

Patterns and Trends: New York State Energy Profiles, 2007–2021

Final Report | November 2023



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, 2007–2021

Final Report

Prepared by:

New York State Energy Research and Development Authority

Albany, NY

November 2023

Message from the President

Letter from President and CEO—Doreen M. Harris

NYSERDA's Patterns and Trends: New York State Energy Profiles, 2007–2021 offers a 15-year profile of New York State energy-related data. This report provides comprehensive historical information on energy production, sources of energy supply, prices, and total expenditures at a critical point in our State's energy transition. The enclosed data provide insight into the continuation of the COVID-19 Public Health Emergency including the start of vaccine availability toward the second half of the year and the continued impacts and recovery related to New York State energy use. It also provides continued measurement on changes in energy use patterns associated with the ambitious environmental, justice, and workforce targets embedded in the Climate Leadership and Community Protection Act.

Important highlights from the report include the following:

- Primary energy consumption in New York State increased 5.0% compared to 2020, representing the slow recovery from the COVID-19 Public Health Emergency. Compared to the primary consumption in 2019 (pre-COVID-19), the 2021 primary consumption was 8.1% less.
- Energy production from solar resources increased approximately 17.2% in 2021 compared to 2020.
- Compared to other states and District of Columbia in 2021, New York State had the lowest per capita energy usage. The State had the second lowest energy consumption per unit of gross state product in the United States behind only the District of Columbia.

NYSERDA hopes that the information in this report is useful in advancing understanding of New York State's energy profile and providing safe, reliable, affordable, and ever cleaner energy to all residents.

Best,

Doreen M. Harris

President and CEO, NYSERDA

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Patterns and Trends: New York State Energy Profiles, 2007–2021 presents a 15-year, profile 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 2021 calendar year. Historical data prior to 2007 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.

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1 Overview

The energy profile of New York State is comprised of multiple fuels, markets, supply chains, and demand dynamics. These complicated parameters are monitored and researched by NYSERDA and compiled in this annual report with the following major 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 standardized across fuel types using energy units and British thermal units (Btu) measured statewide per million Btu (MMBtu).

New York State Energy Expenditures presents the estimated net energy expenditures by sector and fuel type in nominal dollars, as well as in 2021 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 2021 constant dollars.

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

Appendices provide supplemental information and 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.

2021 NEW YORK STATE ENERGY FAST FACTS

2021 represents the first year of gradual recovery from the COVID-19 Public Health Emergency. As a result of the continued impact, energy use patterns should not be considered structural changes to the New York Energy profile in comparison to 2020 or earlier datasets.

PRIMARY ENERGY CONSUMPTION

5.0% greater than 2020; 8.1% less than 2019

Primary consumption (3.6% of U.S. total) (trillion Btu).....	3,532.2
By sector:	
Residential.....	(17.9%)632.8
Commercial.....	(11.1%)391.6
Industrial.....	(5.5%)195.7
Transportation.....	(28.8%)1,018.5
Electric Generation.....	(36.6%)1,293.6
By fuel type:	
Petroleum.....	(33.9%)1,198.7
Natural Gas.....	(38.5%)1,361.2
Nuclear.....	(9.2%)325.7
Renewable.....	(8.1%)286.8
Net Imported Electricity.....	(6.0%)213.7
Bioenergy ¹	(3.8%)134.1
Coal.....	(0.2%)5.4
Pumped Storage Hydro.....	(0.2%)5.5
Primary consumption per capita (million Btu).....	177.9

NET ENERGY CONSUMPTION AND EXPENDITURES

	Net Energy Consumption (trillion Btu)	Estimated Expenditures (billion nominal dollars)
Total:.....	2,721.0	\$57.7
By sector:		
Residential.....	(29.8%)810.7	(33.4%)\$19.3
Commercial.....	(23.2%)630.1	(25.4%)\$14.7
Industrial.....	(9.3%)253.3	(3.7%)\$2.1
Transportation.....	(37.7%)1,026.8	(37.5%)\$21.6
By fuel type:		
Petroleum.....	(48.8%)1,192.2	(43.3%)\$25.0
Natural Gas.....	(33.0%)897.8	(16.8%)\$9.7
Electricity.....	(17.7%)482.5	(39.5%)\$22.8
Bioenergy ¹	(4.3%)116.5	(< 1.0%)< \$1.0
Renewable.....	(1.0%)26.6	(< 0.1%)< \$0.1
Coal.....	(0.2%)5.4	(< 0.1%)< \$0.1
Estimated energy expenditures leaving the State (billions).....		\$17.0

AVERAGE ENERGY PRICES

	2020	2021
Gasoline - all grades (gallon).....	\$2.15	\$2.87
Heating Oil (gallon).....	\$2.16	\$2.55
Natural Gas (thousand cubic feet)		
Residential.....	\$12.86	\$13.87
Commercial.....	\$6.92	\$ 7.96
Industrial.....	\$7.03	\$ 8.44
Electricity (kilowatt-hour)		
Residential.....	18.3¢	19.5¢
Commercial.....	14.6¢	16.1¢
Industrial.....	5.5¢	8.4¢

2021 KEY ENERGY OBSERVATIONS

- COVID-19 pandemic recovery begins with vaccines becoming available.
 - Recovery also includes a change in workforce dynamics. More remote working becomes available.
 - Primary consumption did not reach 2019 (pre-pandemic) levels.
- Annualized data for prices do not capture the market dynamics observed during this period of high market volatility.

¹Ethanol (40.4 TBtu) is included in "Other" totals and also as a component of motor gasoline. Total consumption and percentages are based on ethanol only as "Other."

ELECTRICITY

Sales increased 0.7% from 2020; 5.7% less than 2019

Sales to ultimate consumers (gigawatt-hours)	141,424
By sector:	
Residential.....	(36.9%)52,157
Commercial.....	(49.4%)69,920
Industrial.....	(11.9%)16,891
Transportation.....	(1.7%)2,455
In-State Generation (gigawatt-hours).....	131,466
By fuel type:	
Nuclear.....	(20.4%)31,177
Natural Gas.....	(38.9%)59,460
Hydro.....	(18.5%)28,214
Net Imported Electricity.....	(17.9%)27,394
Petroleum.....	(0.1%)158.9
Wind.....	(2.7%)4,111
Solar.....	(1.8%)2,769
Bioenergy.....	(1.5%)2,254

PETROLEUM

Consumption increased 13.1% from 2020; 12.8% less than 2019

Consumption (3.8% of U.S. total) (million barrels)	235.3
By sector:	
Residential.....	(10.6%)24.8
Commercial.....	(6.2%)14.6
Industrial.....	(7.1%)16.7
Transportation.....	(75.7%)178.1
Electric Generation.....	(0.4%)0.1
In-State production (thousand barrels)	266.0

NATURAL GAS

Consumption increased 4.4% from 2020; 1.8% less

Consumption (4.1% of U.S. total) (billion cubic feet).....	1,263.6
By sector:	
Residential.....	(33.8%)445.6
Commercial.....	(22.6%)297.8
Industrial.....	(6.8%)89.9
Transportation.....	(2.8%)36.7
Electric Generation.....	(34.0%)449.0
In-State production (billion cubic feet)	9.7

ADDITIONAL 2020 STATISTICS

Population (6.1% of U.S. total) (million)	19.9
Number of housing units (million).....	8.5
Gross State Product (billion 2020 dollars).....	\$1,901.3
Motor vehicle registrations (million).....	9.4
Vehicle miles of travel (billion miles).....	106.9
Heating degree-days (decreased 0.5% from 2020).....	5,605
Cooling degree-days (decreased 7.0% from 2020).....	702

Note: Totals may not sum exactly due to rounding.

DATA SOURCE

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

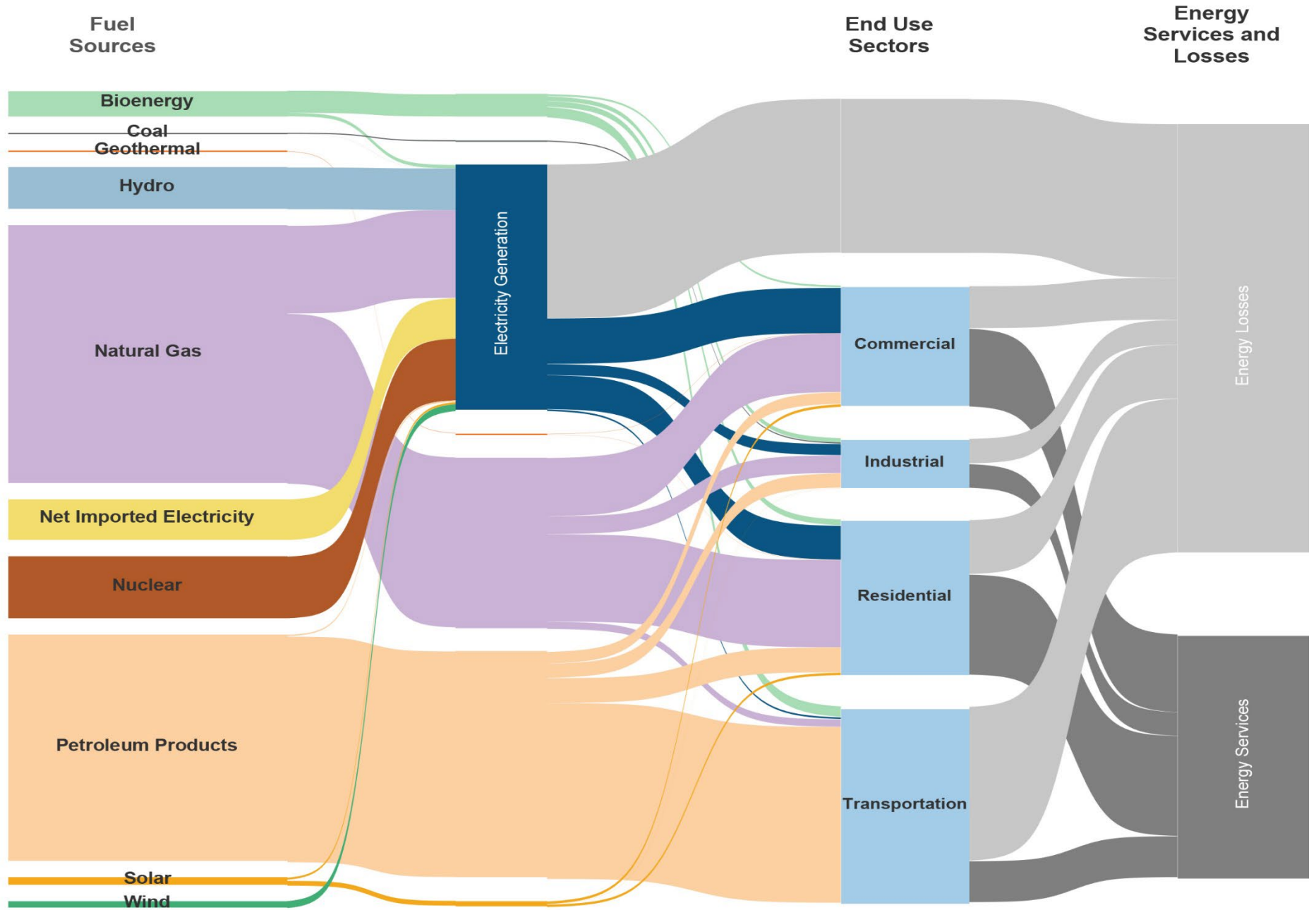
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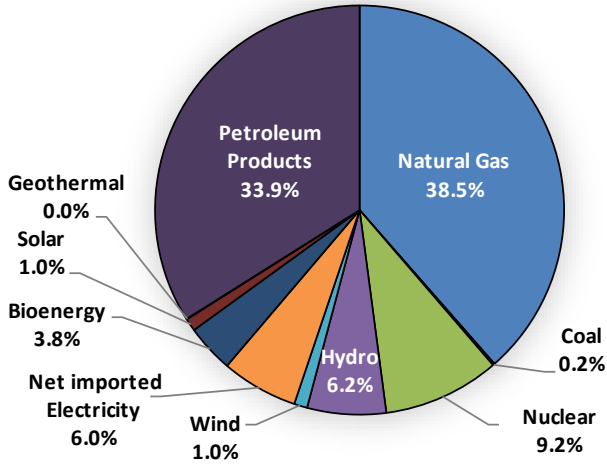
2021 New York State Energy Flow (TBtu)
Estimated Primary Energy Consumption: 3,532 TBtu

Select Year
2021

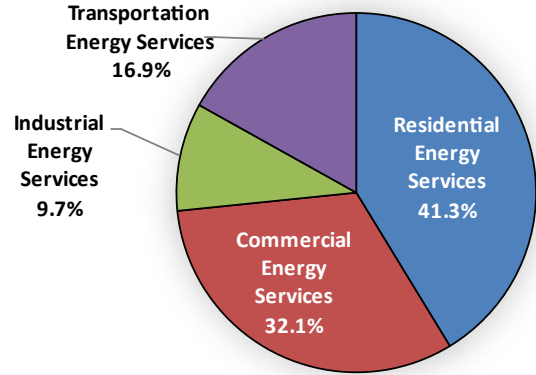


2021 New York State Energy at a Glance

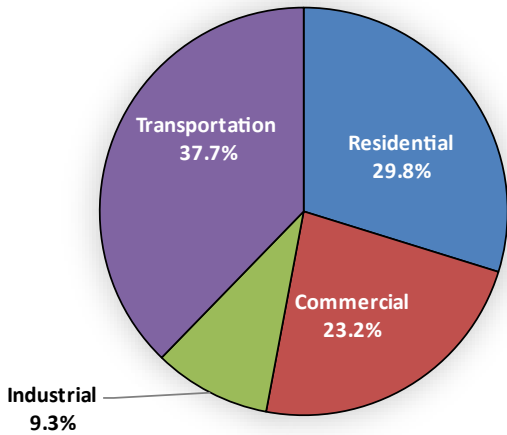
2021 NYS Fuel Sources



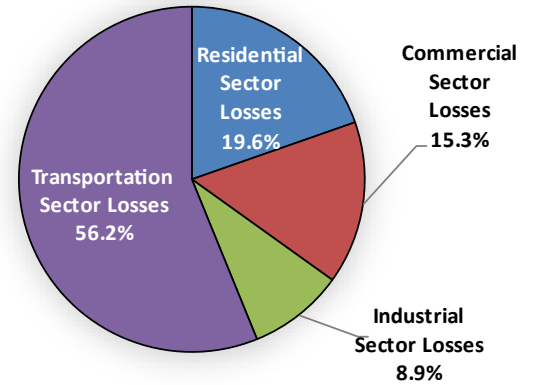
2021 NYS Energy Services



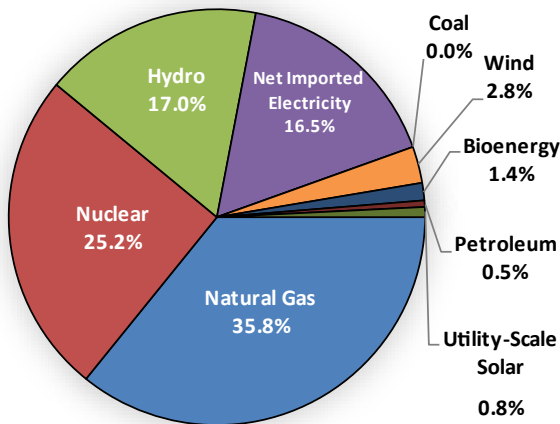
2021 NYS End-Use Sectors



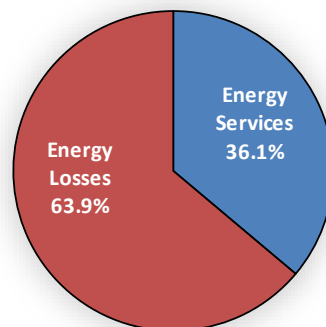
2021 NYS Energy Losses



2021 NYS Energy for Electricity Generation

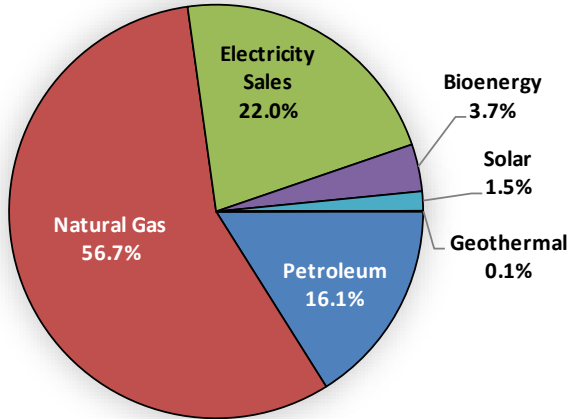


2021 NYS Energy End-Use Services and Losses

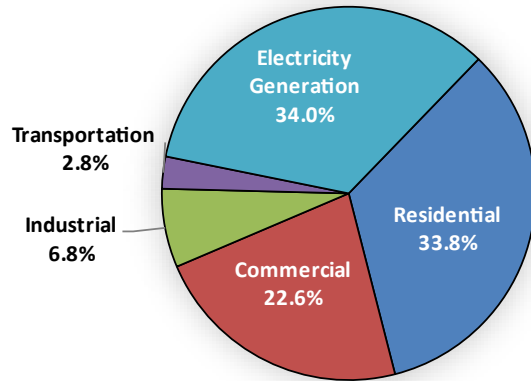


2021 New York State Energy at a Glance

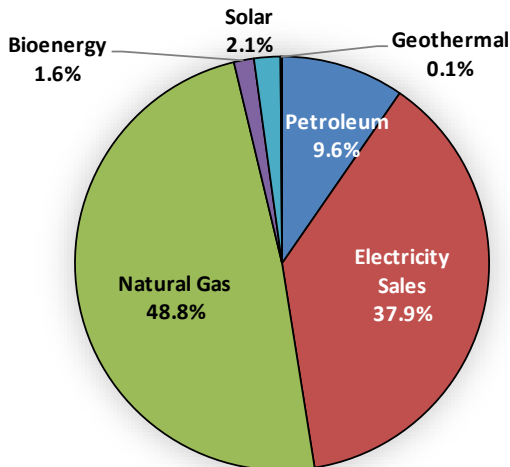
2021 NYS Residential Sector



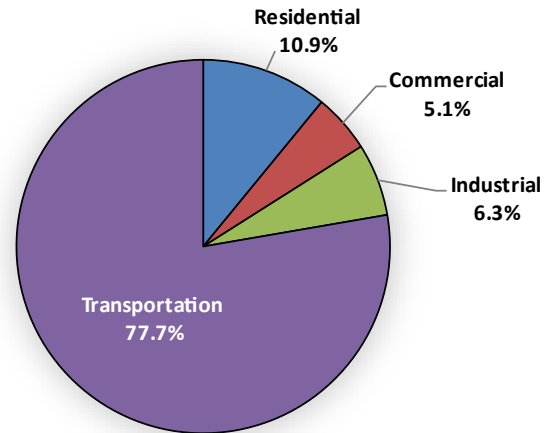
2021 NYS Natural Gas by Sector



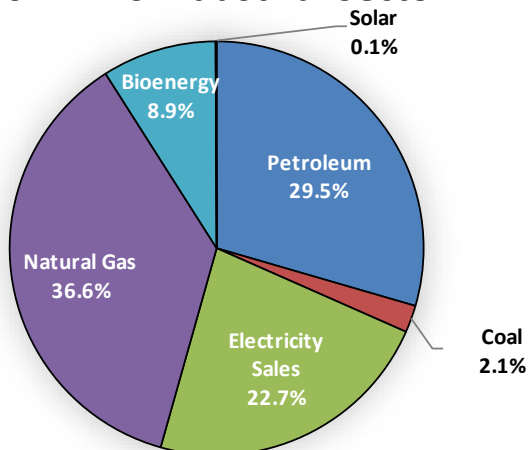
2021 NYS Commercial Sector



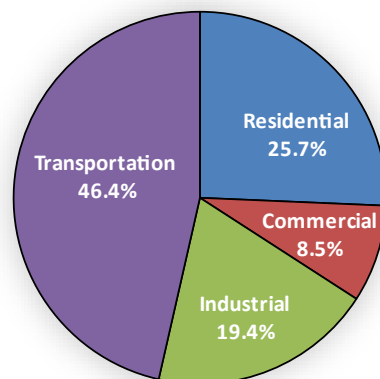
2021 NYS Petroleum by Sector



2021 NYS Industrial Sector

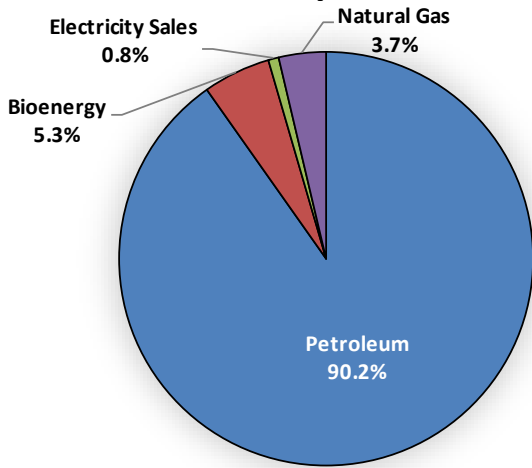


2021 NYS Bioenergy by Sector

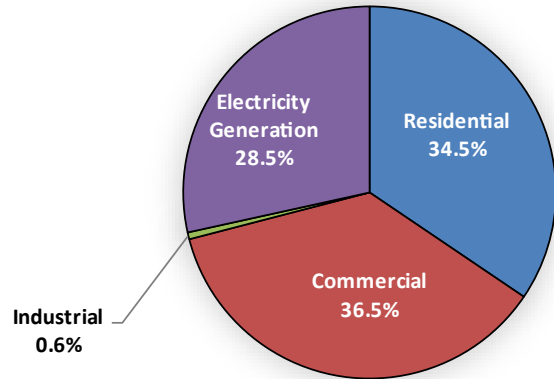


2021 New York State Energy at a Glance

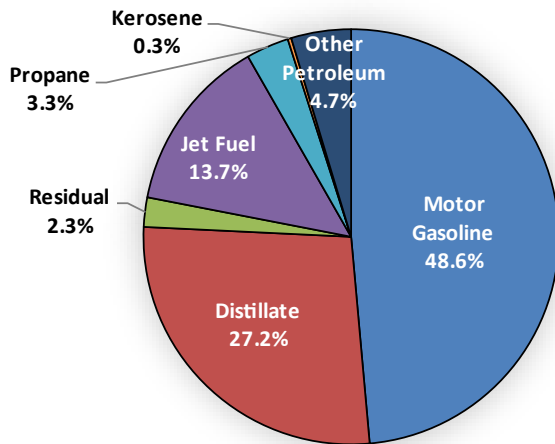
2021 NYS Transportation Sector



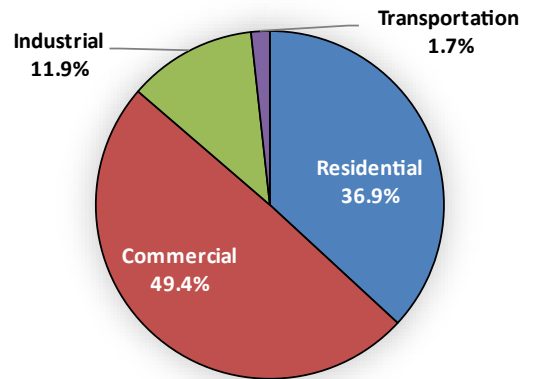
2021 NYS Solar by Sector



2021 NYS Petroleum Products



2021 NYS Electricity Sales



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

This section compares the United States and New York State energy consumption, selected energy prices, sources of petroleum, and factors influencing energy demand and expenditures. 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 United States Department of Energy's (DOE) Energy Information Administration State Energy Data System, New York Independent System Operator (NYISO) Gold Book (2022), U.S. Department of Transportation, U.S. Department of Commerce Bureau of Economic Analysis, Census Bureau, and the U.S. Department of Labor Bureau of Labor Statistics.

2.1 Key Observations about 2021 New York State Energy Data

- New York State ranks eighth nationally in energy consumption, in spite of having the third largest economy.
- The State has the second lowest per capita energy usage in the U.S., accounting for approximately 3.6% of the nation's total primary energy consumption. New York State accounts for 6.0% of the nation's population.
- Renewable resources accounted for 13.4% of the State's primary energy consumption compared to 12.4% for the U.S. in 2021.
- Coal consumption represents 0.15% of the State's energy use compared to 10.8% nationally.
- Net energy demand differs from national demand in several respects (as shown in Tables 2–1 and 2–2):
 - Residential net energy use accounts for 29.8% of total energy demand, compared to 16.0% nationally.
 - Commercial net energy use accounts for 23.2% of total energy demand, compared to 12.5% nationally.
 - Industrial net energy use accounts for 9.3% of total energy demand, compared to 34.8% nationally.
 - Transportation net energy use accounts for 37.7% of total energy demand, compared to 36.7% nationally.

**United States
Primary Consumption of Energy
by Fuel Type and Sector, 2021**

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

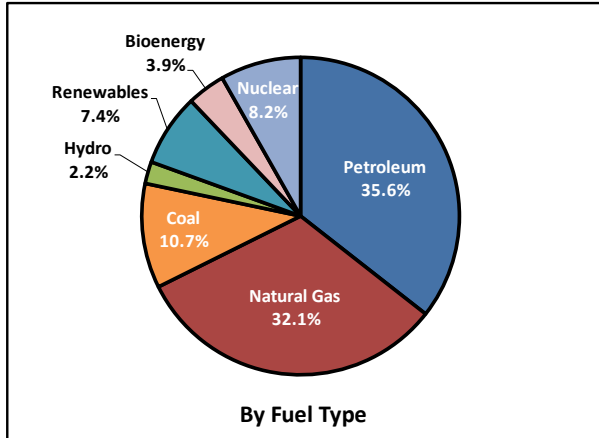


Figure 2-1b. United States Primary Consumption of Energy

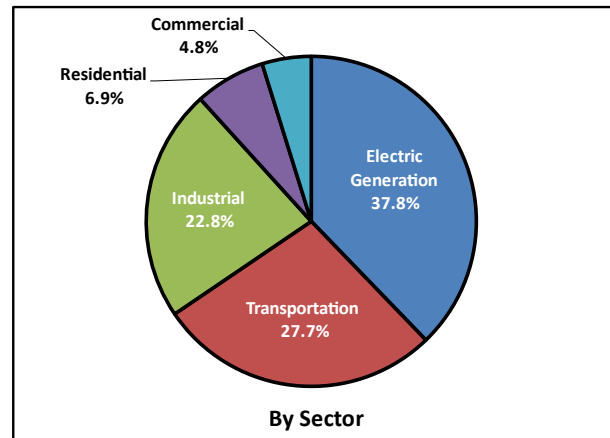


Table 2-1. (In Trillion Btu)

	Residential TBtu	Commercial TBtu	Industrial TBtu	Transportation TBtu	Net Consumption TBtu	Electric Generation ¹ TBtu	Primary Consumption ² TBtu	
Coal	0	15	1,037	0	1,051	9,496	10,548	
Natural Gas	4,914	3,434	10,536	1,227	20,112	11,614	31,725	
Petroleum Products:	967	924	5,016	24,293	31,200	205	31,405	
Distillate	473	328	1,185	6,310	8,297	60	8,357	
Residual		3	46	615	664	57	721	
Kerosene	9	1	1		12	0	12	
Propane (HGL)	484	217	3,519	10	4,230	0	4,230	
Gasoline	0	375	264	14,501	15,140	0	15,140	
Jet Fuel	0	0	0	2,857	2,857	0	2,857	
Renewables ³	372	160	41	0	573	1,154	1,727	
Bioenergy ⁴	439	122	1,527	1,328	3,416	426	3,842	
Electric Sales	5,017	4,533	3,414	22	12,986			
Net Consumption	11,710	9,188	21,571	26,869	69,338			
						Hydro Electricity	2,214	2,214
						Nuclear Electricity	8,129	8,129
						Wind Electricity	3,342	3,342

¹ For national energy accounting, hydro and wind are excluded from the “Renewables” category and listed separately under electric generation.

² Excludes petroleum products not used as a form of energy (example: lubricants).

³ Renewables includes geothermal and solar for the electric generation sector.

⁴ Bioenergy includes wood, waste, ethanol, and biodiesel.

New York State Primary Consumption of Energy by Fuel Type and Sector, 2021

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

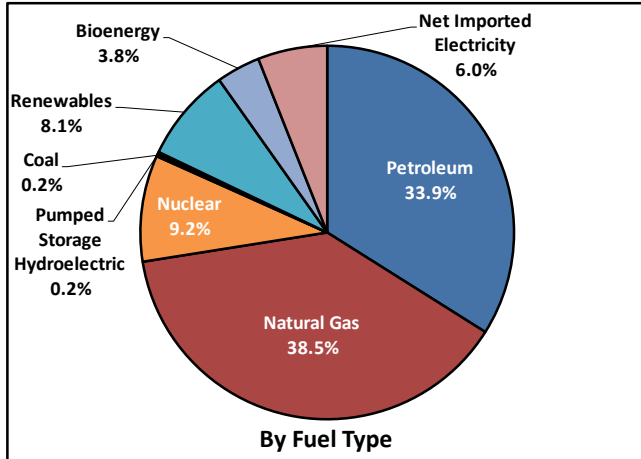


Figure 2-2b. New York State Primary Consumption of Energy

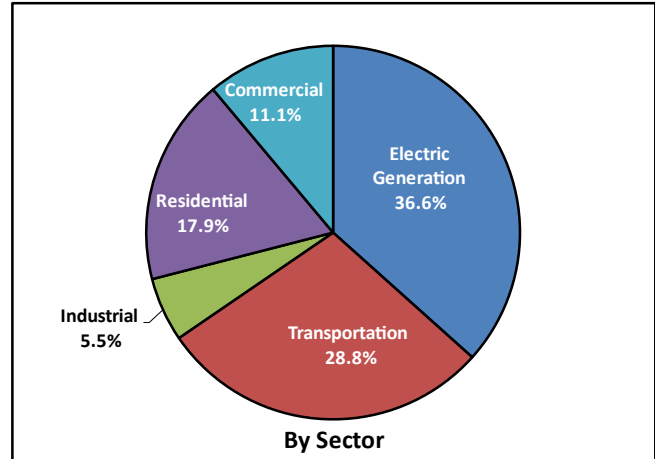


Table 2-2. (In Trillion Btu)

	Residential TBtu	Commercial TBtu	Industrial TBtu	Transportation TBtu	Net Consumption TBtu	Electric Generation ^{1,2} TBtu	Primary Consumption TBtu
Coal	0.0	0.0	5.4	0.0	5.4	0.0	5.4
Natural Gas	459.9	307.4	92.8	37.9	897.8	463.4	1,361.2
Petroleum Products ³ :	130.3	60.6	74.7	926.5	1,192.2	6.5	1,198.7
Distillate	102.2	48.7	11.8	161.9	324.7	1.2	325.9
Residual	0.0	1.2	2.8	18.2	22.2	5.3	27.5
Kerosene	2.5	0.2	0.6	0.0	3.3	0.0	3.3
LPG	25.6	10.5	3.7	0.2	40.0	0.0	40.0
Gasoline	0.0	0.0	0.0	582.2	582.2	0.0	582.2
Jet Fuel	0.0	0.0	0.0	164.0	164.0	0.0	164.0
Other Petroleum	0.0	0.0	55.8	0.0	55.8	0.0	55.8
Renewables ⁴	12.7	13.7	0.2	0.0	26.6	261.3	287.9
Bioenergy ⁵	29.9	9.9	22.6	54.1	116.5	17.6	134.1
Electric Sales	178.0	238.6	57.6	8.4	482.5		
Net Consumption	810.7	630.1	253.3	1,026.8	2,721.0		
						5.6	5.6
						325.7	325.7
						213.7	213.7
						36.7	36.7
						1293.6	3,532.1

¹ For New York energy accounting in the electric generation sector, conventional hydroelectric generation is included in the Renewables category.

