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Table of Contents

Chapter 1. National Summary Data

Table 1.1. Total Electric Power Industry Summary Statistics
Table 1.2. Summary Statistics for the United States
Table 1.3. Supply and Disposition of Electricity

Chapter 2. Electricity Sales

Table 2.1. Number of Ultimate Customers Served by Sector, by Provider
Table 2.2. Sales and Direct Use of Electricity to Ultimate Customers by Sector, by Provider
Table 2.3. Revenue from Sales of Electricity to Ultimate Customers by Sector, by Provider
Table 2.4. Average Price of Electricity to Ultimate Customers by End-Use Sector
Table 2.5. Sales of Electricity to Ultimate Customers: Total by End-Use Sector
Table 2.6. Revenue from Sales of Electricity to Ultimate Customers: Total by End-Use Sector
Table 2.7. Average Price of Electricity to Ultimate Customers: Total by End-Use Sector
Table 2.8. Sales of Electricity to Ultimate Customers by End-Use Sector, by State
Table 2.9. Revenue from Sales of Electricity to Ultimate Customers by End-Use Sector, by State
Table 2.10. Average Price of Electricity to Ultimate Customers by End-Use Sector, by State
Table 2.11. Electric Power Industry - Electricity Purchases
Table 2.12. Electric Power Industry - Electricity Sales for Resale
Table 2.13. Electric Power Industry - U.S. Electricity Imports from and Electricity Exports to Canada and Mexico
Table 2.14. Green Pricing Customers by End Use Sector

Chapter 3. Net Generation

Table 3.1.A. Net Generation by Energy Source: Total (All Sectors)
Table 3.1.B. Net Generation from Renewable Sources: Total (All Sectors)
Table 3.2.A. Net Generation by Energy Source: Electric Utilities
Table 3.2.B. Net Generation from Renewable Sources: Electric Utilities
Table 3.3.A. Net Generation by Energy Source: Independent Power Producers
Table 3.3.B. Net Generation from Renewable Sources: Independent Power Producers
Table 3.4.A. Net Generation by Energy Source: Commercial Sector
Table 3.4.B. Net Generation from Renewable Sources: Commercial Sector
Table 3.5.A. Net Generation by Energy Source: Industrial Sector
Table 3.5.B. Net Generation from Renewable Sources: Industrial Sector
Table 3.6. Net Generation by Energy Source: Residential Sector
Table 3.7. Net Generation by State by Sector
Table 3.8. Net Generation from Coal by State by Sector
Table 3.9. Net Generation from Petroleum Liquids by State by Sector
Table 3.10. Net Generation from Petroleum Coke by State by Sector
Table 3.11. Net Generation from Natural Gas by State by Sector
Table 3.12. Net Generation from Other Gases by State by Sector
Table 3.13. Net Generation from Nuclear Energy by State by Sector
Table 3.14. Net Generation from Hydroelectric (Conventional) Power by State by Sector
Table 3.15. Net Generation from Renewable Sources Excluding Hydroelectric by State by Sector
Table 3.16. Net Generation from Hydroelectric (Pumped Storage) Power by State by Sector
Table 3.17. Net Generation from Other Energy Sources by State by Sector

Table 3.18. Net Generation from Wind by State by Sector
Table 3.19. Net Generation from Biomass by State by Sector
Table 3.20. Net Generation from Geothermal by State by Sector
Table 3.21. Net Generation from Solar Photovoltaic by State by Sector
Table 3.22. Net Generation from Solar Thermal by State by Sector
Table 3.23. Useful Thermal Output by Energy Source: Total Combined Heat and Power (All Sectors)
Table 3.24. Useful Thermal Output by Energy Source: Electric Power Sector Combined Heat and Power
Table 3.25. Useful Thermal Output by Energy Source: Commercial Sector Combined Heat and Power
Table 3.26. Useful Thermal Output by Energy Source: Industrial Sector Combined Heat and Power

Chapter 4. Generation Capacity

Table 4.1. Count of Electric Power Industry Power Plants, by Sector, by Predominant Energy Sources within Plant
Table 4.2.A. Existing Net Summer Capacity by Energy Source and Producer Type
Table 4.2.B. Existing Net Summer Capacity of Other Renewable Sources by Producer Type
Table 4.3. Existing Capacity by Energy Source
Table 4.4. Existing Capacity by Producer Type
Table 4.5. Planned Generating Capacity Changes, by Energy Source
Table 4.6. Capacity Additions, Retirements and Changes by Energy Source
Table 4.7.A. Net Summer Capacity of Utility Scale Units by Technology and by State
Table 4.7.B. Net Summer Capacity of Utility Scale Units Using Primarily Renewable Energy Sources and by State
Table 4.7.C. Net Summer Capacity of Utility Scale Units Using Primarily Fossil Fuels and by State
Table 4.8.A. Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels
Table 4.8.B. Capacity Factors for Utility Scale Generators Not Primarily Using Fossil Fuel
Table 4.9. Total Capacity of Distributed and Dispersed Generators by Technology Type
Table 4.10. Net Metering Customers and Capacity by Technology Type, by End Use Sector
Table 4.11. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Producer Type
Table 4.12. Fuel-Switching Capacity of Operable Generators Reporting Petroleum Liquids as the Primary Fuel, by Producer Type
Table 4.13. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Type of Prime Mover
Table 4.14. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Year of Initial Commercial Operation

Chapter 5. Consumption of Fossil Fuels

Table 5.1.A. Coal: Consumption (Thousand Tons) for Electricity Generation by Sector
Table 5.1.B. Coal: Consumption (Thousand Tons) for Useful Thermal Output by Sector
Table 5.1.C. Coal: Consumption (Thousand Tons) for Electricity Generation and Useful Thermal Output by Sector
Table 5.1.D. Coal: Consumption (Billion Btus) for Electricity Generation by Sector
Table 5.1.E. Coal: Consumption (Billion Btus) for Useful Thermal Output by Sector
Table 5.1.F. Coal: Consumption (Billion Btus) for Electricity Generation and Useful Thermal Output by Sector
Table 5.2.A. Petroleum Liquids: Consumption (Thousand Barrels) for Electricity Generation by Sector

Table 5.2.B. Petroleum Liquids: Consumption (Thousand Barrels) for Useful Thermal Output by Sector
Table 5.2.C. Petroleum Liquids: Consumption (Thousand Barrels) for Electricity Generation and Useful Thermal Output by Sector
Table 5.2.D. Petroleum Liquids: Consumption (Billion Btus) for Electricity Generation by Sector
Table 5.2.E. Petroleum Liquids: Consumption (Billion Btus) for Useful Thermal Output by Sector
Table 5.2.F. Petroleum Liquids: Consumption (Billion Btus) for Electricity Generation and Useful Thermal Output by Sector
Table 5.3.A. Petroleum Coke: Consumption (Thousand Tons) for Electricity Generation by Sector
Table 5.3.B. Petroleum Coke: Consumption (Thousand Tons) for Useful Thermal Output by Sector
Table 5.3.C. Petroleum Coke: Consumption (Thousand Tons) for Electricity Generation and Useful Thermal Output by Sector
Table 5.3.D. Petroleum Coke: Consumption (Billion Btus) for Electricity Generation by Sector
Table 5.3.E. Petroleum Coke: Consumption (Billion Btus) for Useful Thermal Output by Sector
Table 5.3.F. Petroleum Coke: Consumption (Billion Btus) for Electricity Generation and Useful Thermal Output by Sector
Table 5.4.A. Natural Gas: Consumption (Million Cubic Feet) for Electricity Generation by Sector
Table 5.4.B. Natural Gas: Consumption (Million Cubic Feet) for Useful Thermal Output by Sector
Table 5.4.C. Natural Gas: Consumption (Million Cubic Feet) for Electricity Generation and Useful Thermal Output by Sector
Table 5.4.D. Natural Gas: Consumption (Billion Btus) for Electricity Generation by Sector
Table 5.4.E. Natural Gas: Consumption (Billion Btus) for Useful Thermal Output by Sector
Table 5.4.F. Natural Gas: Consumption (Billion Btus) for Electricity Generation and Useful Thermal Output by Sector
Table 5.5.D. Wood / Wood Waste Biomass: Consumption (Billion Btus) for Electricity Generation by Sector
Table 5.5.E. Wood / Wood Waste Biomass: Consumption (Billion Btus) for Useful Thermal Output by Sector
Table 5.5.F. Wood / Wood Waste Biomass: Consumption (Billion Btus) for Electricity Generation and Useful Thermal Output by Sector
Table 5.6.A. Landfill Gas: Consumption (Million Cubic Feet) for Electricity Generation by Sector
Table 5.6.B. Landfill Gas: Consumption (Million Cubic Feet) for Useful Thermal Output by Sector
Table 5.6.C. Landfill Gas: Consumption (Million Cubic Feet) for Electricity Generation and Useful Thermal Output by Sector
Table 5.6.D. Landfill Gas: Consumption (Billion Btus) for Electricity Generation by Sector
Table 5.6.E. Landfill Gas: Consumption (Billion Btus) for Useful Thermal Output by Sector
Table 5.6.F. Landfill Gas: Consumption (Billion Btus) for Electricity Generation and Useful Thermal Output by Sector
Table 5.7.A. Biogenic Municipal Solid Waste: Consumption (Thousand Tons) for Electricity Generation by Sector
Table 5.7.B. Biogenic Municipal Solid Waste: Consumption (Thousand Tons) for Useful Thermal Output by Sector
Table 5.7.C. Biogenic Municipal Solid Waste: Consumption (Thousand Tons) for Electricity Generation and Useful Thermal Output by Sector
Table 5.7.D. Biogenic Municipal Solid Waste: Consumption (Billion Btus) for Electricity Generation by Sector
Table 5.7.E. Biogenic Municipal Solid Waste: Consumption (Billion Btus) for Useful Thermal Output by Sector

Table 5.7.F. Biogenic Municipal Solid Waste: Consumption (Billion Btus) for Electricity Generation and Useful Thermal Output by Sector
Table 5.8.D. Other Waste Biomass: Consumption (Billion Btus) for Electricity Generation by Sector
Table 5.8.E. Other Waste Biomass: Consumption (Billion Btus) for Useful Thermal Output by Sector
Table 5.8.F. Other Waste Biomass: Consumption (Billion Btus) for Electricity Generation and Useful Thermal Output by Sector
Table 5.9. Consumption of Coal for Electricity Generation by State by Sector
Table 5.10. Consumption of Petroleum Liquids for Electricity Generation by State by Sector
Table 5.11. Consumption of Petroleum Coke for Electricity Generation by State by Sector
Table 5.12. Consumption of Natural Gas for Electricity Generation by State by Sector
Table 5.13. Consumption of Landfill Gas for Electricity Generation by State by Sector
Table 5.14. Consumption of Biogenic Municipal Solid Waste for Electricity Generation by State by Sector

Chapter 6. Fossil Fuel Stocks for Electricity Generation

Table 6.1. Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector
Table 6.2. Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, by State
Table 6.3. Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, by Census Division
Table 6.4. Stocks of Coal by Coal Rank: Electric Power Sector

Chapter 7. Receipts, Cost, and Quality of Fossil Fuels

Table 7.1. Receipts, Average Cost, and Quality of Fossil Fuels for the Electric Power Industry
Table 7.2. Receipts and Quality of Coal Delivered for the Electric Power Industry
Table 7.3. Average Quality of Fossil Fuel Receipts for the Electric Power Industry
Table 7.4. Weighted Average Cost of Fossil Fuels for the Electric Power Industry
Table 7.5. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities
Table 7.6. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities (continued)
Table 7.7. Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers
Table 7.8. Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers (continued)
Table 7.9. Receipts, Average Cost, and Quality of Fossil Fuels: Commercial Sector
Table 7.10. Receipts, Average Cost, and Quality of Fossil Fuels: Commercial Sector (continued)
Table 7.11. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector
Table 7.12. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector (continued)
Table 7.13. Receipts of Coal Delivered for Electricity Generation by State
Table 7.14. Receipts of Petroleum Liquids Delivered for Electricity Generation by State
Table 7.15. Receipts of Petroleum Coke Delivered for Electricity Generation by State
Table 7.16. Receipts of Natural Gas Delivered for Electricity Generation by State
Table 7.17. Average Cost of Coal Delivered for Electricity Generation by State
Table 7.18. Average Cost of Petroleum Liquids Delivered for Electricity Generation by State
Table 7.19. Average Cost of Petroleum Coke Delivered for Electricity Generation by State
Table 7.20. Average Cost of Natural Gas Delivered for Electricity Generation by State
Table 7.21. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Total (All Sectors) by State
Table 7.22. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Electric Utilities by State

Table 7.23. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Independent Power Producers by State
Table 7.24. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Commercial Sector by State
Table 7.25. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Industrial Sector by State

Chapter 8. Electric Power System Characteristics and Performance

Table 8.1. Average Operating Heat Rate for Selected Energy Sources
Table 8.2. Average Tested Heat Rates by Prime Mover and Energy Source
Table 8.3. Revenue and Expense Statistics for Major U.S. Investor-Owned Electric Utilities
Table 8.4. Average Power Plant Operating Expenses for Major U.S. Investor-Owned Electric Utilities
Table 8.5. Revenue and Expense Statistics for U.S. Cooperative Borrower-Owned Electric Utilities
Table 8.6.A. Noncoincident Peak Load by North American Electric Reliability Corporation Assessment Area, Actual
Table 8.6.B. Noncoincident Peak Load by North American Electric Reliability Corporation Assessment Area, Projected
Table 8.7.A. Net Energy for Load by North American Electric Reliability Corporation Assessment Area, Actual
Table 8.7.B. Net Energy for Load by North American Electric Reliability Corporation Assessment Area, Projected
Table 8.8. Summer Net Internal Demand, Capacity Resources, and Capacity Margins by North American Electric Reliability Corporation Assessment Area, Projected
Table 8.9. Winter Net Internal Demand, Capacity Resources, and Capacity Margins by North American Electric Reliability Corporation Assessment Area, Projected
Table 8.10.A. Existing Transmission Capacity by High-Voltage Size
Table 8.10.B. Proposed Transmission Capacity Additions by High-Voltage Size
Table 8.11.A. U.S. Transmission Circuit Outages by Type and NERC region
Table 8.11.B. U.S. Transformer Outages by Type and NERC region
Table 8.12.A. U.S. Transmission Circuit Sustained Automatic Outage Counts and Hours, by High-Voltage Size and NERC Region
Table 8.12.B. U.S. Transformer Sustained Automatic Outage Counts and Hours by High-Voltage Size and NERC Region
Table 8.13.A. U.S. Transmission Circuit Sustained Automatic Outage Counts and Hours by Cause Code and by NERC Region
Table 8.13.B. U.S. Transformer Sustained Automatic Outage Counts and Hours by Cause Code and by NERC Region

Chapter 9. Environmental Data

Table 9.1. Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants
Table 9.2. Quantity and Net Summer Capacity of Operable Environmental Equipment
Table 9.3. Quantity and Net Summer Capacity of Operable Cooling Systems, by Energy Source and Cooling System Type
Table 9.4. Average Cost of Existing Flue Gas Desulfurization Units
Table 9.5. Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants, by State

Chapter 10. Demand-Side Management and Advanced Metering

Table 10.1. Demand-Side Management Program Annual Effects by Program Category
Table 10.2. Demand-Side Management Program Annual Effects by Program Category, by Sector
Table 10.3. Demand-Side Management Program Incremental Effects by Program Category
Table 10.4. Demand-Side Management Program Incremental Effects by Program Category, by Sector
Table 10.5. Demand-Side Management Program Direct and Indirect Costs
Table 10.6. Energy Efficiency
Table 10.7. Energy Efficiency – Life Cycle
Table 10.8. Demand Response – Yearly Energy and Demand Savings
Table 10.9. Demand Response – Program Costs
Table 10.10. Advanced Metering Count by Technology Type

Appendix

Technical Notes
Table A.1. Sulfur Dioxide Uncontrolled Emission Factors
Table A.2. Nitrogen Oxides Uncontrolled Emission Factors
Table A.3. Carbon Dioxide Uncontrolled Emission Factors
Table A.4. Nitrogen Oxides Control Technology Emissions Reduction Factors
Table A.5. Unit-of-Measure Equivalents
EIA Electric Industry Data Collection

Chapter 1

National Summary Data

Table 1.1. Total Electric Power Industry Summary Statistics, 2016 and 2015

Net Generation and Consumption of Fuels for January through December														
		Total (All Sectors)			Electric Power Sector				Commercial		Industrial		Residential	
					Electric Utilities		Independent Power Producers							
Fuel	Facility Type	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
Net Generation (Thousand Megawatthours)														
Coal	Utility Scale Facilities	1,239,149	1,352,398	-8.4%	922,399	998,385	307,263	342,608	383	509	9,103	10,896	0	0
Petroleum Liquids	Utility Scale Facilities	13,008	17,372	-25.1%	9,069	10,386	3,360	6,240	77	183	503	563	0	0
Petroleum Coke	Utility Scale Facilities	11,197	10,877	2.9%	8,881	8,278	1,401	1,601	6	8	909	990	0	0
Natural Gas	Utility Scale Facilities	1,378,307	1,333,482	3.4%	654,780	617,817	624,600	619,839	7,730	7,471	91,197	88,355	0	0
Other Gas	Utility Scale Facilities	12,807	13,117	-2.4%	154	199	3,758	3,517	0	0	8,895	9,401	0	0
Nuclear	Utility Scale Facilities	805,694	797,178	1.1%	424,400	416,680	381,294	380,498	0	0	0	0	0	0
Hydroelectric Conventional	Utility Scale Facilities	267,812	249,080	7.5%	247,787	229,640	18,539	17,996	217	35	1,269	1,410	0	0
Renewable Sources Excluding Hydroelectric	Utility Scale Facilities	341,633	295,161	15.7%	42,661	37,485	267,056	225,820	3,226	3,220	28,690	28,635	0	0
... Wind	Utility Scale Facilities	226,993	190,719	19.0%	35,070	30,412	191,720	160,135	131	118	71	53	0	0
... Solar Thermal and Photovoltaic	Utility Scale Facilities	36,054	24,893	44.8%	1,995	1,494	33,502	22,962	529	416	27	21	0	0
... Wood and Wood-Derived Fuels	Utility Scale Facilities	40,947	41,929	-2.3%	3,038	3,018	10,382	11,545	69	48	27,458	27,318	0	0
... Other Biomass	Utility Scale Facilities	21,813	21,703	0.5%	1,478	1,473	16,706	16,350	2,496	2,637	1,134	1,243	0	0
... Geothermal	Utility Scale Facilities	15,826	15,918	-0.6%	1,080	1,089	14,746	14,829	0	0	0	0	0	0
Hydroelectric Pumped Storage	Utility Scale Facilities	-6,686	-5,091	31.3%	-5,629	-4,105	-1,057	-987	0	0	0	0	0	0
Other Energy Sources	Utility Scale Facilities	13,754	14,028	-2.0%	421	558	6,941	6,838	1,068	1,170	5,324	5,462	0	0
All Energy Sources	Utility Scale Facilities	4,076,675	4,077,601	0.0%	2,304,923	2,315,323	1,613,156	1,603,971	12,706	12,595	145,890	145,712	0	0
Estimated Small Scale Solar Photovoltaic	Small Scale Facilities	18,812	14,139	33.1%	0	0	0	0	6,158	5,689	2,060	1,451	10,595	6,999
Estimated Total Solar Photovoltaic	All Facilities	51,483	35,805	43.8%	1,920	1,388	30,194	19,841	6,687	6,106	2,087	1,472	10,595	6,999
Estimated Total Solar	All Facilities	54,866	39,032	40.6%	1,995	1,494	33,502	22,962	6,687	6,106	2,087	1,472	10,595	6,999
Consumption of Fossil Fuels for Electricity Generation														
Coal (1000 tons)	Utility Scale Facilities	677,371	739,594	-8.4%	496,192	539,506	178,047	195,927	111	163	3,021	3,999	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	22,405	28,925	-22.5%	16,137	18,562	5,624	9,473	108	249	536	641	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	4,253	4,044	5.2%	3,427	3,120	591	669	2	2	233	253	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	10,170,110	10,016,576	1.5%	5,018,894	4,745,255	4,571,375	4,576,683	46,304	70,092	533,537	624,545	0	0
Consumption of Fossil Fuels for Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	16,586	16,632	-0.3%	2,979	1,032	1,336	1,980	572	635	11,700	12,985	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	2,277	3,142	-27.5%	68	62	245	1,155	245	282	1,719	1,643	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	1,099	1,144	-4.0%	6	9	113	109	9	16	971	1,010	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	1,151,866	935,098	23.2%	38,096	8,060	356,905	283,372	80,943	46,287	675,922	597,379	0	0
Consumption of Fossil Fuels for Electricity Generation and Useful Thermal Output														
Coal (1000 tons)	Utility Scale Facilities	693,958	756,226	-8.2%	499,172	540,538	179,383	197,906	683	798	14,720	16,984	0	0
Petroleum Liquids (1000 barrels)	Utility Scale Facilities	24,682	32,067	-23.0%	16,205	18,624	5,869	10,629	352	531	2,255	2,283	0	0
Petroleum Coke (1000 tons)	Utility Scale Facilities	5,352	5,188	3.1%	3,433	3,128	705	779	10	18	1,204	1,263	0	0
Natural Gas (1000 Mcf)	Utility Scale Facilities	11,321,975	10,951,674	3.4%	5,056,990	4,753,315	4,928,280	4,860,055	127,246	116,380	1,209,459	1,221,924	0	0

Sales, Revenue, and Average Price of Electricity to Ultimate Customers for January through December									
	Total U.S. Electric Power Industry								
	Sales of Electricity to Ultimate Customers (million kWh)			Revenue from Sales of Electricity to Ultimate Customers (million dollars)			Average Price of Electricity to Ultimate Customers (cents/kWh)		
Sector	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Percentage Change
Residential	1,411,058	1,404,096	0.5%	177,077	177,624	-0.3%	12.55	12.65	-0.8%
Commercial	1,367,191	1,360,752	0.5%	142,643	144,781	-1.5%	10.43	10.64	-2.0%
Industrial	976,715	986,508	-1.0%	66,068	68,166	-3.1%	6.76	6.91	-2.2%
Transportation	7,497	7,637	-1.8%	722	771	-6.3%	9.63	10.09	-4.6%
All Sectors	3,762,462	3,758,992	0.1%	386,509	391,341	-1.2%	10.27	10.41	-1.3%

NM = Not meaningful due to large relative standard error.
W = Withheld to avoid disclosure of individual company data.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Coal generation and consumption includes anthracite, bituminous, subbituminous, lignite, waste coal, refined coal, synthetic coal, and coal-derived synthesis gas.
Petroleum Liquids includes distillate fuel oil, residual fuel oil, jet fuel, kerosene, propane, and waste oil.
Petroleum Coke includes petroleum coke and synthesis gas derived from petroleum coke.
Natural gas includes a small amount of supplemental gaseous fuels that cannot be identified separately.
Other Gases includes blast furnace gas and other manufactured and waste gases derived from fossil fuels.
Wood and Wood-Derived Fuels include wood, black liquor, and other wood waste.
Other Biomass includes biogenic municipal solid waste, landfill gas, sludge waste, agricultural byproducts, and other biomass.
Coal stocks include anthracite, bituminous, subbituminous, lignite, refined coal, and synthetic coal; waste coal is excluded.
Sales of electricity to ultimate customers and net generation may not correspond exactly for a particular month for a variety of reasons (e.g., sales data may include imported electricity).
Net generation is presented for the calendar month while sales of electricity to ultimate customers and associated revenue accumulate from bills collected for periods of time that vary depending

Table 1.2. Summary Statistics for the United States, 2006 - 2016

(From Table 2.1.) Number of Ultimate Customers

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2006	122,471,071	17,172,499	759,604	791	N/A	140,403,965
2007	123,949,916	17,377,219	793,767	750	N/A	142,121,652
2008	125,037,837	17,582,382	774,808	726	N/A	143,395,753
2009	125,208,829	17,562,235	757,537	704	N/A	143,529,305
2010	125,717,935	17,674,338	747,747	239	N/A	144,140,259
2011	126,143,072	17,638,062	727,920	92	N/A	144,509,146
2012	126,832,343	17,729,029	732,385	83	N/A	145,293,840
2013	127,777,153	17,679,562	831,790	75	N/A	146,288,580
2014	128,680,416	17,853,995	839,212	79	N/A	147,373,702
2015	129,811,718	17,985,690	835,536	78	N/A	148,633,022
2016	131,068,760	18,148,353	838,059	86	N/A	150,055,258

(From Table 2.2.) Sales to Ultimate Customers
(Thousand Megawatthours)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2006	1,351,520	1,299,744	1,011,298	7,358	N/A	3,669,919
2007	1,392,241	1,336,315	1,027,832	8,173	N/A	3,764,561
2008	1,380,662	1,336,133	1,009,516	7,653	N/A	3,733,965
2009	1,364,758	1,306,853	917,416	7,768	N/A	3,596,795
2010	1,445,708	1,330,199	971,221	7,712	N/A	3,754,841
2011	1,422,801	1,328,057	991,316	7,672	N/A	3,749,846
2012	1,374,515	1,327,101	985,714	7,320	N/A	3,694,650
2013	1,394,812	1,337,079	985,352	7,625	N/A	3,724,868
2014	1,407,208	1,352,158	997,576	7,758	N/A	3,764,700
2015	1,404,096	1,360,752	986,508	7,637	N/A	3,758,992
2016	1,411,058	1,367,191	976,715	7,497	N/A	3,762,462

(From Table 2.3.) Revenue From Ultimate Customers
(Million Dollars)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2006	140,582	122,914	62,308	702	N/A	326,506
2007	148,295	128,903	65,712	792	N/A	343,703
2008	155,496	137,036	70,231	820	N/A	363,583
2009	157,044	132,747	62,670	828	N/A	353,289
2010	166,778	135,554	65,772	814	N/A	368,918
2011	166,714	135,927	67,606	803	N/A	371,049
2012	163,280	133,898	65,761	747	N/A	363,687
2013	169,131	137,188	67,934	805	N/A	375,058
2014	176,178	145,253	70,855	810	N/A	393,096
2015	177,624	144,781	68,166	771	N/A	391,341
2016	177,077	142,643	66,068	722	N/A	386,509

Table 1.2. Summary Statistics for the United States, 2006 - 2016

(From Table 2.4.) Average Price
(Cents per Kilowatthour)

Year	Residential	Commer-cial	Industrial	Transpor-tation	Other	Total
2006	10.40	9.46	6.16	9.54	N/A	8.90
2007	10.65	9.65	6.39	9.70	N/A	9.13
2008	11.26	10.26	6.96	10.71	N/A	9.74
2009	11.51	10.16	6.83	10.66	N/A	9.82
2010	11.54	10.19	6.77	10.56	N/A	9.83
2011	11.72	10.24	6.82	10.46	N/A	9.90
2012	11.88	10.09	6.67	10.21	N/A	9.84
2013	12.13	10.26	6.89	10.55	N/A	10.07
2014	12.52	10.74	7.10	10.45	N/A	10.44
2015	12.65	10.64	6.91	10.09	N/A	10.41
2016	12.55	10.43	6.76	9.63	N/A	10.27

(From Tables 2.11. - 2.13.) Trade
(Thousand Megawatthours)

Year	Purchases	Sales for Resale	Imports	Exports
2006	5,502,584	5,493,473	42,691	24,271
2007	5,411,422	5,479,394	51,396	20,144
2008	5,612,781	5,680,733	57,019	24,198
2009	5,028,647	5,065,031	52,191	18,138
2010	5,770,134	5,929,211	45,083	19,106
2011	5,024,621	5,143,121	52,300	15,049
2012	4,984,933	5,013,765	59,257	11,996
2013	4,684,977	4,842,508	68,947	11,373
2014	4,802,227	4,908,839	66,510	13,298
2015	4,761,523	4,797,395	75,770	9,100
2016	4,723,571	4,746,967	72,716	6,214

(From Tables 3.1.A. and 3.1.B.) Net Generation (Thousand Megawatthours)

Generation at Utility Scale Facilities									
Year	Coal	Petroleum	Natural Gas	Other Gas	Nuclear	Hydro Conven-tional	Hydro Pumped Storage	Geothermal	Wind
2006	1,990,511	64,166	816,441	14,177	787,219	289,246	-6,558	14,568	26,589
2007	2,016,456	65,739	896,590	13,453	806,425	247,510	-6,896	14,637	34,450
2008	1,985,801	46,243	882,981	11,707	806,208	254,831	-6,288	14,840	55,363
2009	1,755,904	38,937	920,979	10,632	798,855	273,445	-4,627	15,009	73,886
2010	1,847,290	37,061	987,697	11,313	806,968	260,203	-5,501	15,219	94,652
2011	1,733,430	30,182	1,013,689	11,566	790,204	319,355	-6,421	15,316	120,177
2012	1,514,043	23,190	1,225,894	11,898	769,331	276,240	-4,950	15,562	140,822
2013	1,581,115	27,164	1,124,836	12,853	789,016	268,565	-4,681	15,775	167,840
2014	1,581,710	30,232	1,126,609	12,022	797,166	259,367	-6,174	15,877	181,655
2015	1,352,398	28,249	1,333,482	13,117	797,178	249,080	-5,091	15,918	190,719
2016	1,239,149	24,205	1,378,307	12,807	805,694	267,812	-6,686	15,826	226,993

Generation at Utility Scale Facilities	Small Scale Generation	Utility and Small Scale Generation

Table 1.2. Summary Statistics for the United States, 2006 - 2016

Year	Solar Photo-voltaic	Solar Thermal	Wood and Wood-Derived Fuels	Other Biomass	Other Energy Sources	Total Utility Scale Generation	Estimated Photo-voltaic	Total Photo-voltaic	Total Solar
2006	15	493	38,762	16,099	12,974	4,064,702	--	15	508
2007	16	596	39,014	16,525	12,231	4,156,745	--	16	612
2008	76	788	37,300	17,734	11,804	4,119,388	--	76	864
2009	157	735	36,050	18,443	11,928	3,950,331	--	157	891
2010	423	789	37,172	18,917	12,855	4,125,060	--	423	1,212
2011	1,012	806	37,449	19,222	14,154	4,100,141	--	1,012	1,818
2012	3,451	876	37,799	19,823	13,787	4,047,765	--	3,451	4,327
2013	8,121	915	40,028	20,830	13,588	4,065,964	--	8,121	9,036
2014	15,250	2,441	42,340	21,650	13,461	4,093,606	11,233	26,482	28,924
2015	21,666	3,227	41,929	21,703	14,028	4,077,601	14,139	35,805	39,032
2016	32,670	3,384	40,947	21,813	13,754	4,076,675	18,812	51,483	54,866

(From Tables 4.2.A. and 4.2.B.) Net Summer Generating Capacity (Megawatts)

Utility Scale Capacity									
Year	Coal	Petroleum	Natural Gas	Other Gas	Nuclear	Hydro Conven-tional	Hydro Pumped Storage	Geothermal	Wind
2006	312,956.0	58,097.0	388,294.0	2,256.0	100,334.0	77,821.0	21,461.0	2,274.0	11,329.0
2007	312,738.0	56,068.0	392,876.0	2,313.0	100,266.0	77,885.0	21,886.0	2,214.0	16,515.0
2008	313,322.0	57,445.0	397,460.0	1,995.0	100,755.0	77,930.0	21,858.0	2,229.0	24,651.0
2009	314,294.1	56,780.5	401,271.8	1,932.4	101,003.7	78,517.7	22,160.4	2,381.9	34,295.8
2010	316,800.1	55,646.9	407,028.4	2,700.3	101,167.4	78,824.7	22,198.9	2,404.6	39,134.5
2011	317,640.3	51,481.6	415,191.3	1,934.2	101,418.8	78,651.6	22,292.6	2,409.2	45,675.9
2012	309,680.4	47,167.2	422,364.4	1,945.6	101,885.0	78,738.0	22,368.3	2,592.1	59,074.8
2013	303,306.3	43,523.0	425,389.7	2,107.8	99,240.3	79,200.0	22,389.3	2,607.0	59,973.4
2014	299,094.2	41,135.4	432,150.3	1,914.3	98,569.3	79,677.3	22,485.1	2,514.3	64,231.5
2015	279,719.9	36,830.3	439,425.4	2,500.4	98,672.0	79,664.2	22,575.1	2,541.5	72,573.4
2016	266,619.9	34,382.4	446,823.2	2,456.9	99,564.8	79,912.9	22,778.7	2,516.6	81,286.6

Utility Scale Capacity							Small Scale Capacity	Utility and Small Scale Capacity	
Year	Solar Photo-voltaic	Solar Thermal	Wood and Wood-Derived Fuels	Other Biomass	Other Energy Sources	Total Utility Scale Capacity	Estimated Photo-voltaic	Total Photo-voltaic	Total Solar
2006	--	--	6,372.0	3,727.0	882.0	986,215.0	--	--	--
2007	36.7	464.8	6,704.0	4,134.0	788.0	994,888.0	--	36.7	501.5
2008	70.8	464.8	6,864.0	4,186.0	942.0	1,010,171.0	--	70.8	535.6
2009	145.5	473.0	6,939.3	4,316.5	887.8	1,025,400.4	--	145.5	618.5
2010	393.4	473.0	7,037.3	4,368.5	883.8	1,039,061.8	--	393.4	866.4
2011	1,052.0	471.5	7,076.5	4,535.9	1,419.6	1,051,251.0	--	1,052.0	1,523.5
2012	2,694.1	476.0	7,507.6	4,810.6	1,728.9	1,063,033.0	--	2,694.1	3,170.1
2013	5,336.1	1,286.4	8,354.2	5,043.0	2,307.0	1,060,063.5	--	5,336.1	6,622.5
2014	8,656.6	1,666.7	8,368.1	5,166.5	2,792.6	1,068,422.2	7,326.6	15,983.2	17,649.9
2015	11,905.4	1,757.9	8,968.9	5,124.5	1,795.6	1,064,054.5	9,778.5	21,683.9	23,441.8
2016	20,192.9	1,757.9	8,936.1	5,088.8	2,015.1	1,074,332.8	12,765.1	32,958.0	34,715.9

Table 1.2. Summary Statistics for the United States, 2006 - 2016

(From Chapter 5.) Consumption of Fossil Fuels

	For Electricity Generation				For Useful Thermal Output			
Year	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Gas (Millions of BTU)	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Gas (Millions of BTU)
2006	1,030,556	110,634	6,461,615	114,665	23,227	20,371	942,817	226,464
2007	1,046,795	112,615	7,089,342	114,904	22,810	19,775	872,579	214,321
2008	1,042,335	80,932	6,895,843	96,757	22,168	12,016	793,537	203,236
2009	934,683	67,668	7,121,069	83,593	20,507	13,161	816,787	175,671
2010	979,684	65,071	7,680,185	90,058	21,727	10,161	821,775	172,081
2011	934,938	52,387	7,883,865	91,290	21,532	9,223	839,681	191,138
2012	825,734	40,977	9,484,710	103,353	19,333	9,828	886,103	199,121
2013	860,729	47,492	8,596,299	115,303	18,350	10,886	882,385	189,902
2014	853,634	53,593	8,544,387	110,010	18,107	9,513	865,146	194,088
2015	739,594	49,145	10,016,576	105,997	16,632	8,864	935,098	183,596
2016	677,371	43,671	10,170,110	73,785	16,586	7,770	1,151,866	221,835

	Total			
Year	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Other Gas (Millions of BTU)
2006	1,053,783	131,005	7,404,432	341,129
2007	1,069,606	132,389	7,961,922	329,225
2008	1,064,503	92,948	7,689,380	299,993
2009	955,190	80,830	7,937,856	259,265
2010	1,001,411	75,231	8,501,960	262,138
2011	956,470	61,610	8,723,546	282,428
2012	845,066	50,805	10,370,812	302,475
2013	879,078	58,378	9,478,685	305,205
2014	871,741	63,106	9,409,532	304,098
2015	756,226	58,009	10,951,674	289,593
2016	693,958	51,441	11,321,975	295,619

(From Tables 6.1. and 7.1)

Year End Stocks, Annual Receipts and Average Costs

	Electric Power Sector Year End Stocks		Annual Receipts at All Electricty Generators			Average Cost of Fuel at All Electricty Generators		
Year	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Coal (Thousand Tons)	Petroleum (Thousand Barrels)	Natural Gas (Millions of Cubic Feet)	Coal (Dollars per MMBtu)	Petroleum (Dollars per MMBtu)	Natural Gas (Dollars per MMBtu)
2006	140,964	51,583	1,079,943	100,965	6,675,246	1.69	6.23	6.94
2007	151,221	47,203	1,054,664	88,347	7,200,316	1.77	7.17	7.11
2008	161,589	44,498	1,069,709	96,341	7,879,046	2.07	10.87	9.02
2009	189,467	46,181	981,477	88,951	8,118,550	2.21	7.02	4.74
2010	174,917	40,800	979,918	75,285	8,673,070	2.27	9.54	5.09
2011	172,387	37,387	956,538	66,058	9,056,164	2.39	12.48	4.72
2012	185,116	34,698	841,183	40,364	9,531,389	2.38	12.48	3.42
2013	147,884	33,622	823,222	43,714	8,503,424	2.34	11.57	4.33

Table 1.2. Summary Statistics for the United States, 2006 - 2016

2014	151,548	37,643	854,560	54,488	8,431,423	2.37	11.60	5.00
2015	195,548	39,586	782,929	48,804	9,842,581	2.22	6.74	3.23
2016	162,009	36,064	650,770	37,637	10,271,180	2.11	5.24	2.87

(From Table 9.1.) Emissions (Thousand Metric Tons)

Year	Carbon Dioxide (CO2)	Sulfur Dioxide (SO2)	Nitrogen Oxides (NOx)
2006	2,488,918	9,524	3,799
2007	2,547,032	9,042	3,650
2008	2,484,012	7,830	3,330
2009	2,269,508	5,970	2,395
2010	2,388,596	5,400	2,491
2011	2,287,071	4,845	2,406
2012	2,156,875	3,704	2,148
2013	2,173,806	3,609	2,163
2014	2,168,284	3,454	2,100
2015	2,031,452	2,548	1,824
2016	1,928,401	1,807	1,630

(From Tables 10.6. and 10.7.) Energy Efficiency

	Savings		Incremental Costs		Life Cycle Savings		Life Cycle Costs	
Year	Energy (MWh)	Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)	Energy (MWh)	Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)
2013	24,681,523	19,599	2,872,171	1,945,877	251,464,746	See Note 1	6,029,552	3,996,230
2014	26,465,221	6,517	3,411,034	2,209,148	290,141,793	See Note 1	4,007,996	3,123,719
2015	26,189,500	6,055	3,449,385	2,281,188	307,084,004	See Note 1	4,256,873	3,708,393
2016	27,506,995	6,364	3,570,930	2,522,849	354,401,681	See Note 1	4,126,765	3,432,718

(From Tables 10.8. and 10.9.) Demand Response

	Yearly Energy and Demand Savings				Program Costs	
Year	Customers	Energy (MWh)	Potential Peak Demand (MW)	Actual Peak Demand (MW)	Incentives (thousand dollars)	Other (thousand dollars)
2013	9,187,350	1,401,987	27,095	11,883	1,112,782	485,133
2014	9,265,629	1,436,449	31,191	12,683	1,217,796	447,659
2015	9,094,138	1,251,006	32,875	13,036	1,120,446	381,918
2016	9,839,355	1,336,136	35,924	11,841	1,039,890	379,707

Table 1.2. Summary Statistics for the United States, 2006 - 2016

Note 1- This data is being withheld pending EIA review.
Coal includes anthracite, bituminous, subbituminous and lignite coal. Starting in 2002 waste coal is included in all coal metrics except for year-end stocks. Starting in 2002 Synthetic coal is included in all coal metrics. Starting in 2011 Coal-derived synthesis gas is included in all coal metrics. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum includes Distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology) and waste oil. Prior to 2011 propane was in the Other Gas category. Beginning in 2004 small quantities of waste oil were excluded from petroleum stocks.
Natural gas includes a small number of generators for which waste heat is the primary energy source. Natural gas also includes a small amount of supplemental gaseous fuels that cannot be identified separately.
Prior to 2011, synthesis gas derived from petroleum coke was in the Other Gas category. Other Gas includes blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.
Conventional hydroelectric power excludes pumped storage facilities.

Wood and wood derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other biomass includes biogenic municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases). The reported summer capacity for other biomass also includes non-biogenic municipal solid waste.
Pumped storage is the capacity to generate electricity from water previously pumped to an elevated reservoir and then released through a conduit to turbine generators located at a lower level. The generation from a hydroelectric pumped storage facility is the net value of production minus the energy used for pumping.
Other energy sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources, and for generation values, non-biogenic muncipal solid waste.

Costs of fuels for 2002 through 2007 include data from the Form EIA-423 for independent power producers, commercial power-producing facilities, and industrial power-producing facilities. Beginning in 2008, data are collected on the Form EIA-923 for utilities, independent power producers, commerical power-producing facilities, and industrial power-producing facilities. Receipts, cost, and quality data are collected from plants above a 50 MW threshold, and imputed for plants between 1 and 50 MW. Therefore, there may be a notable increase in fuel receipts beginning with 2008 data. Receipts of coal include imported coal.

N/A = Not available.
Notes: See Glossary reference for definitions. See Technical Notes Appendix for conversion to different units of measure. Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator. Dual-fired capacity returned to respective fuel categories for current and all historical years. New fuel switchable capacity tables have replaced dual-fired breakouts. Totals may not equal sum of components because of independent rounding.
In 2013, EIA revised its approach to estimating imports from Mexico.

Sources: U.S. Energy Information Administration Form EIA-411, 'Coordinated Bulk Power Supply Program Report;' Form EIA-412, 'Annual Electric Industry Financial Report'. The Form EIA-412 was terminated in 2003; Form EIA-767, 'Steam-Electric Plant Operation and Design Report' was suspended; Form EIA-860, 'Annual Electric Generator Report;' Form EIA-861, 'Annual Electric Power Industry Report;' Form EIA-923, 'Power Plant Operations Report' replaces several form(s) including: Form EIA-906, 'Power Plant Report;' Form EIA-920 'Combined Heat and Power Plant Report;' Form EIA-423, 'Monthly Cost and Quality of Fuels for Electric Plants Report;' and FERC Form 423, 'Monthly Report of Cost and Quality of Fuels for Electric Plants,' and their predecessor forms. Federal Energy Regulatory Commission, FERC Form 1, 'Annual Report of Major Utilities, Licensees and Others;' FERC Form 1-F, 'Annual Report for Nonmajor Public Utilities and Licensees;' Rural Utilities Service (RUS) Form 7, 'Operating Report;' RUS Form 12, 'Operating Report;'
Imports and Exports: National Energy Board of Canada; FERC 714, Annual Electric Balancing Authority Area and Planning Report; California Energy Commission; and EIA estimates

Table 1.3. Supply and Disposition of Electricity, 2006 through 2016

(From Chapter 3.) Supply (Thousand Megawatthours)

	Generation						
Year	Electric Utilities	IPP (Non-CHP)	IPP (CHP)	Commercial Sector	Industrial Sector	Total Imports	Total Supply
2006	2,483,656	1,259,062	165,359	8,371	148,254	42,691	4,107,394
2007	2,504,131	1,323,856	177,356	8,273	143,128	51,396	4,208,140
2008	2,475,367	1,332,068	166,915	7,926	137,113	57,019	4,176,407
2009	2,372,776	1,277,916	159,146	8,165	132,329	52,191	4,002,522
2010	2,471,632	1,338,712	162,042	8,592	144,082	45,083	4,170,143
2011	2,460,851	1,331,303	156,032	10,080	141,875	52,300	4,152,441
2012	2,339,172	1,386,991	164,194	11,301	146,107	59,257	4,107,022
2013	2,388,058	1,368,038	147,619	12,234	150,015	68,947	4,134,911
2014	2,382,473	1,404,324	150,205	12,520	144,083	66,510	4,160,116
2015	2,315,323	1,448,799	155,173	12,595	145,712	75,770	4,153,371
2016	2,304,923	1,459,624	153,532	12,706	145,890	69,601	4,146,276

(From Chapter 2.) Disposition (Thousand Megawatthours)

	Retail Sales						
Year	Full-Service Providers	Energy-Only Providers	Facility Direct	Direct Use	Total Exports	Losses and Unaccounted For	Total Disposition
2006	3,438,337	219,185	12,397	146,927	24,271	266,277	4,107,394
2007	3,468,018	282,538	14,004	125,670	20,144	297,766	4,208,140
2008	3,436,011	284,386	13,567	132,197	24,198	286,048	4,176,407
2009	3,289,877	294,229	12,689	126,938	18,138	260,650	4,002,522
2010	3,365,338	379,277	10,226	131,910	19,106	264,285	4,170,143
2011	3,272,622	466,964	10,259	132,754	15,049	254,792	4,152,441
2012	3,172,096	514,290	8,263	137,657	11,996	262,720	4,107,022
2013	3,147,192	559,211	18,465	143,462	11,373	255,208	4,134,911
2014	3,184,841	563,441	16,418	138,574	13,298	243,544	4,160,116
2015	3,191,425	554,944	12,624	141,168	9,100	244,112	4,153,371
2016	3,189,541	560,015	12,905	139,844	9,329	234,640	4,146,276

N/A = Not Available.
Facility Direct Retail Sales typically represent bilateral electric power sales between industrial and commercial generating facilities.
Direct Use represents commercial and industrial facility use of onsite net electricity generation; electricity sales or transfers to adjacent or co-located facilities; and barter transactions. Losses and Unaccounted For includes: (1) reporting by utilities and power marketers that represent losses incurred in transmission and distribution, as well as volumes unaccounted for in their own energy balance; and (2) discrepancies among the differing categories upon balancing the table.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report" and predecessor form(s) including U.S. Energy Information Administration, Form EIA-906, "Power Plant Report;" and Form EIA-920, "Combined Heat and Power Plant Report;" Form EIA-861, "Annual Electric Power Industry Report;" and predecessor forms. Imports and Exports: Mexico data - DOE, Fossil Fuels, Office of Fuels Programs, Form OE-781R, "Annual Report of International Electrical Export/Import Data:" Canada data - National Energy Board of Canada (metered energy firm and interruptible).

Chapter 2

Electricity Sales

Table 2.1. Number of Ultimate Customers Served by Sector, by Provider, 2006 through 2016

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2006	122,471,071	17,172,499	759,604	791	140,403,965
2007	123,949,916	17,377,219	793,767	750	142,121,652
2008	125,037,837	17,582,382	774,808	726	143,395,753
2009	125,208,829	17,562,235	757,537	704	143,529,305
2010	125,717,935	17,674,338	747,747	239	144,140,259
2011	126,143,072	17,638,062	727,920	92	144,509,146
2012	126,832,343	17,729,029	732,385	83	145,293,840
2013	127,777,153	17,679,562	831,790	75	146,288,580
2014	128,680,416	17,853,995	839,212	79	147,373,702
2015	129,811,718	17,985,690	835,536	78	148,633,022
2016	131,068,760	18,148,353	838,059	86	150,055,258
Full-Service Providers					
2006	120,677,627	16,673,766	745,645	764	138,097,802
2007	121,782,003	16,767,635	771,637	710	139,321,985
2008	122,706,203	16,932,969	756,094	696	140,395,962
2009	122,560,533	16,852,697	736,326	666	140,150,222
2010	121,555,089	16,675,341	718,652	198	138,949,280
2011	120,306,190	16,321,174	682,906	56	137,310,326
2012	118,650,233	16,111,883	681,074	48	135,443,238
2013	116,624,884	15,817,442	780,759	48	133,223,133
2014	117,230,661	15,942,158	789,803	50	133,962,672
2015	119,477,949	16,108,931	787,466	48	136,374,394
2016	120,875,548	16,197,174	788,641	53	137,861,416
Energy-Only Providers					
2006	1,793,444	498,733	13,959	27	2,306,163
2007	2,167,913	609,584	22,130	40	2,799,667
2008	2,331,634	649,413	18,714	30	2,999,791
2009	2,648,296	709,538	21,211	38	3,379,083
2010	4,162,846	998,997	29,095	41	5,190,979
2011	5,836,882	1,316,888	45,014	36	7,198,820
2012	8,182,110	1,617,146	51,311	35	9,850,602
2013	11,152,269	1,862,120	51,031	27	13,065,447
2014	11,449,755	1,911,837	49,409	29	13,411,030
2015	10,333,769	1,876,759	48,070	30	12,258,628
2016	10,193,212	1,951,179	49,418	33	12,193,842

N/A = Not Available.

Pursuant to applicable Texas statutes establishing competitive electricity markets within the Electric Reliability Council of Texas (ERCOT), all customers served by Retail Energy Providers must be provided bundled energy and delivery services, so they are included under "Full-Service Providers".

Full-Service Providers sell bundled electricity services (e.g., both energy and delivery) to end users. Full-Service Providers may purchase electricity from others (such as Independent Power Producers or other Full-Service Providers) prior to delivery. Direct sales from independent facility generators to end use consumers are reported under Full-Service Providers. Energy-Only Providers sell energy to end use customers; incumbent utility distribution firms provide Delivery-Only Services for these customers.

Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report." and Form EIA-861S, "Annual Electric Power Industry Report (Short Form)."

Table 2.2. Sales and Direct Use of Electricity to Ultimate Customers by Sector, by Provider, 2006 through 2016 (Megawatthours)

Year	Residential	Commercial	Industrial	Transportation	Total	Direct Use	Total End Use
Total Electric Industry							
2006	1,351,520,036	1,299,743,695	1,011,297,566	7,357,543	3,669,918,840	146,926,612	3,816,845,452
2007	1,392,240,996	1,336,315,196	1,027,831,925	8,172,595	3,764,560,712	125,670,185	3,890,230,897
2008	1,380,661,745	1,336,133,485	1,009,516,178	7,653,211	3,733,964,619	132,196,685	3,866,161,304
2009	1,364,758,153	1,306,852,524	917,416,468	7,767,989	3,596,795,134	126,937,958	3,723,733,092
2010	1,445,708,403	1,330,199,364	971,221,189	7,712,412	3,754,841,368	131,910,249	3,886,751,617
2011	1,422,801,093	1,328,057,439	991,315,564	7,672,084	3,749,846,180	132,754,037	3,882,600,217
2012	1,374,514,708	1,327,101,196	985,713,854	7,320,028	3,694,649,786	137,656,510	3,832,306,296
2013	1,394,812,129	1,337,078,777	985,351,874	7,625,041	3,724,867,821	143,461,937	3,868,329,758
2014	1,407,208,311	1,352,158,263	997,576,138	7,757,555	3,764,700,267	138,573,884	3,903,274,151
2015	1,404,096,499	1,360,751,527	986,507,732	7,636,632	3,758,992,390	141,167,519	3,900,159,909
2016	1,411,058,153	1,367,191,386	976,715,181	7,496,910	3,762,461,630	139,844,397	3,902,306,027
Full-Service Providers							
2006	1,337,837,993	1,170,661,399	939,194,648	3,040,062	3,450,734,102	N/A	3,450,734,102
2007	1,375,450,126	1,180,789,042	923,148,031	2,635,498	3,482,022,697	N/A	3,482,022,697
2008	1,363,664,159	1,173,581,515	909,792,014	2,540,452	3,449,578,140	N/A	3,449,578,140
2009	1,345,314,362	1,143,473,246	811,314,045	2,464,259	3,302,565,912	N/A	3,302,565,912
2010	1,409,355,244	1,123,328,313	840,439,791	2,440,567	3,375,563,915	N/A	3,375,563,915
2011	1,368,453,770	1,090,292,969	822,404,124	1,730,820	3,282,881,683	N/A	3,282,881,683
2012	1,297,818,441	1,073,346,766	807,805,140	1,389,340	3,180,359,687	N/A	3,180,359,687
2013	1,291,368,071	1,074,915,884	797,769,849	1,603,318	3,165,657,122	N/A	3,165,657,122
2014	1,301,458,851	1,083,806,639	814,206,541	1,787,408	3,201,259,439	N/A	3,201,259,439
2015	1,307,918,081	1,089,268,864	805,111,979	1,749,450	3,204,048,374	N/A	3,204,048,374
2016	1,316,113,416	1,091,957,177	792,712,354	1,663,475	3,202,446,422	N/A	3,202,446,422
Energy-Only Providers							
2006	13,682,043	129,082,296	72,102,918	4,317,481	219,184,738	N/A	219,184,738
2007	16,790,870	155,526,154	104,683,894	5,537,097	282,538,015	N/A	282,538,015
2008	16,997,586	162,551,970	99,724,164	5,112,759	284,386,479	N/A	284,386,479
2009	19,443,791	163,379,278	106,102,423	5,303,730	294,229,222	N/A	294,229,222
2010	36,353,159	206,871,051	130,781,398	5,271,845	379,277,453	N/A	379,277,453
2011	54,347,323	237,764,470	168,911,440	5,941,264	466,964,497	N/A	466,964,497
2012	76,696,267	253,754,430	177,908,714	5,930,688	514,290,099	N/A	514,290,099
2013	103,444,058	262,162,893	187,582,025	6,021,723	559,210,699	N/A	559,210,699
2014	105,749,460	268,351,624	183,369,597	5,970,147	563,440,828	N/A	563,440,828
2015	96,178,418	271,482,663	181,395,753	5,887,182	554,944,016	N/A	554,944,016
2016	94,944,737	275,234,209	184,002,827	5,833,435	560,015,208	N/A	560,015,208

N/A = Not Available.

Direct Use represents commercial and industrial facility use of onsite net electricity generation; and electricity sales or transfers to adjacent or co-located facilities for which revenue information is not available.

Pursuant to applicable Texas statutes establishing competitive electricity markets within the Electric Reliability Council of Texas (ERCOT), all customers served by Retail Energy Providers must be provided bundled energy and delivery services, so they are included under "Full-Service Providers".

Full-Service Providers sell bundled electricity services (e.g., both energy and delivery) to end users. Full-Service Providers may purchase electricity from others (such as Independent Power Producers or other Full-Service Providers) prior to delivery. Direct sales from independent facility generators to end use consumers are reported under Full-Service Providers. Energy-Only Providers sell energy to end use customers; incumbent utility distribution firms provide Delivery-Only Services for these customers.

Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report.", Form EIA-861S, "Annual Electric Power Industry Report (Short Form)" and Form EIA-923, "Power Plant Operations Report"

Table 2.3. Revenue from Sales of Electricity to Ultimate Customers by Sector, by Provider, 2006 through 2016 (Million Dollars)

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2006	140,582	122,914	62,308	702	326,506
2007	148,295	128,903	65,712	792	343,703
2008	155,496	137,036	70,231	820	363,583
2009	157,044	132,747	62,670	828	353,289
2010	166,778	135,554	65,772	814	368,918
2011	166,714	135,927	67,606	803	371,049
2012	163,280	133,898	65,761	747	363,687
2013	169,131	137,188	67,934	805	375,058
2014	176,178	145,253	70,855	810	393,096
2015	177,624	144,781	68,166	771	391,341
2016	177,077	142,643	66,068	722	386,509
Full-Service Providers					
2006	138,608	107,432	56,385	257	302,683
2007	145,642	109,703	56,950	232	312,527
2008	152,520	115,413	61,117	252	329,301
2009	153,741	112,254	53,284	226	319,506
2010	161,221	110,298	54,582	233	326,334
2011	158,788	108,318	54,285	162	321,552
2012	152,817	106,012	52,667	132	311,628
2013	155,203	108,460	54,309	167	318,138
2014	160,637	113,880	57,140	187	331,845
2015	162,857	113,225	54,787	170	331,038
2016	162,395	111,218	52,958	164	326,735
Competitive Service Providers					
2006	1,974	15,482	5,922	445	23,823
2007	2,653	19,200	8,762	560	31,176
2008	2,977	21,623	9,114	568	34,282
2009	3,302	20,493	9,386	602	33,783
2010	5,557	25,256	11,190	581	42,584
2011	7,926	27,609	13,321	641	49,497
2012	10,464	27,886	13,094	615	52,059
2013	13,928	28,729	13,625	638	56,919
2014	15,541	31,373	13,715	623	61,251
2015	14,767	31,557	13,379	601	60,303
2016	14,682	31,425	13,110	557	59,774
Energy-Only Providers					
2006	1,127	10,792	4,510	356	16,784
2007	1,646	13,553	7,197	458	22,854
2008	1,859	15,661	7,506	448	25,474
2009	1,889	14,045	7,369	460	23,763
2010	3,226	16,994	8,664	424	29,308
2011	4,578	18,086	10,392	463	33,519
2012	5,776	17,397	9,895	432	33,500
2013	7,755	17,876	10,330	451	36,412
2014	9,079	19,948	10,813	436	40,277
2015	8,428	19,657	10,298	407	38,791
2016	7,947	18,850	9,896	360	37,053
Delivery-Only Providers					
2006	847	4,690	1,412	90	7,040
2007	1,007	5,647	1,565	102	8,322
2008	1,118	5,962	1,608	120	8,808
2009	1,413	6,448	2,017	143	10,021
2010	2,330	8,262	2,526	157	13,276
2011	3,348	9,523	2,929	178	15,978
2012	4,687	10,489	3,199	183	18,559
2013	6,172	10,853	3,295	187	20,507
2014	6,462	11,425	2,901	187	20,975
2015	6,339	11,900	3,081	193	21,512
2016	6,735	12,575	3,213	197	22,720

N/A = Not Available.

Pursuant to applicable Texas statutes establishing competitive electricity markets within the Electric Reliability Council of Texas (ERCOT), all customers served by Retail Energy Providers must be provided bundled energy and delivery services, so they are included under "Full-Service Providers".

Full-Service Providers sell bundled electricity services (e.g., both energy and delivery) to end users. Full-Service Providers may purchase electricity from others (such as Independent Power Producers or other Full-Service Providers) prior to delivery. Direct sales from independent facility generators to end use consumers are reported under Full-Service Providers. Energy-Only Providers sell energy to end use customers; incumbent utility distribution firms provide Delivery-Only Services for these customers. Data reported under Competitive Service Providers represent the sum of Energy-Only and Delivery-Only Services."

Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report." Form EIA-861S, "Annual Electric Power Industry Report (Short Form)."

Table 2.4. Average Price of Electricity to Ultimate Customers

by End-Use Sectors 2006 through 2016 (Cents per kilowatthour)

Year	Residential	Commercial	Industrial	Transportation	Total
Total Electric Industry					
2006	10.40	9.46	6.16	9.54	8.90
2007	10.65	9.65	6.39	9.70	9.13
2008	11.26	10.26	6.96	10.71	9.74
2009	11.51	10.16	6.83	10.66	9.82
2010	11.54	10.19	6.77	10.56	9.83
2011	11.72	10.24	6.82	10.46	9.90
2012	11.88	10.09	6.67	10.21	9.84
2013	12.13	10.26	6.89	10.55	10.07
2014	12.52	10.74	7.10	10.45	10.44
2015	12.65	10.64	6.91	10.09	10.41
2016	12.55	10.43	6.76	9.63	10.27
Full-Service Providers					
2006	10.36	9.18	6.0	8.44	8.77
2007	10.59	9.29	6.17	8.82	8.98
2008	11.18	9.83	6.72	9.91	9.55
2009	11.43	9.82	6.57	9.17	9.67
2010	11.44	9.82	6.49	9.55	9.67
2011	11.60	9.93	6.60	9.35	9.79
2012	11.77	9.88	6.52	9.50	9.80
2013	12.02	10.09	6.81	10.40	10.05
2014	12.34	10.51	7.02	10.49	10.37
2015	12.45	10.39	6.80	9.71	10.33
2016	12.34	10.19	6.68	9.87	10.20
Competitive Service Providers					
2006	14.43	11.99	8.21	10.32	10.87
2007	15.80	12.35	8.37	10.11	11.03
2008	17.51	13.30	9.14	11.11	12.05
2009	16.98	12.54	8.85	11.36	11.48
2010	15.29	12.21	8.56	11.03	11.23
2011	14.58	11.61	7.89	10.79	10.60
2012	13.64	10.99	7.36	10.38	10.12
2013	13.46	10.96	7.26	10.60	10.18
2014	14.70	11.69	7.48	10.44	10.87
2015	15.35	11.62	7.38	10.20	10.87
2016	15.46	11.42	7.12	9.56	10.67
Energy-Only Providers					
2006	8.23	8.36	6.25	8.24	7.66
2007	9.80	8.71	6.87	8.28	8.09
2008	10.94	9.63	7.53	8.77	8.96
2009	9.72	8.60	6.94	8.67	8.08
2010	8.88	8.21	6.62	8.05	7.73
2011	8.42	7.61	6.15	7.80	7.18
2012	7.53	6.86	5.56	7.29	6.51
2013	7.50	6.82	5.51	7.49	6.51
2014	8.59	7.43	5.90	7.31	7.15
2015	8.76	7.24	5.68	6.92	6.99
2016	8.37	6.85	5.38	6.17	6.62
Delivery-Only Providers					
2006	6.19	3.63	1.96	2.08	3.21
2007	6.0	3.63	1.50	1.84	2.95
2008	6.58	3.67	1.61	2.35	3.10
2009	7.27	3.95	1.90	2.69	3.41
2010	6.41	3.99	1.93	2.98	3.50
2011	6.16	4.01	1.73	2.99	3.42
2012	6.11	4.13	1.80	3.09	3.61
2013	5.97	4.14	1.76	3.11	3.67
2014	6.11	4.26	1.58	3.12	3.72
2015	6.59	4.38	1.70	3.28	3.88
2016	7.09	4.57	1.75	3.38	4.06

N/A = Not Available.
Pursuant to applicable Texas statutes establishing competitive electricity markets within the Electric Reliability Council of Texas (ERCOT), all customers served by Retail Energy Providers must be provided bundled energy and delivery services, so they are included under "Full-Service Providers".
Full-Service Providers sell bundled electricity services (e.g., both energy and delivery) to end users. Full-Service Providers may purchase electricity from others (such as Independent Power Producers or other Full-Service Providers) prior to delivery. Direct sales from independent facility generators to end use consumers are reported under Full-Service Providers. Energy-Only Providers sell energy to end use customers; incumbent utility distribution firms provide Delivery-Only Services for these customers. Data reported under Competitive Service Providers represent the sum of Energy-Only and Delivery-Only Services."
Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report." Form EIA-861S, "Annual Electric Power Industry Report (Short Form)."

Table 2.5. Sales of Electricity to Ultimate Customers:
Total by End-Use Sector, 2006 - December 2016 (Thousand Megawatthours)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2006	1,351,520	1,299,744	1,011,298	7,358	3,669,919
2007	1,392,241	1,336,315	1,027,832	8,173	3,764,561
2008	1,380,662	1,336,133	1,009,516	7,653	3,733,965
2009	1,364,758	1,306,853	917,416	7,768	3,596,795
2010	1,445,708	1,330,199	971,221	7,712	3,754,841
2011	1,422,801	1,328,057	991,316	7,672	3,749,846
2012	1,374,515	1,327,101	985,714	7,320	3,694,650
2013	1,394,812	1,337,079	985,352	7,625	3,724,868
2014	1,407,208	1,352,158	997,576	7,758	3,764,700
2015	1,404,096	1,360,752	986,508	7,637	3,758,992
2016	1,411,058	1,367,191	976,715	7,497	3,762,462
Year 2014					
January	146,511	113,866	80,149	712	341,238
February	128,475	104,353	75,413	700	308,941
March	114,233	106,968	80,539	648	302,388
April	92,290	102,459	80,505	640	275,894
May	95,727	109,666	85,383	646	291,421
June	118,049	118,423	85,711	609	322,792
July	137,028	125,434	88,417	645	351,524
August	135,830	125,603	89,808	642	351,883
September	120,741	120,049	85,489	628	326,907
October	98,038	113,023	84,994	625	296,680
November	99,486	104,245	81,044	637	285,413
December	120,801	108,070	80,123	626	309,620
Year 2015					
January	137,765	111,620	79,609	673	329,666
February	123,838	105,482	76,749	699	306,768
March	117,167	107,796	79,709	679	305,352
April	90,199	104,168	80,489	620	275,475
May	95,161	109,406	82,916	609	288,091
June	120,300	119,270	86,218	609	326,397
July	146,038	128,504	87,747	648	362,938
August	144,515	128,519	88,373	625	362,032
September	125,417	122,195	84,730	615	332,958
October	99,349	112,821	83,249	636	296,055
November	92,678	104,140	78,495	604	275,917
December	111,670	106,829	78,224	619	297,344
Year 2016					
January	130,972	110,410	78,848	660	320,890
February	115,959	103,452	76,748	646	296,806
March	100,227	105,739	79,237	609	285,812
April	88,244	102,045	78,647	595	269,531
May	94,198	108,437	81,491	581	284,708
June	125,211	120,363	83,672	631	329,878
July	154,409	130,038	87,076	648	372,172
August	156,442	135,019	89,101	631	381,192
September	129,363	123,493	83,259	637	336,752
October	101,508	112,963	81,597	613	296,681
November	93,244	105,060	78,421	592	277,317
December	121,281	110,172	78,616	653	310,722

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors. NA = Not available. See Glossary for definitions.
Geographic coverage is the 50 States and the District of Columbia. Values include energy service provider (power marketer) data.
Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-826. Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within specified limits by rate schedule. Changes from year to year in consumer counts, sales and revenues, particularly involving the commercial and industrial consumer sectors, may result from respondent implementation of changes in the definitions of consumers, and reclassifications. Sales and net generation may not correspond exactly for a particular month for a variety of reasons (i.e., sales data may include purchases of electricity from nonutilities or imported electricity). Net generation is for the calendar month while sales and associated revenue accumulate from bills collected for periods of time (28 to 35 days) that vary dependent upon customer class and consumption occurring in and outside the calendar month.
Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.
Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;
Form EIA-861, Annual Electric Power Industry Report; and Form EIA-861S, Annual Electric Power Industry Report (Short Form).

Table 2.6. Revenue from Sales of Electricity to Ultimate Customers: Total by End-Use Sector, 2006 - December 2016 (Million Dollars)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2006	140,582	122,914	62,308	702	326,506
2007	148,295	128,903	65,712	792	343,703
2008	155,496	137,036	70,231	820	363,583
2009	157,044	132,747	62,670	828	353,289
2010	166,778	135,554	65,772	814	368,918
2011	166,714	135,927	67,606	803	371,049
2012	163,280	133,898	65,761	747	363,687
2013	169,131	137,188	67,934	805	375,058
2014	176,178	145,253	70,855	810	393,096
2015	177,624	144,781	68,166	771	391,341
2016	177,077	142,643	66,068	722	386,509
Year 2014					
January	17,075	11,790	5,596	78	34,539
February	15,338	11,142	5,370	73	31,922
March	13,996	11,390	5,632	68	31,087
April	11,365	10,715	5,451	65	27,596
May	12,300	11,555	5,833	65	29,753
June	15,337	12,974	6,335	65	34,710
July	17,943	14,014	6,742	69	38,767
August	17,708	13,876	6,748	64	38,396
September	15,639	13,399	6,299	69	35,406
October	12,352	12,239	6,007	64	30,663
November	12,417	10,967	5,470	65	28,920
December	14,707	11,192	5,372	66	31,336
Year 2015					
January	16,665	11,506	5,310	70	33,551
February	15,215	11,203	5,277	73	31,768
March	14,450	11,460	5,441	69	31,419
April	11,379	10,803	5,323	60	27,566
May	12,300	11,456	5,589	60	29,405
June	15,537	12,992	6,133	62	34,725
July	18,904	14,229	6,538	67	39,738
August	18,659	14,065	6,493	63	39,280
September	16,347	13,420	6,107	63	35,937
October	12,633	12,100	5,728	63	30,524
November	11,775	10,722	5,185	58	27,740
December	13,759	10,825	5,043	61	29,688
Year 2016					
January	15,704	11,133	5,080	63	31,980
February	14,076	10,605	4,927	62	29,670
March	12,593	10,815	5,122	58	28,587
April	10,967	10,398	5,065	57	26,486
May	12,048	11,184	5,357	54	28,643
June	15,942	12,828	5,879	62	34,710
July	19,575	13,891	6,294	64	39,823
August	20,157	14,530	6,440	63	41,191
September	16,652	13,298	5,947	64	35,961
October	12,648	11,914	5,491	59	30,111
November	11,886	10,840	5,225	55	28,007
December	14,830	11,206	5,242	62	31,339

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors. NA = Not available. See Glossary for definitions.
Geographic coverage is the 50 States and the District of Columbia. Values include energy service provider (power marketer) data.
Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-826. Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within specified limits by rate schedule. Changes from year to year in consumer counts, sales and revenues, particularly involving the commercial and industrial consumer sectors, may result from respondent implementation of changes in the definitions of consumers, and reclassifications. Sales and net generation may not correspond exactly for a particular month for a variety of reasons (i.e., sales data may include purchases of electricity from nonutilities or imported electricity). Net generation is for the calendar month while sales and associated revenue accumulate from bills collected for periods of time (28 to 35 days) that vary dependent upon customer class and consumption occurring in and outside the calendar month.
Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.
Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;
Form EIA-861, Annual Electric Power Industry Report; and Form EIA-861S, Annual Electric Power Industry Report (Short Form).

Table 2.7. Average Price of Electricity to Ultimate Customers:
Total by End-Use Sector, 2006 - December 2016 (Cents per Kilowatthour)

Period	Residential	Commercial	Industrial	Transportation	All Sectors
Annual Totals					
2006	10.40	9.46	6.16	9.54	8.90
2007	10.65	9.65	6.39	9.70	9.13
2008	11.26	10.26	6.96	10.71	9.74
2009	11.51	10.16	6.83	10.66	9.82
2010	11.54	10.19	6.77	10.56	9.83
2011	11.72	10.24	6.82	10.46	9.90
2012	11.88	10.09	6.67	10.21	9.84
2013	12.13	10.26	6.89	10.55	10.07
2014	12.52	10.74	7.10	10.45	10.44
2015	12.65	10.64	6.91	10.09	10.41
2016	12.55	10.43	6.76	9.63	10.27
Year 2014					
January	11.65	10.35	6.98	10.93	10.12
February	11.94	10.68	7.12	10.41	10.33
March	12.25	10.65	6.99	10.43	10.28
April	12.31	10.46	6.77	10.23	10.00
May	12.85	10.54	6.83	10.06	10.21
June	12.99	10.96	7.39	10.60	10.75
July	13.09	11.17	7.62	10.68	11.03
August	13.04	11.05	7.51	10.02	10.91
September	12.95	11.16	7.37	11.02	10.83
October	12.60	10.83	7.07	10.27	10.34
November	12.48	10.52	6.75	10.20	10.13
December	12.17	10.36	6.70	10.48	10.12
Year 2015					
January	12.10	10.31	6.67	10.45	10.18
February	12.29	10.62	6.88	10.49	10.36
March	12.33	10.63	6.83	10.12	10.29
April	12.62	10.37	6.61	9.76	10.01
May	12.93	10.47	6.74	9.87	10.21
June	12.92	10.89	7.11	10.15	10.64
July	12.94	11.07	7.45	10.34	10.95
August	12.91	10.94	7.35	10.14	10.85
September	13.03	10.98	7.21	10.29	10.79
October	12.72	10.73	6.88	9.91	10.31
November	12.71	10.30	6.61	9.63	10.05
December	12.32	10.13	6.45	9.81	9.98
Year 2016					
January	11.99	10.08	6.44	9.52	9.97
February	12.14	10.25	6.42	9.61	10.00
March	12.56	10.23	6.46	9.56	10.00
April	12.43	10.19	6.44	9.53	9.83
May	12.79	10.31	6.57	9.28	10.06
June	12.73	10.66	7.03	9.75	10.52
July	12.68	10.68	7.23	9.84	10.70
August	12.88	10.76	7.23	10.04	10.81
September	12.87	10.77	7.14	10.00	10.68
October	12.46	10.55	6.73	9.62	10.15
November	12.75	10.32	6.66	9.22	10.10
December	12.23	10.17	6.67	9.49	10.09

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors. NA = Not available. See Glossary for definitions.
Geographic coverage is the 50 States and the District of Columbia. Values include energy service provider (power marketer) data.
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Sources: U.S. Energy Information Administration, Form EIA-861M (formerly EIA-826), Monthly Electric Industry Power Report.
Form EIA-826, Monthly Electric Sales and Revenue Report with State Distributions Report;
Form EIA-861, Annual Electric Power Industry Report; and Form EIA-861S, Annual Electric Power Industry Report (Short Form).

Table 2.8. Sales of Electricity to Ultimate Customers by End-Use Sector, by State, 2016 and 2015 (Thousand Megawatthours)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	46,532	47,482	52,753	53,383	17,965	18,733	552	572	117,802	120,170
Connecticut	12,677	12,893	12,701	12,959	3,370	3,432	183	193	28,931	29,476
Maine	4,586	4,662	3,986	4,018	2,877	3,208	0	0	11,449	11,888
Massachusetts	19,693	20,175	25,934	26,200	7,507	7,892	342	353	53,476	54,621
New Hampshire	4,438	4,527	4,466	4,491	2,000	1,981	0	0	10,905	10,999
Rhode Island	3,082	3,136	3,651	3,705	764	799	27	26	7,524	7,665
Vermont	2,056	2,089	2,014	2,011	1,446	1,422	0	0	5,516	5,521
Middle Atlantic	133,799	134,574	158,715	159,474	72,130	72,804	3,846	3,896	368,490	370,747
New Jersey	29,091	29,142	38,672	38,723	7,293	7,320	303	304	75,359	75,490
New York	50,831	51,013	76,507	77,006	17,709	18,079	2,756	2,816	147,803	148,914
Pennsylvania	53,877	54,419	43,535	43,745	47,128	47,404	787	776	145,328	146,344
East North Central	187,898	183,153	185,751	183,420	195,324	196,364	585	589	569,557	563,527
Illinois	45,990	44,646	50,910	50,320	43,632	43,131	519	524	141,050	138,620
Indiana	33,026	32,442	24,229	24,022	46,429	48,030	21	21	103,705	104,515
Michigan	34,543	33,358	38,986	38,441	30,934	30,677	4	4	104,468	102,480
Ohio	52,524	51,493	47,742	47,124	50,291	50,557	41	40	150,598	149,213
Wisconsin	21,814	21,215	23,884	23,514	24,038	23,970	0	0	69,736	68,699
West North Central	102,860	101,620	102,760	101,711	89,589	91,430	46	45	295,255	294,806
Iowa	14,094	13,786	12,291	12,072	22,046	21,289	0	0	48,431	47,147
Kansas	13,509	13,242	15,887	15,380	11,414	11,227	0	0	40,810	39,849
Minnesota	21,804	21,714	23,502	23,388	21,217	21,453	24	24	66,546	66,579
Missouri	34,355	33,912	30,728	30,535	13,513	17,036	21	21	78,618	81,504
Nebraska	9,738	9,532	9,307	9,308	11,154	10,655	0	0	30,199	29,495
North Dakota	4,741	4,863	6,346	6,279	7,433	6,988	0	0	18,520	18,129
South Dakota	4,619	4,571	4,698	4,749	2,813	2,782	0	0	12,130	12,102
South Atlantic	361,426	359,258	313,557	311,709	139,870	143,229	1,326	1,341	816,179	815,537
Delaware	4,763	4,849	4,235	4,219	2,260	2,430	0	0	11,258	11,498
District of Columbia	2,502	2,498	8,368	8,222	192	238	331	334	11,394	11,291
Florida	123,321	122,759	95,547	95,847	16,759	16,897	95	95	235,722	235,599
Georgia	57,889	56,422	47,762	47,151	32,290	32,134	171	171	138,112	135,878
Maryland	27,317	27,403	29,676	29,959	3,821	3,883	540	536	61,354	61,782
North Carolina	58,457	57,902	48,604	48,236	27,337	27,701	6	9	134,404	133,848
South Carolina	30,616	30,059	22,275	21,927	26,687	29,342	0	0	79,578	81,328
Virginia	45,186	45,928	49,264	48,347	17,648	17,537	183	196	112,281	112,009
West Virginia	11,376	11,437	7,826	7,801	12,875	13,065	0	0	32,076	32,303
East South Central	118,627	118,305	93,577	92,400	100,383	102,502	0	0	312,587	313,208
Alabama	32,056	31,909	23,634	23,438	32,535	33,499	0	0	88,225	88,846
Kentucky	26,338	26,168	19,981	19,589	28,234	30,281	0	0	74,554	76,039
Mississippi	18,459	18,561	14,523	14,392	16,069	15,739	0	0	49,050	48,692
Tennessee	41,774	41,667	35,439	34,982	23,546	22,983	0	0	100,758	99,632
West South Central	217,197	218,086	196,873	194,164	183,555	179,373	194	192	597,819	591,815
Arkansas	17,784	18,273	12,178	12,153	16,226	16,038	0	0	46,188	46,465
Louisiana	30,650	31,545	24,896	24,996	35,895	35,123	12	12	91,453	91,676
Oklahoma	22,790	22,616	20,696	20,691	18,031	18,029	0	0	61,517	61,336
Texas	145,973	145,652	139,104	136,324	113,403	110,182	182	180	398,662	392,337
Mountain	97,005	95,206	95,538	94,880	83,442	84,740	137	134	276,122	274,962
Arizona	33,691	33,167	29,564	29,284	14,976	14,892	7	6	78,238	77,349
Colorado	18,834	18,385	20,800	20,408	15,103	15,259	65	64	54,802	54,116
Idaho	8,172	8,055	6,279	6,264	8,612	8,740	0	0	23,063	23,059
Montana	4,853	4,825	4,832	4,894	4,416	4,488	0	0	14,101	14,207
Nevada	12,692	12,339	9,929	9,614	13,515	14,059	8	8	36,145	36,020
New Mexico	6,643	6,642	8,806	8,877	7,591	7,575	0	0	23,040	23,094
Utah	9,371	9,117	11,565	11,615	9,187	9,405	57	56	30,180	30,192
Wyoming	2,751	2,677	3,762	3,925	10,041	10,323	0	0	16,555	16,925
Pacific Contiguous	141,096	141,727	161,824	163,672	89,349	92,284	812	867	393,081	398,550
California	88,311	89,386	116,775	118,384	50,979	52,562	782	838	256,847	261,170
Oregon	18,573	18,269	16,060	16,021	12,692	12,950	24	24	47,349	47,264
Washington	34,212	34,072	28,989	29,267	25,678	26,772	6	5	88,885	90,116
Pacific Noncontiguous	4,618	4,686	5,843	5,938	5,108	5,047	0	0	15,569	15,671
Alaska	NM	2,044	2,731	2,763	1,385	1,352	0	0	6,123	6,159
Hawaii	2,612	2,641	3,111	3,174	3,722	3,696	0	0	9,445	9,511
U.S. Total	1,411,058	1,404,096	1,367,191	1,360,752	976,715	986,508	7,497	7,637	3,762,462	3,758,992

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors.

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.

Notes: - See Glossary for definitions. - Values are final.

See Technical Notes for a discussion of the sample design for the Form EIA-826.

Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within specified limits by rate schedule.

Changes from year to year in consumer counts, sales and revenues, particularly involving the commercial and industrial consumer sectors, may result from respondent implementation of changes in the definitions of consumers, and reclassifications.

Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 2.9. Revenue from Sales of Electricity to Ultimate Customers by End-Use Sector, by State, 2016 and 2015 (Million Dollars)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	8,751	9,227	8,009	8,255	2,191	2,312	45	58	18,996	19,852
Connecticut	2,537	2,699	2,000	2,070	432	445	20	25	4,989	5,239
Maine	726	728	482	501	258	290	0	0	1,465	1,519
Massachusetts	3,742	4,000	4,046	4,136	1,004	1,069	20	27	8,812	9,232
New Hampshire	816	838	645	672	247	252	0	0	1,707	1,762
Rhode Island	574	605	543	584	103	110	5	5	1,225	1,304
Vermont	357	357	293	292	148	146	0	0	798	795
Middle Atlantic	20,977	21,487	19,808	20,937	5,071	5,331	419	457	46,276	48,212
New Jersey	4,574	4,607	4,740	4,952	741	779	26	31	10,082	10,370
New York	8,934	9,456	11,054	11,786	1,068	1,141	332	365	21,388	22,747
Pennsylvania	7,470	7,423	4,014	4,199	3,262	3,412	60	61	14,806	15,095
East North Central	24,536	23,730	18,498	18,252	13,525	13,690	40	41	56,600	55,713
Illinois	5,765	5,581	4,592	4,540	2,840	2,875	35	36	13,231	13,033
Indiana	3,892	3,753	2,425	2,349	3,238	3,295	2	2	9,557	9,399
Michigan	5,258	4,811	4,147	4,057	2,138	2,155	0	0	11,543	11,023
Ohio	6,551	6,591	4,762	4,743	3,509	3,549	3	3	14,825	14,886
Wisconsin	3,069	2,994	2,572	2,562	1,802	1,816	0	0	7,443	7,372
West North Central	12,127	11,654	9,802	9,431	6,378	6,289	4	4	28,312	27,379
Iowa	1,682	1,604	1,127	1,077	1,333	1,255	0	0	4,143	3,936
Kansas	1,764	1,635	1,664	1,553	855	854	0	0	4,283	4,042
Minnesota	2,763	2,631	2,316	2,207	1,564	1,506	2	2	6,646	6,346
Missouri	3,851	3,800	2,846	2,798	962	1,096	2	2	7,661	7,696
Nebraska	1,056	1,011	819	807	858	809	0	0	2,732	2,627
North Dakota	482	468	580	555	593	564	0	0	1,655	1,586
South Dakota	530	507	450	435	213	205	0	0	1,193	1,146
South Atlantic	41,790	42,175	28,983	29,576	9,028	9,421	105	109	79,906	81,280
Delaware	639	651	426	433	183	201	0	0	1,249	1,285
District of Columbia	308	324	981	987	17	21	32	30	1,337	1,362
Florida	13,545	14,217	8,507	9,106	1,288	1,388	8	9	23,348	24,719
Georgia	6,659	6,511	4,688	4,663	1,884	1,887	9	9	13,240	13,070
Maryland	3,886	3,787	3,262	3,296	301	331	42	45	7,492	7,458
North Carolina	6,446	6,532	4,189	4,210	1,725	1,804	1	1	12,362	12,547
South Carolina	3,874	3,778	2,289	2,240	1,625	1,774	0	0	7,788	7,792
Virginia	5,131	5,221	3,909	3,970	1,157	1,219	14	16	10,211	10,425
West Virginia	1,302	1,153	732	672	846	796	0	0	2,879	2,621
East South Central	12,888	12,796	9,542	9,458	5,835	6,133	0	0	28,264	28,387
Alabama	3,843	3,732	2,627	2,539	1,966	2,021	0	0	8,436	8,292
Kentucky	2,763	2,680	1,912	1,848	1,600	1,661	0	0	6,276	6,189
Mississippi	1,932	2,092	1,390	1,518	931	1,033	0	0	4,253	4,643
Tennessee	4,350	4,292	3,612	3,553	1,337	1,418	0	0	9,299	9,263
West South Central	22,999	23,870	16,211	15,880	9,755	10,025	16	11	48,980	49,786
Arkansas	1,765	1,794	1,002	1,011	986	999	0	0	3,753	3,804
Louisiana	2,862	2,944	2,139	2,166	1,822	1,901	1	1	6,825	7,011
Oklahoma	2,324	2,294	1,586	1,588	905	964	0	0	4,814	4,846
Texas	16,048	16,838	11,484	11,115	6,042	6,161	14	10	33,588	34,124
Mountain	11,298	11,264	9,066	9,212	5,320	5,583	13	13	25,698	26,073
Arizona	4,094	4,023	3,078	3,043	909	933	1	1	8,082	7,999
Colorado	2,274	2,228	1,996	2,017	1,110	1,129	6	6	5,386	5,380
Idaho	813	800	487	489	564	576	0	0	1,865	1,865
Montana	531	525	492	501	223	239	0	0	1,246	1,264
Nevada	1,448	1,574	788	889	795	949	1	1	3,031	3,413
New Mexico	799	828	858	915	443	480	0	0	2,101	2,223
Utah	1,032	992	1,012	1,002	581	580	6	6	2,632	2,579
Wyoming	306	294	354	358	695	698	0	0	1,355	1,349
Pacific Contiguous	20,585	20,234	21,477	22,443	7,984	8,332	79	78	50,125	51,088
California	15,360	15,188	17,603	18,627	6,077	6,394	77	75	39,116	40,285
Oregon	1,981	1,948	1,431	1,410	768	773	2	2	4,182	4,134
Washington	3,245	3,098	2,443	2,406	1,139	1,165	1	0	6,827	6,669
Pacific Noncontiguous	1,125	1,187	1,246	1,337	981	1,048	0	0	3,352	3,572
Alaska	NM	405	480	482	211	196	0	0	1,098	1,083
Hawaii	717	782	767	855	770	852	0	0	2,254	2,489
U.S. Total	177,077	177,624	142,643	144,781	66,068	68,166	722	771	386,509	391,341

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors.

