Dollars, 2004–2018

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas And Elec. Corp.	St. Lawrence Gas Co.
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
2018	13.40	17.23	16.76	7.56	13.85	8.16	10.27	9.00	14.63	9.51	11.51

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2018	11.79	11.31	7.67	5.29	10.82	7.62	8.51	7.93	12.23	7.43	9.13

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2018	10.07	10.22	7.32	N/A	N/A	6.15	7.43	5.88	10.44	6.24	7.26

Appendix F-5

New York State Natural Gas Customers by Sector by Utility, 2004–2018

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2018	1,208,512	70,438	943,882	13,889	537,057	501,260	237,129	573,737	124,017	291,816	14,715

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2018	42,005	11,735	139,134	1,092	62,080	35,143	30,065	45,991	12,074	23,263	1,764

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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	64	N/A	500	654	251	26	771	20
2011	4,053	253	48	69	N/A	490	626	252	20	754	21
2012	3,428	251	48	74	N/A	493	615	234	20	704	21
2013	3,864	245	48	40	N/A	491	618	214	20	727	21
2014	3,885	251	48	38	N/A	482	624	215	18	709	22
2015	3,657	259	48	38	N/A	439	616	221	19	689	22
2016	4,133	273	48	40	N/A	419	592	227	22	668	21
2017	4,348	279	48	38	N/A	412	577	233	27	646	21
2018	4,573	288	48	36	N/A	432	560	238	25	627	20

Appendix F-6

New York State Natural Gas Sales by Sector by Utility, 2004–2018

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2018	133,108	5,888	109,357	1,451	58,063	54,885	23,858	54,713	14,981	27,115	1,648

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2018	26,252	7,926	128,313	440	53,794	26,575	21,171	37,082	8,016	17,900	2,153

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 Mohawk (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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	282	N/A	14,672	12,666	23,651	2,450	6,998	3,710
2011	3,720	2,903	1,764	327	N/A	14,145	12,643	24,440	2,281	6,967	3,805
2012	3,107	2,574	1,601	318	N/A	13,929	12,594	25,622	2,358	6,548	3,378
2013	3,279	2,896	1,847	3,165	N/A	14,379	13,160	26,296	2,327	6,826	3,426
2014	3,534	3,053	1,913	3,634	N/A	16,993	13,606	26,660	2,176	7,030	3,577
2015	3,201	3,153	1,776	4,020	N/A	16,358	12,476	27,671	2,266	6,689	3,402
2016	3,169	2,937	1,784	3,710	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
2018	3,871	3,078	1,934	3,986	N/A	18,928	12,294	26,463	2,023	13,645	3,433

Appendix G-1

New York State Weather Normalized Residential Energy Consumption, 1980–2018

Figure G-1

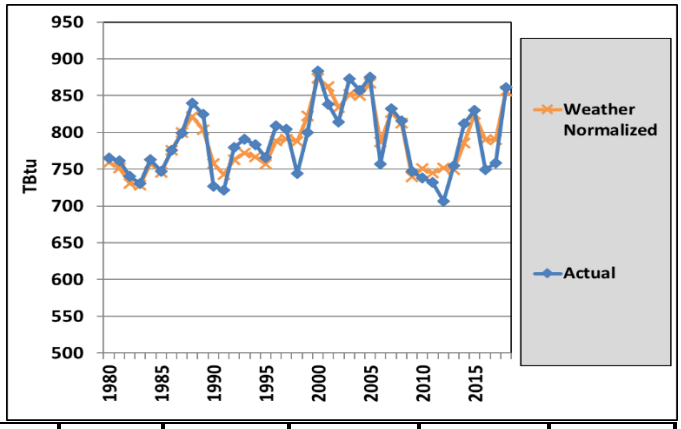

Table G-1. (In Trillion Btu)