² Petroleum includes petroleum coke used for electric generation.

³ Excludes petroleum products not used as a form of energy (example: lubricants).

⁴ Renewables includes geothermal, solar, wind, and conventional hydroelectric generation.

⁵ Bioenergy includes wood, waste energy, landfill gas, ethanol, and biodiesel.

⁶ Wind electricity is provided as a line item under electric generation as historically presented in this report, but this line item is not included in the total since wind consumption is reflected as renewable generation in these New York State summary data.

**United States and New York State
Selected Energy Prices
in Nominal Dollars, 2007–2021**

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
2007	274.2	272.1	10.7	13.0	9.6	11.3	6.4	8.5
2008	318.4	337.6	11.3	13.9	10.3	12.2	6.9	10.3
2009	230.4	251.7	11.5	12.1	10.2	9.9	6.8	6.6
2010	273.7	296.9	11.5	11.4	10.2	9.4	6.8	6.3
2011	345.0	356.7	11.7	11.0	10.2	9.0	6.8	6.1
2012	354.7	397.0	11.9	10.6	10.1	8.2	6.7	5.0
2013	344.8	388.9	12.1	10.3	10.3	8.3	6.9	5.6
2014	331.2	379.1	12.5	10.9	10.7	9.1	7.1	6.6
2015	243.5	261.2	12.7	10.3	10.6	8.1	6.9	5.0
2016	217.2	223.1	12.5	10.0	10.4	7.5	6.8	4.4
2017	243.6	249.1	12.9	10.9	10.7	8.1	6.9	5.0
2018	270.9	276.1	12.9	10.5	10.7	8.0	6.9	5.0
2019	259.7	265.7	13.0	10.5	10.7	7.9	6.8	4.8
2020	216.4	219.7	13.2	10.7	10.6	7.8	6.7	4.2
2021	298.0	263.8	13.7	12.1	11.2	9.1	7.2	6.1

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
2007	276.7	278.0	17.1	15.8	15.9	11.9	8.7	11.5
2008	327.0	342.5	18.3	16.9	16.8	12.9	9.4	12.4
2009	235.7	260.6	17.5	15.1	15.5	10.8	8.4	9.6
2010	277.8	301.1	18.7	14.0	16.3	10.9	8.8	8.5
2011	351.9	355.2	18.3	13.6	15.8	9.3	7.8	8.1
2012	364.1	394.7	17.6	12.9	15.1	7.8	6.7	6.9
2013	354.7	388.8	18.8	12.4	15.4	7.9	6.6	7.4
2014	341.8	379.2	20.1	12.5	16.1	8.3	6.6	8.1
2015	246.6	264.9	18.5	11.3	15.3	6.9	6.3	6.7
2016	218.4	227.6	17.6	10.9	14.4	6.2	6.0	6.0
2017	242.1	252.6	18.0	12.1	14.8	6.9	5.9	7.2
2018	267.5	278.9	18.5	12.4	14.5	7.4	6.0	7.9
2019	252.2	264.5	17.9	12.7	14.1	7.3	5.6	7.8
2020	214.8	216.4	18.4	12.9	14.6	6.9	5.5	7.0
2021	287.0	255.4	19.5	13.9	16.1	8.0	6.3	8.4

United States Estimated Sources of Petroleum Products, 2007–2021

Figure 2-4. United States Petroleum Net Imports

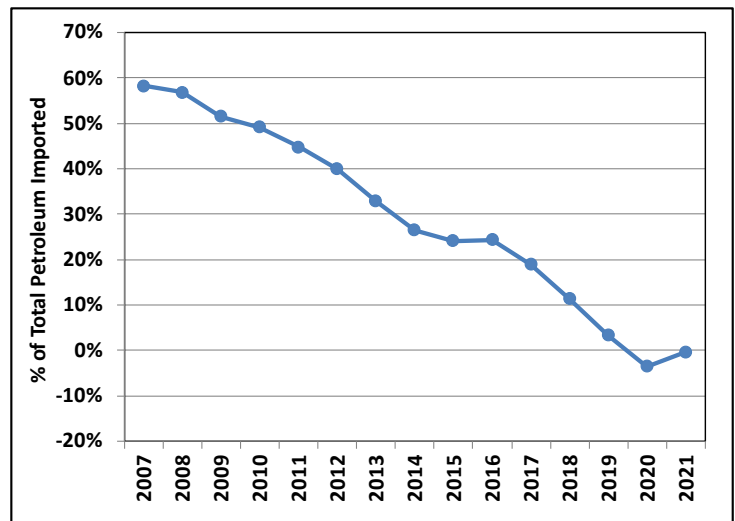


Table 2-4. United States Sources of Petroleum

Year	Total Domestic ¹	Total Foreign	OPEC ²	Non-OPEC ³
	%	%	%	%
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%
2019	96.7%	3.3%	8.0%	-4.7%
2020	103.5%	-3.5%	4.9%	-8.4%
2021	100.3%	-0.3%	4.8%	-5.1%

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, 2007–2021**

Table 2-5a. United States

Year	Population	Housing Units	Non-Manufacturing ¹ Employment	Manufacturing ¹ Employment	GDP ²	Licensed Drivers	Vehicles Registered	Vehicle Miles Traveled
	thousands	thousands	thousands	thousands	B/2021\$	millions	millions	billions
2007	301,231	128,132	124,120	13,879	\$18,916	206	247	3,049
2008	304,094	129,313	123,835	13,406	\$18,589	208	248	2,993
2009	306,772	129,970	119,466	11,847	\$18,286	210	246	2,976
2010	309,327	131,705	118,834	11,528	\$18,701	210	242	2,985
2011	311,583	132,316	120,206	11,726	\$18,792	212	253	2,965
2012	313,878	132,452	122,248	11,927	\$19,183	212	254	2,969
2013	316,060	132,808	124,339	12,019	\$19,592	212	256	2,988
2014	318,386	133,963	126,735	12,185	\$20,089	214	260	3,026
2015	320,739	134,794	129,466	12,335	\$20,814	218	264	3,095
2016	323,072	135,703	131,980	12,353	\$21,107	222	269	3,174
2017	325,122	137,384	134,172	12,439	\$21,531	225	273	3,224
2018	326,838	138,540	136,209	12,688	\$22,157	228	274	3,255
2019	328,330	139,686	138,075	12,816	\$22,662	229	276	3,276
2020	331,512	140,801	129,988	12,165	\$22,050	228	276	2,917
2021	332,032	142,152	133,927	12,354	\$23,315	233	282	3,132

Table 2-5b. New York State

Year	Population	Housing Units	Non-Manufacturing ¹ Employment	Manufacturing ¹ Employment	GSP ³	Licensed Drivers	Vehicles Registered	Vehicle Miles Traveled
	thousands	thousands	thousands	thousands	MM/2021\$	thousands	thousands	billions
2007	19,132	7,940	8,168	552	\$1,462,887	11,369	11,495	137
2008	19,212	7,977	8,246	532	\$1,405,290	11,285	11,089	134
2009	19,307	8,018	8,064	476	\$1,465,234	11,329	11,245	134
2010	19,400	8,108	8,088	457	\$1,520,436	11,286	11,082	131
2011	19,500	8,120	8,233	459	\$1,502,910	11,211	10,085	128
2012	19,574	8,124	8,360	459	\$1,567,599	11,249	10,449	128
2013	19,626	8,126	8,500	457	\$1,588,349	11,211	10,674	130
2014	19,653	8,192	8,668	454	\$1,637,844	11,318	10,904	129
2015	19,657	8,207	8,836	456	\$1,700,731	11,690	10,639	127
2016	19,636	8,232	8,983	452	\$1,751,490	11,948	11,122	123
2017	19,594	8,327	9,115	446	\$1,773,050	12,185	10,857	124
2018	19,544	8,364	9,241	444	\$1,829,032	12,194	11,482	123
2019	19,463	8,404	9,346	440	\$1,884,228	12,194	11,389	124
2020	20,108	8,488	8,413	401	\$1,805,786	12,194	11,325	102
2021	19,857	8,537	8,635	409	\$1,901,297	11,879	9,409	107

¹ Includes nonfarm jobs only.

² Gross domestic product in billions of 2021 dollars.

³ Gross State product in millions of 2021 dollars.

Energy Consumption and Expenditure Indicators, State Comparisons, 2021

Table 2-6.

States	Primary Energy Use		Primary Energy Use		Primary Energy Use		Energy Expenditures	
	Energy Use	Ranking	per Capita	Ranking	per unit GSP	Ranking	per Capita	Ranking
	TBtu		MMBtu		Btu		Dollars	
Alabama	1,964	16	389	13	7,728	7	\$4,797	11
Alaska	684	40	932	1	11,923	3	\$8,711	1
Arizona	1,563	24	215	42	3,722	36	\$3,517	42
Arkansas	1,078	30	356	17	7,251	10	\$4,496	15
California	7,203	2	189	48	2,135	48	\$3,837	30
Colorado	1,510	26	260	33	3,460	39	\$3,523	41
Connecticut	704	38	194	46	2,360	47	\$3,789	31
Delaware	296	47	294	25	3,641	37	\$3,869	28
D.C.	151	50	225	39	981	51	\$3,118	49
Florida	4,315	3	198	45	3,437	40	\$3,059	50
Georgia	2,835	9	263	32	4,099	29	\$3,583	37
Hawaii	270	48	187	49	2,966	42	\$4,386	17
Idaho	574	41	301	23	5,957	19	\$4,057	24
Illinois	3,707	5	294	26	3,920	32	\$3,556	40
Indiana	2,725	10	400	11	6,599	16	\$4,570	13
Iowa	1,561	25	490	5	7,199	11	\$5,245	7
Kansas	1,073	31	366	16	5,605	20	\$4,312	21
Kentucky	1,688	21	375	14	7,115	12	\$4,544	14
Louisiana	4,281	4	925	2	16,554	1	\$7,839	4
Maine	372	45	270	30	4,769	24	\$4,380	18
Maryland	1,270	28	206	43	2,860	44	\$3,211	48
Massachusetts	1,343	27	192	47	2,095	49	\$3,636	35
Michigan	2,709	11	270	31	4,734	25	\$3,664	34
Minnesota	1,807	18	319	19	4,380	27	\$3,971	27
Mississippi	1,084	29	368	15	8,515	6	\$4,622	12
Missouri	1,759	20	285	27	4,904	22	\$3,862	29
Montana	434	43	392	12	7,399	9	\$5,086	8
Nebraska	897	33	457	9	6,132	17	\$4,923	9
Nevada	761	36	242	38	3,914	33	\$3,584	36
New Hampshire	301	46	217	40	3,024	41	\$4,080	22
New Jersey	2,000	15	216	41	2,929	43	\$3,344	46
New Mexico	739	37	349	18	6,743	14	\$4,333	20
New York	3,536	8	178	50	1,860	50	\$2,998	51
North Carolina	2,629	12	249	35	3,970	31	\$3,437	43
North Dakota	703	39	905	3	11,056	4	\$7,938	3
Ohio	3,540	7	301	22	4,678	26	\$3,784	32
Oklahoma	1,650	22	414	10	7,664	8	\$4,475	16
Oregon	1,038	32	246	36	3,813	34	\$3,579	38
Pennsylvania	3,631	6	279	29	4,299	28	\$3,568	39
Rhode Island	186	49	170	51	2,793	46	\$3,406	44
South Carolina	1,631	23	314	21	6,044	18	\$4,045	25
South Dakota	410	44	458	8	6,643	15	\$5,329	6
Tennessee	2,195	14	315	20	5,139	21	\$4,016	26
Texas	14,349	1	486	6	6,993	13	\$5,469	5
Utah	848	35	254	34	3,763	35	\$3,328	47
Vermont	129	51	199	44	3,469	38	\$4,349	19
Virginia	2,441	13	282	28	4,035	30	\$3,712	33
Washington	1,896	17	245	37	2,799	45	\$3,351	45
West Virginia	853	34	478	7	9,989	5	\$4,903	10
Wisconsin	1,762	19	300	24	4,780	23	\$4,066	23
Wyoming	505	42	870	4	12,154	2	\$8,656	2
United States	97,547		280		4,186		\$3,967	
NYS as a % of U.S.	3.6%		64%		44%		76%	

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, 2021

Table 2-7.

States	Residential Primary Energy Use ¹ per Housing Unit		Residential Energy Expenditures per Housing Unit		Commercial Primary Energy Use ¹ per Non-Manufacturing Employee		Commercial Energy Expenditures Per Non-Manufacturing Employee	
		Ranking		Ranking		Ranking		Ranking
	MMBtu		Dollars		MMBtu		Dollars	
Alabama	147	37	\$2,044	19	139	27	\$1,776	9
Alaska	169	14	\$2,763	3	205	2	\$3,105	1
Arizona	136	42	\$1,737	43	124	34	\$1,381	37
Arkansas	164	18	\$1,938	33	158	11	\$1,544	26
California	102	50	\$1,986	28	90	50	\$1,701	18
Colorado	149	33	\$1,678	45	111	45	\$1,183	46
Connecticut	156	24	\$3,229	1	125	33	\$1,983	3
Delaware	151	30	\$2,014	25	143	22	\$1,476	31
D.C.	109	49	\$1,424	51	120	39	\$1,519	30
Florida	120	48	\$1,614	48	110	46	\$1,255	43
Georgia	157	22	\$2,146	11	124	35	\$1,391	36
Hawaii	66	51	\$1,779	41	72	51	\$1,908	5
Idaho	180	6	\$1,762	42	127	32	\$1,071	49
Illinois	172	10	\$1,995	27	145	20	\$1,354	39
Indiana	179	7	\$2,084	15	142	24	\$1,433	33
Iowa	162	19	\$2,045	17	141	25	\$1,424	35
Kansas	168	15	\$2,045	18	173	6	\$1,750	13
Kentucky	170	11	\$1,911	35	148	18	\$1,544	25
Louisiana	150	31	\$1,855	38	140	26	\$1,607	20
Maine	136	43	\$2,305	7	120	38	\$1,761	11
Maryland	153	28	\$2,096	14	145	19	\$1,602	21
Massachusetts	139	41	\$2,749	5	116	41	\$1,773	10
Michigan	165	17	\$2,163	10	162	8	\$1,752	12
Minnesota	165	16	\$2,028	21	138	30	\$1,428	34
Mississippi	143	39	\$1,932	34	149	16	\$1,832	7
Missouri	183	5	\$1,965	29	153	13	\$1,363	38
Montana	195	1	\$2,014	24	178	5	\$1,734	16
Nebraska	186	4	\$1,882	36	153	15	\$1,244	44
Nevada	143	38	\$1,665	46	116	40	\$1,050	50
New Hampshire	150	32	\$2,764	2	113	43	\$1,733	17
New Jersey	153	27	\$2,104	13	145	21	\$1,743	15
New Mexico	131	44	\$1,574	49	153	14	\$1,586	22
New York	130	45	\$2,248	8	121	36	\$1,744	14
North Carolina	148	34	\$1,788	40	137	31	\$1,267	42
North Dakota	188	3	\$2,057	16	235	1	\$2,139	2
Ohio	162	20	\$2,000	26	138	28	\$1,320	41
Oklahoma	170	13	\$1,963	30	161	9	\$1,524	28
Oregon	140	40	\$1,683	44	115	42	\$1,222	45
Pennsylvania	151	29	\$2,189	9	105	48	\$1,088	48
Rhode Island	127	47	\$2,714	6	108	47	\$1,824	8
South Carolina	156	25	\$1,954	32	138	29	\$1,460	32
South Dakota	170	12	\$2,106	12	155	12	\$1,567	24
Tennessee	173	9	\$1,838	39	160	10	\$1,681	19
Texas	147	35	\$1,858	37	142	23	\$1,326	40
Utah	161	21	\$1,547	50	120	37	\$1,019	51
Vermont	128	46	\$2,753	4	100	49	\$1,952	4
Virginia	156	23	\$2,018	23	182	4	\$1,573	23
Washington	147	36	\$1,637	47	112	44	\$1,178	47
West Virginia	178	8	\$2,040	20	164	7	\$1,533	27
Wisconsin	155	26	\$1,962	31	148	17	\$1,522	29
Wyoming	190	2	\$2,023	22	203	3	\$1,835	6
United States	146		\$1,838		131		\$1,488	
NYS as % of U.S.	89%		122%		93%		117%	

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, 2021

Table 2-8.

States	Industrial Primary Energy Use ¹		Industrial Energy Expenditures		Transportation Primary Use ¹ per Vehicle Registration		Transportation Expenditures per Vehicle Registration	
	per unit of GSP	Ranking	per unit of GSP	Ranking		Ranking		Ranking
	Btu		Dollars		MMBtu		Dollars	
Alabama	3,248	8	\$0.0182	9	101	15	\$2,145	25
Alaska	6,595	3	\$0.0140	14	276	1	\$5,486	1
Arizona	536	40	\$0.0056	39	94	26	\$2,293	17
Arkansas	2,618	14	\$0.0193	7	81	34	\$1,782	42
California	505	41	\$0.0051	41	89	28	\$2,488	12
Colorado	957	32	\$0.0069	35	84	32	\$1,991	31
Connecticut	220	48	\$0.0024	48	78	37	\$1,866	33
Delaware	1,058	31	\$0.0060	37	169	3	\$3,922	2
D.C.	39	51	\$0.0005	51	47	51	\$1,040	51
Florida	390	44	\$0.0035	46	88	29	\$1,849	34
Georgia	1,089	29	\$0.0072	33	94	23	\$2,000	30
Hawaii	546	39	\$0.0115	20	116	11	\$2,593	10
Idaho	1,783	20	\$0.0128	16	86	30	\$2,199	21
Illinois	1,192	27	\$0.0076	31	81	33	\$1,814	37
Indiana	3,028	11	\$0.0192	8	94	25	\$2,145	24
Iowa	3,929	6	\$0.0238	6	77	38	\$1,774	43
Kansas	2,037	18	\$0.0116	19	99	18	\$2,190	22
Kentucky	2,555	15	\$0.0155	12	113	12	\$2,359	14
Louisiana	11,688	1	\$0.0762	1	182	2	\$2,558	11
Maine	1,247	26	\$0.0097	25	76	41	\$1,842	35
Maryland	207	49	\$0.0023	49	86	31	\$1,916	32
Massachusetts	223	47	\$0.0032	47	77	39	\$1,773	44
Michigan	1,149	28	\$0.0083	28	74	45	\$1,649	47
Minnesota	1,474	24	\$0.0097	26	81	35	\$1,806	38
Mississippi	3,117	9	\$0.0172	10	147	6	\$2,953	4
Missouri	851	34	\$0.0069	34	98	19	\$2,201	20
Montana	2,206	17	\$0.0119	17	56	50	\$1,430	50
Nebraska	2,734	13	\$0.0152	13	104	14	\$2,435	13
Nevada	844	35	\$0.0077	29	97	20	\$2,332	15
New Hampshire	393	43	\$0.0050	43	70	47	\$1,658	46
New Jersey	355	45	\$0.0037	45	101	16	\$2,233	19
New Mexico	2,344	16	\$0.0106	23	128	9	\$2,830	5
New York	193	50	\$0.0018	50	109	13	\$2,314	16
North Carolina	832	36	\$0.0062	36	93	27	\$2,113	26
North Dakota	6,363	4	\$0.0335	3	148	5	\$2,641	9
Ohio	1,538	22	\$0.0108	22	80	36	\$1,796	40
Oklahoma	3,029	10	\$0.0139	15	136	8	\$2,715	7
Oregon	1,067	30	\$0.0075	32	76	42	\$2,003	29
Pennsylvania	1,623	21	\$0.0102	24	77	40	\$1,786	41
Rhode Island	332	46	\$0.0050	42	68	49	\$1,599	49
South Carolina	1,916	19	\$0.0115	21	94	24	\$2,054	28
South Dakota	2,881	12	\$0.0158	11	72	46	\$1,630	48
Tennessee	1,288	25	\$0.0076	30	100	17	\$2,148	23
Texas	3,774	7	\$0.0304	4	139	7	\$2,676	8
Utah	942	33	\$0.0059	38	94	22	\$2,275	18
Vermont	447	42	\$0.0084	27	70	48	\$1,724	45
Virginia	762	37	\$0.0052	40	96	21	\$2,067	27
Washington	692	38	\$0.0038	44	76	43	\$1,805	39
West Virginia	4,690	5	\$0.0245	5	160	4	\$3,225	3
Wisconsin	1,483	23	\$0.0116	18	75	44	\$1,830	36
Wyoming	6,940	2	\$0.0378	2	126	10	\$2,752	6
United States	1,402		\$0.0099		86		\$2,139	
NYS as % of U.S.	14%		19%		125%		108%	

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, 2021

Figure 2-9a. Primary Consumption by Fuel Type, 2021

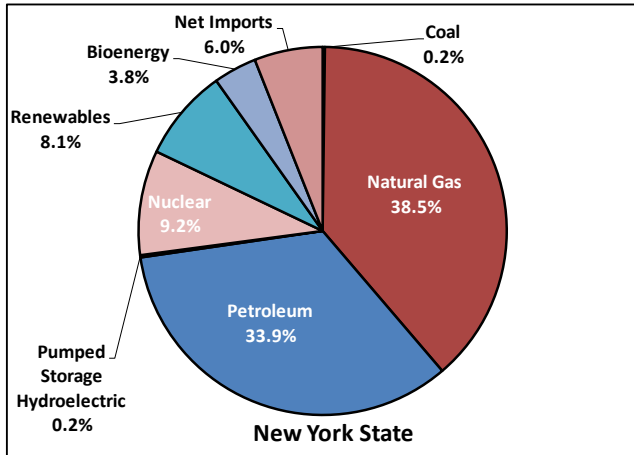
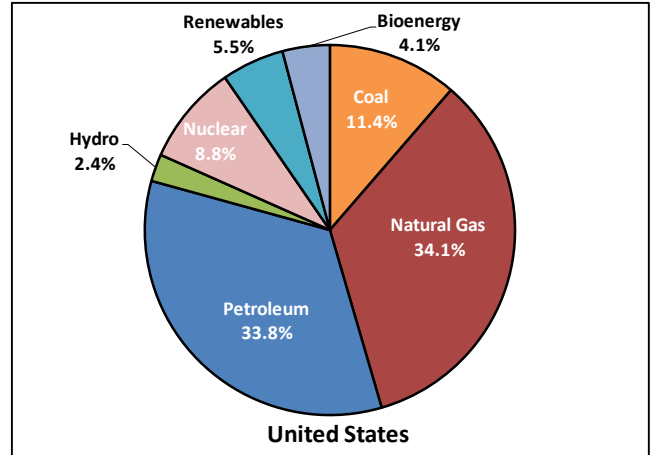


Figure 2-9b. Primary Consumption by Fuel Type, 2021



Note for New York State primary consumption accounting (Figure 2.9a), conventional hydroelectric generation is included with renewables since NYISO (2022) breaks out hydroelectric by conventional and pumped storage. For U.S.(Figure 2-9b), hydroelectric reflects the combined types and no hydroelectric generation is included as renewable since a differentiation is unavailable at the national level at this time.

Figure 2-9c. Primary Consumption by Sector, 2021

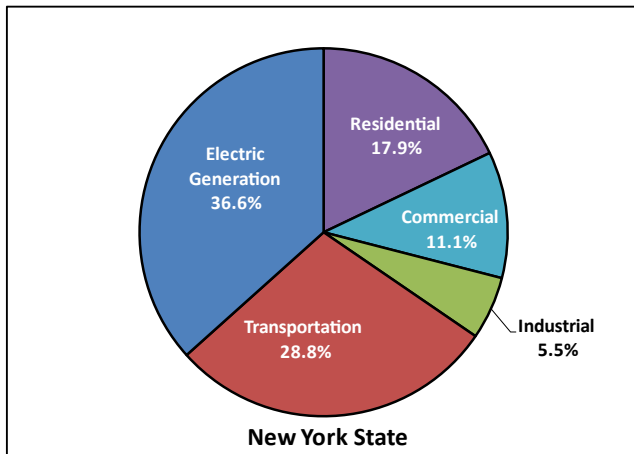
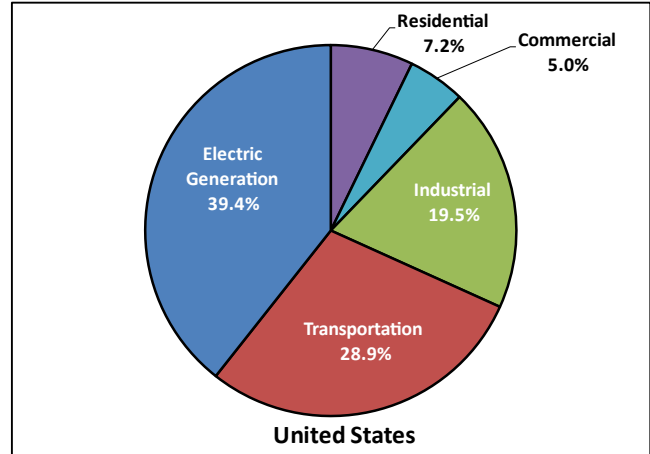


Figure 2-9d. Primary Consumption by Sector, 2021



United States and New York State Selected Comparisons, 2021

Figure 2-10a. Electricity Generation by Fuel Type, 2021

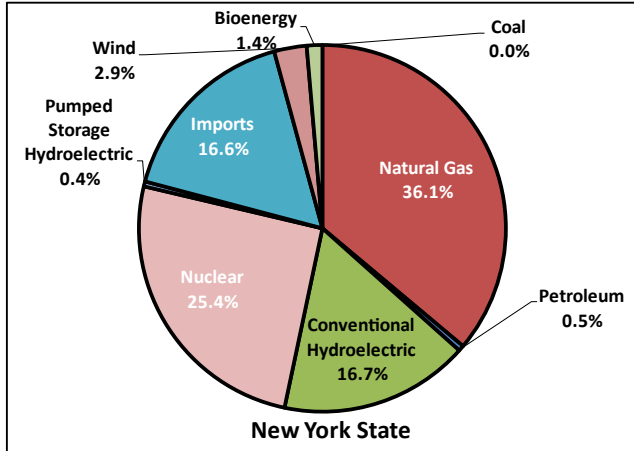


Figure 2-10b. Electricity Generation by Fuel Type, 2021

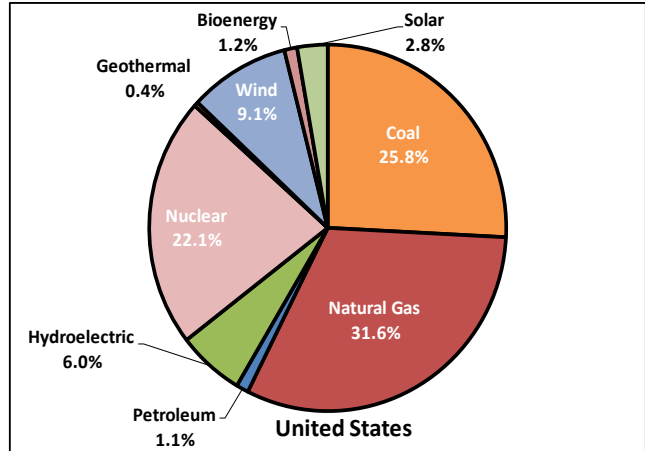


Figure 2-10c. Primary Consumption of Petroleum Products, 2021^{1,2}

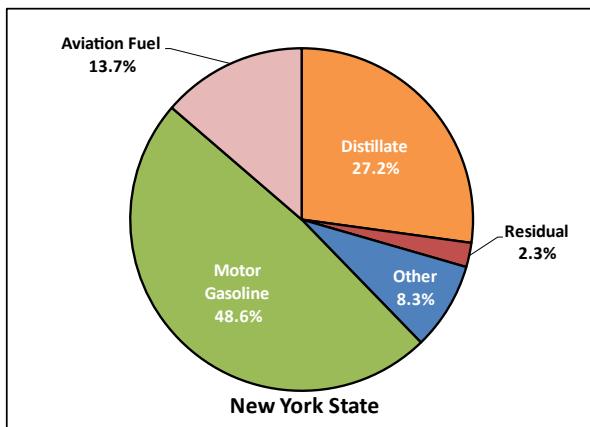
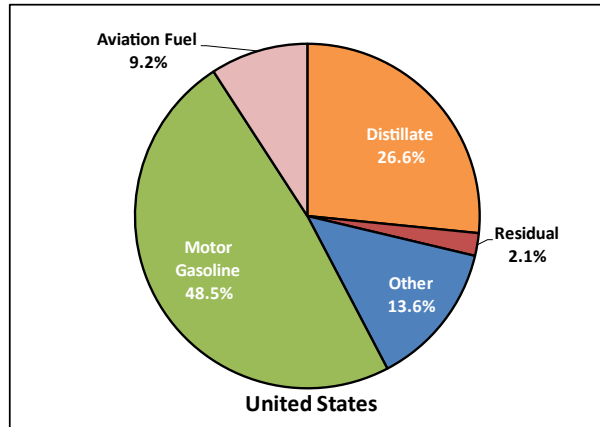