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Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 2.10. Average Price of Electricity to Ultimate Customers by End-Use Sector, by State, 2016 and 2015 (Cents per Kilowatthour)

Census Division and State	Residential		Commercial		Industrial		Transportation		All Sectors	
	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	18.81	19.43	15.18	15.46	12.20	12.34	8.19	10.07	16.13	16.52
Connecticut	20.01	20.94	15.75	15.97	12.81	12.95	10.84	13.18	17.24	17.77
Maine	15.83	15.61	12.08	12.47	8.96	9.05	--	--	12.80	12.78
Massachusetts	19.00	19.83	15.60	15.79	13.38	13.54	5.94	7.76	16.48	16.90
New Hampshire	18.38	18.50	14.43	14.96	12.34	12.74	--	--	15.66	16.02
Rhode Island	18.62	19.29	14.88	15.78	13.48	13.76	18.71	18.54	16.28	17.01
Vermont	17.37	17.09	14.54	14.54	10.23	10.27	--	--	14.46	14.41
Middle Atlantic	15.68	15.97	12.48	13.13	7.03	7.32	10.88	11.72	12.56	13.00
New Jersey	15.72	15.81	12.26	12.79	10.16	10.64	8.68	10.25	13.38	13.74
New York	17.58	18.54	14.45	15.31	6.03	6.31	12.05	12.95	14.47	15.28
Pennsylvania	13.86	13.64	9.22	9.60	6.92	7.20	7.64	7.82	10.19	10.31
East North Central	13.06	12.96	9.96	9.95	6.92	6.97	6.91	7.01	9.94	9.89
Illinois	12.54	12.50	9.02	9.02	6.51	6.67	6.67	6.81	9.38	9.40
Indiana	11.79	11.57	10.01	9.78	6.97	6.86	9.82	9.92	9.22	8.99
Michigan	15.22	14.42	10.64	10.55	6.91	7.02	11.63	11.44	11.05	10.76
Ohio	12.47	12.80	9.97	10.07	6.98	7.02	7.93	7.69	9.84	9.98
Wisconsin	14.07	14.11	10.77	10.89	7.49	7.58	14.68	14.66	10.67	10.73
West North Central	11.79	11.47	9.54	9.27	7.12	6.88	9.24	8.98	9.59	9.29
Iowa	11.94	11.63	9.17	8.92	6.05	5.90	--	--	8.55	8.35
Kansas	13.06	12.34	10.47	10.10	7.49	7.61	--	--	10.49	10.14
Minnesota	12.67	12.12	9.86	9.44	7.37	7.02	10.06	9.50	9.99	9.53
Missouri	11.21	11.21	9.26	9.16	7.12	6.44	8.31	8.36	9.74	9.44
Nebraska	10.84	10.60	8.80	8.67	7.69	7.59	--	--	9.05	8.91
North Dakota	10.16	9.62	9.15	8.83	7.98	8.07	--	--	8.94	8.75
South Dakota	11.47	11.08	9.58	9.16	7.57	7.37	--	--	9.83	9.47
South Atlantic	11.56	11.74	9.24	9.49	6.45	6.58	7.93	8.12	9.79	9.97
Delaware	13.42	13.42	10.07	10.25	8.11	8.28	--	--	11.09	11.17
District of Columbia	12.29	12.99	11.72	12.01	8.80	8.78	9.53	9.00	11.73	12.07
Florida	10.98	11.58	8.90	9.50	7.69	8.22	8.32	8.92	9.91	10.49
Georgia	11.50	11.54	9.81	9.89	5.84	5.87	5.08	5.27	9.59	9.62
Maryland	14.23	13.82	10.99	11.00	7.89	8.53	7.85	8.34	12.21	12.07
North Carolina	11.03	11.28	8.62	8.73	6.31	6.51	7.88	7.90	9.20	9.37
South Carolina	12.65	12.57	10.28	10.21	6.09	6.05	--	--	9.79	9.58
Virginia	11.36	11.37	7.93	8.21	6.56	6.95	7.76	8.11	9.09	9.31
West Virginia	11.44	10.08	9.35	8.61	6.57	6.09	--	--	8.98	8.11
East South Central	10.86	10.82	10.20	10.24	5.81	5.98	--	--	9.04	9.06
Alabama	11.99	11.70	11.11	10.83	6.04	6.03	--	--	9.56	9.33
Kentucky	10.49	10.24	9.57	9.44	5.67	5.48	--	--	8.42	8.14
Mississippi	10.47	11.27	9.57	10.55	5.79	6.56	--	--	8.67	9.53
Tennessee	10.41	10.30	10.19	10.16	5.68	6.17	--	--	9.23	9.30
West South Central	10.59	10.95	8.23	8.18	5.31	5.59	7.99	5.53	8.19	8.41
Arkansas	9.92	9.82	8.23	8.32	6.08	6.23	10.40	11.21	8.13	8.19
Louisiana	9.34	9.33	8.59	8.66	5.08	5.41	9.03	8.28	7.46	7.65
Oklahoma	10.20	10.14	7.66	7.68	5.02	5.35	--	--	7.83	7.90
Texas	10.99	11.56	8.26	8.15	5.33	5.59	7.92	5.34	8.43	8.70
Mountain	11.65	11.83	9.49	9.71	6.38	6.59	9.67	9.97	9.31	9.48
Arizona	12.15	12.13	10.41	10.39	6.07	6.26	9.93	9.40	10.33	10.34
Colorado	12.07	12.12	9.60	9.88	7.35	7.40	9.80	10.08	9.83	9.94
Idaho	9.95	9.93	7.76	7.80	6.55	6.60	--	--	8.08	8.09
Montana	10.94	10.88	10.19	10.23	5.06	5.32	--	--	8.84	8.90
Nevada	11.41	12.76	7.93	9.25	5.88	6.75	7.83	9.11	8.38	9.48
New Mexico	12.03	12.47	9.75	10.30	5.84	6.33	--	--	9.12	9.62
Utah	11.02	10.88	8.75	8.62	6.33	6.17	9.76	10.05	8.72	8.54
Wyoming	11.13	10.97	9.40	9.12	6.92	6.76	--	--	8.19	7.97
Pacific Contiguous	14.59	14.28	13.27	13.71	8.94	9.03	9.78	8.99	12.75	12.82
California	17.39	16.99	15.07	15.73	11.92	12.17	9.80	8.99	15.23	15.42
Oregon	10.66	10.66	8.91	8.80	6.05	5.97	9.26	9.14	8.83	8.75
Washington	9.48	9.09	8.43	8.22	4.43	4.35	8.89	8.18	7.68	7.40
Pacific Noncontiguous	24.36	25.34	21.33	22.51	19.21	20.77	--	--	21.53	22.80
Alaska	NM	19.83	17.56	17.44	15.22	14.53	--	--	17.93	17.59
Hawaii	27.47	29.60	24.64	26.93	20.69	23.06	--	--	23.87	26.17
U.S. Total	12.55	12.65	10.43	10.64	6.76	6.91	9.63	10.09	10.27	10.41

See Technical notes for additional information on the Commercial, Industrial, and Transportation sectors.

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.

Notes: - See Glossary for definitions. - Values are final.

See Technical Notes for a discussion of the sample design for the Form EIA-826.

Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within specified limits by rate schedule.

Changes from year to year in consumer counts, sales and revenues, particularly involving the commercial and industrial consumer sectors, may result from respondent implementation of changes in the definitions of consumers, and reclassifications.

Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report.

Table 2.11. Electric Power Industry - Electricity Purchases, 2006 through 2016 (Thousand Megawatthours)

Year	Electric Utilities	Energy-Only Providers	Independent Power Producers	Combined Heat and Power	U.S. Total
2007	2,504,002	2,805,833	24,942	76,646	5,411,422
2008	2,483,927	3,024,730	25,431	78,693	5,612,781
2009	2,364,648	2,564,407	27,922	71,669	5,028,647
2010	2,353,086	3,319,211	23,976	73,861	5,770,134
2011	2,245,381	2,679,803	21,844	77,593	5,024,621
2012	2,148,346	2,740,043	17,726	78,818	4,984,933
2013	2,099,528	2,482,928	16,101	86,420	4,684,977
2014	2,145,378	2,559,875	17,000	79,975	4,802,227
2015	2,101,788	2,506,185	54,046	99,505	4,761,523
2016	2,089,540	2,438,204	8,520	187,307	4,723,571

Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report" and Form EIA-923, "Power Plant Operations Report"

Table 2.12. Electric Power Industry - Electricity Sales for Resale, 2006 through 2016 (Thousand Megawatthours)

Year	Electric Utilities	Energy-Only Providers	Independent Power Producers	Combined Heat and Power	U.S. Total
2006	1,698,389	2,446,104	1,321,342	27,638	5,493,473
2007	1,603,179	2,476,740	1,368,310	31,165	5,479,394
2008	1,576,976	2,718,661	1,355,017	30,079	5,680,733
2009	1,495,636	2,240,399	1,295,857	33,139	5,065,031
2010	1,541,554	2,946,452	1,404,137	37,068	5,929,211
2011	1,529,434	2,206,981	1,372,306	34,400	5,143,121
2012	1,456,774	2,135,819	1,384,155	37,017	5,013,765
2013	1,472,124	2,036,460	1,298,528	35,396	4,842,508
2014	1,485,964	2,081,235	1,301,724	39,916	4,908,839
2015	1,393,396	2,033,705	1,331,181	39,113	4,797,395
2016	1,391,873	1,947,036	1,372,928	35,131	4,746,967

Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report" and Form EIA-923, "Power Plant Operations Report"

Table 2.13. Electric Power Industry - U.S. Electricity Imports from and Electricity Exports to Canada and Mexico, 2006-2016 (Megawatthours)

	Canada		Mexico		U.S. Total	
Year	Imports from	Exports to	Imports from	Exports to	Imports	Exports
2006	41,544,052	23,405,387	1,147,258	865,948	42,691,310	24,271,335
2007	50,118,056	19,559,417	1,277,646	584,175	51,395,702	20,143,592
2008	55,731,229	23,614,158	1,288,152	584,001	57,019,381	24,198,159
2009	50,870,451	17,517,112	1,320,144	620,872	52,190,595	18,137,984
2010	43,763,091	18,481,678	1,320,095	624,502	45,083,186	19,106,180
2011	51,075,952	14,398,470	1,223,758	650,082	52,299,710	15,048,552
2012	57,971,110	11,392,267	1,285,959	603,382	59,257,069	11,995,649
2013	62,739,038	10,694,907	6,207,597	678,300	68,946,635	11,373,207
2014	59,369,660	12,860,889	7,140,624	437,364	66,510,284	13,298,253
2015	68,462,277	8,707,873	7,308,192	392,016	75,770,469	9,099,889
2016	65,173,818	2,682,381	7,542,445	3,531,636	72,716,263	6,214,017

Notes: As of November 2017, the data for 2016 and going forward will be published using data from the Form EIA-111, "Quarterly Electricity Imports and Exports Report." During 2013-2015, EIA revised its approach to estimating imports from Mexico.

Sources: 2016, U.S. Energy Information Administration, Form EIA-111, "Quarterly Electricity Imports and Exports Report"; 2006-2015 data, National Energy Board of Canada; FERC 714, Annual Electric Balancing Authority Area and Planning Report; California Energy Commission; and EIA estimates.

Table 2.14. Green Pricing Customers by End Use Sector, 2007 through 2012 (Table Discontinued)

Year	Residential	Commercial	Industrial	Transportation	Total
2007	773,391	61,608	553	99	835,651
2008	918,284	63,521	987	203	982,995
2009	1,058,185	64,139	1,454	--	1,123,778
2010	1,137,047	78,128	1,407	--	1,216,582
2011	1,187,867	89,677	1,440	--	1,278,984
2012	2,162,230	102,223	1,509	--	2,265,963

2012 was the last year this data was collected.

In 2006 the single largest provider of green pricing services in the country discontinued service in two States. More than 297,600 customers reverted to standard service tariffs, in Ohio and Pennsylvania.

Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Chapter 3

Net Generation

Table 3.1.A. Net Generation by Energy Source: Total (All Sectors), 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities												Small Scale Generation	Net Generation From Utility and Small Scale Facilities	
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals															
2006	1,990,511	44,460	19,706	816,441	14,177	787,219	289,246	508	96,018	-6,558	12,974	4,064,702	N/A	N/A	N/A
2007	2,016,456	49,505	16,234	896,590	13,453	806,425	247,510	612	104,626	-6,896	12,231	4,156,745	N/A	N/A	N/A
2008	1,985,801	31,917	14,325	882,981	11,707	806,208	254,831	864	125,237	-6,288	11,804	4,119,388	N/A	N/A	N/A
2009	1,755,904	25,972	12,964	920,979	10,632	798,855	273,445	891	143,388	-4,627	11,928	3,950,331	N/A	N/A	N/A
2010	1,847,290	23,337	13,724	987,697	11,313	806,968	260,203	1,212	165,961	-5,501	12,855	4,125,060	N/A	N/A	N/A
2011	1,733,430	16,086	14,096	1,013,689	11,566	790,204	319,355	1,818	192,163	-6,421	14,154	4,100,141	N/A	N/A	N/A
2012	1,514,043	13,403	9,787	1,225,894	11,898	769,331	276,240	4,327	214,006	-4,950	13,787	4,047,765	N/A	N/A	N/A
2013	1,581,115	13,820	13,344	1,124,836	12,853	789,016	268,565	9,036	244,472	-4,681	13,588	4,065,964	N/A	N/A	N/A
2014	1,581,710	18,276	11,955	1,126,609	12,022	797,166	259,367	17,691	261,522	-6,174	13,461	4,093,606	11,233	26,482	28,924
2015	1,352,398	17,372	10,877	1,333,482	13,117	797,178	249,080	24,893	270,268	-5,091	14,028	4,077,601	14,139	35,805	39,032
2016	1,239,149	13,008	11,197	1,378,307	12,807	805,694	267,812	36,054	305,579	-6,686	13,754	4,076,675	18,812	51,483	54,866
Year 2014															
January	157,097	5,913	1,158	91,061	933	73,163	21,634	751	24,742	-290	1,092	377,255	624	1,321	1,375
February	143,294	1,847	916	75,942	817	62,639	17,396	835	20,166	-445	941	324,348	664	1,416	1,499
March	136,443	2,002	1,186	78,151	866	62,397	24,257	1,317	24,534	-421	1,093	331,823	907	2,042	2,224
April	109,281	911	842	76,782	854	56,385	25,440	1,487	24,989	-378	1,039	297,631	988	2,249	2,476
May	118,786	960	1,084	89,120	944	62,947	26,544	1,750	22,073	-601	1,118	324,724	1,092	2,549	2,842
June	137,577	889	1,131	98,468	969	68,138	25,744	1,923	22,541	-653	1,117	357,844	1,101	2,678	3,024
July	149,627	992	1,050	115,081	1,069	71,940	24,357	1,788	19,256	-545	1,163	385,780	1,149	2,674	2,936
August	148,452	1,014	1,036	122,348	1,135	71,129	19,807	1,879	17,141	-840	1,239	384,341	1,139	2,757	3,019
September	126,110	929	1,019	106,582	1,126	67,535	16,074	1,832	18,061	-542	1,159	339,887	1,046	2,621	2,879
October	111,296	908	609	97,683	1,082	62,391	17,159	1,717	21,002	-448	1,122	314,522	965	2,448	2,682
November	119,127	963	775	84,354	1,073	65,140	18,625	1,380	25,428	-531	1,161	317,495	792	2,024	2,171
December	124,620	947	1,149	91,038	1,153	73,363	22,329	1,032	21,590	-480	1,218	337,957	766	1,703	1,798
Year 2015															
January	132,451	1,927	1,046	101,687	1,246	74,270	24,138	1,155	21,966	-551	1,120	360,455	746	1,838	1,902
February	126,977	5,221	1,100	91,315	1,025	63,461	22,286	1,484	21,078	-456	985	334,476	816	2,138	2,299
March	108,488	1,061	717	99,423	1,091	64,547	24,281	2,072	21,871	-409	1,051	324,192	1,134	2,920	3,206
April	88,989	919	809	92,806	979	59,784	22,471	2,379	24,115	-214	1,096	294,133	1,264	3,271	3,643
May	104,585	1,017	922	101,516	1,099	65,827	20,125	2,504	23,678	-370	1,185	322,087	1,394	3,553	3,898
June	125,673	1,040	821	121,478	1,118	68,516	20,414	2,558	20,003	-398	1,187	362,409	1,408	3,586	3,966
July	139,100	1,201	1,103	141,119	1,235	71,412	21,014	2,627	20,827	-513	1,293	400,419	1,487	3,734	4,114
August	134,670	1,093	1,040	139,084	1,196	72,415	19,122	2,688	20,134	-626	1,300	392,116	1,468	3,763	4,156
September	117,986	1,006	1,028	123,036	1,210	66,476	16,094	2,217	20,430	-544	1,182	350,122	1,330	3,238	3,547
October	96,759	945	827	110,005	906	60,571	16,630	1,910	22,798	-443	1,204	312,112	1,198	2,897	3,107
November	87,227	995	715	102,236	902	60,264	19,338	1,730	26,335	-285	1,197	300,653	982	2,507	2,712
December	89,495	948	749	109,777	1,110	69,634	23,166	1,570	27,032	-281	1,228	324,427	914	2,358	2,484
Year 2016															
January	113,459	1,396	966	110,044	1,195	72,525	25,615	1,486	25,193	-312	1,153	352,719	980	2,380	2,465
February	92,705	1,299	910	98,552	1,062	65,638	24,139	2,242	26,496	-399	1,041	313,685	1,145	3,145	3,386
March	72,173	874	927	103,890	1,197	66,149	27,390	2,617	28,467	-384	1,090	304,390	1,525	3,885	4,143
April	72,113	833	1,006	98,876	1,132	62,732	25,878	2,880	26,787	-452	1,109	292,894	1,703	4,309	4,583
May	81,695	984	974	110,430	1,053	66,576	25,486	3,425	25,286	-321	1,195	316,784	1,879	4,916	5,304
June	116,034	972	1,005	131,395	1,043	67,175	23,237	3,473	22,763	-497	1,180	367,781	1,928	4,990	5,401
July	136,316	1,273	1,049	151,554	1,077	70,349	21,455	3,945	24,428	-784	1,225	411,887	2,000	5,474	5,945
August	135,635	1,258	1,078	154,760	1,064	71,526	19,570	3,969	20,496	-902	1,248	409,701	1,942	5,543	5,911
September	114,138	946	980	125,603	1,020	65,448	16,368	3,635	22,894	-715	1,168	351,484	1,735	5,007	5,370
October	99,194	937	635	102,898	913	60,733	17,339	3,191	26,558	-561	1,108	312,945	1,552	4,495	4,743
November	86,940	1,070	799	93,942	1,013	65,179	18,808	2,767	26,052	-607	1,098	297,062	1,257	3,840	4,024
December	118,747	1,166	869	96,364	1,037	71,662	22,528	2,424	30,159	-753	1,139	345,343	1,167	3,500	3,591

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report;
Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.
Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.1.B. Net Generation from Renewable Sources: Total (All Sectors), 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2006	26,589	15	493	38,762	5,677	8,478	1,944	14,568	289,246	385,772	N/A	N/A	N/A
2007	34,450	16	596	39,014	6,158	8,304	2,063	14,637	247,510	352,747	N/A	N/A	N/A
2008	55,363	76	788	37,300	7,156	8,097	2,481	14,840	254,831	380,932	N/A	N/A	N/A
2009	73,886	157	735	36,050	7,924	8,058	2,461	15,009	273,445	417,724	N/A	N/A	N/A
2010	94,652	423	789	37,172	8,377	7,927	2,613	15,219	260,203	427,376	N/A	N/A	N/A
2011	120,177	1,012	806	37,449	9,044	7,354	2,824	15,316	319,355	513,336	N/A	N/A	N/A
2012	140,822	3,451	876	37,799	9,803	7,320	2,700	15,562	276,240	494,573	N/A	N/A	N/A
2013	167,840	8,121	915	40,028	10,658	7,186	2,986	15,775	268,565	522,073	N/A	N/A	N/A
2014	181,655	15,250	2,441	42,340	11,220	7,228	3,202	15,877	259,367	538,579	11,233	26,482	28,924
2015	190,719	21,666	3,227	41,929	11,291	7,211	3,201	15,918	249,080	544,241	14,139	35,805	39,032
2016	226,993	32,670	3,384	40,947	11,218	7,265	3,331	15,826	267,812	609,445	18,812	51,483	54,866
Year 2014													
January	17,911	697	54	3,626	967	584	299	1,355	21,634	47,127	624	1,321	1,375
February	14,009	752	83	3,265	930	490	267	1,206	17,396	38,397	664	1,416	1,499
March	17,736	1,135	182	3,609	961	599	291	1,338	24,257	50,108	907	2,042	2,224
April	18,636	1,261	226	3,230	957	586	267	1,314	25,440	51,916	988	2,249	2,476
May	15,601	1,457	292	3,290	944	635	270	1,332	26,544	50,366	1,092	2,549	2,842
June	15,799	1,578	345	3,622	943	613	271	1,293	25,744	50,208	1,101	2,678	3,024
July	12,187	1,525	262	3,807	1,035	646	261	1,320	24,357	45,402	1,149	2,674	2,936
August	10,171	1,618	261	3,761	988	647	245	1,329	19,807	38,828	1,139	2,757	3,019
September	11,520	1,574	258	3,462	932	606	234	1,308	16,074	35,968	1,046	2,621	2,879
October	14,508	1,484	233	3,422	854	603	269	1,345	17,159	39,878	965	2,448	2,682
November	18,867	1,232	148	3,508	820	612	258	1,362	18,625	45,432	792	2,024	2,171
December	14,711	936	95	3,737	890	609	268	1,375	22,329	44,950	766	1,703	1,798
Year 2015													
January	15,162	1,092	63	3,717	885	582	258	1,362	24,138	47,259	746	1,838	1,902
February	14,922	1,322	161	3,372	792	503	230	1,260	22,286	44,847	816	2,138	2,299
March	15,308	1,786	286	3,457	914	543	255	1,394	24,281	48,224	1,134	2,920	3,206
April	17,867	2,008	372	3,246	915	571	243	1,272	22,471	48,965	1,264	3,271	3,643
May	17,151	2,160	345	3,338	951	609	238	1,390	20,125	46,308	1,394	3,553	3,898
June	13,421	2,178	380	3,496	926	607	251	1,302	20,414	42,975	1,408	3,586	3,966
July	13,675	2,247	380	3,806	1,035	661	293	1,357	21,014	44,469	1,487	3,734	4,114
August	13,080	2,295	392	3,788	982	651	288	1,344	19,122	41,943	1,468	3,763	4,156
September	13,972	1,908	309	3,450	931	607	268	1,203	16,094	38,742	1,330	3,238	3,547
October	16,380	1,700	210	3,252	938	617	289	1,323	16,630	41,338	1,198	2,897	3,107
November	19,682	1,525	204	3,418	993	620	290	1,334	19,338	47,403	982	2,507	2,712
December	20,098	1,444	126	3,587	1,029	642	299	1,377	23,166	51,767	914	2,358	2,484
Year 2016													
January	18,466	1,400	86	3,600	915	603	277	1,332	25,615	52,294	980	2,380	2,465
February	20,138	2,000	241	3,406	886	537	285	1,243	24,139	52,877	1,145	3,145	3,386
March	21,939	2,360	257	3,403	949	579	281	1,315	27,390	58,474	1,525	3,885	4,143
April	20,799	2,606	273	2,967	932	593	287	1,209	25,878	55,544	1,703	4,309	4,583
May	18,848	3,037	388	3,187	980	649	280	1,342	25,486	54,197	1,879	4,916	5,304
June	16,303	3,062	412	3,414	934	614	247	1,251	23,237	49,473	1,928	4,990	5,401
July	17,618	3,473	471	3,658	943	635	262	1,311	21,455	49,828	2,000	5,474	5,945
August	13,589	3,602	368	3,722	942	634	285	1,324	19,570	44,035	1,942	5,543	5,911
September	16,404	3,272	363	3,407	895	589	272	1,327	16,368	42,897	1,735	5,007	5,370
October	20,335	2,942	249	3,176	839	589	265	1,353	17,339	47,088	1,552	4,495	4,743
November	19,406	2,583	184	3,391	993	602	296	1,364	18,808	47,627	1,257	3,840	4,024
December	23,146	2,333	91	3,615	1,011	640	293	1,454	22,528	55,111	1,167	3,500	3,591

Wood and Wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Waste Biomass includes sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
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Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.
Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.2.A. Net Generation by Energy Source: Electric Utilities, 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities											
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total
Annual Totals												
2006	1,471,421	31,269	9,634	282,088	30	425,341	261,864	15	6,573	-5,281	700	2,483,656
2007	1,490,985	33,325	7,395	313,785	141	427,555	226,734	11	8,943	-5,328	586	2,504,131
2008	1,466,395	22,206	5,918	320,190	46	424,256	229,645	17	11,291	-5,143	545	2,475,367
2009	1,322,092	18,035	7,182	349,166	96	417,275	247,198	28	14,589	-3,369	483	2,372,776
2010	1,378,028	17,258	8,807	392,616	52	424,843	236,104	101	17,826	-4,466	462	2,471,632
2011	1,301,107	11,688	9,428	414,843	29	415,298	291,413	216	21,717	-5,492	604	2,460,851
2012	1,146,480	9,892	5,664	504,958	0	394,823	252,936	639	27,378	-4,202	603	2,339,172
2013	1,188,452	9,446	9,522	501,427	798	406,114	243,040	943	31,474	-3,773	615	2,388,058
2014	1,173,073	10,696	9,147	501,414	112	419,871	238,185	1,218	33,278	-5,144	622	2,382,473
2015	998,385	10,386	8,278	617,817	199	416,680	229,640	1,494	35,992	-4,105	558	2,315,323
2016	922,399	9,069	8,881	654,780	154	424,400	247,787	1,995	40,666	-5,629	421	2,304,923
Year 2014												
January	115,862	2,445	949	41,208	13	38,847	19,673	53	3,286	-218	47	222,165
February	104,638	1,051	706	33,600	7	32,937	15,973	61	2,698	-361	34	191,345
March	97,957	1,037	953	35,116	9	32,612	22,423	91	3,296	-355	57	193,194
April	77,724	711	572	34,890	20	30,312	22,977	98	3,274	-301	52	170,329
May	89,103	709	833	41,226	12	33,760	23,933	114	2,632	-506	49	191,866
June	104,523	650	894	44,315	5	35,898	23,790	127	2,613	-557	53	212,311
July	112,875	711	792	50,296	7	38,031	22,624	131	2,261	-445	62	227,343
August	112,568	711	778	54,553	6	37,182	18,251	130	1,894	-740	60	225,392
September	94,482	711	750	46,260	5	35,296	14,895	126	2,277	-461	50	194,390
October	82,991	652	457	42,360	4	32,017	15,863	124	2,826	-351	48	176,990
November	87,064	643	577	37,477	9	34,552	17,369	91	3,473	-441	55	180,869
December	93,287	666	887	40,114	15	38,428	20,415	72	2,749	-409	56	196,279
Year 2015												
January	94,835	1,147	813	46,573	26	39,377	22,523	68	3,130	-460	41	208,073
February	90,828	2,014	879	43,951	24	33,478	21,075	87	2,877	-387	45	194,871
March	78,606	696	502	45,972	21	33,328	22,523	126	3,123	-319	31	184,609
April	66,628	695	565	43,065	20	31,053	20,156	145	3,157	-153	47	165,379
May	79,341	701	691	46,882	20	35,089	18,481	156	3,043	-292	54	184,165
June	93,799	765	604	57,292	17	35,150	18,429	153	2,311	-300	50	208,270
July	104,128	834	898	64,971	15	37,055	19,004	155	2,514	-413	49	229,212
August	100,129	794	827	63,376	21	38,482	17,813	159	2,554	-513	53	223,696
September	85,932	690	797	56,266	20	35,034	15,062	130	2,771	-477	49	196,273
October	71,408	682	610	49,533	12	31,886	15,378	114	3,261	-364	42	172,561
November	64,191	718	490	47,590	1	30,751	17,901	103	3,673	-218	48	165,247
December	68,558	650	604	52,345	1	35,997	21,296	98	3,577	-210	49	182,965
Year 2016												
January	84,012	965	832	52,818	3	37,974	23,579	95	3,303	-230	34	203,384
February	69,852	830	734	48,009	4	34,281	22,015	135	3,624	-332	30	179,182
March	56,982	623	724	49,949	5	34,445	25,125	151	3,696	-291	42	171,452
April	53,542	602	858	46,425	7	34,036	23,742	169	3,887	-367	34	162,936
May	62,093	695	763	52,908	10	36,531	23,508	187	3,098	-257	33	179,569
June	86,611	710	793	63,858	16	37,000	21,716	188	3,034	-409	40	213,557
July	100,856	926	833	71,913	21	37,919	20,030	197	2,837	-678	34	234,890
August	100,156	905	856	72,293	13	37,927	18,241	207	2,432	-787	33	232,277
September	83,223	644	807	58,392	23	33,919	15,283	190	3,215	-626	35	195,105
October	72,950	658	418	47,710	7	30,016	16,149	182	3,479	-471	36	171,134
November	64,830	700	596	44,171	22	33,082	17,599	154	3,635	-522	35	164,301
December	87,293	811	667	46,333	22	37,268	20,799	139	4,425	-657	36	197,136

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
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Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Table 3.2.B. Net Generation from Renewable Sources: Electric Utilities, 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2006	2,351	15	0	1,937	705	228	190	1,162	261,864	268,452	N/A	N/A	N/A
2007	4,361	10	1	2,226	751	240	226	1,139	226,734	235,687	N/A	N/A	N/A
2008	6,899	16	1	1,888	844	211	252	1,197	229,645	240,953	N/A	N/A	N/A
2009	10,348	28	1	1,748	866	184	261	1,182	247,198	261,815	N/A	N/A	N/A
2010	13,089	101	0	2,328	879	154	259	1,118	236,104	254,031	N/A	N/A	N/A
2011	17,140	187	29	2,023	957	165	295	1,137	291,413	313,346	N/A	N/A	N/A
2012	22,926	551	89	1,836	1,022	184	265	1,143	252,936	280,953	N/A	N/A	N/A
2013	26,436	841	102	2,534	1,114	197	188	1,005	243,040	275,457	N/A	N/A	N/A
2014	27,671	1,094	124	3,050	1,068	191	182	1,116	238,185	272,681	0	1,094	1,218
2015	30,412	1,388	106	3,018	1,061	195	218	1,089	229,640	267,125	0	1,388	1,494
2016	35,070	1,920	75	3,038	1,040	201	237	1,080	247,787	290,448	0	1,920	1,995
Year 2014													
January	2,790	49	5	280	91	11	15	98	19,673	23,013	0	49	53
February	2,252	53	8	252	83	10	16	84	15,973	18,732	0	53	61
March	2,801	80	11	284	85	16	12	97	22,423	25,810	0	80	91
April	2,892	86	12	175	87	19	13	89	22,977	26,350	0	86	98
May	2,221	100	13	189	87	18	20	97	23,933	26,679	0	100	114
June	2,146	118	10	255	89	17	14	92	23,790	26,530	0	118	127
July	1,761	120	11	272	97	19	20	93	22,624	25,015	0	120	131
August	1,380	117	12	296	97	16	12	93	18,251	20,274	0	117	130
September	1,806	115	11	262	90	16	11	91	14,895	17,297	0	115	126
October	2,338	107	17	265	90	18	19	97	15,863	18,813	0	107	124
November	3,012	85	6	251	85	16	15	93	17,369	20,932	0	85	91
December	2,272	63	9	270	86	15	15	91	20,415	23,235	0	63	72
Year 2015													
January	2,627	64	5	285	90	12	22	95	22,523	25,721	0	64	68
February	2,436	87	0	251	78	11	17	83	21,075	24,040	0	87	87
March	2,678	118	9	235	92	12	17	91	22,523	25,772	0	118	126
April	2,811	135	10	149	90	18	15	75	20,156	23,457	0	135	145
May	2,595	141	15	227	89	21	17	94	18,481	21,679	0	141	156
June	1,837	138	16	264	84	18	15	93	18,429	20,894	0	138	153
July	1,966	138	17	321	94	19	20	93	19,004	21,673	0	138	155
August	2,001	144	15	325	91	18	27	93	17,813	20,526	0	144	159
September	2,319	123	7	240	87	17	22	85	15,062	17,963	0	123	130
October	2,822	107	6	220	88	17	17	97	15,378	18,753	0	107	114
November	3,216	99	4	243	90	15	16	93	17,901	21,677	0	99	103
December	3,104	96	2	259	90	15	12	97	21,296	24,970	0	96	98
Year 2016													
January	2,787	93	2	300	85	15	20	97	23,579	26,978	0	93	95
February	3,138	130	6	275	89	12	21	89	22,015	25,774	0	130	135
March	3,242	145	6	238	94	19	11	93	25,125	28,972	0	145	151
April	3,525	158	11	178	90	18	13	64	23,742	27,798	0	158	169
May	2,676	173	14	192	92	20	24	94	23,508	26,794	0	173	187
June	2,556	179	10	272	82	17	19	89	21,716	24,938	0	179	188
July	2,318	191	5	310	84	16	19	89	20,030	23,064	0	191	197
August	1,906	201	7	311	85	16	22	92	18,241	20,880	0	201	207
September	2,737	185	5	264	85	17	21	91	15,283	18,688	0	185	190
October	3,077	179	3	187	82	17	20	95	16,149	19,810	0	179	182
November	3,215	149	4	203	83	17	25	93	17,599	21,388	0	149	154
December	3,894	137	3	309	89	16	22	95	20,799	25,364	0	137	139

Wood and Wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Waste Biomass includes sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.
Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.3.A. Net Generation by Energy Source: Independent Power Producers, 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities											
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total
Annual Totals												
2006	498,316	10,396	8,409	452,329	4,223	361,877	24,390	493	58,853	-1,277	6,412	1,424,421
2007	507,406	13,645	6,942	500,967	3,901	378,869	19,109	601	65,150	-1,569	6,191	1,501,212
2008	502,442	8,021	6,737	482,182	3,154	381,952	23,451	847	84,928	-1,145	6,414	1,498,982
2009	419,031	6,306	4,288	491,839	2,962	381,579	24,308	863	100,997	-1,259	6,146	1,437,061
2010	449,709	5,117	3,497	508,774	2,915	382,126	22,351	1,105	119,851	-1,035	6,345	1,500,754
2011	416,783	3,655	3,431	511,447	2,911	374,906	26,117	1,511	140,442	-928	7,059	1,487,335
2012	354,076	2,757	1,758	627,833	2,984	374,509	20,923	3,525	156,539	-748	7,030	1,551,186
2013	379,270	3,761	1,780	527,522	3,524	382,902	22,018	7,782	181,263	-908	6,742	1,515,657
2014	395,701	6,789	1,410	531,758	3,246	377,295	19,861	16,086	196,723	-1,030	6,690	1,554,530
2015	342,608	6,240	1,601	619,839	3,517	380,498	17,996	22,962	202,858	-987	6,838	1,603,971
2016	307,263	3,360	1,401	624,600	3,758	381,294	18,539	33,502	233,553	-1,057	6,941	1,613,156
Year 2014												
January	40,054	3,281	109	41,761	253	34,316	1,837	681	18,727	-72	533	141,480
February	37,580	698	123	35,129	204	29,702	1,316	753	15,039	-84	472	120,930
March	37,333	880	129	35,402	206	29,785	1,715	1,196	18,569	-66	571	125,720
April	30,554	160	141	34,693	211	26,072	2,332	1,355	19,166	-77	516	115,124
May	28,635	203	125	40,419	271	29,187	2,477	1,596	16,817	-95	569	120,205
June	31,947	193	108	46,588	252	32,240	1,850	1,755	17,275	-96	565	132,678
July	35,597	236	128	56,400	276	33,909	1,641	1,618	14,183	-100	584	144,474
August	34,761	261	123	59,357	309	33,946	1,458	1,709	12,495	-101	594	144,913
September	30,580	171	145	52,430	293	32,238	1,091	1,670	13,267	-81	562	132,366
October	27,332	209	51	47,693	331	30,374	1,200	1,556	15,642	-97	566	124,857
November	31,053	268	88	39,234	292	30,589	1,155	1,260	19,441	-90	578	123,869
December	30,274	228	139	42,652	349	34,935	1,787	939	16,102	-71	580	127,913
Year 2015												
January	36,595	701	128	46,877	368	34,893	1,491	1,066	16,096	-92	560	138,685
February	35,196	3,049	132	40,256	305	29,984	1,104	1,372	15,785	-69	489	127,602
March	28,865	306	141	46,138	306	31,218	1,625	1,911	16,184	-90	527	127,131
April	21,519	170	140	42,762	269	28,732	2,175	2,193	18,393	-62	528	116,818
May	24,330	257	144	47,242	318	30,737	1,515	2,300	18,059	-78	561	125,387
June	30,878	215	138	56,098	282	33,366	1,867	2,359	15,117	-98	574	140,797
July	33,932	314	140	67,295	295	34,357	1,892	2,425	15,512	-101	617	156,677
August	33,522	250	142	66,938	311	33,933	1,216	2,481	14,856	-113	624	154,160
September	31,074	273	140	58,525	311	31,442	954	2,047	15,075	-67	571	140,345
October	24,463	216	149	52,489	216	28,685	1,135	1,762	16,981	-79	589	126,607
November	22,171	235	140	46,542	233	29,513	1,301	1,599	20,046	-67	591	122,304
December	20,063	254	67	48,676	302	33,637	1,721	1,448	20,754	-71	607	127,458
Year 2016												
January	28,612	379	42	48,969	341	34,551	1,884	1,363	19,168	-82	589	135,816
February	22,057	416	99	42,840	295	31,357	1,991	2,065	20,345	-66	540	121,939
March	14,363	210	138	45,900	355	31,704	2,100	2,420	22,164	-93	549	119,810
April	17,877	188	97	44,832	311	28,696	1,993	2,662	20,487	-84	554	117,612
May	18,842	233	124	49,574	303	30,046	1,847	3,188	19,608	-64	610	124,310
June	28,585	214	131	59,185	335	30,175	1,410	3,229	17,117	-88	595	140,888
July	34,564	291	136	70,645	324	32,430	1,306	3,690	18,856	-106	610	162,745
August	34,607	309	140	73,317	319	33,599	1,217	3,701	15,341	-115	617	163,051
September	30,124	258	113	58,805	323	31,529	996	3,394	17,145	-89	557	143,155
October	25,524	232	141	47,044	228	30,717	1,080	2,965	20,549	-90	549	128,939
November	21,446	325	116	41,736	330	32,097	1,122	2,576	19,760	-85	560	119,981
December	30,661	307	124	41,755	296	34,394	1,591	2,250	23,013	-96	613	134,908

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report;
Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Table 3.3.B. Net Generation from Renewable Sources: Independent Power Producers, 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2006	24,238	0	493	8,404	4,771	7,259	774	13,406	24,390	83,736	N/A	N/A	N/A
2007	30,089	6	595	8,486	5,177	7,061	839	13,498	19,109	84,860	N/A	N/A	N/A
2008	48,464	60	787	8,750	6,057	6,975	1,040	13,643	23,451	109,226	N/A	N/A	N/A
2009	63,538	129	734	8,990	6,718	6,829	1,095	13,826	24,308	126,168	N/A	N/A	N/A
2010	81,547	316	789	9,118	7,227	6,742	1,116	14,101	22,351	143,306	N/A	N/A	N/A
2011	102,981	734	777	8,709	7,120	6,217	1,237	14,180	26,117	168,071	N/A	N/A	N/A
2012	117,822	2,737	787	9,214	7,852	6,056	1,176	14,419	20,923	180,987	N/A	N/A	N/A
2013	141,306	6,969	813	9,768	8,442	5,838	1,139	14,770	22,018	211,063	N/A	N/A	N/A
2014	153,825	13,769	2,317	11,977	9,062	5,838	1,261	14,761	19,861	232,670	0	13,769	16,086
2015	160,135	19,841	3,121	11,545	9,202	5,806	1,342	14,829	17,996	243,816	0	19,841	22,962
2016	191,720	30,194	3,308	10,382	9,255	5,965	1,486	14,746	18,539	285,594	0	30,194	33,502
Year 2014													
January	15,104	631	50	993	775	466	132	1,257	1,837	21,244	0	631	681
February	11,744	678	75	898	753	406	116	1,122	1,316	17,108	0	678	753
March	14,921	1,024	171	1,007	780	498	123	1,240	1,715	21,480	0	1,024	1,196
April	15,729	1,140	214	865	780	469	98	1,225	2,332	22,853	0	1,140	1,355
May	13,369	1,317	279	818	770	512	113	1,235	2,477	20,891	0	1,317	1,596
June	13,641	1,420	335	1,062	761	493	117	1,201	1,850	20,880	0	1,420	1,755
July	10,416	1,366	251	1,103	835	515	88	1,227	1,641	17,442	0	1,366	1,618
August	8,782	1,460	249	1,076	794	519	88	1,236	1,458	15,661	0	1,460	1,709
September	9,704	1,423	247	1,025	750	483	89	1,217	1,091	16,028	0	1,423	1,670
October	12,154	1,339	217	974	681	487	98	1,248	1,200	18,398	0	1,339	1,556
November	15,835	1,118	142	1,080	664	495	97	1,269	1,155	21,856	0	1,118	1,260
December	12,425	852	87	1,077	720	495	101	1,284	1,787	18,827	0	852	939
Year 2015													
January	12,520	1,007	59	1,023	713	478	96	1,267	1,491	18,653	0	1,007	1,066
February	12,471	1,211	161	983	641	412	101	1,177	1,104	18,261	0	1,211	1,372
March	12,615	1,634	277	993	737	437	99	1,303	1,625	19,721	0	1,634	1,911
April	15,040	1,831	362	876	742	452	84	1,198	2,175	22,760	0	1,831	2,193
May	14,541	1,971	329	866	778	483	95	1,296	1,515	21,874	0	1,971	2,300
June	11,572	1,995	364	980	758	483	114	1,209	1,867	19,343	0	1,995	2,359
July	11,699	2,062	362	1,044	847	530	129	1,263	1,892	19,828	0	2,062	2,425
August	11,069	2,103	377	1,085	801	525	124	1,252	1,216	18,553	0	2,103	2,481
September	11,642	1,746	301	961	758	479	116	1,118	954	18,076	0	1,746	2,047
October	13,541	1,558	204	826	764	501	123	1,226	1,135	19,878	0	1,558	1,762
November	16,447	1,398	201	914	816	499	129	1,240	1,301	22,945	0	1,398	1,599
December	16,976	1,324	124	995	847	525	131	1,280	1,721	23,922	0	1,324	1,448
Year 2016													
January	15,660	1,279	84	903	748	497	125	1,235	1,884	22,416	0	1,279	1,363
February	16,980	1,830	236	908	722	448	132	1,155	1,991	24,402	0	1,830	2,065
March	18,678	2,168	252	897	777	468	122	1,222	2,100	26,684	0	2,168	2,420
April	17,256	2,400	262	706	774	474	132	1,145	1,993	25,142	0	2,400	2,662
May	16,156	2,813	374	755	808	530	111	1,248	1,847	24,643	0	2,813	3,188
June	13,734	2,827	402	823	772	513	113	1,162	1,410	21,756	0	2,827	3,229
July	15,287	3,224	466	932	782	520	113	1,222	1,306	23,852	0	3,224	3,690
August	11,673	3,340	361	1,003	778	520	135	1,232	1,217	20,259	0	3,340	3,701
September	13,654	3,036	358	903	737	482	133	1,236	996	21,535	0	3,036	3,394
October	17,241	2,719	246	764	688	479	120	1,258	1,080	24,594	0	2,719	2,965
November	16,173	2,396	180	864	828	497	126	1,271	1,122	23,458	0	2,396	2,576
December	19,228	2,162	88	924	841	538	122	1,359	1,591	26,854	0	2,162	2,250

Wood and Wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Waste Biomass includes sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
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Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
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Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.4.A. Net Generation by Energy Source: Commercial Sector, 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities												Small Scale Generation	Net Generation From Utility and Small Scale Facilities	
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals															
2006	1,310	228	7	4,355	0	0	93	0	1,619	0	758	8,371	N/A	N/A	N/A
2007	1,371	180	9	4,257	0	0	77	0	1,614	0	764	8,273	N/A	N/A	N/A
2008	1,261	136	6	4,188	0	0	60	0	1,555	0	720	7,926	N/A	N/A	N/A
2009	1,096	157	5	4,225	0	0	71	0	1,769	0	842	8,165	N/A	N/A	N/A
2010	1,111	117	7	4,725	3	0	80	5	1,709	0	834	8,592	N/A	N/A	N/A
2011	1,049	86	3	5,487	3	0	26	84	2,392	0	950	10,080	N/A	N/A	N/A
2012	883	191	6	6,603	0	0	28	148	2,397	0	1,046	11,301	N/A	N/A	N/A
2013	839	118	5	7,154	0	0	44	294	2,662	0	1,118	12,234	N/A	N/A	N/A
2014	595	247	9	7,227	0	0	38	371	2,862	0	1,171	12,520	5,146	5,516	5,516
2015	509	183	8	7,471	0	0	35	416	2,803	0	1,170	12,595	5,689	6,106	6,106
2016	383	77	6	7,730	0	0	217	529	2,697	0	1,068	12,706	6,158	6,687	6,687
Year 2014															
January	76	102	1	651	0	0	4	16	264	0	104	1,218	300	316	316
February	79	37	1	533	0	0	3	20	216	0	71	961	322	342	342
March	66	30	1	529	0	0	4	29	230	0	84	972	432	461	461
April	47	9	1	509	0	0	4	33	229	0	96	927	467	499	499
May	39	8	0	557	0	0	4	38	238	0	102	986	512	550	550
June	42	8	0	605	0	0	3	39	245	0	99	1,041	510	549	549
July	50	9	0	701	0	0	3	38	263	0	109	1,173	529	567	567
August	42	7	1	722	0	0	3	39	256	0	110	1,181	520	559	559
September	36	8	1	657	0	0	3	35	243	0	104	1,086	469	504	504
October	31	9	1	601	0	0	2	36	230	0	97	1,008	419	455	455
November	44	9	1	560	0	0	2	28	218	0	98	960	338	366	366
December	45	10	1	602	0	0	2	20	230	0	97	1,007	329	349	349
Year 2015															
January	56	22	1	564	0	0	3	20	225	0	88	981	327	347	347
February	59	72	1	499	0	0	3	23	198	0	77	932	356	379	379
March	52	11	1	560	0	0	3	33	227	0	91	977	479	512	512
April	38	8	1	513	0	0	3	39	231	0	98	931	525	564	564
May	32	10	0	583	0	0	3	46	237	0	101	1,013	574	619	619
June	45	10	0	662	0	0	4	43	232	0	102	1,098	571	614	614
July	44	12	0	769	0	0	3	45	256	0	108	1,238	596	641	641
August	39	12	1	760	0	0	2	46	243	0	104	1,206	575	621	621
September	33	7	1	716	0	0	2	37	242	0	106	1,145	515	553	553
October	34	6	1	643	0	0	3	32	234	0	95	1,049	455	488	488
November	35	6	1	583	0	0	3	27	236	0	102	992	367	394	394
December	41	7	1	617	0	0	4	24	242	0	98	1,033	349	373	373
Year 2016															
January	43	8	1	605	0	0	21	26	230	0	89	1,022	346	373	373
February	45	8	1	570	0	0	18	39	210	0	75	967	398	437	437
March	46	3	1	579	0	0	22	44	225	0	90	1,011	520	564	564
April	24	6	0	551	0	0	15	46	221	0	97	961	566	612	612
May	20	6	0	607	0	0	12	48	230	0	96	1,019	616	663	663
June	23	5	0	692	0	0	13	53	220	0	83	1,089	623	676	676
July	24	8	1	831	0	0	15	55	234	0	96	1,263	640	696	696
August	26	7	0	859	0	0	19	58	234	0	95	1,298	620	677	677
September	29	4	0	700	0	0	23	48	223	0	87	1,114	556	605	605
October	27	5	0	617	0	0	21	42	218	0	90	1,021	493	536	536
November	35	8	0	521	0	0	17	36	224	0	85	927	393	428	428
December	42	8	1	598	0	0	21	33	228	0	85	1,015	387	420	420

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report;
Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.
Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.4.B. Net Generation from Renewable Sources: Commercial Sector, 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2006	0	0	0	21	173	956	470	0	93	1,713	N/A	N/A	N/A
2007	0	0	0	15	203	962	434	0	77	1,691	N/A	N/A	N/A
2008	0	0	0	21	234	911	389	0	60	1,615	N/A	N/A	N/A
2009	0	0	0	20	318	1,045	386	0	71	1,839	N/A	N/A	N/A
2010	16	5	0	21	256	1,031	386	0	80	1,794	N/A	N/A	N/A
2011	51	84	0	26	952	971	393	0	26	2,502	N/A	N/A	N/A
2012	54	148	0	24	848	1,070	402	0	28	2,573	N/A	N/A	N/A
2013	61	294	0	34	925	1,149	493	0	44	3,000	N/A	N/A	N/A
2014	107	371	0	74	905	1,202	575	0	38	3,271	5,146	5,516	5,516
2015	118	416	0	48	847	1,199	592	0	35	3,255	5,689	6,106	6,106
2016	131	529	0	69	753	1,093	649	0	217	3,443	6,158	6,687	6,687
Year 2014													
January	9	16	0	11	85	107	51	0	4	284	300	316	316
February	8	20	0	10	79	74	46	0	3	240	322	342	342
March	8	29	0	7	79	86	50	0	4	263	432	461	461
April	8	33	0	2	74	98	47	0	4	266	467	499	499
May	6	38	0	7	70	105	49	0	4	280	512	550	550
June	9	39	0	10	77	102	46	0	3	287	510	549	549
July	8	38	0	7	87	112	49	0	3	304	529	567	567
August	6	39	0	6	81	113	50	0	3	298	520	559	559
September	8	35	0	4	78	107	47	0	3	281	469	504	504
October	11	36	0	4	69	99	47	0	2	268	419	455	455
November	13	28	0	2	56	101	45	0	2	247	338	366	366
December	10	20	0	4	68	99	48	0	2	252	329	349	349
Year 2015													
January	11	20	0	6	68	91	50	0	3	249	327	347	347
February	9	23	0	6	60	79	44	0	3	224	356	379	379
March	10	33	0	3	71	93	49	0	3	263	479	512	512
April	11	39	0	4	68	100	48	0	3	273	525	564	564
May	10	46	0	6	70	103	48	0	3	286	574	619	619
June	8	43	0	2	70	104	48	0	4	279	571	614	614
July	7	45	0	7	78	111	53	0	3	304	596	641	641
August	7	46	0	2	74	106	53	0	2	291	575	621	621
September	8	37	0	4	70	109	51	0	2	282	515	553	553
October	11	32	0	4	71	98	50	0	3	269	455	488	488
November	13	27	0	1	71	104	47	0	3	266	367	394	394
December	12	24	0	3	75	101	51	0	4	270	349	373	373
Year 2016													
January	11	26	0	6	66	91	55	0	21	277	346	373	373
February	12	39	0	6	61	77	54	0	18	267	398	437	437
March	13	44	0	3	64	92	54	0	22	292	520	564	564
April	12	46	0	4	53	100	51	0	15	282	566	612	612
May	11	48	0	1	63	98	56	0	12	289	616	663	663
June	9	53	0	9	65	84	53	0	13	286	623	676	676
July	10	55	0	8	63	98	55	0	15	304	640	696	696
August	8	58	0	11	64	97	55	0	19	311	620	677	677
September	9	48	0	8	62	89	55	0	23	295	556	605	605
October	12	42	0	4	57	93	52	0	21	282	493	536	536
November	11	36	0	2	68	88	54	0	17	277	393	428	428
December	14	33	0	6	67	87	54	0	21	282	387	420	420

Wood and Wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Waste Biomass includes sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
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Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
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Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.5.A. Net Generation by Energy Source: Industrial Sector, 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities												Small Scale Generation	Net Generation From Utility and Small Scale Facilities	
Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Solar	Renewable Sources Excluding Hydroelectric and Solar	Hydroelectric Pumped Storage	Other	Total Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals															
2006	19,464	2,567	1,656	77,669	9,923	0	2,899	0	28,972	0	5,103	148,254	N/A	N/A	N/A
2007	16,694	2,355	1,889	77,580	9,411	0	1,590	0	28,919	0	4,690	143,128	N/A	N/A	N/A
2008	15,703	1,555	1,664	76,421	8,507	0	1,676	0	27,462	0	4,125	137,113	N/A	N/A	N/A
2009	13,686	1,474	1,489	75,748	7,574	0	1,868	0	26,033	0	4,457	132,329	N/A	N/A	N/A
2010	18,441	844	1,414	81,583	8,343	0	1,668	2	26,574	0	5,214	144,082	N/A	N/A	N/A
2011	14,490	657	1,234	81,911	8,624	0	1,799	7	27,612	0	5,541	141,875	N/A	N/A	N/A
2012	12,603	563	2,359	86,500	8,913	0	2,353	14	27,693	0	5,108	146,107	N/A	N/A	N/A
2013	12,554	495	2,036	88,733	8,531	0	3,463	17	29,074	0	5,113	150,015	N/A	N/A	N/A
2014	12,341	544	1,389	86,209	8,664	0	1,282	16	28,659	0	4,978	144,083	1,139	1,156	1,156
2015	10,896	563	990	88,355	9,401	0	1,410	21	28,614	0	5,462	145,712	1,451	1,472	1,472
2016	9,103	503	909	91,197	8,895	0	1,269	27	28,663	0	5,324	145,890	2,060	2,087	2,087
Year 2014															
January	1,105	85	100	7,441	667	0	120	1	2,466	0	408	12,391	62	62	62
February	998	61	86	6,680	606	0	104	1	2,212	0	363	11,112	65	66	66
March	1,087	56	103	7,105	651	0	114	1	2,439	0	382	11,937	93	94	94
April	955	32	128	6,690	624	0	127	2	2,319	0	375	11,251	101	103	103
May	1,009	40	126	6,918	662	0	130	2	2,385	0	397	11,667	111	113	113
June	1,065	37	130	6,960	711	0	100	2	2,409	0	400	11,814	113	114	114
July	1,105	37	129	7,685	786	0	89	2	2,549	0	408	12,790	117	119	119
August	1,081	35	134	7,716	820	0	96	2	2,496	0	476	12,856	116	118	118
September	1,013	39	123	7,234	828	0	86	2	2,275	0	444	12,044	106	107	107
October	942	39	101	7,028	748	0	93	1	2,303	0	411	11,667	100	102	102
November	966	42	108	7,083	772	0	99	1	2,297	0	429	11,797	81	82	82
December	1,015	42	121	7,670	790	0	125	1	2,510	0	484	12,757	74	75	75
Year 2015															
January	964	57	103	7,674	852	0	121	1	2,514	0	430	12,717	80	80	80
February	894	86	88	6,609	696	0	105	1	2,217	0	374	11,071	85	86	86
March	965	49	74	6,753	764	0	130	2	2,337	0	402	11,475	119	121	121
April	804	45	104	6,465	690	0	138	2	2,335	0	423	11,005	129	132	132
May	881	48	87	6,809	761	0	127	2	2,339	0	469	11,522	144	146	146
June	951	49	78	7,426	819	0	114	2	2,343	0	462	12,244	144	146	146
July	995	41	66	8,084	925	0	115	2	2,545	0	518	13,292	150	152	152
August	980	37	70	8,010	864	0	90	2	2,480	0	519	13,054	147	149	149
September	947	37	91	7,528	879	0	77	2	2,342	0	456	12,359	135	137	137
October	853	40	67	7,340	678	0	114	2	2,322	0	478	11,894	125	126	126
November	830	36	85	7,521	668	0	133	1	2,380	0	456	12,110	100	102	102
December	832	38	77	8,137	806	0	145	1	2,459	0	475	12,970	93	94	94
Year 2016															
January	793	45	91	7,653	851	0	130	1	2,492	0	442	12,497	113	115	115
February	750	45	76	7,133	763	0	115	2	2,317	0	396	11,597	124	126	126
March	781	39	63	7,462	837	0	142	2	2,381	0	409	12,117	171	173	173
April	670	37	50	7,067	815	0	128	2	2,192	0	424	11,386	186	189	189
May	740	51	87	7,341	740	0	119	3	2,350	0	456	11,886	206	208	208
June	814	44	81	7,661	692	0	99	3	2,391	0	463	12,248	206	209	209
July	873	48	79	8,165	731	0	104	3	2,501	0	486	12,989	214	217	217
August	847	37	81	8,291	732	0	92	3	2,489	0	503	13,075	209	212	212
September	762	41	60	7,706	674	0	65	2	2,312	0	489	12,111	190	192	192
October	693	41	75	7,527	679	0	88	2	2,312	0	433	11,851	174	176	176
November	630	37	87	7,514	662	0	69	2	2,433	0	418	11,852	139	140	140
December	750	40	78	7,678	720	0	117	1	2,493	0	405	12,283	128	129	129

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
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Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report;
Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.
Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.5.B. Net Generation from Renewable Sources: Industrial Sector, 2006 - 2016
(Thousand Megawatthours)

	Generation at Utility Scale Facilities										Small Scale Generation	Generation From Utility and Small Scale Facilities	
Period	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Landfill Gas	Biogenic Municipal Solid Waste	Other Waste Biomass	Geothermal	Conventional Hydroelectric	Total Renewable Generation at Utility Scale Facilities	Estimated Solar Photovoltaic	Estimated Total Solar Photovoltaic	Estimated Total Solar
Annual Totals													
2006	0	0	0	28,400	29	35	509	0	2,899	31,872	N/A	N/A	N/A
2007	0	0	0	28,287	27	40	565	0	1,590	30,509	N/A	N/A	N/A
2008	0	0	0	26,641	21	0	800	0	1,676	29,138	N/A	N/A	N/A
2009	0	0	0	25,292	22	0	718	0	1,868	27,901	N/A	N/A	N/A
2010	0	2	0	25,706	15	0	853	0	1,668	28,244	N/A	N/A	N/A
2011	5	7	0	26,691	15	2	900	0	1,799	29,418	N/A	N/A	N/A
2012	19	14	0	26,725	81	10	857	0	2,353	30,060	N/A	N/A	N/A
2013	37	17	0	27,691	178	2	1,166	0	3,463	32,554	N/A	N/A	N/A
2014	53	16	0	27,239	185	-2	1,185	0	1,282	29,957	1,139	1,156	1,156
2015	53	21	0	27,318	182	12	1,049	0	1,410	30,045	1,451	1,472	1,472
2016	71	27	0	27,458	170	6	959	0	1,269	29,960	2,060	2,087	2,087
Year 2014													
January	7	1	0	2,343	16	0	101	0	120	2,586	62	62	62
February	4	1	0	2,105	14	0	89	0	104	2,317	65	66	66
March	5	1	0	2,311	16	0	106	0	114	2,555	93	94	94
April	6	2	0	2,188	17	-1	109	0	127	2,447	101	103	103
May	4	2	0	2,276	16	0	89	0	130	2,517	111	113	113
June	3	2	0	2,295	16	0	95	0	100	2,511	113	114	114
July	3	2	0	2,426	16	0	104	0	89	2,640	117	119	119
August	2	2	0	2,384	15	0	95	0	96	2,594	116	118	118
September	2	2	0	2,171	14	0	88	0	86	2,362	106	107	107
October	5	1	0	2,180	14	0	105	0	93	2,397	100	102	102
November	6	1	0	2,175	15	0	101	0	99	2,397	81	82	82
December	4	1	0	2,386	15	0	104	0	125	2,636	74	75	75
Year 2015													
January	5	1	0	2,404	15	1	90	0	121	2,636	80	80	80
February	5	1	0	2,132	12	1	67	0	105	2,323	85	86	86
March	5	2	0	2,226	14	1	91	0	130	2,469	119	121	121
April	5	2	0	2,218	15	1	96	0	138	2,475	129	132	132
May	5	2	0	2,239	15	1	79	0	127	2,468	144	146	146
June	4	2	0	2,251	15	1	73	0	114	2,459	144	146	146
July	3	2	0	2,434	16	1	91	0	115	2,663	150	152	152
August	3	2	0	2,377	16	1	84	0	90	2,573	147	149	149
September	3	2	0	2,245	15	1	78	0	77	2,421	135	137	137
October	5	2	0	2,201	16	1	99	0	114	2,438	125	126	126
November	6	1	0	2,259	16	1	98	0	133	2,514	100	102	102
December	6	1	0	2,331	17	1	104	0	145	2,605	93	94	94
Year 2016													
January	8	1	0	2,392	16	0	77	0	130	2,623	113	115	115
February	7	2	0	2,217	14	0	78	0	115	2,434	124	126	126
March	7	2	0	2,266	15	0	93	0	142	2,525	171	173	173
April	6	2	0	2,079	15	0	91	0	128	2,323	186	189	189
May	5	3	0	2,238	16	1	90	0	119	2,472	206	208	208
June	5	3	0	2,310	14	1	62	0	99	2,493	206	209	209
July	3	3	0	2,408	14	1	75	0	104	2,608	214	217	217
August	3	3	0	2,398	14	1	73	0	92	2,585	209	212	212
September	4	2	0	2,231	12	1	63	0	65	2,379	190	192	192
October	6	2	0	2,220	12	1	73	0	88	2,402	174	176	176
November	7	2	0	2,323	14	0	90	0	69	2,505	139	140	140
December	9	1	0	2,375	14	-1	95	0	117	2,611	128	129	129

Wood and Wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Waste Biomass includes sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
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Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.6. Net Generation by Energy Source: Residential Sector, 2014 - 2016
(Thousand Megawatthours)

	Small Scale Generation
Period	**Estimated Small Scale Solar Photovoltaic Generation**
Annual Totals	
2014	4,947
2015	6,999
2016	10,595
Year 2014	
January	263
February	277
March	382
April	421
May	468
June	478
July	502
August	503
September	472
October	445
November	373
December	363
Year 2015	
January	340
February	375
March	536
April	609
May	676
June	693
July	741
August	746
September	679
October	618
November	515
December	471
Year 2016	
January	520
February	622
March	835
April	951
May	1,058
June	1,099
July	1,146
August	1,113
September	989
October	884
November	726
December	653

See Glossary for definitions. Values are final.

Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.

Sources:

Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.7. Utility Scale Facility Net Generation by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	107,725	110,235	-2.3%	2,482	3,364	101,348	102,667	1,282	1,293	2,612	2,911
Connecticut	36,497	37,471	-2.6%	74	45	35,511	36,538	409	402	502	486
Maine	11,514	11,741	-1.9%	0	0	9,458	9,323	205	206	1,851	2,212
Massachusetts	31,955	32,086	-0.4%	468	715	30,729	30,654	532	535	226	181
New Hampshire	19,282	20,016	-3.7%	1,062	1,695	18,113	18,217	74	73	33	32
Rhode Island	6,565	6,939	-5.4%	13	12	6,494	6,854	58	73	0	0
Vermont	1,911	1,982	-3.6%	865	898	1,043	1,081	3	3	0	0
Middle Atlantic	427,095	427,809	-0.2%	35,325	34,725	385,130	386,346	2,127	2,284	4,513	4,454
New Jersey	77,611	74,609	4.0%	151	-24	76,129	73,272	642	656	689	706
New York	134,417	138,628	-3.0%	35,094	34,682	97,139	101,778	1,222	1,236	962	932
Pennsylvania	215,067	214,572	0.2%	80	67	211,863	211,296	263	392	2,861	2,817
East North Central	585,059	599,233	-2.4%	246,855	254,363	326,837	333,002	1,899	1,982	9,468	9,886
Illinois	187,289	193,952	-3.4%	5,191	4,429	179,069	186,373	354	489	2,675	2,662
Indiana	101,759	104,019	-2.2%	86,423	87,771	11,873	12,722	280	246	3,183	3,280
Michigan	112,122	113,008	-0.8%	78,006	85,370	31,947	25,345	881	1,013	1,287	1,280
Ohio	118,922	121,893	-2.4%	26,624	24,404	91,357	96,499	227	128	715	862
Wisconsin	64,967	66,360	-2.1%	50,612	52,389	12,590	12,064	157	106	1,608	1,801
West North Central	325,988	329,479	-1.1%	272,454	281,397	48,911	43,306	654	593	3,969	4,183
Iowa	54,393	56,659	-4.0%	40,080	41,813	12,136	12,522	232	221	1,944	2,103
Kansas	47,600	45,527	4.6%	34,176	35,294	13,372	10,198	0	0	52	36
Minnesota	59,479	56,980	4.4%	47,985	45,817	9,886	9,519	204	191	1,403	1,453
Missouri	78,612	83,640	-6.0%	75,449	80,879	2,916	2,554	199	164	47	43
Nebraska	36,525	39,883	-8.4%	32,548	36,522	3,610	2,963	19	17	347	381
North Dakota	37,856	37,157	1.9%	33,415	33,106	4,267	3,883	0	0	175	167
South Dakota	11,524	9,633	19.6%	8,800	7,966	2,724	1,667	0	0	0	0
South Atlantic	813,880	792,087	2.8%	678,187	664,631	115,751	106,903	1,293	1,321	18,648	19,233
Delaware	8,731	7,810	11.8%	80	50	7,356	6,533	7	6	1,289	1,221
District of Columbia	76	54	42.3%	0	0	53	31	24	23	0	0
Florida	238,262	237,413	0.4%	216,244	218,247	16,576	13,730	84	79	5,358	5,356
Georgia	133,380	128,818	3.5%	115,955	110,213	12,664	13,475	8	14	4,754	5,116
Maryland	37,167	36,366	2.2%	7	19	36,442	35,567	449	504	268	276
North Carolina	130,779	128,388	1.9%	118,657	119,074	9,977	7,089	270	228	1,875	1,998
South Carolina	96,986	96,532	0.5%	91,591	92,412	3,622	2,430	2	4	1,770	1,686
Virginia	92,555	84,412	9.6%	76,224	67,573	13,425	13,916	449	463	2,456	2,459
West Virginia	75,943	72,295	5.0%	59,429	57,043	15,637	14,131	0	0	877	1,121
East South Central	364,881	375,994	-3.0%	308,701	319,182	47,070	47,742	187	153	8,923	8,916
Alabama	142,385	152,477	-6.6%	97,991	107,868	40,139	40,392	0	0	4,255	4,217
Kentucky	80,274	83,544	-3.9%	79,113	82,365	547	589	0	0	613	589
Mississippi	62,881	64,758	-2.9%	54,760	56,273	6,185	6,565	0	7	1,937	1,913
Tennessee	79,341	75,215	5.5%	76,837	72,676	200	195	187	146	2,118	2,197
West South Central	700,416	689,334	1.6%	241,141	242,258	380,273	370,773	990	895	78,012	75,408
Arkansas	60,445	55,559	8.8%	43,352	39,538	15,455	14,265	43	6	1,595	1,750
Louisiana	107,269	107,812	-0.5%	64,486	65,730	10,282	11,143	170	176	32,332	30,764
Oklahoma	78,655	76,136	3.3%	45,255	48,778	32,509	26,468	0	0	891	889
Texas	454,048	449,826	0.9%	88,048	88,212	322,028	318,898	777	712	43,195	42,004
Mountain	364,116	373,168	-2.4%	283,709	298,033	76,336	71,151	582	534	3,488	3,450
Arizona	108,763	113,142	-3.9%	89,822	94,379	18,776	18,611	165	151	0	0
Colorado	54,418	52,393	3.9%	42,191	42,155	12,123	10,141	31	28	73	69
Idaho	15,661	15,667	0.0%	9,995	10,166	5,017	4,886	51	23	599	592
Montana	27,784	29,302	-5.2%	10,811	10,717	16,943	18,558	0	0	30	28
Nevada	39,787	39,047	1.9%	29,476	30,497	9,904	8,131	126	114	280	305
New Mexico	32,912	32,701	0.6%	25,014	25,951	7,777	6,626	119	124	1	1
Utah	38,134	41,949	-9.1%	34,206	39,381	2,766	1,505	90	93	1,072	970
Wyoming	46,657	48,967	-4.7%	42,194	44,788	3,029	2,693	0	0	1,434	1,486
Pacific Contiguous	371,232	363,858	2.0%	225,200	206,132	127,274	138,002	2,965	3,001	15,792	16,723
California	196,963	196,704	0.1%	81,156	71,150	99,247	108,154	2,859	2,889	13,702	14,511
Oregon	60,182	57,867	4.0%	45,096	41,306	14,437	15,808	70	78	579	675
Washington	114,087	109,287	4.4%	98,948	93,676	13,591	14,040	36	35	1,511	1,537
Pacific Noncontiguous	16,284	16,404	-0.7%	10,868	11,239	4,223	4,079	727	539	466	548
Alaska	6,335	6,285	0.8%	5,649	5,746	252	253	322	165	111	121
Hawaii	9,949	10,120	-1.7%	5,218	5,492	3,971	3,826	405	375	355	427
U.S. Total	4,076,675	4,077,601	0.0%	2,304,923	2,315,323	1,613,156	1,603,971	12,706	12,595	145,890	145,712

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Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.8. Utility Scale Facility Net Generation from Coal by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	2,544	3,882	-34.5%	422	937	2,113	2,901	0	0	10	44
Connecticut	177	600	-70.5%	0	0	177	600	0	0	0	0
Maine	70	92	-24.0%	0	0	60	65	0	0	10	27
Massachusetts	1,875	2,253	-16.8%	0	0	1,875	2,236	0	0	0	17
New Hampshire	422	937	-54.9%	422	937	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	57,757	68,776	-16.0%	0	0	57,046	67,990	0	2	711	784
New Jersey	1,315	1,759	-25.3%	0	0	1,315	1,759	0	0	0	0
New York	1,770	2,380	-25.6%	0	0	1,437	2,075	0	0	333	305
Pennsylvania	54,672	64,637	-15.4%	0	0	54,294	64,156	0	2	378	479
East North Central	274,536	313,779	-12.5%	165,111	182,410	107,209	128,589	82	136	2,135	2,644
Illinois	59,338	73,774	-19.6%	3,419	3,715	54,397	68,404	20	37	1,501	1,618
Indiana	72,533	78,231	-7.3%	69,060	72,720	3,421	5,474	46	37	7	0
Michigan	40,527	52,884	-23.4%	39,988	52,297	445	393	15	62	78	132
Ohio	68,775	71,710	-4.1%	19,716	17,180	48,946	54,318	0	0	113	212
Wisconsin	33,363	37,181	-10.3%	32,927	36,499	0	0	0	0	436	682
West North Central	182,383	197,842	-7.8%	179,756	194,736	0	26	142	187	2,485	2,893
Iowa	25,198	29,811	-15.5%	23,480	27,880	0	0	88	128	1,631	1,803
Kansas	23,096	24,593	-6.1%	23,096	24,593	0	0	0	0	0	0
Minnesota	23,206	24,697	-6.0%	22,806	24,111	0	0	2	1	398	586
Missouri	60,322	65,326	-7.7%	60,269	65,221	0	26	53	58	0	21
Nebraska	21,898	24,185	-9.5%	21,551	23,804	0	0	0	0	347	381
North Dakota	26,580	27,734	-4.2%	26,472	27,632	0	0	0	0	109	103
South Dakota	2,083	1,495	39.3%	2,083	1,495	0	0	0	0	0	0
South Atlantic	238,077	242,400	-1.8%	208,099	212,673	28,762	27,959	52	74	1,163	1,694
Delaware	479	599	-19.9%	0	0	479	599	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	39,429	42,904	-8.1%	38,522	41,588	733	1,129	0	0	175	187
Georgia	37,890	37,131	2.0%	37,674	36,915	0	0	0	0	216	216
Maryland	13,826	13,926	-0.7%	0	0	13,751	13,810	0	0	75	115
North Carolina	37,436	39,922	-6.2%	37,020	39,349	166	337	45	56	206	181
South Carolina	21,003	22,631	-7.2%	20,900	22,488	0	0	0	0	103	143
Virginia	16,499	17,231	-4.2%	15,605	16,023	609	878	8	19	277	312
West Virginia	71,513	68,056	5.1%	58,377	56,310	13,024	11,206	0	0	112	540
East South Central	137,590	151,017	-8.9%	133,748	146,886	2,895	3,029	0	0	947	1,101
Alabama	34,258	41,410	-17.3%	34,186	41,311	0	0	0	0	72	99
Kentucky	66,822	72,620	-8.0%	66,822	72,620	0	0	0	0	0	0
Mississippi	5,342	6,400	-16.5%	2,447	3,371	2,895	3,029	0	0	0	0
Tennessee	31,168	30,586	1.9%	30,293	29,584	0	0	0	0	875	1,002
West South Central	176,203	183,326	-3.9%	88,820	95,150	86,965	87,746	0	0	417	430
Arkansas	23,800	21,740	9.5%	19,154	17,634	4,596	4,049	0	0	50	57
Louisiana	12,014	15,165	-20.8%	8,062	9,125	3,952	6,040	0	0	0	0
Oklahoma	19,158	24,867	-23.0%	16,903	22,663	1,888	1,831	0	0	367	373
Texas	121,231	121,554	-0.3%	44,702	45,729	76,529	75,826	0	0	0	0
Mountain	161,149	181,645	-11.3%	144,251	162,855	16,021	17,852	0	0	877	937
Arizona	30,403	36,167	-15.9%	30,403	36,167	0	0	0	0	0	0
Colorado	29,949	31,541	-5.0%	29,920	31,471	21	62	0	0	8	8
Idaho	29	79	-63.0%	0	0	0	0	0	0	29	79
Montana	14,269	16,013	-10.9%	260	221	14,003	15,786	0	0	6	7
Nevada	2,167	2,657	-18.5%	1,279	1,804	888	853	0	0	0	0
New Mexico	18,365	20,440	-10.1%	18,365	20,440	0	0	0	0	0	0
Utah	25,939	31,656	-18.1%	25,103	30,815	399	418	0	0	437	424
Wyoming	40,027	43,091	-7.1%	38,920	41,937	709	734	0	0	397	420
Pacific Contiguous	6,819	7,727	-11.8%	1,898	2,377	4,569	5,016	0	0	352	334
California	319	298	7.1%	0	0	0	0	0	0	319	298
Oregon	1,898	2,377	-20.2%	1,898	2,377	0	0	0	0	0	0
Washington	4,602	5,052	-8.9%	0	0	4,569	5,016	0	0	33	36
Pacific Noncontiguous	2,092	2,005	4.3%	295	360	1,684	1,501	107	109	6	35
Alaska	594	668	-11.0%	295	360	192	198	107	109	0	0
Hawaii	1,497	1,337	12.0%	0	0	1,492	1,303	0	0	6	35
U.S. Total	1,239,149	1,352,398	-8.4%	922,399	998,385	307,263	342,608	383	509	9,103	10,896

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Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.9. Utility Scale Facility Net Generation from Petroleum Liquids by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	693	2,055	-66.3%	58	188	581	1,740	43	84	11	42
Connecticut	92	437	-79.0%	6	8	81	411	3	10	2	9
Maine	110	548	-80.0%	0	0	99	512	2	3	9	34
Massachusetts	422	777	-45.7%	15	61	388	677	19	39	1	0
New Hampshire	39	176	-77.9%	20	106	2	54	16	16	0	0
Rhode Island	26	114	-77.0%	13	12	12	86	2	NM	0	0
Vermont	4	3	31.4%	4	2	0	0	0	1	0	0
Middle Atlantic	997	2,767	-64.0%	328	821	611	1,808	13	62	45	77
New Jersey	81	304	-73.4%	1	4	79	294	1	1	0	5
New York	643	1,892	-66.0%	326	817	269	959	11	59	38	58
Pennsylvania	273	571	-52.1%	1	0	263	554	2	2	7	14
East North Central	547	570	-4.1%	319	346	204	194	5	3	19	26
Illinois	70	56	23.9%	9	8	59	48	1	0	0	0
Indiana	113	159	-28.6%	101	141	0	0	1	0	12	18
Michigan	120	109	10.6%	116	104	0	NM	2	2	2	2
Ohio	217	220	-1.5%	70	72	142	143	1	0	3	5
Wisconsin	27	27	0.7%	23	22	3	3	0	0	1	1
West North Central	392	289	35.6%	382	282	6	5	2	1	2	1
Iowa	239	64	271.8%	238	64	1	0	0	0	0	0
Kansas	28	49	-41.6%	28	49	0	0	0	0	0	0
Minnesota	32	28	14.6%	24	22	6	5	1	1	2	1
Missouri	78	99	-21.1%	78	99	0	0	0	0	0	0
Nebraska	-18	6	-393.4%	-18	6	0	0	0	0	0	0
North Dakota	30	26	13.8%	30	26	0	0	0	0	0	1
South Dakota	3	17	-83.8%	3	17	0	0	0	0	0	0
South Atlantic	2,134	2,992	-28.7%	1,612	2,137	430	740	6	21	86	93
Delaware	63	154	-59.4%	9	5	54	149	0	0	0	0
District of Columbia	1	0	916.8%	0	0	0	0	1	0	0	0
Florida	772	582	32.6%	739	560	7	7	0	0	26	14
Georgia	114	147	-22.3%	60	54	24	48	2	3	30	42
Maryland	161	232	-30.9%	-2	11	159	204	1	16	2	NM
North Carolina	251	435	-42.2%	210	362	33	58	0	0	8	14
South Carolina	114	193	-41.1%	95	167	2	11	0	0	17	15
Virginia	535	1,108	-51.7%	382	851	147	249	2	1	5	7
West Virginia	123	140	-12.5%	118	127	5	14	0	0	0	0
East South Central	273	346	-21.0%	248	312	6	10	0	0	20	24
Alabama	46	84	-45.6%	26	53	5	10	0	0	15	21
Kentucky	88	113	-21.8%	88	113	0	0	0	0	0	0
Mississippi	18	14	25.9%	15	12	0	0	0	0	3	2
Tennessee	122	135	-10.0%	119	133	0	0	0	0	2	2
West South Central	156	257	-39.3%	101	155	47	90	1	1	6	12
Arkansas	42	60	-29.9%	30	39	9	13	0	0	3	8
Louisiana	14	78	-81.5%	13	65	2	13	0	0	0	0
Oklahoma	17	11	59.7%	17	9	0	0	0	0	1	2
Texas	82	108	-24.0%	42	42	36	63	1	1	2	2
Mountain	226	213	6.3%	193	194	22	17	0	NM	11	1
Arizona	52	48	7.2%	52	48	0	0	0	0	0	0
Colorado	7	7	-4.0%	7	7	0	0	0	NM	0	0
Idaho	0	0	200.6%	0	0	0	0	0	0	0	0
Montana	17	14	28.1%	0	0	17	13	0	0	0	0
Nevada	11	16	-31.3%	8	13	3	3	0	0	0	0
New Mexico	52	63	-17.9%	52	63	0	0	0	0	0	0
Utah	32	20	59.9%	30	19	2	1	0	0	0	0
Wyoming	56	45	23.9%	45	45	0	0	0	0	11	0
Pacific Contiguous	119	112	5.7%	40	42	18	34	1	1	60	35
California	92	85	8.6%	33	35	7	25	0	0	51	25
Oregon	5	6	-20.0%	5	6	0	0	0	0	0	0
Washington	22	22	1.6%	2	2	11	9	0	0	9	10
Pacific Noncontiguous	7,472	7,770	-3.8%	5,787	5,908	1,435	1,602	6	9	243	250
Alaska	831	747	11.4%	780	695	0	0	3	6	48	46
Hawaii	6,640	7,023	-5.5%	5,007	5,213	1,435	1,602	3	3	195	205
U.S. Total	13,008	17,372	-25.1%	9,069	10,386	3,360	6,240	77	183	503	563