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	1.7	339.5	217.4	9.8	9.1	236.2	77.8	104.1	0.0	0.0	759.4
1981	2.1	338.8	200.4	8.6	9.8	218.7	87.0	104.8	0.0	0.0	751.5
1982	2.6	346.3	181.2	10.4	9.1	200.7	76.4	104.9	0.0	0.0	730.8
1983	1.5	329.4	170.6	8.5	10.5	189.6	99.2	108.2	0.0	0.0	728.0
1984	2.3	343.6	199.6	20.2	10.6	230.3	69.7	112.1	0.0	0.0	758.0
1985	2.3	328.2	201.1	18.3	11.4	230.7	72.7	112.0	0.0	0.0	745.9
1986	2.6	345.9	221.2	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	273.0	59.4	120.4	0.0	0.0	799.8
1988	1.7	359.0	236.3	23.7	13.3	273.3	59.9	127.4	0.0	0.0	821.4
1989	1.6	364.4	218.0	15.8	14.0	247.8	60.1	129.3	0.3	0.0	803.4
1990	1.4	365.1	193.7	9.9	14.1	217.8	41.9	131.6	0.3	0.0	758.0
1991	1.3	360.8	175.3	11.8	17.7	204.8	42.5	133.1	0.3	0.0	742.9
1992	1.2	379.3	184.4	7.1	17.5	209.0	40.1	132.8	0.3	0.0	762.8
1993	1.0	384.2	173.3	8.9	15.1	197.3	53.0	136.0	0.3	0.1	772.0
1994	0.7	385.9	168.8	8.0	15.2	192.0	50.7	136.8	0.4	0.1	766.7
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	400.7	170.7	8.3	17.2	196.2	52.8	137.7	0.5	0.1	788.8
1997	0.7	377.3	167.5	9.9	15.3	192.8	82.6	137.0	0.5	0.1	790.9
1998	0.4	378.1	166.0	10.4	15.8	192.2	78.5	138.2	0.5	0.0	788.0
1999	0.6	396.5	170.6	13.0	16.9	200.5	78.3	145.8	0.5	0.1	822.2
2000	0.3	406.7	202.3	13.4	21.7	237.3	82.0	147.1	0.5	0.1	874.0
2001	0.3	404.8	219.7	13.4	17.0	250.0	55.9	150.7	0.5	0.1	862.4
2002	0.1	392.5	197.1	9.2	19.6	226.0	56.4	157.7	0.6	0.1	833.4
2003	0.3	406.5	197.1	9.4	18.4	225.0	58.5	160.7	0.6	0.1	851.6
2004	0.4	398.3	197.3	11.8	19.5	228.5	60.3	161.9	0.7	0.1	850.1
2005	0.3	411.5	201.8	12.6	17.7	232.1	50.4	171.4	0.8	0.1	866.7
2006	0.4	385.9	163.0	9.9	16.8	189.7	44.5	165.5	1.0	0.1	787.1
2007	0.3	405.8	172.7	7.5	18.2	198.4	49.4	171.6	1.1	0.2	826.8
2008	0.0	400.0	161.7	3.8	22.5	187.9	55.4	167.7	1.3	0.2	812.4
2009	0.0	403.7	117.4	5.6	22.3	145.3	23.6	165.6	1.3	0.2	739.8
2010	0.0	413.2	117.6	5.5	23.0	146.1	16.3	173.4	1.5	0.3	750.7
2011	0.0	417.6	109.6	4.0	20.4	134.0	16.7	174.7	1.6	0.7	745.2
2012	0.0	405.3	137.9	1.9	18.6	158.4	13.2	172.8	1.8	0.4	751.9
2013	0.0	426.7	103.9	2.3	19.2	125.4	22.0	173.2	2.0	0.4	749.7
2014	0.0	454.1	108.7	4.1	23.7	136.4	20.9	171.2	2.8	0.4	785.8
2015	0.0	464.0	121.0	2.6	22.3	145.9	36.4	173.9	4.3	0.4	824.9
2016	0.0	452.3	95.9	3.0	22.8	121.7	36.6	172.8	6.4	0.4	790.2
2017	0.0	466.1	88.3	2.0	23.0	113.3	34.6	167.7	8.1	0.4	790.3
2018	0.0	499.5	107.0	2.2	27.1	136.3	33.5	177.4	9.3	0.4	856.4

[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, 1990–2018

Figure G-2a: Residential Energy Usage/Household

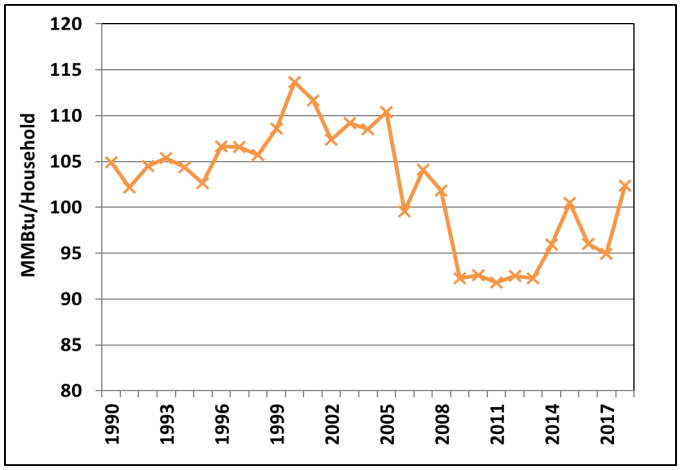

Figure G-2b: Residential Energy Usage/GSP (2018$)