Figure 2-10d. Primary Consumption of Petroleum Products, 2021^{1,2}



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, 2021

Figure 2-11a. Petroleum Consumption by Sector, 2021¹

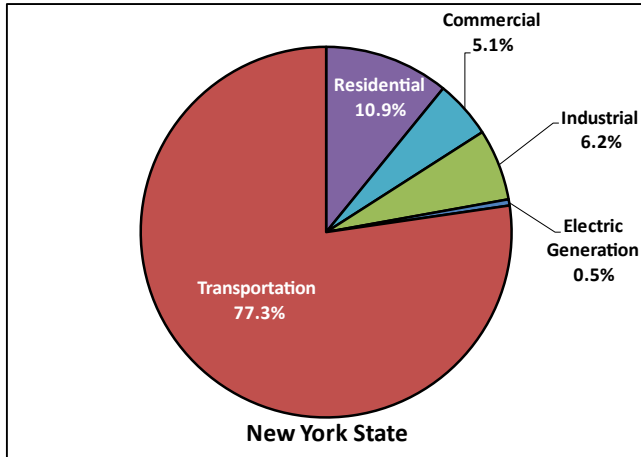


Figure 2-11b. Petroleum Consumption by Sector, 2021¹

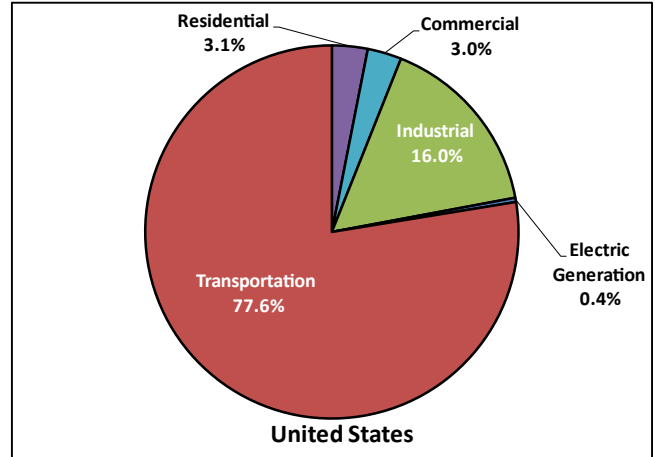


Figure 2-11c. Natural Gas Consumption by Sector, 2021

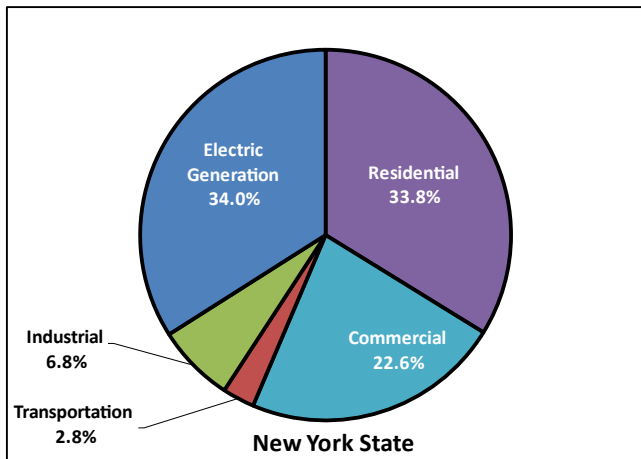
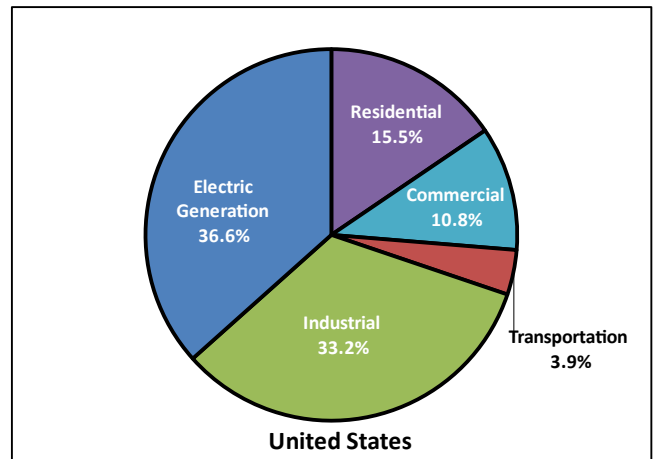


Figure 2-11d. Natural Gas Consumption by Sector, 2021



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

United States and New York State Selected Comparisons, 2021

Figure 2-12a. Coal Consumption by Sector, 2021

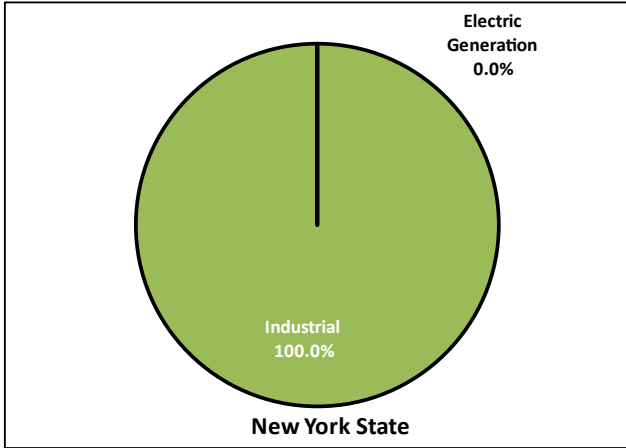


Figure 2-12b. Coal Consumption by Sector, 2021

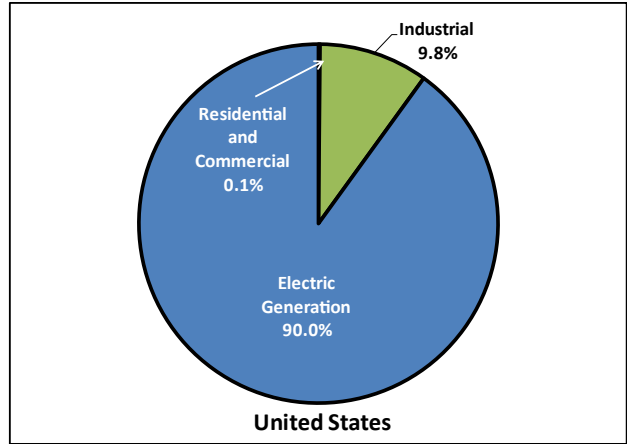


Figure 2-12c. Electricity Sales by Sector, 2021

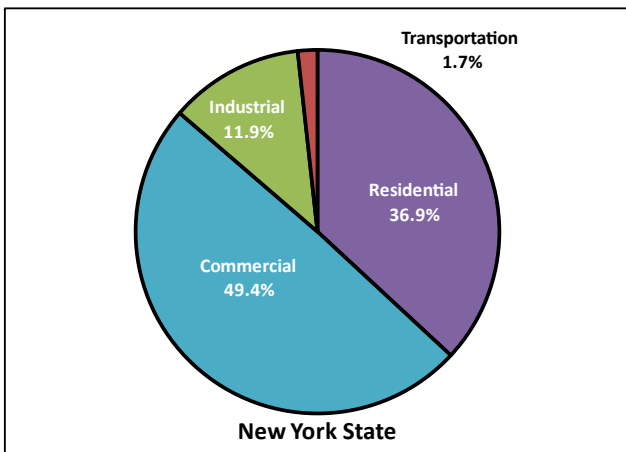
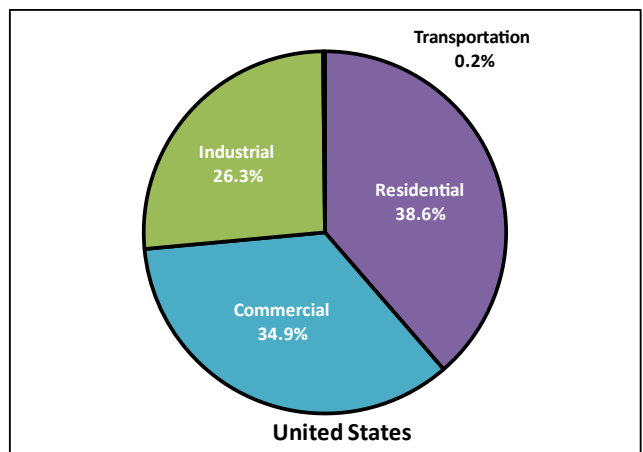


Figure 2-12d. Electricity Sales by Sector, 2021



United States and New York State Selected Energy Indicators, 2007–2021

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

Year	NYS thousand Btu	U.S. thousand Btu
2007	2.82	5.34
2008	2.91	5.32
2009	2.64	5.15
2010	2.57	5.21
2011	2.55	5.15
2012	2.36	4.92
2013	2.39	4.95
2014	2.36	4.89
2015	2.28	4.67
2016	2.16	4.61
2017	2.12	4.53
2018	2.16	4.56
2019	2.04	4.42
2020	1.86	4.21
2021	1.86	4.19

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

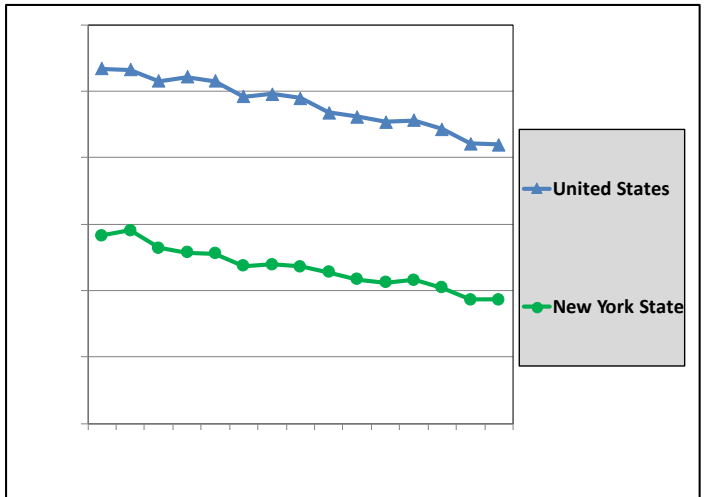
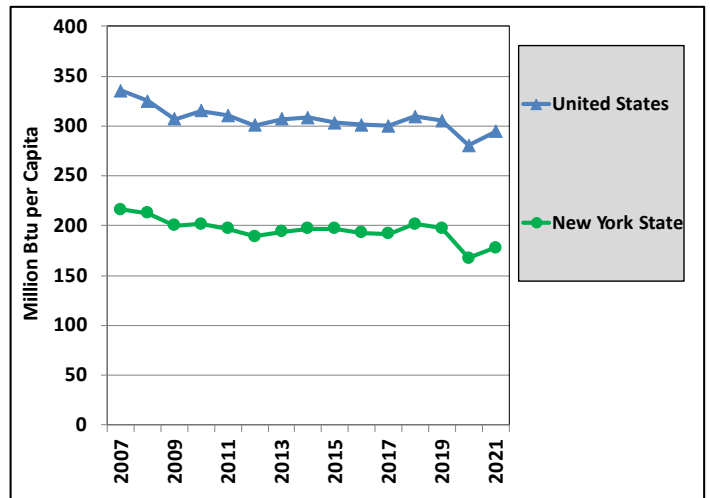


Table 2-13b. Primary Consumption per Capita

Year	NYS MMBtu	U.S. MMBtu
2007	215.95	335.26
2008	212.52	325.10
2009	200.05	306.72
2010	201.60	314.91
2011	196.72	310.56
2012	189.38	300.55
2013	193.72	307.03
2014	196.72	308.53
2015	196.93	303.21
2016	192.85	301.22
2017	191.85	300.26
2018	201.86	309.28
2019	197.54	305.38
2020	167.26	280.12
2021	177.88	294.55

Figure 2-13b. Primary Consumption per Capita

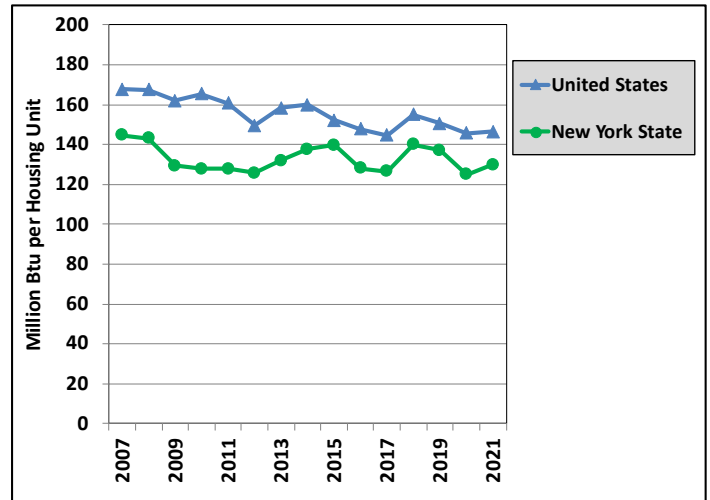


United States and New York State Selected Energy Indicators, 2007–2021

Table 2-14a.
Residential Consumption per Housing Unit

Year	NYS	U.S.
	MMBtu	MMBtu
2007	144.55	167.71
2008	142.91	167.30
2009	129.40	161.96
2010	127.62	165.22
2011	127.74	160.71
2012	125.75	149.61
2013	131.78	158.39
2014	137.60	159.76
2015	139.60	151.98
2016	128.11	147.75
2017	126.54	144.59
2018	140.02	155.00
2019	136.99	150.60
2020	124.95	145.74
2021	129.80	146.38

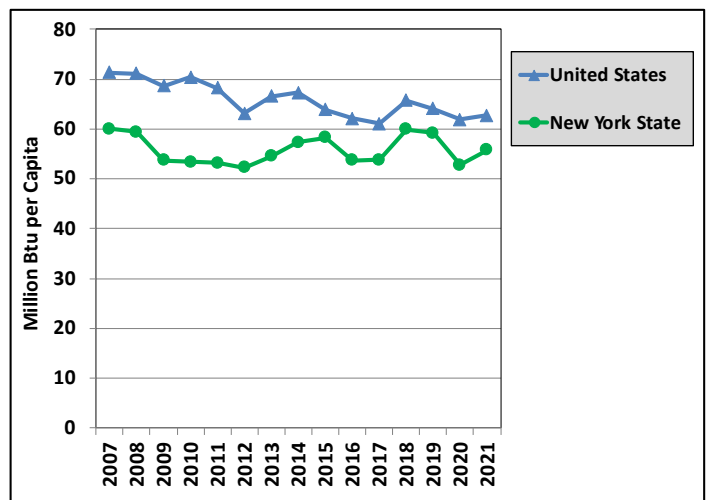
Figure 2-14a. Residential Consumption per Housing Unit



Tablet 2-14b.
Residential Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2007	59.99	71.34
2008	59.34	71.14
2009	53.74	68.62
2010	53.34	70.35
2011	53.19	68.25
2012	52.19	63.13
2013	54.56	66.56
2014	57.35	67.22
2015	58.29	63.87
2016	53.71	62.06
2017	53.78	61.10
2018	59.92	65.70
2019	59.15	64.07
2020	52.75	61.90
2021	55.80	62.67

Figure 2-14b. Residential Consumption per Capita



United States and New York State Selected Energy Indicators, 2007–2021

Table 2-15a. Commercial Consumption per Non-manufacturing Employee

Year	NYS	U.S.
	MMBtu	MMBtu
2007	152.07	146.71
2008	148.13	148.19
2009	144.94	149.44
2010	145.82	151.61
2011	142.49	149.21
2012	134.08	142.04
2013	137.43	143.81
2014	131.61	143.59
2015	132.33	139.87
2016	121.44	136.26
2017	122.94	133.14
2018	127.22	135.19
2019	121.37	130.23
2020	125.53	128.72
2021	120.99	130.09

Figure 2-15a. Commercial Consumption per Non-manufacturing Employee

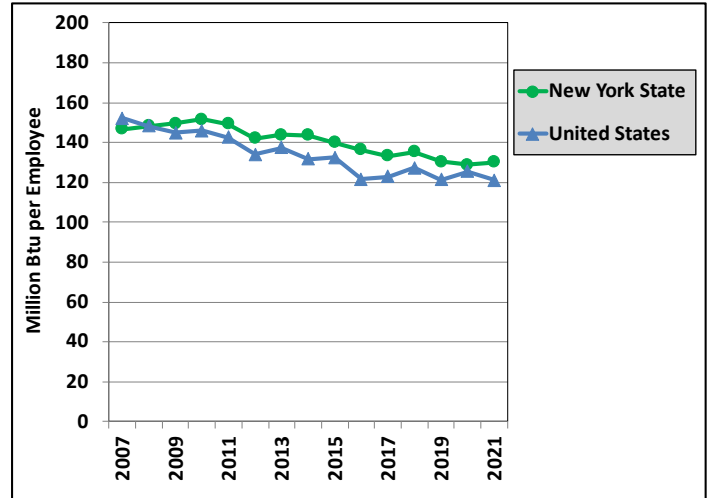
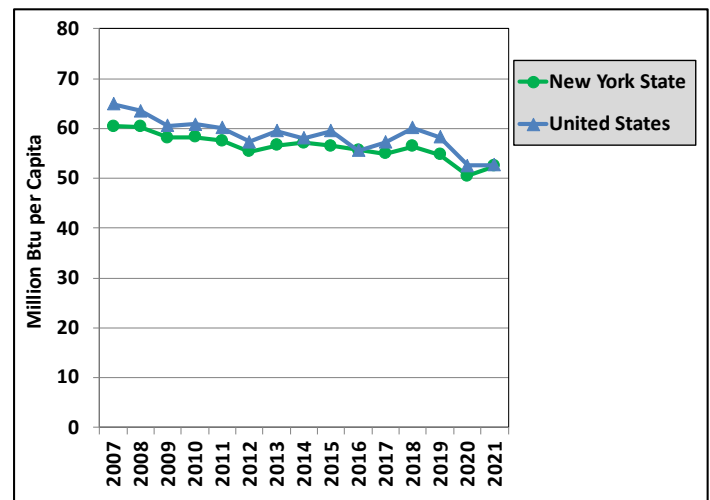


Table 2-15b. Commercial Consumption per Capita

Year	NYS	U.S.
	MMBtu	MMBtu
2007	64.92	60.45
2008	63.57	60.35
2009	60.54	58.20
2010	60.79	58.24
2011	60.16	57.57
2012	57.27	55.32
2013	59.52	56.58
2014	58.05	57.16
2015	59.48	56.46
2016	55.56	55.66
2017	57.19	54.95
2018	60.15	56.34
2019	58.29	54.77
2020	52.52	50.47
2021	52.62	52.47

Figure 2-15b. Commercial Consumption per Capita



United States and New York State Selected Energy Indicators, 2007–2021

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

Year	NYS Btu	U.S. Btu
2007	4,091	7,763
2008	4,195	7,817
2009	3,842	7,910
2010	3,768	8,018
2011	4,026	7,874
2012	3,682	7,789
2013	3,509	7,641
2014	3,309	7,626
2015	2,867	7,589
2016	3,273	7,828
2017	2,857	7,690
2018	2,934	7,629
2019	2,811	7,713
2020	2,791	7,968
2021	3,251	7,565

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

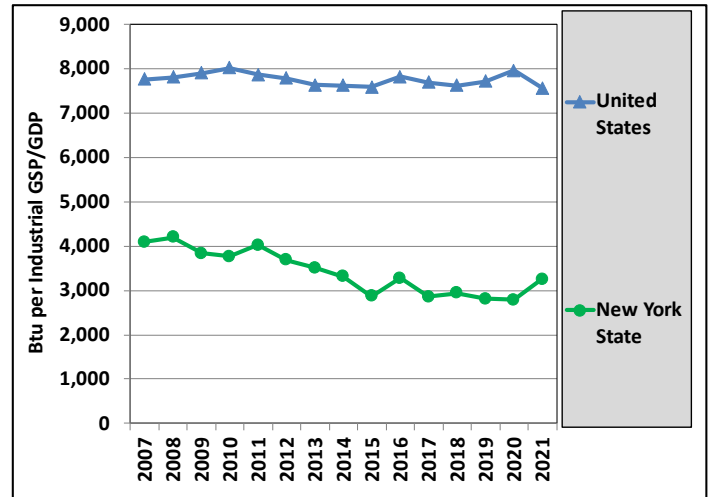
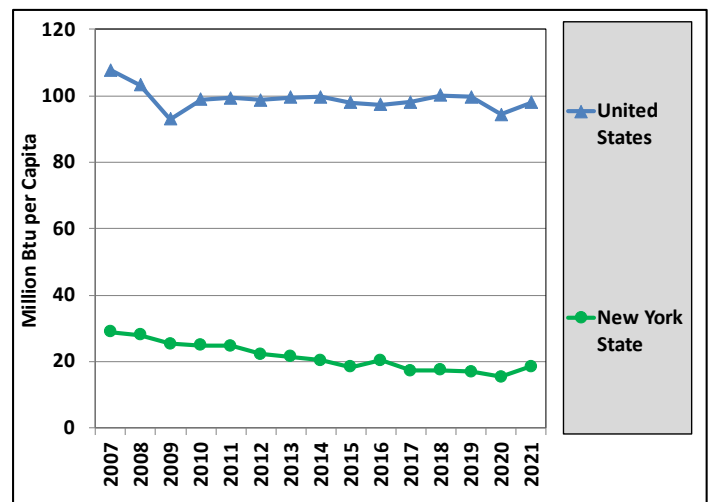


Table 2-16b. Industrial Consumption per Capita

Year	NYS MMBtu	U.S. MMBtu
2007	28.87	107.77
2008	27.97	103.28
2009	25.30	93.02
2010	24.93	98.91
2011	24.66	99.27
2012	22.19	98.78
2013	21.49	99.57
2014	20.37	99.63
2015	18.41	97.89
2016	20.30	97.36
2017	17.34	98.03
2018	17.38	100.17
2019	16.94	99.71
2020	15.42	94.30
2021	18.49	97.88

Figure 2-16b. Industrial Consumption per Capita



United States and New York State Selected Energy Indicators, 2007–2021

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

Year	NYS Btu	U.S. Btu
2007	6,465	7,700
2008	6,367	7,452
2009	6,380	7,381
2010	6,574	7,419
2011	6,471	7,379
2012	6,290	7,253
2013	6,144	7,338
2014	6,415	7,393
2015	6,492	7,289
2016	7,014	7,183
2017	7,046	7,081
2018	7,228	7,105
2019	7,000	7,051
2020	7,199	7,001
2021	7,383	6,998

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

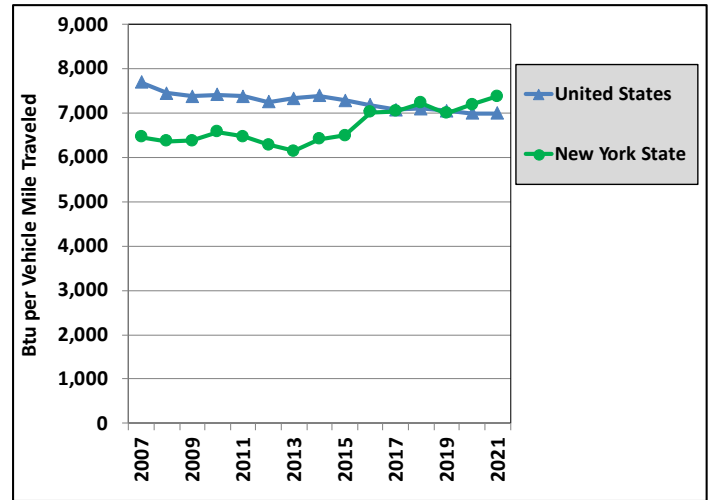
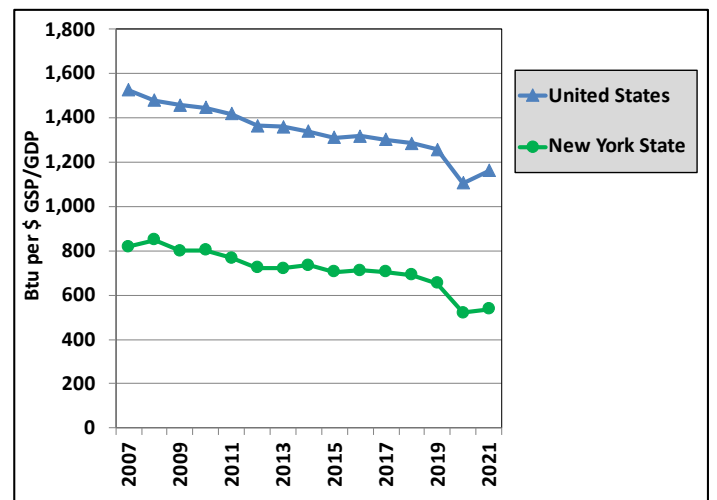


Table 2-17b. Transportation Consumption per Dollar of Gross State/Domestic Product

Year	NYS Btu/\$ GSP	U.S. Btu/\$ GDP
2007	818	1,524
2008	848	1,478
2009	801	1,458
2010	803	1,446
2011	766	1,417
2012	723	1,363
2013	721	1,360
2014	734	1,340
2015	705	1,310
2016	712	1,318
2017	705	1,301
2018	690	1,284
2019	654	1,258
2020	519	1,104
2021	537	1,161

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 2007 through 2021. Total primary energy consumption by sector, including residential, commercial, industrial, transportation, and electric generation is presented for the 15-year period with both physical and energy units.

The section also presents summaries on the State’s renewable and bioenergy consumption. Electricity generation reported does not include generator station use. Electricity—from hydroelectric generation 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. End-use energy consumption by large multifamily buildings and institutional facilities is included in the commercial sector.

3.1 Key Observations about 2021 New York State Energy Consumption Data

- The recovery from the COVID-19 pandemic regarding energy consumption in New York State is highlighted throughout the energy consumption data for 2021. Most notable is the overall energy consumption increases compared to 2020.
- Total primary energy consumption was 3,532 TBtu, a 5.0% increase from 2020, keeping in mind that 2021 total primary energy consumption remains 8.1% below 2019 (pre-pandemic).
- Primary consumption of natural gas (1,361 TBtu) remained the greatest energy source for NYS energy consumption, representing 38.5% of total primary energy consumption. Petroleum products also remained as the second greatest energy source (1,199 TBtu; 33.9% of total primary energy consumption).
- Cumulative heating degree-days were 0.5% lower in 2021 compared to 2020. Cumulative cooling degree-days were 7.0% lower in 2021 compared to 2020.
- Compared to 2020, the 2021 primary consumption increased for natural gas (4.3%), petroleum products (12.9%), electricity imports (36.1%), solar (23.3%), and bioenergy (6.4%). Primary consumption decreased for coal (5.5%), hydroelectric generation (7.1%), and wind (7.3%).
- Total consumption of petroleum products was 1,198.7 TBtu, or 235 million barrels, representing 33.9% of total primary energy consumption.

- In 2021, statewide petroleum products consumption increased 12.9% compared to 2020. This represents another sign of the pandemic recovery. Specific statewide petroleum fuels consumption comparisons include:
 - Distillate oil consumption increased 9.5% from 2020 but remained 7.5% less than 2019 consumption.
 - Motor gasoline consumption increased 10.1% from 2020 but remained 8.7% less than 2019 consumption.
 - Residual fuel oil consumption increased by 81.0% from 2020 and 92.7% greater than 2019 consumption.

- Sales of natural gas totaled 1,319 billion cubic feet in 2021, which was 4.3% greater than the 1,264 billion cubic feet sold in 2020 and 1.8% greater than 2019.
- Sales of natural gas by sector were 33.8% for the residential sector, 22.6% for the commercial sector, 6.8% for the industrial sector, 2.8% for the transportation sector, and 34.0% for the electric generation sector.
- Natural gas and nuclear power accounted for 35.8% and 25.2% of the State's electricity requirements in 2021, respectively.
- Energy used for electricity generation accounted for 36.6% of primary energy use.
- Sales of electricity to ultimate customers increased by 0.7% between 2021 and 2020. However, the 2021 sales of electricity remained 2.9% less than 2019.
- Total residential net energy consumption was 811 TBtu, which was 4.4% greater than 2020 consumption, but was 3.9% less than 2019 consumption. The residential sector accounted for 29.8% of total net energy consumption.
- Total net energy consumption in the commercial sector was 630 TBtu, or 23.2% of total net energy consumption.
- Industrial net energy consumption was 253 TBtu, or 9.3% of total net consumption.
- Transportation energy consumption was 1,027 TBtu, or 37.7% of total net energy consumption.

New York State Primary Consumption of Energy by Fuel Type 2007–2021

Figure 3-1.