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Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.10. Utility Scale Facility Net Generation from Petroleum Coke by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	155	229	-32.3%	0	0	1	0	0	0	155	229
New Jersey	65	71	-8.1%	0	0	0	0	0	0	65	71
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	90	158	-43.2%	0	0	1	0	0	0	89	158
East North Central	2,281	3,175	-28.2%	1,133	1,790	958	1,118	0	0	190	268
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	497	1,179	-57.9%	497	1,179	0	0	0	0	0	0
Michigan	699	718	-2.7%	553	542	3	29	0	0	143	147
Ohio	965	1,097	-12.1%	0	0	955	1,088	0	0	10	9
Wisconsin	120	181	-33.6%	83	69	0	0	0	0	37	112
West North Central	39	46	-15.4%	0	0	0	0	6	8	33	38
Iowa	39	46	-15.4%	0	0	0	0	6	8	33	38
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	2,146	1,681	27.7%	2,048	1,568	0	0	0	0	97	113
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	2,048	1,568	30.7%	2,048	1,568	0	0	0	0	0	0
Georgia	97	113	-13.9%	0	0	0	0	0	0	97	113
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	1,130	964	17.2%	1,130	964	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	1,130	964	17.2%	1,130	964	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	4,919	4,299	14.4%	4,569	3,957	0	0	0	0	350	342
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	4,805	4,165	15.4%	4,569	3,957	0	0	0	0	235	208
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	114	134	-14.4%	0	0	0	0	0	0	114	134
Mountain	443	483	-8.3%	0	0	443	483	0	0	0	0
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	443	483	-8.3%	0	0	443	483	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	84	0	--	0	0	0	0	0	0	84	0
California	84	0	--	0	0	0	0	0	0	84	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	11,197	10,877	2.9%	8,881	8,278	1,401	1,601	6	8	909	990

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.11. Utility Scale Facility Net Generation from Natural Gas by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	53,631	53,961	-0.6%	324	414	51,273	51,527	963	946	1,070	1,073
Connecticut	17,952	17,362	3.4%	48	13	16,996	16,487	407	385	500	477
Maine	3,498	2,952	18.5%	0	0	3,157	2,517	28	27	314	408
Massachusetts	21,144	21,007	0.6%	238	378	20,226	20,012	456	461	223	157
New Hampshire	4,744	6,052	-21.6%	37	22	4,652	5,976	22	22	33	31
Rhode Island	6,291	6,586	-4.5%	0	0	6,241	6,536	49	50	0	0
Vermont	2	1	31.6%	1	1	0	0	1	0	0	0
Middle Atlantic	168,649	153,353	10.0%	12,430	12,145	153,135	138,287	1,088	1,090	1,997	1,831
New Jersey	43,807	36,974	18.5%	272	78	43,005	36,350	187	206	344	340
New York	56,793	56,923	-0.2%	12,146	12,062	43,531	43,811	782	760	335	290
Pennsylvania	68,049	59,455	14.5%	12	4	66,599	58,127	119	123	1,319	1,201
East North Central	111,191	88,604	25.5%	48,048	39,198	59,805	46,414	1,432	1,355	1,906	1,637
Illinois	17,485	10,864	60.9%	1,674	629	14,798	9,276	326	446	686	513
Indiana	19,996	16,263	23.0%	16,010	13,021	3,310	2,532	193	167	483	543
Michigan	29,295	20,045	46.1%	10,050	6,320	18,352	12,896	578	555	315	273
Ohio	28,942	28,034	3.2%	6,548	6,884	22,079	20,948	213	117	103	84
Wisconsin	15,473	13,399	15.5%	13,766	12,342	1,266	762	122	70	319	224
West North Central	22,475	17,472	28.6%	18,506	14,663	3,154	2,194	298	227	518	388
Iowa	2,961	2,398	23.5%	2,661	2,164	0	0	87	45	213	190
Kansas	2,027	1,174	72.7%	1,975	1,138	0	0	0	0	52	36
Minnesota	8,928	7,389	20.8%	7,191	6,392	1,437	771	112	105	189	122
Missouri	6,032	4,596	31.2%	4,173	3,077	1,717	1,424	97	76	44	20
Nebraska	538	431	24.9%	536	430	0	0	1	1	1	0
North Dakota	1,071	711	50.6%	1,051	690	0	0	0	0	20	21
South Dakota	919	773	18.9%	919	773	0	0	0	0	0	0
South Atlantic	322,338	305,242	5.6%	262,912	251,847	54,914	49,108	502	537	4,010	3,751
Delaware	7,787	6,689	16.4%	64	39	6,728	5,684	0	0	995	967
District of Columbia	23	23	0.2%	0	0	0	0	23	23	0	0
Florida	158,495	155,824	1.7%	145,192	145,887	11,820	8,513	33	33	1,450	1,392
Georgia	52,862	50,469	4.7%	41,277	37,264	11,143	12,615	0	0	443	590
Maryland	5,423	4,555	19.0%	0	0	4,919	4,031	425	466	79	59
North Carolina	39,251	36,545	7.4%	34,070	32,567	5,064	3,794	12	8	105	176
South Carolina	16,367	16,549	-1.1%	13,154	14,571	3,150	1,939	1	2	62	38
Virginia	40,905	33,284	22.9%	29,013	21,401	11,253	11,346	9	6	631	531
West Virginia	1,225	1,304	-6.1%	142	119	838	1,185	0	0	245	0
East South Central	127,445	116,235	9.6%	81,521	69,949	43,643	44,223	183	151	2,098	1,913
Alabama	57,804	55,844	3.5%	16,893	14,691	39,838	40,126	0	0	1,073	1,027
Kentucky	8,228	5,950	38.3%	7,452	5,135	523	574	0	0	253	241
Mississippi	50,095	45,117	11.0%	46,400	41,175	3,280	3,523	0	7	415	411
Tennessee	11,319	9,324	21.4%	10,777	8,947	2	0	183	143	356	233
West South Central	347,156	353,095	-1.7%	108,005	104,963	171,057	182,641	899	823	67,194	64,668
Arkansas	18,171	14,866	22.2%	7,181	4,476	10,672	10,068	39	2	279	320
Louisiana	66,479	66,211	0.4%	34,690	37,283	5,145	4,001	170	176	26,475	24,751
Oklahoma	36,529	34,286	6.5%	24,414	22,087	11,945	12,019	0	0	169	180
Texas	225,976	237,731	-4.9%	41,720	41,117	143,294	156,552	691	645	40,271	39,417
Mountain	99,018	97,008	2.1%	72,922	69,836	24,205	25,359	438	418	1,453	1,394
Arizona	34,183	33,657	1.6%	19,266	18,497	14,776	15,030	141	130	0	0
Colorado	12,679	11,644	8.9%	10,732	9,391	1,926	2,230	2	NM	20	19
Idaho	3,321	3,804	-12.7%	1,762	2,128	1,380	1,606	40	15	140	55
Montana	476	599	-20.6%	378	534	94	65	0	0	4	0
Nevada	28,922	29,000	-0.3%	26,369	26,428	2,209	2,200	65	69	278	302
New Mexico	9,958	9,365	6.3%	6,199	5,190	3,641	4,052	116	121	1	1
Utah	8,691	8,218	5.8%	8,031	7,527	179	176	74	78	408	436
Wyoming	788	722	9.1%	185	139	1	1	0	0	602	582
Pacific Contiguous	123,363	145,423	-15.2%	47,135	51,784	63,414	80,085	1,924	1,924	10,889	11,630
California	97,074	116,140	-16.4%	32,955	37,076	51,521	65,695	1,866	1,853	10,731	11,516
Oregon	15,307	16,237	-5.7%	7,587	6,599	7,612	9,532	38	52	69	55
Washington	10,982	13,046	-15.8%	6,593	8,109	4,280	4,859	20	19	89	59
Pacific Noncontiguous	3,040	3,090	-1.6%	2,977	3,019	0	0	1	0	63	70
Alaska	3,040	3,090	-1.6%	2,977	3,019	0	0	1	0	63	70
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	1,378,307	1,333,482	3.4%	654,780	617,817	624,600	619,839	7,730	7,471	91,197	88,355

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.12. Utility Scale Facility Net Generation from Other Gases by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	695	641	8.3%	0	0	1	0	0	0	694	641
New Jersey	207	221	-6.3%	0	0	0	0	0	0	207	221
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	488	420	16.0%	0	0	1	0	0	0	487	420
East North Central	4,812	4,706	2.2%	154	199	2,028	1,785	0	0	2,630	2,723
Illinois	204	280	-27.1%	0	0	6	2	0	0	198	278
Indiana	2,272	2,269	0.2%	9	20	0	0	0	0	2,263	2,248
Michigan	1,615	1,213	33.1%	145	178	1,470	1,034	0	0	0	0
Ohio	721	945	-23.7%	0	0	553	748	0	0	168	197
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	40	39	3.0%	0	0	0	0	0	0	40	39
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	40	39	3.0%	0	0	0	0	0	0	40	39
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	307	272	12.8%	0	0	0	0	0	0	307	272
Delaware	277	238	16.5%	0	0	0	0	0	0	277	238
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	5	5	-1.2%	0	0	0	0	0	0	5	5
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	25	29	-15.2%	0	0	0	0	0	0	25	29
East South Central	39	48	-17.5%	0	0	0	0	0	0	39	48
Alabama	24	36	-32.9%	0	0	0	0	0	0	24	36
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	15	12	28.7%	0	0	0	0	0	0	15	12
West South Central	4,613	4,980	-7.4%	0	0	1,318	1,314	0	0	3,295	3,666
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	2,099	2,401	-12.6%	0	0	0	0	0	0	2,099	2,401
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	2,514	2,579	-2.5%	0	0	1,318	1,314	0	0	1,196	1,265
Mountain	422	436	-3.4%	0	0	9	23	0	0	412	414
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	9	17	-49.7%	0	0	9	17	0	0	0	0
Nevada	1	6	-86.6%	0	0	1	6	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	54	8	551.4%	0	0	0	0	0	0	54	8
Wyoming	358	405	-11.7%	0	0	0	0	0	0	358	405
Pacific Contiguous	1,828	1,944	-5.9%	0	0	402	395	0	0	1,427	1,549
California	1,427	1,549	-7.9%	0	0	0	0	0	0	1,427	1,549
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	402	395	1.7%	0	0	402	395	0	0	0	0
Pacific Noncontiguous	51	50	1.7%	0	0	0	0	0	0	51	50
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	51	50	1.7%	0	0	0	0	0	0	51	50
U.S. Total	12,807	13,117	-2.4%	154	199	3,758	3,517	0	0	8,895	9,401

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
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Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.13. Utility Scale Facility Net Generation from Nuclear Energy by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	32,751	31,890	2.7%	0	0	32,751	31,890	0	0	0	0
Connecticut	16,575	17,411	-4.8%	0	0	16,575	17,411	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	5,414	4,995	8.4%	0	0	5,414	4,995	0	0	0	0
New Hampshire	10,761	9,484	13.5%	0	0	10,761	9,484	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	154,380	158,381	-2.5%	0	0	154,380	158,381	0	0	0	0
New Jersey	29,885	33,262	-10.2%	0	0	29,885	33,262	0	0	0	0
New York	41,571	44,603	-6.8%	0	0	41,571	44,603	0	0	0	0
Pennsylvania	82,924	80,517	3.0%	0	0	82,924	80,517	0	0	0	0
East North Central	157,128	154,001	2.0%	24,507	23,015	132,621	130,986	0	0	0	0
Illinois	98,607	97,282	1.4%	0	0	98,607	97,282	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	31,552	29,334	7.6%	24,507	23,015	7,045	6,319	0	0	0	0
Ohio	16,817	17,377	-3.2%	0	0	16,817	17,377	0	0	0	0
Wisconsin	10,151	10,008	1.4%	0	0	10,151	10,008	0	0	0	0
West North Central	45,590	46,677	-2.3%	40,888	41,434	4,703	5,243	0	0	0	0
Iowa	4,703	5,243	-10.3%	0	0	4,703	5,243	0	0	0	0
Kansas	8,246	8,630	-4.5%	8,246	8,630	0	0	0	0	0	0
Minnesota	13,861	12,039	15.1%	13,861	12,039	0	0	0	0	0	0
Missouri	9,430	10,440	-9.7%	9,430	10,440	0	0	0	0	0	0
Nebraska	9,351	10,325	-9.4%	9,351	10,325	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	206,905	199,917	3.5%	192,145	185,274	14,760	14,643	0	0	0	0
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	29,320	28,122	4.3%	29,320	28,122	0	0	0	0	0	0
Georgia	34,481	33,838	1.9%	34,481	33,838	0	0	0	0	0	0
Maryland	14,760	14,643	0.8%	0	0	14,760	14,643	0	0	0	0
North Carolina	42,786	42,097	1.6%	42,786	42,097	0	0	0	0	0	0
South Carolina	55,826	53,156	5.0%	55,826	53,156	0	0	0	0	0	0
Virginia	29,732	28,060	6.0%	29,732	28,060	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	75,377	78,626	-4.1%	75,377	78,626	0	0	0	0	0	0
Alabama	39,902	41,951	-4.9%	39,902	41,951	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	5,897	11,715	-49.7%	5,897	11,715	0	0	0	0	0	0
Tennessee	29,578	24,960	18.5%	29,578	24,960	0	0	0	0	0	0
West South Central	72,652	68,493	6.1%	30,573	29,139	42,079	39,355	0	0	0	0
Arkansas	13,421	13,838	-3.0%	13,421	13,838	0	0	0	0	0	0
Louisiana	17,152	15,301	12.1%	17,152	15,301	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	42,079	39,355	6.9%	0	0	42,079	39,355	0	0	0	0
Mountain	32,377	32,526	-0.5%	32,377	32,526	0	0	0	0	0	0
Arizona	32,377	32,526	-0.5%	32,377	32,526	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	28,533	26,666	7.0%	28,533	26,666	0	0	0	0	0	0
California	18,908	18,505	2.2%	18,908	18,505	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	9,626	8,161	17.9%	9,626	8,161	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	805,694	797,178	1.1%	424,400	416,680	381,294	380,498	0	0	0	0

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.14. Utility Scale Facility Net Generation from Hydroelectric (Conventional) Power by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	6,161	6,903	-10.7%	806	934	5,029	5,568	3	6	323	394
Connecticut	224	302	-25.9%	17	24	207	278	0	0	0	0
Maine	3,000	3,361	-10.7%	0	0	2,678	2,971	0	0	322	390
Massachusetts	713	827	-13.9%	141	201	567	616	3	6	1	5
New Hampshire	1,145	1,270	-9.8%	275	309	871	962	0	0	0	0
Rhode Island	2	3	-32.4%	0	0	2	3	0	0	0	0
Vermont	1,078	1,139	-5.4%	373	401	704	739	0	0	0	0
Middle Atlantic	29,272	28,628	2.3%	23,161	22,288	6,050	6,273	4	5	57	62
New Jersey	9	10	-0.7%	0	0	9	10	0	0	0	0
New York	26,888	26,015	3.4%	23,094	22,225	3,733	3,723	4	5	57	62
Pennsylvania	2,375	2,604	-8.8%	67	63	2,307	2,541	0	0	0	0
East North Central	5,419	4,802	12.8%	4,727	4,129	489	478	1	2	201	193
Illinois	133	124	6.7%	51	42	80	81	1	2	0	0
Indiana	426	381	11.8%	426	381	0	0	0	0	0	0
Michigan	1,564	1,499	4.3%	1,433	1,387	106	83	0	0	26	30
Ohio	500	457	9.6%	320	245	180	212	0	0	0	0
Wisconsin	2,795	2,341	19.4%	2,497	2,074	123	103	0	0	176	163
West North Central	10,998	12,053	-8.7%	10,613	11,729	255	209	0	0	130	115
Iowa	917	960	-4.5%	909	954	8	6	0	0	0	0
Kansas	31	19	61.0%	0	0	31	19	0	0	0	0
Minnesota	1,209	849	42.3%	861	551	217	183	0	0	130	115
Missouri	1,268	1,595	-20.5%	1,268	1,595	0	0	0	0	0	0
Nebraska	856	1,685	-49.2%	856	1,685	0	0	0	0	0	0
North Dakota	1,912	2,094	-8.7%	1,912	2,094	0	0	0	0	0	0
South Dakota	4,806	4,850	-0.9%	4,806	4,850	0	0	0	0	0	0
South Atlantic	14,692	14,701	-0.1%	12,239	11,940	1,918	2,161	16	13	520	586
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	175	244	-28.5%	175	244	0	0	0	0	0	0
Georgia	3,373	2,984	13.0%	3,350	2,952	7	10	0	0	16	21
Maryland	1,392	1,623	-14.2%	0	0	1,392	1,623	0	0	0	0
North Carolina	4,417	4,742	-6.8%	4,359	4,688	44	44	14	11	0	0
South Carolina	2,226	2,564	-13.2%	2,172	2,497	52	65	2	2	0	0
Virginia	1,471	1,158	27.0%	1,391	1,072	72	74	0	0	9	12
West Virginia	1,638	1,385	18.3%	792	487	351	345	0	0	496	553
East South Central	17,237	22,847	-24.6%	17,227	22,838	10	9	0	0	0	0
Alabama	6,985	9,862	-29.2%	6,985	9,862	0	0	0	0	0	0
Kentucky	3,478	3,403	2.2%	3,468	3,395	10	9	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	6,774	9,581	-29.3%	6,774	9,581	0	0	0	0	0	0
West South Central	8,588	8,189	4.9%	7,409	7,103	1,179	1,086	0	0	0	0
Arkansas	3,570	3,569	0.0%	3,526	3,521	44	49	0	0	0	0
Louisiana	1,103	999	10.4%	0	0	1,103	999	0	0	0	0
Oklahoma	2,573	2,664	-3.4%	2,573	2,664	0	0	0	0	0	0
Texas	1,342	956	40.3%	1,310	918	32	38	0	0	0	0
Mountain	31,856	30,801	3.4%	30,627	29,701	1,217	1,093	12	6	0	0
Arizona	7,168	6,536	9.7%	7,168	6,536	0	0	0	0	0	0
Colorado	1,903	1,620	17.4%	1,688	1,430	203	184	12	6	0	0
Idaho	9,033	8,757	3.2%	8,221	8,025	812	732	0	0	0	0
Montana	10,083	9,888	2.0%	9,941	9,745	142	143	0	0	0	0
Nevada	1,789	2,264	-21.0%	1,748	2,249	41	15	0	0	0	0
New Mexico	148	99	48.8%	148	99	0	0	0	0	0	0
Utah	760	769	-1.2%	749	760	10	9	0	0	0	0
Wyoming	973	868	12.1%	964	858	10	10	0	0	0	0
Pacific Contiguous	141,837	118,467	19.7%	139,471	117,386	2,354	1,078	12	3	0	0
California	28,942	13,808	109.6%	27,303	13,245	1,627	560	12	3	0	0
Oregon	34,549	31,254	10.5%	34,273	31,016	277	238	0	0	0	0
Washington	78,346	73,405	6.7%	77,895	73,125	450	280	0	0	0	0
Pacific Noncontiguous	1,750	1,690	3.5%	1,508	1,591	36	41	168	0	38	59
Alaska	1,659	1,569	5.8%	1,491	1,569	0	0	168	0	0	0
Hawaii	91	121	-25.0%	17	22	36	41	0	0	38	59
U.S. Total	267,812	249,080	7.5%	247,787	229,640	18,539	17,996	217	35	1,269	1,410

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
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Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.15. Utility Scale Facility Net Generation from Renewable Sources Excluding Hydroelectric by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	10,574	10,208	3.6%	872	890	8,437	7,900	187	168	1,077	1,249
Connecticut	893	805	11.0%	3	0	891	801	0	4	0	0
Maine	4,455	4,449	0.1%	0	0	3,290	3,112	90	91	1,075	1,246
Massachusetts	2,030	1,833	10.7%	74	76	1,901	1,725	53	29	1	3
New Hampshire	2,122	2,048	3.6%	308	321	1,778	1,691	36	35	0	0
Rhode Island	246	236	4.4%	0	0	239	229	7	7	0	0
Vermont	828	838	-1.2%	487	494	338	342	2	2	0	0
Middle Atlantic	14,104	13,734	2.7%	82	63	12,602	12,227	633	681	787	764
New Jersey	1,838	1,595	15.3%	82	63	1,439	1,226	312	304	6	1
New York	6,323	6,319	0.1%	0	0	5,903	5,886	220	215	200	218
Pennsylvania	5,942	5,821	2.1%	0	0	5,260	5,114	101	162	581	544
East North Central	28,958	28,944	0.1%	3,634	3,700	23,413	23,292	220	274	1,691	1,677
Illinois	11,179	11,323	-1.3%	37	34	11,138	11,284	5	5	0	0
Indiana	5,558	5,118	8.6%	319	308	5,143	4,716	21	22	75	71
Michigan	7,200	7,283	-1.1%	1,956	1,976	4,395	4,431	146	201	703	675
Ohio	2,033	2,058	-1.2%	23	27	1,691	1,673	13	11	306	347
Wisconsin	2,988	3,162	-5.5%	1,298	1,355	1,047	1,187	35	36	606	584
West North Central	63,417	54,218	17.0%	21,897	17,933	40,652	35,497	173	135	695	652
Iowa	20,324	18,131	12.1%	12,793	10,752	7,424	7,272	51	40	55	67
Kansas	14,172	11,062	28.1%	830	883	13,342	10,179	0	0	0	0
Minnesota	11,836	11,588	2.1%	3,063	2,531	8,086	8,428	56	50	631	579
Missouri	1,293	1,179	9.7%	42	42	1,199	1,105	49	30	3	3
Nebraska	3,900	3,251	20.0%	272	272	3,610	2,963	18	16	0	0
North Dakota	8,178	6,509	25.6%	3,905	2,622	4,267	3,883	0	0	6	4
South Dakota	3,715	2,498	48.7%	991	831	2,724	1,667	0	0	0	0
South Atlantic	25,689	23,017	11.6%	2,266	1,948	12,559	9,958	512	466	10,353	10,644
Delaware	124	130	-4.3%	7	7	94	101	7	6	16	16
District of Columbia	53	31	70.2%	0	0	53	31	0	0	0	0
Florida	4,867	5,143	-5.4%	247	278	2,544	2,709	51	46	2,025	2,110
Georgia	5,454	4,863	12.2%	107	4	1,489	802	6	11	3,852	4,047
Maryland	1,281	1,068	20.0%	9	8	1,137	938	23	21	112	100
North Carolina	5,983	3,963	51.0%	211	12	4,307	2,470	199	153	1,265	1,328
South Carolina	2,381	2,294	3.8%	420	437	414	410	0	0	1,547	1,446
Virginia	4,113	4,144	-0.8%	1,264	1,202	1,088	1,116	226	229	1,535	1,597
West Virginia	1,432	1,381	3.7%	0	0	1,432	1,381	0	0	0	0
East South Central	6,417	6,363	0.9%	103	85	517	471	3	3	5,794	5,804
Alabama	3,367	3,289	2.3%	0	0	296	256	0	0	3,071	3,034
Kentucky	477	441	8.0%	103	85	14	7	0	0	360	349
Mississippi	1,524	1,507	1.2%	0	0	10	13	0	0	1,514	1,494
Tennessee	1,050	1,126	-6.8%	0	0	198	195	3	3	849	928
West South Central	84,653	65,190	29.9%	1,712	1,833	77,507	58,452	90	70	5,345	4,834
Arkansas	1,396	1,442	-3.2%	2	0	133	86	5	4	1,257	1,352
Louisiana	2,876	2,705	6.3%	0	0	80	89	0	0	2,796	2,616
Oklahoma	20,437	14,369	42.2%	1,436	1,427	18,653	12,618	0	0	348	324
Texas	59,944	46,674	28.4%	274	406	58,641	45,659	85	66	944	543
Mountain	38,116	29,642	28.6%	3,517	3,124	34,077	26,005	132	110	391	404
Arizona	4,522	4,135	9.3%	497	532	4,000	3,581	24	22	0	0
Colorado	10,122	7,807	29.6%	139	135	9,962	7,653	17	17	3	3
Idaho	3,212	2,947	9.0%	11	12	2,825	2,549	11	9	365	377
Montana	2,160	1,986	8.8%	231	217	1,909	1,748	0	0	20	21
Nevada	6,877	5,103	34.7%	51	2	6,762	5,054	61	45	3	3
New Mexico	4,389	2,734	60.5%	250	158	4,136	2,573	3	3	0	0
Utah	2,445	1,172	108.6%	257	260	2,172	898	16	15	0	0
Wyoming	4,389	3,757	16.8%	2,080	1,808	2,309	1,949	0	0	0	0
Pacific Contiguous	68,145	62,413	9.2%	8,389	7,725	56,234	51,090	1,029	1,073	2,493	2,524
California	49,712	45,395	9.5%	2,221	2,178	45,909	41,668	981	1,032	602	517
Oregon	8,382	7,950	5.4%	1,334	1,308	6,507	5,996	32	26	510	621
Washington	10,050	9,067	10.8%	4,835	4,239	3,819	3,427	16	16	1,381	1,386
Pacific Noncontiguous	1,560	1,433	8.8%	190	182	1,056	927	247	240	66	84
Alaska	212	215	-1.1%	109	105	60	55	43	50	1	5
Hawaii	1,347	1,218	10.6%	81	77	995	873	205	189	66	79
U.S. Total	341,633	295,161	15.7%	42,661	37,485	267,056	225,820	3,226	3,220	28,690	28,635

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.16. Utility Scale Facility Net Generation from Hydroelectric (Pumped Storage) Power by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	-495	-478	3.6%	0	0	-495	-478	0	0	0	0
Connecticut	6	-4	-250.7%	0	0	6	-4	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	-500	-474	5.6%	0	0	-500	-474	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	-1,237	-1,101	12.3%	-675	-592	-562	-509	0	0	0	0
New Jersey	-204	-170	20.3%	-204	-170	0	0	0	0	0	0
New York	-471	-423	11.4%	-471	-423	0	0	0	0	0	0
Pennsylvania	-562	-509	10.4%	0	0	-562	-509	0	0	0	0
East North Central	-752	-481	56.3%	-752	-481	0	0	0	0	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	-752	-481	56.3%	-752	-481	0	0	0	0	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	179	348	-48.5%	179	348	0	0	0	0	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	179	348	-48.5%	179	348	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	-3,132	-2,755	13.7%	-3,132	-2,755	0	0	0	0	0	0
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	0	0	--	0	0	0	0	0	0	0	0
Georgia	-993	-815	21.9%	-993	-815	0	0	0	0	0	0
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	-100.0%	0	0	0	0	0	0	0	0
South Carolina	-977	-904	8.0%	-977	-904	0	0	0	0	0	0
Virginia	-1,163	-1,036	12.2%	-1,163	-1,036	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	-704	-531	32.6%	-704	-531	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	-704	-531	32.6%	-704	-531	0	0	0	0	0	0
West South Central	-49	-41	19.0%	-49	-41	0	0	0	0	0	0
Arkansas	39	32	22.6%	39	32	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	-87	-72	20.6%	-87	-72	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	-236	-205	14.7%	-236	-205	0	0	0	0	0	0
Arizona	59	73	-19.8%	59	73	0	0	0	0	0	0
Colorado	-294	-279	5.6%	-294	-279	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	-262	153	-271.4%	-262	153	0	0	0	0	0	0
California	-259	113	-330.2%	-259	113	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	-2	40	-105.8%	-2	40	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	-6,686	-5,091	31.3%	-5,629	-4,105	-1,057	-987	0	0	0	0

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
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Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.17. Utility Scale Facility Net Generation from Other Energy Sources by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	1,866	1,814	2.9%	0	0	1,658	1,617	86	89	122	108
Connecticut	577	556	3.8%	0	0	577	553	0	3	0	0
Maine	381	340	12.2%	0	0	174	146	86	86	122	108
Massachusetts	858	868	-1.1%	0	0	858	868	0	0	0	0
New Hampshire	49	50	-1.4%	0	0	49	50	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	2,322	2,400	-3.3%	0	0	1,866	1,888	388	445	68	67
New Jersey	607	582	4.2%	0	0	397	371	143	145	68	67
New York	899	919	-2.2%	0	0	694	721	205	198	0	0
Pennsylvania	816	899	-9.2%	0	0	775	796	41	102	0	0
East North Central	940	1,132	-17.0%	-25	56	109	147	159	212	696	717
Illinois	274	248	10.3%	0	0	-16	-5	0	0	290	253
Indiana	363	420	-13.6%	0	0	0	0	19	20	344	400
Michigan	302	405	-25.5%	11	32	131	160	140	192	19	21
Ohio	-48	-3	NM	-54	-3	-6	-8	0	0	12	8
Wisconsin	50	63	-20.8%	18	27	0	0	0	0	32	35
West North Central	474	495	-4.3%	234	273	141	132	33	34	65	56
Iowa	12	5	140.0%	0	0	0	0	0	0	12	5
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	407	390	4.5%	180	173	141	132	33	34	53	51
Missouri	9	58	-84.4%	9	58	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	45	42	7.0%	45	42	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	4,724	4,621	2.2%	0	0	2,408	2,334	205	208	2,111	2,079
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	3,151	3,021	4.3%	0	0	1,473	1,372	0	0	1,678	1,649
Georgia	101	87	15.9%	0	0	0	0	0	0	101	87
Maryland	323	318	1.6%	0	0	323	318	0	0	0	0
North Carolina	655	685	-4.5%	0	0	363	386	0	0	292	299
South Carolina	45	49	-6.6%	0	0	5	4	0	0	41	44
Virginia	462	462	0.1%	0	0	257	253	205	208	0	0
West Virginia	-12	0	--	0	0	-12	0	0	0	0	0
East South Central	75	78	-4.6%	50	52	0	0	0	0	25	27
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	50	52	-3.4%	50	52	0	0	0	0	0	0
Mississippi	5	6	-13.1%	0	0	0	0	0	0	5	6
Tennessee	20	21	-5.2%	0	0	0	0	0	0	20	21
West South Central	1,524	1,546	-1.4%	0	0	119	91	0	0	1,405	1,455
Arkansas	6	12	-53.5%	0	0	0	0	0	0	6	12
Louisiana	727	788	-7.8%	0	0	0	0	0	0	727	788
Oklahoma	28	11	142.9%	0	0	22	0	0	0	5	11
Texas	764	734	4.1%	0	0	97	91	0	0	667	644
Mountain	744	621	19.9%	57	2	343	319	0	0	344	301
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	53	52	2.0%	0	0	11	12	0	0	42	40
Idaho	65	81	-19.5%	0	0	0	0	0	0	65	81
Montana	327	303	8.0%	0	0	327	303	0	0	0	0
Nevada	21	1	NM	21	1	0	0	0	0	0	0
New Mexico	0	1	-58.0%	0	1	0	0	0	0	0	0
Utah	213	106	101.3%	36	0	5	4	0	0	172	102
Wyoming	65	78	-16.4%	0	0	0	0	0	0	65	78
Pacific Contiguous	766	953	-19.6%	-5	-2	284	303	0	0	487	652
California	666	812	-18.0%	-4	-1	183	207	0	0	487	606
Oregon	41	42	-2.9%	0	0	41	42	0	0	0	0
Washington	60	100	-40.1%	0	0	60	54	0	0	0	46
Pacific Noncontiguous	320	367	-12.8%	110	177	12	8	197	182	0	0
Alaska	-2	-2	-0.6%	-2	-2	0	0	0	0	0	0
Hawaii	322	369	-12.8%	113	180	12	8	197	182	0	0
U.S. Total	13,754	14,028	-2.0%	421	558	6,941	6,838	1,068	1,170	5,324	5,462

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Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.18. Utility Scale Facility Net Generation from Wind by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	2,646	2,269	16.6%	238	267	2,380	1,967	27	33	1	3
Connecticut	13	0	--	0	0	13	0	0	0	0	0
Maine	1,667	1,296	28.7%	0	0	1,667	1,296	0	0	0	0
Massachusetts	216	215	0.7%	59	62	135	124	20	26	1	3
New Hampshire	432	423	2.1%	0	0	432	423	0	0	0	0
Rhode Island	27	10	163.6%	0	0	20	3	7	7	0	0
Vermont	291	325	-10.5%	179	205	112	121	0	0	0	0
Middle Atlantic	7,437	7,351	1.2%	0	0	7,436	7,349	0	0	2	2
New Jersey	21	22	-3.2%	0	0	21	22	0	0	0	0
New York	3,940	3,977	-0.9%	0	0	3,939	3,974	0	0	2	2
Pennsylvania	3,476	3,353	3.7%	0	0	3,476	3,353	0	0	0	0
East North Central	23,019	22,852	0.7%	2,942	3,053	20,010	19,751	8	6	59	41
Illinois	10,663	10,747	-0.8%	13	14	10,646	10,728	5	5	0	0
Indiana	4,899	4,515	8.5%	0	0	4,899	4,514	1	1	0	0
Michigan	4,696	4,797	-2.1%	1,947	1,975	2,749	2,822	0	0	0	0
Ohio	1,245	1,203	3.5%	11	13	1,180	1,156	3	0	52	34
Wisconsin	1,515	1,589	-4.7%	972	1,051	536	531	0	0	7	7
West North Central	60,923	51,867	17.5%	21,334	17,430	39,556	34,405	33	32	0	0
Iowa	20,072	17,873	12.3%	12,770	10,724	7,298	7,146	4	3	0	0
Kansas	14,111	10,999	28.3%	830	883	13,281	10,115	0	0	0	0
Minnesota	9,933	9,779	1.6%	2,646	2,152	7,259	7,598	29	29	0	0
Missouri	1,122	1,033	8.6%	0	0	1,122	1,033	0	0	0	0
Nebraska	3,798	3,180	19.4%	192	218	3,606	2,963	0	0	0	0
North Dakota	8,172	6,506	25.6%	3,905	2,622	4,267	3,883	0	0	0	0
South Dakota	3,714	2,498	48.7%	991	831	2,723	1,667	0	0	0	0
South Atlantic	1,971	1,816	8.5%	0	0	1,966	1,811	5	5	0	0
Delaware	5	5	3.8%	0	0	0	0	5	5	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	0	0	--	0	0	0	0	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	527	435	21.3%	0	0	527	435	0	0	0	0
North Carolina	6	0	--	0	0	6	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	1,432	1,376	4.1%	0	0	1,432	1,376	0	0	0	0
East South Central	38	46	-17.7%	0	0	38	46	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	38	46	-17.7%	0	0	38	46	0	0	0	0
West South Central	77,600	58,864	31.8%	1,686	1,707	75,866	57,126	48	31	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	20,069	14,031	43.0%	1,430	1,426	18,639	12,605	0	0	0	0
Texas	57,531	44,833	28.3%	256	281	57,227	44,521	48	31	0	0
Mountain	23,842	18,945	25.9%	2,450	2,160	21,385	16,776	4	7	3	3
Arizona	542	452	19.8%	0	0	542	452	0	0	0	0
Colorado	9,421	7,475	26.0%	139	135	9,278	7,334	1	4	3	3
Idaho	2,578	2,270	13.6%	0	0	2,578	2,270	0	0	0	0
Montana	2,140	1,965	8.9%	231	217	1,909	1,748	0	0	0	0
Nevada	344	310	11.0%	0	0	344	310	0	0	0	0
New Mexico	3,605	2,090	72.5%	0	0	3,603	2,087	3	3	0	0
Utah	822	626	31.4%	0	0	822	626	0	0	0	0
Wyoming	4,389	3,757	16.8%	2,080	1,808	2,309	1,949	0	0	0	0
Pacific Contiguous	28,708	25,936	10.7%	6,311	5,690	22,385	20,237	6	5	5	4
California	13,509	12,230	10.5%	704	693	12,794	11,527	6	5	5	4
Oregon	7,157	6,632	7.9%	1,261	1,234	5,896	5,398	0	0	0	0
Washington	8,042	7,075	13.7%	4,346	3,763	3,695	3,312	0	0	0	0
Pacific Noncontiguous	808	772	4.7%	109	105	700	667	0	0	0	0
Alaska	169	160	6.0%	109	105	60	55	0	0	0	0
Hawaii	639	613	4.3%	0	0	639	613	0	0	0	0
U.S. Total	226,993	190,719	19.0%	35,070	30,412	191,720	160,135	131	118	71	53

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Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.19. Utility Scale Facility Net Generation from Biomass by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	7,220	7,407	-2.5%	613	610	5,377	5,419	155	132	1,075	1,246
Connecticut	856	787	8.7%	0	0	856	784	0	4	0	0
Maine	2,788	3,153	-11.6%	0	0	1,623	1,816	90	91	1,075	1,246
Massachusetts	1,204	1,167	3.2%	0	0	1,177	1,166	27	1	0	0
New Hampshire	1,689	1,624	4.0%	308	321	1,346	1,268	36	35	0	0
Rhode Island	205	211	-3.1%	0	0	205	211	0	0	0	0
Vermont	477	465	2.8%	305	289	170	174	2	2	0	0
Middle Atlantic	5,618	5,591	0.5%	0	0	4,367	4,297	480	542	771	751
New Jersey	983	946	3.9%	0	0	815	774	167	172	0	0
New York	2,244	2,241	0.1%	0	0	1,828	1,814	217	212	199	215
Pennsylvania	2,391	2,404	-0.5%	0	0	1,723	1,709	96	159	572	536
East North Central	5,587	5,828	-4.1%	639	628	3,109	3,302	210	265	1,629	1,633
Illinois	467	527	-11.4%	22	19	445	507	0	0	0	0
Indiana	433	446	-3.1%	287	300	51	55	20	21	75	71
Michigan	2,495	2,485	0.4%	0	0	1,646	1,609	146	201	703	675
Ohio	722	799	-9.6%	4	5	459	475	8	8	252	311
Wisconsin	1,470	1,571	-6.4%	327	303	508	655	35	36	599	576
West North Central	2,445	2,330	4.9%	558	503	1,052	1,071	139	103	695	652
Iowa	252	258	-2.5%	23	27	127	126	47	37	55	67
Kansas	59	62	-5.0%	0	0	59	62	0	0	0	0
Minnesota	1,892	1,806	4.8%	417	379	818	828	27	21	631	579
Missouri	139	129	7.6%	39	42	49	55	47	29	3	3
Nebraska	98	71	37.9%	80	55	0	0	18	16	0	0
North Dakota	6	4	56.0%	0	0	0	0	0	0	6	4
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	18,907	19,303	-2.0%	1,766	1,744	6,421	6,544	367	371	10,353	10,644
Delaware	68	76	-10.9%	0	0	52	60	0	0	16	16
District of Columbia	53	31	70.2%	0	0	53	31	0	0	0	0
Florida	4,643	4,919	-5.6%	88	104	2,482	2,661	48	45	2,025	2,110
Georgia	4,573	4,734	-3.4%	0	0	719	679	3	8	3,852	4,047
Maryland	546	514	6.1%	0	0	417	400	16	15	112	100
North Carolina	2,556	2,589	-1.3%	0	0	1,217	1,186	74	75	1,265	1,328
South Carolina	2,376	2,289	3.8%	420	437	409	406	0	0	1,547	1,446
Virginia	4,092	4,144	-1.3%	1,259	1,202	1,072	1,116	226	229	1,535	1,597
West Virginia	0	5	-100.0%	0	0	0	5	0	0	0	0
East South Central	6,258	6,241	0.3%	91	85	373	352	0	0	5,794	5,804
Alabama	3,335	3,289	1.4%	0	0	265	256	0	0	3,071	3,034
Kentucky	465	441	5.4%	91	85	14	7	0	0	360	349
Mississippi	1,524	1,507	1.2%	0	0	10	13	0	0	1,514	1,494
Tennessee	933	1,004	-7.0%	0	0	84	76	0	0	849	928
West South Central	6,291	5,922	6.2%	19	125	888	926	40	38	5,345	4,834
Arkansas	1,370	1,441	-4.9%	0	0	108	85	5	4	1,257	1,352
Louisiana	2,876	2,705	6.3%	0	0	80	89	0	0	2,796	2,616
Oklahoma	362	336	7.8%	0	0	15	13	0	0	348	324
Texas	1,683	1,440	16.8%	19	125	685	739	35	33	944	543
Mountain	1,086	1,060	2.4%	11	20	662	619	27	23	385	399
Arizona	214	227	-5.4%	0	7	214	219	0	0	0	0
Colorado	162	81	101.5%	0	0	162	81	0	0	0	0
Idaho	532	601	-11.6%	11	12	145	203	11	9	365	377
Montana	20	21	-5.3%	0	0	0	0	0	0	20	21
Nevada	55	26	115.1%	0	0	55	26	0	0	0	0
New Mexico	18	20	-9.0%	0	0	18	20	0	0	0	0
Utah	84	85	-1.2%	0	0	68	71	16	15	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	8,947	9,575	-6.6%	780	725	4,787	5,365	901	971	2,479	2,514
California	5,939	6,468	-8.2%	230	184	4,268	4,847	853	929	589	507
Oregon	1,001	1,116	-10.3%	63	66	396	404	32	26	510	621
Washington	2,008	1,991	0.8%	488	475	124	114	16	16	1,381	1,386
Pacific Noncontiguous	402	376	7.1%	37	52	51	0	247	240	66	84
Alaska	43	55	-21.6%	0	0	0	0	43	50	1	5
Hawaii	359	321	12.0%	37	52	51	0	205	189	66	79
U.S. Total	62,760	63,632	-1.4%	4,516	4,491	27,087	27,894	2,565	2,685	28,592	28,561

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Negative generation denotes that electric power consumed for plant use exceeds gross generation.
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Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.20. Utility Scale Facility Net Generation from Geothermal by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0	0	0	0	0
New Jersey	0	0	--	0	0	0	0	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	0	0	--	0	0	0	0	0	0	0	0
East North Central	0	0	--	0	0	0	0	0	0	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	0	0	--	0	0	0	0	0	0	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	0	0	--	0	0	0	0	0	0	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	0	0	--	0	0	0	0	0	0	0	0
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	0	0	--	0	0	0	0	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	0	0	--	0	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	0	0	--	0	0	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	3,925	3,625	8.3%	257	260	3,668	3,366	0	0	0	0
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	72	76	-4.8%	0	0	72	76	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	3,353	3,111	7.8%	0	0	3,353	3,111	0	0	0	0
New Mexico	14	10	47.0%	0	0	14	10	0	0	0	0
Utah	485	430	12.9%	257	260	228	170	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	11,641	12,062	-3.5%	823	829	10,818	11,233	0	0	0	0
California	11,457	11,883	-3.6%	819	827	10,638	11,056	0	0	0	0
Oregon	184	179	2.7%	4	2	180	177	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	260	230	12.9%	0	0	260	230	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	260	230	12.9%	0	0	260	230	0	0	0	0
U.S. Total	15,826	15,918	-0.6%	1,080	1,089	14,746	14,829	0	0	0	0

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.21. Net Generation from Solar Photovoltaic by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors							Electric Power Sector				Commercial Sector						Industrial Sector						Residential Sector	
								Electric Utilities		Independent Power Producers															
	Estimated Generation From Utility and Small Scale Facilities			Generation at Utility Scale Facilities		Estimated Small Scale Generation		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Estimated Generation From Utility and Small Scale Facilities		Generation at Utility Scale Facilities		Estimated Small Scale Generation		Estimated Generation From Utility and Small Scale Facilities		Generation at Utility Scale Facilities		Estimated Small Scale Generation		Estimated Small Scale Generation	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	2,467	1,702	44.9%	707	531	1,760	1,171	21	14	681	515	976	746	6	3	970	743	82	52	0	0	82	52	708	376
Connecticut	344	216	59.3%	25	17	320	199	3	0	22	17	130	90	0	0	130	90	16	10	0	0	16	10	174	98
Maine	29	19	54.3%	0	0	29	19	0	0	0	0	10	6	0	0	10	6	0	0	0	0	0	0	19	13
Massachusetts	1,863	1,314	41.8%	609	451	1,254	862	15	14	589	435	782	613	6	3	776	610	64	41	0	0	64	41	414	211
New Hampshire	52	24	117.0%	0	0	52	24	0	0	0	0	14	7	0	0	14	7	2	1	0	0	2	1	36	16
Rhode Island	44	28	60.5%	15	14	30	13	0	0	15	14	16	11	0	0	16	11	0	0	0	0	0	0	14	3
Vermont	135	102	31.6%	59	48	76	54	4	0	55	48	24	18	0	0	24	18	0	0	0	0	0	0	51	36
Middle Atlantic	3,594	3,077	16.8%	1,049	792	2,545	2,284	82	63	800	581	1,394	1,524	153	139	1,241	1,386	172	160	14	10	158	150	1,147	749
New Jersey	2,220	2,062	7.6%	835	628	1,385	1,435	82	63	603	431	954	1,150	144	133	809	1,017	91	82	6	1	85	81	491	337
New York	1,013	689	47.0%	140	101	873	589	0	0	137	98	317	262	3	3	314	259	13	10	0	0	13	10	547	319
Pennsylvania	361	325	11.1%	75	64	287	261	0	0	61	52	123	113	6	3	118	109	68	68	8	8	60	59	109	93
East North Central	604	463	30.3%	352	264	251	199	53	19	294	239	161	149	2	3	159	146	14	7	3	2	11	5	82	48
Illinois	86	76	12.6%	49	49	37	27	2	1	47	48	24	19	0	0	24	19	0	0	0	0	0	0	13	8
Indiana	243	168	44.5%	226	156	17	12	33	8	193	148	7	7	0	0	7	7	1	0	0	0	1	0	9	5
Michigan	64	39	65.2%	9	1	55	38	9	1	0	0	30	27	0	0	30	27	1	1	0	0	1	1	24	10
Ohio	173	151	14.8%	66	56	108	95	9	9	52	42	86	80	2	3	83	77	7	7	3	2	5	4	20	14
Wisconsin	37	29	29.4%	3	1	35	27	0	0	3	1	14	17	0	0	14	17	5	0	0	0	5	0	16	10
West North Central	325	240	35.4%	49	21	276	219	4	0	44	21	150	129	2	0	148	129	6	3	0	0	6	3	121	86
Iowa	60	41	45.2%	0	0	59	41	0	0	0	0	36	27	0	0	36	27	3	1	0	0	3	1	20	13
Kansas	11	6	65.9%	2	2	8	5	0	0	2	2	2	2	0	0	2	2	0	0	0	0	0	0	6	2
Minnesota	47	28	65.7%	10	3	37	26	1	0	9	3	17	14	0	0	17	14	3	2	0	0	3	2	18	10
Missouri	200	162	23.3%	33	17	167	145	3	0	28	16	93	86	2	0	91	86	1	1	0	0	1	1	75	59
Nebraska	7	1	391.9%	4	0	3	1	0	0	4	0	1	0	0	0	1	0	0	0	0	0	0	0	2	1
North Dakota	0	0	4.0%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Dakota	1	1	104.4%	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Atlantic	6,005	2,627	128.6%	4,736	1,792	1,268	834	424	98	4,173	1,604	604	596	140	90	465	506	204	25	0	0	204	25	600	303
Delaware	119	128	-7.3%	51	49	67	79	7	7	43	41	25	55	1	1	24	54	4	4	0	0	4	4	40	22
District of Columbia	32	32	-2.1%	0	0	32	32	0	0	0	0	15	23	0	0	15	23	0	0	0	0	0	0	16	10
Florida	354	274	29.1%	149	118	205	156	84	68	61	48	87	75	3	2	83	73	6	4	0	0	6	4	116	79
Georgia	1,076	229	368.7%	881	129	195	100	107	4	771	123	31	95	3	3	28	92	154	2	0	0	154	2	13	6
Maryland	728	457	59.1%	209	119	519	339	9	8	193	104	181	190	7	7	174	183	35	13	0	0	35	13	310	143
North Carolina	3,589	1,460	145.8%	3,421	1,374	167	86	211	12	3,085	1,284	238	143	125	78	112	65	4	2	0	0	4	2	51	19
South Carolina	41	11	258.9%	5	4	36	7	0	0	5	4	10	2	0	0	10	2	2	0	0	0	2	0	24	5
Virginia	62	30	108.9%	21	0	41	30	5	0	16	0	16	13	0	0	16	13	0	0	0	0	0	0	25	16
West Virginia	6	4	26.4%	0	0	6	4	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	4	3
East South Central	242	155	56.4%	122	76	120	78	12	0	107	73	88	78	3	3	85	75	1	0	0	0	1	0	34	3
Alabama	39	3	NM	31	0	8	3	0	0	31	0	5	3	0	0	5	3	0	0	0	0	0	0	2	0
Kentucky	32	14	131.7%	12	0	20	14	12	0	0	0	13	12	0	0	13	12	0	0	0	0	0	0	7	2
Mississippi	6	2	278.3%	0	0	6	2	0	0	0	0	4	1	0	0	4	1	0	0	0	0	0	0	2	0
Tennessee	164	136	21.0%	79	76	86	60	0	0	75	73	66	62	3	3	63	60	1	0	0	0	1	0	22	0
West South Central	1,355	789	71.9%	762	403	593	385	7	2	753	400	152	109	2	2	150	107	0	0	0	0	0	0	443	279
Arkansas	33	6	423.7%	26	1	7	5	2	0	25	1	3	3	0	0	3	3	0	0	0	0	0	0	4	3
Louisiana	191	153	24.2%	0	0	191	153	0	0	0	0	7	6	0	0	7	6	0	0	0	0	0	0	184	147
Oklahoma	9	5	101.2%	5	2	4	3	5	2	0	0	1	1	0	0	1	1	0	0	0	0	0	0	3	2
Texas	1,122	624	79.8%	731	401	391	223	0	0	729	399	141	100	2	2	139	98	0	0	0	0	0	0	252	126
Mountain	11,143	7,358	51.4%	8,375	5,184	2,767	2,174	799	685	7,474	4,417	974	937	101	80	874	857	206	175	3	3	203	172	1,690	1,145
Arizona	4,726	4,108	15.0%	3,122	2,738	1,603	1,370	497	525	2,601	2,191	493	524	24	22	469	503	170	147	0	0	170	147	964	721
Colorado	999	643	55.5%	538	251	461	391	0	0	522	238	209	192	16	13	193	179	2	2	0	0	2	2	265	210
Idaho	40	6	538.6%	30	0	10	6	0	0	30	0	3	3	0	0	3	3	0	0	0	0	0	0	7	4
Montana	11	8	33.2%	0	0	11	8	0	0	0	0	3	3	0	0	3	3	0	0	0	0	0	0	8	6
Nevada	3,252	1,734	87.5%	2,880	1,548	372	186	51	2	2,765	1,499	158	115	61	45	97	70	25	20	3	3	23	17	253	99
New Mexico	909	757	20.0%	752	615	157	142	250	158	502	457	64	73	0	0	64	73	1	1	0	0	1	1	92	69
Utah	1,203	99	NM	1,054	32	150	67	0	0	1,054	32	43	26	0	0	43	26	6	5	0	0	6	5	101	36
Wyoming	3	3	24.8%	0	0	3	3	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	2	2
Pacific Contiguous	24,899	18,708	33.1%	16,428	12,547	8,471	6,161	475	481	15,824	11,962	1,909	1,594	121	97	1,787	1,497	1,401	1,050	8	7	1,393	1,043	5,291	3,621
California	24,616	18,536	32.8%	16,386	12,522	8,230	6,014	468	474	15,789	11,944	1,825	1,543	121	97	1,703	1,446	1,388	1,046	8	7	1,379	1,040	5,147	3,528
Oregon	192	116	65.9%	41	24	151	92	6	6	35	18	71	41	0	0	71	41	13	4	0	0	13	4	67	47
Washington	90	56	60.1%	1	1	89	55	1	1	0	0	13	10	0	0	13	10	0	0	0	0	0	0	76	46
Pacific Noncontiguous	850	687	23.7%	89	54	761	632	44	25	45	29	280	243	0	0	280	243	2	0	0	0	2	0	479	389
Alaska	1	0	–	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Hawaii	848	687	23.5%	89	54	760	632	44	25	45	29	279	243	0	0	279	243	2	0	0	0	2	0	479	389
U.S. Total	51,483	35,805	43.8%	32,670	21,666	18,812	14,139	1,920	1,388	30,194	19,841	6,687	6,106	529	416	6,158	5,689	2,087	1,472	27	21	2,060	1,451	10,595	6,999

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report;
Estimated small scale solar photovoltaic generation and small scale solar photovoltaic capacity are based on data from Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 3.22. Utility Scale Facility Net Generation from Solar Thermal by State, by Sector, 2016 and 2015 (Thousand Megawatthours)

	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Generation at Utility Scale Facilities			Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities		Generation at Utility Scale Facilities	
Census Division and State	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0	0	0	0	0
New Jersey	0	0	--	0	0	0	0	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	0	0	--	0	0	0	0	0	0	0	0
East North Central	0	0	--	0	0	0	0	0	0	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	0	0	--	0	0	0	0	0	0	0	0
Michigan	0	0	--	0	0	0	0	0	0	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	0	0	--	0	0	0	0	0	0	0	0
West North Central	0	0	--	0	0	0	0	0	0	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	75	106	-29.0%	75	106	0	0	0	0	0	0
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	75	106	-29.0%	75	106	0	0	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	0	0	--	0	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	0	0	--	0	0	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	888	828	7.2%	0	0	888	828	0	0	0	0
Arizona	644	719	-10.5%	0	0	644	719	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	244	109	123.7%	0	0	244	109	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	2,421	2,293	5.6%	0	0	2,421	2,293	0	0	0	0
California	2,421	2,293	5.6%	0	0	2,421	2,293	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	3,384	3,227	4.9%	75	106	3,308	3,121	0	0	0	0

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 3.23. Useful Thermal Output by Energy Source: Total Combined Heat and Power (All Sectors), 2006 - 2016
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
2006	332,548	54,224	24,009	603,288	126,049	689,549	49,308	1,878,973
2007	326,803	50,882	25,373	554,394	116,313	651,230	46,822	1,771,816
2008	315,244	29,554	18,263	509,330	110,680	610,131	23,729	1,616,931
2009	281,557	32,591	20,308	513,002	99,556	546,974	33,287	1,527,276
2010	300,303	19,914	21,448	524,494	91,439	581,310	28,755	1,567,662
2011	286,210	15,230	21,552	535,150	103,615	586,299	31,067	1,579,124
2012	252,605	12,452	24,419	556,945	113,147	580,513	24,571	1,564,653
2013	243,043	12,828	25,224	553,696	103,719	611,443	22,171	1,572,124
2014	232,509	11,990	23,457	545,624	104,868	624,086	21,390	1,563,923
2015	211,030	11,796	21,748	591,749	98,910	626,887	19,729	1,581,849
2016	220,162	8,607	20,122	785,413	148,881	698,858	25,342	1,907,384
Year 2014								
January	22,969	2,284	1,900	55,295	8,694	53,678	1,670	146,489
February	21,093	1,305	1,687	43,162	7,847	49,183	1,427	125,704
March	22,495	1,162	1,947	45,530	8,700	53,280	1,720	134,833
April	17,984	801	2,149	42,114	8,220	51,553	1,774	124,596
May	18,456	842	2,082	43,071	8,308	50,115	1,683	124,557
June	18,058	845	2,122	42,523	8,626	51,604	1,813	125,592
July	18,908	795	2,147	45,823	8,838	52,903	1,816	131,228
August	18,663	817	2,006	47,255	9,139	53,504	1,891	133,276
September	17,474	685	2,109	44,117	8,852	49,239	1,814	124,291
October	17,413	835	1,417	45,279	8,897	52,054	1,901	127,796
November	18,904	865	1,835	44,308	9,331	51,860	1,818	128,922
December	20,093	754	2,055	47,146	9,415	55,115	2,064	136,641
Year 2015								
January	21,115	1,155	1,981	50,138	9,327	56,281	1,661	141,657
February	19,499	2,090	1,905	46,106	7,897	49,871	1,437	128,806
March	19,098	985	2,012	50,343	8,470	52,087	1,631	134,626
April	16,589	873	2,003	46,088	8,189	51,783	1,590	127,116
May	16,985	883	1,878	46,159	7,800	52,304	1,586	127,594
June	16,620	831	1,758	47,704	8,224	51,115	1,683	127,936
July	17,999	873	1,524	52,248	8,551	53,097	1,703	135,996
August	16,970	789	1,626	52,797	8,512	53,028	1,740	135,462
September	16,437	790	1,869	49,599	8,819	50,168	1,681	129,363
October	15,628	905	1,640	50,020	7,731	50,638	1,578	128,140
November	16,832	799	2,015	49,204	7,207	52,039	1,699	129,794
December	17,259	822	1,538	51,343	8,183	54,475	1,739	135,359
Year 2016								
January	21,767	887	1,437	69,485	12,156	61,034	2,214	168,980
February	19,988	1,183	1,742	63,128	11,095	57,474	2,149	156,760
March	19,348	680	1,609	64,650	13,241	58,071	2,305	159,905
April	16,611	676	1,417	60,432	12,636	54,858	2,115	148,745
May	16,955	760	1,799	63,171	12,648	56,622	1,935	153,892
June	18,196	694	1,885	65,879	12,958	56,133	2,023	157,769
July	19,422	698	1,905	70,075	12,519	57,550	2,179	164,348
August	18,885	570	1,860	71,562	12,770	57,813	2,303	165,764
September	16,674	524	1,326	65,239	12,068	53,760	2,051	151,642
October	16,523	657	1,690	62,957	11,961	55,338	2,002	151,128
November	16,378	623	1,764	61,410	11,932	58,348	1,965	152,420
December	19,413	654	1,688	67,424	12,897	71,855	2,099	176,031

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
Beginning with the collection of Form EIA-923 in January 2008, the methodology for separating the fuel used for electricity generation and useful thermal output from combined heat and power plants changed. The new methodology was retroactively applied to 2004-2007, as well as 2008-2015. Beginning with the 2016 Form EIA-923 data, the methodology for seperating the fuel used for electricity generation and useful thermal output from CHP plants was updated. This update will apply to the 2016 data and future data years. See the Technical Notes (Appendix C) for further information.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Table 3.24. Useful Thermal Output by Energy Source: Electric Power Sector Combined Heat and Power, 2006 - 2016
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
2006	38,133	4,812	2,253	207,095	22,567	17,284	4,435	296,579
2007	38,260	5,294	1,862	212,705	20,473	19,166	4,459	302,219
2008	37,220	5,479	1,353	204,167	22,109	17,052	4,854	292,234
2009	38,015	5,341	1,445	190,875	19,830	17,625	5,055	278,187
2010	38,325	4,702	1,108	186,772	19,707	17,589	5,040	273,244
2011	35,209	4,484	1,231	190,712	20,435	16,029	6,044	274,143
2012	26,093	4,405	1,246	200,294	20,948	16,369	5,545	274,900
2013	21,306	4,614	993	188,094	10,303	16,225	4,966	246,501
2014	15,513	4,931	936	182,148	7,732	17,736	5,666	234,662
2015	16,036	4,894	1,143	178,167	7,161	16,999	5,180	229,580
2016	13,922	695	1,237	227,427	17,400	24,993	8,046	293,719
Year 2014								
January	1,494	649	89	17,244	725	1,595	453	22,249
February	1,501	379	69	14,726	518	1,586	425	19,203
March	1,896	429	85	15,719	407	1,702	488	20,726
April	1,378	372	93	13,949	602	1,411	384	18,189
May	1,287	391	83	14,379	613	1,095	381	18,229
June	1,264	402	1	14,490	503	1,390	537	18,587
July	1,261	414	48	15,510	580	1,444	508	19,764
August	1,233	483	92	15,970	635	1,408	478	20,299
September	1,045	274	92	14,627	736	1,273	509	18,555
October	945	414	93	14,607	805	1,550	504	18,918
November	1,133	399	93	14,885	736	1,594	463	19,303
December	1,077	327	97	16,042	872	1,689	537	20,640
Year 2015								
January	1,509	374	103	15,756	761	1,747	461	20,711
February	1,438	625	89	14,177	630	1,520	363	18,844
March	1,506	379	92	15,187	453	1,577	421	19,615
April	1,182	355	98	13,590	449	1,348	374	17,397
May	1,436	364	99	13,998	483	863	397	17,641
June	1,339	355	91	14,474	477	1,268	445	18,448
July	1,429	425	94	15,923	428	1,391	446	20,136
August	1,365	393	92	15,895	549	1,369	481	20,145
September	1,260	402	89	15,489	624	1,314	438	19,615
October	1,230	441	87	14,721	747	1,417	389	19,031
November	1,143	381	100	14,187	742	1,558	476	18,586
December	1,201	400	109	14,769	818	1,627	487	19,411
Year 2016								
January	1,453	69	116	20,662	1,435	2,335	701	26,770
February	1,382	118	111	18,705	1,261	2,381	724	24,682
March	1,261	82	120	19,582	1,629	2,406	755	25,835
April	1,077	44	74	17,200	1,281	2,193	658	22,526
May	946	48	73	18,626	1,262	1,923	662	23,540
June	980	34	94	19,116	1,412	1,840	691	24,166
July	1,222	35	101	20,428	1,469	1,966	705	25,925
August	1,124	42	107	21,332	1,540	1,869	722	26,737
September	993	36	105	18,880	1,573	1,795	572	23,954
October	1,104	51	115	17,131	1,479	1,748	609	22,237
November	1,035	37	108	17,198	1,513	2,207	608	22,708
December	1,344	99	113	18,567	1,547	2,328	641	24,639

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
Beginning with the collection of Form EIA-923 in January 2008, the methodology for separating the fuel used for electricity generation and useful thermal output from combined heat and power plants changed. The new methodology was retroactively applied to 2004-2007, as well as 2008-2015. Beginning with the 2016 Form EIA-923 data, the methodology for seperating the fuel used for electricity generation and useful thermal output from CHP plants was updated. This update will apply to the 2016 data and future data years. See the Technical Notes (Appendix C) for further information.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Table 3.25. Useful Thermal Output by Energy Source: Commercial Sector Combined Heat and Power, 2006 - 2016
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
2006	22,186	2,092	172	19,370	0	9,359	6,242	59,422
2007	22,595	1,640	221	20,040	0	6,651	3,983	55,131
2008	22,991	1,822	177	20,183	0	8,863	6,054	60,091
2009	20,057	1,095	155	25,902	0	8,450	5,761	61,420
2010	19,216	845	216	29,791	13	7,917	5,333	63,330
2011	17,234	687	111	24,848	14	7,433	5,988	56,314
2012	13,992	523	229	27,922	0	7,970	6,426	57,063
2013	10,942	1,017	222	27,562	0	7,054	5,693	52,489
2014	11,081	820	327	26,876	0	7,610	5,123	51,837
2015	7,966	823	325	26,498	0	8,228	5,641	49,482
2016	8,313	924	140	57,356	0	11,017	5,381	83,131
Year 2014								
January	1,344	446	32	4,690	0	711	440	7,663
February	1,353	174	28	2,043	0	553	311	4,461
March	1,265	99	33	1,834	0	621	438	4,290
April	850	13	31	1,732	0	543	424	3,593
May	772	15	16	1,833	0	659	425	3,720
June	831	10	0	1,876	0	686	402	3,805
July	930	13	5	2,052	0	677	415	4,090
August	722	9	41	2,264	0	671	450	4,155
September	637	6	38	2,118	0	630	464	3,893
October	571	7	29	2,162	0	618	455	3,841
November	862	14	36	2,095	0	590	441	4,038
December	945	14	39	2,177	0	652	459	4,286
Year 2015								
January	985	114	46	2,395	0	716	441	4,698
February	996	420	44	2,222	0	630	399	4,711
March	823	58	39	2,231	0	675	490	4,316
April	541	37	26	1,838	0	682	490	3,614
May	506	41	3	1,989	0	686	445	3,670
June	610	29	0	2,060	0	646	472	3,817
July	645	34	0	2,380	0	772	472	4,302
August	565	36	32	2,265	0	681	487	4,066
September	499	7	42	2,346	0	725	487	4,106
October	491	8	38	2,181	0	669	476	3,864
November	575	25	31	2,239	0	650	499	4,020
December	729	14	26	2,352	0	694	483	4,298
Year 2016								
January	918	158	34	5,063	0	979	434	7,585
February	902	102	30	4,502	0	918	399	6,851
March	884	28	26	4,469	0	927	477	6,812
April	556	63	4	4,332	0	915	462	6,332
May	429	51	0	4,348	0	868	470	6,165
June	577	54	2	4,938	0	869	430	6,870
July	579	105	19	5,772	0	937	480	7,891
August	613	67	0	5,946	0	967	484	8,076
September	609	36	0	4,864	0	929	468	6,906
October	607	35	0	4,305	0	853	441	6,241
November	727	130	2	4,080	0	896	407	6,242
December	912	97	24	4,736	0	960	429	7,159

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
Beginning with the collection of Form EIA-923 in January 2008, the methodology for separating the fuel used for electricity generation and useful thermal output from combined heat and power plants changed. The new methodology was retroactively applied to 2004-2007, as well as 2008-2015. Beginning with the 2016 Form EIA-923 data, the methodology for seperating the fuel used for electricity generation and useful thermal output from CHP plants was updated. This update will apply to the 2016 data and future data years. See the Technical Notes (Appendix C) for further information.
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Table 3.26. Useful Thermal Output by Energy Source: Industrial Sector Combined Heat and Power, 2006 - 2016
(Billion Btus)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Renewable Sources	Other	Total
Annual Totals								
2006	272,229	47,320	21,584	376,822	103,481	662,906	38,630	1,522,971
2007	265,948	43,948	23,290	321,648	95,840	625,413	38,380	1,414,466
2008	255,032	22,253	16,733	284,980	88,571	584,216	12,821	1,264,606
2009	223,485	26,155	18,708	296,225	79,726	520,898	22,471	1,187,669
2010	242,762	14,366	20,124	307,931	71,719	555,804	18,382	1,231,088
2011	233,767	10,059	20,209	319,590	83,167	562,838	19,035	1,248,666
2012	212,520	7,524	22,944	328,729	92,199	556,174	12,599	1,232,689
2013	210,795	7,196	24,009	338,041	93,416	588,165	11,512	1,273,134
2014	199,512	6,120	22,167	334,901	97,137	596,087	10,600	1,266,524
2015	180,501	5,965	20,203	384,369	91,749	598,890	8,899	1,290,576
2016	173,589	6,792	18,692	478,068	131,481	655,831	11,904	1,476,358
Year 2014								
January	19,390	1,104	1,779	33,178	7,969	51,175	777	115,373
February	17,597	742	1,584	26,211	7,330	46,825	691	100,980
March	18,701	620	1,828	27,834	8,293	50,693	794	108,763
April	15,213	416	2,024	26,342	7,618	49,395	967	101,974
May	15,871	435	1,982	26,785	7,695	48,127	877	101,772
June	15,564	431	2,119	26,069	8,123	49,321	875	102,502
July	16,219	367	2,094	28,160	8,258	50,552	893	106,542
August	16,256	324	1,873	28,847	8,504	51,208	963	107,975
September	15,340	405	1,978	27,225	8,116	47,165	841	101,070
October	15,458	414	1,293	28,359	8,092	49,667	942	104,225
November	16,404	452	1,696	27,149	8,595	49,460	913	104,669
December	17,500	411	1,916	28,743	8,543	52,500	1,068	110,681
Year 2015								
January	17,972	653	1,828	31,802	8,566	53,548	758	115,127
February	16,437	959	1,768	29,513	7,267	47,456	673	104,072
March	16,153	545	1,875	32,754	8,017	49,592	719	109,654
April	14,389	481	1,875	30,456	7,740	49,593	726	105,260
May	14,575	478	1,768	29,966	7,317	50,534	743	105,380
June	14,150	446	1,652	30,980	7,747	48,965	765	104,706
July	15,399	413	1,426	33,688	8,122	50,706	784	110,539
August	14,589	358	1,502	34,315	7,963	50,745	770	110,242
September	14,206	380	1,738	31,512	8,196	47,924	756	104,711
October	13,390	455	1,511	32,884	6,985	48,333	713	104,270
November	14,508	392	1,858	32,532	6,465	49,611	723	106,089
December	14,733	406	1,403	33,967	7,365	51,883	769	110,525
Year 2016								
January	17,018	628	1,281	41,752	10,722	57,036	1,079	129,515
February	15,407	917	1,596	37,987	9,834	53,440	1,025	120,206
March	15,291	560	1,459	38,835	11,612	54,052	1,071	122,880
April	13,277	560	1,334	37,592	11,355	51,275	994	116,388
May	13,825	652	1,724	38,470	11,386	53,230	803	120,091
June	14,642	589	1,787	39,640	11,547	52,954	902	122,062
July	15,353	552	1,781	41,607	11,050	54,044	993	125,380
August	14,958	452	1,747	42,044	11,230	54,370	1,097	125,897
September	13,385	443	1,216	39,695	10,496	50,696	1,010	116,942
October	12,983	562	1,568	39,902	10,481	52,423	952	118,871
November	12,703	443	1,652	38,490	10,419	54,521	949	119,175
December	14,747	432	1,547	42,055	11,350	67,789	1,028	138,948

Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
Other Gas includes blast furnace gas and other manufactured and waste gases derived from fossil fuels. Prior to 2011, Other Gas included propane and synthesis gases.
See the Technical Notes for fuel conversion factors.
Renewable Sources include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, and solar thermal.
Other includes non-biogenic municipal solid waste, batteries, hydrogen, purchased steam, sulfur, tire-derived fuel, and other miscellaneous energy sources.
Notes: Beginning with 2001 data, non-biogenic municipal solid waste and tire-derived fuels are reclassified as non-renewable energy sources and included in Other. Biogenic municipal solid waste is included in Other Renewable Sources.
Beginning with the collection of Form EIA-923 in January 2008, the methodology for separating the fuel used for electricity generation and useful thermal output from combined heat and power plants changed. The new methodology was retroactively applied to 2004-2007, as well as 2008-2015. Beginning with the 2016 Form EIA-923 data, the methodology for seperating the fuel used for electricity generation and useful thermal output from CHP plants was updated. This update will apply to the 2016 data and future data years. See the Technical Notes (Appendix C) for further information.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding. NM=Not meaningful due to large standard error. W=Withheld to avoid disclosure of individual company data.
Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report; and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Chapter 4

Generation Capacity

Table 4.1. Count of Electric Power Industry Power Plants, by Sector, by Predominant Energy Sources within Plant, 2006 through 2016

Year	Coal	Petroleum	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional	Other Renewables	Hydroelectric Pumped Storage	Other Energy Sources
Total (All Sectors)									
2006	616	1,148	1,659	46	66	1,421	843	39	29
2007	606	1,163	1,659	46	66	1,424	929	39	25
2008	598	1,170	1,655	43	66	1,423	1,076	39	29
2009	593	1,168	1,652	43	66	1,427	1,219	39	28
2010	580	1,169	1,657	48	66	1,432	1,355	39	32
2011	589	1,146	1,646	41	66	1,434	1,582	40	54
2012	557	1,129	1,714	44	66	1,426	1,956	41	64
2013	518	1,101	1,725	44	63	1,435	2,299	41	78
2014	491	1,082	1,749	43	62	1,441	2,674	41	94
2015	427	1,082	1,779	45	62	1,440	3,043	41	83
2016	381	1,076	1,801	45	61	1,451	3,624	40	117
Electric Utilities									
2006	353	832	758	1	37	905	84	34	1
2007	351	851	767	1	37	904	93	34	1
2008	348	866	774	--	37	902	107	34	1
2009	340	855	768	--	34	887	129	34	1
2010	333	855	775	3	34	888	155	34	--
2011	332	829	777	--	34	884	189	35	1
2012	315	815	797	--	34	875	238	36	5
2013	300	795	787	1	32	873	253	36	15
2014	286	780	803	1	32	889	272	35	20
2015	256	782	816	1	32	890	318	35	15
2016	230	771	819	1	31	893	375	35	36
Independent Power Producers, Non-Combined Heat and Power Plants									
2006	101	166	356	2	29	458	552	5	2
2007	101	166	364	1	29	462	625	5	1
2008	99	166	365	--	29	464	751	5	2
2009	100	173	377	1	32	485	868	5	2
2010	102	175	380	1	32	488	966	5	6
2011	98	166	373	--	32	490	1,106	5	12
2012	88	150	368	--	32	494	1,388	5	16
2013	86	147	384	1	31	505	1,670	5	15
2014	87	148	395	1	30	499	2,006	5	18
2015	80	143	397	--	30	497	2,309	5	21
2016	75	142	406	--	30	500	2,826	5	34
Independent Power Producers, Combined Heat and Power Plants									
2006	50	15	173	4	--	--	32	--	--
2007	48	12	170	4	--	--	32	--	--
2008	47	12	169	3	--	--	36	--	--
2009	51	10	166	3	--	--	41	--	--
2010	48	10	161	2	--	--	41	--	--
2011	45	11	156	1	--	--	38	--	1
2012	42	12	157	2	--	--	47	--	--
2013	35	11	152	2	--	1	51	--	5
2014	30	9	145	2	--	--	54	--	7
2015	27	8	143	3	--	--	58	--	3
2016	24	7	143	3	--	--	57	--	2
Commercial Sector									
2006	22	62	109	1	--	9	47	--	--
2007	20	64	106	1	--	9	47	--	1
2008	20	62	106	1	--	9	49	--	1
2009	18	68	107	1	--	9	47	--	1
2010	17	69	110	1	--	9	57	--	1
2011	22	80	118	--	--	10	105	--	2
2012	22	89	153	--	--	9	129	--	2
2013	19	92	164	--	--	9	160	--	3
2014	17	93	169	--	--	10	178	1	6
2015	12	94	176	--	--	10	186	1	3
2016	9	101	181	--	--	14	195	--	3
Industrial Sector									
2006	90	73	263	38	--	49	128	--	26
2007	86	70	252	39	--	49	132	--	22
2008	84	64	241	39	--	48	133	--	25
2009	84	62	234	38	--	46	134	--	24
2010	80	60	231	41	--	47	136	--	25
2011	92	60	222	40	--	50	144	--	38
2012	90	63	239	42	--	48	154	--	41
2013	78	56	238	40	--	47	165	--	40
2014	71	52	237	39	--	43	164	--	43
2015	52	55	247	41	--	43	172	--	41
2016	43	55	252	41	--	44	171	--	42

Notes: The number of power plants for each energy source is the number of sites for which the respective energy source was reported as the most predominant energy source for at least one of its generators. If all generators for a site have the same energy source reported as the most predominant, that site will be counted once under that energy source. However, if the most predominant energy source is not the same for all generators within a site, the site is counted more than once, based on the number of most predominant energy sources for generators at a site. In general, this table translates the number of generators by energy source into the number of sites represented by the generators for an energy source. Therefore, the count for Total (All Sectors) above is the sum of the counts for each sector by energy source and does not necessarily represent unique sites. In addition, changes to predominant energy sources and status codes from year to year may result in changes to previously-posted data.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
In 2011, EIA corrected the NAICS codes of several plants which resulted in a net capacity shift from the electric utility sector to the commercial sector.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.2.A. Existing Net Summer Capacity by Energy Source and Producer Type, 2006 through 2016 (Megawatts)

	Utility Scale Capacity										Small Scale Capacity
Year	Coal	Petroleum	Natural Gas	Other Gases	Nuclear	Hydroelectric Conventional	Other Renewable Sources	Hydroelectric Pumped Storage	Other Energy Sources	Utility Total	Estimated Photovoltaic
Total (All Sectors)											
2006	312,956.0	58,097.0	388,294.0	2,256.0	100,334.0	77,821.0	24,113.0	21,461.0	882.0	986,215.0	--
2007	312,738.0	56,068.0	392,876.0	2,313.0	100,266.0	77,885.0	30,069.0	21,886.0	788.0	994,888.0	--
2008	313,322.0	57,445.0	397,460.0	1,995.0	100,755.0	77,930.0	38,466.0	21,858.0	942.0	1,010,171.0	--
2009	314,294.1	56,780.5	401,271.8	1,932.4	101,003.7	78,517.7	48,552.0	22,160.4	887.8	1,025,400.4	--
2010	316,800.1	55,646.9	407,028.4	2,700.3	101,167.4	78,824.7	53,811.3	22,198.9	883.8	1,039,061.8	--
2011	317,640.3	51,481.6	415,191.3	1,934.2	101,418.8	78,651.6	61,221.0	22,292.6	1,419.6	1,051,251.0	--
2012	309,680.4	47,167.2	422,364.4	1,945.6	101,885.0	78,738.0	77,155.2	22,368.3	1,728.9	1,063,033.0	--
2013	303,306.3	43,523.0	425,389.7	2,107.8	99,240.3	79,200.0	82,600.1	22,389.3	2,307.0	1,060,063.5	--
2014	299,094.2	41,135.4	432,150.3	1,914.3	98,569.3	79,677.3	90,603.7	22,485.1	2,792.6	1,068,422.2	7,326.6
2015	279,719.9	36,830.3	439,425.4	2,500.4	98,672.0	79,664.2	102,871.6	22,575.1	1,795.6	1,064,054.5	9,778.5
2016	266,619.9	34,382.4	446,823.2	2,456.9	99,564.8	79,912.9	119,778.9	22,778.7	2,015.1	1,074,332.8	12,765.1
Electric Utilities											
2006	230,644.0	30,419.0	157,742.0	104.0	56,143.0	71,840.0	2,291.0	18,301.0	39.0	567,523.0	--
2007	231,289.0	29,115.0	162,756.0	104.0	54,211.0	72,186.0	2,806.0	18,693.0	39.0	571,200.0	--
2008	231,857.0	30,657.0	173,106.0	--	54,376.0	72,142.0	4,066.0	18,664.0	39.0	584,908.0	--
2009	234,396.6	30,174.1	180,570.7	--	54,355.2	72,689.7	5,613.9	18,930.0	39.0	596,769.2	--
2010	235,706.8	28,971.9	184,230.5	539.0	54,369.3	72,973.9	6,316.1	18,968.5	--	602,076.0	--
2011	236,391.7	27,669.9	193,630.5	--	54,351.6	72,182.4	7,811.1	19,062.2	5.3	611,104.7	--
2012	232,078.5	26,731.8	206,774.4	--	54,716.7	72,505.1	9,823.8	19,093.9	60.7	621,784.9	--
2013	228,478.0	24,648.8	208,485.7	12.0	52,399.1	72,755.2	10,118.4	19,114.9	787.3	616,799.4	--
2014	219,837.9	24,045.0	215,690.8	12.0	52,390.9	73,725.4	10,893.7	19,121.3	914.5	616,631.5	--
2015	202,922.4	22,269.7	223,215.6	12.0	52,457.2	73,713.0	12,654.3	19,211.3	87.5	606,543.0	--
2016	193,122.6	20,285.5	229,677.1	12.0	53,274.1	73,879.3	14,236.4	19,398.3	236.1	604,121.4	--
Independent Power Producers, Non-Combined Heat and Power Plants											
2006	72,730.0	25,384.0	184,196.0	20.0	44,190.0	5,263.0	15,865.0	3,160.0	46.0	350,854.0	--
2007	71,943.0	24,818.0	184,888.0	8.0	46,055.0	5,346.0	21,002.0	3,193.0	26.0	357,278.0	--
2008	71,864.0	24,823.0	179,169.0	--	46,379.0	5,433.0	28,139.0	3,193.0	46.0	359,044.0	--
2009	70,122.5	24,657.1	176,034.8	7.6	46,648.5	5,469.6	36,556.4	3,230.4	45.9	362,772.8	--
2010	71,214.4	24,866.8	178,190.4	7.6	46,798.1	5,488.6	41,013.7	3,230.4	76.9	370,886.9	--
2011	72,119.5	22,398.8	176,516.5	--	47,067.2	5,539.0	46,698.4	3,230.4	169.2	373,739.0	--
2012	69,068.4	18,643.9	170,653.8	--	47,168.3	5,568.6	60,116.8	3,274.4	470.2	374,964.4	--
2013	67,153.5	17,444.7	171,653.6	47.0	46,841.2	5,762.2	64,890.5	3,274.4	231.2	377,298.3	--
2014	71,994.6	15,724.4	172,224.5	47.0	46,178.4	5,651.2	72,144.4	3,358.4	238.7	387,561.6	--
2015	70,217.8	13,102.9	172,519.2	--	46,214.8	5,650.5	82,014.6	3,358.4	354.3	393,432.5	--
2016	67,667.7	12,587.4	173,455.8	--	46,290.7	5,676.9	97,408.4	3,380.4	487.5	406,954.8	--
Independent Power Producers, Combined Heat and Power Plants											
2006	5,837.0	970.0	30,031.0	325.0	--	1.0	628.0	--	--	37,793.0	--
2007	5,885.0	907.0	29,468.0	339.0	--	--	656.0	--	--	37,254.0	--
2008	5,927.0	900.0	29,575.0	206.0	--	--	701.0	--	--	37,309.0	--
2009	5,939.5	897.0	28,875.4	205.8	--	--	739.9	--	--	36,657.6	--
2010	5,450.6	766.0	29,005.6	182.3	--	--	845.5	--	--	36,250.0	--
2011	5,146.0	317.0	29,372.6	30.0	--	--	792.9	--	53.0	35,711.5	--
2012	4,755.9	317.2	29,128.6	83.0	--	--	981.2	--	--	35,265.9	--
2013	4,313.7	322.2	29,081.2	83.0	--	4.3	945.1	--	121.8	34,871.3	--
2014	4,073.0	308.2	27,676.7	83.0	--	--	885.9	--	335.8	33,362.6	--
2015	3,843.6	307.2	27,284.1	350.0	--	--	970.5	--	126.0	32,881.4	--
2016	3,552.4	301.2	27,222.4	350.0	--	--	1,068.3	--	19.0	32,513.3	--
Commercial Sector											
2006	428.0	341.0	1,040.0	5.0	--	25.0	433.0	--	--	2,272.0	--
2007	428.0	348.0	1,064.0	5.0	--	22.0	443.0	--	3.0	2,312.0	--
2008	428.0	352.0	1,059.0	5.0	--	22.0	444.0	--	3.0	2,312.0	--
2009	423.7	348.3	1,104.7	4.7	--	21.7	480.1	--	2.8	2,386.0	--
2010	418.2	368.2	1,154.5	4.7	--	21.7	519.7	--	2.8	2,489.8	--
2011	435.7	406.3	1,282.6	--	--	233.5	694.1	--	4.2	3,056.4	--
2012	435.6	442.7	1,544.9	--	--	18.4	776.8	--	4.2	3,222.6	--
2013	341.9	455.7	1,778.9	--	--	17.8	947.6	--	9.1	3,551.0	--
2014	290.1	463.5	1,832.6	--	--	21.4	1,066.8	5.4	15.6	3,695.4	3,279.7
2015	226.6	466.1	1,932.5	--	--	21.4	1,126.5	5.4	6.7	3,785.2	3,706.7
2016	202.4	511.0	1,982.6	--	--	74.5	1,132.0	--	6.7	3,909.2	4,022.8
Industrial Sector											
2006	3,317.0	983.0	15,285.0	1,802.0	--	693.0	4,896.0	--	797.0	27,773.0	--
2007	3,194.0	880.0	14,699.0	1,858.0	--	331.0	5,163.0	--	720.0	26,844.0	--
2008	3,246.0	713.0	14,551.0	1,784.0	--	334.0	5,116.0	--	854.0	26,599.0	--
2009	3,411.8	704.0	14,686.2	1,714.3	--	336.7	5,161.7	--	800.1	26,814.8	--
2010	4,010.1	674.0	14,447.4	1,966.7	--	340.5	5,116.3	--	804.1	27,359.1	--
2011	3,547.4	689.6	14,389.1	1,904.2	--	696.7	5,224.5	--	1,187.9	27,639.4	--
2012	3,342.0	1,031.6	14,262.7	1,862.6	--	645.9	5,456.6	--	1,193.8	27,795.2	--
2013	3,019.2	651.6	14,390.3	1,965.8	--	660.5	5,698.5	--	1,157.6	27,543.5	--
2014	2,898.6	594.3	14,725.7	1,772.3	--	279.3	5,612.9	--	1,288.0	27,171.1	700.6
2015	2,509.5	684.4	14,474.0	2,138.4	--	279.3	6,105.7	--	1,221.1	27,412.4	880.3
2016	2,074.8	697.3	14,485.3	2,094.9	--	282.2	5,933.8	--	1,265.8	26,834.1	1,215.3
Residential Sector											
2014	--	--	--	--	--	--	--	--	--	--	3,346.3
2015	--	--	--	--	--	--	--	--	--	--	5,191.5
2016	--	--	--	--	--	--	--	--	--	--	7,527.0