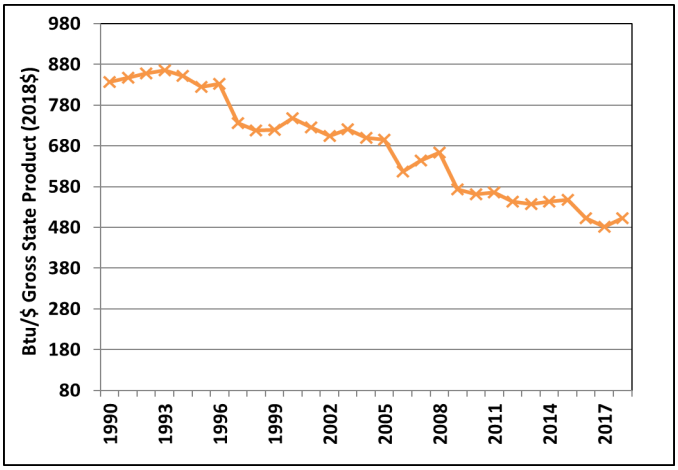

Table G-2. (In Trillion Btu)

Year	Weather Normalized Residential Total Energy	Households	Energy Usage/Household	Gross State Product	Res Energy Usage Per GSP (2018$)
	Tbtu	Thousands	(MMBtu/Household)	Million (2018$)	(Btu/$)
1990	758.0	7,227	104.9	$905,658	836.9
1991	742.9	7,270	102.2	$876,389	847.7
1992	762.8	7,297	104.5	$889,042	858.0
1993	772.0	7,324	105.4	$892,766	864.7
1994	766.7	7,346	104.4	$899,333	852.5
1995	756.9	7,374	102.6	$917,595	824.9
1996	788.8	7,397	106.6	$948,636	831.5
1997	790.9	7,423	106.6	$1,074,158	736.3
1998	788.0	7,455	105.7	$1,097,294	718.2
1999	822.2	7,572	108.6	$1,143,449	719.1
2000	874.0	7,689	113.7	$1,168,899	747.7
2001	862.4	7,724	111.6	$1,188,718	725.5
2002	833.4	7,760	107.4	$1,183,082	704.4
2003	851.6	7,799	109.2	$1,180,835	721.2
2004	850.1	7,836	108.5	$1,213,620	700.5
2005	866.7	7,853	110.4	$1,247,405	694.8
2006	787.1	7,908	99.5	$1,275,505	617.1
2007	826.8	7,940	104.1	$1,283,593	644.1
2008	812.4	7,977	101.8	$1,225,361	663.0
2009	739.8	8,018	92.3	$1,289,675	573.6
2010	750.7	8,108	92.6	$1,336,151	561.9
2011	745.2	8,120	91.8	$1,318,862	565.1
2012	751.9	8,124	92.6	$1,382,426	543.9
2013	749.7	8,126	92.3	$1,396,605	536.8
2014	785.8	8,192	95.9	$1,447,541	542.9
2015	824.9	8,207	100.5	$1,506,975	547.4
2016	790.2	8,232	96.0	$1,573,798	502.1
2017	790.3	8,327	94.9	$1,643,314	480.9
2018	856.4	8,364	102.4	$1,705,010	502.3

Appendix H

New York State Estimated Customer-Sited Solar Capacity and Generation by County, 2008–2018

Table H-1. Solar Installed Capacity (kW)