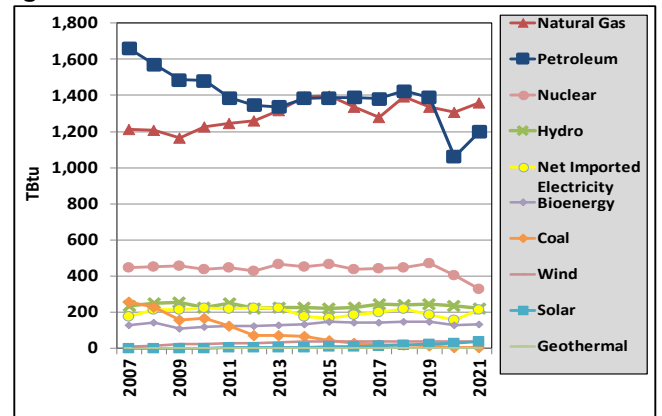


Table 3-1a. (In Physical Units)

Year	Coal	Natural Gas	Petroleum Products ¹	Hydro	Nuclear	Net Imported Electricity	Solar	Wind
	Mtons	Bcf	Mbbl	GWh	GWh	GWh	GWh	GWh
2007	11,058	1,187	308,297	25,557	42,453	18,904	16	833
2008	10,157	1,180	295,891	27,501	43,209	23,344	24	1,251
2009	7,032	1,143	282,236	27,945	43,485	23,361	33	2,266
2010	7,367	1,198	283,381	25,103	41,870	24,912	56	2,596
2011	5,604	1,217	266,385	28,355	42,695	24,883	93	2,828
2012	3,137	1,223	258,653	25,303	40,775	25,516	202	2,992
2013	3,041	1,273	257,552	26,397	44,756	25,902	259	3,539
2014	2,867	1,349	266,956	26,823	43,039	20,789	401	3,986
2015	1,761	1,353	267,380	26,704	44,603	19,809	643	3,984
2016	1,175	1,296	268,501	27,150	41,571	22,358	931	3,943
2017	738	1,237	267,925	30,350	42,167	24,319	1,233	4,219
2018	635	1,350	276,282	29,856	42,919	26,766	1,550	3,985
2019	536	1,296	269,940	30,724	44,865	23,134	1,920	4,454
2020	222	1,264	208,043	30,156	38,430	19,990	2,356	4,163
2021	211	1,319	235,254	28,214	31,177	27,394	2,769	4,111

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
2007	258.5	1,214.4	1,659.9	236.9	445.3	175.2	1.2	8.2	0.7	128.6	4,128.8
2008	229.0	1,205.1	1,572.3	251.2	451.6	213.3	1.3	12.3	0.8	143.9	4,081.0
2009	156.0	1,166.6	1,486.8	252.9	454.8	211.4	1.5	22.1	1.0	107.6	3,860.6
2010	167.1	1,224.5	1,480.9	225.4	437.6	223.7	1.7	25.3	1.1	118.5	3,905.8
2011	125.2	1,247.8	1,387.2	250.7	446.8	220.0	2.1	27.5	1.3	124.9	3,833.4
2012	72.9	1,261.0	1,346.5	220.1	427.3	222.0	3.1	28.5	1.2	124.3	3,706.9
2013	68.7	1,315.3	1,337.9	224.7	467.7	220.5	3.9	33.8	1.2	128.3	3,801.9
2014	64.7	1,392.4	1,384.6	224.3	450.1	173.8	5.3	37.7	1.2	132.0	3,866.1
2015	41.2	1,396.7	1,387.9	221.2	466.5	164.1	7.7	37.0	1.2	147.6	3,871.2
2016	29.7	1,336.5	1,388.2	223.5	434.8	184.1	10.7	36.4	1.2	141.9	3,786.8
2017	19.6	1,276.9	1,381.1	246.5	441.0	197.5	13.9	38.1	1.2	143.3	3,759.1
2018	16.7	1,393.7	1,425.2	240.8	448.7	215.9	17.7	36.4	1.2	149.0	3,945.2
2019	13.6	1,337.8	1,388.1	242.6	468.5	182.7	22.5	39.7	1.2	148.1	3,844.8
2020	5.7	1,305.3	1,061.6	236.8	401.4	156.9	28.8	39.6	1.2	126.1	3,363.4
2021	5.4	1,361.2	1,198.7	220.0	325.7	213.7	35.5	36.8	1.2	134.1	3,532.2

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, 2007–2021**

Figure 3-2.

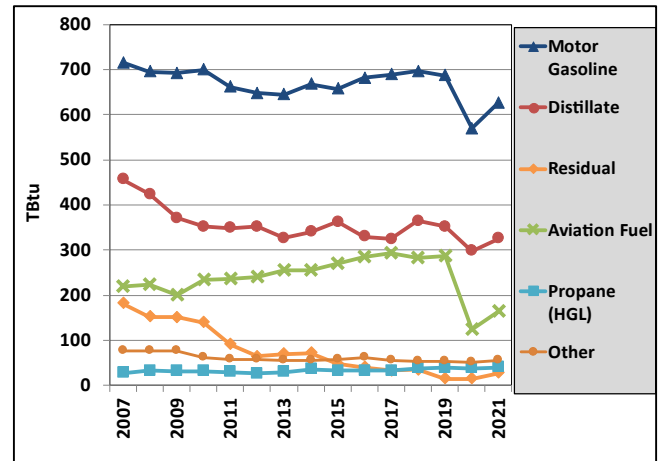


Table 3-2a. (In Thousand Barrels)

Year	Distillate	Residual	Kerosene	Propane (HGL)	Motor Gasoline	Aviation Fuel ¹	Other	Total ²
	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl
2007	78,850	28,975	1,777	7,345	139,140	38,588	21,237	308,297
2008	73,289	24,204	829	8,536	136,105	39,293	23,601	295,891
2009	64,154	24,060	1,218	8,344	135,921	35,364	25,198	282,236
2010	60,987	22,234	1,701	8,138	138,087	41,093	24,629	283,381
2011	60,439	14,517	1,058	7,689	130,718	41,569	23,153	266,385
2012	61,030	10,262	569	6,869	127,902	42,219	22,442	258,653
2013	56,594	11,032	506	7,657	127,461	44,878	22,183	257,552
2014	59,002	11,396	878	9,230	131,943	45,179	22,457	266,956
2015	62,971	7,582	613	8,609	129,909	47,781	22,789	267,380
2016	57,242	6,358	836	8,516	134,799	50,233	23,950	268,501
2017	56,280	5,202	491	8,459	136,414	51,544	23,325	267,925
2018	63,298	5,474	541	9,953	137,758	49,975	23,288	276,282
2019	61,140	2,269	771	10,276	135,872	50,626	22,923	269,940
2020	51,718	2,416	989	9,931	112,676	22,026	19,897	208,043
2021	56,532	4,372	591	10,401	124,180	28,927	23,148	235,254

Table 3-2b. (In Trillion Btu)

Year	Distillate	Residual	Kerosene	Propane (HGL)	Motor Gasoline	Aviation Fuel ¹	Other	Total ²
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2007	456.1	182.2	10.1	27.7	715.5	218.7	76.2	1,659.9
2008	423.6	152.2	4.7	32.4	695.0	222.7	76.3	1,572.3
2009	370.6	151.3	6.9	31.7	691.8	200.5	75.6	1,486.8
2010	352.2	139.8	9.6	31.3	699.7	232.9	62.1	1,480.9
2011	348.7	91.3	6.0	29.5	661.8	235.6	58.5	1,387.2
2012	352.0	64.5	3.2	26.4	647.4	239.3	57.5	1,346.5
2013	326.1	69.4	2.9	29.4	645.0	254.4	55.0	1,337.9
2014	340.0	71.6	5.0	35.5	667.5	256.1	54.5	1,384.6
2015	362.8	47.7	3.5	33.1	656.9	270.9	57.7	1,387.9
2016	329.5	40.0	4.7	32.7	681.4	284.8	61.7	1,388.2
2017	324.0	32.7	2.8	32.5	689.3	292.2	55.5	1,381.1
2018	364.5	34.4	3.1	38.2	696.2	283.3	54.3	1,425.2
2019	352.1	14.3	4.4	39.5	686.4	287.0	53.0	1,388.1
2020	297.7	15.2	5.6	38.1	569.2	124.8	51.2	1,061.6
2021	325.9	27.5	3.3	40.0	627.1	164.0	55.8	1,198.7

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 Sector¹
2007–2021**

Figure 3-3a.

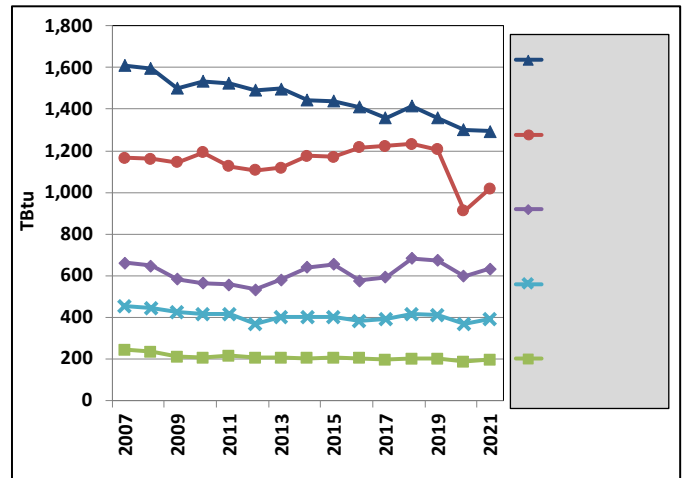


Table 3-3a. (In Trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Electric Generation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2007	660.7	451.6	242.2	1,165.9	1,611.2	4,131.6
2008	648.4	442.8	234.3	1,161.0	1,596.5	4,083.0
2009	582.8	424.4	209.3	1,144.5	1,501.3	3,862.3
2010	564.3	415.0	205.1	1,192.9	1,533.7	3,911.0
2011	557.1	416.6	214.1	1,124.4	1,523.8	3,836.1
2012	533.7	370.3	205.4	1,106.0	1,491.5	3,706.9
2013	581.7	400.2	203.9	1,118.1	1,498.0	3,801.9
2014	641.2	402.0	203.7	1,175.1	1,444.1	3,866.1
2015	655.6	399.7	205.4	1,170.8	1,439.7	3,871.2
2016	575.9	382.8	201.6	1,214.8	1,411.7	3,786.8
2017	591.5	390.9	196.4	1,222.5	1,357.7	3,759.0
2018	683.2	413.7	199.8	1,232.4	1,416.2	3,945.2
2019	672.7	408.5	199.3	1,205.8	1,358.5	3,844.8
2020	598.1	366.4	187.1	911.4	1,300.3	3,363.3
2021	632.8	391.6	195.7	1,018.5	1,293.6	3,532.2

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

**New York State
Primary Consumption
of Energy by Sector¹
2007–2021**

Figure 3-3b.

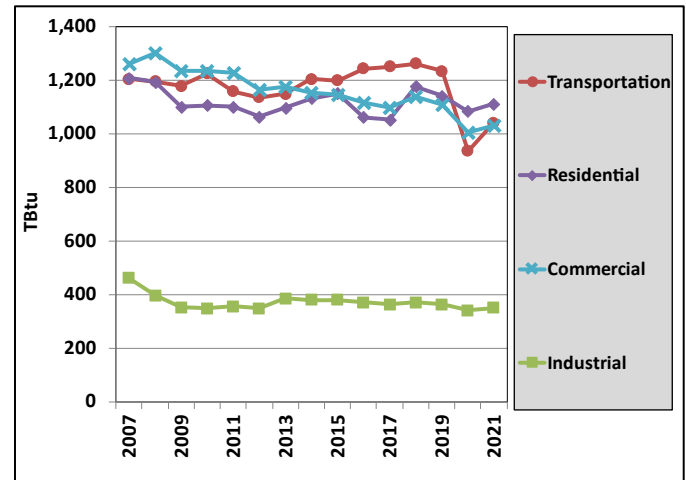


Table 3-3b. (In Trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu
2007	1,207.0	1,259.8	462.0	1,202.8	4,128.8
2008	1,191.8	1,300.8	397.0	1,193.4	4,081.0
2009	1,100.0	1,232.2	353.1	1,177.0	3,860.6
2010	1,104.5	1,234.5	348.1	1,223.9	3,905.8
2011	1,099.1	1,224.9	356.1	1,156.0	3,833.4
2012	1,061.8	1,162.2	348.2	1,134.7	3,706.9
2013	1,096.0	1,173.5	385.3	1,147.1	3,801.9
2014	1,130.9	1,152.0	380.2	1,203.0	3,866.1
2015	1,148.8	1,144.2	380.2	1,198.0	3,871.2
2016	1,061.4	1,113.5	370.7	1,241.1	3,786.8
2017	1,051.1	1,096.3	363.2	1,248.4	3,759.1
2018	1,175.8	1,138.6	370.5	1,260.3	3,945.2
2019	1,140.5	1,109.1	363.1	1,232.1	3,844.8
2020	1,082.0	1,005.3	340.9	935.1	3,363.4
2021	1,109.9	1,031.1	350.2	1,040.9	3,532.2

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 Sector¹ 2007–2021

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

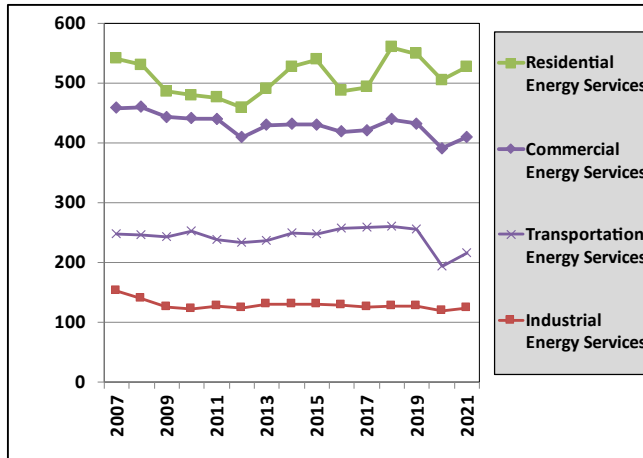


Figure 3-3c-2. Energy Losses by Sector

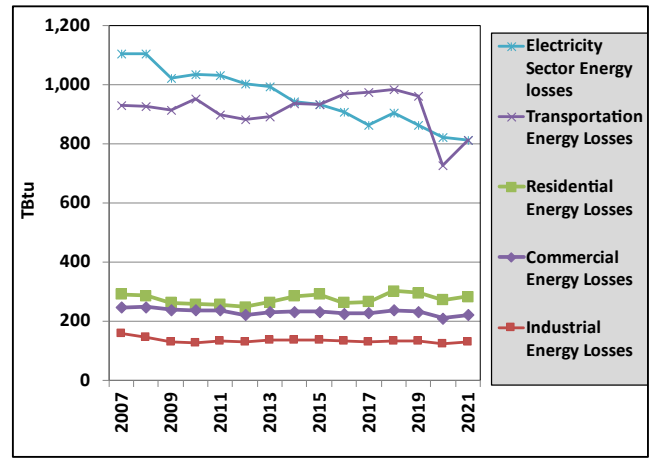


Table 3-3c. (In Trillion Btu)

Year	Residential		Commercial		Industrial		Transportation		Elec. Gen.	Total		Energy
	Services	Losses	Services	Losses	Services	Losses	Services	Losses	Losses	Services	Losses	
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2007	540.9	291.2	458.4	246.8	152.5	158.7	247.3	930.2	1,102.8	1,399.0	2,729.8	4,128.8
2008	530.2	285.5	459.5	247.4	139.3	145.0	245.9	925.1	1,102.9	1,375.0	2,705.9	4,081.0
2009	485.8	261.6	443.0	238.5	125.0	130.1	242.5	912.3	1,021.8	1,296.3	2,564.3	3,860.6
2010	479.8	258.3	441.2	237.5	123.0	128.1	252.6	950.3	1,035.0	1,296.6	2,609.2	3,905.8
2011	475.8	256.2	440.3	237.1	127.4	132.6	238.3	896.3	1,029.6	1,281.7	2,551.7	3,833.4
2012	459.3	247.3	409.3	220.4	123.5	128.6	234.2	881.2	1,003.1	1,226.4	2,480.5	3,706.9
2013	490.7	264.2	429.5	231.3	129.8	135.1	236.9	891.0	993.4	1,286.9	2,515.0	3,801.9
2014	527.6	284.1	431.0	232.1	129.9	135.2	248.8	936.0	941.3	1,337.4	2,528.7	3,866.1
2015	539.3	290.4	430.6	231.9	130.9	136.2	247.9	932.5	931.7	1,348.6	2,522.6	3,871.2
2016	487.1	262.3	418.5	225.3	128.4	133.6	257.1	967.1	907.4	1,291.0	2,495.8	3,786.8
2017	493.3	265.6	421.1	226.8	126.0	131.2	258.7	973.2	863.0	1,299.2	2,459.9	3,759.1
2018	559.7	301.4	439.1	236.4	128.1	133.3	260.9	981.5	904.7	1,387.9	2,557.4	3,945.2
2019	548.4	295.3	432.1	232.6	127.0	132.2	255.2	960.2	861.8	1,362.7	2,482.1	3,844.8
2020	504.7	271.7	391.2	210.6	119.5	124.3	193.2	726.9	821.3	1,208.5	2,154.9	3,363.4
2021	527.0	283.8	409.6	220.5	124.1	129.2	215.6	811.2	811.1	1,276.3	2,255.9	3,532.2

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
2007–2021**

Figure 3-4.

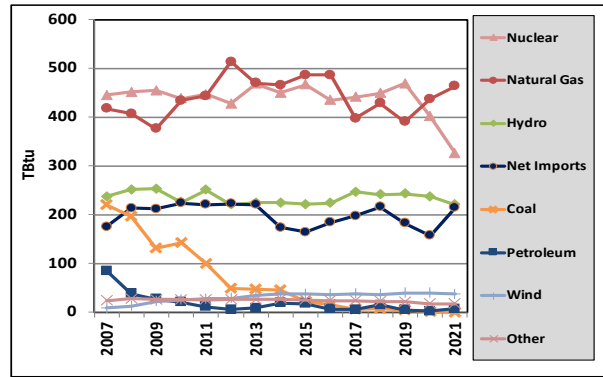


Table 3-4a. (In Physical Units)

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
2007	9,613	408	1,372	11,728	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	43,039	20,789	3,986	71	3,194
2015	1,038	472	835	1,942	2,778	25,879	825	44,603	19,809	3,984	98	3,028
2016	654	472	344	624	968	26,314	836	41,571	22,358	3,943	137	2,881
2017	242	385	264	642	905	29,554	795	42,167	24,319	4,219	178	2,919
2018	272	415	790	1,616	2,405	29,045	811	42,919	26,766	3,985	294	2,729
2019	187	379	382	361	742	30,141	583	44,865	23,134	4,454	507	2,648
2020	64	423	180	212	392	29,521	635	38,430	19,990	4,163	822	2,233
2021	0	449	208	845	1,054	27,502	712	31,177	27,394	4,111	1,143	2,255

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
2007	220.6	416.9	7.9	73.7	84.5	12.7	445.3	175.2	8.2	0.0	23.7	1,611.2
2008	195.6	407.3	4.7	31.0	37.8	16.4	451.6	213.3	12.3	0.0	27.4	1,596.5
2009	131.8	375.6	4.3	20.5	26.5	13.8	454.8	211.4	22.1	0.0	26.1	1,501.3
2010	141.6	433.7	3.7	11.3	20.2	8.0	437.6	223.7	25.3	0.0	26.2	1,533.7
2011	99.2	443.6	1.9	6.4	11.0	6.4	446.8	220.0	27.5	0.1	25.0	1,523.8
2012	48.7	513.6	2.3	2.9	5.1	6.4	427.3	222.0	28.4	0.5	25.6	1,491.5
2013	47.2	469.5	2.9	5.5	8.4	6.5	467.7	220.5	33.7	0.6	25.6	1,498.0
2014	45.9	466.0	4.8	14.0	18.8	7.1	450.1	173.8	37.7	0.7	26.7	1,444.1
2015	22.0	486.0	4.8	12.2	17.0	6.8	466.5	164.1	37.0	0.9	25.1	1,439.7
2016	15.6	486.5	2.0	3.9	5.9	6.9	434.8	184.1	36.3	1.3	23.7	1,411.7
2017	6.3	397.4	1.5	4.0	5.6	6.5	441.0	197.5	38.0	1.6	23.7	1,357.7
2018	7.0	428.1	4.5	10.2	14.7	6.5	448.7	215.9	36.3	2.7	22.0	1,416.2
2019	4.8	390.4	2.2	2.3	4.5	4.6	468.5	182.7	39.6	4.5	20.9	1,358.5
2020	1.6	436.8	1.0	1.3	2.4	5.0	401.4	156.9	39.6	7.2	17.5	1,300.3
2021	0.0	463.4	1.2	5.3	6.5	5.6	325.7	213.7	36.7	10.1	17.6	1,293.6

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 2007–2021

Figure 3-5.

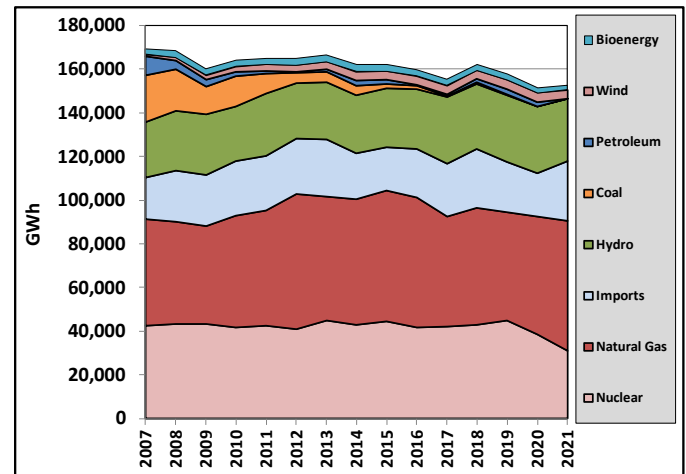


Table 3-5. (In Gigawatt-Hours)

Year	Coal GWh	Natural Gas GWh	Petroleum Products GWh	Conv. Hydro GWh	PS Hydro GWh	Nuclear GWh	Bioenergy ^{1,2}			Wind GWh	Solar ³ GWh	In-State Generation GWh	Net Imports GWh	Total Generation GWh	Electricity Requirements GWh
							Waste GWh	LFG GWh	Wood GWh						
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	144,956	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	139,239	24,912	164,151	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	139,297	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	166,442	163,514
2014	4,325	57,507	2,259	25,974	849	43,039	1,866	789	539	3,986	51	141,185	20,789	161,974	160,059
2015	2,046	59,919	1,992	25,879	825	44,603	1,862	745	422	3,984	52	142,329	19,809	162,138	161,572
2016	1,493	59,698	676	26,314	836	41,571	1,841	748	293	3,943	54	137,465	22,358	159,823	160,798
2017	567	50,270	636	29,554	795	42,167	1,900	730	288	4,219	47	131,175	24,319	155,494	156,370
2018	692	53,593	1,678	29,045	811	42,919	1,878	648	203	3,985	49	135,501	26,766	162,267	161,114
2019	426	49,451	1,994	30,141	583	44,865	1,832	661	155	4,454	52	134,614	23,134	157,748	155,848
2020	146	54,094	2,189	29,521	635	38,430	1,620	613	0	4,163	48	131,459	19,990	151,449	150,310
2021	0	59,460	159	27,502	712	31,177	1,603	651	0	4,111	50	125,425	27,394	152,819	152,147

¹ Includes primarily waste, landfill gas (LFG), 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 2021 was 2,719 GWh (70.4% of total solar) with 1,230 GWh (31.8%) in the residential sector, 1,465 GWh (37.9%) in the commercial sector, and 24 GWh (0.6%) in the industrial sector.

**New York State
Fossil Fuel¹ for Electric Generation Trends
2007–2021**

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

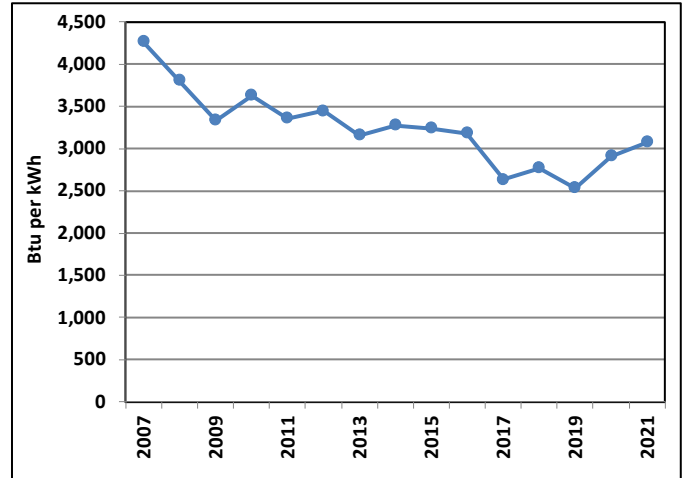


Table 3-6. Fossil Fuel Use for Electricity Trends

Year	Total Fossil Fuel Use	Fossil Fuel per kWh of in-State Generation
	TBtu	Btu
2007	722	4,262
2008	641	3,807
2009	534	3,334
2010	595	3,627
2011	554	3,357
2012	568	3,443
2013	525	3,155
2014	531	3,277
2015	525	3,238
2016	508	3,178
2017	409	2,632
2018	450	2,772
2019	400	2,534
2020	441	2,911
2021	470	3,075

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

**New York State
Sales of Electricity
to Ultimate Consumers
2007–2021**

Figure 3-7.

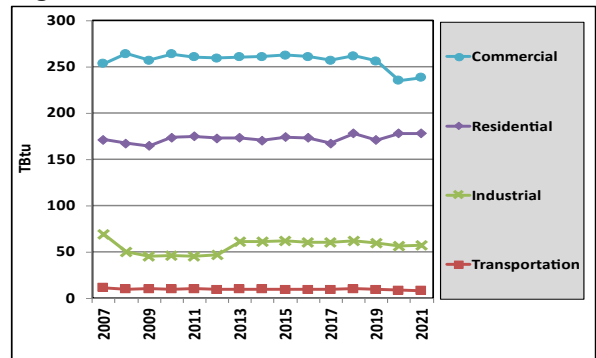


Table 3-7a. (In Gigawatt-Hours)

Year	Residential	Commercial	Industrial	Transportation	Total
	GWh	GWh	GWh	GWh	GWh
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
2019	50,141	75,091	17,548	2,820	145,600
2020	52,257	68,989	16,610	2,550	140,407
2021	52,157	69,920	16,891	2,455	141,424

Table 3-7b. (In Trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Total
	TBtu	TBtu	TBtu	TBtu	TBtu
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
2019	171.1	256.2	59.9	9.6	496.8
2020	178.3	235.4	56.7	8.7	479.1
2021	178.0	238.6	57.6	8.4	482.5

**New York State
Net Consumption
of Energy by Sector
2007–2021**

Figure 3-8.

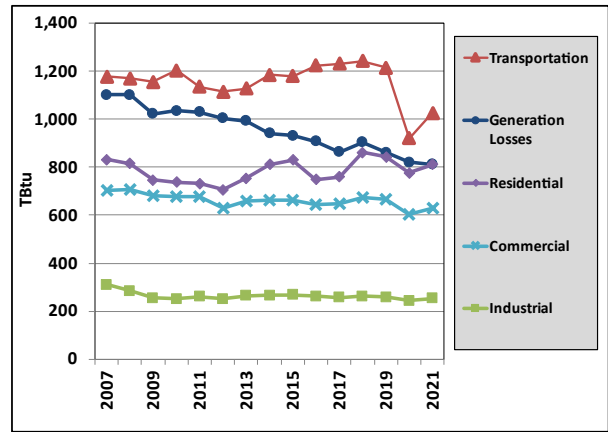


Table 3-8. (In Trillion Btu)

Year	Residential	Commercial	Industrial	Transportation	Net Consumption	Generation Losses ¹	Primary Consumption
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
2007	832.1	705.2	311.2	1,177.5	3,026.0	1,102.8	4,131.6
2008	815.7	707.0	284.4	1,171.0	2,978.1	1,102.9	4,083.0
2009	747.4	681.5	255.1	1,154.8	2,838.8	1,021.8	3,862.3
2010	738.1	678.7	251.1	1,202.9	2,870.8	1,035.0	3,911.0
2011	731.9	677.3	259.9	1,134.6	2,803.8	1,029.6	3,836.1
2012	706.7	629.6	252.1	1,115.4	2,703.8	1,003.1	3,706.9
2013	755.0	660.7	265.0	1,127.9	2,808.6	993.4	3,801.9
2014	811.7	663.2	265.2	1,184.8	2,924.8	941.3	3,866.1
2015	829.6	662.4	267.1	1,180.4	2,939.5	931.7	3,871.2
2016	749.3	643.8	262.0	1,224.2	2,879.4	907.4	3,786.8
2017	759.0	647.9	257.2	1,232.0	2,896.1	863.0	3,759.0
2018	861.1	675.5	261.5	1,242.5	3,040.6	904.7	3,945.2
2019	843.8	664.7	259.2	1,215.4	2,983.0	861.8	3,844.8
2020	776.4	601.8	243.8	920.1	2,542.1	821.3	3,363.3
2021	810.7	630.1	253.3	1,026.8	2,721.0	811.1	3,532.2

1 Conversion and transmission losses.

**New York State
Net Residential Consumption
of Energy by Fuel Type
2007–2021**

Figure 3-9.

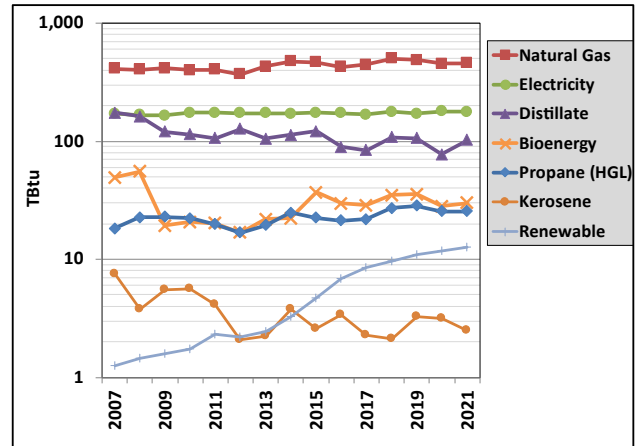


Table 3-9a. (In Physical Units)

Year	Coal	Natural			LPG	Total	Wood	Utility-Scale		Customer-Sited
		Gas	Distillate	Kerosene				Electricity	Solar PV	
	Mtons	Bcf	Mbbl	Mbbl	Mbbl	Mbbl	Mcords	GWh	GWh	
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	24,327	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	27,448	1,849	51,013	319	
2016	0	412	15,511	602	5,529	21,642	1,479	50,831	547	
2017	0	433	14,519	402	5,698	20,619	1,430	49,081	733	
2018	0	486	18,696	376	7,098	26,170	1,741	52,153	868	
2019	0	474	18,350	576	7,361	26,287	1,776	50,141	1,039	
2020	0	437	13,495	551	6,652	20,699	1,408	52,257	1,136	
2021	0	446	17,739	440	6,656	24,836	1,496	52,157	1,230	

Table 3-9b. (In Trillion Btu)

Year	Coal	Natural			LPG	Total	Wood	Electricity	Solar ¹	Geothermal	Total
		Gas	Distillate	Kerosene							
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
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	29.6	173.4	6.4	0.4	749.3
2017	0.0	446.6	83.6	2.3	21.9	107.7	28.6	167.5	8.1	0.4	759.0
2018	0.0	501.6	107.7	2.1	27.3	137.1	34.8	177.9	9.3	0.4	861.1
2019	0.0	488.9	105.7	3.3	28.3	137.2	35.5	171.1	10.6	0.4	843.8
2020	0.0	451.8	77.7	3.1	25.6	106.4	28.2	178.3	11.3	0.4	776.4
2021	0.0	459.9	102.2	2.5	25.6	130.3	29.9	178.0	12.2	0.4	810.7

¹ Includes customer-sited solar electric and thermal energy.

**New York State
Net Commercial Consumption
of Energy by Fuel Type
2007–2021**

Figure 3-10.