Notes: Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; coal synfuel and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011, coal-derived synthesis gas was included in Other Gases.
Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, and beginning in 2011, synthetic gas and propane. Prior to 2011, synthetic gas and propane were included in Other Gases.
Other Gases also includes blast furnace gas. Prior to 2011, waste heat was included in Natural Gas.
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Other Renewable Sources include wood, black liquor, other wood waste, municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.
Other Energy Sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources.
In 2011, EIA corrected the NAICS codes of several plants which resulted in a net capacity shift from the electric utility sector to the commercial sector.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'
Estimated small scale solar photovoltaic generation and capacity are based on data from Form EIA-826, Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 4.2.B. Existing Net Summer Capacity of Other Renewable Sources by Producer Type, 2006 through 2016 (Megawatts) (Page 1)

	Utility Scale Capacity							Utility and Small Scale Capacity		
Year	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Geothermal	Other Biomass	Total Utility (Other Renewable Sources)	Estimated Small Scale Photovoltaic	Total Solar Photovoltaic	Total Solar
Total (All Sectors)										
2006	11,329.0	--	--	6,372.0	2,274.0	3,727.0	24,113.0	--	--	--
2007	16,515.0	36.7	464.8	6,704.0	2,214.0	4,134.0	30,069.0	--	36.7	501.5
2008	24,651.0	70.8	464.8	6,864.0	2,229.0	4,186.0	38,466.0	--	70.8	535.6
2009	34,295.8	145.5	473.0	6,939.3	2,381.9	4,316.5	48,552.0	--	145.5	618.5
2010	39,134.5	393.4	473.0	7,037.3	2,404.6	4,368.5	53,811.3	--	393.4	866.4
2011	45,675.9	1,052.0	471.5	7,076.5	2,409.2	4,535.9	61,221.0	--	1,052.0	1,523.5
2012	59,074.8	2,694.1	476.0	7,507.6	2,592.1	4,810.6	77,155.2	--	2,694.1	3,170.1
2013	59,973.4	5,336.1	1,286.4	8,354.2	2,607.0	5,043.0	82,600.1	--	5,336.1	6,622.5
2014	64,231.5	8,656.6	1,666.7	8,368.1	2,514.3	5,166.5	90,603.7	7,326.6	15,983.2	17,649.9
2015	72,573.4	11,905.4	1,757.9	8,968.9	2,541.5	5,124.5	102,871.6	9,778.5	21,683.9	23,441.8
2016	81,286.6	20,192.9	1,757.9	8,936.1	2,516.6	5,088.8	119,778.9	12,765.1	32,958.0	34,715.9
Electric Utilities										
2006	1,441.0	--	--	428.0	240.0	172.0	2,291.0	--	--	--
2007	1,928.0	10.5	1.0	418.0	158.0	290.0	2,806.0	--	10.5	11.5
2008	3,190.0	12.5	1.0	427.0	159.0	276.0	4,066.0	--	12.5	13.5
2009	4,654.8	41.0	1.0	431.3	158.9	326.9	5,613.9	--	41.0	42.0
2010	5,338.3	78.2	1.0	414.3	158.9	325.4	6,316.1	--	78.2	79.2
2011	6,735.2	201.4	1.0	359.1	158.9	355.5	7,811.1	--	201.4	202.4
2012	8,488.7	331.2	1.0	364.1	162.1	476.7	9,823.8	--	331.2	332.2
2013	8,424.7	487.9	--	564.3	164.1	477.4	10,118.4	--	487.9	487.9
2014	9,022.6	568.5	--	654.8	164.1	483.7	10,893.7	--	568.5	568.5
2015	10,580.9	842.9	--	623.8	165.9	440.8	12,654.3	--	842.9	842.9
2016	11,552.6	1,388.4	--	708.8	167.9	418.7	14,236.4	--	1,388.4	1,388.4
Independent Power Producers, Non-Combined Heat and Power Plants										
2006	9,888.0	--	--	1,037.0	2,034.0	2,505.0	15,865.0	--	--	--
2007	14,587.0	25.2	463.8	1,066.0	2,056.0	2,803.0	21,002.0	--	25.2	489.0
2008	21,461.0	57.2	463.8	1,196.0	2,070.0	2,891.0	28,139.0	--	57.2	521.0
2009	29,639.8	103.4	472.0	1,220.2	2,223.0	2,898.0	36,556.4	--	103.4	575.4
2010	33,783.9	307.9	472.0	1,274.5	2,245.7	2,929.7	41,013.7	--	307.9	779.9
2011	38,911.8	792.1	470.5	1,312.5	2,250.3	2,961.2	46,698.4	--	792.1	1,262.6
2012	50,547.6	2,255.7	475.0	1,398.8	2,384.2	3,055.5	60,116.8	--	2,255.7	2,730.7
2013	51,497.8	4,647.6	1,286.4	1,845.4	2,401.1	3,212.2	64,890.5	--	4,647.6	5,934.0
2014	55,133.0	7,857.0	1,666.7	1,816.6	2,308.8	3,362.3	72,144.4	--	7,857.0	9,523.7
2015	61,905.4	10,768.2	1,757.9	1,873.3	2,375.6	3,334.2	82,014.6	--	10,768.2	12,526.1
2016	69,645.4	18,483.3	1,757.9	1,789.6	2,348.7	3,383.5	97,408.4	--	18,483.3	20,241.2

Notes: Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Biomass includes municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
* = Value is less than half of the smallest unit of measure.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'
Estimated small scale solar photovoltaic generation capacity are based on data from Form EIA-826, Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 4.2.B. Existing Net Summer Capacity of Other Renewable Sources by Producer Type,

2006 through 2016 (Megawatts) (Page 2)

	Utility Scale Capacity							Utility and Small Scale Capacity		
Year	Wind	Solar Photovoltaic	Solar Thermal	Wood and Wood-Derived Fuels	Geothermal	Other Biomass	Total Utility (Other Renewable Sources)	Estimated Small Scale Photovoltaic	Total Solar Photovoltaic	Total Solar
Independent Power Producers, Combined Heat and Power Plants										
2006	--	--	--	212.0	--	416.0	628.0	--	--	--
2007	--	--	--	210.0	--	446.0	656.0	--	--	--
2008	--	--	--	223.0	--	478.0	701.0	--	--	--
2009	--	--	--	237.2	--	502.7	739.9	--	--	--
2010	--	--	--	392.8	--	452.7	845.5	--	--	--
2011	--	--	--	356.3	--	436.6	792.9	--	--	--
2012	--	--	--	489.8	45.8	445.6	981.2	--	--	--
2013	--	--	--	469.2	41.8	434.1	945.1	--	--	--
2014	--	--	--	465.5	41.4	379.0	885.9	--	--	--
2015	--	--	--	568.2	--	402.3	970.5	--	--	--
2016	--	1.0	--	667.2	--	400.1	1,068.3	--	1.0	1.0
Commercial Sector										
2006	--	--	--	7.0	--	426.0	433.0	--	--	--
2007	--	--	--	8.0	--	435.0	443.0	--	--	--
2008	--	0.1	--	8.0	--	436.0	444.0	--	0.1	0.1
2009	1.2	0.1	--	7.6	--	471.2	480.1	--	0.1	0.1
2010	10.5	5.9	--	7.6	--	495.7	519.7	--	5.9	5.9
2011	24.6	54.1	--	7.6	--	607.8	694.1	--	54.1	54.1
2012	29.8	99.9	--	7.6	--	639.5	776.8	--	99.9	99.9
2013	33.2	192.9	--	8.4	--	713.1	947.6	--	192.9	192.9
2014	51.6	223.4	--	65.4	--	726.4	1,066.8	3,279.7	3,503.1	3,503.1
2015	55.3	282.1	--	65.3	--	723.8	1,126.5	3,706.7	3,988.8	3,988.8
2016	56.8	300.8	--	67.1	--	707.3	1,132.0	4,022.8	4,323.6	4,323.6
Industrial Sector										
2006	--	--	--	4,688.0	--	208.0	4,896.0	--	--	--
2007	--	1.0	--	5,002.0	--	160.0	5,163.0	--	1.0	1.0
2008	--	1.0	--	5,010.0	--	105.0	5,116.0	--	1.0	1.0
2009	--	1.0	--	5,043.0	--	117.7	5,161.7	--	1.0	1.0
2010	1.8	1.4	--	4,948.1	--	165.0	5,116.3	--	1.4	1.4
2011	4.3	4.4	--	5,041.0	--	174.8	5,224.5	--	4.4	4.4
2012	8.7	7.3	--	5,247.3	--	193.3	5,456.6	--	7.3	7.3
2013	17.7	7.7	--	5,466.9	--	206.2	5,698.5	--	7.7	7.7
2014	24.3	7.7	--	5,365.8	--	215.1	5,612.9	700.6	708.3	708.3
2015	31.8	12.2	--	5,838.3	--	223.4	6,105.7	880.3	892.5	892.5
2016	31.8	19.4	--	5,703.4	--	179.2	5,933.8	1,215.3	1,234.7	1,234.7
Residential Sector										
2014	--	--	--	--	--	--	--	3,346.3	3,346.3	3,346.3
2015	--	--	--	--	--	--	--	5,191.5	5,191.5	5,191.5
2016	--	--	--	--	--	--	--	7,527.0	7,527.0	7,527.0

Notes: Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Biomass includes municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
* = Value is less than half of the smallest unit of measure.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'
Estimated small scale solar photovoltaic generation capacity are based on data from Form EIA-826, Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 4.3. Existing Capacity by Energy Source, 2016 (Megawatts)

Energy Source	Facility Type	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	Utility Scale	844	290,426.3	266,619.9	268,543.4
Petroleum	Utility Scale	3,541	39,447.8	34,382.4	37,538.1
Natural Gas	Utility Scale	5,833	512,535.4	446,823.2	479,805.1
Other Gases	Utility Scale	96	2,759.0	2,456.9	2,496.1
Nuclear	Utility Scale	99	104,791.1	99,564.8	101,814.1
Hydroelectric Conventional	Utility Scale	4,050	79,376.3	79,912.9	79,346.5
Wind	Utility Scale	1,177	82,048.0	81,286.6	81,390.9
Solar Photovoltaic	Utility Scale	2,237	20,347.3	20,192.9	19,993.0
Solar Thermal	Utility Scale	19	1,774.6	1,757.9	1,631.8
Wood and Wood-Derived Fuels	Utility Scale	367	10,163.7	8,936.1	9,044.0
Geothermal	Utility Scale	195	3,804.6	2,516.6	2,774.6
Other Biomass	Utility Scale	1,960	5,829.6	5,088.8	5,154.3
Hydroelectric Pumped Storage	Utility Scale	153	21,643.3	22,778.7	22,644.9
Other Energy Sources	Utility Scale	153	2,236.3	2,015.1	2,025.0
Total	Utility Scale	20,724	1,177,183.3	1,074,332.8	1,114,201.8
Small Scale Photovoltaic	Small Scale	--	--	12,765.1	--
Estimated Total Photovoltaic	Utility and Small Scale	--	--	32,958.0	--
Estimated Total Solar	Utility and Small Scale	--	--	34,715.9	--

Notes: Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; coal synfuel and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011, coal-derived synthesis gas was included in Other Gases.
Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, and beginning in 2011, synthetic gas and propane. Prior to 2011, synthetic gas and propane were included in Other Gases.
Other Gases includes blast furnace gas. Prior to 2011, waste heat was included in Natural Gas.
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Other Energy Sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
In 2011, EIA corrected the NAICS codes of several plants which resulted in a net capacity shift from the electric utility sector to the commercial sector.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'
Estimated small scale solar photovoltaic capacity is based on data from Form EIA-826, Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 4.4. Existing Capacity by Producer Type, 2016 (Megawatts)

Producer Type	Facility Type	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Electric Power Sector					
Electric Utilities	Utility Scale	9,563	662,459.8	604,121.4	624,996.8
Independent Power Producers, Non-Combined Heat and Power Plants	Utility Scale	7,872	442,755.1	406,954.8	421,542.1
Independent Power Producers, Combined Heat and Power Plants	Utility Scale	537	36,891.8	32,513.3	35,097.9
Total	Utility Scale	17,972	1,142,106.7	1,043,589.5	1,081,636.8
Commercial and Industrial Sectors					
Commercial Sector	Utility Scale	1,155	4,302.6	3,909.2	3,992.8
Industrial Sector	Utility Scale	1,597	30,774.0	26,834.1	28,572.2
Total	Utility Scale	2,752	35,076.6	30,743.3	32,565.0
All Sectors					
Total	**Utility Scale**	**20,724**	**1,177,183.3**	**1,074,332.8**	**1,114,201.8**
Small Scale					
Estimated Solar Photovoltaic	Small Scale	--	--	12,765.1	--

Notes:
See Glossary reference for definitions.
Totals may not equal sum of components because of independent rounding.
In the case of some wind, solar and wave energy sites, the capacity for multiple generators is reported in a single generator record and is presented as a single generator in the generator count.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'
Estimated small scale solar photovoltaic capacity is based on data from Form EIA-826, Form EIA-861M, Form EIA-861 and from estimation methods described in the technical notes.

Table 4.5. Planned Utility-Scale Generating Capacity Changes, by Energy Source, 2017-2021 (Page 1)

	Generator Additions		Generator Retirements		Net Capacity Additions	
Energy Source	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity
Year 2017						
U.S. Total	760	25,127.1	132	11,198.4	628	13,928.7
Coal	--	--	26	5,510.8	-26	-5,510.8
Petroleum	17	26.1	30	624.9	-13	-598.8
Natural Gas	112	12,450.7	47	4,791.4	65	7,659.3
Other Gases	--	--	--	--	--	--
Nuclear	--	--	--	--	--	--
Hydroelectric Conventional	8	219.6	7	109.2	1	110.4
Wind	67	6,924.6	6	42.1	61	6,882.5
Solar Thermal and Photovoltaic	501	5,157.3	--	--	501	5,157.3
Wood and Wood-Derived Fuels	2	112.0	3	48.6	-1	63.4
Geothermal	--	--	2	60.0	-2	-60.0
Other Biomass	26	65.0	11	11.4	15	53.6
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	27	171.8	--	--	27	171.8
Year 2018						
U.S. Total	452	33,485.5	66	9,956.5	386	23,529.0
Coal	1	17.0	25	8,760.5	-24	-8,743.5
Petroleum	5	6.9	14	126.5	-9	-119.6
Natural Gas	153	20,742.5	24	1,051.2	129	19,691.3
Other Gases	1	3.0	--	--	1	3.0
Nuclear	--	--	--	--	--	--
Hydroelectric Conventional	22	255.0	1	0.8	21	254.2
Wind	67	8,114.2	1	17.0	66	8,097.2
Solar Thermal and Photovoltaic	180	3,993.0	1	0.5	179	3,992.5
Wood and Wood-Derived Fuels	1	93.5	--	--	1	93.5
Geothermal	1	37.0	--	--	1	37.0
Other Biomass	12	89.1	--	--	12	89.1
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	9	134.3	--	--	9	134.3
Year 2019						
U.S. Total	169	25,089.2	49	6,107.1	120	18,982.1
Coal	--	--	9	1,584.1	-9	-1,584.1
Petroleum	--	--	4	154.0	-4	-154.0
Natural Gas	80	13,204.5	20	2,145.3	60	11,059.2
Other Gases	1	110.0	--	--	1	110.0
Nuclear	1	1,100.0	3	2,087.7	-2	-987.7
Hydroelectric Conventional	4	2.9	7	109.5	-3	-106.6
Wind	42	7,941.0	--	--	42	7,941.0
Solar Thermal and Photovoltaic	29	2,498.8	4	1.7	25	2,497.1
Wood and Wood-Derived Fuels	2	107.0	2	24.8	--	82.2
Geothermal	1	35.0	--	--	1	35.0
Other Biomass	6	27.6	--	--	6	27.6
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	3	62.4	--	--	3	62.4

Notes: These data reflect plans as of December 31, 2016
Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, coal synfuel, refined coal, and coal-derived synthesis gas.
Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, synthetic gas, and propane.
Other Gases also includes blast furnace gas.
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Other Energy Sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
In the case of wind, solar and wave energy sites, the capacity for multiple generators is reported in a single generator record and is presented as a single generator in the generator count.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.5. Planned Generating Capacity Changes, by Energy Source, 2017-2021 (Page 2)

	Generator Additions		Generator Retirements		Net Capacity Additions	
Energy Source	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity	Number of Generators	Net Summer Capacity
Year 2020						
U.S. Total	105	24,662.9	57	5,081.9	48	19,581.0
Coal	1	275.0	9	1,697.9	-8	-1,422.9
Petroleum	--	--	3	24.3	-3	-24.3
Natural Gas	54	16,309.8	31	3,357.4	23	12,952.4
Other Gases	--	--	--	--	--	--
Nuclear	3	3,300.0	--	--	3	3,300.0
Hydroelectric Conventional	1	122.0	3	1.2	-2	120.8
Wind	9	2,109.5	--	--	9	2,109.5
Solar Thermal and Photovoltaic	28	2,356.9	--	--	28	2,356.9
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	3	114.9	--	--	3	114.9
Other Biomass	3	19.8	11	1.1	-8	18.7
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	3	55.0	--	--	3	55.0
Year 2021						
U.S. Total	34	7,796.7	18	2,290.6	16	5,506.1
Coal	--	--	7	1,496.0	-7	-1,496.0
Petroleum	--	--	1	18.0	-1	-18.0
Natural Gas	22	6,666.7	9	775.6	13	5,891.1
Other Gases	2	400.0	--	--	2	400.0
Nuclear	--	--	--	--	--	--
Hydroelectric Conventional	--	--	--	--	--	--
Wind	5	332.0	--	--	5	332.0
Solar Thermal and Photovoltaic	2	255.0	--	--	2	255.0
Wood and Wood-Derived Fuels	--	--	--	--	--	--
Geothermal	--	--	--	--	--	--
Other Biomass	--	--	1	1.0	-1	-1.0
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	3	143.0	--	--	3	143.0
Years 2017-2021						
U.S. Total	1,520	116,161.4	322	34,634.5	1,198	81,526.9
Coal	2	292.0	76	19,049.3	-74	-18,757.3
Petroleum	22	33.0	52	947.7	-30	-914.7
Natural Gas	421	69,374.2	131	12,120.9	290	57,253.3
Other Gases	4	513.0	--	--	4	513.0
Nuclear	4	4,400.0	3	2,087.7	1	2,312.3
Hydroelectric Conventional	35	599.5	18	220.7	17	378.8
Wind	190	25,421.3	7	59.1	183	25,362.2
Solar Thermal and Photovoltaic	740	14,261.0	5	2.2	735	14,258.8
Wood and Wood-Derived Fuels	5	312.5	5	73.4	--	239.1
Geothermal	5	186.9	2	60.0	3	126.9
Other Biomass	47	201.5	23	13.5	24	188.0
Hydroelectric Pumped Storage	--	--	--	--	--	--
Other Energy Sources	45	566.5	--	--	45	566.5

Notes: These data reflect plans as of December 31, 2016
Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, coal synfuel, refined coal, and coal-derived synthesis gas.
Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, synthetic gas, and propane.
Other Gases also includes blast furnace gas.
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Other Energy Sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
In the case of wind, solar and wave energy sites, the capacity for multiple generators is reported in a single generator record and is presented as a single generator in the generator count.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.6. Utility-Scale Capacity Additions, Retirements and Changes by Energy Source, 2016 (Count, Megawatts)

	Generator Additions				Generator Retirements			
Energy Source	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity	Number of Generators	Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal	1	62.0	50.0	50.0	63	8,695.7	7,905.9	7,986.3
Petroleum	27	67.8	48.4	48.8	66	1,182.6	987.5	1,111.4
Natural Gas	110	9,851.3	9,074.1	9,570.9	131	8,456.4	7,943.2	8,208.4
Other Gases	--	--	--	--	--	--	--	--
Nuclear	1	1,269.9	1,122.0	1,164.0	1	502.0	478.1	478.1
Hydroelectric Conventional	26	380.2	380.2	379.2	7	111.2	111.2	111.1
Wind	83	8,783.6	8,754.1	8,754.1	5	69.8	68.0	68.0
Solar Thermal and Photovoltaic	497	8,026.3	7,972.8	7,924.8	1	4.0	4.0	4.0
Wood and Wood-Derived Fuels	1	8.5	7.1	7.1	9	157.0	107.0	104.5
Geothermal	--	--	--	--	2	38.0	--	--
Other Biomass	52	103.1	98.2	98.2	39	91.7	86.0	86.0
Hydroelectric Pumped Storage	--	--	--	--	--	--	--	--
Other Energy Sources	22	221.2	217.6	218.8	5	26.0	26.0	26.0
Total	820	28,773.9	27,724.5	28,215.9	329	19,334.4	17,716.9	18,183.8

	Other Changes to Existing Capacity			
Energy Source		Generator Nameplate Capacity	Net Summer Capacity	Net Winter Capacity
Coal		-5,729.8	-5,244.1	-4,626.1
Petroleum		-1,758.7	-1,508.8	-1,771.9
Natural Gas		7,203.6	6,266.9	5,947.4
Other Gases		-65.0	-43.5	5.4
Nuclear		162.8	248.9	126.8
Hydroelectric Conventional		150.4	-20.3	6.5
Wind		-59.0	27.1	29.0
Solar Thermal and Photovoltaic		341.3	318.7	277.0
Wood and Wood-Derived Fuels		93.1	67.1	88.9
Geothermal		30.8	-24.9	-24.7
Other Biomass		-62.4	-47.9	-55.0
Hydroelectric Pumped Storage		70.6	203.6	181.6
Other Energy Sources		0.9	27.9	31.3
Total		378.6	270.7	216.2

Notes: Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal, coal synfuel, refined coal, and coal-derived synthesis gas.
Petroleum includes distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, petroleum coke (converted to liquid petroleum, see Technical Notes for conversion methodology), waste oil, synthetic gas, and propane.
Other Gases also includes blast furnace gas and other manufactured and waste gases derived from fossil fuels.
Hydroelectric Conventional capacity includes conventional hydroelectric power excluding pumped storage facilities.
Wood and wood-derived fuels include wood/wood waste solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids), wood waste liquids (red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids), and black liquor.
Other Biomass include municipal solid waste, landfill gas, sludge waste, agricultural byproducts, other biomass solids, other biomass liquids, and other biomass gases (including digester gases, methane, and other biomass gases).
Other Energy Sources include batteries, hydrogen, purchased steam, sulfur, tire-derived fuels and other miscellaneous energy sources.
Capacity by energy source is based on the capacity associated with the energy source reported as the most predominant (primary) one, where more than one energy source is associated with a generator.
In the case of some wind, solar and wave energy sites, the capacity for multiple generators is reported in a single generator record and is presented as a single generator in the generator count.
Other Changes to Existing Capacity reflect uprates, derates, repowerings, and changes to previously reported generator capacity.
* = Value is less than half of the smallest unit of measure.

Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.7.A. Net Summer Capacity of Utility Scale Units by Technology and by State, 2016 and 2015 (Megawatts)

Census Division and State	Renewable Sources		Fossil Fuels		Hydroelectric Pumped Storage		Other Energy Storage		Nuclear		All Other Sources		All Sources	
	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	5,528.0	4,976.7	22,691.3	22,757.0	1,797.4	1,775.4	19.0	2.0	4,015.9	4,018.0	48.0	48.0	34,099.6	33,577.1
Connecticut	352.0	331.4	6,313.6	6,309.6	29.4	29.4	0.8	0.0	2,087.8	2,087.8	26.0	26.0	8,809.6	8,784.2
Maine	2,435.1	2,150.5	2,442.5	2,442.5	0.0	0.0	16.2	0.0	0.0	0.0	22.0	22.0	4,915.8	4,615.0
Massachusetts	1,120.7	963.0	9,765.7	9,843.0	1,768.0	1,746.0	0.0	2.0	677.2	682.3	0.0	0.0	13,331.6	13,236.3
New Hampshire	928.9	918.9	2,266.0	2,270.9	0.0	0.0	0.0	0.0	1,250.9	1,247.9	0.0	0.0	4,445.8	4,437.7
Rhode Island	100.1	57.3	1,805.6	1,791.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,905.7	1,848.6
Vermont	591.2	555.6	97.9	99.7	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	691.1	655.3
Middle Atlantic	10,927.9	10,660.1	69,366.2	68,015.2	3,409.1	3,409.1	70.4	40.0	19,304.3	19,224.5	11.2	11.2	103,089.1	101,360.1
New Jersey	853.8	692.6	13,515.1	13,535.5	420.0	420.0	0.0	0.0	4,107.9	4,107.9	11.2	11.2	18,908.0	18,767.2
New York	7,173.8	7,114.9	26,124.8	26,310.1	1,406.1	1,406.1	20.0	20.0	5,399.4	5,397.6	0.0	0.0	40,124.1	40,248.7
Pennsylvania	2,900.3	2,852.6	29,726.3	28,169.6	1,583.0	1,583.0	50.4	20.0	9,797.0	9,719.0	0.0	0.0	44,057.0	42,344.2
East North Central	10,571.5	10,049.1	112,924.8	116,179.5	2,103.0	1,964.0	187.4	100.6	19,019.3	18,896.1	110.1	110.1	144,916.1	147,299.4
Illinois	4,172.4	3,977.0	28,970.6	29,893.2	0.0	0.0	112.4	72.6	11,587.3	11,589.6	0.0	0.0	44,842.7	45,532.4
Indiana	2,187.0	2,004.0	23,027.4	24,231.4	0.0	0.0	22.0	0.0	0.0	0.0	89.0	89.0	25,325.4	26,324.4
Michigan	2,270.8	2,253.5	20,603.9	21,868.5	2,103.0	1,964.0	0.0	0.0	4,105.4	3,976.5	0.0	0.0	29,083.1	30,062.5
Ohio	827.2	714.1	25,810.5	25,835.0	0.0	0.0	53.0	28.0	2,134.0	2,134.0	0.0	0.0	28,824.7	28,711.1
Wisconsin	1,114.1	1,100.5	14,512.4	14,351.4	0.0	0.0	0.0	0.0	1,192.6	1,196.0	21.1	21.1	16,840.2	16,669.0
West North Central	24,514.5	21,197.6	60,350.5	61,120.3	657.0	657.0	2.0	2.0	5,394.9	5,855.5	24.5	24.5	90,943.4	88,856.9
Iowa	6,940.6	6,302.3	9,503.5	9,950.1	0.0	0.0	0.0	0.0	601.4	601.4	0.0	0.0	17,045.5	16,853.8
Kansas	4,472.2	3,590.9	9,709.0	9,583.1	0.0	0.0	0.0	0.0	1,175.0	1,175.0	0.8	0.8	15,357.0	14,349.8
Minnesota	4,299.7	3,916.0	10,035.8	10,160.6	0.0	0.0	1.0	1.0	1,657.0	1,647.0	18.4	18.4	16,011.9	15,743.0
Missouri	1,242.2	1,032.2	18,578.4	18,883.6	657.0	657.0	1.0	1.0	1,190.0	1,190.0	0.0	0.0	21,668.6	21,763.8
Nebraska	1,527.5	1,178.9	6,215.5	6,237.1	0.0	0.0	0.0	0.0	771.5	1,242.1	0.0	0.0	8,514.5	8,658.1
North Dakota	3,343.5	2,741.5	4,621.2	4,615.5	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	7,970.0	7,362.3
South Dakota	2,688.8	2,435.8	1,687.1	1,690.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,375.9	4,126.1
South Atlantic	16,936.2	14,039.5	158,165.5	157,964.9	7,905.2	7,905.2	77.5	76.5	24,598.6	24,578.6	446.7	509.7	208,129.7	205,074.4
Delaware	44.9	44.9	3,364.0	3,358.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,408.9	3,403.0
District of Columbia	12.0	12.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.0	21.0
Florida	1,662.8	1,425.5	52,848.5	53,289.6	0.0	0.0	0.0	0.0	3,572.0	3,572.0	348.7	348.7	58,432.0	58,635.8
Georgia	4,136.1	3,188.5	26,973.2	27,190.9	1,862.2	1,862.2	1.0	0.0	4,061.0	4,061.0	44.0	0.0	37,077.5	36,302.6
Maryland	1,059.8	1,007.0	9,559.7	9,681.7	0.0	0.0	11.0	11.0	1,707.8	1,707.8	0.0	0.0	12,338.3	12,407.5
North Carolina	5,211.1	3,928.4	21,824.9	22,021.3	86.0	86.0	0.0	0.0	5,113.6	5,113.6	54.0	161.0	32,289.6	31,310.3
South Carolina	1,911.7	1,790.4	11,472.3	11,635.2	2,716.0	2,716.0	0.0	0.0	6,576.2	6,556.2	0.0	0.0	22,676.2	22,697.8
Virginia	1,862.0	1,756.8	17,950.6	16,615.8	3,241.0	3,241.0	0.0	0.0	3,568.0	3,568.0	0.0	0.0	26,621.6	25,181.6
West Virginia	1,035.8	886.0	14,163.3	14,163.3	0.0	0.0	65.5	65.5	0.0	0.0	0.0	0.0	15,264.6	15,114.8
East South Central	8,131.8	8,012.4	65,811.4	67,273.3	1,616.3	1,616.3	0.0	0.0	10,984.1	9,868.1	1.4	1.4	86,545.0	86,771.5
Alabama	3,789.2	3,941.6	20,227.7	21,398.5	0.0	0.0	0.0	0.0	5,060.4	5,066.4	0.0	0.0	29,077.3	30,406.5
Kentucky	1,150.6	907.0	19,004.3	19,153.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20,154.9	20,060.5
Mississippi	277.8	274.7	14,278.0	14,407.4	0.0	0.0	0.0	0.0	1,401.0	1,401.0	1.4	1.4	15,958.2	16,084.5
Tennessee	2,914.2	2,889.1	12,301.4	12,313.9	1,616.3	1,616.3	0.0	0.0	4,522.7	3,400.7	0.0	0.0	21,354.6	20,220.0
West South Central	31,679.8	27,353.2	142,221.5	145,833.5	286.0	286.0	41.0	40.0	8,910.7	8,896.2	512.9	512.2	183,651.9	182,921.1
Arkansas	1,620.1	1,590.6	11,245.2	11,279.6	28.0	28.0	0.0	0.0	1,817.8	1,808.5	0.0	0.0	14,711.1	14,706.7
Louisiana	615.7	687.1	21,165.6	23,144.6	0.0	0.0	0.0	0.0	2,132.9	2,127.7	288.9	275.9	24,203.1	26,235.3
Oklahoma	7,582.4	5,941.7	18,175.5	18,635.4	258.0	258.0	0.0	0.0	0.0	0.0	0.0	0.0	26,015.9	24,835.1
Texas	21,861.6	19,133.8	91,635.2	92,773.9	0.0	0.0	41.0	40.0	4,960.0	4,960.0	224.0	236.3	118,721.8	117,144.0
Mountain	25,000.4	22,222.0	63,857.9	64,069.6	778.8	778.8	2.6	2.6	3,937.0	3,937.0	126.3	111.4	93,703.0	91,121.4
Arizona	4,915.3	4,541.4	19,407.3	19,382.4	216.3	216.3	0.0	0.0	3,937.0	3,937.0	0.0	0.0	28,475.9	28,077.1
Colorado	4,157.2	3,857.7	11,349.0	11,363.0	562.5	562.5	0.0	0.0	0.0	0.0	9.3	9.3	16,078.0	15,792.5
Idaho	3,893.3	3,776.1	1,148.1	1,157.5	0.0	0.0	0.0	0.0	0.0	0.0	14.8	14.8	5,056.2	4,948.4
Montana	3,429.3	3,414.1	2,740.4	2,722.2	0.0	0.0	0.0	0.0	0.0	0.0	44.0	44.0	6,213.7	6,180.3
Nevada	3,549.4	2,619.5	8,248.6	8,258.7	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	11,804.5	10,878.2
New Mexico	1,673.7	1,464.4	6,828.3	6,936.9	0.0	0.0	2.6	2.6	0.0	0.0	0.0	0.0	8,504.6	8,403.9
Utah	1,587.8	834.4	7,348.2	7,462.4	0.0	0.0	0.0	0.0	0.0	0.0	40.2	31.8	8,976.2	8,328.6
Wyoming	1,794.4	1,714.4	6,788.0	6,786.5	0.0	0.0	0.0	0.0	0.0	0.0	11.5	11.5	8,593.9	8,512.4
Pacific Contiguous	65,331.2	62,953.6	50,676.7	51,152.1	4,225.9	4,183.3	127.7	16.5	3,400.0	3,398.0	106.3	106.3	123,867.8	121,809.8
California	28,546.3	26,181.1	41,614.9	42,484.6	3,911.9	3,869.3	117.5	10.5	2,240.0	2,240.0	106.3	106.3	76,536.9	74,891.8
Oregon	12,011.2	12,050.7	4,318.1	3,859.8	0.0	0.0	5.0	5.0	0.0	0.0	0.0	0.0	16,334.3	15,915.5
Washington	24,773.7	24,721.8	4,743.7	4,807.7	314.0	314.0	5.2	1.0	1,160.0	1,158.0	0.0	0.0	30,996.6	31,002.5
Pacific Noncontiguous	1,070.5	1,071.6	4,216.6	4,110.6	0.0	0.0	73.5	54.0	0.0	0.0	26.6	26.6	5,387.2	5,262.8
Alaska	538.0	508.7	2,159.4	2,053.4	0.0	0.0	45.0	27.0	0.0	0.0	0.0	0.0	2,742.4	2,589.1
Hawaii	532.5	562.9	2,057.2	2,057.2	0.0	0.0	28.5	27.0	0.0	0.0	26.6	26.6	2,644.8	2,673.7
U.S. Total	199,691.8	182,535.8	750,282.4	758,476.0	22,778.7	22,575.1	601.1	334.2	99,564.8	98,672.0	1,414.0	1,461.4	1,074,332.8	1,064,054.5

NM = Not meaningful due to large relative standard error.
Values are final.

NOTES:
Capacity from facilities with a total generator nameplate capacity less than 1 MW are excluded from this report. This exclusion may represent a significant portion of capacity for some technologies such as solar photovoltaic generation.
Concentrated Solar Power Energy Storage is included in 'Renewable sources'; it is not included in 'Other Energy Storage'

Sources: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Table 4.7.B. Net Summer Capacity Using Primarily Renewable Energy Sources and by State, 2016 and 2015 (Megawatts)

	Summer Capacity at Utility Scale Facilities														Small Scale Capacity		Capacity From Utility and Small Scale Facilities			
Census Division and State	Wind		Solar Photovoltaic		Solar Thermal		Conventional Hydroelectric		Biomass Sources		Geothermal		Total Renewable Sources		Estimated Solar Photovoltaic		Estimated Total Solar Photovoltaic		Estimated Total Solar	
	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	1,348.0	994.1	578.1	386.6	0.0	0.0	1,957.4	1,948.8	1,644.5	1,647.2	0.0	0.0	5,528.0	4,976.7	1,410.1	1,034.0	1,988.2	1,420.6	1,988.2	1,420.6
Connecticut	1.1	0.0	25.2	10.0	0.0	0.0	122.2	122.2	203.5	199.2	0.0	0.0	352.0	331.4	264.6	180.8	289.8	190.8	289.8	190.8
Maine	898.8	612.8	0.0	0.0	0.0	0.0	732.4	728.9	803.9	808.8	0.0	0.0	2,435.1	2,150.5	23.4	16.6	23.4	16.6	23.4	16.6
Massachusetts	94.5	82.6	477.0	334.0	0.0	0.0	265.9	263.1	283.3	283.3	0.0	0.0	1,120.7	963.0	988.4	750.3	1,465.4	1,084.3	1,465.4	1,084.3
New Hampshire	183.1	171.0	0.0	0.0	0.0	0.0	504.8	504.8	241.0	243.1	0.0	0.0	928.9	918.9	51.6	25.5	51.6	25.5	51.6	25.5
Rhode Island	50.3	7.5	10.2	10.2	0.0	0.0	2.7	2.7	36.9	36.9	0.0	0.0	100.1	57.3	22.3	10.1	32.5	20.3	32.5	20.3
Vermont	120.2	120.2	65.7	32.4	0.0	0.0	329.4	327.1	75.9	75.9	0.0	0.0	591.2	555.6	59.8	50.7	125.5	83.1	125.5	83.1
Middle Atlantic	3,204.1	3,088.1	767.6	566.9	0.0	0.0	5,630.7	5,623.5	1,325.5	1,381.6	0.0	0.0	10,927.9	10,660.1	1,999.7	1,743.8	2,767.3	2,310.7	2,767.3	2,310.7
New Jersey	7.6	7.6	606.6	443.6	0.0	0.0	12.3	12.3	227.3	229.1	0.0	0.0	853.8	692.6	1,058.2	1,026.4	1,664.8	1,470.0	1,664.8	1,470.0
New York	1,824.7	1,747.0	110.2	81.1	0.0	0.0	4,718.8	4,711.6	520.1	575.2	0.0	0.0	7,173.8	7,114.9	727.8	536.7	838.0	617.8	838.0	617.8
Pennsylvania	1,371.8	1,333.5	50.8	42.2	0.0	0.0	899.6	899.6	578.1	577.3	0.0	0.0	2,900.3	2,852.6	213.7	180.6	264.5	222.8	264.5	222.8
East North Central	8,173.7	7,662.6	256.4	207.9	0.0	0.0	853.1	910.3	1,288.3	1,268.3	0.0	0.0	10,571.5	10,049.1	188.1	144.6	444.5	352.5	444.5	352.5
Illinois	3,983.8	3,799.8	32.8	32.8	0.0	0.0	34.1	34.1	121.7	110.3	0.0	0.0	4,172.4	3,977.0	26.9	19.0	59.7	51.8	59.7	51.8
Indiana	1,889.7	1,739.7	160.5	129.4	0.0	0.0	60.4	60.4	76.4	74.5	0.0	0.0	2,187.0	2,004.0	12.6	7.5	173.1	136.9	173.1	136.9
Michigan	1,434.8	1,360.1	12.5	2.0	0.0	0.0	263.0	330.9	560.5	560.5	0.0	0.0	2,270.8	2,253.5	NM	27.7	NM	29.7	NM	29.7
Ohio	533.9	431.6	47.5	42.7	0.0	0.0	101.9	101.9	143.9	137.9	0.0	0.0	827.2	714.1	78.8	69.9	126.3	112.6	126.3	112.6
Wisconsin	331.5	331.4	3.1	1.0	0.0	0.0	393.7	383.0	385.8	385.1	0.0	0.0	1,114.1	1,100.5	29.3	20.6	32.4	21.6	32.4	21.6
West North Central	20,381.3	17,352.1	290.7	16.5	0.0	0.0	3,289.4	3,278.1	553.1	550.9	0.0	0.0	24,514.5	21,197.6	189.7	151.4	480.4	167.9	480.4	167.9
Iowa	6,771.7	6,134.2	2.6	0.0	0.0	0.0	144.9	144.9	21.4	23.2	0.0	0.0	6,940.6	6,302.3	44.5	31.4	47.1	31.4	47.1	31.4
Kansas	4,455.0	3,573.9	1.2	1.0	0.0	0.0	7.0	7.0	9.0	9.0	0.0	0.0	4,472.2	3,590.9	5.8	3.1	7.0	4.1	7.0	4.1
Minnesota	3,359.2	3,240.7	253.9	4.0	0.0	0.0	205.9	194.6	480.7	476.7	0.0	0.0	4,299.7	3,916.0	29.3	20.0	283.2	24.0	283.2	24.0
Missouri	654.3	458.5	25.7	11.5	0.0	0.0	545.7	545.7	16.5	16.5	0.0	0.0	1,242.2	1,032.2	107.5	95.4	133.2	106.9	133.2	106.9
Nebraska	1,329.6	885.3	6.3	0.0	0.0	0.0	175.9	277.9	15.7	15.7	0.0	0.0	1,527.5	1,178.9	1.8	0.9	8.1	0.9	8.1	0.9
North Dakota	2,823.7	2,221.7	0.0	0.0	0.0	0.0	510.0	510.0	9.8	9.8	0.0	0.0	3,343.5	2,741.5	0.2	0.2	0.2	0.2	0.2	0.2
South Dakota	987.8	837.8	1.0	0.0	0.0	0.0	1,700.0	1,598.0	0.0	0.0	0.0	0.0	2,688.8	2,435.8	0.5	0.3	1.5	0.3	1.5	0.3
South Atlantic	1,086.3	775.3	4,023.0	1,881.5	0.0	0.0	7,498.7	7,207.7	4,328.2	4,175.0	0.0	0.0	16,936.2	14,039.5	1,000.1	664.2	5,023.1	2,545.7	5,023.1	2,545.7
Delaware	2.0	2.0	30.7	30.7	0.0	0.0	0.0	0.0	12.2	12.2	0.0	0.0	44.9	44.9	51.7	55.2	82.4	85.9	82.4	85.9
District of Columbia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	12.0	0.0	0.0	12.0	12.0	27.8	20.4	27.8	20.4	27.8	20.4
Florida	0.0	0.0	326.5	82.4	0.0	0.0	54.5	54.5	1,281.8	1,288.6	0.0	0.0	1,662.8	1,425.5	132.7	105.2	459.2	187.6	459.2	187.6
Georgia	0.0	0.0	968.1	245.2	0.0	0.0	2,275.1	2,047.5	892.9	895.8	0.0	0.0	4,136.1	3,188.5	NM	NM	NM	NM	NM	NM
Maryland	190.0	190.0	137.8	83.9	0.0	0.0	590.0	590.0	142.0	143.1	0.0	0.0	1,059.8	1,007.0	482.6	320.3	620.4	404.2	620.4	404.2
North Carolina	208.0	0.0	2,437.0	1,436.8	0.0	0.0	2,002.0	2,004.1	564.1	487.5	0.0	0.0	5,211.1	3,928.4	109.7	69.3	2,546.7	1,506.1	2,546.7	1,506.1
South Carolina	0.0	0.0	19.3	2.5	0.0	0.0	1,361.6	1,345.1	530.8	442.8	0.0	0.0	1,911.7	1,790.4	47.1	5.7	66.4	8.2	66.4	8.2
Virginia	0.0	0.0	103.6	0.0	0.0	0.0	866.0	866.0	892.4	890.8	0.0	0.0	1,862.0	1,756.8	29.5	22.5	133.1	22.5	133.1	22.5
West Virginia	686.3	583.3	0.0	0.0	0.0	0.0	349.5	300.5	0.0	2.2	0.0	0.0	1,035.8	886.0	4.0	3.2	4.0	3.2	4.0	3.2
East South Central	29.1	29.1	158.4	45.2	0.0	0.0	6,729.3	6,726.9	1,215.0	1,211.2	0.0	0.0	8,131.8	8,012.4	75.3	49.2	233.7	94.4	233.7	94.4
Alabama	0.0	0.0	75.0	0.0	0.0	0.0	3,042.3	3,271.0	671.9	670.6	0.0	0.0	3,789.2	3,941.6	4.7	2.0	79.7	2.0	79.7	2.0
Kentucky	0.0	0.0	10.0	0.0	0.0	0.0	1,068.4	837.3	72.2	69.7	0.0	0.0	1,150.6	907.0	13.5	9.2	23.5	9.2	23.5	9.2
Mississippi	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	274.7	274.7	0.0	0.0	277.8	274.7	4.1	1.1	7.2	1.1	7.2	1.1
Tennessee	29.1	29.1	70.3	45.2	0.0	0.0	2,618.6	2,618.6	196.2	196.2	0.0	0.0	2,914.2	2,889.1	53.1	36.9	123.4	82.1	123.4	82.1
West South Central	26,825.8	22,659.3	596.9	332.4	0.0	0.0	2,988.3	2,988.5	1,268.8	1,373.0	0.0	0.0	31,679.8	27,353.2	404.2	261.7	1,001.1	594.1	1,001.1	594.1
Arkansas	0.0	0.0	13.0	12.0	0.0	0.0	1,266.7	1,266.2	340.4	312.4	0.0	0.0	1,620.1	1,590.6	4.6	3.8	17.6	15.8	17.6	15.8
Louisiana	0.0	0.0	0.0	0.0	0.0	0.0	192.0	192.0	423.7	495.1	0.0	0.0	615.7	687.1	119.9	108.7	119.9	108.7	119.9	108.7
Oklahoma	6,644.1	5,001.4	2.5	2.5	0.0	0.0	859.6	861.6	76.2	76.2	0.0	0.0	7,582.4	5,941.7	2.6	2.0	5.1	4.5	5.1	4.5
Texas	20,181.7	17,657.9	581.4	317.9	0.0	0.0	670.0	668.7	428.5	489.3	0.0	0.0	21,861.6	19,133.8	277.1	147.2	858.5	465.1	858.5	465.1
Mountain	8,080.2	7,789.3	5,165.5	2,677.1	473.9	473.9	10,560.4	10,560.5	176.1	176.4	544.3	544.8	25,000.4	22,222.0	1,584.4	1,311.9	6,749.9	3,989.0	7,223.8	4,462.9
Arizona	267.3	267.3	1,601.0	1,227.1	295.4	295.4	2,720.9	2,720.9	30.7	30.7	0.0	0.0	4,915.3	4,541.4	871.8	769.0	2,472.8	1,996.1	2,768.2	2,291.5
Colorado	3,026.1	2,961.8	417.4	192.0	0.0	0.0	685.0	676.5	28.7	27.4	0.0	0.0	4,157.2	3,857.7	281.1	250.7	698.5	442.7	698.5	442.7
Idaho	970.5	962.7	120.0	0.0	0.0	0.0	2,708.9	2,707.7	83.9	95.7	10.0	10.0	3,893.3	3,776.1	7.3	4.6	127.3	4.6	127.3	4.6
Montana	678.5	653.5	0.0	0.0	0.0	0.0	2,747.8	2,757.6	3.0	3.0	0.0	0.0	3,429.3	3,414.1	8.0	6.2	8.0	6.2	8.0	6.2
Nevada	150.0	150.0	1,700.0	776.2	178.5	178.5	1,051.4	1,051.4	9.8	3.2	459.7	460.2	3,549.4	2,619.5	209.5	151.4	1,909.5	927.6	2,088.0	1,106.1
New Mexico	1,112.3	1,062.3	471.3	315.4	0.0	0.0	82.9	82.9	5.6	2.2	1.6	1.6	1,673.7	1,464.4	88.1	76.9	559.4	392.3	559.4	392.3
Utah	388.2	324.4	855.8	166.4	0.0	0.0	256.4	256.4	14.4	14.2	73.0	73.0	1,587.8	834.4	116.4	51.3	972.2	217.7	972.2	217.7
Wyoming	1,487.3	1,407.3	0.0	0.0	0.0	0.0	307.1	307.1	0.0	0.0	0.0	0.0	1,794.4	1,714.4	2.2	NM	2.2	NM	2.2	NM
Pacific Contiguous	11,891.9	11,957.3	8,305.6	5,747.1	1,284.0	1,284.0	39,909.3	39,953.8	2,011.1	2,057.7	1,929.3	1,953.7	65,331.2	62,953.6	5,452.6	4,025.9	13,758.2	9,773.0	15,042.2	11,057.0
California	5,658.6	5,726.8	8,205.2	5,727.7	1,284.0	1,284.0	10,190.4	10,186.2	1,298.3	1,322.2	1,909.8	1,934.2	28,546.3	26,181.1	5,257.9	3,900.0	13,463.1	9,627.7	14,747.1	10,911.7
Oregon	3,160.2	3,157.4	99.9	18.9	0.0	0.0	8,423.2	8,525.4	308.4	329.5	19.5	19.5	12,011.2	12,050.7	116.6	71.3	216.5	90.2	216.5	90.2
Washington	3,073.1	3,073.1	0.5	0.5	0.0	0.0	21,295.7	21,242.2	404.4	406.0	0.0	0.0	24,773.7	24,721.8	78.1	54.6	78.6	55.1	78.6	55.1
Pacific Noncontiguous	266.2	266.2	50.7	44.2	0.0	0.0	496.3	466.1	214.3	252.1	43.0	43.0	1,070.5	1,071.6	460.8	391.8	511.5	436.0	511.5	436.0
Alaska	60.6	60.6	0.0	0.0	0.0	0.0	470.4	441.1	7.0	7.0	0.0	0.0	538.0	508.7	1.3	0.0	1.3	0.0	1.3	0.0
Hawaii	205.6	205.6	50.7	44.2	0.0	0.0	25.9	25.0	207.3	245.1	43.0	43.0	532.5	562.9	459.5	391.8	510.2	436.0	510.2	436.0
U.S. Total	81,286.6	72,573.4	20,192.9	11,905.4	1,757.9	1,757.9	79,912.9	79,664.2	14,024.9	14,093.4	2,516.6	2,541.5	199,691.8	182,535.8	12,765.1	9,778.5	32,958.0	21,683.9	34,715.9	23,441.8

NM = Not meaningful due to large relative standard error.
Values are final.

Sources: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'
Estimated small scale solar photovoltaic capacity is based on data from Form EIA-861M, Form EIA-861, and from estimation methods described in the technical notes.

Table 4.7.C. Net Summer Capacity of Utility Scale Units Using Primarily Fossil Fuels and by State, 2016 and 2015 (Megawatts)

Census Division and State	Natural Gas Fired Combined Cycle		Natural Gas Fired Combustion Turbine		Other Natural Gas		Coal		Petroleum Coke		Petroleum Liquids		Other Gases		Total Fossil Fuels	
	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	12,006.8	11,893.0	1,086.2	1,115.5	1,049.7	644.0	1,955.3	1,988.3	0.0	0.0	6,593.3	7,116.2	0.0	0.0	22,691.3	22,757.0
Connecticut	2,555.3	2,547.5	467.3	479.3	424.6	419.1	383.4	383.4	0.0	0.0	2,483.0	2,480.3	0.0	0.0	6,313.6	6,309.6
Maine	1,250.0	1,250.0	297.1	297.1	14.5	14.5	0.0	0.0	0.0	0.0	880.9	880.9	0.0	0.0	2,442.5	2,442.5
Massachusetts	5,193.3	5,098.6	318.0	335.3	198.0	198.0	1,038.0	1,071.0	0.0	0.0	3,018.4	3,140.1	0.0	0.0	9,765.7	9,843.0
New Hampshire	1,231.0	1,235.2	3.8	3.8	400.2	0.0	533.9	533.9	0.0	0.0	97.1	498.0	0.0	0.0	2,266.0	2,270.9
Rhode Island	1,777.2	1,761.7	0.0	0.0	12.4	12.4	0.0	0.0	0.0	0.0	16.0	17.2	0.0	0.0	1,805.6	1,791.3
Vermont	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.9	99.7	0.0	0.0	97.9	99.7
Middle Atlantic	26,300.6	24,621.1	7,716.4	7,599.7	14,067.5	13,207.8	15,721.7	16,993.0	78.6	78.6	5,356.2	5,391.2	125.2	123.8	69,366.2	68,015.2
New Jersey	8,103.2	8,047.5	2,857.3	2,817.1	1,052.4	1,109.2	1,245.0	1,245.0	11.6	11.6	222.2	281.7	23.4	23.4	13,515.1	13,535.5
New York	8,128.7	8,069.1	3,179.6	3,105.2	9,546.0	9,522.0	1,747.4	2,129.6	0.0	0.0	3,523.1	3,484.2	0.0	0.0	26,124.8	26,310.1
Pennsylvania	10,068.7	8,504.5	1,679.5	1,677.4	3,469.1	2,576.6	12,729.3	13,618.4	67.0	67.0	1,610.9	1,625.3	101.8	100.4	29,726.3	28,169.6
East North Central	17,080.1	17,001.6	26,346.3	25,525.3	3,902.3	3,283.4	61,504.4	65,964.6	247.6	521.6	2,678.2	2,739.9	1,165.9	1,143.1	112,924.8	116,179.5
Illinois	3,562.9	3,543.0	10,302.2	10,164.4	290.9	278.2	14,015.1	15,109.6	0.0	0.0	685.0	680.3	114.5	117.7	28,970.6	29,893.2
Indiana	2,406.0	2,480.2	3,266.6	3,142.6	725.9	88.1	15,776.8	17,384.9	0.0	274.0	237.8	273.3	614.3	588.3	23,027.4	24,231.4
Michigan	4,294.5	4,296.5	3,964.9	3,428.5	2,134.7	2,465.8	9,414.2	10,837.5	47.2	47.2	498.4	543.0	250.0	250.0	20,603.9	21,868.5
Ohio	4,074.8	4,041.0	5,431.7	5,427.7	153.3	131.4	15,181.6	15,259.9	142.0	142.0	640.0	645.9	187.1	187.1	25,810.5	25,835.0
Wisconsin	2,741.9	2,640.9	3,380.9	3,362.1	597.5	319.9	7,116.7	7,372.7	58.4	58.4	617.0	597.4	0.0	0.0	14,512.4	14,351.4
West North Central	5,988.3	5,917.9	11,341.1	11,393.8	4,152.0	3,617.1	34,780.4	36,055.1	32.0	32.0	4,048.3	4,096.0	8.4	8.4	60,350.5	61,120.3
Iowa	1,121.1	1,125.8	1,140.3	1,105.6	670.4	467.4	5,548.8	6,205.9	32.0	32.0	990.9	1,013.4	0.0	0.0	9,503.5	9,950.1
Kansas	266.0	149.0	2,169.0	2,184.8	2,057.5	2,024.0	4,683.2	4,687.2	0.0	0.0	533.3	538.1	0.0	0.0	9,709.0	9,583.1
Minnesota	2,172.0	2,173.2	2,437.9	2,534.1	322.3	353.8	4,308.5	4,300.1	0.0	0.0	795.1	799.4	0.0	0.0	10,035.8	10,160.6
Missouri	1,796.6	1,837.3	3,420.5	3,395.2	501.0	349.9	11,726.1	12,156.5	0.0	0.0	1,134.2	1,144.7	0.0	0.0	18,578.4	18,883.6
Nebraska	342.6	342.6	1,150.8	1,151.5	592.1	413.3	3,817.3	4,016.0	0.0	0.0	312.7	313.7	0.0	0.0	6,215.5	6,237.1
North Dakota	0.0	0.0	328.0	328.0	0.0	0.0	4,222.5	4,214.4	0.0	0.0	62.3	64.7	8.4	8.4	4,621.2	4,615.5
South Dakota	290.0	290.0	694.6	694.6	8.7	8.7	474.0	475.0	0.0	0.0	219.8	222.0	0.0	0.0	1,687.1	1,690.3
South Atlantic	50,670.3	48,550.2	32,396.9	31,110.1	7,272.4	7,072.8	57,079.7	59,031.6	83.8	83.8	10,527.4	11,981.4	135.0	135.0	158,165.5	157,964.9
Delaware	1,512.0	1,512.0	315.2	311.0	877.7	876.0	410.0	410.0	0.0	0.0	114.1	114.1	135.0	135.0	3,364.0	3,358.1
District of Columbia	0.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	9.0
Florida	26,966.7	26,245.6	8,557.5	7,481.4	2,469.3	3,034.7	9,881.0	10,591.0	0.0	0.0	4,974.0	5,936.9	0.0	0.0	52,848.5	53,289.6
Georgia	7,957.7	7,953.2	7,823.8	7,857.0	796.4	789.4	9,360.5	9,508.5	83.8	83.8	951.0	999.0	0.0	0.0	26,973.2	27,190.9
Maryland	250.0	250.0	1,966.2	1,581.0	1,414.2	1,489.8	4,712.0	4,712.0	0.0	0.0	1,217.3	1,648.9	0.0	0.0	9,559.7	9,681.7
North Carolina	4,724.8	4,766.0	5,957.7	6,049.7	0.0	0.0	10,745.8	10,802.8	0.0	0.0	396.6	402.8	0.0	0.0	21,824.9	22,021.3
South Carolina	2,399.0	2,409.0	2,801.9	2,855.6	546.0	298.2	5,212.0	5,547.0	0.0	0.0	513.4	525.4	0.0	0.0	11,472.3	11,635.2
Virginia	6,860.1	5,414.4	3,894.3	3,894.1	1,045.8	584.7	3,800.4	4,379.3	0.0	0.0	2,350.0	2,343.3	0.0	0.0	17,950.6	16,615.8
West Virginia	0.0	0.0	1,071.3	1,071.3	123.0	0.0	12,958.0	13,081.0	0.0	0.0	11.0	11.0	0.0	0.0	14,163.3	14,163.3
East South Central	19,097.9	19,040.8	13,002.4	13,003.3	5,338.8	3,887.0	28,210.5	31,025.4	0.0	0.0	142.0	217.0	19.8	99.8	65,811.4	67,273.3
Alabama	9,441.4	9,397.8	2,532.2	2,530.6	1,908.3	636.3	6,283.4	8,691.4	0.0	0.0	42.6	42.6	19.8	99.8	20,227.7	21,398.5
Kentucky	663.0	663.3	4,976.6	4,976.6	260.0	0.0	13,092.8	13,436.7	0.0	0.0	11.9	76.9	0.0	0.0	19,004.3	19,153.5
Mississippi	7,590.5	7,576.7	1,718.9	1,718.9	3,104.3	3,247.5	1,820.0	1,820.0	0.0	0.0	44.3	44.3	0.0	0.0	14,278.0	14,407.4
Tennessee	1,403.0	1,403.0	3,774.7	3,777.2	66.2	3.2	7,014.3	7,077.3	0.0	0.0	43.2	53.2	0.0	0.0	12,301.4	12,313.9
West South Central	58,389.5	58,937.1	13,425.8	12,809.9	32,190.2	34,865.6	36,423.7	37,420.5	955.7	959.3	181.3	181.3	655.3	659.8	142,221.5	145,833.5
Arkansas	4,620.5	4,602.9	702.8	725.8	793.7	816.3	5,116.0	5,122.4	0.0	0.0	12.2	12.2	0.0	0.0	11,245.2	11,279.6
Louisiana	7,552.8	7,525.4	2,372.8	2,358.1	7,042.3	9,057.6	2,852.9	2,855.1	891.9	895.5	45.5	45.5	407.4	407.4	21,165.6	23,144.6
Oklahoma	6,783.7	6,720.2	1,295.2	1,292.2	5,156.4	5,222.1	4,865.8	5,326.5	0.0	0.0	74.4	74.4	0.0	0.0	18,175.5	18,635.4
Texas	39,432.5	40,088.6	9,055.0	8,433.8	19,197.8	19,769.6	23,589.0	24,116.5	63.8	63.8	49.2	49.2	247.9	252.4	91,635.2	92,773.9
Mountain	22,494.2	22,487.3	8,859.0	8,926.6	3,341.9	3,178.7	28,628.4	28,942.6	52.0	52.0	370.8	370.8	111.6	111.6	63,857.9	64,069.6
Arizona	9,891.6	9,866.7	2,367.6	2,367.6	1,303.6	1,147.6	5,754.0	5,910.0	0.0	0.0	90.5	90.5	0.0	0.0	19,407.3	19,382.4
Colorado	3,240.5	3,240.5	2,572.3	2,535.3	329.0	329.0	5,038.8	5,089.8	0.0	0.0	168.4	168.4	0.0	0.0	11,349.0	11,363.0
Idaho	558.1	568.5	562.1	562.1	14.0	4.3	8.5	17.2	0.0	0.0	5.4	5.4	0.0	0.0	1,148.1	1,157.5
Montana	0.0	0.0	321.6	321.6	72.2	54.0	2,293.1	2,293.1	52.0	52.0	0.0	0.0	1.5	1.5	2,740.4	2,722.2
Nevada	5,415.0	5,418.6	1,385.6	1,385.6	444.6	451.1	997.4	997.4	0.0	0.0	6.0	6.0	0.0	0.0	8,248.6	8,258.7
New Mexico	1,465.0	1,469.0	976.0	1,080.6	849.4	849.4	3,471.0	3,471.0	0.0	0.0	66.9	66.9	0.0	0.0	6,828.3	6,936.9
Utah	1,830.0	1,830.0	520.2	520.2	316.2	330.4	4,654.0	4,754.0	0.0	0.0	27.8	27.8	0.0	0.0	7,348.2	7,462.4
Wyoming	94.0	94.0	153.6	153.6	12.9	12.9	6,411.6	6,410.1	0.0	0.0	5.8	5.8	110.1	110.1	6,788.0	6,786.5
Pacific Contiguous	25,975.2	25,151.4	11,757.3	11,447.0	10,293.6	11,890.1	1,982.0	2,015.0	17.0	17.0	422.3	422.3	229.3	209.3	50,676.7	51,152.1
California	19,962.8	19,571.3	10,904.1	10,551.8	10,037.6	11,638.1	57.0	90.0	17.0	17.0	407.1	407.1	229.3	209.3	41,614.9	42,484.6
Oregon	3,374.9	2,916.6	133.8	133.8	224.4	224.4	585.0	585.0	0.0	0.0	0.0	0.0	0.0	0.0	4,318.1	3,859.8
Washington	2,637.5	2,663.5	719.4	761.4	31.6	27.6	1,340.0	1,340.0	0.0	0.0	15.2	15.2	0.0	0.0	4,743.7	4,807.7
Pacific Noncontiguous	479.2	418.0	626.3	654.3	175.0	175.0	333.8	283.8	0.0	0.0	2,595.9	2,569.9	6.4	9.6	4,216.6	4,110.6
Alaska	479.2	418.0	626.3	654.3	175.0	175.0	153.8	103.8	0.0	0.0	725.1	702.3	0.0	0.0	2,159.4	2,053.4
Hawaii	0.0	0.0	0.0	0.0	0.0	0.0	180.0	180.0	0.0	0.0	1,870.8	1,867.6	6.4	9.6	2,057.2	2,057.2
U.S. Total	238,482.1	234,018.4	126,557.7	123,585.5	81,783.4	81,821.5	266,619.9	279,719.9	1,466.7	1,744.3	32,915.7	35,086.0	2,456.9	2,500.4	750,282.4	758,476.0

NM = Not meaningful due to large relative standard error.
Values are final.

NOTES:
Capacity from facilities with a total generator nameplate capacity less than 1 MW are excluded from this report. This exclusion may represent a significant portion of existing or planned capacity for some technologies such as solar photovoltaic generation.

Sources: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Table 4.8.A. Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels, January 2013-December 2016

	Coal	Natural Gas				Petroleum		
Period		Natural Gas Fired Combined Cycle	Natural Gas Fired Combustion Turbine	Steam Turbine	Internal Combustion Engine	Steam Turbine	Petroleum Liquids Fired Combustion Turbine	Internal Combustion Engine
Annual Factors								
2013	59.8%	48.2%	4.9%	10.6%	6.1%	12.1%	0.8%	2.2%
2014	61.1%	48.3%	5.2%	10.4%	8.5%	12.5%	1.1%	1.4%
2015	54.7%	55.9%	6.9%	11.5%	8.9%	13.3%	1.1%	2.2%
2016	53.3%	55.5%	8.3%	12.4%	9.6%	11.5%	1.1%	2.6%
Year 2014								
January	71.3%	47.2%	6.6%	10.0%	7.8%	19.5%	3.8%	2.3%
February	72.0%	42.5%	4.7%	9.2%	8.7%	12.0%	0.9%	1.5%
March	61.8%	39.7%	4.7%	7.2%	7.1%	13.7%	1.1%	1.4%
April	51.2%	40.3%	3.8%	7.2%	7.9%	9.4%	0.5%	1.0%
May	54.2%	45.0%	5.0%	9.8%	7.8%	10.2%	0.6%	1.6%
June	64.8%	51.1%	5.4%	11.8%	7.6%	14.8%	0.9%	1.3%
July	68.0%	57.7%	6.2%	15.2%	9.7%	15.0%	1.0%	1.5%
August	67.5%	61.0%	6.6%	16.9%	11.0%	14.4%	1.3%	1.5%
September	59.3%	55.4%	5.7%	12.7%	9.5%	13.5%	0.7%	1.4%
October	50.7%	49.0%	5.2%	10.6%	8.8%	8.6%	0.7%	1.3%
November	56.1%	43.7%	4.5%	7.6%	8.3%	7.7%	0.8%	1.2%
December	56.6%	46.2%	4.1%	5.9%	7.2%	10.7%	0.6%	1.1%
Year 2015								
January	61.4%	52.6%	4.4%	7.6%	5.2%	12.4%	0.6%	2.5%
February	65.0%	52.2%	6.2%	9.9%	5.7%	22.8%	1.9%	3.1%
March	50.3%	50.7%	5.2%	8.3%	8.5%	7.9%	0.6%	1.9%
April	43.3%	47.9%	5.7%	9.4%	6.6%	12.0%	0.9%	2.2%
May	49.9%	50.2%	6.7%	9.3%	8.7%	12.6%	1.1%	2.0%
June	62.6%	61.5%	8.3%	13.7%	11.2%	12.0%	1.0%	2.0%
July	66.8%	67.2%	10.7%	19.4%	12.3%	15.5%	1.3%	2.4%
August	64.9%	66.9%	8.9%	19.0%	12.3%	14.8%	1.2%	2.4%
September	58.7%	61.4%	8.2%	14.2%	9.8%	15.9%	1.2%	2.1%
October	47.0%	53.6%	6.7%	10.5%	8.1%	14.5%	1.0%	2.1%
November	44.0%	50.9%	7.0%	8.4%	8.6%	10.5%	1.9%	1.8%
December	43.6%	54.6%	5.0%	8.5%	8.5%	9.7%	1.1%	2.0%
Year 2016								
January	56.4%	56.4%	5.0%	7.1%	9.5%	10.1%	0.6%	3.1%
February	49.1%	53.6%	5.0%	7.4%	8.6%	10.6%	0.7%	2.8%
March	36.0%	50.2%	7.1%	10.2%	8.9%	8.9%	1.1%	2.2%
April	37.8%	47.6%	8.3%	11.7%	9.2%	9.7%	0.8%	2.1%
May	41.6%	52.5%	7.6%	12.3%	9.3%	11.4%	1.1%	2.5%
June	61.2%	63.9%	9.9%	17.5%	10.3%	13.3%	1.3%	2.1%
July	69.8%	68.2%	13.7%	23.1%	11.7%	16.9%	2.1%	2.1%
August	69.3%	70.8%	13.8%	21.1%	12.7%	15.1%	2.6%	2.3%
September	60.4%	60.7%	9.5%	14.6%	10.3%	12.9%	1.2%	2.3%
October	50.8%	47.8%	7.8%	11.4%	8.0%	8.8%	0.9%	2.4%
November	46.2%	46.3%	6.8%	6.5%	7.9%	9.9%	0.7%	2.8%
December	61.2%	47.5%	5.1%	5.4%	8.3%	10.1%	0.5%	4.0%

Values are final.

Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Table 4.8.B. Capacity Factors for Utility Scale Generators Not Primarily Using Fossil Fuels, January 2013-December 2016

Period	Nuclear	Conventional Hydropower	Wind	Solar Photovoltaic	Solar Thermal	Landfill Gas and Muncipal Solid Waste	Other Biomass Including Wood	Geothermal
Annual Factors								
2013	89.9%	38.9%	32.4%	NA	NA	68.9%	56.7%	73.6%
2014	91.7%	37.3%	34.0%	25.9%	19.8%	68.9%	58.9%	74.0%
2015	92.3%	35.8%	32.2%	25.8%	22.1%	68.7%	55.3%	74.3%
2016	92.3%	38.2%	34.5%	25.1%	22.2%	69.7%	55.6%	73.9%
Year 2014								
January	99.1%	36.7%	40.3%	NA	NA	68.1%	60.0%	74.0%
February	94.0%	32.6%	34.8%	NA	NA	68.3%	59.5%	73.3%
March	84.5%	40.7%	39.8%	NA	NA	69.6%	59.7%	73.5%
April	78.8%	44.5%	43.2%	NA	NA	69.9%	49.5%	74.6%
May	85.2%	44.6%	34.9%	NA	NA	70.6%	48.2%	73.2%
June	95.4%	44.8%	36.5%	NA	NA	70.8%	63.0%	73.4%
July	97.5%	41.3%	27.0%	NA	NA	73.1%	63.4%	72.5%
August	96.4%	33.7%	22.5%	30.9%	25.4%	71.1%	62.8%	73.0%
September	94.6%	28.2%	26.1%	30.7%	26.3%	68.9%	61.2%	74.2%
October	84.5%	29.2%	31.6%	26.5%	21.1%	64.4%	56.5%	73.9%
November	91.3%	32.6%	42.3%	22.3%	13.8%	66.1%	62.1%	77.3%
December	99.6%	37.8%	30.4%	15.1%	5.6%	65.4%	60.8%	75.5%
Year 2015								
January	101.3%	40.7%	31.2%	16.8%	5.0%	65.1%	57.2%	75.9%
February	95.8%	41.4%	34.1%	22.1%	14.5%	64.3%	60.0%	76.4%
March	88.0%	40.8%	31.4%	26.7%	22.6%	63.0%	53.4%	76.8%
April	84.3%	39.4%	37.5%	30.9%	30.5%	66.8%	47.3%	72.4%
May	89.8%	33.9%	34.8%	31.2%	27.0%	68.5%	48.4%	76.6%
June	96.4%	35.8%	27.9%	31.7%	32.2%	69.2%	56.7%	74.1%
July	97.3%	35.8%	27.4%	31.4%	31.1%	73.1%	59.9%	74.7%
August	98.6%	32.5%	25.8%	31.3%	32.3%	71.5%	61.6%	73.9%
September	93.6%	28.3%	28.1%	26.6%	27.1%	68.8%	56.1%	67.9%
October	82.5%	28.3%	31.6%	22.8%	16.5%	68.3%	48.8%	72.4%
November	84.8%	33.8%	39.0%	20.7%	16.9%	72.4%	55.8%	75.4%
December	94.9%	39.4%	37.4%	17.5%	9.5%	73.0%	58.3%	75.3%
Year 2016								
January	98.5%	43.6%	33.9%	15.2%	6.8%	68.3%	58.5%	73.4%
February	95.3%	43.8%	39.6%	22.9%	19.5%	67.6%	61.2%	73.2%
March	89.9%	45.9%	40.2%	24.9%	19.6%	67.2%	55.8%	72.5%
April	88.1%	44.6%	39.3%	27.2%	20.9%	69.3%	45.8%	68.8%
May	90.5%	42.8%	34.2%	30.2%	28.9%	72.9%	47.0%	73.9%
June	94.2%	40.6%	30.5%	30.3%	33.5%	72.0%	54.7%	71.2%
July	94.5%	36.1%	31.9%	31.7%	36.9%	70.9%	59.3%	72.2%
August	96.1%	33.0%	24.5%	31.7%	29.2%	70.3%	63.5%	73.0%
September	90.9%	28.6%	30.4%	28.5%	30.2%	67.9%	58.5%	75.5%
October	81.7%	29.3%	36.4%	24.0%	19.1%	63.8%	48.9%	74.6%
November	90.9%	32.8%	35.3%	20.4%	14.4%	72.6%	54.9%	77.7%
December	96.7%	37.9%	38.8%	16.2%	7.0%	73.4%	59.6%	80.1%

Values are final. NA = Not Available

Notes: Solar Thermal Capacity Factors include generation from plants using concentrated solar power energy storage.

Sources: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report; U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report' and Form EIA-860M, 'Monthly Update to the Annual Electric Generator Report.'

Table 4.9. Total Capacity of Distributed and Dispersed Generators by Technology Type, 2006 through 2015 (Table Discontinued)

	Capacity (MW)										
Year	Internal Combustion	Combustion Turbine	Steam Turbine	Hydro	Wind	Photovoltaic	Storage	Other	Wind and Other	Total	Number of Generators
Distributed Generators											
2006	3,646.0	1,298.0	2,582.0	806.0	--	--	--	--	1,081.0	9,411.0	5,044
2007	4,624.0	1,990.0	3,596.0	1,051.0	--	--	--	--	1,441.0	12,702.0	7,103
2008	5,112.0	1,949.0	3,060.0	1,154.0	--	--	--	--	1,588.0	12,863.0	9,591
2009	4,339.0	4,147.0	4,621.0	1,166.0	--	--	--	--	1,729.0	16,002.0	13,006
2010	886.8	186.0	109.9	97.4	98.9	236.3	--	372.7	--	1,988.0	15,630
2011	791.1	115.5	64.9	97.9	36.7	314.8	0.2	264.3	--	1,685.4	20,941
2012	756.1	105.8	60.2	119.9	252.9	543.7	15.2	324.4	--	1,990.6	28,252
2013	981.3	106.4	31.1	103.9	78.3	556.0	2.0	89.0	--	1,947.4	196,141
2014	813.8	81.3	12.9	108.2	33.7	692.0	7.2	101.0	--	1,855.5	203,099
2015	797.6	49.3	10.5	121.2	26.7	876.4	24.4	88.4	--	1,994.6	215,825
Dispersed Generators											
2006	6,524.0	346.0	157.0	3.0	--	--	--	--	8.0	7,037.0	9,536
2007	7,866.0	268.0	102.0	31.0	--	--	--	--	30.0	8,297.0	11,057
2008	9,335.0	86.0	248.0	34.0	--	--	--	--	70.0	9,773.0	12,262
2009	9,751.0	329.0	204.0	81.0	--	--	--	--	108.0	10,475.0	13,928
2010	2,771.2	64.4	13.8	8.4	6.3	95.2	7.0	17.9	--	2,984.2	16,874
2011	2,916.9	40.3	14.6	6.0	3.2	2.7	8.0	7.9	--	2,999.6	14,123
2012	3,180.9	49.8	--	2.2	3.1	8.5	7.7	13.5	--	3,265.5	14,557
2013	3,249.7	159.8	17.0	1.9	4.5	21.6	8.7	25.8	--	3,489.0	17,929
2014	3,479.3	169.7	16.7	0.7	3.7	14.3	6.6	5.7	--	3,696.8	22,599
2015	3,160.9	199.1	16.7	0.7	4.7	17.6	7.2	5.7	--	3,412.6	23,665
Distributed and Dispersed Generators											
2006	10,170.0	1,644.0	2,739.0	809.0	--	--	--	--	1,089.0	16,448.0	14,580
2007	12,490.0	2,258.0	3,698.0	1,082.0	--	--	--	--	1,471.0	20,999.0	18,160
2008	14,447.0	2,035.0	3,308.0	1,188.0	--	--	--	--	1,658.0	22,636.0	21,853
2009	14,090.0	4,476.0	4,825.0	1,247.0	--	--	--	--	1,837.0	26,477.0	26,934
2010	3,658.0	250.4	123.7	105.8	105.2	331.5	7.0	390.6	--	4,972.2	32,504
2011	3,708.0	155.8	79.5	103.9	39.9	317.5	8.2	272.2	--	4,685.0	35,064
2012	3,937.0	155.6	60.2	122.1	256.0	552.2	22.9	337.9	--	5,256.1	42,809
2013	4,231.0	266.2	48.1	105.8	82.8	577.6	10.7	114.8	--	5,436.4	214,070
2014	4,293.1	251.0	29.6	108.9	37.5	706.3	13.8	106.7	--	5,552.2	225,698
2015	3,958.5	248.5	27.2	121.9	31.4	893.9	31.6	94.1	--	5,407.1	239,490

Starting in 2013, the residential sector is now included and all net metering units are excluded.

Distributed and Dispersed generator data in 2005 include a significant number of generators reported by one respondent, which may be for residential applications.

Prior to 2010, data contains generators over and under 1 MW, from 2010 forward, data contains only generators under 1 MW.

Distributed generators are commercial and industrial generators which are connected to the grid. Dispersed generators are commercial and industrial generators which are not connected to the grid. Both types may be installed at or near a customer`s site, or at other locations. They may be owned by either the customers of the distribution utility or by the utility. Other includes generators for which technology is not specified.

Totals may not equal sum of components because of independent rounding.

Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 4.9.A Total Capacity of Non Net Metered Distributed Generators by Technology Type and Sector, 2010 through 2016

	Generators by Technology and Sector					
Year	Residential	Commercial	Industrial	Transportation	Direct Connected	Total
Internal Combustion						
2010	--	--	--	--	--	886.800
2011	--	--	--	--	--	791.100
2012	--	--	--	--	--	756.100
2013	--	--	--	--	--	981.311
2014	--	--	--	--	--	813.847
2015	--	--	--	--	--	797.595
2016	46.974	679.239	223.037	--	69.217	1,018.467
Combustion Turbine						
2010	--	--	--	--	--	186.000
2011	--	--	--	--	--	115.500
2012	--	--	--	--	--	105.800
2013	--	--	--	--	--	106.385
2014	--	--	--	--	--	81.325
2015	--	--	--	--	--	49.329
2016	0.233	62.127	24.415	--	2.728	89.503
Steam Turbine						
2010	--	--	--	--	--	109.900
2011	--	--	--	--	--	64.900
2012	--	--	--	--	--	60.200
2013	--	--	--	--	--	31.050
2014	--	--	--	--	--	12.925
2015	--	--	--	--	--	10.531
2016	--	2.995	0.524	--	0.431	3.950
Hydroelectric						
2010	--	--	--	--	--	97.400
2011	--	--	--	--	--	97.900
2012	--	--	--	--	--	119.900
2013	--	--	--	--	--	103.935
2014	--	--	--	--	--	108.235
2015	--	--	--	--	--	121.234
2016	6.140	39.930	8.533	--	101.146	155.749
Wind						
2010	--	--	--	--	--	98.900
2011	--	--	--	--	--	36.700
2012	--	--	--	--	--	252.900
2013	--	--	--	--	--	78.299
2014	--	--	--	--	--	33.727
2015	--	--	--	--	--	26.658
2016	2.616	15.742	1.366	--	8.828	28.552
Photovoltaic						
2010	--	--	--	--	--	236.300
2011	--	--	--	--	--	314.800
2012	--	--	--	--	--	543.700
2013	--	--	--	--	--	555.965
2014	--	--	--	--	--	692.034
2015	--	--	--	--	--	876.351
2016	80.577	388.911	132.970	--	112.922	715.380
Storage						
2010	--	--	--	--	--	--
2011	--	--	--	--	--	0.200
2012	--	--	--	--	--	15.200
2013	--	--	--	--	--	1.950
2014	--	--	--	--	--	7.227
2015	--	--	--	--	--	24.443
2016	0.070	32.678	8.714	--	1.246	42.708
Fuel Cell						
2010	--	--	--	--	--	--
2011	--	--	--	--	--	--
2012	--	--	--	--	--	--
2013	--	--	--	--	--	--
2014	--	--	--	--	--	--
2015	--	--	--	--	--	--
2016	0.161	6.229	3.700	--	0.225	10.315
Other						
2010	--	--	--	--	--	372.700
2011	--	--	--	--	--	264.300
2012	--	--	--	--	--	324.400
2013	--	--	--	--	--	89.000
2014	--	--	--	--	--	100.995
2015	--	--	--	--	--	88.423
2016	0.753	34.050	10.389	--	6.050	51.242
Total						
2010	--	--	--	--	--	1,988.000
2011	--	--	--	--	--	1,685.400
2012	--	--	--	--	--	1,990.600
2013	--	--	--	--	--	1,947.394
2014	--	--	--	--	--	1,855.455
2015	--	--	--	--	--	1,994.564
2016	137.524	1,261.901	413.648	--	302.793	2,115.866
Total Number of Generators						
2010	--	--	--	--	--	15,630.000
2011	--	--	--	--	--	20,941.000
2012	--	--	--	--	--	28,252.000
2013	--	--	--	--	--	196,141.000
2014	--	--	--	--	--	203,099.000
2015	--	--	--	--	--	215,825.000
2016	--	--	--	--	--	195,703.000

Starting in 2016, Capacity is now collected by technology and sector.
Starting in 2013, the residential sector is now included and all net metering units are excluded.
Distributed generators are generators which are connected to the grid. They may be installed at or near a customer`s site or at other locations. They may be owned by either the customers of the distribution utility or by the utility. Other includes generators for which technology is not specified.
Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 4.10. Net Metering Customers and Capacity by Technology Type, by End Use Sector, 2006 through 2016

	Capacity (MW)					Customers				
Year	Residential	Commercial	Industrial	Transportation	Total	Residential	Commercial	Industrial	Transportation	Total
Historical Data										
2006	N/A	N/A	N/A	N/A	N/A	30,689	2,553	376	--	33,618
2007	N/A	N/A	N/A	N/A	N/A	44,450	3,513	391	--	48,354
2008	N/A	N/A	N/A	N/A	N/A	64,400	5,305	304	--	70,009
2009	N/A	N/A	N/A	N/A	N/A	88,205	7,365	919	--	96,489
Photovoltaic										
2010	697.890	517.861	243.051	--	1,458.802	137,618	11,897	1,225	--	150,740
2011	1,024.139	1,089.275	381.670	--	2,495.410	198,255	18,345	2,418	--	219,018
2012	1,542.226	1,741.821	395.328	--	3,679.630	294,437	27,611	1,317	--	323,365
2013	2,286.567	2,294.831	565.982	--	5,147.380	442,195	35,379	2,480	--	480,054
2014	3,452.987	2,933.122	710.719	--	7,096.828	642,276	43,335	3,131	--	688,742
2015	5,357.358	3,455.124	884.664	--	9,697.146	958,850	51,501	3,624	--	1,013,975
2016	7,487.643	3,975.813	1,078.607	--	12,542.064	1,321,277	60,456	4,391	--	1,386,124
Storage										
2016	4.489	7.575	11.698	--	23.762	793	79	31	--	903
Virtual PV (1 MW and over)										
2016	15.171	194.318	--	--	209.489	5,193	322	--	--	5,515
Virtual PV (under 1 MW)										
2016	27.482	73.116	3.168	--	103.766	8,705	1,506	11	--	10,222
Wind										
2010	83.797	26.106	6.392	--	116.295	3,467	583	37	--	4,087
2011	28.063	44.373	9.932	--	82.368	4,456	905	50	--	5,411
2012	33.484	74.620	17.495	--	125.599	4,796	1,143	48	--	5,987
2013	38.987	92.818	14.659	--	146.464	5,265	1,308	92	--	6,665
2014	37.918	101.622	25.426	--	164.966	5,379	1,351	94	--	6,824
2015	34.893	103.086	29.137	--	167.116	5,387	1,434	109	--	6,930
2016	37.030	108.726	41.454	--	187.210	5,759	1,470	113	--	7,342
Other										
2010	11.455	34.752	24.835	--	71.042	767	271	56	--	1,094
2011	5.030	49.010	56.681	--	110.721	807	242	100	--	1,149
2012	7.539	65.821	83.170	--	156.530	862	314	122	--	1,298
2013	6.785	80.405	80.568	--	167.758	598	331	169	--	1,098
2014	7.633	102.797	98.277	--	208.707	857	397	201	--	1,455
2015	7.873	116.382	116.780	--	241.035	821	445	249	--	1,515
2016	7.952	155.889	149.608	--	313.449	862	592	325	--	1,779
All Technologies										
2010	793.142	578.719	274.278	--	1,646.139	141,852	12,751	1,318	--	155,921
2011	1,057.232	1,182.658	448.283	--	2,688.173	203,518	19,492	2,568	--	225,578
2012	1,583.249	1,882.262	495.993	--	3,961.504	300,095	29,068	1,487	--	330,650
2013	2,332.339	2,468.054	661.209	--	5,461.602	448,058	37,018	2,741	--	487,817
2014	3,498.538	3,137.541	834.422	--	7,470.501	648,512	45,083	3,426	--	697,021
2015	5,400.124	3,674.592	1,030.581	--	10,105.297	965,058	53,380	3,982	--	1,022,420
2016	7,715.715	4,576.384	1,289.946	--	13,582.045	1,341,796	64,346	4,840	--	1,410,982

Starting in 2013, there is no maximum capacity on installed units.
Capacity and customer count was not collected by technology type before 2010.
N/A = Not Available.
Total customer count for the years 2007, 2009, and 2010 were revised based on requests from respondents.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 4.11. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Producer Type, 2016
(Megawatts, Percent)

		Fuel-Switchable Part of Total			
Producer Type	**Total Net Summer Capacity of All Generators Reporting Natural Gas as the Primary Fuel**	**Net Summer Capacity of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids**	**Fuel Switchable Capacity as Percent of Total**	**Maximum Achievable Net Summer Capacity Using Petroleum Liquids**	**Fuel Switchable Net Summer Capacity Reported to Have No Factors that Limit the Ability to Switch to Petroleum Liquids**
Electric Utilities	229,677.1	82,229.2	35.8%	80,345.8	18,323.0
Independent Power Producers, Non-Combined Heat and Power Plants	173,455.8	41,797.0	24.1%	37,900.3	7,100.7
Independent Power Producers, Combined Heat and Power Plants	27,222.4	4,716.7	17.3%	4,509.3	312.9
Electric Power Sector Subtotal	430,355.3	128,742.9	29.9%	122,755.4	25,736.6
Commercial Sector	1,982.6	854.4	43.1%	810.2	99.2
Industrial Sector	14,485.3	891.6	6.2%	867.7	99.5
All Sectors	446,823.2	130,488.9	29.2%	124,433.3	25,935.3

Notes: Petroleum liquids include distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, waste oil, and propane.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.12. Fuel-Switching Capacity of Operable Generators Reporting Petroleum Liquids as the Primary Fuel, by Producer Type, 2016 (Megawatts, Percent)

		Fuel-Switchable Part of Total		
Producer Type	**Total Net Summer Capacity of All Generators Reporting Petroleum Liquids as the Primary Fuel**	**Net Summer Capacity of Petroleum Liquids-Fired Generators Reporting the Ability to Switch to Natural Gas**	**Fuel Switchable Capacity as Percent of Total**	**Maximum Achievable Net Summer Capacity Using Natural Gas**
Electric Utilities	19,395.2	3,937.6	20.3%	4,239.5
Independent Power Producers, Non-Combined Heat and Power Plants	12,451.4	3,668.4	29.5%	2,549.2
Independent Power Producers, Combined Heat and Power Plants	249.2	--	0.0%	--
Electric Power Sector Subtotal	32,095.8	7,606.0	23.7%	6,788.7
Commercial Sector	511.0	15.2	3.0%	15.7
Industrial Sector	308.9	49.9	16.2%	43.9
All Sectors	32,915.7	7,671.1	23.3%	6,848.3

Notes: Petroleum liquids include distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, waste oil, and propane.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.13. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Type of Prime Mover, 2016 (Megawatts, Percent)

Prime Mover Type	Number of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Net Summer Capacity of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Fuel Switchable Net Summer Capacity Reported to Have No Factors that Limit the Ability to Switch to Petroleum Liquids
Steam Generator	182	27,283.2	8,980.3
Combined Cycle	400	47,057.1	6,327.9
Internal Combustion	329	1,213.5	336.7
Gas Turbine	859	54,935.1	10,290.4
All Fuel Switchable Prime Movers	1,770	130,488.9	25,935.3

Notes: Petroleum liquids include distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, waste oil, and propane.
Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 4.14. Fuel-Switching Capacity of Operable Generators Reporting Natural Gas as the Primary Fuel, by Year of Initial Commercial Operation, 2016 (Megawatts, Percent)

Year of Initial Commercial Operation	Number of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Net Summer Capacity of Natural Gas-Fired Generators Reporting the Ability to Switch to Petroleum Liquids	Fuel Switchable Net Summer Capacity Reported to Have No Factors that Limit the Ability to Switch to Petroleum Liquids
Pre-1970	301	12,213.2	4,831.9
1970-1974	268	14,489.7	4,736.5
1975-1979	98	10,681.6	3,206.2
1980-1984	40	850.2	205.7
1985-1989	91	2,801.4	272.0
1990-1994	209	12,015.2	1,531.2
1995-1999	128	9,218.9	1,823.7
2000-2004	394	38,343.1	6,866.1
2005-2009	123	16,261.6	1,680.2
2010-2014	95	11,015.1	83.2
2015-2016	23	2,598.9	698.6
Total	1,770	130,488.9	25,935.3

Notes: Petroleum liquids include distillate fuel oil (all diesel and No. 1, No. 2, and No. 4 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil), jet fuel, kerosene, waste oil, and propane.
Source: U.S. Energy Information Administration, Form EIA-860, "Annual Electric Generator Report."

Chapter 5

Consumption of Fossil Fuels

Table 5.1.A. Coal: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	1,030,556	753,390	269,412	347	7,408
2007	1,046,795	764,765	276,581	361	5,089
2008	1,042,335	760,326	276,565	369	5,075
2009	934,683	695,615	234,077	317	4,674
2010	979,684	721,431	249,814	314	8,125
2011	934,938	689,316	239,541	347	5,735
2012	825,734	615,467	205,295	307	4,665
2013	860,729	638,327	217,219	513	4,670
2014	853,634	624,235	224,568	202	4,629
2015	739,594	539,506	195,927	163	3,999
2016	677,371	496,192	178,047	111	3,021
Year 2014					
January	83,647	61,084	22,129	27	407
February	76,160	55,073	20,699	27	362
March	72,124	51,559	20,147	22	396
April	58,065	41,151	16,541	16	357
May	64,033	47,114	16,521	12	385
June	74,328	55,542	18,365	15	406
July	81,495	60,238	20,821	16	420
August	81,074	60,222	20,422	14	417
September	69,127	50,728	17,998	12	389
October	61,129	44,987	15,772	11	359
November	64,651	46,561	17,720	14	356
December	67,799	49,976	17,434	16	373
Year 2015					
January	71,384	50,757	20,271	18	338
February	67,136	47,845	18,954	19	318
March	58,367	42,202	15,797	17	351
April	48,543	36,037	12,193	12	302
May	57,153	42,814	14,005	10	323
June	68,982	50,592	18,017	14	359
July	76,570	56,202	19,977	14	376
August	73,810	54,023	19,408	12	368
September	64,823	46,706	17,746	10	360
October	53,659	39,023	14,309	11	317
November	48,943	35,427	13,209	12	295
December	50,224	37,878	12,041	14	292
Year 2016					
January	61,983	45,395	16,319	12	258
February	50,516	37,538	12,717	13	248
March	39,864	30,983	8,616	13	252
April	39,065	28,614	10,238	7	206
May	45,032	33,712	11,064	6	249
June	63,186	46,191	16,721	7	266
July	74,132	53,946	19,894	7	285
August	73,798	53,681	19,827	8	282
September	62,335	44,665	17,407	8	254
October	54,537	39,319	14,974	8	237
November	48,076	35,090	12,758	10	218
December	64,847	47,058	17,512	12	266

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
The new methodology was retroactively applied to 2004-2007 data. See the Technical Notes (Appendix C) for further information. See Glossary for definitions.
Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.1.B. Coal: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	23,227	0	3,834	1,539	17,854
2007	22,810	0	3,795	1,566	17,449
2008	22,168	0	3,689	1,652	16,827
2009	20,507	0	3,935	1,481	15,091
2010	21,727	0	3,808	1,406	16,513
2011	21,532	0	3,628	1,321	16,584
2012	19,333	0	2,790	1,143	15,400
2013	18,350	0	2,416	843	15,090
2014	18,107	978	1,821	861	14,448
2015	16,632	1,032	1,980	635	12,985
2016	16,586	2,979	1,336	572	11,700
Year 2014					
January	1,773	114	171	105	1,384
February	1,641	97	167	105	1,271
March	1,722	95	199	96	1,332
April	1,425	81	162	66	1,115
May	1,450	81	146	59	1,164
June	1,413	63	153	63	1,134
July	1,466	78	150	70	1,169
August	1,451	70	149	58	1,175
September	1,355	70	121	52	1,113
October	1,359	66	122	47	1,123
November	1,480	76	138	68	1,198
December	1,573	86	142	74	1,271
Year 2015					
January	1,649	99	197	79	1,275
February	1,505	96	166	78	1,165
March	1,494	94	178	67	1,155
April	1,296	76	144	43	1,034
May	1,335	75	165	40	1,055
June	1,327	87	172	47	1,022
July	1,451	86	187	50	1,129
August	1,345	71	176	45	1,052
September	1,301	75	155	40	1,031
October	1,245	81	145	41	979
November	1,321	99	145	47	1,030
December	1,363	95	151	58	1,059
Year 2016					
January	1,624	288	133	63	1,140
February	1,503	277	130	62	1,034
March	1,433	232	117	61	1,023
April	1,215	204	103	39	870
May	1,264	215	90	31	929
June	1,353	241	97	39	976
July	1,472	278	118	39	1,036
August	1,434	270	112	42	1,010
September	1,257	216	97	41	903
October	1,260	224	105	42	889
November	1,256	233	99	50	875
December	1,515	301	136	63	1,015

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
The new methodology was retroactively applied to 2004-2007 data. See the Technical Notes (Appendix C) for further information. See Glossary for definitions.
Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.1.C. Coal: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	1,053,783	753,390	273,246	1,886	25,262
2007	1,069,606	764,765	280,377	1,927	22,537
2008	1,064,503	760,326	280,254	2,021	21,902
2009	955,190	695,615	238,012	1,798	19,766
2010	1,001,411	721,431	253,621	1,720	24,638
2011	956,470	689,316	243,168	1,668	22,319
2012	845,066	615,467	208,085	1,450	20,065
2013	879,078	638,327	219,635	1,356	19,761
2014	871,741	625,212	226,389	1,063	19,076
2015	756,226	540,538	197,906	798	16,984
2016	693,958	499,172	179,383	683	14,720
Year 2014					
January	85,420	61,198	22,300	132	1,791
February	77,801	55,170	20,866	131	1,633
March	73,846	51,654	20,346	118	1,729
April	59,489	41,232	16,703	82	1,472
May	65,483	47,195	16,667	72	1,549
June	75,741	55,606	18,518	78	1,540
July	82,961	60,316	20,970	85	1,589
August	82,526	60,292	20,571	72	1,591
September	70,482	50,798	18,118	64	1,502
October	62,488	45,053	15,895	58	1,482
November	66,131	46,637	17,858	82	1,554
December	69,372	50,062	17,576	90	1,644
Year 2015					
January	73,033	50,856	20,467	97	1,613
February	68,640	47,941	19,120	97	1,483
March	59,861	42,297	15,975	83	1,506
April	49,840	36,112	12,337	54	1,336
May	58,488	42,889	14,171	50	1,378
June	70,309	50,678	18,189	61	1,381
July	78,021	56,288	20,164	64	1,505
August	75,156	54,094	19,584	58	1,420
September	66,124	46,780	17,901	51	1,391
October	54,904	39,104	14,453	52	1,296
November	50,264	35,526	13,353	59	1,325
December	51,587	37,973	12,192	72	1,350
Year 2016					
January	63,607	45,683	16,452	75	1,397
February	52,019	37,815	12,846	75	1,282
March	41,297	31,215	8,733	74	1,275
April	40,280	28,818	10,341	46	1,076
May	46,297	33,928	11,154	37	1,178
June	64,539	46,432	16,818	46	1,243
July	75,604	54,224	20,012	46	1,321
August	75,232	53,951	19,938	49	1,292
September	63,592	44,881	17,504	50	1,157
October	55,798	39,543	15,079	50	1,126
November	49,331	35,322	12,857	60	1,093
December	66,362	47,359	17,648	75	1,280

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
The new methodology was retroactively applied to 2004-2007 data. See the Technical Notes (Appendix C) for further information. See Glossary for definitions.
Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.1.D. Coal: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	20,527,410	15,211,077	5,166,001	7,526	142,807
2007	20,841,871	15,436,110	5,287,202	7,833	110,727
2008	20,548,610	15,189,050	5,242,194	8,070	109,296
2009	18,240,611	13,744,178	4,390,596	7,007	98,829
2010	19,196,315	14,333,496	4,709,686	6,815	146,318
2011	18,074,298	13,551,416	4,399,144	7,263	116,475
2012	15,867,141	11,995,971	3,767,011	6,383	97,775
2013	16,509,468	12,421,537	3,981,216	9,444	97,270
2014	16,472,004	12,217,628	4,154,134	4,344	95,898
2015	14,167,878	10,456,910	3,624,869	3,443	82,656
2016	12,979,911	9,641,625	3,274,103	2,293	61,889
Year 2014					
January	1,629,049	1,202,969	417,069	589	8,423
February	1,484,641	1,085,437	391,078	585	7,541
March	1,413,884	1,017,112	387,962	493	8,318
April	1,127,192	807,693	311,840	338	7,320
May	1,239,709	927,469	304,012	273	7,956
June	1,439,870	1,091,640	339,459	326	8,446
July	1,566,788	1,177,989	379,727	339	8,733
August	1,552,663	1,174,260	369,470	295	8,637
September	1,318,826	987,034	323,487	249	8,055
October	1,161,615	867,552	286,399	221	7,443
November	1,241,104	908,616	324,843	300	7,344
December	1,296,664	969,857	318,789	335	7,684
Year 2015					
January	1,379,735	990,356	381,946	388	7,045
February	1,315,659	943,535	365,118	414	6,592
March	1,129,765	819,709	302,401	351	7,304
April	929,278	696,649	226,178	245	6,206
May	1,097,338	830,414	260,139	213	6,572
June	1,318,343	983,624	327,033	298	7,389
July	1,463,993	1,089,588	366,359	298	7,748
August	1,414,355	1,049,472	356,990	256	7,638
September	1,237,781	902,873	327,251	219	7,439
October	1,012,894	747,191	258,912	230	6,561
November	922,147	678,236	237,578	246	6,086
December	946,590	725,264	214,966	283	6,077
Year 2016					
January	1,187,475	878,838	302,987	254	5,396
February	973,346	732,061	235,873	276	5,136
March	764,234	602,203	156,482	270	5,279
April	758,789	562,897	191,346	145	4,401
May	863,759	656,726	201,836	117	5,081
June	1,214,088	903,015	305,500	144	5,430
July	1,427,172	1,052,005	369,212	146	5,810
August	1,421,999	1,045,279	370,894	158	5,668
September	1,191,721	867,652	318,734	172	5,163
October	1,032,754	757,171	270,644	161	4,778
November	910,707	676,849	229,268	201	4,389
December	1,233,866	906,931	321,327	248	5,360

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.1.E. Coal: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	532,561	0	84,335	34,086	414,140
2007	521,717	0	83,838	34,690	403,189
2008	503,096	0	81,416	36,163	385,517
2009	462,674	0	90,867	32,651	339,156
2010	490,931	0	90,184	30,725	370,022
2011	479,822	0	84,855	28,056	366,911
2012	420,923	0	58,275	23,673	338,975
2013	401,108	0	47,677	18,535	334,897
2014	391,550	18,332	37,139	18,805	317,274
2015	356,895	18,640	37,815	13,483	286,956
2016	342,370	51,590	29,330	11,736	249,714
Year 2014					
January	38,562	2,143	3,420	2,286	30,713
February	35,455	1,819	3,386	2,301	27,949
March	37,670	1,807	4,257	2,115	29,492
April	30,526	1,528	3,245	1,435	24,318
May	31,345	1,548	3,073	1,299	25,425
June	30,577	1,185	3,131	1,411	24,850
July	31,888	1,483	3,128	1,556	25,722
August	31,443	1,328	3,069	1,257	25,789
September	29,329	1,280	2,590	1,103	24,356
October	29,267	1,233	2,414	990	24,630
November	31,820	1,387	2,769	1,472	26,193
December	33,667	1,591	2,658	1,582	27,836
Year 2015					
January	35,642	1,807	3,662	1,711	28,462
February	32,913	1,775	3,367	1,732	26,040
March	32,194	1,744	3,436	1,429	25,584
April	27,956	1,366	2,757	877	22,956
May	28,711	1,352	3,331	835	23,192
June	28,325	1,546	3,259	1,016	22,504
July	30,648	1,535	3,460	1,088	24,565
August	28,644	1,289	3,279	956	23,120
September	27,840	1,356	3,009	840	22,635
October	26,630	1,459	2,798	832	21,541
November	28,323	1,735	2,668	967	22,953
December	29,071	1,678	2,787	1,202	23,404
Year 2016					
January	33,833	4,989	2,985	1,309	24,550
February	31,219	4,833	2,882	1,303	22,200
March	30,053	4,079	2,601	1,276	22,097
April	25,599	3,546	2,268	790	18,996
May	26,306	3,793	1,988	601	19,924
June	27,987	4,171	2,124	813	20,879
July	30,218	4,835	2,571	808	22,005
August	29,238	4,654	2,393	858	21,334
September	25,837	3,698	2,130	845	19,163
October	25,606	3,798	2,312	833	18,663
November	25,634	4,011	2,208	1,011	18,405
December	30,841	5,184	2,867	1,290	21,501

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.1.F. Coal: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	21,059,972	15,211,077	5,250,336	41,612	556,948
2007	21,363,588	15,436,110	5,371,039	42,523	513,916
2008	21,051,706	15,189,050	5,323,610	44,233	494,813
2009	18,703,284	13,744,178	4,481,463	39,658	437,985
2010	19,687,246	14,333,496	4,799,870	37,540	516,341
2011	18,554,120	13,551,416	4,483,999	35,319	483,385
2012	16,288,063	11,995,971	3,825,286	30,056	436,750
2013	16,910,576	12,421,537	4,028,894	27,979	432,167
2014	16,863,554	12,235,960	4,191,273	23,149	413,173
2015	14,524,773	10,475,551	3,662,685	16,926	369,612
2016	13,322,281	9,693,215	3,303,433	14,029	311,604
Year 2014					
January	1,667,611	1,205,112	420,488	2,875	39,135
February	1,520,096	1,087,256	394,464	2,886	35,490
March	1,451,555	1,018,919	392,218	2,608	37,809
April	1,157,718	809,221	315,085	1,773	31,638
May	1,271,054	929,017	307,084	1,572	33,381
June	1,470,447	1,092,825	342,590	1,737	33,296
July	1,598,676	1,179,472	382,854	1,896	34,455
August	1,584,106	1,175,589	372,539	1,552	34,426
September	1,348,155	988,314	326,078	1,352	32,411
October	1,190,882	868,785	288,813	1,211	32,073
November	1,272,924	910,003	327,612	1,772	33,537
December	1,330,331	971,447	321,447	1,917	35,520
Year 2015					
January	1,415,376	992,163	385,608	2,098	35,507
February	1,348,573	945,310	368,485	2,146	32,632
March	1,161,958	821,453	305,837	1,780	32,888
April	957,233	698,015	228,935	1,122	29,162
May	1,126,049	831,767	263,470	1,049	29,764
June	1,346,669	985,169	330,292	1,314	29,894
July	1,494,640	1,091,122	369,819	1,386	32,312
August	1,443,000	1,050,760	360,269	1,213	30,758
September	1,265,621	904,228	330,260	1,059	30,074
October	1,039,523	748,650	261,710	1,062	28,102
November	950,469	679,971	240,247	1,213	29,039
December	975,661	726,941	217,753	1,485	29,481
Year 2016					
January	1,221,308	883,827	305,973	1,563	29,945
February	1,004,565	736,895	238,756	1,578	27,336
March	794,286	606,281	159,083	1,546	27,375
April	784,387	566,442	193,614	935	23,396
May	890,066	660,518	203,824	718	25,005
June	1,242,075	907,186	307,624	958	26,308
July	1,457,390	1,056,839	371,783	954	27,814
August	1,451,237	1,049,932	373,287	1,016	27,002
September	1,217,558	871,351	320,865	1,017	24,326
October	1,058,360	760,969	272,956	994	23,440
November	936,341	680,860	231,476	1,212	22,794
December	1,264,707	912,115	324,194	1,538	26,861

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; synthetic coal and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.2.A. Petroleum Liquids: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Thousand Barrels)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	73,821	53,529	17,179	327	2,786
2007	82,433	56,910	22,793	250	2,480
2008	53,846	38,995	13,152	160	1,538
2009	43,562	31,847	9,880	184	1,652
2010	40,103	30,806	8,278	164	855
2011	27,326	20,844	5,633	133	716
2012	22,604	17,521	4,110	272	702
2013	23,231	16,827	5,494	328	582
2014	31,531	19,652	10,689	451	739
2015	28,925	18,562	9,473	249	641
2016	22,405	16,137	5,624	108	536
Year 2014					
January	10,190	4,468	5,487	112	122
February	3,117	1,879	1,099	58	81
March	3,476	1,917	1,443	43	72
April	1,556	1,283	200	31	42
May	1,647	1,296	274	22	56
June	1,502	1,179	246	27	50
July	1,696	1,308	311	24	53
August	1,751	1,310	372	23	45
September	1,645	1,296	274	24	50
October	1,550	1,218	251	28	53
November	1,681	1,230	362	28	60
December	1,721	1,268	368	30	54
Year 2015					
January	3,293	2,061	1,135	33	64
February	8,589	3,547	4,845	93	103
March	1,785	1,243	472	18	53
April	1,522	1,232	222	14	54
May	1,697	1,251	376	15	55
June	1,745	1,380	296	14	56
July	1,995	1,480	453	16	45
August	1,801	1,398	344	17	42
September	1,656	1,230	378	7	41
October	1,541	1,215	273	7	46
November	1,720	1,348	324	7	40
December	1,581	1,177	354	8	42
Year 2016					
January	2,472	1,727	685	12	48
February	2,230	1,474	698	12	46
March	1,495	1,096	355	4	40
April	1,421	1,055	320	8	38
May	1,662	1,212	386	8	56
June	1,693	1,275	364	7	48
July	2,287	1,711	514	11	52
August	2,231	1,644	537	10	39
September	1,620	1,128	441	7	44
October	1,629	1,156	423	7	43
November	1,672	1,249	372	11	40
December	1,995	1,410	530	12	43

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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.2.B. Petroleum Liquids: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Thousand Barrels)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	14,077	0	1,153	559	12,365
2007	13,462	0	1,303	441	11,718
2008	7,533	0	1,311	461	5,762
2009	8,128	0	1,301	293	6,534
2010	4,866	0	1,086	212	3,567
2011	3,826	0	1,004	168	2,654
2012	3,097	0	992	122	1,984
2013	3,456	0	1,050	498	1,908
2014	3,099	64	1,170	216	1,650
2015	3,142	62	1,155	282	1,643
2016	2,277	68	245	245	1,719
Year 2014					
January	643	45	189	115	294
February	336	5	88	44	199
March	301	7	101	27	165
April	203	0	86	4	114
May	211	1	89	5	116
June	208	1	90	3	114
July	195	1	93	4	97
August	201	1	108	3	89
September	173	1	62	2	109
October	208	0	92	2	114
November	220	0	90	4	125
December	200	1	80	4	114
Year 2015					
January	324	7	99	43	175
February	595	46	175	116	259
March	261	1	89	25	146
April	239	0	80	17	142
May	232	0	82	18	132
June	218	1	79	14	123
July	231	1	102	15	113
August	203	1	88	16	98
September	199	1	90	2	106
October	225	1	98	3	124
November	203	1	85	7	110
December	210	1	90	5	114
Year 2016					
January	231	12	24	43	153
February	316	17	39	27	233
March	178	3	28	7	140
April	174	3	16	17	138
May	198	3	18	14	163
June	181	6	13	14	149
July	185	2	12	28	142
August	153	3	15	18	117
September	143	3	14	9	117
October	174	3	18	9	144
November	167	4	14	35	113
December	178	9	33	26	110

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.2.C. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Thousand Barrels)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	87,898	53,529	18,332	886	15,150
2007	95,895	56,910	24,097	691	14,198
2008	61,379	38,995	14,463	621	7,300
2009	51,690	31,847	11,181	477	8,185
2010	44,968	30,806	9,364	376	4,422
2011	31,152	20,844	6,637	301	3,370
2012	25,702	17,521	5,102	394	2,685
2013	26,687	16,827	6,544	826	2,490
2014	34,630	19,716	11,859	667	2,389
2015	32,067	18,624	10,629	531	2,283
2016	24,682	16,205	5,869	352	2,255
Year 2014					
January	10,833	4,513	5,677	227	416
February	3,453	1,885	1,187	101	280
March	3,776	1,924	1,545	70	237
April	1,760	1,283	286	35	156
May	1,858	1,296	363	27	172
June	1,711	1,180	336	30	164
July	1,890	1,309	404	28	150
August	1,952	1,311	481	26	134
September	1,818	1,297	336	26	159
October	1,758	1,219	343	30	166
November	1,900	1,230	453	32	186
December	1,921	1,269	449	34	169
Year 2015					
January	3,617	2,069	1,234	76	239
February	9,184	3,593	5,020	209	362
March	2,046	1,244	560	43	199
April	1,761	1,233	301	31	196
May	1,930	1,251	458	34	187
June	1,963	1,381	375	28	179
July	2,226	1,481	555	32	159
August	2,004	1,399	432	33	140
September	1,856	1,230	468	10	147
October	1,766	1,216	371	9	170
November	1,923	1,349	409	14	150
December	1,791	1,178	444	13	155
Year 2016					
January	2,702	1,739	709	55	200
February	2,546	1,491	737	38	279
March	1,673	1,099	383	12	180
April	1,594	1,058	337	24	175
May	1,860	1,216	403	22	219
June	1,875	1,281	377	21	197
July	2,472	1,713	527	38	194
August	2,384	1,647	552	28	156
September	1,763	1,131	455	16	161
October	1,803	1,159	441	16	187
November	1,838	1,254	386	46	153
December	2,173	1,419	563	37	154

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.2.D. Petroleum Liquids: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	459,392	335,130	105,312	1,963	16,987
2007	512,423	355,999	139,977	1,505	14,942
2008	332,367	242,379	79,816	957	9,215
2009	266,508	196,346	59,277	1,101	9,784
2010	244,114	188,987	49,042	970	5,115
2011	163,954	125,755	33,166	801	4,233
2012	134,956	105,179	24,081	1,618	4,078
2013	139,139	101,217	32,504	2,038	3,380
2014	188,814	118,226	63,488	2,765	4,335
2015	172,884	111,808	55,979	1,482	3,616
2016	133,457	96,967	32,922	639	2,928
Year 2014					
January	61,099	26,764	32,930	677	728
February	18,754	11,328	6,590	352	483
March	20,890	11,527	8,674	259	430
April	9,348	7,754	1,156	194	243
May	9,751	7,743	1,548	138	322
June	9,007	7,112	1,434	169	292
July	10,168	7,894	1,817	148	309
August	10,531	7,956	2,172	144	259
September	9,826	7,826	1,563	150	287
October	9,239	7,328	1,431	173	307
November	9,976	7,379	2,067	174	356
December	10,225	7,614	2,105	188	319
Year 2015					
January	19,762	12,461	6,733	196	373
February	51,647	21,467	29,024	555	601
March	10,639	7,442	2,781	106	309
April	9,079	7,414	1,273	82	310
May	10,048	7,502	2,165	90	291
June	10,375	8,309	1,683	82	301
July	11,925	8,942	2,634	98	252
August	10,782	8,447	2,001	102	233
September	9,816	7,329	2,217	44	228
October	9,151	7,287	1,568	39	257
November	10,254	8,123	1,865	41	226
December	9,403	7,085	2,037	46	236
Year 2016					
January	14,680	10,356	3,982	72	271
February	13,324	8,854	4,138	70	262
March	8,819	6,544	2,024	25	226
April	8,449	6,324	1,866	44	215
May	9,830	7,268	2,230	50	283
June	10,072	7,665	2,120	40	248
July	13,747	10,373	3,043	63	268
August	13,428	9,991	3,161	61	215
September	9,666	6,809	2,582	41	234
October	9,792	7,011	2,499	41	241
November	9,882	7,410	2,183	65	224
December	11,768	8,362	3,094	68	244

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
The new methodology was retroactively applied to 2004-2007 data. See the Technical Notes (Appendix C) for further information. See Glossary for definitions.
Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.2.E. Petroleum Liquids: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	87,137	0	6,740	3,481	76,916
2007	82,768	0	7,602	2,754	72,412
2008	45,481	0	7,644	2,786	35,051
2009	48,912	0	7,557	1,802	39,552
2010	29,243	0	6,402	1,297	21,545
2011	22,799	0	5,927	1,039	15,833
2012	18,233	0	5,871	746	11,616
2013	20,717	0	6,176	3,292	11,248
2014	18,181	395	6,802	1,311	9,672
2015	18,449	379	6,748	1,755	9,568
2016	13,164	395	1,391	1,496	9,882
Year 2014					
January	3,814	282	1,058	705	1,769
February	2,010	33	520	269	1,189
March	1,781	44	589	164	984
April	1,190	2	503	22	663
May	1,223	4	522	27	670
June	1,219	4	529	18	668
July	1,130	4	548	24	554
August	1,158	7	631	15	504
September	1,001	5	362	10	624
October	1,214	2	544	13	656
November	1,281	2	529	21	728
December	1,161	7	468	23	663
Year 2015					
January	1,906	46	554	264	1,042
February	3,556	285	997	721	1,552
March	1,545	8	518	157	862
April	1,408	2	471	109	826
May	1,352	3	482	115	752
June	1,268	5	469	92	703
July	1,350	3	599	96	651
August	1,189	7	518	99	565
September	1,151	3	528	15	604
October	1,319	4	580	16	718
November	1,184	5	503	41	634
December	1,222	7	529	28	658
Year 2016					
January	1,368	70	138	266	894
February	1,831	102	210	162	1,355
March	1,027	18	154	42	812
April	1,023	18	95	101	810
May	1,112	20	103	83	906
June	1,027	32	75	86	834
July	1,052	12	72	172	796
August	887	18	88	107	674
September	814	14	80	55	665
October	1,016	17	107	49	843
November	976	25	84	217	651
December	1,030	50	184	155	641

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.2.F. Petroleum Liquids: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	546,529	335,130	112,052	5,444	93,903
2007	595,191	355,999	147,579	4,259	87,354
2008	377,848	242,379	87,460	3,743	44,266
2009	315,420	196,346	66,834	2,903	49,336
2010	273,357	188,987	55,444	2,267	26,660
2011	186,753	125,755	39,093	1,840	20,066
2012	153,189	105,179	29,952	2,364	15,695
2013	159,855	101,217	38,681	5,330	14,628
2014	206,995	118,621	70,291	4,076	14,008
2015	191,333	112,186	62,727	3,236	13,184
2016	146,621	97,363	34,313	2,135	12,810
Year 2014					
January	64,913	27,046	33,988	1,382	2,498
February	20,764	11,361	7,110	621	1,672
March	22,671	11,571	9,262	424	1,414
April	10,537	7,756	1,659	216	906
May	10,974	7,747	2,070	164	992
June	10,226	7,116	1,963	186	960
July	11,298	7,898	2,365	173	863
August	11,689	7,963	2,803	159	764
September	10,827	7,831	1,925	161	910
October	10,453	7,330	1,975	185	963
November	11,257	7,381	2,596	195	1,085
December	11,386	7,621	2,573	211	982
Year 2015					
January	21,668	12,507	7,287	460	1,414
February	55,203	21,752	30,021	1,276	2,154
March	12,184	7,450	3,299	263	1,171
April	10,487	7,417	1,743	191	1,136
May	11,400	7,504	2,647	205	1,044
June	11,643	8,314	2,151	174	1,005
July	13,276	8,945	3,233	195	903
August	11,971	8,454	2,519	201	797
September	10,968	7,332	2,745	59	832
October	10,470	7,291	2,148	56	975
November	11,438	8,128	2,368	82	860
December	10,625	7,092	2,565	74	893
Year 2016					
January	16,048	10,426	4,119	338	1,165
February	15,155	8,957	4,349	232	1,617
March	9,846	6,563	2,178	68	1,038
April	9,473	6,341	1,961	145	1,025
May	10,943	7,288	2,333	133	1,189
June	11,099	7,696	2,195	126	1,082
July	14,799	10,384	3,116	235	1,064
August	14,315	10,009	3,249	168	889
September	10,480	6,823	2,662	96	899
October	10,808	7,028	2,606	90	1,084
November	10,858	7,435	2,267	282	874
December	12,798	8,412	3,278	223	885

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.3.A. Petroleum Coke: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	7,363	3,619	3,286	1	456
2007	6,036	2,808	2,715	2	512
2008	5,417	2,296	2,704	1	416
2009	4,821	2,761	1,724	1	335
2010	4,994	3,325	1,354	2	313
2011	5,012	3,449	1,277	1	286
2012	3,675	2,105	756	1	812
2013	4,852	3,409	779	1	662
2014	4,412	3,440	599	2	371
2015	4,044	3,120	669	2	253
2016	4,253	3,427	591	2	233
Year 2014					
January	436	349	55	0	32
February	361	275	56	0	30
March	421	332	57	0	31
April	303	212	55	0	36
May	393	314	49	0	30
June	418	339	46	0	33
July	385	299	54	0	33
August	382	298	51	0	33
September	372	281	62	0	29
October	230	178	23	0	29
November	288	228	33	0	27
December	424	335	60	0	29
Year 2015					
January	402	312	56	0	33
February	413	332	56	0	25
March	275	195	60	0	20
April	300	213	59	0	28
May	339	260	59	0	20
June	306	233	55	0	18
July	409	333	59	0	17
August	388	311	58	0	18
September	376	294	61	0	21
October	300	227	57	0	16
November	260	178	62	0	20
December	276	232	26	0	18
Year 2016					
January	342	302	16	0	23
February	330	271	39	0	19
March	362	283	63	0	17
April	382	325	43	0	14
May	370	296	52	0	23
June	380	308	52	0	21
July	400	324	56	0	20
August	419	337	61	0	21
September	376	311	49	0	16
October	250	171	61	0	18
November	307	239	46	0	21
December	336	260	55	0	20

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.3.B. Petroleum Coke: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	1,259	0	195	9	1,055
2007	1,262	0	162	11	1,090
2008	897	0	119	9	769
2009	1,007	0	126	8	873
2010	1,059	0	98	11	950
2011	1,080	0	112	6	962
2012	1,346	0	113	11	1,222
2013	1,486	0	96	11	1,379
2014	1,283	3	90	16	1,174
2015	1,144	9	109	16	1,010
2016	1,099	6	113	9	971
Year 2014					
January	105	0	9	2	95
February	93	1	7	1	84
March	106	0	8	2	96
April	116	0	9	2	105
May	110	0	8	1	102
June	109	0	0	0	109
July	114	0	5	0	109
August	112	0	9	2	101
September	113	0	9	2	102
October	86	0	9	1	75
November	104	1	9	2	92
December	114	0	9	2	103
Year 2015					
January	109	0	10	2	96
February	99	1	9	2	88
March	101	1	9	2	89
April	106	1	9	1	95
May	96	1	10	0	86
June	91	2	9	0	81
July	81	1	9	0	71
August	87	0	9	2	77
September	98	0	8	2	88
October	84	0	8	2	73
November	106	3	10	2	92
December	86	0	10	1	75
Year 2016					
January	86	1	11	2	73
February	95	0	10	2	83
March	85	0	11	2	72
April	73	1	7	0	66
May	96	0	7	0	89
June	100	0	9	0	91
July	101	1	9	1	91
August	101	1	10	0	91
September	75	1	10	0	64
October	92	1	11	0	80
November	99	0	10	0	89
December	95	1	10	2	83

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.3.C. Petroleum Coke: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	8,622	3,619	3,482	10	1,511
2007	7,299	2,808	2,877	12	1,602
2008	6,314	2,296	2,823	10	1,184
2009	5,828	2,761	1,850	9	1,209
2010	6,053	3,325	1,452	12	1,264
2011	6,092	3,449	1,388	6	1,248
2012	5,021	2,105	869	13	2,034
2013	6,338	3,409	875	12	2,041
2014	5,695	3,443	689	18	1,545
2015	5,188	3,128	779	18	1,263
2016	5,352	3,433	705	10	1,204
Year 2014					
January	541	349	63	2	127
February	454	276	63	2	113
March	527	332	65	2	128
April	418	212	64	2	141
May	504	314	57	1	132
June	527	339	46	0	141
July	499	299	58	0	142
August	494	298	59	2	134
September	485	281	70	2	131
October	316	178	32	2	104
November	393	229	42	2	120
December	538	335	69	2	132
Year 2015					
January	510	313	66	3	129
February	513	332	65	2	113
March	376	196	69	2	109
April	406	213	68	2	123
May	435	261	69	0	105
June	398	235	63	0	99
July	490	334	68	0	88
August	475	311	67	2	95
September	475	294	69	2	109
October	384	227	65	2	89
November	365	181	72	2	111
December	362	232	36	2	93
Year 2016					
January	427	302	27	3	96
February	425	272	49	2	102
March	447	283	74	2	89
April	455	326	50	0	80
May	466	296	58	0	112
June	480	308	60	0	111
July	502	325	65	1	111
August	520	337	71	0	112
September	451	311	59	0	80
October	342	172	72	0	99
November	406	240	56	0	110
December	431	261	65	2	103

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.3.D. Petroleum Coke: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	208,518	102,117	92,643	33	13,726
2007	170,166	77,941	77,135	45	15,045
2008	152,933	64,843	76,416	37	11,638
2009	136,474	77,919	48,776	32	9,747
2010	141,774	94,331	38,235	44	9,165
2011	144,406	99,257	36,923	20	8,206
2012	105,488	60,862	21,643	39	22,944
2013	138,774	97,626	22,052	38	19,058
2014	123,736	95,642	17,032	59	11,003
2015	113,568	87,210	18,889	58	7,411
2016	118,303	94,892	16,591	47	6,774
Year 2014					
January	12,292	9,793	1,536	5	957
February	10,115	7,684	1,550	5	876
March	11,869	9,312	1,595	6	957
April	8,322	5,675	1,567	6	1,074
May	10,936	8,642	1,385	3	906
June	11,682	9,405	1,307	0	971
July	10,785	8,297	1,532	1	954
August	10,717	8,302	1,453	8	954
September	10,595	7,987	1,762	7	839
October	6,429	4,902	674	6	847
November	8,073	6,291	948	7	827
December	11,921	9,351	1,723	7	840
Year 2015					
January	11,284	8,736	1,580	8	960
February	11,577	9,221	1,607	8	742
March	7,683	5,359	1,708	7	609
April	8,244	5,748	1,657	5	833
May	9,413	7,150	1,681	1	582
June	8,550	6,461	1,558	0	531
July	11,441	9,307	1,663	0	472
August	10,833	8,658	1,655	6	514
September	10,649	8,320	1,718	7	605
October	8,493	6,419	1,596	7	471
November	7,463	5,145	1,739	6	573
December	7,938	6,687	727	5	519
Year 2016					
January	9,812	8,651	461	10	690
February	9,404	7,746	1,087	9	562
March	10,110	7,855	1,757	10	488
April	10,509	8,924	1,189	1	395
May	10,267	8,132	1,470	0	665
June	10,541	8,466	1,469	0	605
July	11,109	8,933	1,591	5	580
August	11,365	9,048	1,713	0	605
September	10,470	8,633	1,370	0	467
October	6,894	4,687	1,674	0	533
November	8,511	6,616	1,286	3	606
December	9,311	7,202	1,523	9	577

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Table 5.3.E. Petroleum Coke: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	38,169	0	5,672	236	32,262
2007	38,033	0	4,710	303	33,019
2008	27,100	0	3,441	243	23,416
2009	29,974	0	3,652	213	26,109
2010	31,303	0	2,855	296	28,152
2011	31,943	0	3,244	153	28,546
2012	38,777	0	3,281	315	35,181
2013	40,846	0	2,769	305	37,772
2014	36,602	90	2,597	449	33,467
2015	33,138	255	3,167	446	29,269
2016	32,473	159	3,255	241	28,817
Year 2014					
January	2,965	0	249	44	2,672
February	2,639	18	193	38	2,390
March	3,032	6	235	45	2,745
April	3,348	4	258	42	3,044
May	3,181	4	229	22	2,926
June	3,154	6	4	0	3,145
July	3,232	0	133	6	3,092
August	3,144	1	255	56	2,832
September	3,305	3	256	52	2,995
October	2,374	6	259	39	2,069
November	2,951	34	258	50	2,609
December	3,277	8	268	54	2,947
Year 2015					
January	3,119	13	285	63	2,758
February	2,865	15	248	60	2,542
March	2,952	21	255	53	2,623
April	3,063	15	272	35	2,740
May	2,811	28	275	4	2,504
June	2,637	51	251	0	2,335
July	2,301	16	260	0	2,025
August	2,500	0	256	43	2,201
September	2,877	1	246	57	2,573
October	2,456	12	240	52	2,152
November	3,097	84	277	43	2,693
December	2,459	0	302	35	2,122
Year 2016					
January	2,465	15	306	59	2,085
February	2,806	14	293	51	2,449
March	2,545	13	316	45	2,171
April	2,223	16	194	7	2,007
May	2,829	8	191	0	2,630
June	2,995	7	247	3	2,738
July	2,973	14	265	33	2,661
August	3,031	18	283	0	2,730
September	2,194	14	277	0	1,903
October	2,719	22	302	0	2,395
November	2,872	4	285	4	2,579
December	2,820	13	297	41	2,469

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.3.F. Petroleum Coke: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	246,687	102,117	98,314	269	45,987
2007	208,198	77,941	81,845	348	48,064
2008	180,034	64,843	79,856	280	35,055
2009	166,449	77,919	52,428	245	35,856
2010	173,078	94,331	41,090	340	37,317
2011	176,349	99,257	40,167	173	36,752
2012	144,266	60,862	24,925	353	58,126
2013	179,621	97,626	24,821	343	56,831
2014	160,338	95,731	19,629	508	44,470
2015	146,706	87,465	22,056	505	36,680
2016	150,776	95,051	19,846	288	35,591
Year 2014					
January	15,257	9,793	1,785	49	3,629
February	12,754	7,702	1,743	43	3,265
March	14,901	9,318	1,830	51	3,703
April	11,670	5,679	1,825	48	4,118
May	14,117	8,646	1,614	24	3,832
June	14,837	9,411	1,311	0	4,115
July	14,017	8,297	1,666	7	4,047
August	13,861	8,303	1,708	64	3,787
September	13,900	7,990	2,018	58	3,834
October	8,803	4,908	933	45	2,917
November	11,024	6,325	1,206	57	3,437
December	15,198	9,359	1,991	61	3,787
Year 2015					
January	14,403	8,748	1,865	71	3,718
February	14,442	9,236	1,855	68	3,284
March	10,635	5,380	1,963	60	3,232
April	11,307	5,763	1,930	41	3,574
May	12,224	7,177	1,956	4	3,086
June	11,186	6,512	1,809	0	2,866
July	13,742	9,322	1,923	0	2,497
August	13,332	8,658	1,911	49	2,714
September	13,527	8,321	1,964	64	3,178
October	10,949	6,430	1,836	59	2,624
November	10,560	5,229	2,016	48	3,267
December	10,397	6,687	1,029	40	2,640
Year 2016					
January	12,277	8,666	767	69	2,775
February	12,210	7,759	1,380	60	3,011
March	12,655	7,868	2,072	54	2,660
April	12,732	8,939	1,383	8	2,402
May	13,097	8,140	1,661	0	3,295
June	13,536	8,473	1,716	3	3,343
July	14,082	8,947	1,856	38	3,240
August	14,396	9,066	1,995	0	3,335
September	12,664	8,646	1,647	0	2,371
October	9,613	4,709	1,976	0	2,928
November	11,383	6,620	1,571	7	3,185
December	12,131	7,216	1,820	50	3,046

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
See the Technical Notes for fuel conversion factors.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.4.A. Natural Gas: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	6,461,615	2,478,396	3,412,826	34,623	535,770
2007	7,089,342	2,736,418	3,765,194	34,087	553,643
2008	6,895,843	2,730,134	3,612,197	33,403	520,109
2009	7,121,069	2,911,279	3,655,712	34,279	519,799
2010	7,680,185	3,290,993	3,794,423	39,462	555,307
2011	7,883,865	3,446,087	3,819,107	47,170	571,501
2012	9,484,710	4,101,927	4,686,260	63,116	633,407
2013	8,596,299	3,970,447	3,917,131	66,570	642,152
2014	8,544,387	3,895,008	3,954,032	71,957	623,390
2015	10,016,576	4,745,255	4,576,683	70,092	624,545
2016	10,170,110	5,018,894	4,571,375	46,304	533,537
Year 2014					
January	694,661	324,657	309,522	6,411	54,071
February	579,819	265,645	261,103	5,180	47,892
March	591,101	271,638	263,442	5,292	50,729
April	579,336	270,132	256,256	4,967	47,981
May	680,193	323,448	300,470	5,761	50,513
June	754,126	348,327	349,049	6,119	50,630
July	880,805	393,011	425,395	6,966	55,433
August	935,170	426,346	445,556	7,430	55,839
September	805,960	355,962	391,332	6,396	52,270
October	736,039	323,456	356,020	5,939	50,625
November	633,279	288,760	287,096	5,496	51,927
December	673,898	303,627	308,792	5,999	55,480
Year 2015					
January	745,235	347,151	338,575	5,254	54,254
February	676,139	331,550	293,466	4,643	46,480
March	736,500	348,019	335,606	5,168	47,707
April	692,199	329,693	312,160	4,864	45,483
May	765,715	361,501	350,073	5,514	48,627
June	922,461	447,079	416,030	6,221	53,131
July	1,084,120	510,084	509,399	7,336	57,301
August	1,064,683	496,826	503,679	7,235	56,943
September	930,090	432,653	437,222	6,696	53,518
October	824,878	380,830	386,725	5,943	51,380
November	767,336	366,510	342,625	5,470	52,732
December	807,219	393,358	351,123	5,748	56,990
Year 2016					
January	786,040	390,246	347,970	3,499	44,325
February	702,082	352,877	304,311	3,344	41,550
March	758,344	377,953	333,147	3,493	43,751
April	734,600	362,063	327,542	3,278	41,717
May	819,345	407,178	365,297	3,620	43,251
June	985,722	497,616	439,024	4,109	44,973
July	1,157,589	569,028	535,036	5,188	48,337
August	1,168,337	564,916	549,161	5,384	48,875
September	932,041	451,574	431,159	4,223	45,086
October	760,610	368,087	345,831	3,675	43,017
November	679,004	333,973	298,069	2,944	44,018
December	686,396	343,384	294,829	3,547	44,637

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.4.B. Natural Gas: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	942,817	0	330,878	33,112	578,828
2007	872,579	0	339,796	35,987	496,796
2008	793,537	0	326,048	32,813	434,676
2009	816,787	0	305,542	41,275	469,970
2010	821,775	0	301,769	46,324	473,683
2011	839,681	0	308,669	39,856	491,155
2012	886,103	0	322,607	47,883	515,613
2013	882,385	0	303,177	51,057	528,151
2014	865,146	4,926	292,016	46,635	521,569
2015	935,098	8,060	283,372	46,287	597,379
2016	1,151,866	38,096	356,905	80,943	675,922
Year 2014					
January	87,362	527	28,175	7,205	51,455
February	68,875	539	23,822	3,527	40,988
March	72,690	476	25,252	3,245	43,717
April	67,023	286	22,224	3,085	41,428
May	67,861	224	22,787	3,272	41,578
June	67,490	274	23,101	3,460	40,656
July	72,370	267	24,630	3,749	43,724
August	74,882	441	25,464	4,031	44,946
September	69,772	367	23,285	3,731	42,390
October	71,722	431	23,484	3,776	44,032
November	70,483	534	24,002	3,672	42,274
December	74,615	561	25,790	3,883	44,381
Year 2015					
January	79,075	582	25,015	4,250	49,227
February	73,005	615	22,712	3,906	45,772
March	80,319	512	24,594	4,013	51,201
April	73,041	598	21,826	3,220	47,398
May	72,919	629	22,283	3,475	46,532
June	74,850	589	22,777	3,582	47,901
July	82,339	727	25,332	4,138	52,143
August	83,543	935	25,150	3,973	53,485
September	78,210	731	24,437	4,076	48,965
October	78,745	688	23,297	3,788	50,972
November	77,684	713	22,566	3,845	50,561
December	81,369	743	23,382	4,021	53,223
Year 2016					
January	102,014	3,434	32,304	7,160	59,117
February	92,405	3,264	29,348	6,354	53,439
March	95,161	3,002	30,664	6,298	55,197
April	88,634	2,286	27,002	6,104	53,241
May	92,471	2,888	29,069	6,096	54,418
June	96,618	3,649	30,019	6,907	56,043
July	102,867	3,805	32,099	8,142	58,821
August	105,025	3,723	33,436	8,377	59,489
September	95,330	2,973	29,581	6,850	55,926
October	92,360	2,740	27,138	6,125	56,357
November	90,321	2,812	27,191	5,773	54,544
December	98,660	3,520	29,054	6,758	59,328

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.4.C. Natural Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	7,404,432	2,478,396	3,743,704	67,735	1,114,597
2007	7,961,922	2,736,418	4,104,991	70,074	1,050,439
2008	7,689,380	2,730,134	3,938,245	66,216	954,785
2009	7,937,856	2,911,279	3,961,254	75,555	989,769
2010	8,501,960	3,290,993	4,096,192	85,786	1,028,990
2011	8,723,546	3,446,087	4,127,777	87,026	1,062,657
2012	10,370,812	4,101,927	5,008,867	110,999	1,149,020
2013	9,478,685	3,970,447	4,220,309	117,626	1,170,303
2014	9,409,532	3,899,934	4,246,048	118,591	1,144,959
2015	10,951,674	4,753,315	4,860,055	116,380	1,221,924
2016	11,321,975	5,056,990	4,928,280	127,246	1,209,459
Year 2014					
January	782,023	325,184	337,697	13,616	105,526
February	648,695	266,184	284,925	8,706	88,880
March	663,791	272,114	288,694	8,537	94,446
April	646,360	270,418	278,481	8,052	89,409
May	748,053	323,672	323,257	9,033	92,091
June	821,616	348,601	372,150	9,580	91,286
July	953,174	393,278	450,025	10,715	99,157
August	1,010,052	426,786	471,019	11,461	100,785
September	875,732	356,329	414,618	10,126	94,659
October	807,761	323,887	379,503	9,715	94,657
November	703,762	289,294	311,098	9,169	94,202
December	748,513	304,188	334,581	9,883	99,861
Year 2015					
January	824,310	347,733	363,591	9,504	103,482
February	749,144	332,165	316,178	8,549	92,252
March	816,819	348,531	360,200	9,180	98,908
April	765,240	330,291	333,985	8,084	92,881
May	838,634	362,129	372,356	8,989	95,159
June	997,311	447,668	438,807	9,804	101,032
July	1,166,459	510,811	534,731	11,474	109,444
August	1,148,226	497,761	528,829	11,208	110,428
September	1,008,300	433,385	461,659	10,772	102,484
October	903,623	381,518	410,022	9,731	102,351
November	845,020	367,223	365,190	9,315	103,292
December	888,588	394,101	374,505	9,769	110,212
Year 2016					
January	888,054	393,680	380,273	10,658	103,442
February	794,487	356,141	333,659	9,697	94,990
March	853,505	380,955	363,811	9,791	98,949
April	823,234	364,349	354,544	9,383	94,958
May	911,816	410,066	394,365	9,716	97,669
June	1,082,340	501,265	469,043	11,016	101,016
July	1,260,455	572,833	567,135	13,330	107,158
August	1,273,362	568,640	582,596	13,761	108,365
September	1,027,371	454,547	460,740	11,073	101,012
October	852,970	370,827	372,969	9,800	99,374
November	769,325	336,785	325,260	8,716	98,563
December	785,056	346,904	323,883	10,305	103,965

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.4.D. Natural Gas: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	6,643,926	2,546,169	3,508,597	35,473	553,687
2007	7,287,714	2,808,500	3,872,646	34,872	571,697
2008	7,087,191	2,803,283	3,712,872	34,138	536,899
2009	7,301,522	2,981,285	3,750,080	35,046	535,111
2010	7,852,665	3,359,035	3,882,995	40,356	570,279
2011	8,052,309	3,511,732	3,906,484	48,509	585,584
2012	9,696,575	4,179,725	4,802,741	64,987	649,122
2013	8,813,288	4,059,838	4,026,793	67,918	658,740
2014	8,795,303	4,001,826	4,076,787	74,194	642,495
2015	10,360,990	4,905,009	4,739,438	71,929	644,615
2016	10,515,826	5,189,543	4,728,444	47,550	550,288
Year 2014					
January	712,739	332,236	318,202	6,617	55,685
February	595,093	272,135	268,359	5,324	49,275
March	606,450	277,717	271,095	5,444	52,194
April	594,458	276,418	263,616	5,108	49,315
May	699,321	331,772	309,525	5,951	52,074
June	775,917	357,324	360,122	6,313	52,157
July	907,414	404,309	438,809	7,174	57,122
August	964,381	438,925	460,152	7,674	57,630
September	831,074	366,740	403,853	6,591	53,890
October	758,982	333,256	367,397	6,129	52,199
November	653,369	297,748	296,324	5,676	53,621
December	696,105	313,245	319,334	6,193	57,333
Year 2015					
January	769,742	358,190	350,122	5,392	56,037
February	698,432	342,020	303,698	4,773	47,941
March	760,323	358,769	347,035	5,302	49,217
April	716,099	340,500	323,696	4,994	46,909
May	792,174	373,581	362,718	5,657	50,218
June	955,116	462,643	431,141	6,378	54,954
July	1,122,760	528,459	527,544	7,524	59,233
August	1,101,434	513,804	521,449	7,411	58,770
September	962,814	447,835	452,875	6,867	55,237
October	853,062	393,697	400,278	6,092	52,995
November	793,593	378,610	355,000	5,629	54,355
December	835,443	406,902	363,882	5,911	58,749
Year 2016					
January	812,780	402,563	360,873	3,597	45,746
February	726,533	365,074	315,091	3,438	42,930
March	784,564	391,226	344,643	3,579	45,116
April	759,120	373,838	338,893	3,365	43,024
May	846,265	420,742	377,249	3,713	44,562
June	1,017,430	513,721	453,168	4,214	46,327
July	1,195,692	587,361	553,161	5,330	49,841
August	1,210,345	585,541	568,729	5,538	50,537
September	965,184	467,729	446,538	4,339	46,577
October	786,171	380,558	357,472	3,777	44,364
November	701,839	345,822	307,682	3,026	45,309
December	709,903	355,368	304,945	3,635	45,955

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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.4.E. Natural Gas: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	968,574	0	339,047	33,928	595,599
2007	894,272	0	347,181	36,689	510,402
2008	813,794	0	333,197	33,434	447,163
2009	836,863	0	312,553	42,032	482,279
2010	841,521	0	308,246	47,001	486,274
2011	861,006	0	315,411	40,976	504,619
2012	909,087	0	330,354	48,944	529,788
2013	905,583	0	311,058	51,939	542,587
2014	891,994	5,033	300,870	47,579	538,514
2015	965,573	8,254	292,629	47,573	617,118
2016	1,188,399	39,123	367,919	83,938	697,418
Year 2014					
January	89,681	541	28,928	7,283	52,929
February	70,790	552	24,446	3,600	42,192
March	74,801	467	25,959	3,309	45,066
April	68,948	292	22,805	3,150	42,701
May	70,016	228	23,476	3,344	42,968
June	69,612	280	23,804	3,531	41,997
July	74,748	276	25,408	3,830	45,233
August	77,399	455	26,291	4,125	46,528
September	72,014	379	24,029	3,815	43,791
October	74,034	441	24,258	3,863	45,472
November	72,787	548	24,809	3,756	43,674
December	77,162	572	26,657	3,971	45,961
Year 2015					
January	81,639	593	25,823	4,355	50,868
February	75,313	628	23,427	4,001	47,257
March	82,901	524	25,415	4,119	52,843
April	75,388	613	22,542	3,304	48,928
May	75,351	641	23,007	3,563	48,139
June	77,455	600	23,573	3,690	49,592
July	85,250	750	26,202	4,262	54,036
August	86,315	953	26,022	4,091	55,249
September	80,778	749	25,235	4,196	50,598
October	81,246	703	24,051	3,891	52,600
November	80,037	734	23,223	3,959	52,120
December	83,900	766	24,107	4,139	54,887
Year 2016					
January	105,274	3,537	33,363	7,427	60,947
February	95,395	3,362	30,296	6,587	55,150
March	98,046	3,090	31,506	6,524	56,926
April	91,393	2,345	27,822	6,324	54,902
May	95,279	2,955	29,897	6,316	56,111
June	99,552	3,743	30,879	7,157	57,772
July	106,090	3,910	33,077	8,441	60,662
August	108,667	3,840	34,596	8,693	61,539
September	98,533	3,049	30,593	7,109	57,782
October	95,307	2,804	27,973	6,357	58,173
November	93,097	2,876	27,953	5,992	56,275
December	101,767	3,612	29,964	7,012	61,179

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.4.F. Natural Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	7,612,500	2,546,169	3,847,644	69,401	1,149,286
2007	8,181,986	2,808,500	4,219,827	71,560	1,082,099
2008	7,900,986	2,803,283	4,046,069	67,571	984,062
2009	8,138,385	2,981,285	4,062,633	77,077	1,017,390
2010	8,694,186	3,359,035	4,191,241	87,357	1,056,553
2011	8,913,315	3,511,732	4,221,895	89,485	1,090,203
2012	10,605,661	4,179,725	5,133,095	113,932	1,178,910
2013	9,718,871	4,059,838	4,337,851	119,857	1,201,326
2014	9,687,297	4,006,859	4,377,657	121,773	1,181,009
2015	11,326,564	4,913,263	5,032,066	119,502	1,261,732
2016	11,704,224	5,228,667	5,096,363	131,489	1,247,706
Year 2014					
January	802,421	332,777	347,130	13,900	108,614
February	665,884	272,687	292,806	8,924	91,468
March	681,251	278,184	297,053	8,753	97,260
April	663,406	276,710	286,421	8,258	92,017
May	769,337	332,000	333,000	9,294	95,042
June	845,529	357,604	383,926	9,845	94,154
July	982,162	404,585	464,217	11,004	102,356
August	1,041,780	439,380	486,443	11,799	104,158
September	903,089	367,120	427,881	10,407	97,681
October	833,016	333,697	391,655	9,992	97,671
November	726,156	298,296	321,133	9,432	97,295
December	773,267	313,817	345,991	10,165	103,294
Year 2015					
January	851,381	358,783	375,946	9,747	106,905
February	773,745	342,649	327,125	8,773	95,198
March	843,224	359,293	372,449	9,422	102,060
April	791,486	341,113	346,238	8,298	95,838
May	867,525	374,222	385,725	9,221	98,357
June	1,032,571	463,242	454,714	10,068	104,546
July	1,208,010	529,209	553,746	11,786	113,269
August	1,187,749	514,757	547,471	11,501	114,019
September	1,043,593	448,583	478,110	11,064	105,835
October	934,308	394,400	424,329	9,984	105,595
November	873,630	379,344	378,223	9,588	106,474
December	919,343	407,668	387,990	10,050	113,636
Year 2016					
January	918,053	406,100	394,236	11,024	106,693
February	821,928	368,437	345,386	10,025	98,080
March	882,609	394,316	376,149	10,103	102,041
April	850,513	376,184	366,715	9,689	97,926
May	941,544	423,696	407,146	10,028	100,674
June	1,116,982	517,465	484,047	11,371	104,099
July	1,301,782	591,270	586,238	13,771	110,503
August	1,319,012	589,381	603,325	14,230	112,076
September	1,063,717	470,778	477,131	11,449	104,359
October	881,478	383,362	385,445	10,134	102,537
November	794,936	348,698	335,635	9,018	101,584
December	811,670	358,980	334,909	10,647	107,134

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.5.D. Wood / Wood Waste Biomass: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	350,074	27,455	135,546	269	186,803
2007	353,025	31,568	132,953	284	188,220
2008	338,786	29,150	130,122	287	179,227
2009	320,444	29,565	130,894	274	159,712
2010	349,530	40,167	137,072	274	172,016
2011	347,623	35,474	130,108	482	181,559
2012	390,342	32,723	138,217	478	218,924
2013	397,929	43,363	143,721	536	210,308
2014	431,285	45,643	174,513	961	210,167
2015	406,650	43,919	171,387	504	190,840
2016	359,983	41,036	149,516	473	168,959
Year 2014					
January	37,135	4,268	14,488	150	18,228
February	33,670	3,805	13,442	125	16,298
March	36,751	4,396	14,837	87	17,430
April	31,558	2,624	12,884	43	16,007
May	32,416	2,959	12,100	67	17,290
June	37,105	3,977	15,346	124	17,658
July	39,028	4,052	16,069	81	18,827
August	38,477	4,275	15,672	69	18,461
September	35,553	3,720	14,839	54	16,940
October	35,086	3,777	13,871	64	17,375
November	36,209	3,715	15,424	46	17,025
December	38,296	4,075	15,542	51	18,628
Year 2015					
January	36,170	4,203	15,139	53	16,775
February	33,328	3,574	14,696	51	15,007
March	33,569	3,459	14,639	41	15,430
April	31,142	2,361	13,300	48	15,433
May	32,373	3,394	13,359	54	15,567
June	33,871	3,817	14,521	25	15,508
July	36,954	4,615	15,335	62	16,942
August	37,027	4,529	15,927	30	16,541
September	33,522	3,464	14,011	42	16,005
October	30,952	3,269	12,065	42	15,577
November	32,840	3,484	13,457	20	15,880
December	34,900	3,750	14,939	35	16,176
Year 2016					
January	31,835	4,082	13,250	40	14,463
February	30,721	3,797	13,249	41	13,634
March	30,380	3,388	13,073	23	13,897
April	25,323	2,547	10,177	31	12,569
May	26,827	2,497	10,522	14	13,794
June	29,961	3,835	11,762	59	14,305
July	32,167	4,067	13,230	51	14,818
August	33,526	4,113	14,559	72	14,782
September	30,502	3,489	13,145	51	13,817
October	27,598	2,574	11,139	29	13,857
November	29,176	2,597	12,211	20	14,349
December	31,967	4,051	13,200	42	14,674

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.5.E. Wood / Wood Waste Biomass: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	1,049,161	0	18,814	1,045	1,029,303
2007	982,486	0	21,435	1,756	959,296
2008	923,889	0	18,075	1,123	904,690
2009	816,285	0	19,587	1,135	795,563
2010	876,041	0	18,357	1,064	856,620
2011	893,314	0	16,577	1,022	875,716
2012	883,158	0	19,251	949	862,958
2013	919,631	0	20,342	950	898,339
2014	946,344	8,835	22,262	3,766	911,481
2015	943,962	9,351	19,200	3,714	911,697
2016	969,841	10,950	22,905	4,520	931,465
Year 2014					
January	80,405	649	1,975	311	77,469
February	73,581	733	1,988	271	70,589
March	80,081	875	2,027	342	76,837
April	77,233	678	1,914	246	74,395
May	76,839	773	1,454	338	74,274
June	79,101	683	1,848	400	76,170
July	80,733	767	1,876	351	77,739
August	82,539	722	1,908	346	79,564
September	76,170	573	1,706	296	73,596
October	78,477	737	1,894	285	75,561
November	78,316	728	1,738	271	75,578
December	82,869	916	1,935	309	79,709
Year 2015					
January	84,431	912	1,877	388	81,254
February	75,501	897	1,754	371	72,478
March	77,437	822	1,688	320	74,607
April	77,369	538	1,622	300	74,909
May	79,154	742	936	146	77,329
June	77,486	796	1,477	273	74,940
July	80,499	768	1,635	384	77,711
August	81,262	782	1,727	295	78,459
September	77,136	694	1,765	327	74,350
October	75,247	739	1,386	273	72,849
November	77,481	741	1,513	295	74,932
December	80,959	919	1,819	342	77,880
Year 2016					
January	84,483	1,087	2,270	460	80,665
February	79,157	1,150	2,299	415	75,293
March	79,225	1,084	1,926	288	75,928
April	74,954	732	1,780	353	72,089
May	78,419	949	1,753	280	75,437
June	79,180	707	1,832	415	76,225
July	80,796	943	1,826	384	77,644
August	81,164	931	1,794	442	77,998
September	75,314	513	1,918	395	72,488
October	76,347	508	1,450	347	74,041
November	80,391	1,132	1,898	340	77,021
December	100,410	1,214	2,159	401	96,636

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.5.F. Wood / Wood Waste Biomass: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	1,399,235	27,455	154,360	1,314	1,216,106
2007	1,335,511	31,568	154,388	2,040	1,147,516
2008	1,262,675	29,150	148,198	1,410	1,083,917
2009	1,136,729	29,565	150,481	1,408	955,276
2010	1,225,571	40,167	155,429	1,338	1,028,637
2011	1,240,937	35,474	146,684	1,504	1,057,275
2012	1,273,500	32,723	157,468	1,427	1,081,882
2013	1,317,560	43,363	164,063	1,486	1,108,647
2014	1,377,629	54,478	196,775	4,727	1,121,648
2015	1,350,612	53,269	190,587	4,219	1,102,537
2016	1,329,824	51,986	172,421	4,993	1,100,424
Year 2014					
January	117,540	4,918	16,463	461	95,698
February	107,251	4,538	15,430	395	86,888
March	116,832	5,272	16,864	430	94,267
April	108,791	3,302	14,798	290	90,402
May	109,255	3,732	13,554	405	91,564
June	116,206	4,661	17,194	524	93,828
July	119,761	4,818	17,945	432	96,566
August	121,016	4,997	17,579	415	98,025
September	111,723	4,292	16,545	350	90,537
October	113,563	4,514	15,765	348	92,936
November	114,524	4,443	17,162	317	92,603
December	121,165	4,991	17,477	360	98,337
Year 2015					
January	120,602	5,115	17,017	441	98,029
February	108,829	4,471	16,450	422	87,485
March	111,006	4,281	16,327	361	90,036
April	108,511	2,899	14,922	348	90,342
May	111,527	4,136	14,295	200	92,896
June	111,358	4,613	15,998	299	90,448
July	117,453	5,384	16,970	446	94,653
August	118,289	5,311	17,653	325	95,000
September	110,658	4,158	15,776	369	90,355
October	106,199	4,007	13,451	315	88,426
November	110,321	4,225	14,970	315	90,811
December	115,859	4,669	16,757	377	94,056
Year 2016					
January	116,318	5,169	15,520	500	95,128
February	109,878	4,947	15,548	456	88,928
March	109,606	4,471	14,999	311	89,825
April	100,276	3,279	11,956	384	84,657
May	105,246	3,446	12,275	294	89,231
June	109,140	4,542	13,594	474	90,530
July	112,964	5,010	15,056	435	92,462
August	114,690	5,044	16,353	514	92,780
September	105,816	4,002	15,063	446	86,306
October	103,946	3,083	12,589	376	87,898
November	109,567	3,729	14,108	360	91,370
December	132,377	5,265	15,360	443	111,310

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Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.6.A. Landfill Gas: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	160,033	16,617	136,108	6,644	664
2007	166,774	17,442	144,104	4,598	630
2008	195,777	20,465	169,547	5,235	530
2009	206,792	19,583	180,689	5,931	589
2010	218,331	19,975	192,428	5,535	393
2011	232,795	22,086	180,856	29,469	384
2012	256,376	25,193	201,965	26,672	2,545
2013	271,967	27,259	211,942	28,143	4,623
2014	285,982	25,819	228,447	27,038	4,678
2015	282,530	25,257	227,381	25,250	4,642
2016	273,557	24,280	224,993	20,445	3,839
Year 2014					
January	24,810	2,187	19,717	2,506	401
February	23,764	1,997	19,121	2,289	357
March	24,623	2,107	19,714	2,388	414
April	24,489	2,133	19,679	2,260	416
May	24,111	2,136	19,380	2,190	404
June	24,096	2,173	19,233	2,294	396
July	26,390	2,372	21,117	2,498	404
August	25,163	2,332	20,037	2,403	391
September	23,690	2,143	18,898	2,290	359
October	21,697	2,148	17,099	2,092	358
November	20,698	2,030	16,561	1,723	385
December	22,451	2,062	17,892	2,105	393
Year 2015					
January	22,341	2,166	17,669	2,131	375
February	19,907	1,894	15,857	1,843	313
March	22,993	2,187	18,282	2,152	372
April	23,039	2,153	18,422	2,078	386
May	23,827	2,070	19,235	2,148	374
June	23,305	2,066	18,720	2,146	372
July	25,727	2,228	20,794	2,293	413
August	24,507	2,120	19,753	2,227	407
September	23,326	2,004	18,828	2,108	387
October	23,435	2,081	18,967	1,989	398
November	24,602	2,123	20,052	2,020	408
December	25,520	2,165	20,803	2,115	438
Year 2016					
January	22,612	2,036	18,360	1,865	351
February	21,859	2,088	17,744	1,705	323
March	23,337	2,187	19,021	1,786	343
April	22,556	2,080	18,805	1,340	331
May	23,744	2,120	19,554	1,717	354
June	22,668	1,896	18,683	1,768	320
July	23,052	1,950	19,047	1,734	321
August	23,038	2,011	18,978	1,726	324
September	21,757	2,010	17,792	1,678	278
October	20,377	1,922	16,583	1,610	263
November	24,047	1,941	20,036	1,762	307
December	24,510	2,041	20,392	1,753	324

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.6.B. Landfill Gas: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	2,051	0	525	1,094	433
2007	1,988	0	386	1,102	501
2008	1,025	0	454	433	138
2009	793	0	545	176	72
2010	1,623	0	1,195	370	58
2011	3,195	0	2,753	351	91
2012	3,189	0	2,788	340	61
2013	831	0	261	423	147
2014	1,710	176	525	674	335
2015	1,522	2	644	515	362
2016	4,163	3	2,339	1,034	788
Year 2014					
January	169	20	62	61	25
February	148	18	64	44	23
March	132	19	41	44	27
April	137	19	28	60	30
May	144	19	33	64	29
June	154	17	54	54	29
July	179	14	70	64	30
August	161	15	62	55	30
September	140	14	47	51	28
October	101	2	21	53	25
November	112	3	17	64	29
December	132	15	26	61	30
Year 2015					
January	105	0	34	42	29
February	102	0	40	37	24
March	131	0	54	47	30
April	128	0	50	47	31
May	125	0	49	45	31
June	119	0	42	46	30
July	151	0	72	47	32
August	123	0	60	31	32
September	132	0	54	47	31
October	111	0	45	36	30
November	143	0	68	45	30
December	152	0	76	45	31
Year 2016					
January	352	0	202	84	66
February	340	0	189	86	65
March	358	0	196	86	75
April	355	0	201	88	66
May	356	0	194	90	72
June	344	0	193	85	66
July	335	0	181	87	66
August	332	0	181	82	68
September	327	0	187	81	59
October	301	0	157	87	56
November	378	0	227	86	66
December	387	0	230	91	65

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.6.C. Landfill Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Million Cubic Feet)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	162,084	16,617	136,632	7,738	1,096
2007	168,762	17,442	144,490	5,699	1,131
2008	196,802	20,465	170,001	5,668	668
2009	207,585	19,583	181,234	6,106	661
2010	219,954	19,975	193,623	5,905	451
2011	235,990	22,086	183,609	29,820	474
2012	259,564	25,193	204,753	27,012	2,606
2013	272,798	27,259	212,203	28,566	4,770
2014	287,692	25,995	228,971	27,713	5,013
2015	284,052	25,259	228,024	25,765	5,004
2016	277,720	24,283	227,332	21,479	4,626
Year 2014					
January	24,980	2,207	19,779	2,567	426
February	23,912	2,014	19,185	2,334	379
March	24,755	2,126	19,755	2,432	442
April	24,625	2,152	19,708	2,320	446
May	24,255	2,155	19,413	2,254	433
June	24,250	2,190	19,287	2,348	425
July	26,569	2,386	21,187	2,561	434
August	25,324	2,347	20,099	2,458	421
September	23,830	2,158	18,944	2,341	387
October	21,798	2,150	17,119	2,145	383
November	20,811	2,033	16,578	1,786	414
December	22,584	2,077	17,918	2,166	423
Year 2015					
January	22,445	2,166	17,702	2,173	404
February	20,009	1,894	15,897	1,881	337
March	23,125	2,187	18,336	2,199	401
April	23,167	2,153	18,473	2,125	417
May	23,952	2,070	19,283	2,193	405
June	23,424	2,066	18,763	2,192	403
July	25,877	2,228	20,865	2,340	445
August	24,630	2,120	19,813	2,258	439
September	23,458	2,004	18,881	2,155	418
October	23,546	2,081	19,012	2,025	428
November	24,746	2,124	20,120	2,064	438
December	25,672	2,165	20,878	2,160	469
Year 2016					
January	22,964	2,036	18,562	1,949	417
February	22,200	2,088	17,933	1,791	388
March	23,694	2,187	19,217	1,873	417
April	22,911	2,081	19,005	1,428	397
May	24,100	2,120	19,748	1,807	425
June	23,012	1,896	18,876	1,853	386
July	23,387	1,950	19,229	1,822	386
August	23,370	2,011	19,159	1,808	392
September	22,084	2,010	17,978	1,759	337
October	20,678	1,922	16,740	1,697	319
November	24,425	1,941	20,263	1,848	373
December	24,897	2,042	20,622	1,845	388

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.6.D. Landfill Gas: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	75,970	8,287	63,950	3,388	345
2007	79,712	8,620	68,432	2,344	316
2008	94,215	10,242	81,029	2,668	276
2009	99,821	9,748	86,773	2,999	301
2010	105,835	10,029	92,763	2,837	205
2011	112,538	11,146	89,857	11,332	203
2012	124,297	12,721	99,938	10,356	1,282
2013	132,766	13,819	105,330	11,290	2,327
2014	140,779	13,132	114,333	10,937	2,377
2015	138,085	12,846	112,911	10,023	2,304
2016	135,365	12,294	112,770	8,374	1,927
Year 2014					
January	12,152	1,109	9,831	1,008	204
February	11,686	1,014	9,561	930	181
March	12,101	1,072	9,862	956	211
April	12,040	1,085	9,843	902	211
May	11,900	1,097	9,725	872	206
June	11,873	1,101	9,633	937	201
July	13,072	1,217	10,609	1,041	206
August	12,414	1,186	10,047	982	199
September	11,663	1,091	9,452	936	183
October	10,659	1,091	8,549	837	182
November	10,192	1,028	8,267	703	194
December	11,028	1,042	8,954	832	200
Year 2015					
January	10,849	1,090	8,760	813	186
February	9,679	941	7,865	718	155
March	11,199	1,102	9,083	830	184
April	11,239	1,102	9,140	806	191
May	11,627	1,075	9,524	842	186
June	11,382	1,033	9,308	856	185
July	12,622	1,139	10,345	932	205
August	11,994	1,091	9,809	892	202
September	11,418	1,034	9,345	846	192
October	11,451	1,060	9,394	799	197
November	12,101	1,086	9,985	827	203
December	12,525	1,094	10,353	861	218
Year 2016					
January	11,143	1,023	9,214	730	176
February	10,782	1,051	8,890	678	162
March	11,544	1,101	9,557	714	172
April	11,219	1,052	9,426	575	166
May	11,762	1,083	9,791	710	178
June	11,246	967	9,385	732	161
July	11,426	997	9,561	707	161
August	11,380	1,007	9,500	711	163
September	10,722	1,004	8,889	690	139
October	10,089	978	8,327	652	132
November	11,925	985	10,041	745	154
December	12,127	1,047	10,190	728	163

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.6.E. Landfill Gas: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	1,034	0	267	549	218
2007	985	0	226	532	228
2008	552	0	271	211	70
2009	440	0	313	91	37
2010	847	0	643	174	30
2011	1,635	0	1,422	165	48
2012	1,630	0	1,441	156	32
2013	414	0	132	206	76
2014	852	88	266	326	173
2015	756	1	326	250	179
2016	2,236	1	1,266	589	380
Year 2014					
January	85	10	32	30	13
February	75	9	32	23	12
March	67	10	21	23	14
April	68	9	14	29	15
May	72	10	17	30	15
June	77	9	28	26	15
July	88	7	36	30	16
August	80	8	31	26	15
September	69	7	24	24	15
October	50	1	11	25	13
November	56	1	9	31	15
December	66	8	13	29	16
Year 2015					
January	52	0	17	21	14
February	51	0	21	19	12
March	65	0	28	22	15
April	64	0	26	23	15
May	62	0	25	22	15
June	58	0	21	22	15
July	75	0	36	22	16
August	62	0	31	16	16
September	65	0	27	23	15
October	56	0	23	18	15
November	70	0	34	21	15
December	75	0	38	21	16
Year 2016					
January	190	0	109	49	32
February	182	0	102	49	31
March	189	0	105	48	36
April	194	0	111	51	32
May	192	0	106	52	34
June	185	0	105	48	32
July	178	0	96	50	32
August	176	0	97	46	33
September	174	0	100	46	28
October	157	0	80	50	27
November	208	0	127	48	32
December	211	0	127	52	31

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.6.F. Landfill Gas: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	77,004	8,287	64,217	3,937	563
2007	80,697	8,620	68,657	2,875	544
2008	94,768	10,242	81,300	2,879	346
2009	100,261	9,748	87,086	3,089	337
2010	106,681	10,029	93,405	3,011	236
2011	114,173	11,146	91,279	11,497	251
2012	125,927	12,721	101,379	10,512	1,315
2013	133,180	13,819	105,462	11,497	2,403
2014	141,632	13,220	114,599	11,263	2,550
2015	138,841	12,847	113,238	10,273	2,483
2016	137,600	12,295	114,036	8,963	2,307
Year 2014					
January	12,237	1,119	9,863	1,038	217
February	11,761	1,023	9,593	953	192
March	12,168	1,082	9,883	979	225
April	12,109	1,094	9,857	931	227
May	11,972	1,107	9,742	902	221
June	11,950	1,110	9,661	962	216
July	13,160	1,224	10,644	1,071	221
August	12,495	1,193	10,078	1,008	215
September	11,732	1,098	9,476	960	198
October	10,709	1,092	8,560	863	195
November	10,247	1,029	8,275	734	209
December	11,093	1,050	8,967	861	215
Year 2015					
January	10,901	1,090	8,777	834	200
February	9,730	941	7,885	737	167
March	11,264	1,102	9,111	852	199
April	11,302	1,102	9,165	829	206
May	11,689	1,075	9,549	865	201
June	11,440	1,033	9,329	878	200
July	12,696	1,139	10,382	955	221
August	12,056	1,091	9,840	908	218
September	11,483	1,034	9,373	869	207
October	11,507	1,060	9,417	817	212
November	12,171	1,086	10,019	848	218
December	12,601	1,094	10,391	882	233
Year 2016					
January	11,333	1,023	9,323	779	208
February	10,964	1,051	8,992	728	194
March	11,733	1,101	9,661	762	208
April	11,413	1,052	9,537	626	198
May	11,954	1,083	9,897	762	212
June	11,431	967	9,491	781	192
July	11,604	997	9,657	757	193
August	11,556	1,007	9,597	757	195
September	10,896	1,004	8,988	736	168
October	10,246	978	8,408	701	159
November	12,133	985	10,168	794	186
December	12,338	1,047	10,317	780	194

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.7.A. Biogenic Municipal Solid Waste: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	19,629	500	17,343	1,761	25
2007	19,576	553	17,116	1,785	122
2008	19,805	509	17,487	1,809	0
2009	19,669	465	17,048	2,155	0
2010	19,437	402	16,802	2,233	0
2011	16,972	388	14,625	1,955	4
2012	16,968	418	14,235	2,304	12
2013	17,007	456	14,057	2,485	8
2014	16,706	444	13,809	2,447	6
2015	16,631	452	13,797	2,375	8
2016	16,994	464	13,953	2,566	11
Year 2014					
January	1,381	28	1,131	221	0
February	1,205	24	1,014	166	0
March	1,390	38	1,165	187	0
April	1,371	44	1,127	200	0
May	1,455	42	1,200	214	1
June	1,418	40	1,170	207	1
July	1,489	44	1,224	220	1
August	1,469	38	1,210	220	1
September	1,384	38	1,141	205	1
October	1,374	40	1,133	200	0
November	1,373	32	1,139	201	0
December	1,397	36	1,155	205	1
Year 2015					
January	1,335	31	1,114	190	0
February	1,212	24	1,020	168	0
March	1,310	28	1,088	194	0
April	1,315	41	1,077	196	1
May	1,380	45	1,136	199	1
June	1,417	44	1,168	205	1
July	1,540	46	1,274	219	1
August	1,491	43	1,239	208	1
September	1,388	43	1,139	206	1
October	1,383	38	1,157	187	1
November	1,389	34	1,153	202	1
December	1,471	36	1,232	202	1
Year 2016					
January	1,398	34	1,161	202	1
February	1,283	27	1,081	174	1
March	1,344	41	1,091	211	1
April	1,413	40	1,153	219	1
May	1,463	44	1,205	214	1
June	1,468	40	1,202	225	1
July	1,486	37	1,212	236	1
August	1,509	42	1,233	233	1
September	1,397	43	1,142	210	1
October	1,378	37	1,127	213	1
November	1,379	39	1,127	212	1
December	1,476	38	1,220	218	0

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Table 5.7.B. Biogenic Municipal Solid Waste: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	2,840	0	725	1,595	520
2007	2,219	0	768	1,136	315
2008	2,328	0	806	1,514	8
2009	2,426	0	823	1,466	137
2010	2,287	0	819	1,316	152
2011	2,044	0	742	1,148	154
2012	1,986	0	522	1,273	190
2013	1,865	0	517	1,160	187
2014	1,955	0	650	1,104	200
2015	1,986	0	655	1,127	203
2016	2,232	0	885	1,134	213
Year 2014					
January	203	0	59	126	17
February	140	0	49	76	15
March	154	0	52	86	15
April	155	0	58	82	15
May	166	0	57	92	18
June	163	0	57	90	16
July	164	0	54	93	17
August	161	0	47	92	22
September	157	0	48	92	18
October	165	0	56	93	17
November	158	0	55	88	15
December	169	0	59	93	17
Year 2015					
January	180	0	67	95	19
February	147	0	48	83	16
March	172	0	59	96	17
April	162	0	53	92	17
May	164	0	49	99	16
June	154	0	47	90	17
July	170	0	55	99	17
August	164	0	55	91	18
September	162	0	49	95	18
October	169	0	57	94	17
November	166	0	56	96	14
December	174	0	61	96	17
Year 2016					
January	191	0	80	92	18
February	189	0	87	88	14
March	219	0	96	104	19
April	181	0	65	98	18
May	182	0	70	96	17
June	172	0	73	81	18
July	186	0	74	96	16
August	191	0	71	96	23
September	176	0	64	95	18
October	179	0	65	95	19
November	180	0	68	94	17
December	185	0	71	98	16

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.7.C. Biogenic Municipal Solid Waste: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Thousand Tons)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	22,469	500	18,068	3,356	545
2007	21,796	553	17,885	2,921	437
2008	22,134	509	18,294	3,323	8
2009	22,095	465	17,872	3,622	137
2010	21,725	402	17,621	3,549	152
2011	19,016	388	15,367	3,103	158
2012	18,954	418	14,757	3,577	203
2013	18,871	456	14,574	3,646	195
2014	18,661	444	14,459	3,551	206
2015	18,617	452	14,452	3,502	211
2016	19,226	464	14,838	3,700	224
Year 2014					
January	1,584	28	1,190	347	18
February	1,345	24	1,063	242	15
March	1,544	38	1,217	273	16
April	1,526	44	1,184	283	15
May	1,622	42	1,256	306	18
June	1,581	40	1,227	297	17
July	1,653	44	1,279	313	18
August	1,629	38	1,257	312	22
September	1,541	38	1,188	297	18
October	1,540	40	1,189	293	17
November	1,531	32	1,194	289	15
December	1,566	36	1,214	299	17
Year 2015					
January	1,515	31	1,181	284	19
February	1,359	24	1,068	250	16
March	1,482	28	1,147	290	18
April	1,477	41	1,130	289	17
May	1,544	45	1,185	298	17
June	1,571	44	1,214	296	18
July	1,710	46	1,329	318	18
August	1,655	43	1,294	299	19
September	1,551	43	1,188	301	19
October	1,551	38	1,215	281	18
November	1,555	34	1,209	297	15
December	1,645	36	1,293	298	18
Year 2016					
January	1,589	34	1,241	295	19
February	1,472	27	1,167	262	15
March	1,563	41	1,188	315	19
April	1,594	40	1,218	317	18
May	1,646	44	1,274	310	18
June	1,640	40	1,275	305	19
July	1,673	37	1,286	332	17
August	1,700	42	1,304	330	25
September	1,573	43	1,206	305	19
October	1,557	37	1,192	308	20
November	1,559	39	1,195	306	18
December	1,661	38	1,291	316	16

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report.