County	2008	2013	2018
New York State	17,342	203,886	1,273,517
Albany	255	9,044	51,172
Alleghany	13	136	3,428
Bronx	91	4,387	19,040
Broome	48	1,087	9,580
Cattaraugus	8	310	10,718
Cayuga	21	891	9,187
Chautauqua	90	727	5,336
Chemung	17	2,726	5,502
Chenango	30	206	1,469
Clinton	184	721	3,855
Columbia	411	3,965	17,490
Cortland	36	874	6,802
Deleware	78	378	1,523
Dutchess	1,015	5,929	35,072
Erie	141	10,391	38,242
Essex	73	407	1,855
Franklin	30	120	1,112
Fulton	18	345	28,930
Genesee	10	522	10,517
Greene	91	912	7,243
Hamilton	12	76	222
Herkimer	10	221	3,238
Jefferson	20	1,780	11,298
Kings	204	5,577	30,429
Lewis	0	41	3,212
Livingston	36	413	3,464
Madison	19	705	5,545
Monroe	122	2,397	38,774
Montgomery	31	1,706	15,848
Nassau	2,445	19,032	79,794
New York	191	1,128	7,911
Niagara	10	1,241	6,168
Oneida	47	1,081	29,444
Onondaga	95	2,348	26,428
Ontario	42	810	23,479
Orange	405	7,511	77,579
Orleans	9	181	1,598
Oswego	22	1,215	6,689
Ostego	67	301	2,519
Putnam	31	648	7,671
Queens	278	7,409	56,672
Rensselaer	248	5,914	30,211
Richmond	12	4,420	58,649
Rockland	281	3,368	30,248
St. Lawrence	209	5,302	33,481
Saratoga	94	3,140	31,462
Schenectady	62	520	6,376
Schoharie	25	193	1,699
Schuyler	28	1,173	2,976
Seneca	46	536	14,111
Steuben	12	219	4,723
Suffolk	7,101	46,628	168,363
Sullivan	84	1,427	11,872
Tioga	67	271	2,805
Tompkins	453	2,694	21,066
Ulster	844	6,044	30,624
Warren	60	2,375	15,872
Washington	147	1,030	13,389
Wayne	15	629	11,980
Westchester	760	9,508	64,489
Wyoming	35	157	3,296
Yates	3	255	1,589

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

County	2008	2013	2018
New York State	22,260	232,970	1,427,412
Albany	266	9,952	57,694
Alleghany	8	139	3,429
Bronx	94	5,081	22,016
Broome	52	1,175	11,051
Cattaraugus	9	326	12,499
Cayuga	22	910	10,585
Chautauqua	97	740	5,478
Chemung	17	2,646	5,670
Chenango	32	225	1,658
Clinton	158	799	4,443
Columbia	427	4,255	19,964
Cortland	33	885	7,607
Deleware	77	406	1,691
Dutchess	1,104	6,604	36,615
Erie	146	10,450	40,918
Essex	77	429	2,026
Franklin	30	130	1,260
Fulton	19	388	33,756
Genesee	10	568	12,277
Greene	95	1,022	8,301
Hamilton	11	80	226
Herkimer	9	248	3,536
Jefferson	18	1,796	12,544
Kings	219	6,631	35,099
Lewis	0	42	3,617
Livingston	36	465	3,978
Madison	20	772	6,247
Monroe	126	2,538	44,002
Montgomery	33	1,958	18,492
Nassau	4,278	23,747	93,908
New York	200	1,304	9,167
Niagara	8	1,264	6,400
Oneida	51	1,133	30,946
Onondaga	97	2,648	29,453
Ontario	42	872	27,335
Orange	446	8,211	85,098
Orleans	9	208	1,817
Oswego	20	1,393	7,726
Ostego	68	316	2,741
Putnam	32	687	8,381
Queens	308	8,758	64,333
Rensselaer	268	6,897	35,047
Richmond	14	5,462	65,915
Rockland	310	3,628	31,162
St. Lawrence	223	5,919	36,810
Saratoga	103	3,512	36,295
Schenectady	69	602	7,559
Schoharie	25	204	1,881
Schuyler	30	1,160	3,076
Seneca	44	588	15,861
Steuben	10	220	5,373
Suffolk	9,743	56,140	193,515
Sullivan	86	1,483	13,010
Tioga	63	291	3,153
Tompkins	445	2,774	22,343
Ulster	909	6,443	32,101
Warren	62	2,397	16,822
Washington	162	1,079	14,540
Wayne	12	684	13,544
Westchester	837	10,912	69,963
Wyoming	36	166	3,844
Yates	3	256	1,662

Appendix I

Abbreviations

B	billion or 10^9
bbl	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 (2018)

Coal

Electric generation	25,682,000 Btu/ton
Industrial end use sector	26,048,000 Btu/ton

Natural Gas

Electric generation	1,030 Btu/cf
Other end use sectors	1,033 Btu/cf

Wood

20,000,000 Btu/cord

Electricity Sales

3,412 Btu/kWh

Electricity Generation

8,066 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	5,770,000 Btu/barrel
Ethanol	3,553,000 Btu/barrel
Jet fuel, kerosene-type	5,670,000 Btu/barrel
Kerosene	5,670,000 Btu/barrel
Motor gasoline	5,054,000 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.

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 in trucks and automobiles, as well as off-highway engines, such as 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 source. 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 as well as 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 No. 6 fuel oils, 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" ton. 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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