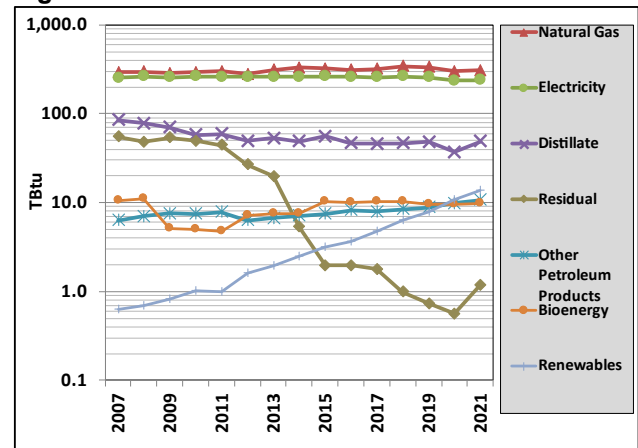


Table 3-10a. (In Physical Units)

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
2007	119	285	14,606	8,723	244	1,276	25,112	398	74,326	7
2008	68	290	13,447	7,685	128	1,641	23,110	420	77,416	8
2009	22	281	12,062	8,571	169	1,724	22,738	137	75,347	12
2010	3	287	10,050	7,835	154	1,718	19,937	135	77,276	24
2011	4	291	10,310	7,089	168	1,797	19,551	130	76,406	43
2012	0	270	8,602	4,237	60	1,558	14,630	114	76,018	91
2013	0	301	9,223	3,139	28	1,693	14,273	132	76,342	127
2014	0	320	8,434	846	54	1,776	11,303	137	76,541	183
2015	0	311	9,634	312	28	1,892	14,967	271	77,006	262
2016	0	303	8,095	312	57	2,061	13,605	262	76,507	317
2017	0	310	7,935	285	31	2,023	13,343	262	75,333	439
2018	0	330	8,111	156	41	2,118	13,491	261	76,745	616
2019	0	323	8,364	117	74	2,200	13,842	256	75,091	806
2020	0	289	6,437	90	54	2,472	12,165	252	68,989	1,148
2021	0	298	8,453	188	42	2,731	14,561	268	69,920	1,465

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
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	0.2	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	0.4	0.6	677.3
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	629.6
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
2019	0.0	333.2	48.2	0.7	0.4	8.4	57.8	5.1	4.5	256.2	7.2	0.8	664.7
2020	0.0	298.6	37.1	0.6	0.3	9.5	47.4	5.0	4.5	235.4	10.1	0.8	601.8
2021	0.0	307.4	48.7	1.2	0.2	10.5	60.6	5.4	4.5	238.6	13.0	0.8	630.1

¹ Includes customer-sited solar electric and thermal energy.

**New York State
Net Industrial Consumption
of Energy by Fuel Type
2007–2021**

Figure 3-11.

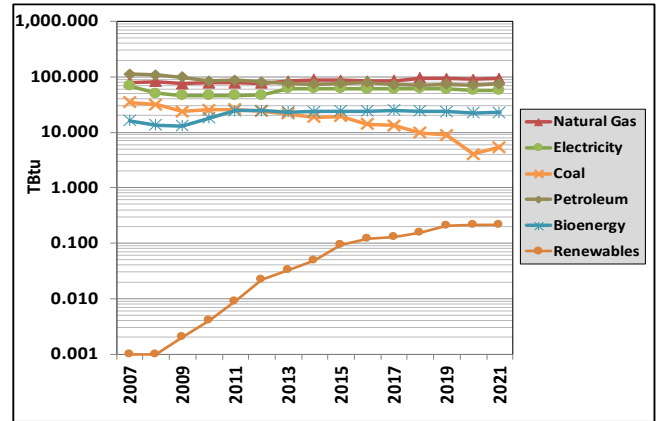


Table 3-11a. (In Physical Units)

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
2007	1,313	78	3,625	1,461	215	1,243	12,398	20,890	735	20,213	0
2008	1,205	81	3,409	1,247	41	753	12,438	19,538	614	14,685	0
2009	902	73	2,931	485	76	583	12,166	17,798	579	13,417	0
2010	979	76	2,274	514	548	611	9,810	15,545	818	13,480	0
2011	1,008	76	2,809	1,244	164	718	9,231	15,566	925	13,420	1
2012	909	75	2,502	578	144	903	9,161	15,411	953	13,705	2
2013	816	80	2,274	711	84	875	8,686	14,812	939	17,911	3
2014	714	85	2,001	552	153	950	8,569	14,165	930	18,003	5
2015	723	83	2,031	431	127	817	9,123	15,120	926	18,079	10
2016	521	81	1,872	457	176	868	9,801	15,723	936	17,709	13
2017	496	83	1,904	539	58	608	8,776	14,599	925	17,811	14
2018	364	92	1,953	406	124	665	8,612	14,450	917	18,077	17
2019	349	91	2,544	360	121	647	8,384	14,765	932	17,548	23
2020	158	87	2,330	194	384	760	8,056	14,199	898	16,610	24
2021	211	90	2,039	444	108	973	8,738	15,054	904	16,891	24

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
2007	34.6	79.8	21.0	9.2	1.2	4.2	76.2	111.8	14.7	1.3	69.0	0.0	311.2
2008	31.6	82.4	19.7	7.8	0.2	2.5	76.3	106.6	12.3	1.3	50.1	0.0	284.4
2009	23.6	74.8	16.9	3.0	0.4	1.9	75.6	97.9	11.6	1.5	45.8	0.0	255.1
2010	25.4	77.8	13.1	3.2	3.1	2.3	62.1	84.0	16.4	1.5	46.0	0.0	251.1
2011	25.9	77.7	16.2	7.8	0.9	2.8	58.5	86.2	18.5	5.9	45.8	0.0	259.9
2012	24.2	77.0	14.4	3.6	0.8	3.5	57.5	79.8	19.1	5.3	46.8	0.0	252.1
2013	21.6	82.9	13.1	4.5	0.5	3.4	55.0	76.4	18.8	4.2	61.1	0.0	265.0
2014	18.7	87.4	11.5	3.5	0.9	3.6	54.5	74.0	18.6	5.0	61.4	0.0	265.2
2015	19.3	86.1	11.7	2.7	0.7	3.1	57.7	76.0	18.5	5.4	61.7	0.1	267.1
2016	14.0	83.6	10.8	2.9	1.0	3.3	61.7	79.6	18.7	5.4	60.4	0.1	262.0
2017	13.3	85.7	11.0	3.4	0.3	2.3	55.5	72.6	18.5	6.2	60.8	0.1	257.2
2018	9.7	94.6	11.2	2.6	0.7	2.6	54.3	71.3	18.3	5.6	61.7	0.2	261.5
2019	8.9	93.4	14.7	2.3	0.7	2.5	53.0	73.1	18.6	5.1	59.9	0.2	259.2
2020	4.0	89.5	13.4	1.2	2.2	2.9	51.2	70.9	18.0	4.5	56.7	0.2	243.8
2021	5.4	92.8	11.8	2.8	0.6	3.7	55.8	74.7	18.1	4.6	57.6	0.2	253.3

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
2007–2021**

Figure 3-12.

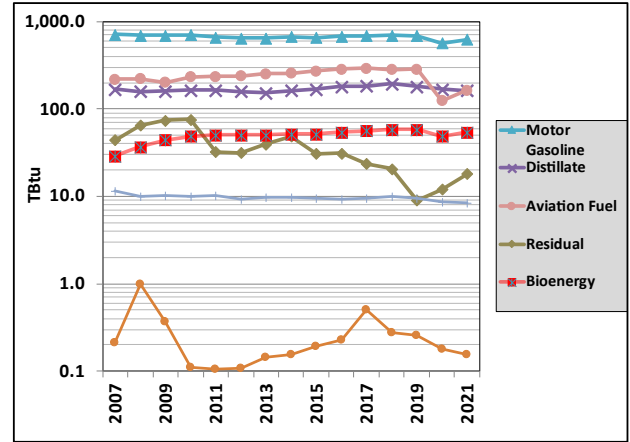


Table 3-12a. (In Physical Units)

Year	Natural Gas	Distillate	Residual	Motor Gasoline	Jet Fuel ¹	Propane (HGL)	Total Petroleum	Ethanol ²	Biodiesel ³	Electricity
	Bcf	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	Mbbl	GWh
2007	16	29,146	7,063	139,140	38,588	56	194,083	7,482	482	3,397
2008	16	27,485	10,336	136,105	39,293	257	194,971	9,827	414	2,918
2009	15	27,670	11,743	135,921	35,364	97	191,161	11,859	439	3,025
2010	19	28,245	12,094	138,087	41,093	29	217,556	13,242	355	2,922
2011	23	28,534	5,158	130,718	41,569	27	204,426	12,587	1,209	2,981
2012	21	27,591	4,988	127,902	42,219	28	200,011	12,399	1,221	2,748
2013	20	26,395	6,300	127,461	44,878	38	202,266	12,514	1,132	2,864
2014	33	28,052	7,770	131,943	45,179	41	211,270	12,902	1,180	2,853
2015	35	29,331	4,897	129,909	47,781	51	206,419	12,297	1,259	2,816
2016	28	31,420	4,965	134,799	50,233	59	216,225	12,855	1,438	2,756
2017	26	31,659	3,736	136,414	51,544	131	218,661	13,200	1,495	2,767
2018	27	33,748	3,296	137,758	49,975	71	220,012	13,407	1,709	2,954
2019	31	31,501	1,431	135,872	50,626	68	214,494	13,330	1,845	2,820
2020	28	29,277	1,919	112,676	22,026	47	162,305	10,995	1,506	2,550
2021	37	28,092	2,893	124,180	28,927	41	181,647	12,274	1,728	2,455

Table 3-12b. (In Trillion Btu)

Year	Natural Gas	Distillate	Residual	Motor Gasoline	Jet Fuel ¹	Propane (HGL)	Total Petroleum	Ethanol ²	Biodiesel ³	Electricity	Total
	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu	TBtu
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	232.9	0.1	1,125.1	46.8	1.9	10.0	1,202.9
2011	23.3	164.6	32.4	661.8	235.6	0.1	1,050.4	44.2	6.5	10.2	1,134.6
2012	22.2	159.1	31.4	647.4	239.3	0.1	1,033.5	43.8	6.5	9.4	1,115.4
2013	20.8	152.1	39.6	645.0	254.4	0.1	1,047.0	44.3	6.1	9.8	1,127.9
2014	34.5	161.7	48.8	667.5	256.1	0.2	1,088.7	45.6	6.3	9.7	1,184.8
2015	36.2	169.0	30.8	656.9	270.9	0.2	1,083.1	44.7	6.7	9.6	1,180.4
2016	28.6	180.9	31.2	681.4	284.8	0.2	1,131.9	46.6	7.7	9.4	1,224.2
2017	26.7	182.3	23.5	689.3	292.2	0.5	1,139.8	47.9	8.0	9.4	1,232.0
2018	28.3	194.4	20.7	696.2	283.3	0.3	1,146.1	48.8	9.2	10.1	1,242.5
2019	31.8	181.4	9.0	686.4	287.0	0.3	1,115.6	48.5	9.9	9.6	1,215.4
2020	28.5	168.5	12.1	569.2	124.8	0.2	834.5	40.4	8.1	8.7	920.1
2021	37.9	161.9	18.2	627.1	164.0	0.2	926.5	44.9	9.3	8.4	1,026.8

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 2007 through 2021. Energy prices are provided by fuel type in nominal dollars per physical unit and per 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 2021 (real) dollars. To convert energy prices from nominal to constant 2021 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 2021 New York State Energy Price Data

- Residential sector statewide average nominal fuel prices:
 - Home heating oil prices increased 18.0% from an average \$2.16 per gallon in 2020 to \$2.55 per gallon in 2021.
 - Natural gas prices increased by 7.8% from an average \$12.86 per thousand cubic feet in 2020 to \$13.87 per thousand cubic feet in 2021.
 - Electricity prices increased by 6.1% from 18.4¢ per kWh in 2020 to 19.5¢ in 2021.
- Commercial sector statewide average nominal fuel prices:
 - Distillate fuel prices averaged \$2.34 per gallon in 2021, which was a 60.5% increase from 2020 prices.
 - Residual oil prices averaged \$72.24 per barrel in 2021, which was a 48.8% increase from 2020 prices.
 - Electricity prices averaged 16.1¢ per kWh, which was a 10.4% increase from 2020 prices.
 - Natural gas prices averaged \$7.96 per thousand cubic feet, which was a 15.0% increase from 2019 prices.

- Industrial sector statewide average nominal fuel prices:
 - Residual oil prices averaged \$72.23 per barrel in 2021, which was a 48.8% increase from 2020 prices.
 - Natural gas prices averaged \$8.44 per thousand cubic feet, which was an 19.9% increase from 2020 prices.
 - Electricity prices averaged 6.3¢ per kWh, which was a 14.4% increase from 2020 prices.
- The 2021 average retail price for all grades of gasoline was \$2.87 per gallon, an increase of \$0.72 per gallon (33.6%) from the average price in 2020.
- The combination of increases in fuel and energy prices observed with these 2021 data along with the increases in consumption, described in section 2, were responsible for the increasing expenditures (total and leaving the State) described in detail within section 5.

**New York State
Residential Energy Prices
in Nominal Dollars
2007–2021**

Figure 4-1.

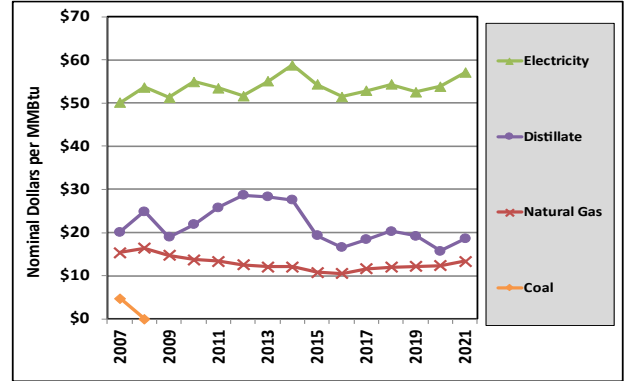


Table 4-1a. (In Physical Units)

Year	Coal	Distillate ¹	Kerosene	Propane	Natural Gas	Electricity	Wood	GDP Deflator ²
	\$/Ton	Cents/Gal.	Cents/Gal.	Cents/Gal.	\$/Mcf	Cents/kWh	\$/Cord	2020=1
2007	\$105.05	278.05	289.85	243.95	\$15.77	170.98	\$139.40	0.765
2008	\$0.00	342.53	365.31	285.69	\$16.86	183.09	\$171.80	0.795
2009	\$0.00	260.56	281.21	259.02	\$15.10	175.00	\$129.00	0.792
2010	\$0.00	301.14	320.90	274.73	\$14.04	187.42	\$152.20	0.805
2011	\$0.00	355.22	379.76	308.52	\$13.64	182.61	\$183.00	0.830
2012	\$0.00	394.69	399.87	288.07	\$12.87	176.16	\$203.80	0.847
2013	\$0.00	388.78	400.68	285.42	\$12.41	187.93	\$199.60	0.860
2014	\$0.00	379.23	402.84	315.01	\$12.53	200.73	\$194.60	0.874
2015	\$0.00	264.87	224.78	251.44	\$11.25	185.37	\$134.20	0.875
2016	\$0.00	227.64	179.15	246.97	\$10.92	175.75	\$114.60	0.886
2017	\$0.00	252.62	224.10	293.10	\$12.09	180.29	\$128.20	0.905
2018	\$0.00	278.88	316.85	318.99	\$12.44	185.20	\$141.80	0.927
2019	\$0.00	264.46	302.27	274.36	\$12.71	179.40	\$136.40	0.943
2020	\$0.00	216.38	196.29	239.42	\$12.86	183.63	\$112.80	0.955
2021	\$0.00	255.39	309.56	290.27	\$13.87	194.83	\$0.00	1.000

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

Year	Coal	Distillate ¹	Kerosene	Propane	Natural Gas	Electricity	Wood	GDP Deflator ²
	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	2020=1
2007	\$4.76	\$20.19	\$21.47	\$26.71	\$15.36	\$50.11	\$6.97	0.765
2008	\$0.00	\$24.89	\$27.06	\$31.28	\$16.42	\$53.66	\$8.59	0.795
2009	\$0.00	\$18.93	\$20.83	\$28.36	\$14.73	\$51.29	\$6.45	0.792
2010	\$0.00	\$21.89	\$23.77	\$30.08	\$13.72	\$54.93	\$7.61	0.805
2011	\$0.00	\$25.83	\$28.13	\$33.78	\$13.35	\$53.52	\$9.15	0.830
2012	\$0.00	\$28.71	\$29.62	\$31.54	\$12.56	\$51.63	\$10.19	0.847
2013	\$0.00	\$28.28	\$29.68	\$31.25	\$12.07	\$55.08	\$9.98	0.860
2014	\$0.00	\$27.59	\$29.84	\$34.49	\$12.13	\$58.83	\$9.73	0.874
2015	\$0.00	\$19.28	\$16.65	\$27.53	\$10.84	\$54.33	\$6.71	0.875
2016	\$0.00	\$16.57	\$13.27	\$27.04	\$10.51	\$51.51	\$5.73	0.886
2017	\$0.00	\$18.43	\$16.60	\$32.05	\$11.66	\$52.84	\$6.41	0.905
2018	\$0.00	\$20.30	\$23.47	\$34.88	\$11.98	\$54.28	\$7.09	0.927
2019	\$0.00	\$19.25	\$22.39	\$30.00	\$12.22	\$52.58	\$6.82	0.943
2020	\$0.00	\$15.75	\$14.54	\$26.18	\$12.38	\$53.82	\$5.64	0.955
2021	\$0.00	\$18.59	\$22.93	\$31.74	\$13.35	\$57.10	\$0.00	1.000

¹ Home heating oil.

² To convert prices to 2021 dollars, divide the selected price by the deflator factor in the same row.

**New York State
Commercial Energy Prices
in Nominal Dollars
2007–2021**

Figure 4-2.

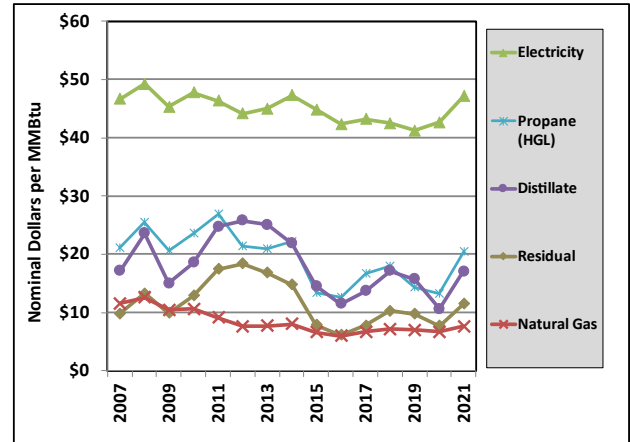


Table 4-2a. (In Physical Units)

Year	Coal	Distillate ¹	Residual	Kerosene	Propane (HGL)	Natural Gas	Electricity	GDP Deflator ²
	\$/Ton	Cents/Gal.	\$/bbl	Cents/Gal.	Cents/Gal.	\$/Mcf	Cents/kWh	2020=1
2007	\$60.91	236.32	\$61.74	289.85	193.17	\$11.85	159.17	0.765
2008	\$103.43	324.51	\$83.43	365.31	233.08	\$12.93	167.94	0.795
2009	\$132.54	206.88	\$62.49	281.21	188.06	\$10.75	154.77	0.792
2010	\$133.63	254.64	\$81.10	320.90	215.46	\$10.87	163.06	0.805
2011	\$127.73	340.37	\$109.46	379.76	245.69	\$9.28	158.08	0.830
2012	\$0.00	354.69	\$115.43	399.87	194.81	\$7.79	150.57	0.847
2013	\$0.00	344.38	\$105.87	400.68	191.89	\$7.95	153.54	0.860
2014	\$0.00	299.78	\$92.73	402.84	202.94	\$8.31	161.22	0.874
2015	\$0.00	199.34	\$49.23	224.78	122.39	\$6.89	153.06	0.875
2016	\$0.00	157.58	\$38.35	179.15	115.08	\$6.23	144.50	0.886
2017	\$0.00	187.24	\$49.04	224.10	152.18	\$6.90	147.50	0.905
2018	\$0.00	234.78	\$64.50	316.85	164.43	\$7.40	145.01	0.927
2019	\$0.00	216.24	\$61.49	302.27	130.78	\$7.26	140.57	0.943
2020	\$0.00	145.76	\$48.54	196.29	121.08	\$6.92	145.59	0.955
2021	\$0.00	233.96	\$72.24	309.56	187.29	\$7.96	160.74	1.000

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

Year	Coal	Distillate ¹	Residual	Kerosene	Propane (HGL)	Natural Gas	Electricity	GDP Deflator ²
	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	2020=1
2007	\$2.76	\$17.16	\$9.82	\$21.47	\$21.15	\$11.54	\$46.65	0.765
2008	\$4.49	\$23.58	\$13.27	\$27.06	\$25.52	\$12.59	\$49.22	0.795
2009	\$5.80	\$15.03	\$9.94	\$20.83	\$20.59	\$10.49	\$45.36	0.792
2010	\$5.91	\$18.51	\$12.90	\$23.77	\$23.59	\$10.63	\$47.79	0.805
2011	\$5.78	\$24.75	\$17.41	\$28.13	\$26.90	\$9.08	\$46.33	0.830
2012	\$0.00	\$25.80	\$18.36	\$29.62	\$21.33	\$7.60	\$44.13	0.847
2013	\$0.00	\$25.05	\$16.84	\$29.68	\$21.01	\$7.73	\$45.00	0.860
2014	\$0.00	\$21.81	\$14.75	\$29.84	\$22.22	\$8.04	\$47.25	0.874
2015	\$0.00	\$14.51	\$7.83	\$16.65	\$13.40	\$6.64	\$44.86	0.875
2016	\$0.00	\$11.47	\$6.10	\$13.27	\$12.60	\$6.00	\$42.35	0.886
2017	\$0.00	\$13.66	\$7.80	\$16.60	\$16.64	\$6.65	\$43.23	0.905
2018	\$0.00	\$17.09	\$10.26	\$23.47	\$17.98	\$7.13	\$42.50	0.927
2019	\$0.00	\$15.74	\$9.78	\$22.39	\$14.30	\$6.98	\$41.20	0.943
2020	\$0.00	\$10.61	\$7.72	\$14.54	\$13.24	\$6.66	\$42.67	0.955
2021	\$0.00	\$17.03	\$11.49	\$22.93	\$20.48	\$7.66	\$47.11	1.000

¹ Home heating oil.

² To convert prices to 2021 dollars, divide the selected price by the deflator factor in the same row.

**New York State
Industrial Energy Prices
in Nominal Dollars
2007–2021**

Figure 4-3.

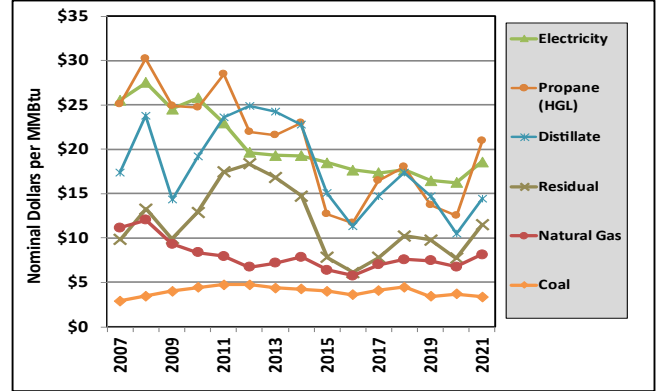


Table 4-3a. (In Physical Units)

Year	Coal	Distillate ¹	Residual	Kerosene	Propane (HGL)	Natural Gas	Electricity	GDP Deflator ²
	\$/Ton	Cents/Gal.	\$/bbl	Cents/Gal.	Cents/Gal.	\$/Mcf	Cents/kWh	2020=1
2007	\$70.86	238.52	\$61.74	243.27	229.25	\$11.46	8.71	0.765
2008	\$83.57	327.12	\$83.43	306.86	275.46	\$12.37	9.39	0.795
2009	\$96.55	197.79	\$62.49	204.39	227.51	\$9.55	8.37	0.792
2010	\$106.87	263.72	\$81.10	251.24	225.23	\$8.54	8.79	0.805
2011	\$113.44	324.69	\$109.46	331.56	260.03	\$8.15	7.83	0.830
2012	\$118.45	342.18	\$115.43	346.55	200.48	\$6.87	6.69	0.847
2013	\$109.92	332.69	\$105.87	351.41	197.01	\$7.39	6.59	0.860
2014	\$105.96	313.25	\$92.73	332.64	209.98	\$8.13	6.58	0.874
2015	\$100.07	206.76	\$49.23	194.54	115.54	\$6.65	6.31	0.875
2016	\$89.39	154.97	\$38.35	152.28	106.95	\$5.96	6.03	0.886
2017	\$100.93	201.63	\$49.04	192.92	150.44	\$7.24	5.92	0.905
2018	\$110.54	238.08	\$64.50	241.92	164.80	\$7.87	6.02	0.927
2019	\$84.39	201.54	\$61.49	228.96	125.38	\$7.76	5.61	0.943
2020	\$90.18	143.84	\$48.54	169.16	114.04	\$7.03	5.54	0.955
2021	\$82.73	197.69	\$72.24	224.24	191.59	\$8.44	6.34	1.000

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

Year	Coal	Distillate ¹	Residual	Kerosene	Propane (HGL)	Natural Gas	Electricity	GDP Deflator ²
	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	2020=1
2007	\$2.91	\$17.32	\$9.82	\$18.02	\$25.10	\$11.16	\$25.53	0.765
2008	\$3.44	\$23.77	\$13.27	\$22.73	\$30.16	\$12.04	\$27.53	0.795
2009	\$4.01	\$14.37	\$9.94	\$15.14	\$24.91	\$9.32	\$24.54	0.792
2010	\$4.44	\$19.17	\$12.90	\$18.61	\$24.66	\$8.35	\$25.76	0.805
2011	\$4.74	\$23.61	\$17.41	\$24.56	\$28.47	\$7.97	\$22.96	0.830
2012	\$4.73	\$24.89	\$18.36	\$25.67	\$21.95	\$6.70	\$19.62	0.847
2013	\$4.37	\$24.20	\$16.84	\$26.03	\$21.57	\$7.19	\$19.30	0.860
2014	\$4.24	\$22.79	\$14.75	\$24.64	\$22.99	\$7.87	\$19.28	0.874
2015	\$4.02	\$15.05	\$7.83	\$14.41	\$12.65	\$6.41	\$18.49	0.875
2016	\$3.60	\$11.28	\$6.10	\$11.28	\$11.71	\$5.74	\$17.67	0.886
2017	\$4.08	\$14.71	\$7.80	\$14.29	\$16.45	\$6.98	\$17.36	0.905
2018	\$4.48	\$17.33	\$10.26	\$17.92	\$18.02	\$7.58	\$17.64	0.927
2019	\$3.42	\$14.67	\$9.78	\$16.96	\$13.71	\$7.46	\$16.45	0.943
2020	\$3.67	\$10.47	\$7.72	\$12.53	\$12.47	\$6.77	\$16.25	0.955
2021	\$3.36	\$14.39	\$11.49	\$16.61	\$20.95	\$8.12	\$18.59	1.000

¹ Home heating oil.

² To convert prices to 2021 dollars, divide the selected price by the deflator factor in the same row.

**New York State
Transportation Energy Prices
in Nominal Dollars
2007–2021**

Figure 4-4.

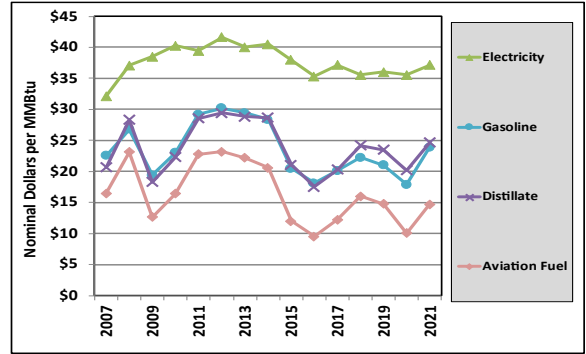


Table 4-4a. (In Physical Units)

Year	Motor Gasoline	Distillate ¹	Aviation Fuel ²	Residual ³	Electricity ⁴	GDP Deflator ⁵
	Cents/Gal.	Cents/Gal.	Cents/Gal.	\$/bbl	Cents/kWh	2020=1
2007	276.65	284.38	222.21	\$49.35	10.97	0.765
2008	326.97	389.19	312.26	\$75.95	12.64	0.795
2009	235.74	251.47	170.64	\$51.80	13.13	0.792
2010	277.84	307.06	221.81	\$68.28	13.74	0.805
2011	351.86	392.22	307.40	\$93.11	13.45	0.830
2012	364.05	404.87	312.66	\$96.82	14.20	0.847
2013	354.70	396.34	299.03	\$97.57	13.65	0.860
2014	341.79	393.94	278.24	\$82.93	13.82	0.874
2015	246.61	289.05	161.87	\$46.90	12.96	0.875
2016	218.38	240.97	128.12	\$35.21	12.05	0.886
2017	242.06	278.39	164.84	\$47.47	12.67	0.905
2018	267.50	332.19	216.00	\$62.81	12.14	0.927
2019	252.24	322.85	199.40	\$62.87	12.28	0.943
2020	214.83	277.51	135.54	\$45.83	12.14	0.955
2021	287.01	338.78	198.45	\$68.97	12.67	1.000

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

Year	Motor Gasoline	Distillate ¹	Aviation Fuel ²	Residual ³	Electricity ⁴	GDP Deflator ⁵
	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	\$/MMBtu	2020=1
2007	\$22.54	\$20.65	\$16.46	\$7.85	\$32.14	0.765
2008	\$26.79	\$28.28	\$23.13	\$12.08	\$37.05	0.795
2009	\$19.41	\$18.27	\$12.64	\$8.24	\$38.49	0.792
2010	\$22.98	\$22.32	\$16.43	\$10.86	\$40.28	0.805
2011	\$29.16	\$28.52	\$22.77	\$14.81	\$39.41	0.830
2012	\$30.20	\$29.45	\$23.16	\$15.40	\$41.63	0.847
2013	\$29.43	\$28.83	\$22.15	\$15.52	\$40.01	0.860
2014	\$28.37	\$28.66	\$20.61	\$13.19	\$40.49	0.874
2015	\$20.47	\$21.04	\$11.99	\$7.46	\$37.97	0.875
2016	\$18.13	\$17.54	\$9.49	\$5.60	\$35.33	0.886
2017	\$20.12	\$20.31	\$12.21	\$7.55	\$37.12	0.905
2018	\$22.23	\$24.18	\$16.00	\$9.99	\$35.57	0.927
2019	\$20.97	\$23.50	\$14.77	\$10.00	\$36.00	0.943
2020	\$17.86	\$20.20	\$10.04	\$7.29	\$35.57	0.955
2021	\$23.87	\$24.66	\$14.70	\$10.97	\$37.13	1.000

1 Diesel
 2 Summation of kerosene-based jet fuel and aviation gasoline.
 3 Bunker fuel
 4 Railroad use
 5 To convert prices to 2021 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 2021 dollars for the following selected years: 2007, 2012, and 2017 through 2021.