Table 5.7.D. Biogenic Municipal Solid Waste: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	146,987	4,078	129,779	12,964	165
2007	146,308	4,557	127,826	13,043	881
2008	148,452	4,476	130,041	13,934	0
2009	146,971	3,989	126,649	16,333	0
2010	144,934	3,322	124,437	17,176	0
2011	135,241	3,433	115,841	15,933	34
2012	135,735	3,910	113,418	18,307	100
2013	135,764	4,459	111,430	19,811	64
2014	134,408	4,429	110,569	19,366	45
2015	133,117	4,295	109,691	19,068	63
2016	135,957	4,434	111,003	20,431	89
Year 2014					
January	11,151	274	9,110	1,764	3
February	9,655	237	8,128	1,287	3
March	11,231	457	9,297	1,474	3
April	11,034	448	9,007	1,578	1
May	11,678	397	9,596	1,680	5
June	11,426	411	9,379	1,632	5
July	11,996	428	9,825	1,737	6
August	11,822	357	9,715	1,745	5
September	11,120	379	9,098	1,638	4
October	11,026	361	9,056	1,605	3
November	11,072	302	9,151	1,616	3
December	11,198	377	9,206	1,609	5
Year 2015					
January	10,811	282	8,993	1,531	5
February	9,765	232	8,180	1,350	3
March	10,467	263	8,659	1,542	3
April	10,583	400	8,612	1,567	4
May	11,137	434	9,081	1,615	6
June	11,297	422	9,257	1,613	5
July	12,220	443	10,031	1,741	6
August	11,820	415	9,735	1,664	6
September	11,034	405	8,961	1,664	5
October	11,118	363	9,238	1,512	5
November	11,112	301	9,166	1,638	7
December	11,751	334	9,778	1,632	7
Year 2016					
January	11,170	320	9,224	1,619	7
February	10,193	258	8,556	1,374	6
March	10,768	386	8,703	1,673	6
April	11,359	405	9,188	1,759	6
May	11,677	377	9,602	1,690	8
June	11,682	385	9,510	1,778	8
July	11,827	355	9,592	1,870	10
August	12,001	406	9,732	1,853	11
September	11,073	412	8,990	1,661	10
October	11,068	358	8,994	1,705	10
November	11,182	392	9,081	1,702	7
December	11,958	380	9,831	1,746	0

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Table 5.7.E. Biogenic Municipal Solid Waste: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	21,729	0	5,347	12,654	3,728
2007	16,174	0	5,683	8,350	2,141
2008	18,272	0	6,039	12,174	59
2009	18,785	0	6,229	11,535	1,021
2010	17,502	0	6,031	10,333	1,138
2011	16,766	0	5,807	9,731	1,227
2012	16,310	0	4,180	10,615	1,515
2013	15,168	0	4,145	9,530	1,493
2014	15,783	0	5,140	9,046	1,597
2015	16,623	0	5,195	9,752	1,676
2016	18,259	0	6,877	9,665	1,717
Year 2014					
January	1,632	0	474	1,019	139
February	1,128	0	387	624	117
March	1,247	0	409	716	122
April	1,250	0	461	670	119
May	1,339	0	445	754	140
June	1,315	0	450	738	127
July	1,320	0	430	754	136
August	1,299	0	371	756	172
September	1,264	0	372	752	140
October	1,332	0	440	759	133
November	1,280	0	432	729	120
December	1,376	0	469	773	134
Year 2015					
January	1,533	0	530	822	181
February	1,227	0	377	714	136
March	1,438	0	465	832	141
April	1,350	0	421	795	135
May	1,368	0	383	859	126
June	1,281	0	366	778	136
July	1,419	0	432	854	133
August	1,382	0	433	787	162
September	1,352	0	384	825	143
October	1,409	0	447	820	142
November	1,401	0	461	831	109
December	1,463	0	495	836	132
Year 2016					
January	1,578	0	630	789	159
February	1,505	0	648	747	110
March	1,790	0	737	894	160
April	1,501	0	516	836	149
May	1,498	0	548	817	133
June	1,375	0	560	682	133
July	1,521	0	587	818	117
August	1,580	0	548	823	210
September	1,452	0	498	809	144
October	1,478	0	509	809	160
November	1,466	0	540	800	126
December	1,513	0	557	840	117

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
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Table 5.7.F. Biogenic Municipal Solid Waste: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	168,716	4,078	135,127	25,618	3,893
2007	162,482	4,557	133,509	21,393	3,022
2008	166,723	4,476	136,080	26,108	59
2009	165,755	3,989	132,877	27,868	1,021
2010	162,436	3,322	130,467	27,509	1,138
2011	152,007	3,433	121,648	25,664	1,262
2012	152,045	3,910	117,598	28,923	1,614
2013	150,932	4,459	115,574	29,342	1,557
2014	150,191	4,429	115,709	28,411	1,643
2015	149,740	4,295	114,886	28,821	1,739
2016	154,216	4,434	117,880	30,095	1,806
Year 2014					
January	12,783	274	9,584	2,783	142
February	10,783	237	8,514	1,911	120
March	12,478	457	9,706	2,190	125
April	12,284	448	9,468	2,248	119
May	13,017	397	10,041	2,434	145
June	12,741	411	9,829	2,370	132
July	13,316	428	10,255	2,492	141
August	13,121	357	10,086	2,501	176
September	12,384	379	9,470	2,390	144
October	12,359	361	9,497	2,364	136
November	12,352	302	9,583	2,345	123
December	12,574	377	9,676	2,382	139
Year 2015					
January	12,344	282	9,523	2,353	186
February	10,992	232	8,557	2,064	139
March	11,905	263	9,125	2,373	144
April	11,934	400	9,032	2,362	139
May	12,505	434	9,464	2,474	132
June	12,578	422	9,624	2,391	141
July	13,640	443	10,463	2,595	139
August	13,202	415	10,167	2,450	169
September	12,386	405	9,345	2,489	148
October	12,528	363	9,685	2,332	147
November	12,512	301	9,627	2,469	116
December	13,215	334	10,274	2,468	139
Year 2016					
January	12,748	320	9,853	2,408	166
February	11,698	258	9,204	2,121	116
March	12,558	386	9,439	2,567	166
April	12,860	405	9,704	2,595	156
May	13,175	377	10,150	2,507	141
June	13,057	385	10,071	2,461	140
July	13,348	355	10,179	2,688	126
August	13,581	406	10,280	2,676	221
September	12,525	412	9,489	2,470	154
October	12,546	358	9,503	2,515	170
November	12,649	392	9,621	2,502	134
December	13,471	380	10,388	2,586	117

Notes: Beginning with the collection of Form EIA-923 in January 2008, the methodology to allocate total fuel consumption for electricity generation and consumption for useful thermal output was changed.
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Table 5.8.D. Other Waste Biomass: Consumption for Electricity Generation, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	17,727	2,611	7,788	4,436	2,893
2007	19,083	2,992	8,861	4,049	3,181
2008	24,288	3,409	12,745	3,684	4,450
2009	24,847	3,679	13,231	3,760	4,177
2010	29,996	3,668	14,449	3,790	8,090
2011	30,771	4,488	16,115	3,816	6,352
2012	30,342	4,191	15,740	4,016	6,395
2013	29,385	2,432	13,671	4,979	8,303
2014	38,361	2,360	21,628	5,745	8,627
2015	41,785	2,853	25,058	5,935	7,939
2016	33,786	2,553	18,194	5,504	7,536
Year 2014					
January	3,630	212	2,208	509	701
February	3,175	199	1,875	459	641
March	3,420	142	2,015	509	754
April	3,157	170	1,713	473	800
May	3,380	241	1,957	491	691
June	3,350	182	1,995	461	713
July	3,143	261	1,631	491	760
August	2,962	148	1,596	495	723
September	2,776	136	1,525	464	652
October	3,137	257	1,666	472	742
November	3,045	202	1,671	455	716
December	3,188	209	1,777	466	735
Year 2015					
January	3,094	259	1,688	510	638
February	2,946	220	1,776	454	497
March	3,146	215	1,758	505	667
April	2,971	188	1,574	485	724
May	3,130	229	1,797	481	623
June	3,326	190	2,057	492	586
July	3,941	275	2,428	520	719
August	4,054	370	2,501	517	666
September	3,738	299	2,314	501	623
October	3,717	223	2,301	476	717
November	3,927	215	2,507	477	727
December	3,797	171	2,357	516	753
Year 2016					
January	2,790	210	1,531	469	580
February	2,930	235	1,654	453	588
March	2,898	131	1,562	464	740
April	3,039	140	1,749	437	712
May	2,727	244	1,277	475	731
June	2,475	196	1,338	444	497
July	2,569	188	1,336	467	578
August	3,072	258	1,769	459	585
September	2,781	227	1,590	461	503
October	2,660	216	1,407	449	588
November	2,996	274	1,544	457	721
December	2,850	233	1,439	468	710

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Table 5.8.E. Other Waste Biomass: Consumption for Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	36,966	0	8,561	2,318	26,087
2007	41,757	0	10,294	2,643	28,820
2008	41,851	0	9,674	1,542	30,635
2009	41,810	0	10,355	1,638	29,817
2010	47,153	0	8,436	1,648	37,070
2011	43,483	0	6,460	1,566	35,458
2012	46,863	0	6,914	1,796	38,153
2013	62,445	0	6,768	1,259	54,418
2014	65,201	15	6,930	1,543	56,712
2015	67,512	1	7,845	2,000	57,666
2016	57,123	18	11,252	3,569	42,284
Year 2014					
January	6,040	2	701	138	5,199
February	5,865	2	723	134	5,006
March	6,232	2	797	123	5,311
April	6,446	2	388	104	5,952
May	4,525	2	305	138	4,081
June	4,469	2	323	142	4,002
July	5,141	1	380	149	4,611
August	4,143	1	403	151	3,588
September	3,841	1	304	122	3,413
October	6,029	0	692	101	5,235
November	6,000	0	960	113	4,927
December	6,469	1	955	130	5,383
Year 2015					
January	6,572	0	1,031	161	5,379
February	5,524	0	875	137	4,512
March	6,283	0	829	151	5,302
April	5,542	0	361	183	4,997
May	4,782	0	421	187	4,174
June	4,738	0	470	169	4,098
July	5,097	0	478	198	4,421
August	4,526	0	390	208	3,928
September	4,356	0	351	186	3,819
October	6,558	0	832	151	5,575
November	6,636	0	982	118	5,535
December	6,899	0	825	149	5,925
Year 2016					
January	5,086	0	923	324	3,839
February	5,329	0	944	313	4,072
March	6,149	7	1,312	311	4,520
April	5,490	3	1,232	273	3,982
May	4,878	0	888	306	3,684
June	3,227	1	687	306	2,234
July	3,722	0	822	301	2,599
August	3,543	4	742	277	2,520
September	3,228	1	633	293	2,302
October	5,057	1	876	240	3,940
November	5,669	0	1,094	323	4,251
December	5,745	1	1,099	302	4,342

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Table 5.8.F. Other Waste Biomass: Consumption for Electricity Generation and Useful Thermal Output, by Sector, 2006 - 2016 (Billion Btus)

		Electric Power Sector			
Period	Total (all sectors)	Electric Utilities	Independent Power Producers	Commercial Sector	Industrial Sector
Annual Totals					
2006	54,693	2,611	16,348	6,755	28,980
2007	60,840	2,992	19,155	6,692	32,001
2008	66,139	3,409	22,419	5,227	35,085
2009	66,658	3,679	23,586	5,398	33,994
2010	77,150	3,668	22,884	5,438	45,159
2011	74,255	4,488	22,574	5,382	41,810
2012	77,205	4,191	22,654	5,812	44,548
2013	91,830	2,432	20,439	6,238	62,721
2014	103,561	2,375	28,558	7,289	65,339
2015	109,297	2,854	32,903	7,935	65,605
2016	90,909	2,571	29,446	9,073	49,820
Year 2014					
January	9,669	214	2,909	647	5,900
February	9,039	201	2,598	593	5,648
March	9,652	144	2,812	632	6,065
April	9,603	172	2,101	577	6,752
May	7,905	243	2,262	628	4,772
June	7,819	183	2,317	603	4,715
July	8,285	262	2,010	640	5,371
August	7,105	150	1,998	645	4,312
September	6,616	137	1,829	586	4,065
October	9,166	257	2,358	573	5,977
November	9,045	203	2,631	568	5,643
December	9,657	210	2,732	596	6,119
Year 2015					
January	9,666	259	2,719	671	6,017
February	8,470	220	2,651	591	5,008
March	9,428	215	2,587	656	5,969
April	8,513	188	1,935	668	5,722
May	7,912	229	2,218	668	4,797
June	8,063	190	2,527	662	4,684
July	9,039	275	2,906	718	5,140
August	8,579	370	2,891	724	4,594
September	8,094	299	2,665	687	4,442
October	10,275	223	3,133	627	6,292
November	10,562	216	3,489	596	6,262
December	10,696	171	3,182	666	6,678
Year 2016					
January	7,877	210	2,454	793	4,419
February	8,258	235	2,597	766	4,660
March	9,047	138	2,873	775	5,260
April	8,529	144	2,981	709	4,695
May	7,605	244	2,165	782	4,415
June	5,702	197	2,024	751	2,731
July	6,291	188	2,158	768	3,177
August	6,615	262	2,511	736	3,105
September	6,009	228	2,223	753	2,805
October	7,716	217	2,283	689	4,528
November	8,664	274	2,638	780	4,973
December	8,595	235	2,538	770	5,052

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Table 5.9. Consumption of Coal for Electricity Generation by State by Sector, 2016 and 2015 (Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector							
				Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	1,246	1,795	-31.0%	194	406	1,048	1,377	0	0	3	12
Connecticut	128	359	-64.0%	0	0	128	359	0	0	0	0
Maine	16	22	-24.0%	0	0	13	13	0	0	3	8
Massachusetts	907	1,009	-10.0%	0	0	907	1,005	0	0	0	3
New Hampshire	194	406	-52.0%	194	406	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	28,812	32,755	-12.0%	0	0	28,598	32,513	0	1	214	241
New Jersey	563	753	-25.0%	0	0	563	753	0	0	0	0
New York	760	1,104	-31.0%	0	0	654	1,038	0	0	106	66
Pennsylvania	27,489	30,898	-11.0%	0	0	27,381	30,722	0	1	108	175
East North Central	143,250	164,983	-13.0%	86,747	96,932	55,796	67,141	24	38	684	873
Illinois	35,899	44,030	-18.0%	1,895	2,033	33,536	41,413	9	13	460	572
Indiana	36,014	39,116	-7.9%	34,303	36,320	1,698	2,786	11	10	3	0
Michigan	23,123	29,568	-22.0%	22,871	29,253	221	228	4	15	27	72
Ohio	29,080	30,576	-4.9%	8,716	7,804	20,341	22,714	0	0	23	58
Wisconsin	19,134	21,692	-12.0%	18,963	21,522	0	0	0	0	171	171
West North Central	113,565	125,028	-9.2%	112,397	123,424	0	13	37	58	1,131	1,533
Iowa	14,019	17,659	-21.0%	13,477	16,840	0	0	23	34	519	786
Kansas	14,587	15,851	-8.0%	14,587	15,851	0	0	0	0	0	0
Minnesota	13,446	14,649	-8.2%	13,255	14,338	0	0	2	5	189	306
Missouri	35,473	38,277	-7.3%	35,460	38,234	0	13	13	19	0	12
Nebraska	13,443	14,862	-9.5%	13,056	14,508	0	0	0	0	388	354
North Dakota	21,297	22,739	-6.3%	21,263	22,663	0	0	0	0	34	76
South Dakota	1,299	990	31.0%	1,299	990	0	0	0	0	0	0
South Atlantic	103,425	105,370	-1.8%	90,681	92,673	12,420	12,283	14	23	310	391
Delaware	227	276	-18.0%	0	0	227	276	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	17,700	19,053	-7.1%	17,341	18,581	326	437	0	0	32	35
Georgia	19,318	19,354	-0.2%	19,272	19,307	0	0	0	0	46	47
Maryland	5,882	6,046	-2.7%	0	0	5,864	6,015	0	0	19	31
North Carolina	14,772	15,634	-5.5%	14,645	15,436	76	151	12	14	40	33
South Carolina	8,569	9,238	-7.2%	8,545	9,183	0	0	0	0	24	55
Virginia	7,520	7,587	-0.9%	7,135	7,121	255	396	2	8	129	62
West Virginia	29,436	28,181	4.5%	23,744	23,045	5,672	5,008	0	0	20	128
East South Central	69,467	75,121	-7.5%	66,214	71,763	3,056	3,133	0	0	198	226
Alabama	17,466	21,049	-17.0%	17,448	21,025	0	0	0	0	18	24
Kentucky	31,859	34,381	-7.3%	31,859	34,381	0	0	0	0	0	0
Mississippi	4,522	4,830	-6.4%	1,466	1,697	3,056	3,133	0	0	0	0
Tennessee	15,621	14,862	5.1%	15,441	14,660	0	0	0	0	180	202
West South Central	121,146	126,189	-4.0%	58,328	62,331	62,604	63,662	0	0	214	196
Arkansas	14,075	12,830	9.7%	11,525	10,557	2,541	2,259	0	0	9	14
Louisiana	8,566	10,755	-20.0%	5,852	6,671	2,714	4,084	0	0	0	0
Oklahoma	12,375	15,825	-22.0%	10,977	14,453	1,193	1,191	0	0	205	182
Texas	86,130	86,779	-0.7%	29,975	30,651	56,155	56,129	0	0	0	0
Mountain	90,967	102,261	-11.0%	80,258	90,285	10,517	11,542	0	0	192	435
Arizona	16,639	19,812	-16.0%	16,639	19,812	0	0	0	0	0	0
Colorado	16,636	17,461	-4.7%	16,628	17,440	6	16	0	0	2	5
Idaho	6	16	-61.0%	0	0	0	0	0	0	6	16
Montana	9,331	10,283	-9.3%	256	221	9,073	10,057	0	0	3	5
Nevada	1,192	1,507	-21.0%	674	1,010	519	497	0	0	0	0
New Mexico	10,547	11,882	-11.0%	10,547	11,882	0	0	0	0	0	0
Utah	12,092	14,814	-18.0%	11,604	14,140	397	440	0	0	91	234
Wyoming	24,524	26,486	-7.4%	23,911	25,781	523	532	0	0	90	173
Pacific Contiguous	4,271	4,882	-13.0%	1,125	1,401	3,075	3,405	0	0	72	76
California	63	67	-7.0%	0	0	0	0	0	0	63	67
Oregon	1,125	1,401	-20.0%	1,125	1,401	0	0	0	0	0	0
Washington	3,083	3,414	-9.7%	0	0	3,075	3,405	0	0	9	9
Pacific Noncontiguous	1,222	1,209	1.1%	248	292	933	858	37	44	4	15
Alaska	443	556	-20.0%	248	292	158	220	37	44	0	0
Hawaii	779	653	19.0%	0	0	775	638	0	0	4	15
U.S. Total	677,371	739,594	-8.4%	496,192	539,506	178,047	195,927	111	163	3,021	3,999

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Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 5.10. Consumption of Petroleum Liquids for Electricity Generation by State, by Sector,. 2016 and 2015 (Thousand Barrels)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	1,157	3,440	-66.0%	125	350	978	2,940	44	102	10	49
Connecticut	209	737	-72.0%	12	12	193	691	3	20	2	14
Maine	227	927	-76.0%	0	0	213	884	6	8	7	35
Massachusetts	598	1,325	-55.0%	30	100	549	1,175	19	50	1	0
New Hampshire	67	291	-77.0%	49	208	3	70	15	14	0	0
Rhode Island	44	151	-71.0%	23	23	19	120	2	9	0	0
Vermont	12	8	37.0%	11	7	0	0	0	2	0	0
Middle Atlantic	1,888	4,680	-60.0%	634	1,419	1,173	3,100	25	72	56	90
New Jersey	130	496	-74.0%	2	7	126	481	1	1	0	7
New York	1,142	3,101	-63.0%	630	1,410	459	1,571	15	65	38	54
Pennsylvania	616	1,083	-43.0%	2	1	588	1,048	9	6	18	29
East North Central	1,083	1,106	-2.1%	654	699	407	369	6	4	17	34
Illinois	135	107	26.0%	17	17	117	90	1	0	0	0
Indiana	204	287	-29.0%	191	264	0	0	1	1	12	23
Michigan	248	222	12.0%	244	216	0	0	3	2	1	4
Ohio	426	422	0.7%	136	142	286	274	1	1	3	6
Wisconsin	71	67	4.7%	65	61	4	5	0	0	1	1
West North Central	546	590	-7.5%	526	569	15	15	2	4	3	2
Iowa	161	95	70.0%	159	92	2	2	0	0	0	0
Kansas	66	110	-40.0%	66	110	0	0	0	0	0	0
Minnesota	67	69	-2.7%	51	51	13	13	2	4	1	1
Missouri	165	209	-21.0%	165	209	0	0	0	0	0	0
Nebraska	16	16	-0.3%	16	16	0	0	0	0	0	0
North Dakota	60	53	13.0%	59	52	0	0	0	0	1	1
South Dakota	11	38	-71.0%	11	38	0	0	0	0	0	0
South Atlantic	4,010	5,463	-27.0%	3,060	4,014	846	1,300	14	48	89	101
Delaware	114	255	-55.0%	17	8	97	246	0	0	0	0
District of Columbia	5	0	855.0%	0	0	0	0	5	0	0	0
Florida	1,428	1,100	30.0%	1,387	1,062	16	26	0	0	25	12
Georgia	209	284	-26.0%	133	156	45	86	3	5	27	37
Maryland	353	484	-27.0%	3	23	347	419	2	40	2	2
North Carolina	485	801	-40.0%	411	723	65	62	1	1	8	15
South Carolina	214	385	-45.0%	189	342	4	14	0	0	20	29
Virginia	987	1,907	-48.0%	713	1,475	263	424	4	2	7	6
West Virginia	216	247	-13.0%	207	224	9	23	0	0	0	0
East South Central	560	691	-19.0%	528	639	12	22	0	0	20	30
Alabama	79	153	-48.0%	51	104	12	22	0	0	16	27
Kentucky	211	244	-14.0%	211	244	0	0	0	0	0	0
Mississippi	34	31	11.0%	32	29	0	0	0	0	2	1
Tennessee	237	264	-10.0%	235	262	0	1	0	0	2	1
West South Central	293	463	-37.0%	193	272	91	174	2	1	7	15
Arkansas	76	108	-30.0%	57	75	16	23	0	0	3	9
Louisiana	30	125	-76.0%	26	99	3	25	0	0	0	1
Oklahoma	32	20	61.0%	31	17	0	0	0	0	1	3
Texas	155	211	-26.0%	79	81	72	126	2	1	2	2
Mountain	428	424	0.9%	372	384	46	39	0	0	10	1
Arizona	98	92	5.8%	98	92	0	0	0	0	0	0
Colorado	21	24	-9.5%	21	23	0	0	0	0	0	0
Idaho	0	0	388.0%	0	0	0	0	0	0	0	0
Montana	38	32	20.0%	1	1	37	31	0	0	0	0
Nevada	22	31	-30.0%	16	25	6	NM	0	0	0	0
New Mexico	101	126	-20.0%	101	126	0	0	0	0	0	0
Utah	55	34	59.0%	51	32	3	1	0	0	0	1
Wyoming	94	85	11.0%	85	85	0	0	0	0	9	0
Pacific Contiguous	190	213	-11.0%	76	81	39	83	1	1	74	48
California	149	164	-9.1%	63	67	20	65	0	1	66	32
Oregon	8	11	-21.0%	8	11	0	0	0	0	0	0
Washington	32	38	-14.0%	5	4	19	17	0	1	8	16
Pacific Noncontiguous	12,250	11,856	3.3%	9,969	10,137	2,015	1,431	14	17	252	272
Alaska	1,454	1,346	8.0%	1,382	1,260	0	0	3	7	68	79
Hawaii	10,797	10,510	2.7%	8,587	8,877	2,015	1,431	10	9	184	193
U.S. Total	22,405	28,925	-23.0%	16,137	18,562	5,624	9,473	108	249	536	641

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Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 5.11. Consumption of Petroleum Coke for Electricity Generation by State, by Sector, 2016 and 2015 (Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	23	55	-58.0%	0	0	0	0	0	0	23	55
New Jersey	6	7	-8.3%	0	0	0	0	0	0	6	7
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	17	48	-65.0%	0	0	0	0	0	0	17	48
East North Central	983	1,238	-21.0%	478	700	431	487	0	0	73	52
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	159	387	-59.0%	159	387	0	0	0	0	0	0
Michigan	348	321	8.4%	283	280	1	15	0	0	65	27
Ohio	431	473	-8.9%	0	0	430	472	0	0	1	1
Wisconsin	44	57	-22.0%	37	34	0	0	0	0	7	23
West North Central	7	18	-63.0%	0	0	0	0	2	2	5	16
Iowa	7	18	-63.0%	0	0	0	0	2	2	5	16
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	764	597	28.0%	739	566	0	0	0	0	25	30
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	739	566	30.0%	739	566	0	0	0	0	0	0
Georgia	25	30	-17.0%	0	0	0	0	0	0	25	30
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	439	369	19.0%	439	369	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	439	369	19.0%	439	369	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	1,862	1,585	17.0%	1,771	1,485	0	0	0	0	91	100
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,812	1,518	19.0%	1,771	1,485	0	0	0	0	41	33
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	50	68	-26.0%	0	0	0	0	0	0	50	68
Mountain	160	182	-12.0%	0	0	160	182	0	0	0	0
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	160	182	-12.0%	0	0	160	182	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	16	0	--	0	0	0	0	0	0	16	0
California	16	0	--	0	0	0	0	0	0	16	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	4,253	4,044	5.2%	3,427	3,120	591	669	2	2	233	253

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Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 5.12. Consumption of Nautral Gas for Electricity Generation by State, by Sector, 2016 and 2015 (Million Cubic Feet)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	388,458	404,268	-3.9%	3,330	4,386	374,582	382,202	5,180	9,325	5,366	8,355
Connecticut	127,130	128,326	-0.9%	421	267	121,879	119,063	2,213	3,913	2,618	5,082
Maine	23,895	20,260	18.0%	0	0	22,281	17,888	130	356	1,483	2,017
Massachusetts	156,132	162,051	-3.7%	2,419	3,792	150,150	152,881	2,504	4,262	1,059	1,116
New Hampshire	34,140	43,066	-21.0%	476	307	33,365	42,366	92	253	206	140
Rhode Island	47,144	50,545	-6.7%	0	0	46,907	50,005	236	539	0	0
Vermont	19	21	-10.0%	14	19	0	0	4	2	0	0
Middle Atlantic	1,269,480	1,180,966	7.5%	110,702	116,143	1,141,115	1,042,537	6,552	10,628	11,111	11,658
New Jersey	314,705	275,564	14.0%	2,583	737	309,356	269,860	945	1,816	1,821	3,150
New York	452,696	467,122	-3.1%	108,016	115,373	337,708	342,188	4,993	7,515	1,979	2,046
Pennsylvania	502,080	438,280	15.0%	103	33	494,051	430,488	615	1,297	7,312	6,461
East North Central	852,535	684,073	25.0%	382,447	305,678	446,919	350,516	7,522	10,439	15,647	17,441
Illinois	149,481	87,371	71.0%	13,725	5,464	128,973	74,372	1,813	4,080	4,970	3,455
Indiana	152,405	125,064	22.0%	123,508	96,816	24,991	23,024	1,016	994	2,890	4,230
Michigan	225,323	164,114	37.0%	87,203	54,569	129,419	98,273	3,052	3,511	5,650	7,762
Ohio	210,518	208,398	1.0%	55,135	57,059	153,812	149,307	1,051	1,306	520	726
Wisconsin	114,807	99,125	16.0%	102,876	91,769	9,724	5,540	590	548	1,617	1,268
West North Central	179,323	143,077	25.0%	151,096	120,123	23,870	16,237	1,609	3,042	2,747	3,674
Iowa	22,012	18,776	17.0%	20,699	16,198	0	0	459	542	854	2,036
Kansas	20,680	15,182	36.0%	20,399	14,624	0	0	0	0	281	558
Minnesota	65,624	54,364	21.0%	52,636	45,920	11,137	6,055	636	1,646	1,215	743
Missouri	47,411	37,925	25.0%	34,015	26,653	12,732	10,183	501	850	163	239
Nebraska	5,813	4,266	36.0%	5,791	4,255	0	0	13	4	9	7
North Dakota	10,373	6,437	61.0%	10,146	6,346	0	0	0	0	227	91
South Dakota	7,410	6,128	21.0%	7,410	6,128	0	0	0	0	0	0
South Atlantic	2,415,762	2,288,760	5.5%	1,947,864	1,864,143	440,121	388,423	5,960	7,551	21,816	28,643
Delaware	58,855	57,235	2.8%	711	367	53,122	45,067	0	0	5,022	11,801
District of Columbia	601	648	-7.4%	0	0	0	0	600	648	0	0
Florida	1,186,725	1,163,471	2.0%	1,081,094	1,086,206	97,758	68,114	172	208	7,701	8,944
Georgia	381,331	358,959	6.2%	295,258	262,095	83,189	93,261	0	0	2,884	3,603
Maryland	53,486	44,642	20.0%	0	0	48,046	37,782	5,048	6,551	391	310
North Carolina	293,942	270,320	8.7%	254,527	239,576	38,745	29,779	80	54	590	912
South Carolina	131,598	135,505	-2.9%	106,252	119,264	24,999	15,980	9	21	338	240
Virginia	298,102	244,760	22.0%	208,486	155,303	85,637	86,553	51	70	3,928	2,833
West Virginia	11,122	13,219	-16.0%	1,536	1,332	8,625	11,887	0	0	961	0
East South Central	929,994	862,559	7.8%	613,191	533,813	304,829	313,289	901	1,255	11,073	14,202
Alabama	403,770	404,213	-0.1%	120,458	111,635	277,130	283,612	0	0	6,182	8,967
Kentucky	67,386	53,503	26.0%	60,847	45,788	5,512	5,935	0	0	1,027	1,780
Mississippi	368,640	332,923	11.0%	344,423	306,850	22,175	23,742	0	34	2,041	2,296
Tennessee	90,198	71,920	25.0%	87,463	69,540	12	0	901	1,221	1,823	1,159
West South Central	2,480,580	2,636,288	-5.9%	886,812	862,132	1,204,698	1,307,140	4,706	7,298	384,364	459,718
Arkansas	131,629	105,102	25.0%	54,814	34,791	74,981	68,332	433	24	1,401	1,954
Louisiana	481,008	531,883	-9.6%	280,472	305,826	44,592	29,480	739	1,679	155,205	194,898
Oklahoma	278,283	255,418	9.0%	194,042	169,886	82,920	84,483	0	0	1,320	1,048
Texas	1,589,660	1,743,885	-8.8%	357,484	351,629	1,002,205	1,124,844	3,534	5,595	226,437	261,818
Mountain	739,943	727,043	1.8%	550,066	525,578	175,191	185,807	2,274	4,578	12,413	11,081
Arizona	256,096	249,798	2.5%	149,716	139,541	105,757	108,784	624	1,472	0	0
Colorado	93,347	89,735	4.0%	77,193	70,440	15,818	19,043	12	3	323	249
Idaho	24,098	28,013	-14.0%	13,694	16,437	9,590	10,882	170	163	644	531
Montana	5,382	6,558	-18.0%	4,499	5,956	864	602	0	0	19	0
Nevada	208,394	209,654	-0.6%	190,283	190,075	15,428	16,286	270	699	2,412	2,594
New Mexico	81,834	77,051	6.2%	55,180	47,060	26,044	28,614	594	1,364	16	13
Utah	65,310	61,376	6.4%	58,000	54,843	1,678	1,587	603	877	5,029	4,069
Wyoming	5,483	4,859	13.0%	1,502	1,226	12	8	0	0	3,969	3,626
Pacific Contiguous	885,536	1,058,400	-16.0%	345,161	383,053	460,049	590,531	11,593	15,976	68,733	68,840
California	701,605	850,427	-17.0%	245,491	278,479	377,035	488,483	11,301	15,325	67,778	68,140
Oregon	106,536	112,912	-5.6%	51,498	46,156	54,339	65,790	209	571	490	395
Washington	77,394	95,061	-19.0%	48,172	58,419	28,674	36,257	83	80	465	305
Pacific Noncontiguous	28,498	31,139	-8.5%	28,224	30,207	0	0	7	0	267	933
Alaska	28,498	31,139	-8.5%	28,224	30,207	0	0	7	0	267	933
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	10,170,110	10,016,576	1.5%	5,018,894	4,745,255	4,571,375	4,576,683	46,304	70,092	533,537	624,545

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 5.13. Consumption of Landfill Gas for Electricity Generation by State, by Sector, 2016 and 2015 (Million Cubic Feet)

Census Division and State	All Sectors			Electric Power Sector				Commercial Sector		Industrial Sector	
				Electric Utilities		Independent Power Producers					
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	11,326	11,497	-1.5%	0	0	11,128	10,952	198	546	0	0
Connecticut	476	490	-2.8%	0	0	476	490	0	0	0	0
Maine	732	849	-14.0%	0	0	732	849	0	0	0	0
Massachusetts	4,133	3,801	8.7%	0	0	4,133	3,801	0	0	0	0
New Hampshire	1,433	1,625	-12.0%	0	0	1,235	1,079	198	546	0	0
Rhode Island	4,124	4,191	-1.6%	0	0	4,124	4,191	0	0	0	0
Vermont	428	541	-21.0%	0	0	428	541	0	0	0	0
Middle Atlantic	53,761	55,414	-3.0%	0	0	51,556	52,918	840	826	1,365	1,670
New Jersey	8,088	9,051	-11.0%	0	0	7,783	8,748	305	303	0	0
New York	16,102	16,083	0.1%	0	0	16,102	16,083	0	0	0	0
Pennsylvania	29,571	30,281	-2.3%	0	0	27,671	28,088	535	523	1,365	1,670
East North Central	61,641	64,333	-4.2%	6,864	7,114	54,392	56,208	146	227	239	784
Illinois	12,537	13,620	-7.9%	422	371	12,115	13,249	0	0	0	0
Indiana	7,383	7,889	-6.4%	6,301	6,539	1,071	1,071	0	0	12	279
Michigan	19,931	19,708	1.1%	0	0	19,931	19,708	0	0	0	0
Ohio	10,348	11,248	-8.0%	0	0	10,348	11,248	0	0	0	0
Wisconsin	11,442	11,868	-3.6%	141	204	10,927	10,932	146	227	227	505
West North Central	11,113	10,779	3.1%	3,311	2,977	7,801	7,802	0	0	0	0
Iowa	2,627	2,604	0.9%	0	0	2,627	2,604	0	0	0	0
Kansas	1,270	1,380	-8.0%	0	0	1,270	1,380	0	0	0	0
Minnesota	3,609	3,502	3.0%	765	736	2,844	2,767	0	0	0	0
Missouri	1,903	1,937	-1.7%	842	885	1,061	1,052	0	0	0	0
Nebraska	1,704	1,356	26.0%	1,704	1,356	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	47,055	48,003	-2.0%	4,530	5,538	38,239	38,084	2,051	2,193	2,235	2,188
Delaware	1,379	1,592	-13.0%	0	0	1,232	1,432	0	0	148	160
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	7,840	8,797	-11.0%	1,699	2,075	6,123	6,684	8	7	10	31
Georgia	4,696	4,423	6.2%	0	0	4,240	3,892	0	77	456	454
Maryland	2,667	2,411	11.0%	0	0	1,887	1,651	780	760	0	0
North Carolina	11,273	10,907	3.3%	0	0	10,268	9,822	1,005	1,085	0	0
South Carolina	4,769	5,281	-9.7%	2,774	3,391	373	347	0	0	1,621	1,544
Virginia	14,431	14,441	-0.1%	57	72	14,117	14,105	258	264	0	0
West Virginia	0	151	-100.0%	0	0	0	151	0	0	0	0
East South Central	5,496	5,061	8.6%	2,177	2,044	3,319	3,017	0	0	0	0
Alabama	1,093	1,028	6.3%	0	0	1,093	1,028	0	0	0	0
Kentucky	2,479	2,197	13.0%	2,177	2,044	302	153	0	0	0	0
Mississippi	188	227	-17.0%	0	0	188	227	0	0	0	0
Tennessee	1,737	1,609	7.9%	0	0	1,737	1,609	0	0	0	0
West South Central	15,922	17,375	-8.4%	0	0	15,353	16,725	569	649	0	0
Arkansas	1,491	1,572	-5.2%	0	0	1,491	1,572	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	360	297	21.0%	0	0	360	297	0	0	0	0
Texas	14,072	15,507	-9.2%	0	0	13,503	14,857	569	649	0	0
Mountain	6,474	5,785	12.0%	245	561	5,650	4,705	579	519	0	0
Arizona	854	1,280	-33.0%	0	281	854	999	0	0	0	0
Colorado	1,311	1,274	2.9%	0	0	1,311	1,274	0	0	0	0
Idaho	993	994	-0.2%	245	279	564	549	183	166	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	1,479	544	172.0%	0	0	1,479	544	0	0	0	0
New Mexico	29	0	--	0	0	29	0	0	0	0	0
Utah	1,808	1,692	6.8%	0	0	1,413	1,339	395	353	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	60,012	63,191	-5.0%	7,153	7,024	37,554	36,969	15,305	19,198	0	0
California	50,177	53,431	-6.1%	2,813	2,647	32,565	32,043	14,799	18,741	0	0
Oregon	5,889	5,632	4.5%	1,627	1,511	3,755	3,664	506	457	0	0
Washington	3,946	4,128	-4.4%	2,712	2,866	1,234	1,262	0	0	0	0
Pacific Noncontiguous	758	1,091	-31.0%	0	0	0	0	758	1,091	0	0
Alaska	758	1,091	-31.0%	0	0	0	0	758	1,091	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	273,557	282,530	-3.2%	24,280	25,257	224,993	227,381	20,445	25,250	3,839	4,642

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Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 5.14. Consumption of Biogenic Municipal Solid Waste for Electricity Generation by State, by Sector, 2016 and 2015 (Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector							
				Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	3,752,472	3,763,218	-0.3%	0	0	3,563,135	3,552,611	189,337	210,607	0	0
Connecticut	1,327,571	1,295,253	2.5%	0	0	1,327,571	1,280,442	0	14,811	0	0
Maine	302,663	297,513	1.7%	0	0	113,326	101,717	189,337	195,796	0	0
Massachusetts	2,000,266	2,048,139	-2.3%	0	0	2,000,266	2,048,139	0	0	0	0
New Hampshire	121,972	122,313	-0.3%	0	0	121,972	122,313	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	5,430,250	5,335,761	1.8%	0	0	4,279,138	4,212,340	1,151,112	1,123,421	0	0
New Jersey	1,439,426	1,380,234	4.3%	0	0	1,094,098	1,034,424	345,328	345,810	0	0
New York	2,046,762	2,014,840	1.6%	0	0	1,482,562	1,503,504	564,200	511,336	0	0
Pennsylvania	1,944,062	1,940,687	0.2%	0	0	1,702,478	1,674,412	241,584	266,275	0	0
East North Central	250,391	259,287	-3.4%	38,435	39,561	0	0	211,956	219,726	0	0
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	17,638	10,346	70.0%	0	0	0	0	17,638	10,346	0	0
Michigan	194,318	209,380	-7.2%	0	0	0	0	194,318	209,380	0	0
Ohio	0	0	--	0	0	0	0	0	0	0	0
Wisconsin	38,435	39,561	-2.8%	38,435	39,561	0	0	0	0	0	0
West North Central	656,309	649,182	1.1%	425,217	412,369	219,783	212,117	11,309	24,696	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	656,309	649,182	1.1%	425,217	412,369	219,783	212,117	11,309	24,696	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	5,710,075	5,442,950	4.9%	0	0	5,153,439	5,027,176	556,636	415,774	0	0
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	3,933,291	3,633,452	8.3%	0	0	3,933,291	3,633,452	0	0	0	0
Georgia	0	0	--	0	0	0	0	0	0	0	0
Maryland	624,522	808,747	-23.0%	0	0	624,405	808,531	117	216	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	1,152,262	1,000,751	15.0%	0	0	595,743	585,193	556,519	415,558	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	0	0	--	0	0	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	0	0	--	0	0	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	11,046	7,727	43.0%	0	0	0	0	0	0	11,046	7,727
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	0	0	--	0	0	0	0	0	0	0	0
Oklahoma	11,046	7,727	43.0%	0	0	0	0	0	0	11,046	7,727
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	3,077	2,042	51.0%	0	0	3,077	2,042	0	0	0	0
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	3,077	2,042	51.0%	0	0	3,077	2,042	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	734,231	790,261	-7.1%	0	0	734,231	790,261	0	0	0	0
California	457,278	520,946	-12.0%	0	0	457,278	520,946	0	0	0	0
Oregon	114,085	117,293	-2.7%	0	0	114,085	117,293	0	0	0	0
Washington	162,868	152,022	7.1%	0	0	162,868	152,022	0	0	0	0
Pacific Noncontiguous	446,086	380,467	17.0%	0	0	0	0	446,086	380,467	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	446,086	380,467	17.0%	0	0	0	0	446,086	380,467	0	0
U.S. Total	16,993,937	16,630,895	2.2%	463,652	451,930	13,952,803	13,796,547	2,566,436	2,374,691	11,046	7,727

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Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Chapter 6

Fossil Fuel Stocks for Electricity Generation

Table 6.1. Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, 2006 - 2016

	Electric Power Sector			Electric Utilities			Independent Power Producers		
Period	Coal (Thousand Tons)	Petroluem Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)	Coal (Thousand Tons)	Petroluem Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)	Coal (Thousand Tons)	Petroluem Liquids (Thousand Barrels)	Petroleum Coke (Thousand Tons)
End of Year Stocks									
2006	140,964	48,216	674	110,277	29,799	456	30,688	18,416	217
2007	151,221	44,433	554	120,504	28,032	253	30,717	16,401	301
2008	161,589	40,804	739	127,463	26,108	468	34,126	14,696	270
2009	189,467	39,210	1,394	154,815	25,811	1,194	34,652	13,399	201
2010	174,917	35,706	1,019	143,744	24,798	850	31,173	10,908	168
2011	172,387	34,847	508	142,103	25,648	404	30,284	9,198	104
2012	185,116	32,224	495	150,942	23,875	414	34,174	8,349	81
2013	147,884	31,673	390	120,792	22,494	303	27,092	9,179	86
2014	151,548	33,505	827	116,684	22,487	686	34,864	11,018	142
2015	195,548	32,884	1,340	153,226	21,443	1,163	42,322	11,441	177
2016	162,009	31,839	845	130,885	21,013	603	31,124	10,827	241
Year 2014, End of Month Stocks									
January	133,705	27,553	298	108,249	20,649	216	25,456	6,904	83
February	119,904	29,158	277	97,363	20,964	202	22,541	8,195	74
March	118,260	29,197	350	96,029	21,341	282	22,231	7,855	67
April	128,925	29,568	515	103,431	21,583	451	25,494	7,985	64
May	136,921	29,376	458	108,064	21,446	374	28,856	7,930	84
June	133,479	29,738	397	103,948	21,568	343	29,531	8,170	54
July	125,870	29,120	381	97,829	20,967	300	28,041	8,152	81
August	121,369	29,346	388	93,552	21,205	289	27,817	8,141	99
September	124,546	29,789	389	96,266	21,338	297	28,280	8,451	92
October	136,964	30,883	510	105,094	21,741	394	31,870	9,142	117
November	142,595	32,829	633	110,221	22,103	502	32,374	10,726	131
December	151,548	33,505	827	116,684	22,487	686	34,864	11,018	142
Year 2015, End of Month Stocks									
January	154,390	32,896	892	118,239	22,177	742	36,151	10,718	150
February	149,071	28,446	850	115,271	20,328	723	33,800	8,118	127
March	154,347	29,536	818	120,635	21,165	698	33,712	8,371	120
April	167,063	29,614	912	130,078	21,218	776	36,985	8,396	136
May	172,809	30,184	999	134,499	21,504	856	38,310	8,680	143
June	166,437	30,441	1,031	130,716	21,634	883	35,720	8,807	149
July	157,938	30,119	1,064	124,301	21,365	909	33,638	8,754	156
August	155,952	30,143	1,029	123,296	21,138	891	32,656	9,005	138
September	162,109	31,390	1,102	128,351	21,450	973	33,757	9,941	129
October	175,588	32,462	1,151	138,712	21,540	1,026	36,876	10,922	125
November	188,595	33,487	1,290	149,168	21,946	1,159	39,427	11,542	131
December	195,548	32,884	1,340	153,226	21,443	1,163	42,322	11,441	177
Year 2016, End of Month Stocks									
January	187,203	32,307	1,320	146,300	20,894	1,089	40,903	11,412	231
February	187,064	31,644	1,323	145,895	20,651	1,064	41,168	10,994	259
March	191,553	31,569	1,240	148,648	20,642	974	42,905	10,927	266
April	193,185	31,788	1,181	150,859	20,926	901	42,327	10,863	280
May	192,417	32,139	1,071	150,639	21,202	826	41,778	10,936	246
June	182,086	31,992	905	144,309	21,133	689	37,777	10,859	216
July	168,119	31,606	858	134,344	20,906	678	33,775	10,700	180
August	158,908	31,565	780	128,256	20,846	589	30,652	10,719	191
September	156,567	31,637	768	127,532	20,924	566	29,035	10,713	201
October	160,932	31,831	813	131,510	21,017	606	29,422	10,813	207
November	170,277	32,503	833	138,091	21,583	606	32,185	10,921	227
December	162,009	31,839	845	130,885	21,013	603	31,124	10,827	241

Notes: See Glossary for definitions. Values are final.
See Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms. Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms.
Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following: Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report; and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Table 6.2 Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, by State, 2016 and 2015

Census Division and State	Coal (Thousand Tons)			Petroleum Liquids (Thousand Barrels)			Petroleum Coke (Thousand Tons)		
	December 2016	December 2015	Percentage Change	December 2016	December 2015	Percentage Change	December 2016	December 2015	Percentage Change
New England	1,638	1,758	-6.8%	4,534	4,918	-7.8%	0	0	--
Connecticut	W	W	W	1,596	1,669	-4.4%	0	0	--
Maine	0	0	--	468	675	-30.6%	0	0	--
Massachusetts	W	W	W	1,903	1,957	-2.7%	0	0	--
New Hampshire	W	W	W	365	410	-10.9%	0	0	--
Rhode Island	W	0	W	150	154	-2.3%	0	0	--
Vermont	0	0	--	52	NM	NM	0	0	--
Middle Atlantic	4,526	7,914	-42.8%	5,792	6,054	-4.3%	0	0	--
New Jersey	783	932	-15.9%	682	761	-10.5%	0	0	--
New York	W	513	W	3,759	3,861	-2.6%	0	0	--
Pennsylvania	W	6,469	W	1,352	1,432	-5.6%	0	0	--
East North Central	35,636	43,926	-18.9%	1,167	1,158	0.8%	247	192	28.6%
Illinois	7,056	11,111	-36.5%	83	87	-4.3%	0	0	--
Indiana	9,703	11,491	-15.6%	109	114	-4.3%	W	0	W
Michigan	6,024	7,743	-22.2%	361	339	6.5%	W	W	W
Ohio	8,028	8,582	-6.5%	389	361	7.7%	W	W	W
Wisconsin	4,824	4,999	-3.5%	225	257	-12.4%	W	W	W
West North Central	31,091	31,675	-1.8%	1,040	1,069	-2.7%	0	0	--
Iowa	8,430	6,892	22.3%	169	148	14.2%	0	0	--
Kansas	4,588	4,985	-8.0%	123	143	-14.0%	0	0	--
Minnesota	4,003	4,933	-18.8%	141	149	-5.2%	0	0	--
Missouri	9,547	9,764	-2.2%	389	415	-6.4%	0	0	--
Nebraska	2,985	3,068	-2.7%	130	118	9.5%	0	0	--
North Dakota	W	W	W	33	37	-11.4%	0	0	--
South Dakota	W	W	W	55	58	-4.8%	0	0	--
South Atlantic	26,769	35,260	-24.1%	12,144	12,323	-1.5%	W	W	W
Delaware	W	W	W	571	486	17.6%	0	0	--
District of Columbia	0	0	--	0	0	--	0	0	--
Florida	4,427	6,344	-30.2%	4,913	5,476	-10.3%	W	148	W
Georgia	4,907	6,683	-26.6%	806	841	-4.1%	0	0	--
Maryland	1,535	2,051	-25.1%	941	983	-4.3%	0	0	--
North Carolina	4,986	7,621	-34.6%	1,248	1,264	-1.2%	0	0	--
South Carolina	5,080	5,891	-13.8%	718	721	-0.5%	0	0	--
Virginia	1,093	1,401	-22.0%	2,789	2,422	15.1%	0	0	--
West Virginia	W	W	W	158	130	21.4%	W	W	W
East South Central	15,918	18,959	-16.0%	2,004	1,835	9.2%	W	W	W
Alabama	3,514	4,324	-18.7%	339	259	30.7%	0	0	--
Kentucky	7,945	8,934	-11.1%	238	251	-5.1%	W	W	W
Mississippi	1,246	1,706	-27.0%	570	577	-1.1%	0	0	--
Tennessee	3,214	3,995	-19.6%	856	748	14.5%	0	0	--
West South Central	24,799	34,018	-27.1%	1,800	1,911	-5.8%	W	W	W
Arkansas	3,877	5,056	-23.3%	188	190	-1.1%	0	0	--
Louisiana	2,488	3,831	-35.1%	419	412	1.7%	W	W	W
Oklahoma	4,624	5,923	-21.9%	110	111	-0.7%	0	0	--
Texas	13,811	19,208	-28.1%	1,083	1,198	-9.6%	0	0	--
Mountain	20,144	20,737	-2.9%	410	411	-0.3%	W	W	W
Arizona	3,544	4,728	-25.1%	147	138	6.6%	0	0	--
Colorado	4,363	5,605	-22.2%	126	125	0.4%	0	0	--
Idaho	0	0	--	0	0	-12.4%	0	0	--
Montana	W	W	W	20	19	4.1%	W	W	W
Nevada	W	1,114	W	15	14	11.6%	0	0	--
New Mexico	W	W	W	39	43	-8.0%	0	0	--
Utah	5,279	3,941	33.9%	32	40	-20.9%	0	0	--
Wyoming	4,177	3,329	25.5%	30	31	-4.3%	0	0	--
Pacific Contiguous	W	W	W	358	517	-30.7%	0	0	--
California	0	0	--	177	169	4.6%	0	0	--
Oregon	W	W	W	75	81	-7.2%	0	0	--
Washington	W	W	W	106	267	-60.2%	0	0	--
Pacific Noncontiguous	W	W	W	2,591	2,689	-3.6%	0	0	--
Alaska	W	W	W	322	362	-11.0%	0	0	--
Hawaii	W	W	W	2,269	2,327	-2.5%	0	0	--
U.S. Total	162,009	195,548	-17.2%	31,839	32,884	-3.2%	845	1,340	-37.0%

Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
NM = Not meaningful due to large relative standard error or excessive percentage change.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
Negative generation denotes that electric power consumed for plant use exceeds gross generation.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form EIA-923, Power Plant Operations Report.

Table 6.3 Stocks of Coal, Petroleum Liquids, and Petroleum Coke: Electric Power Sector, by Census Divison, 2016 and 2015

	Electric Power Sector			Electric Utilities		Independent Power Producers	
Census Division	**December 2016**	**December 2015**	**Percentage Change**	**December 2016**	**December 2015**	**December 2016**	**December 2015**
Coal (Thousand Tons)							
New England	1,638	1,758	-6.8%	W	W	W	W
Middle Atlantic	4,526	7,914	-42.8%	0	0	4,526	7,914
East North Central	35,636	43,926	-18.9%	22,656	27,729	12,980	16,198
West North Central	31,091	31,675	-1.8%	W	W	W	W
South Atlantic	26,769	35,260	-24.1%	24,404	32,248	2,364	3,012
East South Central	15,918	18,959	-16.0%	15,918	18,959	0	0
West South Central	24,799	34,018	-27.1%	16,279	21,483	8,520	12,535
Mountain	20,144	20,737	-2.9%	W	W	W	W
Pacific Contiguous	W	W	W	W	W	W	W
Pacific Noncontiguous	W	W	W	W	W	W	W
U.S. Total	**162,009**	**195,548**	**-17.2%**	**130,885**	**153,226**	**31,124**	**42,322**
Petroleum Liquids (Thousand Barrels)							
New England	4,534	4,918	-7.8%	683	689	3,852	4,229
Middle Atlantic	5,792	6,054	-4.3%	2,331	2,381	3,461	3,673
East North Central	1,167	1,158	0.8%	855	862	312	296
West North Central	1,040	1,069	-2.7%	1,014	1,042	26	27
South Atlantic	12,144	12,323	-1.5%	9,637	9,839	2,507	2,484
East South Central	2,004	1,835	9.2%	1,931	1,765	73	70
West South Central	1,800	1,911	-5.8%	1,384	1,411	416	500
Mountain	410	411	-0.3%	376	380	34	31
Pacific Contiguous	358	517	-30.7%	249	414	109	103
Pacific Noncontiguous	2,591	2,689	-3.6%	2,554	2,661	37	28
U.S. Total	**31,839**	**32,884**	**-3.2%**	**21,013**	**21,443**	**10,827**	**11,441**
Petroleum Coke (Thousand Tons)							
New England	0	0	--	0	0	0	0
Middle Atlantic	0	0	--	0	0	0	0
East North Central	247	192	28.6%	W	W	W	W
West North Central	0	0	--	0	0	0	0
South Atlantic	W	W	W	W	148	W	W
East South Central	W	W	W	W	W	0	0
West South Central	W	W	W	W	W	0	0
Mountain	W	W	W	0	0	W	W
Pacific Contiguous	0	0	--	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0
U.S. Total	**845**	**1,340**	**-37.0%**	**W**	**W**	**W**	**W**

W = Withheld to avoid disclosure of individual company data.
Notes: See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form-923.
Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Source: U.S. Energy Information Administration, Form-923, 'Power Plant Operations Report.'

Table 6.4. Stocks of Coal by Coal Rank: Electric Power Sector, 2006 - 2016

	Electric Power Sector			
Period	Bituminous Coal	Subbituminous Coal	Lignite Coal	Total
End of Year Stocks				
2006	67,760	68,408	4,797	140,964
2007	63,964	82,692	4,565	151,221
2008	65,818	91,214	4,556	161,589
2009	91,922	92,448	5,097	189,467
2010	81,108	86,915	6,894	174,917
2011	82,056	85,151	5,179	172,387
2012	86,437	93,833	4,846	185,116
2013	73,113	69,720	5,051	147,884
2014	72,771	72,552	6,225	151,548
2015	82,004	108,614	4,931	195,548
2016	67,241	90,376	4,393	162,009
Year 2014, End of Month Stocks				
January	63,618	64,709	5,378	133,705
February	56,041	58,418	5,445	119,904
March	55,150	57,657	5,453	118,260
April	60,602	62,266	6,056	128,925
May	63,782	66,827	6,311	136,921
June	62,679	64,378	6,423	133,479
July	60,134	59,514	6,222	125,870
August	60,128	54,787	6,453	121,369
September	63,031	55,432	6,082	124,546
October	69,246	61,368	6,350	136,964
November	70,666	66,105	5,824	142,595
December	72,771	72,552	6,225	151,548
Year 2015, End of Month Stocks				
January	70,423	78,424	5,542	154,390
February	64,396	79,411	5,264	149,071
March	65,421	84,013	4,912	154,347
April	70,985	90,919	5,159	167,063
May	74,195	93,538	5,077	172,809
June	72,921	88,835	4,681	166,437
July	68,197	84,988	4,753	157,938
August	67,777	83,691	4,484	155,952
September	70,365	87,185	4,559	162,109
October	76,243	94,720	4,626	175,588
November	80,254	103,602	4,738	188,595
December	82,004	108,614	4,931	195,548
Year 2016, End of Month Stocks				
January	76,919	105,641	4,643	187,203
February	76,373	106,153	4,537	187,064
March	79,664	107,076	4,813	191,553
April	81,390	106,720	5,075	193,185
May	82,185	105,068	5,164	192,417
June	78,216	98,822	5,048	182,086
July	71,287	92,104	4,727	168,119
August	67,462	87,040	4,406	158,908
September	65,962	86,411	4,194	156,567
October	67,250	89,666	4,016	160,932
November	70,537	95,428	4,313	170,277
December	67,241	90,376	4,393	162,009

Notes: See Glossary for definitions.
Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.
and predecessor forms. Totals may not equal sum of components because of independent rounding.
Sources: U.S. Energy Information Administration, Form EIA-906, Power Plant Report; U.S. Energy Information Administration, Form EIA-920 Combined Heat and Power Plant Report, and predecessor forms. Beginning with 2008 data, the Form EIA-923, Power Plant Operations Report, replaced the following:
Form EIA-906, Power Plant Report; Form EIA-920, Combined Heat and Power Plant Report; Form EIA-423, Monthly Cost and Quality of Fuels for Electric Plants Report;
and Federal Energy Regulatory Commission, FERC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants.

Chapter 7

Receipts, Cost, and Quality of Fossil Fuels

Table 7.1. Receipts, Average Cost, and Quality of Fossil Fuels for the Electric Power Industry, 2006 through 2016

	Coal				Petroleum				Natural Gas		All Fossil Fuels
			Average Cost				Average Cost			Average Cost	Average Cost
Period	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	(Dollars per MMBtu)	(Dollars per Ton)	Receipts (Thousand Barrels)	Average Sulfur Percent by Weight	(Dollars per MMBtu)	(Dollars per Barrel)	Receipts (Thousand Mcf)	(Dollars per MMBtu)	(Dollars per MMBtu)
2006	1,079,943	0.97	1.69	34.09	100,965	2.31	6.23	37.66	6,675,246	6.94	3.02
2007	1,054,664	0.96	1.77	35.48	88,347	2.10	7.17	43.50	7,200,316	7.11	3.23
2008	1,069,709	0.97	2.07	41.14	96,341	2.21	10.87	64.89	7,879,046	9.02	4.11
2009	981,477	1.01	2.21	43.74	88,951	2.14	7.02	41.64	8,118,550	4.74	3.04
2010	979,918	1.16	2.27	44.64	75,285	2.14	9.54	56.35	8,673,070	5.09	3.26
2011	956,538	1.19	2.39	46.65	66,058	2.49	12.48	73.29	9,056,164	4.72	3.29
2012	841,183	1.25	2.38	46.09	40,364	3.61	12.48	73.30	9,531,389	3.42	2.83
2013	823,222	1.29	2.34	45.33	43,714	3.54	11.57	68.09	8,503,424	4.33	3.09
2014	854,560	1.32	2.37	45.96	54,488	3.56	11.60	68.12	8,431,423	5.00	3.31
2015	782,929	1.29	2.22	42.86	48,804	3.38	6.74	39.51	9,842,581	3.23	2.65
2016	650,770	1.34	2.11	40.64	37,637	3.69	5.24	30.46	10,271,180	2.87	2.47

* = Value is less than half of the smallest unit of measure. (e.g., for values with no decimals, the smallest unit is 1 then values under 0.5 are shown as *.)
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Beginning in January 2013, the threshold for reporting fuel receipts data was changed from 50 megawatts to 200 megawatts of nameplate capacity for plants primarily fueled by natural gas, petroleum coke, distillate fuel oil, and residual fuel oil. In addition, the requirement to report self-produced and minor fuels, i.e., blast furnace gas, other manufactured gases, kerosene, jet fuel, propane, and waste oils was eliminated. The threshold for coal plants remained at 50 megawatts. The following caveats for each fuel type should be noted:
COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.
PETROLEUM - includes petroleum liquids (distillate fuel oil and residual fuel oil) and petroleum coke which includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.
NATURAL GAS - includes natural gas only. Prior to 2011, includes Other Gases.

- All values are final.
- See Glossary for definitions.
- Starting in January 2013, there may have been a shift in the continuity of Chapter 7 tables due to changes in the sample design of Form EIA-923 and the imputation process.
- See the EIA-923 section of the Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
- See the Technical Notes for fuel conversion factors.
- Totals may not equal the sum of components because of independent rounding.

Sources: U.S. Energy Information Administration (EIA), Form EIA-923, "Power Plant Operations Report" and predecessor forms including Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report" and Federal Energy Regulatory Commission (FERC), FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Table 7.2. Receipts and Quality of Coal Delivered for the Electric Power Industry, 2006 through 2016

	Bituminous			Subbituminous			Lignite		
Period	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
2006	489,550	1.59	10.5	504,947	0.35	6.1	75,742	0.95	14.4
2007	467,817	1.62	10.3	505,155	0.34	6.0	71,930	0.90	14.0
2008	464,362	1.68	10.6	522,228	0.34	5.8	68,945	0.86	13.8
2009	418,688	1.77	10.5	484,007	0.34	5.8	64,966	0.95	14.0
2010	403,619	1.90	10.4	491,425	0.33	5.8	71,416	0.90	14.1
2011	380,184	2.01	10.5	488,366	0.33	5.8	75,675	0.90	14.4
2012	317,398	2.23	10.6	442,674	0.32	5.8	71,848	0.93	14.6
2013	312,821	2.33	10.5	429,283	0.32	5.8	71,191	0.92	14.3
2014	334,082	2.34	10.3	440,013	0.31	5.8	71,534	0.90	14.1
2015	289,093	2.40	10.4	421,127	0.32	5.8	65,826	0.89	14.1
2016	245,141	2.43	10.3	333,241	0.31	5.8	64,426	0.91	14.0

* = Value is less than half of the smallest unit of measure. (e.g., for values with no decimals, the smallest unit is 1 then values under 0.5 are shown as *.)
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Bituminous coal includes anthracite and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.

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- See Glossary for definitions.
- Starting in January 2013, there may have been a shift in the continuity of Chapter 7 tables due to changes in the sample design of Form EIA-923 and the imputation process.
- See the EIA-923 section of the Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
- See the Technical Notes for fuel conversion factors.
- Totals may not equal the sum of components because of independent rounding.

Sources: U.S. Energy Information Administration (EIA), Form EIA-923, "Power Plant Operations Report" and predecessor forms including Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report" and Federal Energy Regulatory Commission (FERC), FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Table 7.3. Average Quality of Fossil Fuel Receipts for the Electric Power Industry, 2006 through 2016

	Coal			Petroleum			Natural Gas
Period	Average Btu per Pound	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Average Btu per Gallon	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Average Btu per Cubic Foot
2006	10,063	0.97	9.0	143,883	2.31	0.2	1,027
2007	10,028	0.96	8.8	144,546	2.10	0.1	1,027
2008	9,947	0.97	9.0	142,205	2.21	0.3	1,027
2009	9,902	1.01	8.9	141,321	2.14	0.2	1,025
2010	9,842	1.16	8.8	140,598	2.14	0.2	1,022
2011	9,762	1.19	8.8	139,795	2.49	0.4	1,021
2012	9,668	1.25	8.8	139,567	3.61	0.5	1,023
2013	9,661	1.29	8.7	139,671	3.54	0.5	1,026
2014	9,710	1.32	8.6	139,713	3.56	0.5	1,029
2015	9,634	1.29	8.6	139,681	3.38	0.5	1,034
2016	9,617	1.34	8.7	138,384	3.69	0.5	1,034

* = Value is less than half of the smallest unit of measure. (e.g., for values with no decimals, the smallest unit is 1 then values under 0.5 are shown as *.)
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Beginning in January 2013, the threshold for reporting fuel receipts data was changed from 50 megawatts to 200 megawatts of nameplate capacity for plants primarily fueled by natural gas, petroleum coke, distillate fuel oil, and residual fuel oil. In addition, the requirement to report self-produced and minor fuels, i.e., blast furnace gas, other manufactured gases, kerosene, jet fuel, propane, and waste oils was eliminated. The threshold for coal plants remained at 50 megawatts. The following caveats for each fuel type should be noted:
COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.
PETROLEUM - includes petroleum liquids (distillate fuel oil and residual fuel oil) and petroleum coke which includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.
NATURAL GAS - includes natural gas only. Prior to 2011, includes Other Gases.

- All values are final.
- See Glossary for definitions.
- Starting in January 2013, there may have been a shift in the continuity of Chapter 7 tables due to changes in the sample design of Form EIA-923 and the imputation process.
- See the EIA-923 section of the Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
- See the Technical Notes for fuel conversion factors.
- Totals may not equal the sum of components because of independent rounding.

Sources: U.S. Energy Information Administration (EIA), Form EIA-923, "Power Plant Operations Report" and predecessor forms including Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report" and Federal Energy Regulatory Commission (FERC), FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Table 7.4. Weighted Average Cost of Fossil Fuels for the Electric Power Industry, 2006 through 2016

	Coal								Petroleum		Natural Gas		Total Fossil	
	Bituminous		Subbituminous		Lignite		All Coal Ranks							
Period	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)	Receipts (Trillion Btu)	Average Cost (Dollars per MMBtu)
2006	11,789	2.03	8,842	1.31	982	1.15	21,735	1.69	610	6.23	6,856	6.94	29,201	3.02
2007	11,279	2.07	8,826	1.45	925	1.28	21,152	1.77	536	7.17	7,396	7.11	29,085	3.23
2008	11,119	2.50	9,087	1.62	896	1.41	21,280	2.07	575	10.87	8,089	9.02	29,945	4.11
2009	10,010	2.75	8,421	1.64	835	1.58	19,438	2.21	528	7.02	8,319	4.74	28,285	3.04
2010	9,652	2.81	8,545	1.73	925	1.62	19,290	2.27	445	9.54	8,867	5.09	28,602	3.26
2011	9,040	2.94	8,498	1.91	986	1.62	18,676	2.39	388	12.48	9,251	4.72	28,314	3.29
2012	7,502	2.89	7,722	1.97	931	1.80	16,266	2.38	237	12.48	9,747	3.42	26,249	2.83
2013	7,351	2.77	7,511	2.00	927	1.78	15,907	2.34	256	11.57	8,721	4.33	24,884	3.09
2014	7,883	2.74	7,681	2.06	934	1.77	16,595	2.37	320	11.60	8,679	5.00	25,594	3.31
2015	6,797	2.58	7,353	1.94	855	1.92	15,086	2.22	286	6.74	10,174	3.23	25,546	2.65
2016	5,770	2.40	5,818	1.89	840	1.74	12,516	2.11	219	5.24	10,619	2.87	23,354	2.47

* = Value is less than half of the smallest unit of measure. (e.g., for values with no decimals, the smallest unit is 1 then values under 0.5 are shown as *.)
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Beginning in January 2013, the threshold for reporting fuel receipts data was changed from 50 megawatts to 200 megawatts of nameplate capacity for plants primarily fueled by natural gas, petroleum coke, distillate fuel oil, and residual fuel oil. In addition, the requirement to report self-produced and minor fuels, i.e., blast furnace gas, other manufactured gases, kerosene, jet fuel, propane, and waste oils was eliminated. The threshold for coal plants remained at 50 megawatts. The following caveats for each fuel type should be noted:
COAL - All coal ranks subtotal includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.
Bituminous coal includes anthracite coal and beginning in 2011, coal-derived synthesis gas.
PETROLEUM - includes petroleum liquids (distillate fuel oil and residual fuel oil) and petroleum coke which includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.
NATURAL GAS - includes natural gas only. Prior to 2011, includes Other Gases.

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- See the EIA-923 section of the Technical Notes for a discussion of the sample design for the Form EIA-923 and predecessor forms.
- See the Technical Notes for fuel conversion factors.
- Totals may not equal the sum of components because of independent rounding.

Sources: U.S. Energy Information Administration (EIA), Form EIA-923, "Power Plant Operations Report" and predecessor forms including Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report" and Federal Energy Regulatory Commission (FERC), FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Table 7.5. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities, 2006 - 2016

	Coal						Petroleum Liquids					
	Receipts		Average Cost				Receipts		Average Cost			
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)	Average Sulfur Percent by Weight	Percentage of Consumption
Annual Totals												
2006	16,197,852	797,361	1.69	34.26	0.92	105.8	269,033	42,415	8.33	52.80	0.82	79.2
2007	15,561,395	767,377	1.78	36.06	0.92	100.3	216,349	34,026	9.24	58.73	0.77	59.8
2008	15,347,396	764,399	2.06	41.32	0.93	100.5	240,937	38,891	15.83	98.09	0.60	99.7
2009	14,402,019	719,253	2.22	44.47	0.99	103.4	202,598	32,959	10.44	64.18	0.51	103.5
2010	14,226,995	713,094	2.27	45.33	1.14	98.8	189,790	31,099	13.94	85.07	0.48	101.0
2011	13,871,559	699,353	2.40	47.67	1.16	101.5	144,255	23,859	20.30	122.72	0.53	114.5
2012	11,939,543	609,445	2.43	47.51	1.18	99.0	86,030	14,252	22.11	133.44	0.41	81.3
2013	11,595,328	592,772	2.38	46.51	1.23	92.9	78,101	12,814	21.09	128.57	0.43	76.2
2014	12,064,810	614,728	2.39	46.95	1.21	98.3	98,357	16,161	19.90	121.14	0.44	82.0
2015	11,088,631	571,707	2.25	43.71	1.17	105.8	90,041	14,747	11.32	69.13	0.46	79.2
2016	9,256,878	476,207	2.16	42.01	1.21	95.4	73,294	11,985	9.16	56.02	0.45	74.0
Year 2014												
January	939,850	48,843	2.30	44.18	1.13	79.8	12,001	2,011	21.72	129.64	0.32	44.6
February	870,977	44,490	2.31	45.27	1.23	80.6	12,180	2,005	21.72	131.94	0.49	106.4
March	991,708	50,353	2.37	46.61	1.23	97.5	8,992	1,474	21.53	131.41	0.39	76.6
April	948,645	47,838	2.41	47.72	1.23	116.0	6,691	1,099	21.74	132.35	0.36	85.6
May	1,003,354	50,694	2.42	47.83	1.27	107.4	5,313	885	21.88	131.42	0.34	68.2
June	998,236	50,508	2.40	47.48	1.25	90.8	6,271	1,037	21.65	130.91	0.34	87.9
July	1,059,989	53,961	2.41	47.22	1.19	89.5	5,979	985	21.28	129.22	0.47	75.2
August	1,096,270	55,759	2.40	47.18	1.22	92.5	6,800	1,108	20.61	126.44	0.50	84.5
September	1,037,230	52,716	2.41	47.40	1.21	103.8	6,921	1,137	19.90	121.13	0.48	87.7
October	1,047,018	53,419	2.34	45.74	1.20	118.6	6,939	1,148	19.33	117.03	0.48	94.2
November	1,010,559	51,705	2.33	45.51	1.20	110.9	7,512	1,237	17.71	107.56	0.50	100.6
December	1,060,973	54,441	2.60	50.75	1.20	108.8	12,760	2,035	13.22	82.91	0.46	160.4
Year 2015												
January	1,022,724	52,840	2.31	44.72	1.17	103.9	8,679	1,427	11.79	71.76	0.57	69.0
February	853,788	44,181	2.26	43.70	1.17	92.2	8,590	1,404	11.71	71.63	0.47	39.1
March	915,194	47,024	2.26	44.08	1.17	111.2	10,166	1,669	12.11	73.85	0.52	134.1
April	872,141	44,828	2.26	43.98	1.20	124.1	6,581	1,083	13.26	80.57	0.39	87.9
May	918,188	46,827	2.29	44.97	1.21	109.2	7,705	1,259	12.50	76.54	0.46	100.6
June	897,838	45,934	2.28	44.49	1.23	90.6	7,498	1,234	13.66	82.97	0.46	89.4
July	959,033	49,930	2.24	42.94	1.11	88.7	6,138	1,004	12.47	76.21	0.40	67.8
August	1,026,500	52,727	2.26	44.04	1.17	97.5	5,716	944	11.75	71.16	0.42	67.5
September	993,558	51,091	2.26	44.03	1.16	109.2	7,097	1,157	9.75	59.76	0.38	94.1
October	941,342	48,715	2.19	42.30	1.13	124.6	5,909	970	9.43	57.50	0.44	79.8
November	862,786	44,830	2.20	42.41	1.14	126.2	8,558	1,386	8.80	54.38	0.57	102.8
December	825,539	42,781	2.21	42.64	1.16	112.7	7,402	1,209	8.52	52.14	0.37	102.7
Year 2016												
January	750,914	39,064	2.17	41.71	1.18	85.5	6,190	1,022	7.88	47.74	0.44	58.8
February	722,024	37,129	2.16	41.95	1.23	98.2	5,814	955	6.92	42.16	0.41	64.1
March	685,422	34,609	2.19	43.49	1.34	110.9	5,223	851	6.69	41.07	0.40	77.5
April	612,742	30,953	2.19	43.39	1.31	107.4	6,897	1,126	8.35	51.19	0.37	106.4
May	655,166	33,408	2.17	42.60	1.25	98.5	6,742	1,114	9.12	55.16	0.40	91.7
June	775,536	39,900	2.15	41.79	1.24	85.9	5,511	908	10.51	63.80	0.44	70.9
July	849,005	43,981	2.17	41.99	1.15	81.1	7,117	1,142	11.54	71.91	0.52	66.7
August	925,332	47,610	2.17	42.19	1.19	88.3	6,737	1,090	9.15	56.57	0.51	66.2
September	851,137	43,822	2.18	42.34	1.18	97.6	5,514	896	9.00	55.39	0.49	79.2
October	842,651	43,693	2.12	40.99	1.16	110.5	5,205	851	9.80	59.94	0.52	73.4
November	805,502	41,615	2.13	41.25	1.20	117.8	6,780	1,106	9.80	60.07	0.48	88.2
December	781,447	40,423	2.13	41.17	1.21	85.4	5,565	925	10.71	64.43	0.44	65.2

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Notes:
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COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.
PETROLEUM LIQUIDS - includes distillate fuel oil and residual fuel oil. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.

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Table 7.6. Receipts, Average Cost, and Quality of Fossil Fuels: Electric Utilities, 2006 - 2016 (continued)

	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMbtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2006	99,471	3,516	1.49	42.21	5.11	97.2	2,222,289	2,163,113	7.36	7.56	87.3	2.45
2007	84,812	2,964	1.73	49.57	5.09	105.6	2,378,104	2,315,637	7.47	7.67	84.6	2.61
2008	80,987	2,843	2.13	60.51	5.36	123.8	2,856,354	2,784,642	9.15	9.39	102.0	3.33
2009	109,126	3,833	1.68	47.84	5.02	138.8	3,033,133	2,962,640	5.50	5.63	101.8	2.87
2010	103,152	3,628	2.38	67.65	5.03	109.1	3,395,962	3,327,919	5.43	5.54	101.1	2.99
2011	99,208	3,445	3.08	88.73	5.17	99.9	3,571,348	3,507,613	5.00	5.09	101.8	3.08
2012	72,782	2,521	2.30	66.40	5.46	119.8	4,083,579	4,003,457	3.74	3.81	97.6	2.86
2013	99,088	3,463	2.11	60.30	5.34	101.6	3,939,408	3,851,241	4.49	4.59	97.0	2.99
2014	123,793	4,349	1.89	53.77	5.56	126.3	3,876,549	3,772,596	5.17	5.31	96.7	3.16
2015	115,929	4,069	1.77	50.44	5.23	130.1	4,717,748	4,565,040	3.52	3.64	96.0	2.67
2016	99,706	3,538	1.52	42.85	5.38	103.1	5,075,337	4,907,538	3.15	3.26	97.0	2.54
Year 2014												
January	8,753	309	1.79	50.66	5.22	88.7	322,118	314,783	6.23	6.37	96.8	3.45
February	8,883	312	2.01	57.15	5.47	113.1	261,721	255,665	7.00	7.16	96.1	3.56
March	11,235	396	1.94	54.97	5.85	119.1	269,374	263,288	5.93	6.06	96.8	3.24
April	11,184	394	2.07	58.69	5.98	186.0	270,455	264,009	5.34	5.47	97.6	3.14
May	10,813	383	2.13	60.11	5.57	121.8	324,319	316,054	5.26	5.40	97.7	3.18
June	9,321	325	1.97	56.35	5.85	95.9	346,749	337,837	5.17	5.31	96.9	3.19
July	9,697	339	1.79	51.25	5.70	113.6	390,076	379,146	4.84	4.98	96.4	3.12
August	10,451	365	1.85	52.89	5.51	122.5	424,307	412,297	4.47	4.60	96.6	3.05
September	9,844	345	1.81	51.54	5.40	122.6	353,112	342,647	4.63	4.77	96.2	3.05
October	9,240	326	1.65	46.75	5.25	182.8	323,101	313,490	4.55	4.69	96.8	2.93
November	10,079	354	1.70	48.51	5.43	154.6	288,185	279,556	4.75	4.90	96.6	2.94
December	14,294	499	1.90	54.38	5.40	149.0	303,034	293,825	4.61	4.76	96.6	3.13
Year 2015												
January	11,509	404	1.94	55.36	5.21	129.1	345,262	334,921	4.24	4.37	96.3	2.84
February	8,617	301	1.72	49.17	5.31	90.5	325,811	315,866	4.57	4.72	95.1	2.95
March	7,949	283	1.95	54.67	5.16	144.7	343,696	333,075	3.78	3.90	95.6	2.74
April	8,845	313	1.95	55.11	4.92	146.8	331,639	321,268	3.48	3.60	97.3	2.65
May	10,125	357	1.98	56.26	5.21	136.5	364,935	353,283	3.50	3.61	97.6	2.69
June	7,485	262	1.73	49.60	5.62	111.4	444,769	429,988	3.47	3.59	96.1	2.72
July	11,256	395	1.86	52.91	5.04	118.3	509,115	491,495	3.46	3.59	96.2	2.69
August	9,787	342	1.76	50.54	4.92	109.8	492,323	476,327	3.46	3.57	95.7	2.67
September	12,216	429	1.72	49.08	5.09	145.7	428,044	413,887	3.40	3.52	95.5	2.63
October	9,567	334	1.77	50.64	5.05	147.2	380,675	367,001	3.25	3.37	96.2	2.52
November	10,082	354	1.46	41.65	5.64	196.4	365,361	354,358	2.97	3.07	96.5	2.47
December	8,492	297	1.35	38.62	5.76	128.1	386,119	373,572	2.93	3.03	94.8	2.47
Year 2016												
January	7,935	278	1.15	32.96	5.67	91.8	394,925	382,074	3.27	3.38	97.1	2.57
February	9,837	356	1.13	31.18	5.53	131.0	356,803	344,669	2.96	3.06	96.8	2.43
March	8,402	294	1.21	34.47	5.28	103.8	383,424	371,055	2.53	2.61	97.4	2.33
April	8,436	300	1.14	31.95	5.58	92.1	367,155	355,539	2.72	2.80	97.6	2.42
May	7,842	281	1.22	34.16	5.35	94.9	412,465	399,342	2.68	2.77	97.4	2.40
June	6,325	220	1.33	38.34	4.59	71.4	501,782	485,899	2.88	2.97	96.9	2.46
July	9,587	340	1.43	40.50	5.10	104.6	571,042	552,828	3.20	3.31	96.5	2.62
August	9,306	335	1.62	45.01	5.45	99.4	571,170	551,024	3.23	3.34	96.9	2.59
September	9,059	320	2.00	56.51	5.12	102.8	457,872	442,147	3.43	3.55	97.3	2.64
October	7,088	253	1.87	52.47	5.71	146.9	370,666	358,541	3.53	3.65	96.7	2.58
November	7,871	279	2.22	62.85	5.74	116.3	339,777	328,019	3.36	3.48	97.4	2.54
December	8,017	284	1.99	56.17	5.39	108.8	348,255	336,401	4.15	4.30	97.0	2.78

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Notes:
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PETROLEUM COKE - includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
NATURAL GAS - includes natural gas only. Prior to 2011, includes Other Gases.