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 2007 through 2021 in both nominal and constant 2021 dollars.

5.1 Key Observations about 2021 New York State Energy Expenditures Data

- Cumulative heating degree-days were 0.5% lower in 2021 compared to 2020.
- In nominal dollars, the State's 2021 estimated energy bill of \$57.7 billion increased 23.9% from 2020. Additionally:
 - 9.8% less than the \$63.9 billion spent in 2007.
 - 1.2% greater than the \$57.0 billion spent in 2020 (pre-pandemic).
- In constant 2021 dollars, the State's estimated energy bill increased \$8.9 billion (18.3%) from 2020. This reflects a \$25.9 billion (31.0%) and \$2.7 billion (4.5%) decrease of the State's energy bills compared to 2007 and 2019, respectively.
- State residents spent \$19.3 billion for household energy, which was a 1.1% increase from the 2020 level in nominal dollars.
- The total commercial customer energy bill was \$14.7 billion, which was 16.7% greater than 2020 in nominal dollars.
- Industrial customers paid \$2.1 billion for energy, which was a 21.5% increase from 2020 levels in nominal dollars.
- The annual energy bill for transporting people and goods was \$21.6 billion, a 44.4% increase from 2020 levels in nominal dollars.
- From 2020 to 2021 statewide expenditures increased 46.4% for petroleum, 14.5% for natural gas, and 9.1% for electricity in nominal dollars.
- In nominal dollars, the 2021 out-of-State estimated energy bill of \$22.3 billion increased 28.4% from 2020, and the estimate is 42.9% less than the \$39.1 billion spent in 2007.
- In constant 2021 dollars, the out-of-State estimated energy bill increased \$4.1 billion (22.6%) from 2020 and was \$28.8 billion (4.9%) less than in 2007.

**New York State
Energy Expenditure Estimates
by Fuel Type and Sector
in Nominal Dollars
2007–2021**

Figure 5-1.

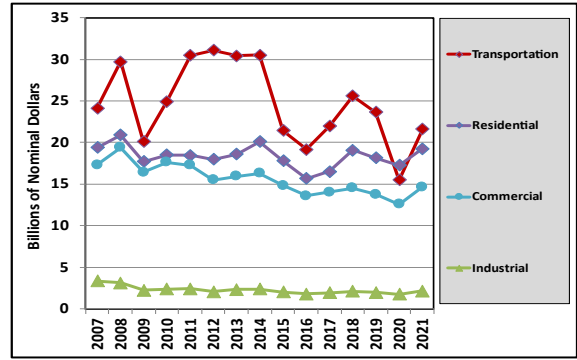


Table 5-1. (In Million Dollars)

	2007	2012	2017	2018	2019	2020	2021
Residential							
Coal	\$1.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Petroleum	\$4,165.1	\$4,225.1	\$2,279.7	\$3,186.7	\$2,956.1	\$1,938.2	\$2,769.5
Distillate	\$3,515.2	\$3,633.0	\$1,540.5	\$2,185.7	\$2,034.7	\$1,223.8	\$1,900.8
Kerosene	\$160.4	\$61.4	\$37.8	\$50.0	\$73.1	\$45.5	\$57.2
LPG	\$489.5	\$530.7	\$701.4	\$951.0	\$848.3	\$669.0	\$811.5
Natural Gas	\$6,295.4	\$4,637.7	\$5,207.7	\$6,009.3	\$5,974.4	\$5,593.3	\$6,139.0
Electricity	\$8,590.1	\$8,929.9	\$8,848.8	\$9,659.0	\$8,995.4	\$9,596.2	\$10,161.5
Wood	\$344.1	\$171.3	\$183.4	\$246.9	\$242.3	\$159.0	\$202.6
Total	\$19,396.2	\$17,964.0	\$16,519.6	\$19,101.9	\$18,168.2	\$17,286.6	\$19,272.6
Commercial							
Coal	\$8.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Petroleum	\$2,121.6	\$1,906.6	\$770.2	\$960.2	\$896.2	\$528.1	\$1,063.7
Distillate	\$1,449.7	\$1,279.9	\$624.0	\$798.3	\$758.7	\$393.6	\$829.8
Residual	\$538.5	\$489.0	\$14.0	\$10.1	\$7.2	\$4.3	\$13.6
Kerosene	\$29.8	\$10.0	\$2.9	\$5.5	\$9.4	\$4.4	\$5.5
LPG	\$103.7	\$127.6	\$129.3	\$146.3	\$120.8	\$125.7	\$214.9
Natural Gas	\$3,368.1	\$2,120.0	\$2,130.7	\$2,431.6	\$2,325.7	\$1,988.7	\$2,354.3
Electricity	\$11,830.5	\$11,446.1	\$11,111.8	\$11,128.9	\$10,555.9	\$10,044.1	\$11,239.0
Total	\$17,328.4	\$15,472.7	\$14,012.6	\$14,520.6	\$13,777.8	\$12,560.9	\$14,657.0
Industrial							
Coal	\$100.6	\$114.3	\$54.2	\$43.6	\$30.4	\$14.8	\$18.0
Petroleum	\$581.1	\$521.6	\$234.3	\$281.6	\$285.0	\$214.3	\$289.7
Distillate	\$363.1	\$359.1	\$161.2	\$194.9	\$215.6	\$140.3	\$169.1
Residual	\$90.2	\$66.7	\$26.4	\$26.2	\$22.5	\$9.3	\$32.1
Kerosene	\$22.0	\$21.0	\$4.7	\$12.6	\$11.6	\$27.3	\$10.2
LPG	\$105.8	\$74.7	\$41.9	\$48.0	\$35.2	\$37.5	\$78.3
Natural Gas	\$890.6	\$515.6	\$598.4	\$717.2	\$696.8	\$605.9	\$753.3
Electricity	\$1,760.7	\$917.5	\$1,055.0	\$1,088.0	\$984.9	\$921.0	\$1,071.4
Total	\$3,332.9	\$2,069.0	\$1,941.9	\$2,130.4	\$1,997.1	\$1,756.0	\$2,132.4
Transportation							
Petroleum	\$23,560.7	\$30,268.3	\$21,320.1	\$24,919.7	\$22,974.6	\$14,908.7	\$20,851.5
Distillate	\$3,481.2	\$4,686.0	\$3,701.7	\$4,699.6	\$4,262.9	\$3,403.7	\$3,993.1
Residual	\$348.6	\$482.9	\$177.3	\$207.0	\$90.0	\$88.2	\$199.6
Motor Gasoline	\$16,126.5	\$19,552.6	\$13,868.7	\$15,477.1	\$14,394.4	\$10,166.6	\$14,245.3
Jet Fuel	\$3,599.1	\$5,542.9	\$3,567.6	\$4,533.0	\$4,224.9	\$1,249.0	\$2,410.2
LPG	\$5.3	\$3.8	\$4.8	\$3.0	\$2.5	\$1.2	\$3.3
Natural Gas	\$209.5	\$450.7	\$314.6	\$302.9	\$320.2	\$280.2	\$452.1
Electricity	\$372.6	\$390.3	\$350.4	\$358.5	\$346.4	\$309.5	\$311.0
Total	\$24,142.7	\$31,109.3	\$21,985.1	\$25,581.2	\$23,641.3	\$15,498.3	\$21,614.6
Total							
Coal	\$110.4	\$114.3	\$54.2	\$43.6	\$30.4	\$14.8	\$18.0
Petroleum	\$30,428.5	\$36,921.5	\$24,604.2	\$29,348.2	\$27,111.9	\$17,589.3	\$24,974.4
Distillate	\$8,809.2	\$9,958.1	\$6,027.4	\$7,878.4	\$7,271.9	\$5,161.4	\$6,892.8
Residual	\$977.3	\$1,038.7	\$217.8	\$243.3	\$119.7	\$101.8	\$245.3
Motor Gasoline	\$16,126.5	\$19,552.6	\$13,868.7	\$15,477.1	\$14,394.4	\$10,166.6	\$14,245.3
Kerosene	\$212.1	\$92.4	\$45.5	\$68.1	\$94.2	\$77.2	\$72.9
Jet Fuel	\$3,599.1	\$5,542.9	\$3,567.6	\$4,533.0	\$4,224.9	\$1,249.0	\$2,410.2
LPG	\$704.3	\$736.8	\$877.4	\$1,148.2	\$1,006.7	\$833.3	\$1,108.0
Natural Gas	\$10,763.6	\$7,724.0	\$8,251.4	\$9,461.1	\$9,317.1	\$8,468.0	\$9,698.7
Electricity	\$22,553.8	\$21,683.8	\$21,366.0	\$22,234.4	\$20,882.6	\$20,870.7	\$22,782.9
Wood	\$344.1	\$171.3	\$183.4	\$246.9	\$242.3	\$159.0	\$202.6
Total	\$64,200.3	\$66,615.0	\$54,459.2	\$61,334.1	\$57,584.2	\$47,101.8	\$57,676.6

**New York State
Energy Expenditure Estimates
by Fuel Type and Sector
in Constant 2021 Dollars
2007–2021**

Figure 5-2.

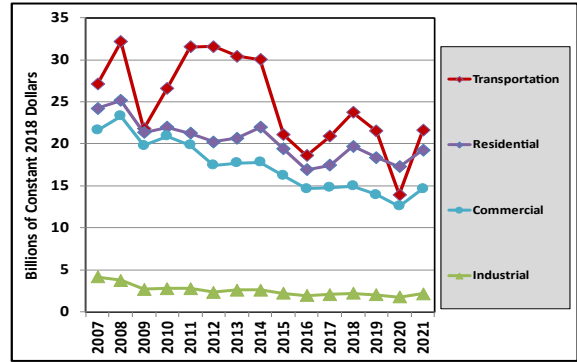


Table 5-2. (In Million Dollars)

	2007	2012	2017	2018	2019	2020	2021
Residential							
Coal	\$2.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Petroleum	\$5,199.0	\$4,762.8	\$2,407.0	\$3,284.5	\$2,992.6	\$1,938.2	\$2,769.5
Distillate	\$4,387.8	\$4,095.4	\$1,626.5	\$2,252.7	\$2,059.8	\$1,223.8	\$1,900.8
Kerosene	\$200.2	\$69.2	\$40.0	\$51.6	\$74.0	\$45.5	\$57.2
LPG	\$611.0	\$598.2	\$740.6	\$980.2	\$858.7	\$669.0	\$811.5
Natural Gas	\$7,858.1	\$5,227.9	\$5,498.6	\$6,193.7	\$6,048.1	\$5,593.3	\$6,139.0
Electricity	\$10,722.4	\$10,066.3	\$9,343.0	\$9,955.3	\$9,106.4	\$9,596.2	\$10,161.5
Wood	\$429.5	\$193.1	\$193.6	\$254.4	\$245.2	\$159.0	\$202.6
Total	\$24,211.0	\$20,250.1	\$17,442.3	\$19,687.9	\$18,392.3	\$17,286.6	\$19,272.6
Commercial							
Coal	\$10.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Petroleum	\$2,648.3	\$2,149.2	\$813.2	\$989.6	\$907.2	\$528.1	\$1,063.7
Distillate	\$1,809.5	\$1,442.8	\$658.9	\$822.8	\$768.0	\$393.6	\$829.8
Residual	\$672.2	\$551.3	\$14.8	\$10.4	\$7.3	\$4.3	\$13.6
Kerosene	\$37.1	\$11.3	\$3.1	\$5.7	\$9.6	\$4.4	\$5.5
LPG	\$129.4	\$143.9	\$136.5	\$150.8	\$122.3	\$125.7	\$214.9
Natural Gas	\$4,204.2	\$2,389.8	\$2,249.7	\$2,506.2	\$2,354.4	\$1,988.7	\$2,354.3
Electricity	\$14,767.2	\$12,902.7	\$11,732.4	\$11,470.3	\$10,686.1	\$10,044.1	\$11,239.0
Total	\$21,629.9	\$17,441.7	\$14,795.3	\$14,966.1	\$13,947.7	\$12,560.9	\$14,657.0
Industrial							
Coal	\$125.6	\$128.9	\$57.2	\$44.9	\$30.8	\$14.8	\$18.0
Petroleum	\$725.4	\$587.9	\$247.3	\$290.3	\$288.5	\$214.3	\$289.7
Distillate	\$453.3	\$404.8	\$170.2	\$200.9	\$218.3	\$140.3	\$169.1
Residual	\$112.6	\$75.2	\$27.9	\$27.0	\$22.8	\$9.3	\$32.1
Kerosene	\$27.4	\$23.7	\$5.0	\$13.0	\$11.8	\$27.3	\$10.2
LPG	\$132.1	\$84.2	\$44.2	\$49.4	\$35.6	\$37.5	\$78.3
Natural Gas	\$1,111.6	\$581.2	\$631.8	\$739.2	\$705.4	\$605.9	\$753.3
Electricity	\$2,197.7	\$1,034.2	\$1,113.9	\$1,121.4	\$997.1	\$921.0	\$1,071.4
Total	\$4,160.3	\$2,332.3	\$2,050.3	\$2,195.8	\$2,021.7	\$1,756.0	\$2,132.4
Transportation							
Petroleum	\$29,409.2	\$34,120.1	\$22,510.9	\$25,684.3	\$23,258.1	\$14,908.7	\$20,851.5
Distillate	\$4,345.3	\$5,282.3	\$3,908.4	\$4,843.7	\$4,315.5	\$3,403.7	\$3,993.1
Residual	\$435.1	\$544.3	\$187.3	\$213.4	\$91.1	\$88.2	\$199.6
Motor Gasoline	\$20,129.6	\$22,040.8	\$14,643.3	\$15,952.0	\$14,572.0	\$10,166.6	\$14,245.3
Jet Fuel	\$4,492.5	\$6,248.3	\$3,766.9	\$4,672.1	\$4,277.0	\$1,249.0	\$2,410.2
LPG	\$6.7	\$4.3	\$5.0	\$3.1	\$2.5	\$1.2	\$3.3
Natural Gas	\$261.5	\$508.0	\$332.1	\$312.2	\$324.2	\$280.2	\$452.1
Electricity	\$465.1	\$440.0	\$370.0	\$369.5	\$350.7	\$309.5	\$311.0
Total	\$30,135.8	\$35,068.1	\$23,213.1	\$26,366.1	\$23,932.9	\$15,498.3	\$21,614.6
Total							
Coal	\$137.7	\$128.9	\$57.2	\$44.9	\$30.8	\$14.8	\$18.0
Petroleum	\$37,981.9	\$41,620.0	\$25,978.5	\$30,248.7	\$27,446.3	\$17,589.3	\$24,974.4
Distillate	\$10,995.9	\$11,225.3	\$6,364.0	\$8,120.1	\$7,361.6	\$5,161.4	\$6,892.8
Residual	\$1,220.0	\$1,170.9	\$229.9	\$250.7	\$121.2	\$101.8	\$245.3
Motor Gasoline	\$20,129.6	\$22,040.8	\$14,643.3	\$15,952.0	\$14,572.0	\$10,166.6	\$14,245.3
Kerosene	\$264.8	\$104.1	\$48.0	\$70.2	\$95.4	\$77.2	\$72.9
Jet Fuel	\$4,492.5	\$6,248.3	\$3,766.9	\$4,672.1	\$4,277.0	\$1,249.0	\$2,410.2
LPG	\$879.1	\$830.6	\$926.4	\$1,183.5	\$1,019.2	\$833.3	\$1,108.0
Natural Gas	\$13,435.4	\$8,706.9	\$8,712.3	\$9,751.3	\$9,432.0	\$8,468.0	\$9,698.7
Electricity	\$28,152.4	\$24,443.2	\$22,559.4	\$22,916.6	\$21,140.2	\$20,870.7	\$22,782.9
Wood	\$429.5	\$193.1	\$193.6	\$254.4	\$245.2	\$159.0	\$202.6
Total	\$80,137.0	\$75,092.2	\$57,501.0	\$63,215.9	\$58,294.6	\$47,101.8	\$57,676.6

**New York Out-of-State
Energy Expenditure Estimates
by Fuel Type
in Nominal and
Constant 2020 Dollars
2007–2021**

Figure 5-3.

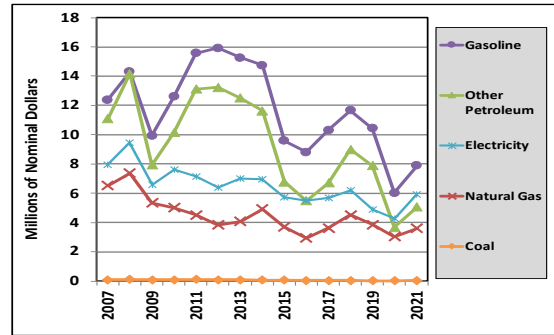


Table 5-3a. (In Million Nominal Dollars)

Year	Coal	Natural Gas	Gasoline	Other Petroleum	Electricity	Total
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
2019	\$ 25.8	\$ 3,850.8	\$ 10,422.6	\$ 7,895.7	\$ 4,875.4	\$ 27,070.4
2020	\$ 12.6	\$ 3,026.7	\$ 6,023.0	\$ 3,657.7	\$ 4,285.7	\$ 17,005.6
2021	\$ 27.4	\$ 3,592.3	\$ 7,675.6	\$ 5,067.8	\$ 5,937.0	\$ 22,300.0

Table 5-3b. (In Million Constant 2021 Dollars)

Year	Coal	Natural Gas	Gasoline	Other Petroleum	Electricity	Total
2007	\$ 117.1	\$ 8,134.0	\$ 15,451.5	\$ 13,837.8	\$ 9,929.3	\$ 47,469.7
2008	\$ 119.0	\$ 8,865.3	\$ 17,172.8	\$ 17,028.6	\$ 11,388.3	\$ 54,574.0
2009	\$ 100.2	\$ 6,447.9	\$ 11,991.0	\$ 9,574.7	\$ 7,926.2	\$ 36,040.0
2010	\$ 114.4	\$ 5,957.0	\$ 14,940.7	\$ 12,054.0	\$ 9,054.6	\$ 42,120.7
2011	\$ 120.6	\$ 5,201.0	\$ 17,914.2	\$ 15,080.9	\$ 8,197.2	\$ 46,514.0
2012	\$ 109.5	\$ 4,306.7	\$ 17,934.7	\$ 14,909.6	\$ 7,179.5	\$ 44,440.2
2013	\$ 89.0	\$ 4,513.1	\$ 16,941.3	\$ 13,880.5	\$ 7,763.9	\$ 43,187.6
2014	\$ 73.7	\$ 5,363.8	\$ 16,125.9	\$ 12,703.7	\$ 7,591.9	\$ 41,859.0
2015	\$ 72.0	\$ 4,019.2	\$ 10,457.2	\$ 7,398.9	\$ 6,233.3	\$ 28,180.4
2016	\$ 46.4	\$ 3,173.2	\$ 9,491.5	\$ 5,905.1	\$ 5,936.4	\$ 24,552.6
2017	\$ 48.6	\$ 3,828.2	\$ 10,875.0	\$ 7,084.0	\$ 6,012.2	\$ 27,848.0
2018	\$ 38.2	\$ 4,646.4	\$ 12,015.1	\$ 9,266.4	\$ 6,365.9	\$ 32,332.0
2019	\$ 26.2	\$ 3,898.3	\$ 10,551.2	\$ 7,993.1	\$ 4,935.6	\$ 27,404.3
2020	\$ 12.6	\$ 3,026.7	\$ 6,023.0	\$ 3,657.7	\$ 4,285.7	\$ 17,005.6
2021	\$ 27.4	\$ 3,592.3	\$ 7,675.6	\$ 5,067.8	\$ 5,937.0	\$ 22,300.0

6 New York State's Sources of Energy

On the national level, New York State is the eighth largest energy user. Nevertheless, households, businesses, industries, and electric utilities in the State rely largely on fuels produced elsewhere. Approximately 12.4% of the total primary energy requirements were met from in-State resources in 2021. Hydroelectric power is produced at various locations throughout the State and for 2021 was the second greatest hydroelectric producer in the U.S, second to Washington. In 2021, New York State produced more hydroelectric power than any other state east of the Rocky Mountains. Wind energy produced in the State ranks 19th in the nation for 2021 and crude oil and natural gas production are found in its western region. 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 2021

- In-State resources produced 12.4% of the State's total primary energy requirement, including 6.2% from hydropower and 2.1% from biofuels as measured by USEIA, including ethanol, biodiesel, renewable diesel, waste, wood, and landfill gas, collectively. Wind, solar, and geothermal renewable resources met 2.0% 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 50.2% and 30.6%, respectively, of the State's primary energy production. Wind, solar, and geothermal resources accounted for 16.7% of the primary energy production, while crude oil and natural gas constitute the remaining 2.5%.
- In-State crude oil and natural gas production represent less than 0.1% and 0.8%, respectively, of 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 remained similar in 2021 compared to 2020. In 2021, natural gas production was 9.7 billion cubic feet and accounted for 0.7% of the State's total primary energy use.
- Energy production from solar resources increased 29.7% from 2020 to 2021 while collective production of biofuels including ethanol, waste, wood, and landfill gas increased 5.4%.

**New York State
Primary Energy Production
by Fuel Type¹
2007–2021**

Figure 6-1.

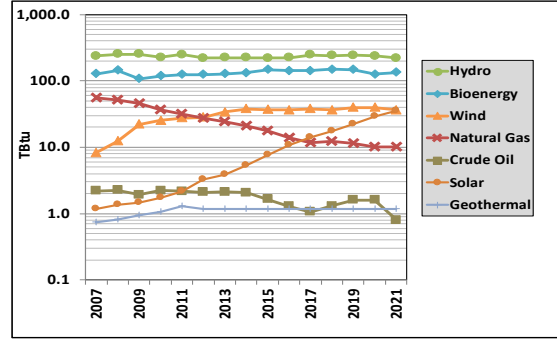


Table 6-1a. (In Physical Units)

Year	Hydro Electricity ² GWh	Natural Gas Bcf	Crude Oil Mbbl	Ethanol Mbbl	Distributed Solar GWh	Utility Solar GWh	Total Solar GWh
2007	25,557	55	379	100	16	n.a.	n.a.
2008	27,501	50	387	2,064	24	n.a.	n.a.
2009	27,945	45	333	1,189	33	n.a.	n.a.
2010	25,103	36	381	2,482	56	n.a.	n.a.
2011	28,355	31	375	3,063	93	7	99
2012	25,303	26	362	3,095	202	53	255
2013	26,397	23	366	3,762	259	52	311
2014	26,823	20	356	3,490	401	51	452
2015	26,704	17	286	3,465	643	52	696
2016	27,150	14	225	3,801	931	54	984
2017	30,350	11	184	3,687	1,233	47	1,281
2018	29,856	12	221	3,308	1,550	49	1,599
2019	30,724	11	277	3,519	1,920	52	1,972
2020	30,156	10	238	1,753	2,356	48	2,404
2021	28,214	10	266	1,375	2,769	50	2,819

Table 6-1b. (In Trillion Btu)

Year	Hydro Electricity ² TBtu	Natural Gas TBtu	Crude Oil TBtu	Biofuels ^{3,4,5} TBtu	Wind TBtu	Solar ⁴ TBtu	Geothermal ⁴	Total Production TBtu
2007	236.9	56.2	2.2	128.6	8.2	1.2	0.7	434.0
2008	251.2	51.4	2.2	143.9	12.3	1.3	0.8	463.3
2009	252.9	45.8	1.9	107.6	22.1	1.5	1.0	432.7
2010	225.4	36.6	2.2	118.5	25.3	1.7	1.1	410.8
2011	250.7	31.9	2.2	124.9	27.5	2.1	1.3	440.6
2012	220.1	27.2	2.1	124.3	28.4	3.2	1.2	406.6
2013	224.7	24.2	2.1	128.3	33.7	3.9	1.2	418.2
2014	224.3	20.8	2.1	132.0	37.7	5.3	1.2	423.4
2015	221.2	17.9	1.6	147.6	37.0	7.7	1.2	434.3
2016	223.5	13.9	1.3	141.9	36.4	10.7	1.2	428.9
2017	246.5	11.8	1.1	143.3	38.1	13.9	1.2	455.8
2018	240.8	12.2	1.3	149.0	36.3	17.7	1.2	458.5
2019	242.6	11.3	1.6	148.1	39.6	22.5	1.2	467.0
2020	236.8	10.0	1.6	126.1	39.6	28.8	1.2	444.1
2021	220.0	10.0	0.8	134.1	36.7	35.5	1.2	438.4

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

² Includes both conventional and pumped storage hydro.

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

⁴ Consumption used as proxy.

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

7 References

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Appendix A

Under New York State’s Climate Leadership and Community Protection Act (Climate Act), New York State’s Department of Environmental Conservation (DEC) is required to produce and publish an annual inventory of greenhouse gases, the [Statewide Greenhouse Gas Emissions Report](#) with additional supporting data available at [OPENNY](#). Per Climate Act provisions, the report is required to adopt a 20-year global warming potential and include all emissions from fossil fuels and electricity consumed within the State, including emissions from fuel production and transportation beyond the State boundaries. DEC published the first annual report in December 2021, in collaboration with NYSERDA, as well as the first annual update in December 2022.

NYSERDA conducted studies that provided the underlying analysis for the energy sector greenhouse gas (GHG) emissions inventory, including direct emissions and emissions from imported fossil fuels and electricity, methane emissions from oil and gas systems, as well as hydrofluorocarbon (HFC) emissions, which together make up over 80% of statewide GHG emissions. More information about NYSERDA’s Greenhouse Gas Emissions Studies can be found on NYSERDA’s website. NYSERDA updates these studies over time to make methodological improvements and to incorporate new data when available.

Appendix B

New York State

Household Consumption and Expenditures by End Use, 2020¹

Table B-1. Total Household Energy

	Households ² (MM)	Average per Household Using the Fuel	
		Consumption	Expenditure
Total	7.5		
Electricity	0.5	6,916 kWh	\$1,270
Natural Gas	5.9	53.7 Mcf	\$924
Fuel Oil/Kerosene	1.4	505 gallons	\$1,331
Propane/LPG	0.8	379 gallons	\$872

Table B-2. Space-Heating³

	Households ² (MM)	Average per Household Using the Fuel as Main Heating Source	
		Consumption	Expenditure
Total	7.52		
Electricity	1.19	1,698 kWh	\$256
Natural Gas	4.57	45.3 Mcf	\$675
Fuel Oil/Kerosene	1.25	396 gallons	\$1,024

Table B-3. Water-Heating

	Households ² (MM)	Average per Household Using the Fuel as Water Heating Source	
		Consumption	Expenditure
Total	7.52		
Electricity	2.11	2,116 kWh	\$369
Natural Gas	4.28	19.1 Mcf	\$394
Fuel Oil/Kerosene	0.83	144 gallons	\$396

Table B-4. Electric Air Conditioning

	Households ² (MM)	Average per Household	
		Consumption	Expenditure
Central Air	2.2	1,302 kWh	\$266
Room/Wall	4.6		

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 7.5 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, 2019–2021

Table C-1. (In Thousand Gallons)

County	2019	2020	2021
New York State	5,759,723	5,111,875	5,207,176
New York City	1,124,765	970,366	985,902
Rest of State	4,634,958	4,141,509	4,221,275
Albany	131,209	112,513	135,098
Alleghany	15,040	14,181	16,329
Broome	107,699	93,347	91,873
Cattaraugus	21,138	19,021	18,903
Cayuga	24,758	22,103	23,176
Chautauqua	46,720	40,767	41,773
Chemung	39,246	32,504	32,696
Chenango	22,936	21,132	21,296
Clinton	48,552	39,664	38,088
Columbia	49,995	48,863	45,069
Cortland	26,773	23,902	24,132
Delaware	19,388	18,557	19,670
Dutchess	118,112	99,635	103,732
Erie	326,258	271,471	280,003
Essex	18,994	17,525	18,565
Franklin	17,761	16,165	16,305
Fulton	18,691	17,694	16,265
Genesee	49,641	48,076	50,923
Greene	28,941	24,550	24,009
Hamilton	3,224	2,689	2,896
Herkimer	27,722	26,305	25,862
Jefferson	56,557	51,831	53,978
Lewis	12,367	11,664	11,678
Livingston	36,961	32,963	34,544
Madison	17,984	16,285	16,267
Monroe	267,635	239,287	240,535
Montgomery	37,876	35,962	38,252
Nassau	541,826	469,074	478,305
Niagara	65,975	56,986	55,820
Oneida	87,315	80,111	79,425
Onondaga	227,961	199,459	202,174
Ontario	65,002	55,646	57,687
Orange	195,755	169,404	179,931
Orleans	10,825	10,394	10,489
Oswego	43,119	40,421	39,149
Otsego	29,561	26,468	26,997
Putnam	51,683	45,891	43,517
Rensselaer	75,946	65,856	67,603
Rockland	73,461	71,618	77,760
St. Lawrence	44,689	40,555	40,646
Saratoga	115,967	102,532	106,145
Schenectady	69,781	59,349	62,048
Schoharie	14,343	13,508	13,971
Schuyler	8,515	7,678	8,448
Seneca	23,539	26,552	16,103
Steuben	58,960	52,364	57,882
Suffolk	686,940	614,474	626,192
Sullivan	37,194	35,156	37,037
Tioga	29,091	25,642	28,116
Tompkins	27,588	24,429	25,763
Ulster	90,873	79,479	82,377
Warren	45,954	43,295	41,126
Washington	19,958	18,863	19,092
Wayne	39,804	37,120	36,041
Westchester	236,740	248,307	237,497
Wyoming	16,297	14,330	14,203
Yates	8,120	7,889	7,818

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

Estimated Annual Residential Energy Consumption by County in New York State, 2007–2021

Table C-2.

Residential Energy Consumption County	Natural Gas		Propane		Electricity		Distillate		Kerosene		Wood	
	Bcf		Mbbbl		GWh		Mbbbl		Mbbbl		MCords	
	2021	2007	2021	2007	2021	2007	2021	2007	2021	2007	2021	2007
Albany	12.2	9.6	99	49	1,987	1,329	169	236	4	10	24	30
Allegany	1.3	1.2	48	39	142	166	19	29	0	1	27	56
Bronx	16.3	11.4	131	80	2,221	2,081	1,236	2,809	31	123	0	3
Broome	7.7	6.2	150	104	1,109	712	163	162	4	7	32	54
Cattaraugus	2.3	2.1	100	90	345	382	30	45	1	2	35	76
Cayuga	2.1	1.9	98	87	286	279	73	94	2	4	24	46
Chautauqua	4.8	4.6	105	84	600	616	23	28	1	1	31	61
Chemung	3.8	3.2	61	32	408	272	40	41	1	2	15	27
Chenango	0.5	0.3	77	49	271	258	128	131	3	6	35	55
Clinton	0.7	0.3	67	23	958	762	282	234	7	10	34	47
Columbia	0.5	0.4	100	47	324	357	240	245	6	11	23	37
Cortland	1.2	1.0	47	31	167	187	47	50	1	2	18	26
Delaware	0.4	0.3	69	45	196	196	165	161	4	7	43	66
Dutchess	4.8	3.1	162	91	1,378	1,143	1,007	942	25	41	29	41
Erie	46.7	38.4	162	142	2,119	1,849	69	118	2	5	27	76
Essex	0.2	0.1	73	35	272	263	185	147	5	6	33	44
Franklin	0.2	0.2	71	29	237	247	213	183	5	8	40	44
Fulton	1.3	1.1	66	36	184	149	113	121	3	5	24	38
Genesee	2.0	1.7	65	62	211	203	41	55	1	2	9	24
Greene	0.3	0.1	70	41	209	192	181	195	4	9	17	29
Hamilton	0.0	0.0	11	11	11	18	16	20	0	1	5	10
Herkimer	1.8	1.3	56	34	301	280	119	125	3	5	32	43
Jefferson	3.0	2.1	177	101	815	613	132	151	3	7	37	55
Kings	48.2	50.8	277	225	3,340	2,678	610	2,026	15	89	2	10
Lewis	0.3	0.1	56	26	72	76	72	81	2	4	39	61
Livingston	1.8	1.4	83	76	283	303	44	56	1	2	21	39
Madison	1.5	1.4	82	53	247	268	94	123	2	5	20	39
Monroe	34.5	28.5	163	103	4,036	3,078	96	168	2	7	18	41
Montgomery	1.3	1.1	32	21	158	133	85	97	2	4	14	22
Nassau	28.6	26.4	153	90	1,484	2,100	1,754	3,467	44	152	5	13
New York	21.7	17.1	149	138	6,147	6,982	989	3,067	25	134	3	2
Niagara	9.8	8.2	109	95	672	579	71	108	2	5	15	31
Oneida	7.3	6.3	130	85	922	834	225	304	6	13	36	56
Onondaga	18.4	16.4	138	106	2,621	2,191	120	168	3	7	24	46
Ontario	4.0	3.1	144	115	551	444	58	82	1	4	19	39
Orange	6.3	7.0	135	119	862	1,022	468	722	12	32	19	38
Orleans	1.0	0.8	89	60	159	161	46	54	1	2	14	25
Oswego	2.7	2.4	215	185	493	383	92	122	2	5	56	85
Otsego	0.6	0.4	95	79	233	244	154	181	4	8	45	62
Putnam	0.4	0.3	35	32	410	664	268	400	7	18	7	15
Queens	44.3	45.1	249	196	2,389	2,878	833	2,448	21	107	3	8
Rensselaer	4.8	3.3	136	83	723	647	258	282	6	12	41	53
Richmond	12.9	15.2	47	38	426	409	82	219	2	10	1	1
Rockland	8.1	10.1	24	20	499	566	37	58	1	3	2	4
St. Lawrence	2.7	1.6	148	68	491	411	241	243	6	11	85	111
Saratoga	8.7	5.6	266	166	1,050	877	254	275	6	12	34	65
Schenectady	6.4	4.9	62	32	725	537	75	110	2	5	8	12
Schoharie	0.1	0.1	51	29	167	178	103	117	3	5	25	38
Schuyler	0.2	0.2	47	40	95	80	27	30	1	1	10	17
Seneca	0.8	0.7	62	58	166	124	29	35	1	2	10	11
Steuben	3.0	2.6	107	109	408	327	43	64	1	3	46	79
Suffolk	21.6	21.9	283	209	2,222	3,198	3,104	4,844	77	212	28	51
Sullivan	0.2	0.1	115	102	451	372	311	277	8	12	33	48
Tioga	1.0	0.7	79	46	209	153	117	128	3	6	25	37
Tompkins	3.0	2.1	118	86	787	567	59	68	1	3	29	36
Ulster	2.4	1.6	230	127	765	660	636	660	16	29	54	68
Warren	1.5	1.5	72	56	252	311	95	133	2	6	14	30
Washington	0.6	0.7	62	60	171	220	142	181	4	8	25	63
Wayne	3.1	2.4	121	95	461	448	73	93	2	4	27	48
Westchester	16.2	15.9	121	105	1,877	2,234	1,241	2,229	31	98	8	16
Wyoming	1.0	0.9	56	41	228	203	26	33	1	1	20	35
Yates	0.4	0.3	49	52	147	147	17	26	0	1	13	24
New York State	445.6	400.3	6,656	4,771	52,157	50,241	17,739	30,101	440	1,318	1,496	2,468

Estimated Annual Residential Energy Consumption by County in New York State (TBtu), 2007–2021

Table C-3.

Residential Energy Consumption	Natural Gas		Propane		Electricity		Distillate		Kerosene		Wood		Solar	
	(TBtu)		(TBtu)		(TBtu)		(TBtu)		(TBtu)		(TBtu)		(TBtu)	
County	2021	2007	2021	2007	2021	2007	2021	2007	2021	2007	2021	2007	2021	2007
Albany	12.6	9.8	0.4	0.2	6.8	4.5	1.0	1.4	0.0	0.1	0.5	0.6	0.3	0.0
Allegany	1.3	1.2	0.2	0.2	0.5	0.6	0.1	0.2	0.0	0.0	0.5	1.1	0.0	0.0
Bronx	16.8	11.7	0.5	0.3	7.6	7.1	7.1	16.2	0.2	0.7	0.0	0.1	0.3	0.1
Broome	7.9	6.4	0.6	0.4	3.8	2.4	0.9	0.9	0.0	0.0	0.6	1.1	0.1	0.0
Cattaraugus	2.4	2.1	0.4	0.3	1.2	1.3	0.2	0.3	0.0	0.0	0.7	1.5	0.0	0.0
Cayuga	2.1	1.9	0.4	0.3	1.0	1.0	0.4	0.5	0.0	0.0	0.5	0.9	0.0	0.0
Chautauqua	5.0	4.8	0.4	0.3	2.0	2.1	0.1	0.2	0.0	0.0	0.6	1.2	0.1	0.0
Chemung	3.9	3.3	0.2	0.1	1.4	0.9	0.2	0.2	0.0	0.0	0.3	0.5	0.0	0.0
Chenango	0.5	0.4	0.3	0.2	0.9	0.9	0.7	0.8	0.0	0.0	0.7	1.1	0.0	0.0
Clinton	0.7	0.3	0.3	0.1	3.3	2.6	1.6	1.4	0.0	0.1	0.7	0.9	0.0	0.0
Columbia	0.5	0.4	0.4	0.2	1.1	1.2	1.4	1.4	0.0	0.1	0.5	0.7	0.3	0.0
Cortland	1.2	1.1	0.2	0.1	0.6	0.6	0.3	0.3	0.0	0.0	0.4	0.5	0.1	0.0
Delaware	0.4	0.3	0.3	0.2	0.7	0.7	0.9	0.9	0.0	0.0	0.9	1.3	0.0	0.0
Dutchess	5.0	3.2	0.6	0.4	4.7	3.9	5.8	5.5	0.1	0.2	0.6	0.8	0.4	0.0
Erie	48.2	39.4	0.6	0.5	7.2	6.3	0.4	0.7	0.0	0.0	0.5	1.5	0.2	0.0
Essex	0.2	0.1	0.3	0.1	0.9	0.9	1.1	0.9	0.0	0.0	0.7	0.9	0.1	0.0
Franklin	0.2	0.2	0.3	0.1	0.8	0.8	1.2	1.1	0.0	0.0	0.8	0.9	0.0	0.0
Fulton	1.3	1.1	0.3	0.1	0.6	0.5	0.7	0.7	0.0	0.0	0.5	0.8	0.1	0.0
Genesee	2.1	1.7	0.2	0.2	0.7	0.7	0.2	0.3	0.0	0.0	0.2	0.5	0.1	0.0
Greene	0.3	0.1	0.3	0.2	0.7	0.7	1.0	1.1	0.0	0.0	0.3	0.6	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	0.2	0.0	0.0
Herkimer	1.8	1.4	0.2	0.1	1.0	1.0	0.7	0.7	0.0	0.0	0.6	0.9	0.2	0.0
Jefferson	3.1	2.1	0.7	0.4	2.8	2.1	0.8	0.9	0.0	0.0	0.7	1.1	0.0	0.0
Kings	49.8	52.0	1.1	0.9	11.4	9.1	3.5	11.7	0.1	0.5	0.0	0.2	0.9	0.2
Lewis	0.3	0.1	0.2	0.1	0.2	0.3	0.4	0.5	0.0	0.0	0.8	1.2	0.0	0.0
Livingston	1.8	1.4	0.3	0.3	1.0	1.0	0.3	0.3	0.0	0.0	0.4	0.8	0.0	0.0
Madison	1.5	1.4	0.3	0.2	0.8	0.9	0.5	0.7	0.0	0.0	0.4	0.8	0.0	0.0
Monroe	35.6	29.2	0.6	0.4	13.8	10.5	0.6	1.0	0.0	0.0	0.4	0.8	0.2	0.0
Montgomery	1.3	1.1	0.1	0.1	0.5	0.5	0.5	0.6	0.0	0.0	0.3	0.4	0.0	0.0
Nassau	29.5	27.0	0.6	0.3	5.1	7.2	10.1	20.1	0.2	0.9	0.1	0.3	1.1	0.0
New York	22.4	17.5	0.6	0.5	21.0	23.8	5.7	17.7	0.1	0.8	0.1	0.0	0.7	0.2
Niagara	10.1	8.4	0.4	0.4	2.3	2.0	0.4	0.6	0.0	0.0	0.3	0.6	0.1	0.0
Oneida	7.5	6.5	0.5	0.3	3.1	2.8	1.3	1.8	0.0	0.1	0.7	1.1	0.0	0.0
Onondaga	19.0	16.8	0.5	0.4	8.9	7.5	0.7	1.0	0.0	0.0	0.5	0.9	0.2	0.0
Ontario	4.1	3.1	0.6	0.4	1.9	1.5	0.3	0.5	0.0	0.0	0.4	0.8	0.1	0.0
Orange	6.5	7.1	0.5	0.5	2.9	3.5	2.7	4.2	0.1	0.2	0.4	0.8	0.2	0.0
Orleans	1.0	0.8	0.3	0.2	0.5	0.5	0.3	0.3	0.0	0.0	0.3	0.5	0.1	0.0
Oswego	2.8	2.4	0.8	0.7	1.7	1.3	0.5	0.7	0.0	0.0	1.1	1.7	0.1	0.0
Otsego	0.7	0.5	0.4	0.3	0.8	0.8	0.9	1.0	0.0	0.0	0.9	1.2	0.1	0.0
Putnam	0.4	0.3	0.1	0.1	1.4	2.3	1.5	2.3	0.0	0.1	0.1	0.3	0.0	0.0
Queens	45.7	46.2	1.0	0.8	8.1	9.8	4.8	14.2	0.1	0.6	0.1	0.2	0.7	0.1
Rensselaer	4.9	3.4	0.5	0.3	2.5	2.2	1.5	1.6	0.0	0.1	0.8	1.1	0.2	0.0
Richmond	13.3	15.6	0.2	0.1	1.5	1.4	0.5	1.3	0.0	0.1	0.0	0.0	0.4	0.0
Rockland	8.4	10.4	0.1	0.1	1.7	1.9	0.2	0.3	0.0	0.0	0.0	0.1	0.3	0.0
St. Lawrence	2.8	1.7	0.6	0.3	1.7	1.4	1.4	1.4	0.0	0.1	1.7	2.2	0.1	0.0
Saratoga	9.0	5.8	1.0	0.6	3.6	3.0	1.5	1.6	0.0	0.1	0.7	1.3	0.1	0.1
Schenectady	6.6	5.1	0.2	0.1	2.5	1.8	0.4	0.6	0.0	0.0	0.2	0.2	0.3	0.0
Schoharie	0.1	0.1	0.2	0.1	0.6	0.6	0.6	0.7	0.0	0.0	0.5	0.8	0.0	0.0
Schuyler	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.0	0.0	0.2	0.3	0.0	0.0
Seneca	0.9	0.7	0.2	0.2	0.6	0.4	0.2	0.2	0.0	0.0	0.2	0.2	0.0	0.0
Steuben	3.1	2.7	0.4	0.4	1.4	1.1	0.2	0.4	0.0	0.0	0.9	1.6	0.0	0.0
Suffolk	22.3	22.4	1.1	0.8	7.6	10.9	17.9	28.0	0.4	1.2	0.6	1.0	1.7	0.1
Sullivan	0.2	0.1	0.4	0.4	1.5	1.3	1.8	1.6	0.0	0.1	0.7	1.0	0.1	0.0
Tioga	1.1	0.8	0.3	0.2	0.7	0.5	0.7	0.7	0.0	0.0	0.5	0.7	0.2	0.0
Tompkins	3.1	2.2	0.5	0.3	2.7	1.9	0.3	0.4	0.0	0.0	0.6	0.7	0.3	0.0
Ulster	2.5	1.6	0.9	0.5	2.6	2.3	3.7	3.8	0.1	0.2	1.1	1.4	0.6	0.0
Warren	1.6	1.6	0.3	0.2	0.9	1.1	0.5	0.8	0.0	0.0	0.3	0.6	0.2	0.0
Washington	0.7	0.7	0.2	0.2	0.6	0.8	0.8	1.0	0.0	0.0	0.5	1.3	0.1	0.0
Wayne	3.2	2.4	0.5	0.4	1.6	1.5	0.4	0.5	0.0	0.0	0.5	1.0	0.0	0.0
Westchester	16.7	16.2	0.5	0.4	6.4	7.6	7.2	12.9	0.2	0.6	0.2	0.3	0.3	0.0
Wyoming	1.1	0.9	0.2	0.2	0.8	0.7	0.1	0.2	0.0	0.0	0.4	0.7	0.0	0.0
Yates	0.4	0.4	0.2	0.2	0.5	0.5	0.1	0.2	0.0	0.0	0.3	0.5	0.0	0.0
New York State	459.9	409.9	25.6	18.3	178.0	171.4	102.2	174.1	2.5	7.5	29.9	49.4	12.2	1.1

Appendix D-1

Occupied Housing Units by Type of Space Heating Fuel by County in New York State, 2017–2021, 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	7,530,150	4,489,695	334,341	972,142	1,405,933	16,442	113,064	7,517	89,119	101,897
New York City	3,250,657	2,122,672	79,661	436,454	474,300	1,821	1,505	2,881	50,337	81,026
Bronx	521,340	254,943	12,721	66,518	158,535	567	64	312	7,374	20,306
Kings	985,108	746,435	26,693	99,012	77,401	402	309	864	12,535	21,457
New York	767,213	366,073	15,658	198,791	136,893	551	567	797	21,883	26,000
Queens	807,468	608,592	21,266	62,850	93,783	301	398	595	7,708	11,975
Richmond	169,528	146,629	3,323	9,283	7,688	0	167	313	837	1,288
Rest of State	4,225,533	2,322,850	243,811	514,891	951,442	15,702	117,102	4,744	36,734	18,257
Albany	130,754	85,984	4,332	26,746	9,740	230	1,874	137	899	812
Allegany	16,671	8,817	2,112	1,912	1,087	363	2,149	6	212	13
Broome	81,031	48,937	5,949	13,528	8,498	469	2,275	46	648	681
Cattaraugus	31,333	16,506	4,455	4,741	1,751	404	2,870	13	505	88
Cayuga	30,604	14,848	4,361	3,934	4,281	358	1,936	16	773	97
Chautauqua	53,050	34,736	4,692	8,289	1,389	78	2,493	44	935	394
Chemung	34,223	23,440	2,339	4,807	2,006	282	1,029	16	190	114
Chenango	19,753	3,155	3,046	3,291	6,651	600	2,484	0	452	74
Clinton	32,379	3,913	2,331	10,347	13,026	85	2,166	11	338	162
Columbia	25,167	3,138	3,820	3,828	12,136	50	1,580	123	336	156
Cortland	18,260	8,760	2,110	2,323	2,777	455	1,484	33	247	71
Deleware	18,487	2,299	2,529	2,207	7,920	251	2,880	10	352	39
Dutchess	111,735	31,108	6,473	16,973	53,101	105	2,126	153	961	735
Erie	403,064	354,384	7,650	30,803	4,319	171	2,346	119	2,046	1,226
Essex	15,714	814	2,324	2,666	7,748	29	1,924	28	136	45
Franklin	18,561	1,263	2,340	2,425	9,314	97	2,430	3	602	87
Fulton	21,712	8,369	2,632	2,264	5,941	132	1,733	25	463	153
Genesee	24,461	14,690	2,897	2,911	2,415	187	761	40	507	53
Greene	17,451	1,738	2,625	2,413	8,969	13	1,170	13	448	62
Hamilton	1,457	36	341	101	653	0	295	3	27	1
Herkimer	24,441	10,326	2,020	3,354	5,683	282	2,122	69	525	60
Jefferson	45,517	18,493	6,822	9,702	6,721	59	2,627	17	742	334
Lewis	10,453	1,655	1,972	780	3,308	42	2,447	3	218	28
Livingston	24,012	12,050	3,487	3,652	2,449	256	1,596	18	428	76
Madison	24,779	10,148	3,527	3,280	5,342	528	1,560	2	323	69
Monroe	311,955	240,320	7,031	53,777	5,479	108	1,449	77	1,931	1,783
Montgomery	18,907	8,793	1,367	2,054	4,747	204	1,092	16	446	188
Nassau	453,576	274,191	9,110	27,275	137,971	137	517	668	2,171	1,536
Niagara	90,030	69,649	4,831	9,172	4,120	82	1,173	49	486	468
Oneida	90,866	53,248	5,926	12,935	13,532	363	3,017	18	1,284	543
Onondaga	190,353	134,047	6,234	36,514	7,164	874	1,953	97	2,025	1,445
Ontario	46,547	27,250	6,126	7,207	3,250	326	1,485	49	745	109
Orange	132,880	64,264	8,561	16,908	39,263	214	2,169	132	910	459
Orleans	16,203	6,625	3,684	2,027	2,509	63	1,020	23	203	49
Oswego	46,749	19,036	9,469	6,679	5,326	562	4,464	52	976	185
Ostego	22,448	4,057	3,693	2,800	7,946	219	3,220	46	333	134
Putnam	34,651	3,439	2,047	7,372	20,613	30	741	29	252	128
Rensselaer	66,341	32,475	5,737	9,416	14,369	98	3,155	106	760	225
Rockland	102,161	85,745	1,584	10,116	3,185	68	276	193	367	627
St. Lawrence	41,224	14,428	4,939	5,037	10,562	187	5,147	21	527	376
Saratoga	97,829	56,486	10,755	13,060	13,510	326	2,463	38	817	374
Schenectady	61,038	43,320	2,572	9,338	4,158	50	629	143	443	385
Schoharie	12,110	790	1,989	1,989	5,223	117	1,778	17	190	33
Schuyler	7,542	1,300	2,034	1,262	1,528	386	810	7	187	28
Seneca	13,603	5,740	2,601	2,161	1,613	366	745	5	283	89
Steuben	38,650	20,673	4,562	5,370	2,428	1,231	3,570	6	727	83
Suffolk	505,564	202,523	16,482	39,826	238,190	339	2,985	1,001	2,409	1,809
Sullivan	28,816	1,262	4,240	5,134	15,145	184	2,205	40	531	75
Tioga	20,316	6,199	2,968	2,428	5,830	844	1,722	65	217	43
Tompkins	42,889	20,394	4,934	10,138	3,267	631	2,239	142	726	418
Ulster	71,194	15,168	8,946	9,188	32,676	122	3,837	227	841	189
Warren	29,261	12,932	3,771	4,070	6,534	120	1,352	111	277	94
Washington	24,073	5,428	3,211	2,756	9,743	201	2,408	34	217	75
Wayne	37,771	20,169	4,928	5,796	3,933	217	2,020	0	428	280
Westchester	364,413	187,951	8,771	41,770	118,239	71	1,074	255	3,400	2,882
Wyoming	15,870	7,018	2,411	3,004	1,444	132	1,541	15	276	29
Yates	8,594	2,496	1,996	1,832	911	223	946	6	84	100

Appendix D-2

Occupied Housing Units by Type of Space Heating Fuel by County in New York State, 2021, One-Year Estimates¹

Table D-2. (In Housing Units)

County	Total Occupied Units	Utility Gas	Bottled Tank or LP Gas	Electricity	Fuel Oil or Kerosene	Coal or Coke	All Other Fuels	No Fuel Used
New York State	7,652,666	4,489,009	388,311	1,118,015	1,293,770	14,596	98,952	132,953
New York City	3,263,895	2,075,360	94,203	523,102	405,229	1,554	53,248	106,179
Bronx	533,004	265,326	14,328	83,526	128,487	498	7,141	33,086
Kings	1,001,868	719,493	32,096	130,764	75,530	194	13,580	28,691
New York	737,575	359,467	14,951	208,219	104,192	495	22,710	26,547
Queens	820,686	587,597	27,264	90,813	89,152	367	8,869	15,543
Richmond	170,762	143,477	5,564	9,780	7,868	0	948	2,312
Rest of State	3,834,788	2,250,657	198,412	455,603	799,626	9,787	30,864	16,553
Albany	132,171	84,903	4,561	30,195	9,266	538	705	346
Broome	84,452	51,609	5,399	14,461	8,169	519	429	709
Cattaraugus	32,562	17,158	4,780	4,960	1,706	514	749	50
Cayuga	32,392	15,737	4,657	4,529	4,451	365	688	44
Chautauqua	53,309	35,075	4,462	8,175	1,439	142	964	380
Chemung	35,407	22,792	2,671	6,531	1,611	321	309	251
Clinton	33,860	4,731	3,335	9,748	13,619	0	567	200
Dutchess	118,175	33,910	8,121	18,531	53,259	0	976	660
Erie	412,870	359,838	8,135	34,747	4,353	205	1,462	2,040
Jefferson	48,628	19,120	8,557	10,139	5,731	84	1,134	396
Madison	25,294	10,784	4,406	3,608	4,411	353	323	162
Monroe	318,883	239,157	7,954	59,670	5,162	144	2,000	2,956
Nassau	459,452	286,310	11,082	29,433	127,706	190	1,755	1,386
Niagara	90,975	67,330	4,876	11,249	4,817	12	515	996
Oneida	93,373	54,994	6,858	14,751	12,743	314	1,258	225
Onondaga	198,132	137,920	7,454	40,285	5,693	792	2,641	1,410
Ontario	47,607	28,967	6,711	7,200	2,711	221	923	33
Orange	137,561	69,000	9,375	16,556	39,032	163	510	805
Oswego	46,924	15,936	10,382	7,424	6,348	286	1,458	276
Putnam	35,166	3,516	2,170	7,486	20,177	0	579	41
Rensselaer	66,431	34,489	5,651	9,848	12,912	176	808	170
Rockland	102,609	85,840	1,788	10,566	2,542	0	266	1,186
St. Lawrence	42,298	13,984	5,939	5,109	11,201	162	896	281
Saratoga	100,226	56,732	12,898	14,753	12,130	359	433	686
Schenectady	66,910	45,743	2,929	11,671	4,543	71	386	475
Steuben	39,500	20,246	5,952	5,156	2,268	1,131	1,560	389
Suffolk	511,951	211,357	23,637	41,108	225,682	46	3,145	2,741
Sullivan	32,529	1,035	4,231	7,901	16,049	211	750	0
Tompkins	44,469	19,588	4,306	14,550	2,621	113	657	495
Ulster	75,053	18,305	10,566	8,900	32,921	136	1,047	28
Warren	29,729	13,406	3,867	4,228	5,857	159	627	107
Wayne	38,634	20,998	5,335	5,763	3,636	79	652	214
Westchester	371,736	187,311	12,839	51,885	107,550	96	6,089	4,940

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, 2010–2020

Table D-3.

County	July 2010	July 2011	July 2012	July 2013	July 2014	July 2015	July 2016	July 2017	July 2018	July 2019	July 2020
New York State	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	19,453,561	20,201,249
Albany	304,086	304,596	305,723	306,589	307,151	307,433	307,597	307,717	306,585	305,506	314,848
Allegghany	48,971	48,800	48,210	47,900	47,652	47,334	47,044	46,639	46,332	46,091	46,456
Bronx	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	1,418,207	1,472,654
Broome	200,481	199,363	198,667	197,914	197,251	195,928	194,498	193,100	191,925	190,488	198,683
Cattaraugus	80,218	79,815	79,348	78,996	78,677	77,926	77,658	77,176	76,726	76,117	77,042
Cayuga	79,895	79,693	79,505	79,088	78,762	78,298	77,674	77,457	77,121	76,576	76,248
Chautauqua	134,725	134,209	133,304	132,852	131,751	130,529	129,206	128,372	127,472	126,903	127,657
Chemung	88,895	88,899	89,137	88,199	87,177	86,705	85,644	84,736	83,935	83,456	84,148
Chenango	50,399	50,182	49,883	49,477	49,319	48,772	48,315	47,805	47,445	47,207	47,220
Clinton	82,096	81,728	81,714	81,523	81,463	80,718	80,500	80,531	80,679	80,485	79,843
Columbia	63,036	62,528	62,449	62,170	61,942	61,434	60,835	60,338	59,785	59,461	61,570
Cortland	49,279	49,380	49,023	48,905	48,740	48,290	47,915	47,815	47,722	47,581	46,809
Deleware	47,888	47,584	47,215	46,803	46,562	45,891	45,393	45,028	44,526	44,135	44,308
Dutchess	297,728	298,133	297,023	296,268	295,127	294,039	293,029	293,545	293,939	294,218	295,911
Erie	919,152	919,843	919,906	920,869	921,755	920,644	918,678	919,034	919,717	918,702	954,236
Essex	39,360	39,271	38,875	38,601	38,323	37,965	37,671	37,487	37,288	36,885	37,381
Franklin	51,645	51,545	51,791	51,212	51,096	50,540	51,081	50,465	50,279	50,022	47,555
Fulton	55,455	55,112	54,845	54,345	53,932	53,801	53,610	53,802	53,633	53,383	53,324
Genesee	59,928	59,880	59,672	59,112	58,725	58,462	58,013	57,798	57,487	57,280	58,388
Greene	49,139	48,857	48,587	48,308	47,964	47,616	47,494	47,442	47,381	47,188	47,931
Hamilton	4,851	4,826	4,803	4,766	4,700	4,699	4,556	4,471	4,432	4,416	5,107
Herkimer	64,470	64,386	64,227	63,883	63,384	62,652	62,436	62,163	61,713	61,319	60,139
Jefferson	116,592	117,752	120,235	118,490	117,971	116,371	112,980	113,157	111,866	109,834	116,721
Kings	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	2,559,903	2,736,074
Lewis	27,077	27,027	27,196	27,098	27,089	26,827	26,647	26,605	26,486	26,296	26,582
Livingston	65,240	64,849	64,796	64,627	64,585	64,344	64,000	63,483	63,213	62,914	61,834
Madison	73,440	72,887	72,414	72,457	72,210	71,636	71,387	70,942	71,117	70,941	68,016
Monroe	744,580	746,751	747,344	748,290	747,364	745,577	743,770	742,724	742,864	741,770	759,443
Montgomery	50,307	49,911	49,829	49,743	49,679	49,564	49,169	49,163	49,394	49,221	49,532
Nassau	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	1,356,924	1,395,774
New York	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	1,628,706	1,694,251
Niagara	216,475	215,719	214,713	214,105	213,305	212,358	211,554	210,848	210,060	209,281	212,666
Oneida	234,756	234,218	233,765	233,347	232,598	231,264	230,375	230,011	229,474	228,671	232,125
Onondaga	467,533	467,614	467,030	468,146	467,285	466,277	464,109	461,795	461,649	460,528	476,516
Ontario	108,176	108,599	108,611	109,044	109,334	109,271	109,229	109,538	109,738	109,777	112,458
Orange	373,445	374,097	373,699	374,320	374,845	375,803	377,799	379,758	382,126	384,940	401,310
Orleans	42,851	42,648	42,391	42,229	41,861	41,481	41,247	40,786	40,655	40,352	40,343
Oswego	122,137	121,981	121,458	121,170	120,590	119,735	118,895	118,427	117,515	117,124	117,525
Osteo	62,259	61,971	61,747	61,614	60,950	60,504	60,132	59,920	59,810	59,493	58,524
Putnam	99,667	99,827	99,625	99,572	99,438	99,185	98,761	98,856	98,814	98,320	97,668
Queens	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	2,253,858	2,405,464
Rensselaer	159,340	159,589	159,437	159,545	159,666	159,436	159,294	159,200	159,283	158,714	161,130
Richmond	469,615	471,021	470,614	471,803	471,937	472,349	474,040	475,671	476,260	476,143	495,747
Rockland	312,499	315,452	317,196	319,284	321,119	322,919	323,258	324,622	325,522	325,789	338,329
St. Lawrence	111,812	112,277	112,355	111,931	111,437	110,348	109,449	108,699	108,327	107,740	108,505
Saratoga	220,109	221,111	222,483	224,087	224,513	226,078	227,122	229,276	230,170	229,863	235,509
Schenectady	154,861	154,864	155,016	154,944	155,016	154,733	154,475	154,710	155,079	155,299	158,061
Schoharie	32,686	32,618	32,039	31,900	31,767	31,405	31,304	31,255	31,146	30,999	29,714
Schuyler	18,334	18,413	18,498	18,382	18,176	18,027	17,967	17,913	17,884	17,807	17,898
Seneca	35,266	35,380	35,388	35,250	34,879	34,801	34,710	34,246	34,179	34,016	33,814
Steuben	99,005	99,148	98,925	98,843	98,165	97,551	96,958	96,360	95,860	95,379	93,584
Suffolk	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	1,476,601	1,525,920
Sullivan	77,476	77,053	76,931	76,945	75,634	74,832	74,922	74,994	75,399	75,432	78,624
Tioga	51,008	50,875	50,278	50,103	49,824	49,355	48,824	48,609	48,441	48,203	48,455
Tompkins	101,740	101,821	102,726	103,553	103,391	103,006	102,942	102,664	102,419	102,180	105,740
Ulster	182,418	182,448	181,538	180,698	180,400	179,658	179,042	178,635	178,418	177,573	181,851
Warren	65,665	65,736	65,417	65,083	64,866	64,420	64,438	64,365	64,215	63,944	65,737
Washington	63,356	63,091	63,003	62,765	62,475	62,246	61,795	61,559	61,274	61,204	61,302
Wayne	93,751	93,256	93,029	92,339	91,801	91,291	90,758	90,429	90,200	89,918	91,283
Westchester	950,601	956,262	959,585	964,567	967,044	968,773	970,267	969,689	968,213	967,506	1,004,457
Wyoming	42,126	41,849	41,700	41,359	41,134	40,930	40,432	40,282	40,023	39,859	40,531
Yates	25,376	25,454	25,337	25,207	25,149	25,128	25,059	25,002	24,951	24,913	24,774

Appendix E

New York State Heating and Cooling Degree-Days 2007–2021

Figure E-1.