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Table 7.7 Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers, 2006 - 2016

	Coal						Petroleum Liquids					
	Receipts		Average Cost				Receipts		Average Cost			
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)	Average Sulfur Percent by Weight	Percentage of Consumption
Annual Totals												
2006	5,204,402	266,856	1.69	33.04	1.09	97.7	117,524	19,236	9.65	58.98	0.45	104.9
2007	5,275,454	273,216	1.71	33.11	1.06	97.5	125,025	20,486	10.49	64.01	0.45	85.0
2008	5,395,142	281,258	2.03	38.98	1.04	100.4	82,124	13,657	16.30	98.03	0.41	94.4
2009	4,563,080	240,687	2.11	39.94	1.06	101.1	68,030	11,408	10.02	59.76	0.37	102.0
2010	4,555,898	243,585	2.20	41.15	1.21	96.0	49,598	8,420	14.80	87.19	0.35	89.9
2011	4,292,284	233,295	2.28	41.95	1.25	95.9	41,599	7,096	20.30	119.01	0.50	106.9
2012	4,036,436	218,341	2.21	40.92	1.42	104.9	23,922	4,073	22.34	131.28	0.44	79.8
2013	4,032,431	217,572	2.20	40.95	1.48	99.1	43,432	7,205	19.71	118.88	0.45	110.1
2014	4,243,949	226,600	2.25	42.20	1.61	100.1	71,774	11,980	19.90	119.36	0.45	101.0
2015	3,731,508	198,982	2.10	39.39	1.66	100.5	55,248	9,189	11.69	70.36	0.46	86.5
2016	3,047,358	164,648	1.93	35.69	1.73	91.8	25,975	4,410	9.93	58.56	0.48	75.1
Year 2014												
January	356,260	19,360	2.25	41.46	1.56	86.8	14,823	2,481	22.05	132.09	0.46	43.7
February	324,520	17,309	2.31	43.39	1.62	83.0	13,652	2,247	21.53	131.09	0.39	189.3
March	383,238	19,906	2.32	44.67	1.66	97.8	6,096	1,023	22.59	134.69	0.52	66.2
April	368,214	19,193	2.29	44.00	1.60	114.9	2,150	365	21.88	129.00	0.48	127.7
May	358,005	18,880	2.30	43.62	1.65	113.3	3,198	529	20.19	121.99	0.52	145.8
June	346,608	18,528	2.29	42.89	1.64	100.1	2,867	477	21.11	126.96	0.51	141.6
July	346,695	18,879	2.24	41.19	1.53	90.0	2,327	391	21.59	128.64	0.50	96.7
August	366,331	19,740	2.22	41.23	1.63	96.0	2,265	382	W	W	0.49	79.5
September	342,392	18,355	2.21	41.35	1.70	101.3	3,161	526	19.20	115.97	0.50	156.6
October	345,463	18,416	2.18	40.98	1.57	115.9	5,762	961	17.58	105.43	0.44	279.8
November	338,083	18,186	2.19	40.72	1.58	101.8	10,107	1,695	15.62	93.26	0.38	374.5
December	368,141	19,847	2.20	40.90	1.54	112.9	5,366	904	15.41	91.46	0.53	201.5
Year 2015												
January	370,545	19,679	2.19	41.18	1.57	96.2	4,385	732	15.01	89.69	0.49	59.4
February	302,474	16,111	2.22	41.77	1.63	84.3	11,250	1,857	13.25	80.43	0.51	37.0
March	298,086	15,549	2.21	42.43	1.63	97.3	3,976	670	13.58	80.81	0.49	119.6
April	290,324	15,310	2.11	40.15	1.67	124.1	2,315	394	12.90	76.13	0.46	130.6
May	289,053	15,209	2.13	40.54	1.77	107.3	3,836	648	13.09	77.69	0.41	141.4
June	282,635	15,143	2.14	40.04	1.77	83.3	2,120	356	13.32	79.32	0.48	95.0
July	319,704	17,307	2.09	38.62	1.66	85.8	2,277	386	12.82	75.72	0.47	69.7
August	345,979	18,463	2.11	39.54	1.69	94.3	3,485	581	12.58	75.51	0.48	134.5
September	345,305	18,605	2.05	38.03	1.69	103.9	6,857	1,134	9.47	57.12	0.47	242.0
October	323,263	17,340	1.99	37.04	1.62	120.0	6,936	1,131	8.70	53.42	0.41	304.8
November	286,023	15,432	1.97	36.47	1.57	115.6	5,410	891	9.13	55.56	0.45	217.6
December	278,119	14,836	1.96	36.85	1.64	121.7	2,401	409	9.61	56.22	0.45	92.1
Year 2016												
January	264,906	14,431	1.94	35.56	1.72	87.7	2,670	459	7.86	45.79	0.42	64.8
February	241,497	12,970	1.92	35.76	1.91	101.0	1,867	313	6.94	41.57	0.47	42.4
March	192,217	10,216	2.04	38.36	1.89	117.0	1,484	256	W	W	0.47	66.8
April	178,203	9,323	1.99	38.00	1.97	90.2	1,473	252	W	W	0.50	74.9
May	200,347	10,560	2.08	39.52	2.05	94.7	2,331	396	11.84	69.75	0.48	98.3
June	228,760	12,535	1.87	34.19	1.72	74.5	1,842	312	10.09	59.54	0.47	82.9
July	288,156	15,689	1.89	34.68	1.67	78.4	1,828	310	12.96	76.40	0.45	58.9
August	309,421	16,607	1.89	35.21	1.71	83.3	2,262	383	10.26	60.58	0.48	69.4
September	289,363	15,859	1.91	34.96	1.65	90.6	2,478	420	10.16	59.98	0.49	92.3
October	280,681	15,236	1.88	34.66	1.62	101.0	2,885	492	10.39	61.12	0.49	111.5
November	276,435	15,051	1.91	35.16	1.53	117.1	2,652	446	10.79	64.16	0.47	115.5
December	297,372	16,171	1.91	35.08	1.60	91.6	2,202	370	W	W	0.50	65.7

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Notes:
Beginning in January 2013, the threshold for reporting fuel receipts data was changed from 50 megawatts to 200 megawatts of nameplate capacity for plants primarily fueled by natural gas, petroleum coke, distillate fuel oil, and residual fuel oil. In addition, the requirement to report self-produced and minor fuels, i.e., blast furnace gas, other manufactured gases, kerosene, jet fuel, propane, and waste oils was eliminated. The threshold for coal plants remained at 50 megawatts. The following caveats for each fuel type should be noted:
COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.
PETROLEUM LIQUIDS - includes distillate fuel oil and residual fuel oil. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.

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- See the Technical Notes for fuel conversion factors.
- Totals may not equal the sum of components because of independent rounding.

Sources: U.S. Energy Information Administration (EIA), Form EIA-923, "Power Plant Operations Report" and predecessor forms including Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report" and Federal Energy Regulatory Commission (FERC), FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Table 7.8. Receipts, Average Cost, and Quality of Fossil Fuels: Independent Power Producers, 2006 - 2016 (continued)

	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMbtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2006	85,924	3,031	1.07	30.34	5.13	87.1	3,742,865	3,647,102	6.66	6.84	97.4	3.82
2007	56,580	1,994	1.02	28.95	4.88	69.3	4,097,825	3,990,546	6.92	7.11	97.2	4.06
2008	79,122	2,788	1.47	41.85	4.63	98.8	4,061,830	3,956,155	8.93	9.17	100.5	5.07
2009	49,619	1,732	1.31	37.63	3.87	93.6	4,087,573	3,987,721	4.30	4.41	100.7	3.18
2010	30,079	1,050	1.74	49.80	3.84	72.3	4,212,611	4,119,103	4.94	5.05	100.6	3.57
2011	33,643	1,175	2.54	72.85	4.55	84.6	4,252,040	4,158,617	4.62	4.72	100.8	3.52
2012	23,024	801	0.82	23.98	5.49	92.1	4,810,553	4,696,637	3.17	3.25	93.8	2.74
2013	16,150	575	W	W	5.39	65.6	4,025,263	3,917,898	4.25	4.36	92.8	W
2014	13,781	488	2.48	70.31	5.33	70.9	4,054,540	3,934,672	4.90	5.05	92.7	W
2015	14,550	524	2.45	68.22	5.26	67.3	4,683,291	4,530,195	2.94	3.04	93.2	W
2016	13,573	492	2.50	68.88	5.44	69.9	4,791,729	4,634,518	2.54	2.63	94.0	W
Year 2014												
January	922	33	W	W	5.35	52.4	320,157	311,751	8.58	8.81	92.3	W
February	1,039	38	0.00	0.00	5.27	60.8	267,558	260,190	8.33	8.57	91.3	5.10
March	1,127	41	W	W	5.47	62.5	271,937	264,409	6.38	6.56	91.6	W
April	1,047	37	W	W	5.53	57.9	264,781	257,569	4.83	4.96	92.5	W
May	1,419	50	W	W	5.35	88.8	305,484	296,701	4.51	4.65	91.8	W
June	1,349	47	W	W	5.24	102.9	352,539	342,158	4.45	4.58	91.9	W
July	1,124	39	W	W	5.55	67.8	432,673	419,753	3.98	4.10	93.3	W
August	1,401	49	W	W	5.39	83.2	455,652	441,523	3.71	3.83	93.7	W
September	946	33	W	W	5.29	47.3	400,187	387,887	3.72	3.84	93.6	W
October	821	29	W	W	5.26	91.2	363,367	352,206	3.58	3.69	92.8	W
November	1,066	36	W	W	5.29	87.9	298,147	289,008	4.27	4.41	92.9	W
December	1,520	53	W	W	5.10	76.9	322,057	311,517	4.04	4.18	93.1	W
Year 2015												
January	1,427	52	W	W	5.10	77.7	341,822	330,761	4.08	4.22	91.0	W
February	562	20	W	W	4.53	30.3	301,145	291,394	5.27	5.45	92.2	W
March	956	34	W	W	4.81	48.8	347,024	336,090	3.37	3.49	93.3	W
April	1,501	54	W	W	4.95	79.8	324,962	313,969	2.65	2.75	94.0	W
May	1,348	48	W	W	5.17	69.5	359,864	347,963	2.75	2.85	93.5	W
June	1,237	44	W	W	5.22	69.1	425,118	410,985	2.68	2.78	93.7	W
July	1,119	40	W	W	5.30	58.9	516,995	500,696	2.71	2.79	93.6	W
August	1,289	45	W	W	5.62	67.7	511,789	495,450	2.71	2.80	93.7	W
September	432	16	W	W	5.44	22.4	445,913	431,110	2.69	2.79	93.4	W
October	1,295	47	W	W	5.38	71.8	394,437	381,566	2.55	2.64	93.1	W
November	1,643	59	W	W	5.35	82.8	351,912	340,122	2.31	2.40	93.1	W
December	1,742	65	W	W	5.70	179.6	362,309	350,090	2.21	2.29	93.5	W
Year 2016												
January	1,305	49	W	W	5.70	182.6	366,954	353,940	2.80	2.91	93.1	W
February	1,314	47	W	W	5.44	97.1	322,866	312,018	2.43	2.52	93.5	W
March	1,337	48	W	W	5.37	65.3	353,542	341,974	1.89	1.95	94.0	W
April	1,203	44	W	W	5.30	88.5	345,599	334,192	2.07	2.14	94.3	W
May	506	18	W	W	5.28	30.6	384,972	373,040	2.04	2.11	94.6	W
June	348	12	W	W	5.32	20.5	457,044	442,942	2.41	2.49	94.4	W
July	223	8	W	W	5.67	12.1	552,956	535,139	2.66	2.75	94.4	W
August	1,510	55	W	W	5.24	77.3	569,120	549,584	2.62	2.71	94.3	W
September	1,483	53	W	W	5.43	90.7	448,820	433,556	2.61	2.70	94.1	W
October	1,549	56	W	W	5.59	78.5	362,466	350,675	2.60	2.69	94.0	W
November	1,294	47	W	W	5.43	83.4	313,867	304,227	2.59	2.67	93.5	W
December	1,501	55	W	W	5.50	84.2	313,521	303,233	3.83	3.95	93.6	W

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Notes:
Beginning in January 2013, the threshold for reporting fuel receipts data was changed from 50 megawatts to 200 megawatts of nameplate capacity for plants primarily fueled by natural gas, petroleum coke, distillate fuel oil, and residual fuel oil. In addition, the requirement to report self-produced and minor fuels, i.e., blast furnace gas, other manufactured gases, kerosene, jet fuel, propane, and waste oils was eliminated. The threshold for coal plants remained at 50 megawatts. The following caveats for each fuel type should be noted:
PETROLEUM COKE - includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
NATURAL GAS - includes natural gas only. Prior to 2011, includes Other Gases.

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- Totals may not equal the sum of components because of independent rounding.

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Table 7.9. Receipts, Average Cost, and Quality of Fossil Fuels: Commercial Sector, 2006 - 2016

	Coal						Petroleum Liquids					
	Receipts		Average Cost				Receipts		Average Cost			
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)	Average Sulfur Percent by Weight	Percentage of Consumption
Annual Totals												
2006	12,207	518	2.63	61.95	2.51	27.5	798	137	13.50	78.70	0.17	15.5
2007	12,419	531	2.67	62.46	2.58	27.6	249	43	14.04	81.93	0.17	6.2
2008	43,997	2,009	2.65	58.12	1.73	99.4	3,800	633	17.84	107.10	0.37	102.0
2009	41,182	1,876	2.90	63.68	1.67	104.3	3,517	583	10.82	65.26	0.45	122.1
2010	37,778	1,747	2.82	61.06	1.77	101.6	2,395	400	15.24	91.25	0.38	106.3
2011	35,892	1,686	2.92	62.24	1.78	101.1	1,959	325	19.67	118.66	0.55	108.0
2012	4,427	192	3.41	78.71	2.75	13.2	247	43	W	W	0.00	11.0
2013	3,507	151	W	W	3.05	11.2	0	0	--	--	--	0.0
2014	4,096	182	W	W	2.50	17.1	0	0	--	--	--	0.0
2015	2,439	109	W	W	2.55	13.6	0	0	--	--	--	0.0
2016	1,288	57	W	W	3.03	8.3	0	0	--	--	--	0.0
Year 2014												
January	400	18	W	W	3.06	13.3	0	0	--	--	--	0.0
February	407	18	W	W	2.91	13.7	0	0	--	--	--	0.0
March	526	24	2.98	66.22	2.39	20.1	0	0	--	--	--	0.0
April	640	30	2.70	58.40	1.24	36.2	0	0	--	--	--	0.0
May	475	21	W	W	2.54	29.1	0	0	--	--	--	0.0
June	116	5	W	W	2.88	6.3	0	0	--	--	--	0.0
July	261	11	W	W	2.52	13.2	0	0	--	--	--	0.0
August	159	7	W	W	2.96	9.4	0	0	--	--	--	0.0
September	306	13	W	W	2.56	21.1	0	0	--	--	--	0.0
October	313	14	W	W	2.72	23.9	0	0	--	--	--	0.0
November	229	10	W	W	3.00	12.3	0	0	--	--	--	0.0
December	264	12	W	W	2.96	13.0	0	0	--	--	--	0.0
Year 2015												
January	309	14	W	W	2.65	14.4	0	0	--	--	--	0.0
February	479	23	2.14	44.32	1.71	23.9	0	0	--	--	--	0.0
March	177	8	W	W	2.93	9.3	0	0	--	--	--	0.0
April	298	13	W	W	2.72	23.8	0	0	--	--	--	0.0
May	102	5	W	W	2.90	9.0	0	0	--	--	--	0.0
June	213	9	W	W	2.30	15.1	0	0	--	--	--	0.0
July	124	5	W	W	2.93	8.3	0	0	--	--	--	0.0
August	187	8	W	W	2.46	13.3	0	0	--	--	--	0.0
September	49	2	W	W	3.01	4.3	0	0	--	--	--	0.0
October	130	6	W	W	3.08	11.1	0	0	--	--	--	0.0
November	182	8	W	W	3.00	13.6	0	0	--	--	--	0.0
December	188	8	W	W	2.86	11.5	0	0	--	--	--	0.0
Year 2016												
January	139	6	W	W	2.87	8.1	0	0	--	--	--	0.0
February	124	5	W	W	2.84	7.2	0	0	--	--	--	0.0
March	163	7	W	W	3.03	9.7	0	0	--	--	--	0.0
April	9	0	W	W	2.98	0.9	0	0	--	--	--	0.0
May	0	0	--	--	--	0.0	0	0	--	--	--	0.0
June	0	0	--	--	--	0.0	0	0	--	--	--	0.0
July	0	0	--	--	--	0.0	0	0	--	--	--	0.0
August	92	4	W	W	3.09	8.2	0	0	--	--	--	0.0
September	153	7	W	W	3.14	13.5	0	0	--	--	--	0.0
October	159	7	W	W	3.15	14.1	0	0	--	--	--	0.0
November	237	10	W	W	3.04	17.6	0	0	--	--	--	0.0
December	214	9	W	W	3.05	12.5	0	0	--	--	--	0.0

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Notes:
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COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.
PETROLEUM LIQUIDS - includes distillate fuel oil and residual fuel oil. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.

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Table 7.10. Receipts, Average Cost, and Quality of Fossil Fuels: Commerical Sector, 2006 - 2016 (continued)

	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMbtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2006	0	0	--	--	--	0.0	21,369	20,819	8.33	8.55	30.7	6.42
2007	0	0	--	--	--	0.0	23,502	22,955	7.99	8.18	32.8	6.20
2008	370	14	2.14	58.36	5.53	135.3	71,670	69,877	9.01	9.24	105.5	6.94
2009	252	9	1.65	46.54	5.11	102.8	81,134	79,308	5.18	5.30	105.0	4.58
2010	410	15	2.19	60.59	5.67	122.5	92,055	90,130	5.39	5.51	105.1	4.83
2011	268	9	W	W	5.46	147.4	95,287	93,306	5.20	5.31	107.2	W
2012	0	0	--	--	--	0.0	18,315	18,008	5.88	5.98	16.2	W
2013	0	0	--	--	--	0.0	5,497	5,450	W	W	4.6	W
2014	0	0	--	--	--	0.0	5,849	5,795	W	W	4.9	W
2015	0	0	--	--	--	0.0	6,499	6,371	W	W	5.5	W
2016	0	0	--	--	--	0.0	8,005	7,766	W	W	6.1	W
Year 2014												
January	0	0	--	--	--	0.0	423	418	W	W	3.1	W
February	0	0	--	--	--	0.0	314	310	W	W	3.6	W
March	0	0	--	--	--	0.0	359	355	W	W	4.2	W
April	0	0	--	--	--	0.0	439	435	W	W	5.4	W
May	0	0	--	--	--	0.0	491	486	W	W	5.4	W
June	0	0	--	--	--	0.0	440	437	W	W	4.6	W
July	0	0	--	--	--	0.0	476	472	W	W	4.4	W
August	0	0	--	--	--	0.0	625	619	W	W	5.4	W
September	0	0	--	--	--	0.0	555	551	W	W	5.4	W
October	0	0	--	--	--	0.0	580	575	W	W	5.9	W
November	0	0	--	--	--	0.0	476	472	W	W	5.1	W
December	0	0	--	--	--	0.0	672	666	W	W	6.7	W
Year 2015												
January	0	0	--	--	--	0.0	552	545	W	W	5.7	W
February	0	0	--	--	--	0.0	378	372	W	W	4.4	W
March	0	0	--	--	--	0.0	438	432	W	W	4.7	W
April	0	0	--	--	--	0.0	420	413	W	W	5.1	W
May	0	0	--	--	--	0.0	494	488	W	W	5.4	W
June	0	0	--	--	--	0.0	522	513	W	W	5.2	W
July	0	0	--	--	--	0.0	540	528	W	W	4.6	W
August	0	0	--	--	--	0.0	694	680	W	W	6.1	W
September	0	0	--	--	--	0.0	632	620	W	W	5.8	W
October	0	0	--	--	--	0.0	530	523	W	W	5.4	W
November	0	0	--	--	--	0.0	775	749	W	W	8.0	W
December	0	0	--	--	--	0.0	524	507	W	W	5.2	W
Year 2016												
January	0	0	--	--	--	0.0	1,241	1,203	W	W	11.3	W
February	0	0	--	--	--	0.0	488	477	W	W	4.9	W
March	0	0	--	--	--	0.0	620	610	W	W	6.2	W
April	0	0	--	--	--	0.0	578	567	W	W	6.1	W
May	0	0	--	--	--	0.0	599	587	W	W	6.1	W
June	0	0	--	--	--	0.0	599	585	W	W	5.3	W
July	0	0	--	--	--	0.0	691	667	W	W	5.0	W
August	0	0	--	--	--	0.0	802	765	W	W	5.6	W
September	0	0	--	--	--	0.0	610	591	W	W	5.3	W
October	0	0	--	--	--	0.0	598	575	W	W	5.9	W
November	0	0	--	--	--	0.0	613	589	W	W	6.8	W
December	0	0	--	--	--	0.0	568	549	W	W	5.3	W

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Notes:
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PETROLEUM COKE - includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
NATURAL GAS - includes natural gas only. Prior to 2011, includes Other Gases.

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Sources: U.S. Energy Information Administration (EIA), Form EIA-923, "Power Plant Operations Report" and predecessor forms including Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report" and Federal Energy Regulatory Commission (FERC), FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants."

Table 7.11. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector, 2006 - 2016

	Coal						Petroleum Liquids					
	Receipts		Average Cost				Receipts		Average Cost			
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMBtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Barrels)	(Dollars per MMBtu)	(Dollars per Barrel)	Average Sulfur Percent by Weight	Percentage of Consumption
Annual Totals												
2006	320,640	15,208	2.03	42.76	1.47	60.2	19,514	3,214	7.57	45.95	1.30	21.2
2007	303,091	13,540	2.20	49.16	1.36	60.1	33,637	5,514	8.53	52.06	1.33	38.8
2008	493,724	22,044	2.72	60.96	1.28	100.7	48,822	7,958	12.50	76.69	1.01	109.0
2009	431,686	19,661	2.81	61.68	1.22	99.5	55,899	9,232	9.83	59.52	0.83	112.8
2010	468,991	21,492	2.75	60.08	1.26	87.2	33,276	5,554	13.21	79.15	0.93	125.6
2011	476,108	22,204	2.93	62.86	1.33	99.5	28,939	4,878	17.67	104.83	1.08	144.8
2012	285,172	13,206	3.02	65.24	1.33	65.8	6,739	1,095	W	W	1.52	40.8
2013	275,543	12,727	W	W	1.32	64.4	2,431	394	18.20	112.29	1.43	15.8
2014	281,867	13,050	W	W	1.33	68.4	2,290	373	17.91	109.99	1.43	15.6
2015	263,630	12,132	W	W	1.35	71.4	2,359	385	13.45	82.47	1.42	16.9
2016	210,749	9,859	W	W	1.30	67.0	2,541	412	10.51	64.79	1.27	18.3
Year 2014												
January	23,384	1,093	W	W	1.29	61.0	385	62	18.67	115.30	1.30	15.0
February	21,991	1,020	W	W	1.33	62.5	332	53	20.18	125.46	1.04	19.1
March	25,143	1,161	2.92	63.25	1.41	67.2	135	22	20.74	127.74	1.16	9.3
April	22,469	1,042	3.09	66.66	1.31	70.8	142	23	17.86	110.18	1.60	14.8
May	22,090	1,028	W	W	1.27	66.3	144	23	17.67	109.00	1.70	13.6
June	21,987	1,014	W	W	1.40	65.9	197	32	18.15	111.64	1.79	19.5
July	24,237	1,122	W	W	1.29	70.6	149	24	16.89	103.81	1.54	16.2
August	25,258	1,165	W	W	1.35	73.2	117	19	W	W	1.59	14.2
September	23,305	1,073	W	W	1.28	71.5	140	23	17.75	108.43	1.86	14.5
October	23,967	1,110	W	W	1.35	74.9	150	25	16.21	98.83	1.56	14.8
November	23,701	1,098	W	W	1.37	70.7	169	28	17.46	105.26	1.42	15.1
December	24,334	1,125	W	W	1.30	68.4	230	38	14.15	85.81	1.33	22.4
Year 2015												
January	24,148	1,100	W	W	1.36	68.2	210	34	13.50	83.50	1.82	14.2
February	19,118	882	2.77	60.15	1.42	59.5	275	44	15.47	96.51	1.58	12.2
March	24,240	1,110	W	W	1.30	73.7	212	34	14.93	93.02	1.65	17.1
April	21,069	969	W	W	1.42	72.5	257	43	13.30	79.04	0.98	22.1
May	21,441	991	W	W	1.28	71.9	95	16	15.20	90.88	1.05	8.5
June	21,188	975	W	W	1.36	70.6	240	39	13.12	79.91	1.30	22.0
July	23,947	1,110	W	W	1.34	73.7	122	20	13.55	83.51	1.58	12.5
August	22,948	1,059	W	W	1.28	74.6	161	26	13.21	81.06	1.52	18.7
September	22,556	1,038	W	W	1.22	74.6	151	25	13.56	82.72	1.38	16.9
October	20,964	967	W	W	1.40	74.6	221	36	12.74	77.23	1.26	21.5
November	21,602	987	W	W	1.51	74.5	180	29	11.49	71.78	1.40	19.1
December	20,408	944	W	W	1.36	69.9	234	38	11.75	72.24	1.52	24.5
Year 2016												
January	19,357	897	W	W	1.36	64.2	237	38	11.34	71.47	1.49	18.7
February	17,418	814	W	W	1.42	63.5	342	55	8.70	53.76	1.16	19.8
March	19,181	888	W	W	1.29	69.7	205	33	W	W	1.18	18.5
April	16,048	739	W	W	1.43	68.7	222	36	W	W	1.36	20.8
May	16,376	761	2.67	57.42	1.39	64.6	158	26	11.79	72.81	1.49	11.7
June	18,607	865	2.66	57.25	1.25	69.6	259	42	10.38	64.15	1.45	21.3
July	18,586	875	2.64	56.18	1.23	66.2	85	14	11.10	68.65	1.14	7.1
August	19,629	929	W	W	1.16	71.9	119	19	11.84	73.14	1.11	12.4
September	16,052	753	W	W	1.20	65.1	162	27	11.67	71.25	1.12	16.5
October	18,491	879	W	W	1.25	78.1	297	48	10.34	63.78	1.20	25.7
November	14,936	701	W	W	1.27	64.1	283	47	10.57	63.80	1.30	30.7
December	16,067	759	W	W	1.33	59.3	172	28	W	W	1.12	18.0

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COAL - includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas. Prior to 2011, synthesis gas was included in the category of Other Gases.
PETROLEUM LIQUIDS - includes distillate fuel oil and residual fuel oil. Prior to 2013, petroleum liquids included distillate fuel oil, residual fuel oil, kerosene, jet fuel, waste oil, and, beginning in 2011, propane. Prior to 2011, propane was included in the category of Other Gases.

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Table 7.12. Receipts, Average Cost, and Quality of Fossil Fuels: Industrial Sector, 2006 - 2016 (continued)

	Petroleum Coke						Natural Gas					All Fossil Fuels
	Receipts		Average Cost				Receipts		Average Cost			Average Cost
Period	(Billion Btu)	(Thousand Tons)	(Dollars per MMbtu)	(Dollars per Ton)	Average Sulfur Percent by Weight	Percentage of Consumption	(Billion Btu)	(Thousand Mcf)	(Dollars per MMBtu)	(Dollars per Mcf)	Percentage of Consumption	(Dollars per MMBtu)
Annual Totals												
2006	17,875	646	1.63	45.05	5.43	42.7	869,157	844,211	7.02	7.22	75.7	5.64
2007	19,700	698	1.96	55.42	5.52	43.6	896,803	871,178	6.97	7.18	82.9	5.78
2008	39,246	1,396	3.34	93.84	4.92	117.9	1,099,613	1,068,372	8.95	9.22	111.9	7.10
2009	38,924	1,381	1.80	50.82	4.51	114.2	1,117,489	1,088,880	4.27	4.38	110.0	4.02
2010	35,866	1,269	2.46	69.38	4.90	100.5	1,166,768	1,135,917	4.64	4.77	110.4	4.24
2011	37,981	1,351	W	W	5.03	108.3	1,331,977	1,296,628	4.28	4.40	122.0	W
2012	23,861	858	2.62	72.96	5.86	42.2	834,245	813,288	2.97	3.05	70.8	W
2013	17,236	623	W	W	5.82	30.5	750,946	728,835	W	W	62.3	W
2014	9,736	358	W	W	5.83	23.2	742,347	718,360	W	W	62.7	W
2015	8,189	304	W	W	5.50	24.1	765,964	740,975	W	W	60.6	W
2016	3,664	135	W	W	5.84	11.2	744,034	721,358	W	W	59.6	W
Year 2014												
January	398	15	W	W	5.87	11.7	66,078	64,072	W	W	60.7	W
February	339	13	W	W	5.95	11.2	59,291	57,453	W	W	64.6	W
March	834	31	W	W	5.76	24.3	65,433	63,434	W	W	67.2	W
April	755	28	W	W	5.88	19.7	58,439	56,714	W	W	63.4	W
May	408	15	W	W	5.78	11.7	60,012	58,094	W	W	63.1	W
June	990	36	W	W	5.66	25.6	60,327	58,411	W	W	64.0	W
July	794	29	W	W	5.79	20.2	64,393	62,325	W	W	62.9	W
August	912	34	W	W	5.80	25.1	64,667	62,493	W	W	62.0	W
September	997	36	W	W	5.92	27.6	59,277	57,273	W	W	60.5	W
October	950	34	W	W	5.92	33.0	58,228	56,273	W	W	59.5	W
November	1,071	40	W	W	5.83	33.3	61,753	59,657	W	W	63.3	W
December	1,286	47	W	W	5.86	36.1	64,449	62,162	W	W	62.3	W
Year 2015												
January	1,065	39	W	W	5.45	30.6	63,737	61,619	W	W	59.6	W
February	675	25	W	W	5.72	22.1	60,233	58,313	W	W	63.2	W
March	794	29	W	W	5.66	26.6	63,904	61,821	W	W	62.5	W
April	937	34	W	W	5.81	27.3	59,995	58,072	W	W	62.5	W
May	650	24	W	W	5.58	22.7	62,594	60,498	W	W	63.6	W
June	847	32	W	W	5.41	31.7	63,763	61,470	W	W	60.8	W
July	680	26	W	W	5.28	29.4	67,248	64,911	W	W	59.3	W
August	478	18	W	W	5.34	18.9	68,195	66,008	W	W	59.8	W
September	648	24	W	W	5.57	22.0	63,672	61,594	W	W	60.1	W
October	218	9	W	W	4.62	9.6	57,688	55,868	W	W	54.6	W
November	393	15	W	W	5.27	13.3	65,289	63,274	W	W	61.3	W
December	804	30	W	W	5.46	32.7	69,647	67,528	W	W	61.3	W
Year 2016												
January	400	15	W	W	5.94	15.3	63,059	61,034	W	W	59.0	W
February	122	4	W	W	6.10	4.3	56,120	54,342	W	W	57.2	W
March	574	21	W	W	5.88	23.8	60,020	58,279	W	W	58.9	W
April	669	25	W	W	5.81	31.0	60,005	58,224	W	W	61.3	W
May	206	8	W	W	5.64	7.0	59,608	57,927	W	W	59.3	W
June	222	8	W	W	5.94	7.0	60,985	59,247	W	W	58.7	W
July	222	8	W	W	5.94	7.0	64,456	62,488	W	W	58.3	W
August	217	8	W	W	5.81	7.2	64,784	62,548	W	W	57.7	W
September	200	8	W	W	5.64	9.6	61,346	59,335	W	W	58.7	W
October	207	8	W	W	5.66	7.9	62,185	60,320	W	W	60.7	W
November	200	8	W	W	5.47	7.0	64,265	62,438	W	W	63.4	W
December	427	16	W	W	5.99	15.4	67,201	65,176	W	W	62.7	W

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Table 7.13. Receipts of Coal Delivered for Electricity Generation by State, 2016 and 2015
(Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector							
				Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	1,173	2,081	-44.0%	177	657	979	1,395	0	0	17	30
Connecticut	85	251	-66.0%	0	0	85	251	0	0	0	0
Maine	87	104	-16.0%	0	0	70	74	0	0	17	30
Massachusetts	824	1,070	-23.0%	0	0	824	1,070	0	0	0	0
New Hampshire	177	657	-73.0%	177	657	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	24,329	31,548	-23.0%	0	0	23,738	30,693	0	0	591	856
New Jersey	649	854	-24.0%	0	0	649	854	0	0	0	0
New York	637	1,006	-37.0%	0	0	361	698	0	0	277	309
Pennsylvania	23,042	29,689	-22.0%	0	0	22,728	29,142	0	0	314	547
East North Central	137,391	174,849	-21.0%	82,037	100,647	52,728	71,207	0	27	2,625	2,968
Illinois	39,036	55,587	-30.0%	6,947	8,656	30,046	44,727	0	0	2,043	2,204
Indiana	28,736	34,888	-18.0%	27,038	32,030	1,699	2,858	0	0	0	0
Michigan	21,809	29,684	-27.0%	21,548	29,367	247	260	0	27	13	30
Ohio	28,881	31,671	-8.8%	7,993	8,063	20,736	23,362	0	0	152	246
Wisconsin	18,929	23,020	-18.0%	18,511	22,531	0	0	0	0	418	488
West North Central	117,202	139,057	-16.0%	114,210	135,625	0	0	57	81	2,935	3,350
Iowa	18,041	22,411	-19.0%	15,932	20,212	0	0	0	0	2,110	2,199
Kansas	14,425	17,888	-19.0%	14,425	17,888	0	0	0	0	0	0
Minnesota	12,471	17,220	-28.0%	12,404	16,848	0	0	0	14	67	358
Missouri	34,893	41,233	-15.0%	34,836	41,166	0	0	57	67	0	0
Nebraska	13,652	15,326	-11.0%	12,894	14,532	0	0	0	0	758	794
North Dakota	22,386	23,877	-6.2%	22,386	23,877	0	0	0	0	0	0
South Dakota	1,333	1,101	21.0%	1,333	1,101	0	0	0	0	0	0
South Atlantic	95,606	111,710	-14.0%	82,063	96,660	12,343	13,080	0	0	1,200	1,969
Delaware	243	152	60.0%	0	0	243	152	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	15,033	19,159	-22.0%	14,744	18,339	290	589	0	0	0	230
Georgia	17,397	20,219	-14.0%	17,246	20,005	0	0	0	0	151	214
Maryland	5,583	6,438	-13.0%	0	0	5,354	6,163	0	0	228	276
North Carolina	12,236	16,129	-24.0%	11,802	15,519	74	237	0	0	359	373
South Carolina	7,971	11,163	-29.0%	7,883	11,009	0	0	0	0	88	155
Virginia	7,861	7,791	0.9%	6,894	6,594	663	855	0	0	304	343
West Virginia	29,281	30,657	-4.5%	23,494	25,194	5,719	5,084	0	0	69	379
East South Central	67,605	76,694	-12.0%	63,383	72,115	3,053	3,133	0	0	1,170	1,447
Alabama	16,261	20,259	-20.0%	16,261	20,259	0	0	0	0	0	0
Kentucky	37,275	40,770	-8.6%	37,275	40,770	0	0	0	0	0	0
Mississippi	4,442	5,125	-13.0%	1,389	1,993	3,053	3,133	0	0	0	0
Tennessee	9,627	10,541	-8.7%	8,458	9,094	0	0	0	0	1,170	1,447
West South Central	110,732	135,422	-18.0%	52,760	70,465	57,516	64,344	0	0	457	613
Arkansas	12,797	14,779	-13.0%	10,593	12,220	2,142	2,475	0	0	62	84
Louisiana	6,912	10,896	-37.0%	5,113	6,480	1,799	4,416	0	0	0	0
Oklahoma	11,073	18,725	-41.0%	9,583	16,884	1,095	1,312	0	0	395	529
Texas	79,950	91,021	-12.0%	27,471	34,881	52,479	56,140	0	0	0	0
Mountain	90,812	105,381	-14.0%	80,388	93,895	10,193	11,259	0	0	231	227
Arizona	15,236	21,535	-29.0%	15,236	21,535	0	0	0	0	0	0
Colorado	15,889	18,272	-13.0%	15,889	18,272	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	9,032	9,997	-9.7%	256	221	8,776	9,777	0	0	0	0
Nevada	956	1,367	-30.0%	459	856	497	510	0	0	0	0
New Mexico	10,909	12,403	-12.0%	10,909	12,403	0	0	0	0	0	0
Utah	13,632	15,203	-10.0%	13,004	14,536	397	440	0	0	231	227
Wyoming	25,158	26,604	-5.4%	24,635	26,072	523	532	0	0	0	0
Pacific Contiguous	4,880	5,421	-10.0%	994	1,476	3,252	3,273	0	0	634	671
California	634	671	-5.6%	0	0	0	0	0	0	634	671
Oregon	994	1,476	-33.0%	994	1,476	0	0	0	0	0	0
Washington	3,252	3,273	-0.6%	0	0	3,252	3,273	0	0	0	0
Pacific Noncontiguous	1,041	765	36.0%	195	166	846	599	0	0	0	0
Alaska	195	166	17.0%	195	166	0	0	0	0	0	0
Hawaii	846	599	41.0%	0	0	846	599	0	0	0	0
U.S. Total	650,770	782,929	-17.0%	476,207	571,707	164,648	198,982	57	109	9,859	12,132

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Notes:
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Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.14. Receipts of Petroleum Liquids Delivered for Electricity Generation by State, 2016 and 2015
(Thousand Barrels)

Census Division and State	All Sectors			Electric Power Sector							
				Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	590	2,937	-80.0%	76	63	509	2,868	0	0	5	6
Connecticut	37	761	-95.0%	0	0	37	761	0	0	0	0
Maine	29	873	-97.0%	0	0	24	867	0	0	5	6
Massachusetts	498	1,107	-55.0%	66	6	432	1,101	0	0	0	0
New Hampshire	11	81	-87.0%	11	58	0	23	0	0	0	0
Rhode Island	15	115	-87.0%	0	0	15	115	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	1,133	4,179	-73.0%	307	1,544	712	2,616	0	0	114	19
New Jersey	18	119	-84.0%	0	0	18	119	0	0	0	0
New York	612	3,054	-80.0%	307	1,544	284	1,494	0	0	22	16
Pennsylvania	502	1,006	-50.0%	0	0	410	1,003	0	0	92	3
East North Central	1,050	1,081	-2.9%	547	690	472	349	0	0	31	42
Illinois	119	101	17.0%	5	12	114	89	0	0	0	0
Indiana	184	268	-31.0%	184	268	0	0	0	0	0	0
Michigan	180	177	1.6%	171	167	0	0	0	0	9	11
Ohio	517	458	13.0%	142	172	354	256	0	0	21	30
Wisconsin	51	77	-34.0%	47	71	4	4	0	0	0	2
West North Central	402	437	-7.9%	398	437	4	0	0	0	0	0
Iowa	106	78	36.0%	106	78	0	0	0	0	0	0
Kansas	41	89	-54.0%	41	89	0	0	0	0	0	0
Minnesota	42	46	-8.4%	38	46	4	0	0	0	0	0
Missouri	144	145	-0.4%	144	145	0	0	0	0	0	0
Nebraska	4	3	39.0%	4	3	0	0	0	0	0	0
North Dakota	61	46	33.0%	61	46	0	0	0	0	0	0
South Dakota	4	30	-88.0%	4	30	0	0	0	0	0	0
South Atlantic	3,717	5,045	-26.0%	2,804	3,535	659	1,197	0	0	254	313
Delaware	79	199	-60.0%	0	0	79	199	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	916	652	40.0%	909	631	7	4	0	0	0	17
Georgia	264	275	-4.3%	169	142	32	76	0	0	63	57
Maryland	266	457	-42.0%	0	0	266	457	0	0	0	0
North Carolina	354	628	-44.0%	249	547	68	41	0	0	38	40
South Carolina	277	458	-39.0%	150	302	0	7	0	0	127	149
Virginia	1,323	2,159	-39.0%	1,104	1,715	193	396	0	0	27	49
West Virginia	238	215	11.0%	223	199	14	16	0	0	0	0
East South Central	459	493	-6.9%	439	482	11	7	0	0	9	4
Alabama	67	86	-23.0%	55	79	11	7	0	0	0	0
Kentucky	188	196	-4.0%	188	196	0	0	0	0	0	0
Mississippi	26	47	-44.0%	26	47	0	0	0	0	0	0
Tennessee	178	165	8.3%	169	161	0	0	0	0	9	4
West South Central	287	342	-16.0%	215	237	72	106	0	0	0	0
Arkansas	74	98	-24.0%	57	71	18	27	0	0	0	0
Louisiana	54	94	-43.0%	52	70	2	25	0	0	0	0
Oklahoma	29	4	674.0%	29	4	0	0	0	0	0	0
Texas	129	146	-12.0%	77	92	52	54	0	0	0	0
Mountain	355	360	-1.3%	321	337	34	23	0	0	0	0
Arizona	108	104	3.4%	108	104	0	0	0	0	0	0
Colorado	14	6	128.0%	14	6	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	24	15	65.0%	0	0	24	15	0	0	0	0
Nevada	22	30	-29.0%	16	24	6	6	0	0	0	0
New Mexico	84	103	-18.0%	84	103	0	0	0	0	0	0
Utah	30	30	1.1%	26	28	4	2	0	0	0	0
Wyoming	73	71	2.8%	73	71	0	0	0	0	0	0
Pacific Contiguous	20	23	-14.0%	4	9	15	14	0	0	0	0
California	0	0	--	0	0	0	0	0	0	0	0
Oregon	3	8	-56.0%	3	8	0	0	0	0	0	0
Washington	16	15	8.2%	1	1	15	14	0	0	0	0
Pacific Noncontiguous	8,793	9,423	-6.7%	6,872	7,413	1,921	2,010	0	0	0	0
Alaska	9	17	-48.0%	9	17	0	0	0	0	0	0
Hawaii	8,784	9,406	-6.6%	6,863	7,396	1,921	2,010	0	0	0	0
U.S. Total	16,807	24,320	-31.0%	11,985	14,747	4,410	9,189	0	0	412	385

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Petroleum Liquids includes distillate and residual fuel oils.
See the Technical Notes for fuel conversion factors.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.15. Receipts of Petroleum Coke Delivered for Electricity Generation by State, 2016 and 2015
(Thousand Tons)

Census Division and State	All Sectors			Electric Power Sector							
				Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	0	0	--	0	0	0	0	0	0	0	0
Connecticut	0	0	--	0	0	0	0	0	0	0	0
Maine	0	0	--	0	0	0	0	0	0	0	0
Massachusetts	0	0	--	0	0	0	0	0	0	0	0
New Hampshire	0	0	--	0	0	0	0	0	0	0	0
Rhode Island	0	0	--	0	0	0	0	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	0	107	-100.0%	0	0	0	0	0	0	0	107
New Jersey	0	0	--	0	0	0	0	0	0	0	0
New York	0	0	--	0	0	0	0	0	0	0	0
Pennsylvania	0	107	-100.0%	0	0	0	0	0	0	0	107
East North Central	1,014	1,309	-23.0%	504	711	492	524	0	0	18	75
Illinois	0	0	--	0	0	0	0	0	0	0	0
Indiana	162	393	-59.0%	162	393	0	0	0	0	0	0
Michigan	295	295	-0.1%	295	282	0	13	0	0	0	0
Ohio	492	511	-3.6%	0	0	492	511	0	0	0	0
Wisconsin	66	111	-41.0%	47	36	0	0	0	0	18	75
West North Central	0	0	--	0	0	0	0	0	0	0	0
Iowa	0	0	--	0	0	0	0	0	0	0	0
Kansas	0	0	--	0	0	0	0	0	0	0	0
Minnesota	0	0	--	0	0	0	0	0	0	0	0
Missouri	0	0	--	0	0	0	0	0	0	0	0
Nebraska	0	0	--	0	0	0	0	0	0	0	0
North Dakota	0	0	--	0	0	0	0	0	0	0	0
South Dakota	0	0	--	0	0	0	0	0	0	0	0
South Atlantic	1,441	1,125	28.0%	1,324	1,003	0	0	0	0	117	122
Delaware	0	0	--	0	0	0	0	0	0	0	0
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	1,324	1,003	32.0%	1,324	1,003	0	0	0	0	0	0
Georgia	117	122	-3.8%	0	0	0	0	0	0	117	122
Maryland	0	0	--	0	0	0	0	0	0	0	0
North Carolina	0	0	--	0	0	0	0	0	0	0	0
South Carolina	0	0	--	0	0	0	0	0	0	0	0
Virginia	0	0	--	0	0	0	0	0	0	0	0
West Virginia	0	0	--	0	0	0	0	0	0	0	0
East South Central	92	623	-85.0%	92	623	0	0	0	0	0	0
Alabama	0	0	--	0	0	0	0	0	0	0	0
Kentucky	92	623	-85.0%	92	623	0	0	0	0	0	0
Mississippi	0	0	--	0	0	0	0	0	0	0	0
Tennessee	0	0	--	0	0	0	0	0	0	0	0
West South Central	1,619	1,732	-6.5%	1,619	1,732	0	0	0	0	0	0
Arkansas	0	0	--	0	0	0	0	0	0	0	0
Louisiana	1,619	1,732	-6.5%	1,619	1,732	0	0	0	0	0	0
Oklahoma	0	0	--	0	0	0	0	0	0	0	0
Texas	0	0	--	0	0	0	0	0	0	0	0
Mountain	0	0	--	0	0	0	0	0	0	0	0
Arizona	0	0	--	0	0	0	0	0	0	0	0
Colorado	0	0	--	0	0	0	0	0	0	0	0
Idaho	0	0	--	0	0	0	0	0	0	0	0
Montana	0	0	--	0	0	0	0	0	0	0	0
Nevada	0	0	--	0	0	0	0	0	0	0	0
New Mexico	0	0	--	0	0	0	0	0	0	0	0
Utah	0	0	--	0	0	0	0	0	0	0	0
Wyoming	0	0	--	0	0	0	0	0	0	0	0
Pacific Contiguous	0	0	--	0	0	0	0	0	0	0	0
California	0	0	--	0	0	0	0	0	0	0	0
Oregon	0	0	--	0	0	0	0	0	0	0	0
Washington	0	0	--	0	0	0	0	0	0	0	0
Pacific Noncontiguous	0	0	--	0	0	0	0	0	0	0	0
Alaska	0	0	--	0	0	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	4,166	4,897	-15.0%	3,538	4,069	492	524	0	0	135	304

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Totals may not equal sum of components because of independent rounding. Percentage change is calculated before rounding.
Petroleum Coke includes petroleum coke-derived synthesis gas.
See the Technical Notes for fuel conversion factors.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.16. Receipts of Natural Gas Delivered for Electricity Generation by State, 2016 and 2015
(Million Cubic Feet)

Census Division and State	All Sectors			Electric Power Sector							
				Electric Utilities		Independent Power Producers		Commercial Sector		Industrial Sector	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	372,811	370,575	0.6%	1,973	2,208	370,838	368,367	0	0	0	0
Connecticut	118,539	116,115	2.1%	0	0	118,539	116,115	0	0	0	0
Maine	22,591	18,262	24.0%	0	0	22,591	18,262	0	0	0	0
Massachusetts	150,999	145,641	3.7%	1,497	1,900	149,502	143,741	0	0	0	0
New Hampshire	33,883	42,713	-21.0%	476	308	33,407	42,405	0	0	0	0
Rhode Island	46,798	47,843	-2.2%	0	0	46,798	47,843	0	0	0	0
Vermont	0	0	--	0	0	0	0	0	0	0	0
Middle Atlantic	1,212,167	1,103,350	9.9%	101,020	100,143	1,108,355	1,001,191	0	0	2,792	2,016
New Jersey	309,871	266,209	16.0%	0	0	309,871	266,209	0	0	0	0
New York	422,842	421,822	0.2%	101,020	100,143	320,922	320,884	0	0	900	794
Pennsylvania	479,454	415,319	15.0%	0	0	477,561	414,097	0	0	1,892	1,222
East North Central	845,653	650,392	30.0%	373,096	289,805	454,803	348,022	6,357	5,235	11,398	7,331
Illinois	135,248	72,846	86.0%	12,793	4,906	122,418	67,883	0	0	36	57
Indiana	148,401	113,996	30.0%	121,845	90,386	26,556	23,610	0	0	0	0
Michigan	237,431	160,213	48.0%	83,424	49,690	141,907	101,036	6,357	5,235	5,744	4,252
Ohio	209,824	204,922	2.4%	55,369	55,607	152,722	148,304	0	0	1,733	1,012
Wisconsin	114,750	98,416	17.0%	99,664	89,216	11,201	7,189	0	0	3,885	2,010
West North Central	179,892	133,003	35.0%	151,235	113,623	25,263	17,690	1,409	1,136	1,985	555
Iowa	31,395	24,510	28.0%	30,523	24,490	0	0	0	0	872	19
Kansas	17,007	11,865	43.0%	17,007	11,865	0	0	0	0	0	0
Minnesota	64,230	51,801	24.0%	49,834	43,836	13,294	7,372	10	74	1,092	519
Missouri	45,802	35,353	30.0%	32,434	23,974	11,970	10,318	1,399	1,062	0	0
Nebraska	4,333	3,510	23.0%	4,312	3,493	0	0	0	0	21	16
North Dakota	11,320	520	NM	11,320	520	0	0	0	0	0	0
South Dakota	5,804	5,444	6.6%	5,804	5,444	0	0	0	0	0	0
South Atlantic	2,396,562	2,253,356	6.4%	1,942,448	1,847,641	413,536	363,728	0	0	40,577	41,987
Delaware	63,408	54,963	15.0%	0	0	49,502	41,150	0	0	13,906	13,812
District of Columbia	0	0	--	0	0	0	0	0	0	0	0
Florida	1,153,072	1,124,717	2.5%	1,072,377	1,072,494	80,695	51,313	0	0	0	910
Georgia	390,148	363,615	7.3%	297,542	258,451	82,871	92,429	0	0	9,735	12,736
Maryland	47,562	37,007	29.0%	0	0	45,379	36,516	0	0	2,182	492
North Carolina	292,769	273,890	6.9%	253,834	238,411	38,745	29,779	0	0	189	5,700
South Carolina	130,416	131,628	-0.9%	105,944	118,356	22,310	12,522	0	0	2,162	750
Virginia	304,679	254,277	20.0%	211,213	158,515	85,355	88,175	0	0	8,111	7,587
West Virginia	14,508	13,259	9.4%	1,537	1,414	8,678	11,845	0	0	4,293	0
East South Central	939,721	843,264	11.0%	621,230	520,943	306,493	312,000	0	0	11,998	10,321
Alabama	394,076	376,645	4.6%	115,349	94,387	278,728	282,258	0	0	0	0
Kentucky	67,374	54,355	24.0%	61,863	48,420	5,511	5,935	0	0	0	0
Mississippi	378,393	332,183	14.0%	356,139	308,376	22,254	23,806	0	0	0	0
Tennessee	99,878	80,081	25.0%	87,879	69,760	0	0	0	0	11,998	10,321
West South Central	2,855,252	2,915,238	-2.1%	863,058	836,372	1,369,805	1,439,913	0	0	622,389	638,953
Arkansas	133,676	109,604	22.0%	50,915	31,168	80,503	74,489	0	0	2,258	3,948
Louisiana	536,078	540,484	-0.8%	271,761	299,974	50,056	36,611	0	0	214,261	203,898
Oklahoma	276,545	254,326	8.7%	193,111	168,137	82,633	85,496	0	0	801	693
Texas	1,908,954	2,010,824	-5.1%	347,272	337,093	1,156,613	1,243,317	0	0	405,068	430,414
Mountain	688,171	670,939	2.6%	532,547	507,474	154,856	162,953	0	0	768	512
Arizona	254,500	247,291	2.9%	148,841	138,854	105,659	108,437	0	0	0	0
Colorado	90,645	87,626	3.4%	76,165	70,667	14,481	16,960	0	0	0	0
Idaho	20,974	24,559	-15.0%	12,110	14,164	8,865	10,395	0	0	0	0
Montana	3,386	4,978	-32.0%	3,367	4,957	18	21	0	0	0	0
Nevada	191,152	188,354	1.5%	191,152	188,354	0	0	0	0	0	0
New Mexico	73,286	65,736	11.0%	48,589	39,673	24,697	26,063	0	0	0	0
Utah	54,033	51,263	5.4%	52,142	49,682	1,123	1,070	0	0	768	512
Wyoming	194	1,131	-83.0%	182	1,124	12	8	0	0	0	0
Pacific Contiguous	767,973	886,660	-13.0%	307,952	331,027	430,569	516,331	0	0	29,451	39,302
California	593,164	720,997	-18.0%	212,636	234,515	351,077	447,181	0	0	29,451	39,302
Oregon	106,814	85,639	25.0%	52,607	46,071	54,207	39,567	0	0	0	0
Washington	67,994	80,024	-15.0%	42,708	50,441	25,285	29,583	0	0	0	0
Pacific Noncontiguous	12,979	15,803	-18.0%	12,979	15,803	0	0	0	0	0	0
Alaska	12,979	15,803	-18.0%	12,979	15,803	0	0	0	0	0	0
Hawaii	0	0	--	0	0	0	0	0	0	0	0
U.S. Total	10,271,180	9,842,581	4.4%	4,907,538	4,565,040	4,634,518	4,530,195	7,766	6,371	721,358	740,975

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Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.17. Average Cost of Coal Delivered for Electricity Generation by State, 2016 and 2015
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015
New England	W	3.47	W	4.07	3.87	W	3.25
Connecticut	W	W	W	--	--	W	W
Maine	W	W	W	--	--	W	W
Massachusetts	W	W	W	--	--	W	W
New Hampshire	4.07	3.87	5.2%	4.07	3.87	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	1.96	2.34	-16.0%	--	--	1.96	2.34
New Jersey	W	3.82	W	--	--	W	3.82
New York	W	2.83	W	--	--	W	2.83
Pennsylvania	1.90	2.28	-17.0%	--	--	1.90	2.28
East North Central	2.09	2.18	-4.1%	2.18	2.29	1.94	2.04
Illinois	W	1.92	W	1.97	2.06	W	1.89
Indiana	W	W	W	2.25	2.32	W	W
Michigan	W	W	W	2.25	2.39	W	W
Ohio	2.06	W	W	1.89	2.12	2.12	W
Wisconsin	2.21	2.27	-2.6%	2.21	2.27	--	--
West North Central	1.72	1.72	0.0%	1.72	1.72	--	--
Iowa	1.59	1.62	-1.9%	1.59	1.62	--	--
Kansas	1.70	1.70	0.0%	1.70	1.70	--	--
Minnesota	2.06	1.90	8.4%	2.06	1.90	--	--
Missouri	1.87	1.90	-1.6%	1.87	1.90	--	--
Nebraska	1.35	1.34	0.7%	1.35	1.34	--	--
North Dakota	1.55	1.56	-0.6%	1.55	1.56	--	--
South Dakota	2.25	2.23	0.9%	2.25	2.23	--	--
South Atlantic	2.74	2.93	-6.5%	2.78	2.97	2.53	2.64
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	W	W	W	3.01	3.08	W	W
Georgia	2.79	2.93	-4.8%	2.79	2.93	--	--
Maryland	2.85	2.87	-0.7%	--	--	2.85	2.87
North Carolina	W	3.47	W	3.10	3.47	W	3.55
South Carolina	3.19	3.55	-10.0%	3.19	3.55	--	--
Virginia	W	2.95	W	2.88	2.87	W	3.49
West Virginia	2.25	2.31	-2.6%	2.29	2.37	2.03	1.96
East South Central	W	W	W	2.19	2.32	W	W
Alabama	2.32	2.44	-4.9%	2.32	2.44	--	--
Kentucky	2.11	2.22	-5.0%	2.11	2.22	--	--
Mississippi	W	W	W	2.69	3.06	W	W
Tennessee	2.23	2.39	-6.7%	2.23	2.39	--	--
West South Central	1.92	2.07	-7.2%	2.15	2.20	1.68	1.90
Arkansas	W	W	W	2.17	2.26	W	W
Louisiana	W	W	W	2.92	3.18	W	W
Oklahoma	W	W	W	1.91	1.97	W	W
Texas	1.80	1.97	-8.6%	2.09	2.13	1.64	1.87
Mountain	W	W	W	1.88	1.92	W	W
Arizona	2.13	2.07	2.9%	2.13	2.07	--	--
Colorado	1.85	1.83	1.1%	1.85	1.83	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	1.66	1.72	W	W
Nevada	W	W	W	2.02	2.47	W	W
New Mexico	1.90	2.34	-19.0%	1.90	2.34	--	--
Utah	1.94	1.94	0.0%	1.94	1.94	--	--
Wyoming	W	W	W	1.68	1.63	W	W
Pacific Contiguous	W	W	W	2.25	2.38	W	W
California	--	--	--	--	--	--	--
Oregon	2.25	2.38	-5.5%	2.25	2.38	--	--
Washington	W	W	W	--	--	W	W
Pacific Noncontiguous	W	W	W	3.08	3.27	W	W
Alaska	3.08	3.27	-5.8%	3.08	3.27	--	--
Hawaii	W	W	W	--	--	W	W
U.S. Total	2.10	2.21	-5.0%	2.16	2.25	1.93	2.10

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Coal includes anthracite, bituminous, subbituminous, lignite, waste coal, and coal-derived synthesis gas.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.18. Average Cost of Petroleum Liquids Delivered for Electricity Generation by State, 2016 and 2015
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015
New England	8.95	W	W	9.76	11.50	8.83	W
Connecticut	10.94	W	W	--	--	10.94	W
Maine	W	W	W	--	--	W	W
Massachusetts	W	11.84	W	9.64	22.00	W	11.79
New Hampshire	10.52	W	W	10.52	10.54	--	W
Rhode Island	W	W	W	--	--	W	W
Vermont	--	--	--	--	--	--	--
Middle Atlantic	10.11	11.27	-10.0%	8.04	8.78	11.04	13.04
New Jersey	9.74	13.93	-30.0%	--	--	9.74	13.93
New York	9.88	10.77	-8.3%	8.04	8.78	11.88	12.94
Pennsylvania	10.47	13.13	-20.0%	--	--	10.47	13.13
East North Central	W	13.52	W	10.86	13.57	W	13.41
Illinois	10.87	W	W	11.05	14.05	10.87	W
Indiana	10.60	13.78	-23.0%	10.60	13.78	--	--
Michigan	10.50	12.86	-18.0%	10.50	12.86	--	--
Ohio	W	13.44	W	11.42	13.54	W	13.37
Wisconsin	W	W	W	11.48	14.44	W	W
West North Central	W	12.40	W	10.66	12.40	W	--
Iowa	10.95	12.24	-11.0%	10.95	12.24	--	--
Kansas	10.43	12.07	-14.0%	10.43	12.07	--	--
Minnesota	W	13.13	W	11.34	13.13	W	--
Missouri	10.92	12.88	-15.0%	10.92	12.88	--	--
Nebraska	11.28	18.25	-38.0%	11.28	18.25	--	--
North Dakota	9.41	12.65	-26.0%	9.41	12.65	--	--
South Dakota	8.54	9.48	-9.9%	8.54	9.48	--	--
South Atlantic	9.97	12.45	-20.0%	9.87	12.16	10.46	13.49
Delaware	W	W	W	--	--	W	W
District of Columbia	--	--	--	--	--	--	--
Florida	W	W	W	11.47	14.24	W	W
Georgia	9.39	15.88	-41.0%	9.68	16.66	7.86	14.11
Maryland	9.65	10.79	-11.0%	--	--	9.65	10.79
North Carolina	10.03	W	W	10.58	13.22	8.03	W
South Carolina	11.17	14.83	-25.0%	11.17	14.83	--	--
Virginia	W	11.30	W	7.99	10.19	W	16.49
West Virginia	W	W	W	11.48	13.89	W	W
East South Central	W	W	W	10.44	12.57	W	W
Alabama	W	W	W	10.12	12.66	W	W
Kentucky	10.62	13.21	-20.0%	10.62	13.21	--	--
Mississippi	9.56	10.43	-8.3%	9.56	10.43	--	--
Tennessee	10.47	12.40	-16.0%	10.47	12.40	--	--
West South Central	10.69	13.12	-19.0%	10.55	13.00	11.10	13.39
Arkansas	W	W	W	10.38	13.26	W	W
Louisiana	W	W	W	9.70	12.53	W	W
Oklahoma	12.16	13.81	-12.0%	12.16	13.81	--	--
Texas	W	W	W	10.66	13.12	W	W
Mountain	11.45	14.68	-22.0%	11.37	14.70	12.16	14.33
Arizona	11.31	13.67	-17.0%	11.31	13.67	--	--
Colorado	10.25	14.74	-30.0%	10.25	14.74	--	--
Idaho	--	--	--	--	--	--	--
Montana	W	W	W	--	--	W	W
Nevada	W	W	W	11.79	16.50	W	W
New Mexico	11.32	15.53	-27.0%	11.32	15.53	--	--
Utah	W	W	W	11.75	14.72	W	W
Wyoming	11.49	14.38	-20.0%	11.49	14.38	--	--
Pacific Contiguous	W	W	W	11.43	11.19	W	W
California	--	--	--	--	--	--	--
Oregon	11.19	11.19	0.0%	11.19	11.19	--	--
Washington	W	W	W	12.29	11.29	W	W
Pacific Noncontiguous	W	W	W	8.50	10.94	W	W
Alaska	14.43	17.12	-16.0%	14.43	17.12	--	--
Hawaii	W	W	W	8.50	10.93	W	W
U.S. Total	9.36	11.45	-18.0%	9.16	11.32	9.93	11.69

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Petroleum Liquids includes distillate and residual fuel oils.
See the Technical Notes for fuel conversion factors.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.19. Average Cost of Petroleum Coke Delivered for Electricity Generation by State, 2016 and 2015
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015
New England	--	--	--	--	--	--	--
Connecticut	--	--	--	--	--	--	--
Maine	--	--	--	--	--	--	--
Massachusetts	--	--	--	--	--	--	--
New Hampshire	--	--	--	--	--	--	--
Rhode Island	--	--	--	--	--	--	--
Vermont	--	--	--	--	--	--	--
Middle Atlantic	W	--	W	--	--	W	--
New Jersey	--	--	--	--	--	--	--
New York	--	--	--	--	--	--	--
Pennsylvania	W	--	W	--	--	W	--
East North Central	W	W	W	1.23	1.29	W	W
Illinois	--	--	--	--	--	--	--
Indiana	0.96	0.95	1.1%	0.96	0.95	--	--
Michigan	1.30	W	W	1.30	1.76	--	W
Ohio	W	W	W	--	--	W	W
Wisconsin	1.72	1.68	2.4%	1.72	1.68	--	--
West North Central	--	--	--	--	--	--	--
Iowa	--	--	--	--	--	--	--
Kansas	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--
Missouri	--	--	--	--	--	--	--
Nebraska	--	--	--	--	--	--	--
North Dakota	--	--	--	--	--	--	--
South Dakota	--	--	--	--	--	--	--
South Atlantic	1.55	2.12	-27.0%	1.55	2.12	--	--
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	1.55	2.12	-27.0%	1.55	2.12	--	--
Georgia	--	--	--	--	--	--	--
Maryland	--	--	--	--	--	--	--
North Carolina	--	--	--	--	--	--	--
South Carolina	--	--	--	--	--	--	--
Virginia	--	--	--	--	--	--	--
West Virginia	--	--	--	--	--	--	--
East South Central	1.55	1.68	-7.7%	1.55	1.68	--	--
Alabama	--	--	--	--	--	--	--
Kentucky	1.55	1.68	-7.7%	1.55	1.68	--	--
Mississippi	--	--	--	--	--	--	--
Tennessee	--	--	--	--	--	--	--
West South Central	1.58	1.80	-12.0%	1.58	1.80	--	--
Arkansas	--	--	--	--	--	--	--
Louisiana	1.58	1.80	-12.0%	1.58	1.80	--	--
Oklahoma	--	--	--	--	--	--	--
Texas	--	--	--	--	--	--	--
Mountain	--	--	--	--	--	--	--
Arizona	--	--	--	--	--	--	--
Colorado	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--
Montana	--	--	--	--	--	--	--
Nevada	--	--	--	--	--	--	--
New Mexico	--	--	--	--	--	--	--
Utah	--	--	--	--	--	--	--
Wyoming	--	--	--	--	--	--	--
Pacific Contiguous	--	--	--	--	--	--	--
California	--	--	--	--	--	--	--
Oregon	--	--	--	--	--	--	--
Washington	--	--	--	--	--	--	--
Pacific Noncontiguous	--	--	--	--	--	--	--
Alaska	--	--	--	--	--	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	1.64	1.85	-11.0%	1.52	1.77	2.50	2.45

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Petroleum Coke includes petroleum coke-derived synthesis gas.
See the Technical Notes for fuel conversion factors.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.20. Average Cost of Natural Gas Delivered for Electricity Generation by State, 2016 and 2015
(Dollars per MMBtu)

Census Division and State	Electric Power Sector			Electric Utilities		Independent Power Producers	
	Year 2016	Year 2015	Percentage Change	Year 2016	Year 2015	Year 2016	Year 2015
New England	3.32	4.29	-23.0%	3.64	3.92	3.32	4.30
Connecticut	3.58	4.60	-22.0%	--	--	3.58	4.60
Maine	W	W	W	--	--	W	W
Massachusetts	3.20	4.21	-24.0%	3.51	3.76	3.19	4.22
New Hampshire	W	W	W	4.07	4.92	W	W
Rhode Island	W	3.62	W	--	--	W	3.62
Vermont	--	--	--	--	--	--	--
Middle Atlantic	2.22	2.92	-24.0%	2.74	3.70	2.17	2.82
New Jersey	2.13	2.87	-26.0%	--	--	2.13	2.87
New York	2.68	3.41	-21.0%	2.74	3.70	2.66	3.31
Pennsylvania	1.87	2.42	-23.0%	--	--	1.87	2.42
East North Central	2.64	2.82	-6.4%	2.78	2.94	2.53	2.72
Illinois	2.82	W	W	3.04	3.71	2.79	W
Indiana	W	W	W	2.92	2.93	W	W
Michigan	2.71	3.12	-13.0%	2.88	3.10	2.62	3.13
Ohio	2.23	2.28	-2.2%	2.25	2.38	2.22	2.25
Wisconsin	W	W	W	2.77	3.17	W	W
West North Central	2.91	W	W	2.90	3.44	2.95	W
Iowa	2.66	3.06	-13.0%	2.66	3.06	--	--
Kansas	3.36	3.78	-11.0%	3.36	3.78	--	--
Minnesota	W	W	W	3.05	3.62	W	W
Missouri	W	W	W	2.85	3.27	W	W
Nebraska	3.10	3.71	-16.0%	3.10	3.71	--	--
North Dakota	2.58	8.40	-69.0%	2.58	8.40	--	--
South Dakota	2.46	3.13	-21.0%	2.46	3.13	--	--
South Atlantic	3.45	3.98	-13.0%	3.56	4.11	2.63	2.86
Delaware	--	--	--	--	--	--	--
District of Columbia	--	--	--	--	--	--	--
Florida	3.78	4.31	-12.0%	3.80	4.34	2.87	2.82
Georgia	2.99	3.17	-5.7%	3.05	3.21	2.75	3.03
Maryland	2.85	3.88	-27.0%	--	--	2.85	3.88
North Carolina	W	W	W	3.68	4.64	W	W
South Carolina	W	W	W	3.28	3.37	W	W
Virginia	W	3.36	W	3.07	3.80	W	2.14
West Virginia	W	W	W	2.45	2.78	W	W
East South Central	2.82	2.92	-3.4%	2.83	2.92	2.80	2.94
Alabama	W	W	W	2.95	3.01	W	W
Kentucky	W	W	W	3.19	3.52	W	W
Mississippi	W	W	W	2.79	2.85	W	W
Tennessee	2.59	2.72	-4.8%	2.59	2.72	--	--
West South Central	2.63	2.82	-6.7%	2.74	2.93	2.54	2.74
Arkansas	W	W	W	3.08	3.28	W	W
Louisiana	2.68	W	W	2.72	2.91	2.45	W
Oklahoma	W	W	W	2.75	2.97	W	W
Texas	2.60	2.79	-6.8%	2.70	2.91	2.56	2.75
Mountain	2.97	W	W	2.98	3.23	2.82	W
Arizona	W	3.30	W	3.17	3.41	W	2.96
Colorado	W	3.52	W	3.12	3.39	W	4.32
Idaho	2.92	2.89	1.0%	2.92	2.89	--	--
Montana	W	W	W	1.77	2.26	W	W
Nevada	2.90	3.20	-9.4%	2.90	3.20	--	--
New Mexico	2.92	3.07	-4.9%	2.92	3.07	--	--
Utah	W	W	W	2.65	2.92	W	W
Wyoming	W	W	W	9.06	4.72	W	W
Pacific Contiguous	2.96	3.20	-7.5%	3.28	3.47	2.63	2.96
California	3.07	3.29	-6.7%	3.53	3.64	2.68	3.03
Oregon	W	W	W	2.35	2.75	W	W
Washington	W	W	W	3.41	3.48	W	W
Pacific Noncontiguous	6.61	5.37	23.0%	6.61	5.37	--	--
Alaska	6.61	5.37	23.0%	6.61	5.37	--	--
Hawaii	--	--	--	--	--	--	--
U.S. Total	2.89	3.27	-12.0%	3.15	3.52	2.54	2.94

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Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.21. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Total (All Sectors) by State, 2016

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	1,088	1.01	8.3	85	0.09	2.0	0	--	--
Connecticut	0	--	--	85	0.09	2.0	0	--	--
Maine	87	0.84	8.1	0	--	--	0	--	--
Massachusetts	824	0.61	8.5	0	--	--	0	--	--
New Hampshire	177	2.64	7.9	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	17,702	3.07	9.6	0	--	--	0	--	--
New Jersey	649	1.57	7.3	0	--	--	0	--	--
New York	637	2.29	8.0	0	--	--	0	--	--
Pennsylvania	16,416	3.16	9.8	0	--	--	0	--	--
East North Central	68,238	3.06	10.0	69,152	0.24	4.8	0	--	--
Illinois	9,419	3.71	20.1	29,617	0.22	4.6	0	--	--
Indiana	26,831	2.84	8.5	1,906	0.24	4.6	0	--	--
Michigan	2,136	2.34	7.6	19,672	0.28	4.8	0	--	--
Ohio	28,713	3.18	9.0	168	0.27	4.9	0	--	--
Wisconsin	1,139	2.44	7.8	17,790	0.25	5.1	0	--	--
West North Central	1,001	3.23	9.3	94,382	0.27	5.1	21,819	0.83	9.8
Iowa	386	3.40	7.6	17,655	0.24	4.9	0	--	--
Kansas	201	3.09	12.9	14,224	0.30	4.9	0	--	--
Minnesota	0	--	--	12,471	0.37	6.2	0	--	--
Missouri	414	3.13	9.2	34,479	0.22	4.7	0	--	--
Nebraska	0	--	--	13,652	0.28	5.3	0	--	--
North Dakota	0	--	--	567	0.35	4.7	21,819	0.83	9.8
South Dakota	0	--	--	1,333	0.35	5.2	0	--	--
South Atlantic	85,304	2.29	10.3	9,459	0.33	4.8	0	--	--
Delaware	243	2.49	7.6	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	15,033	2.23	8.4	0	--	--	0	--	--
Georgia	7,997	2.45	8.0	9,400	0.33	4.8	0	--	--
Maryland	5,523	2.42	9.4	59	0.20	4.6	0	--	--
North Carolina	12,236	1.67	9.7	0	--	--	0	--	--
South Carolina	7,971	1.66	8.9	0	--	--	0	--	--
Virginia	7,861	1.06	15.0	0	--	--	0	--	--
West Virginia	28,439	3.00	11.5	0	--	--	0	--	--
East South Central	42,237	2.60	9.0	22,316	0.25	5.1	3,053	0.44	13.7
Alabama	6,251	1.27	9.7	10,009	0.24	5.2	0	--	--
Kentucky	28,826	3.00	9.1	8,450	0.28	5.1	0	--	--
Mississippi	712	1.44	7.4	677	0.25	5.1	3,053	0.44	13.7
Tennessee	6,448	2.21	7.9	3,179	0.23	4.7	0	--	--
West South Central	855	1.93	19.4	70,703	0.28	5.2	39,174	0.99	16.5
Arkansas	62	0.67	8.7	12,735	0.26	5.2	0	--	--
Louisiana	268	3.25	9.5	3,957	0.28	5.2	2,688	0.51	15.1
Oklahoma	525	1.36	26.4	10,547	0.25	4.9	0	--	--
Texas	0	--	--	43,464	0.29	5.3	36,486	1.03	16.6
Mountain	27,659	0.61	14.0	62,500	0.51	8.8	256	0.53	9.2
Arizona	6,105	0.59	10.6	9,132	0.63	10.4	0	--	--
Colorado	2,420	0.50	10.9	13,469	0.32	5.6	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	8,776	0.69	9.9	256	0.53	9.2
Nevada	425	0.47	8.4	531	0.28	5.2	0	--	--
New Mexico	6,191	0.77	23.4	4,718	0.79	21.5	0	--	--
Utah	12,518	0.59	12.4	716	1.03	9.6	0	--	--
Wyoming	0	--	--	25,158	0.45	7.2	0	--	--
Pacific Contiguous	634	0.52	10.6	4,221	0.38	8.2	0	--	--
California	634	0.52	10.6	0	--	--	0	--	--
Oregon	0	--	--	994	0.23	4.3	0	--	--
Washington	0	--	--	3,227	0.43	9.4	0	--	--
Pacific Noncontiguous	423	0.57	9.2	423	0.19	4.0	124	0.15	8.7
Alaska	0	--	--	0	--	--	124	0.15	8.7
Hawaii	423	0.57	9.2	423	0.19	4.0	0	--	--
U.S. Total	245,141	2.43	10.3	333,241	0.31	5.8	64,426	0.91	14.0

Displayed values of zero may represent small values that round to zero.
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Bituminous coal includes anthracite coal and coal-derived synthesis gas.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.22. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Electric Utilties by State, 2016

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	177	2.64	7.9	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	0	--	--	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	177	2.64	7.9	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	0	--	--	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	0	--	--	0	--	--	0	--	--
East North Central	37,941	2.88	8.5	44,096	0.26	4.9	0	--	--
Illinois	1,922	3.33	11.0	5,025	0.21	4.6	0	--	--
Indiana	25,132	2.79	8.5	1,906	0.24	4.6	0	--	--
Michigan	1,876	2.46	7.8	19,672	0.28	4.8	0	--	--
Ohio	7,993	3.17	8.7	0	--	--	0	--	--
Wisconsin	1,019	2.57	7.7	17,492	0.25	5.1	0	--	--
West North Central	558	3.13	10.5	91,833	0.27	5.1	21,819	0.83	9.8
Iowa	0	--	--	15,932	0.25	4.9	0	--	--
Kansas	201	3.09	12.9	14,224	0.30	4.9	0	--	--
Minnesota	0	--	--	12,404	0.37	6.2	0	--	--
Missouri	357	3.15	9.3	34,479	0.22	4.7	0	--	--
Nebraska	0	--	--	12,894	0.28	5.3	0	--	--
North Dakota	0	--	--	567	0.35	4.7	21,819	0.83	9.8
South Dakota	0	--	--	1,333	0.35	5.2	0	--	--
South Atlantic	72,663	2.21	10.2	9,400	0.33	4.8	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	14,744	2.26	8.4	0	--	--	0	--	--
Georgia	7,846	2.47	7.9	9,400	0.33	4.8	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	11,802	1.70	9.8	0	--	--	0	--	--
South Carolina	7,883	1.67	8.9	0	--	--	0	--	--
Virginia	6,894	1.06	16.0	0	--	--	0	--	--
West Virginia	23,494	2.84	11.2	0	--	--	0	--	--
East South Central	41,067	2.66	9.0	22,316	0.25	5.1	0	--	--
Alabama	6,251	1.27	9.7	10,009	0.24	5.2	0	--	--
Kentucky	28,826	3.00	9.1	8,450	0.28	5.1	0	--	--
Mississippi	712	1.44	7.4	677	0.25	5.1	0	--	--
Tennessee	5,278	2.55	8.1	3,179	0.23	4.7	0	--	--
West South Central	268	3.25	9.5	42,862	0.26	5.2	9,630	1.15	18.5
Arkansas	0	--	--	10,593	0.26	5.2	0	--	--
Louisiana	268	3.25	9.5	2,157	0.26	5.3	2,688	0.51	15.1
Oklahoma	0	--	--	9,583	0.25	4.9	0	--	--
Texas	0	--	--	20,529	0.27	5.2	6,942	1.43	20.0
Mountain	27,428	0.62	14.1	52,704	0.49	8.6	256	0.53	9.2
Arizona	6,105	0.59	10.6	9,132	0.63	10.4	0	--	--
Colorado	2,420	0.50	10.9	13,469	0.32	5.6	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	256	0.53	9.2
Nevada	425	0.47	8.4	34	0.42	4.6	0	--	--
New Mexico	6,191	0.77	23.4	4,718	0.79	21.5	0	--	--
Utah	12,287	0.59	12.4	716	1.03	9.6	0	--	--
Wyoming	0	--	--	24,635	0.45	7.2	0	--	--
Pacific Contiguous	0	--	--	994	0.23	4.3	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	994	0.23	4.3	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	124	0.15	8.7
Alaska	0	--	--	0	--	--	124	0.15	8.7
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	180,102	2.24	10.1	264,205	0.31	5.8	31,829	0.92	12.3

Displayed values of zero may represent small values that round to zero.
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Bituminous coal includes anthracite coal and coal-derived synthesis gas.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.23. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Independent Power Producers by State, 2016

	Bituminous			Subbituminous			Lignite		
Census Division and State	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	894	0.63	8.4	85	0.09	2.0	0	--	--
Connecticut	0	--	--	85	0.09	2.0	0	--	--
Maine	70	0.85	8.0	0	--	--	0	--	--
Massachusetts	824	0.61	8.5	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	17,111	3.11	9.7	0	--	--	0	--	--
New Jersey	649	1.57	7.3	0	--	--	0	--	--
New York	361	2.85	8.2	0	--	--	0	--	--
Pennsylvania	16,101	3.18	9.8	0	--	--	0	--	--
East North Central	28,585	3.30	12.0	24,143	0.21	4.6	0	--	--
Illinois	6,071	3.89	27.1	23,975	0.21	4.6	0	--	--
Indiana	1,699	3.50	9.5	0	--	--	0	--	--
Michigan	247	1.38	6.6	0	--	--	0	--	--
Ohio	20,568	3.19	9.2	168	0.27	4.9	0	--	--
Wisconsin	0	--	--	0	--	--	0	--	--
West North Central	0	--	--	0	--	--	0	--	--
Iowa	0	--	--	0	--	--	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	0	--	--	0	--	--	0	--	--
Nebraska	0	--	--	0	--	--	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	11,441	2.86	10.7	59	0.20	4.6	0	--	--
Delaware	243	2.49	7.6	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	290	0.81	9.4	0	--	--	0	--	--
Georgia	0	--	--	0	--	--	0	--	--
Maryland	5,295	2.44	9.0	59	0.20	4.6	0	--	--
North Carolina	74	0.57	7.0	0	--	--	0	--	--
South Carolina	0	--	--	0	--	--	0	--	--
Virginia	663	0.90	8.4	0	--	--	0	--	--
West Virginia	4,877	3.81	13.3	0	--	--	0	--	--
East South Central	0	--	--	0	--	--	3,053	0.44	13.7
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	3,053	0.44	13.7
Tennessee	0	--	--	0	--	--	0	--	--
West South Central	525	1.36	26.4	27,446	0.31	5.4	29,544	0.95	15.9
Arkansas	0	--	--	2,142	0.26	5.4	0	--	--
Louisiana	0	--	--	1,799	0.31	5.1	0	--	--
Oklahoma	525	1.36	26.4	570	0.32	5.0	0	--	--
Texas	0	--	--	22,935	0.31	5.4	29,544	0.95	15.9
Mountain	0	--	--	9,796	0.66	9.5	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	8,776	0.69	9.9	0	--	--
Nevada	0	--	--	497	0.27	5.2	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	0	--	--	0	--	--	0	--	--
Wyoming	0	--	--	523	0.50	6.6	0	--	--
Pacific Contiguous	0	--	--	3,227	0.43	9.4	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	3,227	0.43	9.4	0	--	--
Pacific Noncontiguous	423	0.57	9.2	423	0.19	4.0	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	423	0.57	9.2	423	0.19	4.0	0	--	--
U.S. Total	58,981	3.08	11.0	65,178	0.33	5.9	32,597	0.91	15.7

Displayed values of zero may represent small values that round to zero.
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Bituminous coal includes anthracite coal and coal-derived synthesis gas.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.24. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Commercial Sector by State, 2016

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	0	--	--	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	0	--	--	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	0	--	--	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	0	--	--	0	--	--	0	--	--
Pennsylvania	0	--	--	0	--	--	0	--	--
East North Central	0	--	--	0	--	--	0	--	--
Illinois	0	--	--	0	--	--	0	--	--
Indiana	0	--	--	0	--	--	0	--	--
Michigan	0	--	--	0	--	--	0	--	--
Ohio	0	--	--	0	--	--	0	--	--
Wisconsin	0	--	--	0	--	--	0	--	--
West North Central	57	3.03	9.2	0	--	--	0	--	--
Iowa	0	--	--	0	--	--	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	0	--	--	0	--	--
Missouri	57	3.03	9.2	0	--	--	0	--	--
Nebraska	0	--	--	0	--	--	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	0	--	--	0	--	--	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	0	--	--	0	--	--	0	--	--
Georgia	0	--	--	0	--	--	0	--	--
Maryland	0	--	--	0	--	--	0	--	--
North Carolina	0	--	--	0	--	--	0	--	--
South Carolina	0	--	--	0	--	--	0	--	--
Virginia	0	--	--	0	--	--	0	--	--
West Virginia	0	--	--	0	--	--	0	--	--
East South Central	0	--	--	0	--	--	0	--	--
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	0	--	--
Tennessee	0	--	--	0	--	--	0	--	--
West South Central	0	--	--	0	--	--	0	--	--
Arkansas	0	--	--	0	--	--	0	--	--
Louisiana	0	--	--	0	--	--	0	--	--
Oklahoma	0	--	--	0	--	--	0	--	--
Texas	0	--	--	0	--	--	0	--	--
Mountain	0	--	--	0	--	--	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	0	--	--
Nevada	0	--	--	0	--	--	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	0	--	--	0	--	--	0	--	--
Wyoming	0	--	--	0	--	--	0	--	--
Pacific Contiguous	0	--	--	0	--	--	0	--	--
California	0	--	--	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	57	3.03	9.2	0	--	--	0	--	--

Displayed values of zero may represent small values that round to zero.
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Bituminous coal includes anthracite coal and coal-derived synthesis gas.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Table 7.25. Receipts and Quality of Coal by Rank Delivered for Electricity Generation: Industrial Sector by State, 2016

Census Division and State	Bituminous			Subbituminous			Lignite		
	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight	Receipts (Thousand Tons)	Average Sulfur Percent by Weight	Average Ash Percent by Weight
New England	17	0.79	8.3	0	--	--	0	--	--
Connecticut	0	--	--	0	--	--	0	--	--
Maine	17	0.79	8.3	0	--	--	0	--	--
Massachusetts	0	--	--	0	--	--	0	--	--
New Hampshire	0	--	--	0	--	--	0	--	--
Rhode Island	0	--	--	0	--	--	0	--	--
Vermont	0	--	--	0	--	--	0	--	--
Middle Atlantic	591	1.88	8.2	0	--	--	0	--	--
New Jersey	0	--	--	0	--	--	0	--	--
New York	277	1.56	7.7	0	--	--	0	--	--
Pennsylvania	314	2.16	8.6	0	--	--	0	--	--
East North Central	1,712	3.34	8.9	914	0.46	5.5	0	--	--
Illinois	1,427	3.60	8.7	616	0.54	5.6	0	--	--
Indiana	0	--	--	0	--	--	0	--	--
Michigan	13	0.56	7.5	0	--	--	0	--	--
Ohio	152	2.92	10.4	0	--	--	0	--	--
Wisconsin	120	1.25	9.5	297	0.28	5.5	0	--	--
West North Central	386	3.40	7.6	2,549	0.21	4.7	0	--	--
Iowa	386	3.40	7.6	1,724	0.21	4.8	0	--	--
Kansas	0	--	--	0	--	--	0	--	--
Minnesota	0	--	--	67	0.23	5.4	0	--	--
Missouri	0	--	--	0	--	--	0	--	--
Nebraska	0	--	--	758	0.21	4.4	0	--	--
North Dakota	0	--	--	0	--	--	0	--	--
South Dakota	0	--	--	0	--	--	0	--	--
South Atlantic	1,200	1.25	11.0	0	--	--	0	--	--
Delaware	0	--	--	0	--	--	0	--	--
District of Columbia	0	--	--	0	--	--	0	--	--
Florida	0	--	--	0	--	--	0	--	--
Georgia	151	1.19	10.9	0	--	--	0	--	--
Maryland	228	1.88	22.0	0	--	--	0	--	--
North Carolina	359	0.92	6.9	0	--	--	0	--	--
South Carolina	88	0.75	7.3	0	--	--	0	--	--
Virginia	304	1.49	10.1	0	--	--	0	--	--
West Virginia	69	1.06	12.9	0	--	--	0	--	--
East South Central	1,170	0.83	7.3	0	--	--	0	--	--
Alabama	0	--	--	0	--	--	0	--	--
Kentucky	0	--	--	0	--	--	0	--	--
Mississippi	0	--	--	0	--	--	0	--	--
Tennessee	1,170	0.83	7.3	0	--	--	0	--	--
West South Central	62	0.67	8.7	395	0.19	4.4	0	--	--
Arkansas	62	0.67	8.7	0	--	--	0	--	--
Louisiana	0	--	--	0	--	--	0	--	--
Oklahoma	0	--	--	395	0.19	4.4	0	--	--
Texas	0	--	--	0	--	--	0	--	--
Mountain	231	0.47	9.5	0	--	--	0	--	--
Arizona	0	--	--	0	--	--	0	--	--
Colorado	0	--	--	0	--	--	0	--	--
Idaho	0	--	--	0	--	--	0	--	--
Montana	0	--	--	0	--	--	0	--	--
Nevada	0	--	--	0	--	--	0	--	--
New Mexico	0	--	--	0	--	--	0	--	--
Utah	231	0.47	9.5	0	--	--	0	--	--
Wyoming	0	--	--	0	--	--	0	--	--
Pacific Contiguous	634	0.52	10.6	0	--	--	0	--	--
California	634	0.52	10.6	0	--	--	0	--	--
Oregon	0	--	--	0	--	--	0	--	--
Washington	0	--	--	0	--	--	0	--	--
Pacific Noncontiguous	0	--	--	0	--	--	0	--	--
Alaska	0	--	--	0	--	--	0	--	--
Hawaii	0	--	--	0	--	--	0	--	--
U.S. Total	6,001	1.78	9.0	3,858	0.27	4.9	0	--	--

Displayed values of zero may represent small values that round to zero.
NM = Not meaningful due to large relative standard error or excessive percentage change.
W = Withheld to avoid disclosure of individual company data.