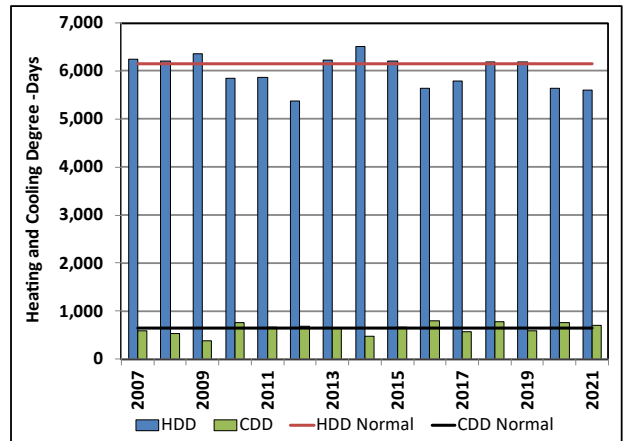


Table E-1. (Monthly Heating Degree-Days)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
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
2019	1,198	989	944	488	249	48	0	10	79	343	821	1,013	6,182
2020	990	933	735	615	293	47	0	5	114	366	574	962	5,634
2021	1,108	1,051	804	485	264	32	7	2	54	231	718	849	5,605
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
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
2019	0	0	0	0	11	85	283	168	38	11	0	0	596
2020	0	0	0	0	24	132	322	218	59	0	0	0	755
2021	0	0	0	0	31	161	193	250	62	5	0	0	702
Normal	0	0	0	0	18	119	233	200	64	3	0	0	637

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

Appendix F-1

New York State Electricity Prices by Sector by Utility¹ in Nominal Dollars 2007–2021

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
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
2019	17.19	25.30	20.39	11.39	12.54	19.41	12.85
2020	17.57	26.15	21.22	11.49	12.64	18.65	12.61
2021	18.53	27.33	22.07	12.91	14.89	19.85	13.54

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
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
2019	13.01	18.70	18.27	9.62	8.79	13.30	11.41
2020	13.23	20.16	18.81	9.66	8.60	13.69	10.88
2021	15.41	23.50	20.16	11.91	10.90	11.99	12.45

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
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
2019	10.11	14.70	N/A	7.42	5.00	5.45	10.88
2020	9.93	15.58	N/A	7.47	4.95	4.32	10.02
2021	12.37	18.86	N/A	9.53	6.59	5.77	12.79

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 2007–2021

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
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
2019	Bundled	222,451	2,372,477	1,015,686	649,945	1,285,489	141,580	296,612	141,417	17,738	57,937	-53,152	6,148,180
2019	Delivery	38,645	587,472	23	128,303	222,218	61,498	45,046	0	0	0	0	1,083,205
2019	Total	261,096	2,959,949	1,015,709	778,248	1,507,707	203,078	341,658	141,417	17,738	57,937	-53,152	7,231,385
2020	Bundled	211,342	2,402,283	1,020,864	656,837	1,307,935	142,401	302,686	67,330	N/A	63,846	33,241	6,208,765
2020	Delivery	52,080	538,931	8	125,533	206,712	61,576	390,840	0	N/A	0	0	1,375,680
2020	Total	263,422	2,941,214	1,020,872	782,370	1,514,647	203,977	693,526	67,330	N/A	63,846	33,241	7,584,445
2021	Bundled	215,501	2,482,139	1,024,508	678,499	1,341,789	134,506	287,962	62,738	N/A	89,072	3,922	6,320,636
2021	Delivery	44,690	458,590	2	108,511	181,452	71,313	58,862	0	N/A	0	121	923,541
2021	Total	260,191	2,940,729	1,024,510	787,010	1,523,241	205,819	346,824	62,738	N/A	89,072	4,043	7,244,177

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
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
2019	Bundled	35,776	400,615	117,786	78,268	110,404	18,108	23,505	18,498	527	176	264	803,927
2019	Delivery	11,350	157,612	1,982	44,287	67,190	14,338	17,631	0	0	0	0	314,390
2019	Total	47,126	558,227	119,768	122,555	177,594	32,446	41,136	18,498	527	176	264	1,118,317
2020	Bundled	32,912	425,378	121,254	78,979	112,928	18,170	23,411	8,907	N/A	178	13,501	835,618
2020	Delivery	14,442	149,972	394	44,260	66,147	14,384	17,521	0	N/A	0	0	307,120
2020	Total	47,354	575,350	121,648	123,239	179,075	32,554	40,932	8,907	N/A	178	13,501	1,142,738
2021	Bundled	33,370	447,828	122,547	82,179	117,461	16,428	22,330	8,477	N/A	175	550	851,345
2021	Delivery	13,380	141,285	380	42,769	63,752	16,453	18,818	0	N/A	0	61	296,898
2021	Total	46,750	589,113	122,927	124,948	181,213	32,881	41,148	8,477	N/A	175	611	1,148,243

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
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
2019	Bundled	749	52	N/A	608	560	53	279	1,407	0	0	19	3,727
2019	Delivery	292	691	N/A	1,182	1,022	58	468	0	0	0	0	3,713
2019	Total	1,041	743	N/A	1,790	1,582	111	747	1,407	0	0	19	7,440
2020	Bundled	690	46	N/A	590	568	43	276	315	0	0	1,343	3,871
2020	Delivery	318	676	N/A	1,138	1,012	61	457	0	0	0	0	3,662
2020	Total	1,008	722	N/A	1,728	1,580	104	733	315	0	0	1,343	7,533
2021	Bundled	612	43	N/A	576	582	36	260	331	0	0	1	2,441
2021	Delivery	272	685	N/A	1,097	988	63	455	0	0	0	0	3,560
2021	Total	884	728	N/A	1,673	1,570	99	715	331	0	0	1	6,001

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
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
2019	125,237	148,790	89,867	55,463	37,705	82,136	44,429	25,328	26,419	15,258	1,090,148
2020	117,325	156,706	96,179	43,649	30,253	82,642	38,183	16,249	22,040	12,247	1,012,618
2021	110,280	168,615	66,157	25,865	25,271	73,547	33,942	13,431	19,010	9,884	905,274

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
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	N/A	483	7,189	3,703	9,087	321,254
2019	57,299	N/A	1,313	187	8,118	N/A	554	8,307	3,067	633	252,540
2020	57,606	N/A	1,485	111	7,660	N/A	889	N/A	89	N/A	246,431
2021	57,313	N/A	1,634	108	6,318	N/A	396	N/A	N/A	N/A	233,255

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
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	N/A	N/A	137	14	33	6	104	34	N/A	3,740
2019	1,343	N/A	N/A	164	N/A	36	5	117	2	N/A	3,529
2020	1,281	N/A	N/A	185	N/A	9	5	134	N/A	N/A	2,365
2021	1,283	N/A	N/A	204	N/A	6	5	145	N/A	N/A	2,254

Appendix F-3

New York State Electricity Sales by Sector by Utility, 2007–2021

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
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
2019	Bundled	1,742	10,594	9,076	5,588	9,632	1,038	2,293	1,672	118	420	37	42,210
2019	Delivery	316	3,177	0	1,205	1,943	578	406	0	0	0	0	7,625
2019	Total	2,058	13,771	9,076	6,793	11,575	1,616	2,699	1,672	118	420	37	49,835
2020	Bundled	312	2,905	2,030	671	1,302	205	312	61	N/A	81	1,199	9,079
2020	Delivery	53	538	0	84	158	70	31	0	N/A	0	0	933
2020	Total	365	3,443	2,030	755	1,460	275	343	61	N/A	81	1,199	10,011
2021	Bundled	1,829	11,344	9,535	6,075	10,510	1,067	2,399	847	N/A	467	36	44,109
2021	Delivery	380	2,625	0	1,037	1,656	677	477	0	N/A	0	1	6,853
2021	Total	2,209	13,969	9,535	7,112	12,166	1,744	2,876	847	N/A	467	37	50,962

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

Year	Category	Central Hudson	Consolidated Edison	Long Island Power Authority	New York State Elec. & Gas Corp. (NYSEG)	National Grid	Orange & Rockland	Rochester Gas & Electric	Municipal	Cooperative	Behind the Meter	Adjustment/ Other	Total
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
2019	Bundled	782	9,922	8,440	1,602	3,439	557	635	1,094	34	34	522	27,062
2019	Delivery	1,171	28,497	1,039	4,310	9,054	1,403	2,529	0	0	0	0	48,002
2019	Total	1,953	38,418	9,478	5,911	12,494	1,960	3,164	1,094	34	34	522	75,063
2020	Bundled	738	9,382	8,238	1,505	3,340	591	631	514	N/A	34	1,053	26,025
2020	Delivery	1,072	25,487	500	3,916	8,425	1,232	2,307	0	N/A	0	0	42,938
2020	Total	1,810	34,869	8,738	5,421	11,765	1,823	2,937	514	N/A	34	1,053	68,964
2021	Bundled	770	9,313	8,494	1,622	3,703	612	698	518	N/A	20	21	25,771
2021	Delivery	1,051	25,505	507	3,912	8,418	1,331	2,311	0	N/A	0	7	43,042
2021	Total	1,821	34,818	9,001	5,534	12,121	1,943	3,009	518	N/A	20	28	68,813

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
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	N/A	2,837	10,435	378	1,231	1,101	0	0	610	18,081
2019	Bundled	71	63	N/A	102	1,047	52	42	1,591	0	0	254	3,222
2019	Delivery	826	446	N/A	2,668	8,865	325	1,165	0	0	0	0	14,296
2019	Total	897	509	N/A	2,770	9,912	377	1,208	1,591	0	0	254	17,518
2020	Bundled	70	53	N/A	105	942	53	43	896	N/A	0	877	3,038
2020	Delivery	820	372	N/A	2,608	8,408	296	1,064	0	N/A	0	0	13,569
2020	Total	889	425	N/A	2,714	9,350	349	1,107	896	N/A	0	877	16,607
2021	Bundled	67	52	N/A	113	959	62	38	932	N/A	0	0	2,223
2021	Delivery	805	335	N/A	2,602	8,686	295	1,061	0	N/A	0	2	13,786
2021	Total	872	387	0	2,715	9,645	357	1,099	932	N/A	0	2	16,009

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
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
2019	1,056	1,335	709	385	190	354	258	244	203	117	8,513
2020	1,032	1,548	847	326	165	377	248	170	175	95	7,957
2021	954	1,578	558	188	135	372	190	97	149	76	6,909

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
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	N/A	1,029	1,137	828	612	50,587
2019	10,721	N/A	4,445	1,866	793	N/A	1,092	1,205	635	4	38,108
2020	9,888	N/A	4,013	1,852	595	N/A	725	N/A	1	N/A	35,016
2021	9,492	N/A	4,240	1,863	545	N/A	509	N/A	N/A	N/A	34,354

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
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
2019	3,608	N/A	N/A	555	N/A	696	259	259	3	N/A	6,477
2020	3,813	N/A	N/A	501	N/A	155	251	239	N/A	N/A	5,339
2021	3,782	N/A	N/A	529	N/A	91	240	279	N/A	N/A	5,371

Appendix F-4

New York State Natural Gas Prices by Sector and by Utility in Nominal Dollars, 2007–2021

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. And Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2019	14.15	17.07	17.44	8.57	13.94	7.88	10.15	8.77	13.71	8.77	10.74
2020	14.40	17.90	18.65	9.15	13.77	7.74	9.57	7.89	12.76	8.17	10.57
2021	14.74	19.57	20.80	8.70	14.31	8.55	10.70	9.94	14.52	9.46	11.07

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. and Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2019	11.71	10.16	7.77	5.87	10.49	7.59	8.33	6.36	11.08	6.64	7.95
2020	11.57	9.87	6.87	6.37	10.13	7.19	7.76	7.19	9.88	6.07	7.40
2021	12.36	11.04	8.68	6.07	10.78	7.89	8.80	7.33	11.61	7.18	8.04

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. and Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2019	10.32	9.17	7.11	N/A	N/A	6.19	7.16	5.70	9.04	5.56	4.91
2020	9.59	8.60	6.29	N/A	N/A	6.21	6.45	4.85	7.90	4.71	4.60
2021	10.31	8.52	8.19	N/A	N/A	7.39	7.32	6.23	10.50	5.83	9.30

Appendix F-5

New York State Natural Gas Customers by Sector by Utility, 2007–2021

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. and Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2019	1,216,950	71,489	943,086	13,844	543,638	500,788	237,932	577,354	125,098	293,541	14,778
2020	1,214,179	72,766	932,045	13,561	549,861	500,300	239,447	582,184	126,479	295,860	14,887
2021	1,216,168	71,549	922,899	14,070	555,907	504,818	240,562	586,647	127,731	297,994	15,072

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. and Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2019	43,253	11,969	141,697	1,083	62,449	35,198	30,328	46,269	12,083	23,572	1,761
2020	43,605	12,074	147,036	1,022	62,586	35,064	30,226	46,459	12,092	23,320	1,760
2021	35,199	9,708	123,143	944	51,197	22,332	22,460	32,571	8,161	15,523	1,656

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. and Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
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
2019	4,796	298	48	36	N/A	429	540	239	27	599	17
2020	4,446	295	48	39	N/A	427	525	235	29	580	20
2021	3,048	239	15	N/A	N/A	103	181	84	31	207	3

Appendix F-6

New York State Natural Gas Sales by Sector by Utility, 2007–2021

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. and Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
2007	97,329	4,601	43,133	1,019	44,208	41,741	21,363	42,663	8,371	22,979	1,633
2008	97,255	4,477	40,511	1,019	43,354	39,331	20,475	40,013	7,718	21,735	1,521
2009	90,368	4,424	41,410	1,031	46,817	38,818	19,615	39,184	7,493	21,075	1,548
2010	86,273	4,071	38,098	1,012	42,591	36,681	17,525	36,686	7,063	19,468	1,417
2011	80,186	4,379	39,101	1,061	40,374	37,859	17,061	37,456	6,726	18,976	1,451
2012	73,309	3,557	36,179	941	36,623	33,123	14,481	31,890	6,001	16,833	1,327
2013	83,399	4,103	40,701	1,120	43,158	38,389	16,407	36,625	6,914	19,725	1,469
2014	89,158	4,566	47,848	1,280	48,318	41,945	18,495	40,870	7,461	20,903	1,628
2015	86,806	4,549	50,208	1,269	49,759	39,621	18,174	41,044	7,376	20,503	1,544
2016	79,598	4,219	49,449	1,353	44,777	36,090	16,170	37,055	7,581	19,790	1,414
2017	84,835	4,363	53,274	1,447	47,681	37,821	17,160	39,161	8,054	21,051	1,424
2018	93,806	5,179	59,209	1,353	53,838	45,430	20,449	45,299	9,582	23,496	1,612
2019	92,251	5,217	55,924	1,325	53,697	46,585	20,755	45,250	9,921	24,887	1,618
2020	85,982	4,877	50,109	1,246	50,393	43,578	19,527	41,999	9,461	23,224	1,446
2021	90,564	5,001	52,194	1,235	53,452	44,049	19,454	43,004	11,165	22,988	1,392

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. and Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
2007	16,359	4,258	51,468	211	27,537	6,288	7,681	12,676	1,903	4,646	948
2008	15,789	4,102	55,173	212	26,420	5,645	6,749	11,509	1,671	4,236	980
2009	13,069	3,746	48,976	212	23,587	5,270	6,445	10,733	1,609	3,810	1,018
2010	10,618	3,186	48,153	184	18,443	4,681	5,606	9,992	1,335	3,379	966
2011	9,393	3,320	52,670	204	15,029	4,954	5,550	9,891	1,268	3,385	904
2012	8,482	2,737	45,126	184	12,064	4,091	4,714	8,364	1,156	2,805	833
2013	9,419	3,065	56,668	214	13,625	4,836	5,265	9,450	1,438	3,412	901
2014	10,966	3,298	57,093	252	19,051	5,560	5,875	10,509	1,621	3,860	970
2015	10,731	3,036	49,600	243	19,958	5,247	5,790	10,500	1,568	3,432	941
2016	9,783	2,860	47,444	218	18,137	4,667	4,991	9,606	1,733	3,463	997
2017	10,493	2,977	48,956	226	21,026	5,084	5,369	10,196	1,931	3,460	1,054
2018	11,449	3,445	52,977	266	23,809	6,064	6,339	11,911	2,025	4,091	1,239
2019	11,779	3,371	51,195	269	24,172	6,083	6,332	12,203	2,163	4,529	1,184
2020	9,769	3,026	49,158	228	21,322	5,543	5,791	10,857	1,985	3,725	1,086
2021	10,734	3,380	50,132	219	25,129	5,788	5,943	11,787	2,337	3,669	1,057

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

Year	Brooklyn Union Gas (National Grid)	Central Hudson Gas & Electric	Consolidated Edison	Corning Natural Gas	Keyspan Energy (National Grid)	National Fuel Gas Dist.	New York State Elec. and Gas Corp. (NYSEG)	Niagara Mohaw k (National Grid)	Orange & Rockland Utilities	Rochester Gas and Elec. Corp.	St. Lawrence Gas Co.
2007	3,411	300	1,159	105	N/A	416	1,814	331	73	609	423
2008	3,228	275	1,261	103	N/A	326	1,484	380	70	487	608
2009	2,461	262	1,133	106	N/A	257	1,553	418	71	441	761
2010	2,740	290	1,158	N/A	N/A	435	1,079	291	47	245	918
2011	1,965	305	1,212	N/A	N/A	137	546	194	39	300	386
2012	1,700	250	1,065	N/A	N/A	159	479	129	32	252	151
2013	1,653	379	1,274	N/A	N/A	96	299	121	39	268	125
2014	1,670	396	1,293	N/A	N/A	141	352	129	42	269	157
2015	1,552	386	1,134	N/A	N/A	138	596	257	45	232	154
2016	1,519	305	1,200	N/A	N/A	122	273	228	46	225	124
2017	1,561	230	1,188	N/A	N/A	186	241	250	190	253	112
2018	1,836	230	1,273	N/A	N/A	484	280	156	103	265	92
2019	1,840	228	1,295	N/A	N/A	454	261	110	99	285	108
2020	1,594	214	1,204	N/A	N/A	259	255	106	96	252	101
2021	1,732	234	1,182	N/A	N/A	210	256	109	89	262	96

Appendix G-1

New York State Weather Normalized Residential Energy Consumption, 1980–2021

Figure G-1.

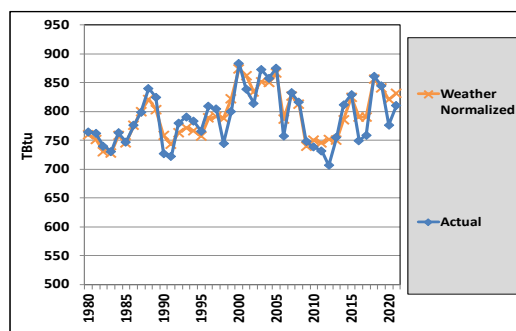


Table G-1. (In Trillion Btu)

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
2019	0.0	486.9	105.1	3.3	28.1	136.5	35.2	171.3	10.6	0.4	840.9
2020	0.0	481.4	85.7	2.6	27.3	115.6	34.1	177.7	11.3	0.4	820.6
2021	0.0	484.7	97.8	2.5	26.6	126.9	29.9	177.6	12.2	0.4	831.8

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, 1990–2021

Figure G-2a. Residential Energy

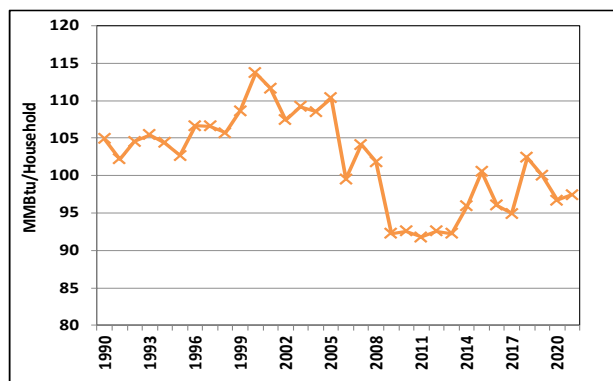


Figure G-2b. Residential Energy Usage/GSP (2021\$)

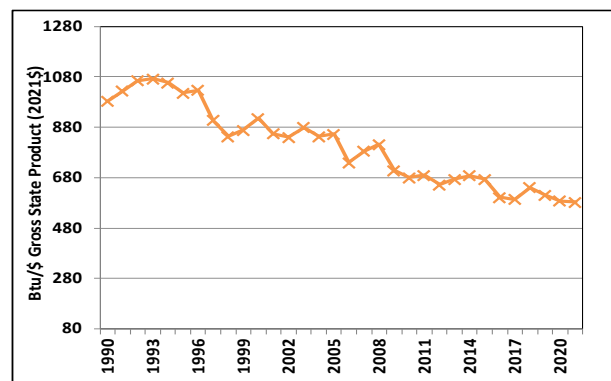


Table G-2. (In Trillion Btu)

Year	Weather Normalized Residential Total Energy	Households Thousands	Energy Usage/Household	Gross State Product Million (2018\$)	Res Energy Usage Per GSP (2020\$)
	Tbtu		(MMBtu/Household)		(Btu/\$)
1990	758.0	7,227	104.9	\$976,615	776.1
1991	742.9	7,270	102.2	\$945,052	786.1
1992	762.8	7,297	104.5	\$958,697	795.7
1993	772.0	7,324	105.4	\$962,713	801.9
1994	766.7	7,346	104.4	\$969,794	790.5
1995	756.9	7,374	102.6	\$989,487	765.0
1996	788.8	7,397	106.6	\$1,022,961	771.1
1997	790.9	7,423	106.6	\$1,159,093	682.4
1998	788.0	7,455	105.7	\$1,182,459	666.4
1999	822.2	7,572	108.6	\$1,231,247	667.8
2000	874.0	7,689	113.7	\$1,256,784	695.4
2001	862.4	7,724	111.6	\$1,276,929	675.4
2002	833.4	7,760	107.4	\$1,271,907	655.2
2003	851.6	7,799	109.2	\$1,269,503	670.9
2004	850.1	7,836	108.5	\$1,304,718	651.6
2005	866.7	7,853	110.4	\$1,341,340	646.1
2006	787.1	7,908	99.5	\$1,371,898	573.7
2007	826.8	7,940	104.1	\$1,385,225	596.9
2008	812.4	7,977	101.8	\$1,324,254	613.5
2009	739.8	8,018	92.3	\$1,388,525	532.8
2010	750.7	8,108	92.6	\$1,439,101	521.7
2011	745.2	8,120	91.8	\$1,423,592	523.5
2012	751.9	8,124	92.6	\$1,491,811	504.0
2013	749.7	8,126	92.3	\$1,513,117	495.5
2014	785.8	8,192	95.9	\$1,558,670	504.2
2015	824.9	8,207	100.5	\$1,622,226	508.5
2016	790.2	8,232	96.0	\$1,667,113	474.0
2017	790.3	8,327	94.9	\$1,698,755	465.3
2018	856.4	8,364	102.4	\$1,757,321	487.3
2019	840.9	8,404	100.1	\$1,794,123	468.7
2020	820.6	8,488	96.7	\$1,699,045	483.0
2021	831.8	8,537	129.8	\$1,901,297	582.8

Appendix H

New York State Estimated Customer-Sited Solar Capacity and Generation by County, 2011–2021

Table H-1. Solar Installed Capacity (kW) Generation (MWh)

County	2011	2016	2021
New York State	84,207	752,611	3,595,192
Albany	2,661	23,641	83,988
Allegghany	66	3,116	16,373
Bronx	1,103	10,927	46,417
Broome	560	3,053	26,465
Cattaraugus	117	1,009	30,565
Cayuga	171	2,608	9,660
Chautauqua	394	4,326	15,951
Chemung	103	3,865	30,647
Chenango	82	1,065	26,942
Clinton	307	1,750	28,820
Columbia	1,678	13,921	41,143
Cortland	139	3,094	48,503
Deleware	203	1,278	9,657
Dutchess	2,756	23,861	97,105
Erie	3,906	21,361	115,477
Essex	310	1,076	3,215
Franklin	78	896	9,260
Fulton	59	2,524	76,612
Genesee	117	1,461	39,244
Greene	430	3,780	33,523
Hamilton	36	168	307
Herkimer	84	1,309	8,197
Jefferson	189	3,702	65,016
Kings	1,890	15,400	72,421
Lewis	12	397	23,458
Livingston	163	2,801	21,070
Madison	184	2,006	37,238
Monroe	951	12,930	111,339
Montgomery	279	6,435	42,233
Nassau	11,286	67,215	222,606
New York	733	1,883	9,378
Niagara	540	3,765	42,899
Oneida	433	12,585	53,441
Onondaga	973	12,132	41,706
Ontario	364	7,946	39,897
Orange	1,581	44,786	202,467
Orleans	73	1,129	15,796
Oswego	145	3,485	24,609
Ostego	163	1,238	7,472
Putnam	262	4,249	11,501
Queens	2,459	25,191	128,321
Rensselaer	1,208	18,040	62,638
Richmond	396	34,725	102,894
Rockland	626	20,616	47,901
St. Lawrence	920	22,494	91,442
Saratoga	782	14,478	74,956
Schenectady	202	2,395	7,539
Schoharie	56	1,185	9,616
Schuyler	77	2,517	15,652
Seneca	197	5,617	22,732
Steuben	65	1,277	33,876
Suffolk	27,058	147,434	612,573
Sullivan	591	5,471	48,250
Tioga	194	1,353	74,914
Tompkins	882	15,980	90,880
Ulster	2,853	21,036	105,284
Warren	333	10,119	15,113
Washington	466	10,325	32,697
Wayne	218	6,290	35,942
Westchester	3,469	41,486	128,322
Wyoming	92	1,032	3,825
Yates	52	1,195	7,207

Table H-2. Solar Estimated Annual

County	2011	2016	2021
New York State	97,499	841,934	4,220,153
Albany	2,976	26,740	98,589
Allegghany	62	3,077	19,219
Bronx	1,211	12,941	54,485
Broome	568	3,448	31,065
Cattaraugus	118	1,109	35,879
Cayuga	188	2,856	11,339
Chautauqua	384	4,385	18,724
Chemung	108	3,830	35,974
Chenango	87	1,249	31,626
Clinton	300	2,009	33,830
Columbia	1,766	15,935	48,295
Cortland	146	3,240	56,934
Deleware	213	1,425	11,336
Dutchess	3,046	25,138	113,986
Erie	3,567	22,786	135,550
Essex	321	1,179	3,774
Franklin	80	1,024	10,869
Fulton	65	2,872	89,930
Genesee	119	1,651	46,066
Greene	476	4,354	39,350
Hamilton	40	177	360
Herkimer	91	1,370	9,622
Jefferson	162	3,766	76,319
Kings	2,092	18,019	85,007
Lewis	12	406	27,535
Livingston	177	3,224	24,733
Madison	181	2,216	43,711
Monroe	959	13,970	130,693
Montgomery	274	7,593	49,575
Nassau	14,655	79,470	261,302
New York	800	2,223	11,008
Niagara	513	3,991	50,357
Oneida	445	12,465	62,732
Onondaga	1,043	13,441	48,956
Ontario	376	8,934	46,832
Orange	1,747	48,737	237,664
Orleans	85	1,300	18,542
Oswego	152	3,970	28,887
Ostego	164	1,331	8,771
Putnam	276	4,661	13,500
Queens	2,742	28,947	150,620
Rensselaer	1,342	21,078	73,527
Richmond	418	39,420	120,777
Rockland	692	21,990	56,229
St. Lawrence	1,028	24,620	107,338
Saratoga	840	16,615	87,986
Schenectady	228	2,868	8,850
Schoharie	59	1,321	11,288
Schuyler	78	2,583	18,373
Seneca	199	5,992	26,684
Steuben	68	1,402	39,765
Suffolk	33,169	169,544	719,062
Sullivan	595	5,647	56,637
Tioga	204	1,483	87,937
Tompkins	900	16,670	106,678
Ulster	3,121	22,133	123,586
Warren	344	10,730	17,740
Washington	508	11,409	38,381
Wayne	217	6,843	42,190
Westchester	3,777	45,747	150,628
Wyoming	90	1,190	4,490
Yates	55	1,239	8,460

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 (2021)

Coal

Electric generation	25,847,000 Btu/ton
Industrial end use sector	25,413,000 Btu/ton

Natural Gas

Electric generation	1,032 Btu/cf
Other end use sectors	1,026 Btu/cf

Wood (20,000,000 Btu/cord)

Electricity Sales	3,412 Btu/kWh
Electricity Generation	7,851 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	5,764,000 Btu/barrel
Ethanol	3,539,000 Btu/barrel
Jet fuel, kerosene-type	5,670,000 Btu/barrel
Kerosene	5,670,000 Btu/barrel
Motor gasoline	5,052,000 Btu/barrel
HGL (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.

Hydrocarbon gas liquids (HGL): Represents propane in Patterns & Trends. A group of hydrocarbons including ethane, propane, normal butane, isobutane, and natural gasoline. This includes the associated olefins, including ethylene, propylene, butylene, and isobutylene. This group excludes liquified natural gas.

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.

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. It is 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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