Notes:
Bituminous coal includes anthracite coal and coal-derived synthesis gas.
See Glossary for definitions. Values are final. See Technical Notes for a discussion of the sample design for the Form EIA-923.

Source: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report."

Chapter 8

Electric Power System Characteristics and Performance

Table 8.1. Average Operating Heat Rate for Selected Energy Sources, 2006 through 2016 (Btu per Kilowatthour)

Year	Coal	Petroleum	Natural Gas	Nuclear
2006	10,351	10,809	8,471	10,435
2007	10,375	10,794	8,403	10,489
2008	10,378	11,015	8,305	10,452
2009	10,414	10,923	8,160	10,459
2010	10,415	10,984	8,185	10,452
2011	10,444	10,829	8,152	10,464
2012	10,498	10,991	8,039	10,479
2013	10,459	10,713	7,948	10,449
2014	10,428	10,814	7,907	10,459
2015	10,495	10,687	7,878	10,458
2016	10,493	10,811	7,870	10,459

Coal includes anthracite, bituminous, subbituminous and lignite coal. Waste coal and synthetic coal are included starting in 2002.
Petroleum includes distillate fuel oil (all diesel and No. 1 and No. 2 fuel oils), residual fuel oil (No. 5 and No. 6 fuel oils and bunker C fuel oil, jet fuel, kerosene, petroleum coke, and waste oil.

Notes:
Included in the calculation for coal, petroleum, and natural gas average operating heat rate are electric power plants in the utility and independent power producer sectors.
Combined heat and power plants, and all plants in the commercial and industrial sectors are excluded from the calculations.
The nuclear average heat rate is the weighted average tested heat rate for nuclear units as reported on the Form EIA-860.

Sources: U.S. Energy Information Administration, Form EIA-923, "Power Plant Operations Report," and predecessor form(s) including U.S. Energy Information Administration, Form EIA-906, "Power Plant Report;" and Form EIA-920, "Combined Heat and Power Plant Report;" Form EIA-860, "Annual Electric Generator Report."

Table 8.2. Average Tested Heat Rates by Prime Mover and Energy Source, 2007 - 2016
(Btu per Kilowatthour)

Prime Mover	Coal	Petroleum	Natural Gas	Nuclear
2007				
Steam Generator	10,158	10,398	10,440	10,489
Gas Turbine	--	13,217	11,632	--
Internal Combustion	--	10,447	10,175	--
Combined Cycle	W	10,970	7,577	--
2008				
Steam Generator	10,138	10,356	10,377	10,452
Gas Turbine	--	13,311	11,576	--
Internal Combustion	--	10,427	9,975	--
Combined Cycle	W	10,985	7,642	--
2009				
Steam Generator	10,150	10,349	10,427	10,459
Gas Turbine	--	13,326	11,560	--
Internal Combustion	--	10,428	9,958	--
Combined Cycle	W	10,715	7,605	--
2010				
Steam Generator	10,142	10,249	10,416	10,452
Gas Turbine	--	13,386	11,590	--
Internal Combustion	--	10,429	9,917	--
Combined Cycle	W	10,474	7,619	--
2011				
Steam Generator	10,128	10,414	10,414	10,464
Gas Turbine	--	13,637	11,569	--
Internal Combustion	--	10,428	9,923	--
Combined Cycle	W	10,650	7,603	--
2012				
Steam Generator	10,107	10,359	10,385	10,479
Gas Turbine	--	13,622	11,499	--
Internal Combustion	--	10,416	9,991	--
Combined Cycle	W	10,195	7,615	--
2013				
Steam Generator	10,089	10,334	10,354	10,449
Gas Turbine	--	13,555	11,371	--
Internal Combustion	--	10,401	9,573	--
Combined Cycle	W	9,937	7,667	--
2014				
Steam Generator	10,080	10,156	10,408	10,459
Gas Turbine	--	13,457	11,378	--
Internal Combustion	--	10,403	9,375	--
Combined Cycle	W	9,924	7,658	--
2015				
Steam Generator	10,059	10,197	10,372	10,458
Gas Turbine	--	13,550	11,302	--
Internal Combustion	--	10,379	9,322	--
Combined Cycle	W	9,676	7,655	--
2016				
Steam Generator	10,045	10,189	10,382	10,459
Gas Turbine	--	13,535	11,214	--
Internal Combustion	--	10,331	9,179	--
Combined Cycle	W	9,860	7,652	--

Notes: W = Withheld to avoid disclosure of individual company data.

Heat rate is reported at full load conditions for electric utilities and independent power producers.
The average heat rates above are weighted by Net Summer Capacity.
Coal Combined Cycle represents integrated gasification units.

Source: U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report.'

Table 8.3. Revenue and Expense Statistics for Major U.S. Investor-Owned Electric Utilities, 2006 through 2016 (Million Dollars)

Description	2006	2007	2008	2009	2010	2011
Utility Operating Revenues	**275,501**	**270,964**	**298,962**	**276,124**	**285,512**	**280,520**
.....Electric Utility	246,736	240,864	266,124	249,303	260,119	255,573
.....Other Utility	28,765	30,100	32,838	26,822	25,393	24,946
Utility Operating Expenses	**245,589**	**241,198**	**267,263**	**244,243**	**253,022**	**247,118**
.....Electric Utility	218,445	213,076	236,572	219,544	234,173	228,873
.....Operation	158,893	153,885	175,887	154,925	166,922	161,460
.....Production	127,494	121,700	140,974	118,816	128,831	122,520
.....Cost of Fuel	37,945	39,548	47,337	40,242	44,138	42,779
.....Purchased Power	79,205	74,112	84,724	67,630	67,284	61,447
.....Other	10,371	8,058	8,937	10,970	17,409	18,294
.....Transmission	6,179	6,051	6,950	6,742	6,948	6,876
.....Distribution	3,640	3,765	3,997	3,947	4,007	4,044
.....Customer Accounts	4,409	4,652	5,286	5,203	5,091	5,180
.....Customer Service	2,536	2,939	3,567	3,857	4,741	5,311
.....Sales	240	239	225	178	185	185
.....Administrative and General	14,580	14,346	14,718	15,991	17,120	17,343
.....Maintenance	12,838	13,181	14,192	14,092	14,957	15,772
.....Depreciation	17,373	17,936	19,049	20,095	20,951	22,555
.....Taxes and Other	28,149	27,000	26,202	29,081	31,343	29,086
.....Other Utility	27,143	28,122	30,692	24,698	18,849	18,245
Net Utility Operating Income	**29,912**	**29,766**	**31,699**	**31,881**	**32,490**	**33,402**

Description	2012	2013	2014	2015	2016
Utility Operating Revenues	**270,912**	**281,901**	**298,430**	**282,695**	**282,499**
.....Electric Utility	249,166	257,718	271,832	260,121	261,047
.....Other Utility	21,745	24,183	26,598	22,574	21,451
Utility Operating Expenses	**235,694**	**244,316**	**258,936**	**242,728**	**239,037**
.....Electric Utility	220,722	227,483	240,643	228,366	226,457
.....Operation	152,379	156,077	165,989	149,939	145,077
.....Production	111,714	115,046	123,366	107,201	100,852
.....Cost of Fuel	38,998	41,127	42,545	34,711	32,621
.....Purchased Power	54,570	55,529	62,066	52,970	49,962
.....Other	18,146	18,390	18,755	19,521	18,269
.....Transmission	7,183	7,881	8,902	9,624	10,447
.....Distribution	4,181	4,197	4,331	4,406	4,734
.....Customer Accounts	5,086	5,107	5,255	5,184	5,077
.....Customer Service	5,640	5,906	6,396	6,445	6,187
.....Sales	221	203	208	201	205
.....Administrative and General	18,353	17,738	17,532	16,878	17,575
.....Maintenance	15,489	15,505	16,801	16,392	16,982
.....Depreciation	23,677	24,723	25,919	26,847	30,097
.....Taxes and Other	29,177	31,179	31,934	35,188	34,301
.....Other Utility	14,972	16,833	18,293	14,362	12,579
Net Utility Operating Income	**35,218**	**37,585**	**39,494**	**39,968**	**43,462**

Notes: 2007 financial data does not include information on Entergy Gulf State Louisiana LLC and Entergy Texas Inc. as both were not reported on the FERC Form for that year.

Missing or erroneous respondent data may result in slight imbalances in some of the expense account subtotals.

Total may not equal sum of components due to independent rounding.

Sources: Federal Energy Regulatory Commission, FERC Form 1, "Annual Report of Major Electric Utilities, Licensees and Others via Ventyx Global Energy Velocity Suite.

Table 8.4. Average Power Plant Operating Expenses for Major U.S. Investor-Owned

Electric Utilities, 2006 through 2016 (Mills per Kilowatthour)

	Operation				Maintenance			
Year	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale
2006	9.03	3.57	3.76	3.51	5.69	3.19	2.70	2.16
2007	9.54	3.63	5.44	3.26	5.79	3.37	3.87	2.42
2008	9.89	3.72	5.78	3.77	6.20	3.59	3.89	2.72
2009	10.00	4.23	4.88	3.05	6.34	3.96	3.50	2.58
2010	10.50	4.04	5.33	2.79	6.80	3.99	3.81	2.73
2011	10.89	4.02	5.13	2.81	6.80	3.99	3.74	2.93
2012	12.49	4.38	6.71	2.46	7.32	4.48	4.63	2.76
2013	12.51	4.57	6.56	2.56	6.64	4.41	4.32	2.80
2014	12.41	4.55	7.30	2.63	6.67	5.11	4.59	2.90
2015	11.17	5.16	8.37	2.34	7.06	5.41	5.06	2.68
2016	10.90	5.05	6.65	2.49	7.01	5.53	4.34	2.74

	Fuel				Total			
Year	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale	Nuclear	Fossil Steam	Hydro-electric	Gas Turbine and Small Scale
2006	4.85	23.09	--	53.89	19.57	29.85	6.46	59.56
2007	4.99	23.88	--	58.75	20.32	30.88	9.32	64.43
2008	5.29	28.43	--	64.23	21.37	35.75	9.67	70.72
2009	5.35	32.30	--	51.93	21.69	40.48	8.38	57.55
2010	6.68	27.73	--	43.21	23.98	35.76	9.15	48.74
2011	7.01	27.08	--	38.80	24.70	35.09	8.88	44.54
2012	7.61	28.34	--	30.45	27.42	37.20	11.34	35.67
2013	8.14	28.94	--	32.56	27.29	37.92	10.88	37.92
2014	7.71	29.39	--	37.06	26.79	39.04	11.90	42.60
2015	7.48	26.70	--	28.22	25.71	37.26	13.42	33.24
2016	7.45	25.50	--	24.97	25.36	36.08	10.98	30.19

Hydroelectric category consists of both conventional hydroelectric and pumped storage.
Gas Turbine and Small Scale category consists of gas turbine, internal combustion, photovoltaic, and wind plants.
Notes: Expenses are average expenses weighted by net generation. A mill is a monetary cost and billing unit equal to 1/1000 of the U.S. dollar (equivalent to 1/10 of one cent).
Total may not equal sum of components due to independent rounding.
Sources: Federal Energy Regulatory Commission, FERC Form 1, "Annual Report of Major Electric Utilities, Licensees and Others via Ventyx Global Energy Velocity Suite.

Chapter 9

Environmental Data

Table 9.1. Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants 2006 through 2016 (Thousand Metric Tons)

Year	Carbon Dioxide (CO2)	Sulfur Dioxide (SO2)	Nitrogen Oxides (NOx)
2006	2,488,918	9,524	3,799
2007	2,547,032	9,042	3,650
2008	2,484,012	7,830	3,330
2009	2,269,508	5,970	2,395
2010	2,388,596	5,400	2,491
2011	2,287,071	4,845	2,406
2012	2,156,875	3,704	2,148
2013	2,173,806	3,609	2,163
2014	2,168,284	3,454	2,100
2015	2,031,452	2,548	1,824
2016	1,928,401	1,807	1,630

Notes:

The emissions data presented include total emissions from both electricity generation and the production of useful thermal output.

See Appendix A, Technical Notes, for a description of the sources and methodology used to develop the emissions estimates.

Source: Calculations made by the Office of Electricity, Renewables, and Uranium Statistics, U.S. Energy Information Administration.

Table 9.2. Quantity and Net Summer Capacity of Operable Environmental Equipment, 2006 - 2016

	Flue Gas Desulfurization Systems		Electrostatic Precipitators		Baghouses		Select Catalytic and Non-Catalytic Reduction Systems		Activated Carbon Injection Systems		Direct Sorbent Injection Systems	
Year	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)
2006	559	117,481	1,496	317,863	539	60,641	1,160	257,367	139	6,859	56	7,433
2007	587	131,397	1,496	317,751	556	65,672	1,195	266,295	141	7,735	57	7,507
2008	634	151,417	1,471	316,810	576	68,442	1,248	277,474	169	17,391	60	7,606
2009	674	174,672	1,456	314,356	597	73,863	1,321	299,905	227	39,546	63	8,147
2010	713	200,950	1,410	310,486	610	83,407	1,358	315,120	262	54,183	64	8,627
2011	727	211,652	1,367	307,035	633	98,507	1,406	331,140	274	59,057	73	8,883
2012	723	219,214	1,290	298,416	629	101,593	1,449	344,709	287	63,709	81	10,524
2013	698	219,050	1,217	289,174	636	104,292	1,457	351,217	260	61,160	95	12,890
2014	696	223,556	1,171	283,932	620	105,951	1,471	358,410	277	68,697	102	16,683
2015	687	223,848	1,036	264,897	622	110,780	1,478	359,767	361	105,860	120	23,213
2016	688	228,047	942	252,896	605	109,956	1,477	360,785	477	152,254	120	26,030

Note:
'Associated Net Summer Capacity' is defined as the net summer capacity of the generators that are associated with the operation of this environmental equipment.
In some cases respondents have reported equipment late. Counts and capacity may have changed from prior publications of this table because of late reporting.
Data for 2005 and earlier are based primarily on Form EIA-767 data. In 2006, the Form EIA-767 was suspended. Data for 2007 and later are based primarily on Form EIA-860 data.
All data for 2006 are inferred based on submissions from subsequent years. Beginning in 2013 environmental data was collected at a more detailed level, which increases its accuracy and in some cases reduces the equipment counts.

Source: U.S. Energy Information Administration, Forms EIA-767, "Steam-Electric Plant Operation and Design Report" and Form EIA-860, "Annual Electric Generator Report."

Table 9.3. Quantity and Net Summer Capacity of Operable Cooling Systems, by Energy Source and Cooling System Type, 2006 - 2016

	Once-Through Cooling Systems		Recirculating Cooling Systems		Cooling Ponds		Dry Cooling Systems		Hybrid Wet and Dry Cooling Systems		Other Cooling System Types	
Energy Source	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)	Quantity	Associated Net Summer Capacity (MW)
2006												
Coal	463	132,567	353	154,619	101	49,609	--	--	--	--	15	6,283
Natural Gas	202	51,672	416	79,814	67	28,323	41	9,946	2	272	9	2,504
Petroleum	85	22,613	23	6,824	3	2,513	--	--	--	--	2	2,017
Other	16	1,072	28	2,462	--	--	2	100	--	--	4	424
2007												
Coal	458	131,692	355	155,972	101	49,609	--	--	--	--	15	6,283
Natural Gas	202	51,836	423	81,192	66	27,563	41	9,946	2	272	9	2,668
Petroleum	85	22,613	23	6,824	3	2,513	--	--	--	--	2	2,017
Other	16	1,072	28	2,522	--	--	2	100	--	--	4	424
2008												
Coal	453	131,909	360	158,057	100	48,787	--	--	--	--	10	4,366
Natural Gas	197	51,110	424	82,064	59	25,261	42	10,209	2	272	10	2,957
Petroleum	84	22,654	20	6,614	3	4,104	--	--	--	--	2	2,022
Other	16	1,162	25	2,251	--	--	2	100	--	--	4	424
2009												
Coal	445	129,350	368	161,000	100	47,960	1	335	--	--	8	3,036
Natural Gas	192	48,737	428	83,663	57	23,022	51	12,338	3	482	3	1,175
Petroleum	81	22,111	18	6,575	3	4,104	--	--	--	--	2	2,022
Other	16	1,160	25	2,316	2	344	4	356	--	--	1	33
2010												
Coal	437	129,554	369	162,641	101	48,929	2	435	1	766	9	3,086
Natural Gas	180	48,398	424	82,851	57	22,746	54	13,078	3	542	3	1,172
Nuclear	49	51,465	39	43,363	13	14,996	--	--	--	--	7	7,901
Petroleum	80	21,232	17	5,513	3	4,064	--	--	--	--	2	2,022
Other	17	1,190	26	2,546	2	344	4	356	--	--	2	63
2011												
Coal	415	127,412	367	165,646	104	50,476	3	840	1	766	9	3,090
Natural Gas	176	48,361	439	86,899	58	21,944	57	13,471	3	542	2	870
Nuclear	49	51,642	39	43,422	13	15,011	--	--	--	--	8	8,890
Petroleum	70	17,454	17	5,443	4	4,692	--	--	--	--	2	2,022
Other	18	1,318	20	1,641	--	--	1	26	--	--	2	63
2012												
Coal	372	124,589	364	166,603	88	39,933	4	1,412	1	766	15	6,918
Natural Gas	172	52,020	444	92,026	54	18,533	59	13,813	4	637	2	499
Nuclear	49	51,846	38	39,561	13	15,105	--	--	--	--	8	8,900
Petroleum	63	15,326	17	4,046	4	4,692	--	--	--	--	2	2,022
Other	15	1,258	27	2,167	--	--	1	53	--	--	2	63
2013												
Coal	345	120,340	355	164,514	77	39,482	4	1,422	1	750	11	4,797
Natural Gas	159	51,291	425	88,439	57	18,843	58	12,828	4	637	4	2,481
Nuclear	45	50,266	38	40,013	13	15,251	--	--	--	--	8	11,181
Petroleum	49	11,910	11	3,481	4	4,692	--	--	--	--	--	--
Solar Thermal	--	--	2	591	--	--	4	516	--	--	--	--
Other	15	1,301	31	2,561	1	66	--	--	--	--	1	128
2014												
Coal	328	115,930	338	160,222	74	38,906	4	1,422	1	750	22	8,322
Natural Gas	161	50,985	417	84,715	55	20,254	58	11,878	4	637	3	2,419
Nuclear	44	49,586	35	37,650	13	15,237	--	--	--	--	9	11,886
Petroleum	40	10,043	11	3,473	4	4,691	--	--	--	--	--	--
Solar Thermal	--	--	4	841	--	--	5	900	--	--	--	--
Other	16	1,332	31	2,756	1	66	1	72	--	--	1	128
2015												
Coal	259	93,180	311	153,605	77	45,026	4	1,422	1	750	25	9,883
Natural Gas	160	49,219	434	88,713	58	22,311	58	11,936	3	475	3	2,410
Nuclear	43	47,268	35	37,610	14	17,663	--	--	--	--	9	12,062
Petroleum	27	8,254	9	2,308	4	4,299	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	--	--	--	--
Other	18	1,676	26	2,104	1	66	1	72	--	--	1	128
2016												
Coal	210	82,047	292	148,875	79	44,702	4	1,422	1	750	22	10,148
Natural Gas	168	49,664	436	87,981	57	21,930	62	13,446	3	475	3	2,359
Nuclear	42	47,029	35	38,745	14	17,660	--	--	--	--	9	13,298
Petroleum	25	7,771	8	2,222	3	3,904	--	--	--	--	--	--
Solar Thermal	--	--	4	866	--	--	5	900	--	--	--	--
Other	18	1,689	24	2,035	1	66	1	72	--	--	1	128

Notes:
'Associated Net Summer Capacity' is defined as the net summer capacity of the generators that are associated with the operation of this environmental equipment.
In some cases respondents have reported equipment late. Counts and capacity may have changed from prior publications of this table because of late reporting.
Coal includes anthracite, bituminous, subbituminous, lignite, and waste coal; coal synfuel and refined coal; and beginning in 2011, coal-derived synthesis gas. Prior to 2011 coal-derived synthesis gas was included in Other Gases.
Petroleum Liquids includes distillate and residual fuel oils, jet fuel, kerosene, waste oil, and beginning in 2011, propane. Prior to 2011 propane was included in Other Gases.
Petroleum Coke includes petroleum coke-derived synthesis gas. Prior to 2011, petroleum coke-derived synthesis gas was included in Other Gases.
EIA did not collect cooling system data for nuclear units before 2010.
Other Energy Sources consists of wood and wood waste products, biomass, blast furnace gas and other gases.
Data for 2005 and earlier are based primarily on Form EIA-767 data. In 2006, the Form EIA-767 was suspended. Data for 2007 and later are based primarily on Form EIA-860 data. All data for 2006 are inferred based on submissions from subsequent years.

Source: U.S. Energy Information Administration, Forms EIA-767, "Steam-Electric Plant Operation and Design Report" and Form EIA-860, "Annual Electric Generator Report."

Table 9.4. Average Costs of Existing Flue Gas Desulfurization Units

Operating in Electric Power Sector, 2006 - 2016

Year	Average Operation and Maintenance Costs (Dollars per Megawatthour)	Average Installed Capital Costs (Dollars per Kilowatt)
2006	--	148.14
2007	1.26	206.24
2008	1.44	262.28
2009	1.44	357.70
2010	1.52	359.34
2011	1.79	335.16
2012	1.87	281.02
2013	1.74	256.95
2014	1.84	186.70
2015	2.03	158.14
2016	1.96	288.27

Notes: Average Installed Capital Costs reflect units which began operating in the specified year. Prior publications of this table reported the average installation cost of all units that were operating during each year; the new metric is intended to portray a more accurate understanding of how installation costs have changed over time.
Years in which Operation and Maintenance Costs were not collected display a '--' to indicate data was not collected.
Commercial and industrial facilities had significantly different costs than units used in the electric power sector. In order to give a more accurate reflection of the electric power sector, commercial and industrial facilities have been excluded from this publication table; prior publications of this table included commercial and industrial facilities when calculating average costs.

Sources:
U.S. Energy Information Administration, Form EIA-860, 'Annual Electric Generator Report'
U.S. Energy Information Administration, Form EIA-923, 'Power Plant Operations Report'

Table 9.5. Emissions from Energy Consumption at Conventional Power Plants and Combined-Heat-and-Power Plants, by State, 2015 and 2016 (Thousand Metric Tons)

Census Division and State	Carbon Dioxide (CO2)		Sulfur Dioxide (SO2)		Nitrogen Oxides (NOx)	
	Year 2016	Year 2015	Year 2016	Year 2015	Year 2016	Year 2015
New England	29,066	31,965	12	19	26	31
Connecticut	8,579	9,049	1	1	6	7
Maine	2,557	2,956	7	11	6	8
Massachusetts	12,722	13,422	3	5	10	11
New Hampshire	2,526	3,653	1	2	2	3
Rhode Island	2,670	2,874	0	0	1	1
Vermont	12	11	0	0	1	1
Middle Atlantic	137,445	143,131	121	226	131	151
New Jersey	21,108	19,427	3	3	12	12
New York	31,295	32,731	18	22	32	35
Pennsylvania	85,041	90,973	100	201	87	104
East North Central	338,794	369,356	432	700	271	310
Illinois	72,226	84,275	98	139	36	42
Indiana	85,393	89,045	83	157	89	97
Michigan	58,644	67,119	92	137	52	61
Ohio	81,618	83,722	131	214	65	76
Wisconsin	40,914	45,195	28	54	28	34
West North Central	203,950	219,199	246	304	179	189
Iowa	30,216	35,043	31	44	26	31
Kansas	25,762	27,341	6	13	17	19
Minnesota	29,644	30,307	24	27	25	28
Missouri	62,731	67,995	93	114	54	44
Nebraska	23,014	25,326	47	59	20	23
North Dakota	29,908	31,246	43	43	36	42
South Dakota	2,676	1,941	1	4	1	3
South Atlantic	379,065	378,419	275	345	271	301
Delaware	4,363	4,091	0	1	2	2
District of Columbia	48	36	0	0	0	0
Florida	110,388	111,863	59	77	70	76
Georgia	60,156	59,274	53	67	43	48
Maryland	18,578	18,314	25	31	13	15
North Carolina	52,492	53,824	47	52	48	51
South Carolina	28,001	29,849	23	26	15	18
Virginia	36,566	34,898	27	31	32	34
West Virginia	68,473	66,270	42	61	48	57
East South Central	196,408	204,017	182	351	126	149
Alabama	57,776	64,442	49	117	35	51
Kentucky	72,433	76,427	72	122	55	62
Mississippi	26,272	25,171	12	33	15	15
Tennessee	39,927	37,977	48	79	22	21
West South Central	358,451	369,898	395	432	290	301
Arkansas	31,726	28,587	54	54	31	29
Louisiana	53,162	56,299	58	69	66	71
Oklahoma	37,106	41,626	50	61	27	29
Texas	236,457	243,386	233	247	166	172
Mountain	209,056	228,381	101	126	204	254
Arizona	44,531	50,201	12	16	36	43
Colorado	36,075	37,413	18	22	29	35
Idaho	1,829	1,866	4	4	5	12
Montana	16,470	18,136	11	13	16	19
Nevada	14,542	14,752	2	5	10	10
New Mexico	23,193	24,850	7	11	35	42
Utah	28,245	33,688	11	16	33	47
Wyoming	44,172	47,476	35	40	39	45
Pacific Contiguous	65,443	76,054	21	22	95	102
California	47,008	55,481	2	1	69	73
Oregon	8,207	8,987	8	9	12	15
Washington	10,229	11,586	11	12	13	14
Pacific Noncontiguous	10,723	11,033	21	23	37	37
Alaska	3,466	3,676	3	4	21	19
Hawaii	7,257	7,356	18	20	16	17
U.S. Total	1,928,401	2,031,452	1,807	2,548	1,630	1,824

Notes:
The emissions data presented include total emissions from both electricity generation and the production of useful thermal output.
See Appendix A, Technical Notes, for a description of the sources and methodology used to develop the emissions estimates.
Displayed values of zero may represent small values that round to zero. The Excel version of this table provides additional precision which may be accessed by selecting individual cells.
Source: Calculations made by the Office of Electricity, Renewables, and Uranium Statistics, U.S. Energy Information Administration.

Chapter 10

Demand-Side Management and Advanced Metering

Table 10.1. Demand-Side Management Program Annual Effects by Program Category, 2006 through 2012 (Table Discontinued)

	Energy Efficiency		Load Management			Total	
Year	Energy Savings (Thousand MWh)	Actual Peak Load Reduction (MW)	Energy Savings (Thousand MWh)	Potential Peak Load Reduction (MW)	Actual Peak Load Reduction (MW)	Energy Savings (Thousand MWh)	Actual Peak Load Reduction (MW)
2006	63,076	16,006	790	21,254	11,268	63,866	27,274
2007	67,278	17,773	1,859	23,091	12,545	69,137	30,318
2008	74,871	19,708	1,822	26,318	12,064	76,693	31,772
2009	76,912	19,761	1,027	26,310	11,972	77,939	31,732
2010	86,914	20,828	447	26,100	12,536	87,361	33,364
2011	120,659	26,314	556	26,596	12,126	121,214	38,439
2012	138,525	28,924	712	28,503	13,200	139,237	42,124

2012 was the last year this data was collected.
Previously, annual effects were reported for large respondents only. Now the annual effects include large and small respondents, combined.
Non-Utility DSM Administrators are included in the 2011 data. See technical notes for list.
Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.2. Demand-Side Management Program Annual Effects by Program

Category, by Sector, 2006 through 2012 (Table Discontinued)

Year	Residential	Commercial	Industrial	Transportation	Total
Energy Efficiency - Energy Savings (Thousand MWh)					
2006	21,150	28,720	13,155	50	63,076
2007	22,772	30,359	14,038	108	67,278
2008	25,396	34,634	14,766	75	74,871
2009	27,395	34,831	14,610	76	76,912
2010	32,150	37,416	17,259	89	86,914
2011	46,790	50,732	23,061	76	120,659
2012	54,516	58,894	25,023	92	138,525
Energy Efficiency - Actual Peak Load Reduction (MW)					
2006	6,900	6,067	3,032	7	16,006
2007	8,275	6,241	3,250	7	17,773
2008	8,764	7,838	2,991	114	19,708
2009	8,724	7,954	3,074	9	19,761
2010	9,404	8,046	3,368	10	20,828
2011	11,391	10,422	4,490	11	26,314
2012	12,821	11,743	4,348	12	28,924
Load Management - Energy Savings (Thousand MWh)					
2006	321	331	138	1	790
2007	953	463	442	--	1,859
2008	1,151	239	431	--	1,822
2009	436	197	394	--	1,027
2010	215	113	118	--	447
2011	237	194	125	--	556
2012	257	368	87	--	712
Load Management - Potential Peak Load Reduction (MW)					
2006	6,176	3,957	11,064	57	21,254
2007	7,022	3,984	12,030	55	23,091
2008	8,097	6,029	12,137	55	26,318
2009	7,308	6,460	12,462	81	26,310
2010	7,998	6,080	11,750	272	26,100
2011	7,882	6,023	12,380	311	26,596
2012	8,600	6,462	13,261	180	28,503
Load Management - Actual Peak Load Reduction (MW)					
2006	3,863	1,730	5,643	32	11,268
2007	4,949	1,837	5,749	10	12,545
2008	4,158	3,270	4,625	12	12,064
2009	3,899	3,464	4,606	3	11,972
2010	4,726	2,854	4,819	137	12,536
2011	4,105	2,808	5,108	105	12,126
2012	4,152	3,208	5,732	108	13,200

2012 was the last year this data was collected.
Transportation data is not available before 2003.
Previously, annual data included only large respondents. Now it includes large and small respondents, combined.
Non-Utility DSM Administrators are included in the 2011 data. See technical notes for list.
Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.3. Demand-Side Management Program Incremental Effects by Program Category, 2006 through 2012 (Table Discontinued)

	Energy Efficiency		Load Management			Total	
Year	Energy Savings (Thousand MWh)	Actual Peak Load Reduction (MW)	Energy Savings (Thousand MWh)	Potential Peak Load Reduction (MW)	Actual Peak Load Reduction (MW)	Energy Savings (Thousand MWh)	Actual Peak Load Reduction (MW)
2006	5,394	1,268	99	2,817	1,690	5,492	2,958
2007	7,680	1,998	137	4,765	2,392	7,817	4,390
2008	10,428	6,327	168	7,253	3,292	10,596	9,619
2009	12,907	3,721	65	6,042	2,224	12,972	5,945
2010	13,592	3,215	46	5,234	2,709	13,639	5,923
2011	21,421	3,974	135	4,043	2,062	21,556	6,036
2012	21,478	3,764	41	5,357	2,671	21,520	6,435

2012 was the last year this data was collected.
Previously, large and small respondents were published separately, now they are combined.
Non-Utility DSM Administrators are included in the 2011 data. See technical notes for list.
Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.4. Demand-Side Management Program Incremental Effects by Program Category, by Sector, 2006 through 2012 (Table Discontinued)

Year	Residential	Commercial	Industrial	Transportation	Total
Energy Efficiency - Energy Savings (Thousand MWh)					
2006	2,127	2,281	986	--	5,394
2007	3,659	2,830	1,178	13	7,680
2008	4,568	4,383	1,477	1	10,428
2009	5,030	4,959	2,918	1	12,907
2010	6,492	5,325	1,771	5	13,592
2011	9,989	8,166	3,261	6	21,421
2012	9,531	8,924	3,019	4	21,478
Energy Efficiency - Actual Peak Load Reduction (MW)					
2006	665	433	170	--	1,268
2007	994	763	240	1	1,998
2008	4,543	1,168	614	1	6,327
2009	1,849	1,044	827	1	3,721
2010	1,378	1,053	783	1	3,215
2011	1,628	1,545	800	1	3,974
2012	1,775	1,562	426	1	3,764
Load Management - Energy Savings (Thousand MWh)					
2006	23	62	14	--	99
2007	13	98	26	--	137
2008	32	62	74	--	168
2009	34	21	10	--	65
2010	13	21	12	--	46
2011	29	86	21	--	135
2012	20	14	7	--	41
Load Management - Potential Peak Load Reduction (MW)					
2006	905	776	1,136	--	2,817
2007	2,342	1,324	1,045	54	4,765
2008	3,013	2,156	2,083	1	7,253
2009	1,922	1,971	2,127	22	6,042
2010	1,976	1,171	2,087	--	5,234
2011	1,324	1,327	1,392	--	4,043
2012	1,369	1,155	2,833	1	5,357
Load Management - Actual Peak Load Reduction (MW)					
2006	478	389	823	--	1,690
2007	1,221	562	567	42	2,392
2008	1,179	1,445	667	1	3,292
2009	793	781	648	3	2,224
2010	666	948	1,095	--	2,709
2011	817	619	625	--	2,062
2012	686	737	1,248	*	2,671

2012 was the last year this data was collected.
Transportation data is not available before 2003.
Previously, large and small respondents were published separately, now they are combined.
Non-Utility DSM Administrators are included in the 2011 data. See technical notes for list.
Totals may not equal sum of components because of independent rounding.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.5. Demand-Side Management Program Direct and Indirect Costs,

2006 through 2012 (Thousand Dollars) (Table Discontinued)

Year	Energy Efficiency	Load Management	Direct Cost	Indirect Cost	Total Cost
2006	1,270,602	663,980	1,934,582	128,886	2,072,962
2007	1,677,969	700,362	2,378,331	160,326	2,604,711
2008	2,137,452	836,359	2,973,811	181,843	3,186,742
2009	2,221,480	944,261	3,165,741	394,193	3,607,076
2010	2,906,906	1,048,356	3,955,262	275,158	4,230,420
2011	4,002,672	1,213,102	5,215,774	328,622	5,544,396
2012	4,397,635	1,270,391	5,668,026	332,440	6,000,466

2012 was the last year this data was collected.
Direct Costs reflect electric utility costs incurred during the year that are identified with Energy Efficiency and Load Management.
Total Costs are the sum of Direct and Indirect Costs.
Previously, this table included only large respondents. Now it includes large and small respondents, combined.
For the total cost data, prior to 2010, both large and small respondents reported total costs, however small respondents did not break out the costs into direct and indirect. The direct and indirect costs were reported for large respondents only. Therefore, prior to 2010 the total cost does not equal the sum of the direct and indirect costs.
Totals may not equal sum of components because of independent rounding.
Non-Utility DSM Administrators are included in the 2011 data. See technical notes for list.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.6. Energy Efficiency Category, by Sector, 2013 through 2016

Year	Residential	Commercial	Industrial	Transportation	Total
Incremental Annual Savings - Energy Savings (MWh)					
2013	11,031,419	10,478,997	3,141,213	29,894	24,681,523
2014	11,442,191	11,928,895	3,074,819	19,316	26,465,221
2015	11,015,779	12,288,889	2,871,418	13,414	26,189,500
2016	11,717,964	13,350,090	2,424,794	14,147	27,506,995
Incremental Annual Savings - Peak Demand Savings (MW)					
2013	6,812	11,319	1,463	5	19,599
2014	3,031	2,920	564	2	6,517
2015	2,683	2,965	407	--	6,055
2016	2,781	2,676	904	3	6,364
Incremental Costs - Customer Incentive (thousand dollars)					
2013	1,252,085	1,274,406	345,676	5	2,872,171
2014	1,522,335	1,561,408	327,227	64	3,411,034
2015	1,488,796	1,617,816	342,753	20	3,449,385
2016	1,541,459	1,733,171	296,300	--	3,570,930
Incremental Costs - All Other Costs (thousand dollars)					
2013	1,015,842	750,299	179,719	33	1,945,877
2014	1,088,970	911,968	208,096	122	2,209,148
2015	1,152,713	935,435	193,015	40	2,281,188
2016	1,387,122	959,160	176,560	12	2,522,849

Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.7. Energy Efficiency - Life Cycle Category, by Sector, 2013 through 2016

Year	Residential	Commercial	Industrial	Transportation	Total
Life Cycle Savings - Energy Savings (MWh)					
2013	84,525,515	128,026,835	38,500,862	448,421	251,464,746
2014	100,729,499	149,493,353	39,631,016	287,925	290,141,793
2015	104,449,512	162,983,049	39,452,115	199,328	307,084,004
2016	134,023,068	186,685,356	33,481,057	212,200	354,401,681
Life Cycle Savings - Peak Demand Savings (MW) SEE NOTE 1					
2013					
2014					
2015					
2016					
Life Cycle Costs - Customer Incentive (thousand dollars)					
2013	2,698,741	2,875,605	455,357	5	6,029,552
2014	1,749,387	1,912,327	346,218	64	4,007,996
2015	1,844,797	1,998,650	413,396	30	4,256,873
2016	1,704,465	2,079,373	342,927		4,126,765
Life Cycle Costs - All Other Costs (thousand dollars)					
2013	2,134,979	1,626,658	234,577	33	3,996,230
2014	1,558,256	1,348,673	216,674	122	3,123,719
2015	2,087,072	1,405,072	216,226	40	3,708,393
2016	1,964,832	1,265,765	202,112	12	3,432,718

Note 1- This data is being withheld pending EIA review.
* = Value is less than half of the smallest unit of measure.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.8. Demand Response - Yearly Energy and Demand Savings Category, by Sector, 2013 through 2016

Year	Residential	Commercial	Industrial	Transportation	Total
Number of Customers Enrolled					
2013	8,419,233	611,826	155,893	398	9,187,350
2014	8,603,402	605,094	57,129	4	9,265,629
2015	8,140,688	890,284	63,163	3	9,094,138
2016	8,739,535	1,033,649	66,170	1	9,839,355
Energy Savings (MWh)					
2013	799,743	486,348	115,895	1	1,401,987
2014	881,563	462,337	92,549	--	1,436,449
2015	855,017	273,089	122,900	--	1,251,006
2016	1,005,144	225,174	105,818	--	1,336,136
Potential Peak Demand Savings (MW)					
2013	7,003	5,124	14,800	168	27,095
2014	8,118	6,215	16,505	353	31,191
2015	8,703	6,989	17,169	14	32,875
2016	10,518	11,053	14,339	14	35,924
Actual Peak Demand Savings (MW)					
2013	3,381	2,548	5,805	149	11,883
2014	3,147	2,652	6,883	1	12,683
2015	3,430	3,047	6,546	13	13,036
2016	3,608	3,598	4,632	4	11,841

Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.9. Demand Response - Program Costs Category, by Sector, 2013 through 2016

Year	Residential	Commercial	Industrial	Transportation	Total
Customer Incentives (thousand dollars)					
2013	398,598	286,057	421,208	6,919	1,112,782
2014	345,894	345,435	514,751	11,716	1,217,796
2015	320,683	338,153	461,271	339	1,120,446
2016	306,635	448,332	284,584	339	1,039,890
All Other Costs (thousand dollars)					
2013	338,353	95,748	50,982	50	485,133
2014	301,389	101,127	45,028	115	447,659
2015	256,519	78,758	46,613	28	381,918
2016	253,180	66,084	60,443	--	379,707

Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

Table 10.10. Advanced Metering Count by Technology Type, 2007 through 2016

Year	Residential	Commercial	Industrial	Transportation	Total
Automated Meter Reading (AMR)					
2007	25,785,782	2,322,329	44,015	109	28,152,235
2008	36,425,943	3,529,985	77,122	13	40,033,063
2009	41,462,111	4,239,531	107,033	11	45,808,686
2010	43,913,225	4,611,877	159,315	626	48,685,043
2011	41,451,888	4,341,105	172,692	77	45,965,762
2012	43,455,437	4,691,018	185,862	125	48,330,822
2013	42,491,242	4,632,744	196,132	1,202	47,321,320
2014	41,830,781	4,781,167	216,459	1,252	46,829,659
2015	42,326,302	5,049,978	226,908	1,023	47,604,211
2016	41,508,261	5,074,877	223,584	971	46,807,693
Advanced Metering Infrastructure (AMI)					
2007	2,202,222	262,159	9,106	2	2,473,489
2008	4,190,244	444,003	12,757	12	4,647,016
2009	8,712,297	876,419	22,675	10	9,611,401
2010	18,369,908	1,904,983	59,567	67	20,334,525
2011	33,453,548	3,682,159	154,659	7	37,290,373
2012	38,524,639	4,461,350	179,159	35	43,165,183
2013	47,321,995	5,770,067	248,515	845	53,341,422
2014	51,710,725	6,563,614	270,683	916	58,545,938
2015	57,107,785	7,324,345	310,889	813	64,743,832
2016	62,360,132	8,119,223	342,766	1,345	70,823,466
Standard (non-AMR/AMI) Meters					
2007	--	--	--	--	--
2008	--	--	--	--	--
2009	--	--	--	--	--
2010	--	--	--	--	--
2011	--	--	--	--	--
2012	--	--	--	--	--
2013	32,059,522	5,104,322	244,114	132	37,408,090
2014	32,995,176	5,642,247	254,621	1,331	38,893,375
2015	32,430,105	5,744,831	290,354	432	38,465,722
2016	28,491,094	4,929,344	280,406	416	33,701,260
Total Number of Meters					
2007	--	--	--	--	--
2008	--	--	--	--	--
2009	--	--	--	--	--
2010	--	--	--	--	--
2011	--	--	--	--	--
2012	--	--	--	--	--
2013	121,872,759	15,507,133	688,761	2,179	138,070,832
2014	126,536,682	16,987,028	741,763	3,499	144,268,972
2015	131,864,192	18,119,154	828,151	2,268	150,813,765
2016	132,359,487	18,123,444	846,756	2,732	151,332,419

Prior to 2010, the count was the number of customers, not number of meters.
Starting in 2013 Standard (Non-AMR/AMI) meter data was collected on the EIA-861.
This data is not collected on the EIA-861S.
Source: U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report." Form EIA-861S, "Annual Electric Power Industry Report (Short Form)."

Appendix

Table A.1. Sulfur Dioxide Uncontrolled Emission Factors

Fuel, Code, Source and Emission Units				Combustion System Type / Firing Configuration						
Fuel	EIA Fuel Code	Source and Tables (As Appropriate)	Emissions Units Lbs = Pounds MMCF = Million Cubic Feet MG = Thousand Gallons	Cyclone Firing Boiler	Fluidized Bed Firing Boiler	Stoker Boiler	Tangential Firing Boiler	All Other Boiler Types	Combustion Turbine	Internal Combustion Engine
Distillate Fuel Oil*	DFO	Source: 2, Table 3.1-2a, 3.4-1 & 1.3-1	Lbs per MG	142.00	14.20	142.00	142.00	142.00	140.00	140.00
Jet Fuel*	JF	Assumed to have emissions similar to DFO.	Lbs per MG	142.00	14.20	142.00	142.00	142.00	140.00	140.00
Kerosene*	KER	Assumed to have emissions similar to DFO.	Lbs per MG	142.00	14.20	142.00	142.00	142.00	140.00	140.00
Other Biomass Liquids*	OBL	Source: 1 (including footnotes 3 and 16 within source)	Lbs per MG	142.00	14.20	142.00	142.00	142.00	140.00	140.00
Residual Fuel Oil*	RFO	Source: 2, Table 1.3-1; Combustion turbines and internal combusition engines assumed to have emissions similar to DFO.	Lbs per MG	157.00	15.70	157.00	157.00	157.00	140.00	140.00
Wood Waste Liquids*	WDL	Source: 1 (including footnotes 3 and 16 within source)	Lbs per MG	142.00	14.20	142.00	142.00	142.00	140.00	140.00
Waste Oil*	WO	Source: 2, Table 1.11-2; Combustion turbines and internal combusition engines assumed to have emissions similar to DFO.	Lbs per MG	147.00	14.70	147.00	147.00	147.00	140.00	140.00
Blast Furnace Gas	BFG	Sources: 1 (including footnote 7 within source); 2, Table 1.4-2 (including footnote d within source)	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Landfill Gas	LFG	Sources: 1 (including footnote 7 within source); 2, Table 1.4-2 (including footnote d within source)	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Natural Gas	NG	Sources: 1 (including footnote 7 within source); 2, Table 1.4-2 (including footnote d within source)	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Other Biomass Gas	OBG	Sources: 1 (including footnote 7 within source); 2, Table 1.4-2 (including footnote d within source)	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Other Gases	OG	Source: 1 (including footnote 7 within source)	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Other	OTH	Assumed to have emissions similar to Natural Gas.	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Propane Gas	PG	Sources: 1 (including footnote 7 within source); 2, Table 1.4-2 (including footnote d within source)	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Coal-Derived Synthesis Gas	SGC	Assumed to have emissions similar to Natural Gas	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Synthesis Gas from Petroleum Coke	SGP	Assumed to have emissions similar to Natural Gas	Lbs per MMCF	0.60	0.06	0.60	0.60	0.60	0.60	0.60
Agricultural Byproducts	AB	Source: 1	Lbs per ton	0.08	0.01	0.08	0.08	0.08	N/A	N/A
Bituminous Coal*	BIT	Source: 2, Table 1.1-3	Lbs per ton	38.00	3.80	38.00	38.00	38.00	N/A	N/A
Lignite Coal*	LIG	Source: 2, Table 1.7-1	Lbs per ton	30.00	3.00	30.00	30.00	30.00	N/A	N/A
Municipal Solid Waste	MSW	Source: 1	Lbs per ton	1.70	0.17	1.70	1.70	1.70	N/A	N/A
Other Biomass Solids	OBS	Source: 1 (including footnote 11 within source)	Lbs per ton	0.23	0.02	0.23	0.23	0.23	N/A	N/A
Petroleum Coke*	PC	Source: 1	Lbs per ton	39.00	3.90	39.00	39.00	39.00	N/A	N/A
Refined Coal*	RC	Assumed to have the emissions similar to Bituminous Coal.	Lbs per ton	38.00	3.80	38.00	38.00	38.00	N/A	N/A
Subbituminous Coal*	SUB	Source: 2, Table 1.1-3	Lbs per ton	35.00	3.50	35.00	35.00	35.00	N/A	N/A
Tire-Derived Fuel*	TDF	Source: 1 (including footnote 13 within source)	Lbs per ton	38.00	3.80	38.00	38.00	38.00	N/A	N/A
Waste Coal*	WC	Source: 1 (including footnote 20 within source)	Lbs per ton	30.00	3.00	30.00	30.00	30.00	N/A	N/A
Wood Waste Solids	WDS	Source: 1	Lbs per ton	0.29	0.08	0.08	0.29	0.29	N/A	N/A
Black Liquor	BLQ	Source: 1	Lbs per ton **	7.00	0.70	7.00	7.00	7.00	N/A	N/A
Sludge Waste	SLW	Source: 1 (including footnote 11 within source)	Lbs per ton **	2.80	0.28	2.80	2.80	2.80	N/A	N/A

Notes:

* For these fuels, emissions are estimated by multiplying the emissions factor by the physical volume of fuel and the sulfur percentage of the fuel (other fuels do not require the sulfur percentage in the calculation). Note that EIA data do not provide the sulfur content of TDF. The value used (1.56 percent) is from U.S. EPA, Control of Mercury Emissions from Coal-Fired Electric Utility Boilers, April 2002, EPA-600/R-01-109, Table A-11 (available at:http://www.epa.gov/appcdwww/aptb/EPA-600-R-01-109A.pdf).

** Although Sludge Waste and Black Liquor consist substantially of liquids, these fuels are measured and reported to EIA in tons.

Sources:

1. Eastern Research Group, Inc. and E.H. Pechan & Associates, Inc., Documentation for the 2002 Electric Generating Unit National Emissions Inventory, Table 6, September 2004.
   Prepared for the U.S. Environmental Protection Agency, Emission Factor and Inventory Group (D205-01), Emissions, Monitoring and Analysis Division, Research Triangle Park
2. U.S. Environmental Protection Agency, AP 42, Fifth Edition (Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources); available at: http://www.epa.gov/ttn/chief/ap42/

Table A.2. Nitrogen Oxides Uncontrolled Emission Factors

Fuel, Code, Source and Emission Units				Combustion System Type / Firing Configuration								
							Tangential Boiler		All Other Boiler Types			
Fuel	EIA Fuel Code	Source and Tables (As Appropriate)	Emissions Units Lbs = Pounds MMCF = Million Cubic Feet MG = Thousand Gallons	Cyclone Firing Boiler	Fluidized Bed Firing Boiler	Stoker Boiler	Dry-Bottom Boilers	Wet-Bottom Boilers	Dry-Bottom Boilers	Wet-Bottom Boilers	Combustion Turbine	Internal Combustion Engine
Distillate Fuel Oil	DFO	Source: 2, Tables 1.3-1, 3.1-1, & 3.4-1	Lbs per MG	24.00	24.00	24.00	24.00	24.00	24.00	24.00	122.00	443.80
Jet Fuel	JF	Source: 2, Tables 1.3-1, 3.1-1, & 3.4-1	Lbs per MG	24.00	24.00	24.00	24.00	24.00	24.00	24.00	118.80	432.00
Kerosene	KER	Source: 2, Tables 1.3-1, 3.1-1, & 3.4-1	Lbs per MG	24.00	24.00	24.00	24.00	24.00	24.00	24.00	118.80	432.00
Other Biomass Liquids	OBL	Source: 1 (including footnote 3 within source); EIA estimates	Lbs per MG	19.00	19.00	19.00	19.00	19.00	19.00	19.00	112.30	408.30
Residual Fuel Oil	RFO	Source: 2, Table 1.3-1; EIA estimates	Lbs per MG	47.00	47.00	47.00	32.00	32.00	47.00	47.00	131.70	479.00
Wood Waste Liquids	WDL	Source: 1 (including footnote 16 within source); EIA estimates	Lbs per MG	5.43	5.43	5.43	5.43	5.43	5.43	5.43	230.50	838.10
Waste Oil	WO	Source: 2, Table 1.11-2; EIA estimates	Lbs per MG	19.00	19.00	19.00	19.00	19.00	19.00	19.00	92.20	335.20
Blast Furnace Gas	BFG	Sources: 1 (including footnote 7 within source); EIA estimates	Lbs per MMCF	15.40	15.40	15.40	15.40	15.40	15.40	15.40	30.40	256.55
Landfill Gas	LFG	Sources: 1 (including footnote 7 within source); EIA estimates	Lbs per MMCF	72.44	72.44	72.44	72.44	72.44	72.44	72.44	144.00	1,215.22
Natural Gas	NG	Source: 2, Tables 1.4-1, 3.1-1, and 3.4-1	Lbs per MMCF	280.00	280.00	280.00	170.00	170.00	280.00	280.00	328.00	2,768.00
Other Biomass Gas	OBG	Sources: 1 (including footnote 7 within source); EIA estimates	Lbs per MMCF	112.83	112.83	112.83	112.83	112.83	112.83	112.83	313.60	2,646.48
Other Gases	OG	Sources: 1 (including footnote 7 within source); EIA estimates	Lbs per MMCF	152.82	152.82	152.82	152.82	152.82	152.82	152.82	263.82	2,226.41
Other	OTH	Assumed to have emissions similar to Natural Gas.	Lbs per MMCF	280.00	280.00	280.00	170.00	170.00	280.00	280.00	328.00	2,768.00
Propane Gas	PG	Sources: 3; EIA estimates	Lbs per MMCF	522.26	522.26	522.26	522.26	522.26	522.26	522.26	803.36	6,779.57
Synthesis Gas from Petroleum Coke	SGC	Assumed to have emissions similar to Natural Gas	Lbs per MMCF	280.00	280.00	280.00	170.00	170.00	280.00	280.00	328.00	2,768.00
Coal-Derived Synthesis Gas	SGP	Assumed to have emissions similar to Natural Gas	Lbs per MMCF	280.00	280.00	280.00	170.00	170.00	280.00	280.00	328.00	2,768.00
Agricultural Byproducts	AB	Source: 1	Lbs per ton	1.20	1.20	1.20	1.20	1.20	1.20	1.20	N/A	N/A
Bituminous Coal	BIT	Source: 2, Table 1.1-3	Lbs per ton	33.00	5.00	11.00	10.00	14.00	12.00	31.00	N/A	N/A
Lignite Coal	LIG	Source: 2, Table 1.7-1	Lbs per ton	15.00	3.60	5.80	7.10	7.10	6.30	6.30	N/A	N/A
Municipal Solid Waste	MSW	Source: 1	Lbs per ton	5.00	5.00	5.00	5.00	5.00	5.00	5.00	N/A	N/A
Other Biomass Solids	OBS	Source: 1 (including footnote 11 within source)	Lbs per ton	2.00	2.00	2.00	2.00	2.00	2.00	2.00	N/A	N/A
Petroleum Coke	PC	Source: 1 (including footnote 8 within source)	Lbs per ton	21.00	5.00	21.00	21.00	21.00	21.00	21.00	N/A	N/A
Refined Coal	RC	Assumed to have the emissions similar to Bituminous Coal.	Lbs per ton	33.00	5.00	11.00	10.00	14.00	12.00	31.00	N/A	N/A
Subbituminous Coal	SUB	Source: 2, Table 1.1-3	Lbs per ton	17.00	5.00	8.80	7.20	7.20	7.40	24.00	N/A	N/A
Tire-Derived Fuel	TDF	Source: 1 (including footnote 13 within source)	Lbs per ton	33.00	5.00	11.00	10.00	14.00	12.00	31.00	N/A	N/A
Waste Coal	WC	Source: 1 (including footnote 20 within source)	Lbs per ton	15.00	3.60	5.80	7.10	7.10	6.30	6.30	N/A	N/A
Wood Waste Solids	WDS	Source: 1	Lbs per ton	2.51	2.00	1.50	2.51	2.51	2.51	2.51	N/A	N/A
Black Liquor	BLQ	Source: 1	Lbs per ton **	1.50	1.50	1.50	1.50	1.50	1.50	1.50	N/A	N/A
Sludge Waste	SLW	Source: 1 (including footnote 11 within source)	Lbs per ton **	5.00	5.00	5.00	5.00	5.00	5.00	5.00	N/A	N/A

Notes:
** Although Sludge Waste and Black Liquor consist substantially of liquids, these fuels are measured and reported to EIA in tons.

Sources:
1. Eastern Research Group, Inc. and E.H. Pechan & Associates, Inc., Documentation for the 2002 Electric Generating Unit National Emissions Inventory, Table 6, September 2004. Prepared for the U.S. Environmental Protection Agency, Emission Factor and Inventory Group (D205-01), Emissions, Monitoring and Analysis Division, Research Triangle Park
2. U.S. Environmental Protection Agency, AP 42, Fifth Edition (Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources); available at: http://www.epa.gov/ttn/chief/ap42/
3. U.S. Environmental Protection Agency, Factor Information Retrieval (FIRE) Database, Version 6.25; available at: http://www.epa.gov/ttn/chief/software/fire/index.html

Table A.3. Carbon Dioxide Uncontrolled Emission Factors

Fuel	EIA Fuel Code	Factor (Kilograms of CO2 Per Million Btu)**	Notes
Bituminous Coal	BIT	93.30	
Distillate Fuel Oil	DFO	73.16	
Geothermal	GEO	7.71	
Jet Fuel	JF	70.90	
Kerosene	KER	72.30	
Lignite Coal	LIG	97.70	
Municipal Solid Waste	MSW	41.69	
Natural Gas	NG	53.07	
Petroleum Coke	PC	102.10	
Propane Gas	PG	63.07	
Refined Coal	RC	93.30	Assumed to have emissions similar to Bituminous Coal.
Residual Fuel Oil	RFO	78.79	
Synthesis Gas Derived from Coal	SGC	*	Factor is based on the fuel source used to produce the synthesis gas
Synthesis Gas Derived from Petroleum Coke	SGP	*	Factor is based on the fuel source used to produce the synthesis gas
Subbituminous Coal	SUB	97.20	
Tire-Derived Fuel	TDF	85.97	
Waste Coal	WC	93.30	Assumed to have emissions similar to Bituminous Coal.
Waste Oil	WO	95.25	

Notes:
* Factors for synthesis gas derived from coal and synthesis gas derived from petroleum coke are based on the fuel source used to produce the synthesis gas.
** CO2 factors do not vary by combustion system type or boiler firing configuration.

Source: Energy Information Administration estimates:
http://www.eia.gov/environment/emissions/co2_vol_mass.cfm

Table A.4. Nitrogen Oxides Control Technology Emissions Reduction Factors

		Reduction Factor							
Nitrogen Oxides Control Technology	**EIA Code**	**Coal**	**Residual Fuel Oil and Distallate Fuel Oil**	**Natural Gas**	**Wood**	**Other Solids**	**Other Liquids**	**Other Gases**	**Other Fuels**
Burner Out of Service	BO	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
Low Excess Air	LA	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
Biased Firing (Alternative Burners)	BF	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
Overfire Air	OV	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%	25.00%
Advanced Overfire Air	AA	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%
Low NOx Burners	LN	45.00%	45.00%	50.00%	45.00%	45.00%	45.00%	50.00%	45.00%
Fuel Reburning	FU	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%	55.00%
Selective Noncatalytic Reduction	SN	45.00%	32.50%	32.50%	55.00%	45.00%	32.50%	32.50%	45.00%
Selective Catalytic Reduction	SR	80.00%	80.00%	85.00%	80.00%	80.00%	80.00%	85.00%	80.00%
Ammonia Injection	NH3	62.50%	56.25%	58.75%	67.50%	62.50%	56.25%	58.75%	62.50%
Flue Gas Recirculation	FR	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%	45.00%
Water Injection	H2O	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
Steam Injection	STM	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
Other	OT	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%

		Source of Selected Reduction Factor							
Nitrogen Oxides Control Technology	**EIA Code**	**Coal**	**Residual Fuel Oil and Distallate Fuel Oil**	**Natural Gas**	**Wood**	**Other Solids**	**Other Liquids**	**Other Gases**	**Other Fuels**
Burner Out of Service	BO	Source: 1	Source: 2	Source: 9	Source: 9	Source: 9	Source: 10	Source: 11	Source: 9
Low Excess Air	LA	Source: 1	Source: 2	Source: 9	Source: 9	Source: 9	Source: 10	Source: 11	Source: 9
Biased Firing (Alternative Burners)	BF	Source: 1	Source: 2	Source: 9	Source: 9	Source: 9	Source: 10	Source: 11	Source: 9
Overfire Air	OV	Source: 1	Source: 9	Source: 9	Source: 9	Source: 9	Source: 10	Source: 11	Source: 9
Advanced Overfire Air	AA	Source: 1	Source: 9	Source: 9	Source: 9	Source: 9	Source: 10	Source: 11	Source: 9
Low NOx Burners	LN	Source: 1	Source: 2	Source: 3	Source: 9	Source: 9	Source: 10	Source: 11	Source: 9
Fuel Reburning	FU	Source: 1	Source: 9	Source: 9	Source: 9	Source: 9	Source: 10	Source: 11	Source: 9
Selective Noncatalytic Reduction	SN	Source: 1	Source: 2	Source: 4	Source: 5	Source: 9	Source: 10	Source: 11	Source: 9
Selective Catalytic Reduction	SR	Source: 1	Source: 2	Source: 4	Source: 9	Source: 9	Source: 10	Source: 11	Source: 9
Ammonia Injection	NH3	Source: 6	Source: 6	Source: 6	Source: 6	Source: 9	Source: 10	Source: 11	Source: 9
Flue Gas Recirculation	FR	Source: 10	Source: 2	Source: 10	Source: 10	Source: 9	Source: 10	Source: 11	Source: 9
Water Injection	H2O	Source: 8	Source: 8	Source: 8	Source: 8	Source: 9	Source: 10	Source: 11	Source: 9
Steam Injection	STM	Source: 8	Source: 8	Source: 8	Source: 8	Source: 9	Source: 10	Source: 11	Source: 9
Other	OT	Source: 7	Source: 7	Source: 7	Source: 7	Source: 9	Source: 10	Source: 11	Source: 9

Source: U.S. Environmental Protection Agency, AP 42, Fifth Edition (Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources); available at: http://www.epa.gov/ttn/chief/ap42/

Source 1: AP-42, Table 1.1-2
Source 2: AP-42, Section 1.3.4.3 Text
Source 3: AP-42, Table 1.4-1
Source 4: AP-42, Section 1.4.4 Text
Source 5: AP-42, Section 1.6.4 Text
Source 6: Average of Selective Catalytic Reductiona and Selective Noncatalytic Reduction
Source 7: Minimum of other technologies for fuel group
Source 8: Matches Other selection
Source 9: Assumed to have reduction similar to coal
Source 10: Assumed to have reduction similar to Residual Fuel Oil and Distallate Fuel Oil
Source 11: Assumed to have reduction similar to natural gas

Notes:
Coal reduction factors are applied to Bituminous Coal, Subbituminous Coal, Lignite Coal, and Waste Coal.
Wood reduction factors are applied to Wood Waste Solids, Black Liquor, and Wood Waste Liquids.
Other Solids reduction factors are applied to Petroleum Coke, Mincipal Solid Waste, Tire-Derived Fuels, Sludge Waste, Agricultural Biproducts, and Other Biomass Solids.
Other Liquids reduction factors are applied to Jet Fuel, Kerosene, Waste Oil, and Other Biomass Liquids.
Other Gases reduction factors are applied to Blast Furnace Gas, Landfill Gas, Propane Gas, Coal-Derived Synthesis Gas, Synthesis Gas from Petroleum Coke, Other Biomass Gas, and Other Gas.

Table A.5. Unit of Measure Equivalents

Unit	Equivalent
Kilowatt (kW)	1,000 (One Thousand) Watts
Megawatt (MW)	1,000,000 (One Million) Watts
Gigawatt (GW)	1,000,000,000 (One Billion) Watts
Terawatt (TW)	1,000,000,000,000 (One Trillion) Watts
Gigawatt	1,000,000 (One Million) Kilowatts
Thousand Gigawatts	1,000,000,000 (One Billion) Kilowatts
Kilowatthours (kWh)	1,000 (One Thousand) Watthours
Megawatthours (MWh)	1,000,000 (One Million) Watthours
Gigawatthours (GWh)	1,000,000,000 (One Billion) Watthours
Terawatthours (TWh)	1,000,000,000,000 (One Trillion) Watthours
Gigawatthours	1,000,000 (One Million) Kilowatthours
Thousand Gigawatthours	1,000,000,000(One Billion Kilowatthours
U.S. Dollar	1,000 (One Thousand) Mills
U.S. Cent	10 (Ten) Mills
Barrel of Oil	42 Gallons

Source: U.S. Energy Information Administration

Technical Notes

This appendix describes how the U.S. Energy Information Administration collects, estimates, and reports electric power data in the Electric Power Annual.

Data Quality and Submission

The Electric Power Annual (EPA) is prepared by the Office of Electricity, Renewables, and Uranium Statistics (ERUS), U.S. Energy Information Administration (EIA), U.S. Department of Energy (DOE). ERUS performs routine reviews of the data collection respondent frames, survey forms, and reviews the quality of the data received.

Data are entered directly by respondents into the ERUS Internet Data Collection (IDC) system. A small number of hard copy forms are keyed into the system by ERUS personnel. All data are subject to review via interactive edits built into the IDC system, internal quality assurance reports, and review by ERUS subject matter experts. Questionable data values are verified through contacts with respondents, and survey non-respondents are identified and contacted.

IDC edits include both deterministic checks, in which records are checked for the presence of data in required fields, and statistical checks, in which the data are checked against a range of values based on historical data values and for logical or mathematical consistency with data elements reported in the survey. Discrepancies found in the data, as a result of these checks, must either be corrected by the respondent or the respondent must enter an explanation as to why the data are correct. If these explanations are unsatisfactory the respondent is contacted by EIA for clarification or corrected data.

Those respondents unable to use the electronic reporting method provide the data in hard copy, typically via fax and email. These data are manually entered into the computerized database and are subjected to the same data edits as those performed during e-filing by the respondent.

Reliability of Data

Annual survey data have non-sampling errors. Non-sampling errors can be attributed to many sources: (1) inability to obtain complete information about all cases (i.e., non-response); (2) response errors; (3) definitional difficulties; (4) differences in the interpretation of questions; (5) mistakes in recording or coding the data; and (6) other errors of collection, response, coverage, and estimation for missing data.

Although no direct measurement of the biases due to non-sampling errors can be obtained, precautionary steps were taken in all phases of the frame development and data collection, processing, and tabulation processes to minimize their influence.

Imputation: If the reported values appear to be in error and the data issue cannot be resolved with the respondent, or if the facility is a non-respondent, a regression methodology is used to impute for the facility. The regression methodology relies on other data to make estimates for erroneous or missing responses. The basis for the current methodology involves a 'borrowing of strength' technique for small domains.[1]

Data Revision Procedure

The EPA presents the most current and complete data available to the EIA. The statistics may differ from those published previously in EIA publications due to corrections, revisions, or other adjustments to the data subsequent to its original release.

After data are disseminated as final, revisions will be considered if a correction would make a difference of 1 percent or greater at the national level. Revisions for differences that do not meet the 1 percent or greater threshold will be determined by the Office Director. In either case, the proposed revision will be subject to the EIA revision policy concerning how it affects other EIA products.

Sensitive Data (Formerly Identified as Data Confidentiality): Most of the data collected on the electric power surveys are not considered business sensitive. However, the data that are classified as sensitive are handled by ERUS consistent with EIA's "Policy on the Disclosure of Individually Identifiable Energy Information in the Possession of the EIA" (45 Federal Register 59812 (1980)).

Rounding and Percent Change Calculations

Rounding Rules for Data: To round a number to n digits (decimal places), add one unit to the nth digit if the (n+1) digit is 5 or larger and keep the nth digit unchanged if the (n+1) digit is less than 5. The symbol for a number rounded to zero is (*).

Percent Change: The following formula is used to calculate percent changes:

$$\text{Percent Change} = \left(\frac{x\ (t_2) - x\ (t_1)}{x\ (t_1)} \right) x\, 100,$$

where $x\ (t_1)$ and $x\ (t_2)$ denote the quantity at period t_1 and subsequent period t_2.

Data Sources for Electric Power Annual

Data published in the EPA are compiled from forms filed annually or aggregated to an annual basis from monthly forms (see figure on EIA Electric Industry Data Collection in Appendix A). The respondents to these forms include electric utilities, other generators and sellers of electricity, and North American Electric Reliability Corporation (NERC) reliability entities. The EIA forms used are:

- Form EIA-411, "Coordinated Bulk Power Supply Program Report;"
- Form EIA-860, "Annual Electric Generator Report;"
- Form EIA-861, "Annual Electric Power Industry Report;"
- Form EIA-861M, "Monthly Electric Power Industry Report;"
- Form EIA-861S, "Annual Electric Power Industry Report (Short Form);"
- Form EIA-923, "Power Plant Operations Report."

These forms can be found on the EIA Internet website at:
http://www.eia.gov/cneaf/electricity/page/forms.html.

Survey data from other Federal sources are also utilized for this publication. They include:

- FERC Form 1, “Annual Report of Major Electric Utilities, Licensees, and Others;”
- U. S. Department of Agriculture (USDA) Rural Utility Service Form 7, “Financial and Statistical Report;” and
- USDA Rural Utility Service Form 12, “Operating Report – Financial.”

In addition to the above-named forms, the historical data published in the EPA are compiled from the following inactive forms:

- Form EIA-412, “Annual Electric Industry Financial Report,” FERC Form 423, “Cost and Quality of Fuels for Electric Plants,”
- Form EIA-423, “Monthly Cost and Quality of Fuels for Electric Plants Report;”
- Form EIA-759, “Monthly Power Plant Report,”
- Form EIA-767, “Steam-Electric Plant Operation and Design Report;”
- Form EIA-826, “ Monthly Electric Utility Sales and Revenues with State Distributions Report;”
- Form EIA-860A, “Annual Electric Generator Report–Utility,”
- Form EIA-860B, “Annual Electric Generator Report–Nonutility,”
- Form EIA-867, “Annual Nonutility Power Producer Report,”
- Form EIA-900, “Monthly Nonutility Power Report,”
- Form EIA-906, “Power Plant Report;” and
- Form EIA-920, “Combined Heat and Power Plant Report.”

Additionally, some data reported in this publication were acquired from public reports of the National Energy Board of Canada on electricity imports and exports.

Meanings of Symbols Appearing in Tables: The following symbols have the meaning described below:

* The value reported is less than half of the smallest unit of measure, but is greater than zero.

P Indicates a preliminary value.

W Withheld to avoid disclosure of individual company data.

NM Data value is not meaningful, either (1) when compared to the same value for the previous time period, or (2) when a data value is not meaningful due to having a high Relative Standard Error (RSE).

(*) Usage of this symbol indicates a number rounded to zero.

Form EIA-411

The information reported on the mandatory Form EIA-411 includes: (1) actual energy and peak demand for the preceding year and five additional years; (2) existing and future generating capacity and capacity reserve margins; (3) scheduled capacity transfers; (4) projections of capacity, demand, purchases, sales, and scheduled maintenance; (5) power flow cases; and (6) bulk power system maps. The data is collected for EIA by NERC from NERC regional reliability entities, which in turn aggregate reports from regional members. Non-member data is also included. The compiled data is reviewed and edited by

NERC and submitted to EIA annually on July 15. The data undergoes additional review by EIA. EIA resolves any quality issues with NERC.

Instrument and Design History: The Form EIA-411 program was initiated under the Federal Power Commission (FPC) Docket R-362, Reliability and Adequacy of Electric Service, and Orders 383-2, 383-3, and 383-4. The DOE, established in October 1977, assumed the responsibility for this activity. The responsibility for collecting these data was delegated to the Office of Emergency Planning and Operations within the DOE and was transferred to EIA for the reporting year 1996. Until 2008, this form was voluntary. The data are collected under the authority of the Federal Power Act (Public Law 88-280), the Federal Energy Administration Act of 1974 (Public Law 93-275), and the DOE Organization Act (Public Law 95-91).

Issues within Historical Data Series: The Florida Reliability Coordinating Council (FRCC) separated itself from the Southeastern Electric Reliability Council (SERC) in the mid-1990s and all time-series data have been adjusted. In 1998, several utilities realigned from Southwest Power Pool (SPP) to SERC. Adjustments were made to the information to account for the separation and to address the tracking of shared reserve capacity that was under long-term contracts with multiple members. Name changes altered the Mid-Continent Area Power Pool (MAPP) to the Midwest Reliability Organization (MRO) and the Western Systems Coordinating Council (WSCC) to the Western Electricity Coordinating Council (WECC). The MRO membership boundaries have altered over time, but WECC membership boundaries have not. The utilities in the associated regional entity identified as the Alaska System Coordination Council (ASCC) dropped their formal participation in NERC. (Alaska and, obviously, Hawaii are not electrically interconnected with the coterminous 48 States).

At the close of calendar year 2005, the following reliability regional councils were dissolved: East Central Area Reliability Coordination Agreement (ECAR), Mid-Atlantic Area Council (MAAC), and Mid-America Interconnected Network (MAIN). On January 1, 2006, the ReliabilityFirst Corporation (RFC) came into existence as a new regional reliability council. Individual utility membership in the former ECAR, MAAC, and MAIN councils mostly shifted to RFC. However, adjustments in membership, as utilities joined or left various reliability councils, impacted MRO, SERC, and SPP. The Texas Regional Entity (TRE) was formed to handle the regional reliability responsibilities of the Electric Reliability Council of Texas (ERCOT). The revised delegation agreements covering all the regions were approved by the FERC on March 21, 2008. Reliability Councils that are unchanged include: Florida Reliability Coordinating Council (FRCC), Northeast Power Coordinating Council (NPCC), and the Western Electricity Coordinating Council (WECC). The historical time series have not been adjusted to account for individual membership shifts.

The current NERC regional entity names are as follows:

- Florida Reliability Coordinating Council (FRCC),
- Midwest Reliability Organization (MRO),
- Northeast Power Coordinating Council (NPCC),
- ReliabilityFirst Corporation (RFC),
- Southeastern Electric Reliability Council (SERC),

- Southwest Power Pool (SPP),
- Texas Regional Entity (TRE), and
- Western Energy Coordinating Council (WECC).

Changes Introduced in 2011: Starting in 2011, NERC modified the bulk power system reporting regions (in contrast to regional reliability entity organizational boundaries) to align them with electric market operations. Consequently, reliability data will be reported for the PJM and MISO regional transmission organization areas and the MAPP area rather than for the MRO and RFC regional areas. This new framework, along with the other NERC regions, now forms the bulk power system reliability assessment areas.

Historically the MRO, RFC, SERC, and SPP regional boundaries were altered as utilities changed reliability organizations. In published EIA reports the historical data series for these regions have not been adjusted. Instead, starting in 2011, EIA has introduced the Balance of Eastern Region category to provide a consistent trend for the Eastern interconnection.

Concept of Demand within the EIA-411: The EIA-411 uses the following categorization of electricity demand:

- **Net Internal Demand:** Internal Demand less Direct Control Load Management and Interruptible Demand.
- **Internal Demand:** To collect these data, NERC develops a Total Internal Demand that is the sum of the metered (net) outputs of all generators within the system and the metered line flows into the system, less the metered line flows out of the system. The demand of station service or auxiliary needs (such as fan motors, pump motors, and other equipment essential to the operation of the generating units) is not included nor are any requirement customer (utility) load or capacity found behind the line meters on the system.
- **Direct Control Load Management:** Demand-Side Management that is under the direct control of the system operator. DCLM may control the electric supply to individual appliances or equipment on customer premises; it does not included Interruptible Demand.
- **Interruptible Demand:** The magnitude of customer demand that, in accordance with contractual arrangements, can be interrupted at the time of the Regional Council's seasonal peak by direct control of the System Operator or by action of the customer at the direct request of the System Operator.

For additional information on demand, refer to the NERC's Long-Term Reliability Assessments at http://www.nerc.com/page.php?cid=4|61.

Sensitive Data: Power flow cases and maps are considered business sensitive.

Form EIA-412 (Terminated)

The Form EIA-412 was used annually to collect accounting, financial, and operating data from publicly owned electric utilities engaged in the generation, transmission, or distribution of electricity which had

150,000 megawatthours of sales to ultimate consumers and/or 150,000 megawatthours of sales for resale for the two previous years. Data was collected annually.

Beginning with the 2001 data collection, the plant statistics reported on Schedule 9 were also collected from unregulated entities that own plants with a nameplate capacity of 10 megawatts or greater. Beginning with the 2003 collection, the transmission data reported in Schedules 10 and 11 were collected from each generation and transmission cooperative owning transmission lines having a nominal voltage of 132 kilovolts or greater.

Instrument and Design History: The FPC created the FPC Form 1M in 1961 as a mandatory survey. It became the responsibility of the EIA in October 1977 when the FPC was merged with DOE and renamed the Federal Energy Regulatory Commission (FERC). In 1979, the FPC Form 1M was superseded by the Economic Regulatory Administration (ERA) Form ERA-412 and in January 1980 by the Form EIA-412.

The criteria used to select the respondents for this survey fit approximately 500 publicly owned electric utilities. Federal electric utilities were required to file the Form EIA-412. The financial data for the U.S. Army Corps of Engineers (except for Saint Mary's Falls at Sault Ste. Marie, Michigan); the U.S. Department of Interior, Bureau of Reclamation; and the U.S. International Boundary and Water Commission were collected on the Form EIA-412 from the Federal power marketing administrations. The form was terminated after the 2003 data year.

Issues within Historical Data Series: For 2001 - 2003, the California Department of Water Resources (CDWR) Electric Energy Fund data were included in the EIA-412 data tables. In response to the energy shortfall in California, in 2001 the California State legislature authorized the CDWR, using its undamaged borrowing capability, to enter the wholesale markets on behalf of the California retail customers effective on January 17, 2001 and for the period ending December 31, 2002. Their 2001 revenue collected was $5,501,000,000 with purchased power costs of $12,055,000,000. Their 2002 revenue collected was $4,210,000,000 with purchased power costs of $3,827,749,811. Their 2003 revenue collected was $4,627,000,000 with purchased power costs of $4,732,000,000. The California Public Utility Commission was required by statute to establish the procedures for retail revenue recovery mechanisms for their purchase power costs in the future.

Sensitive Data: The nonutility data collected on Schedule 9 “Electric Generating Plant Statistics” for “Cost of Plant” and “Production Expenses,” are considered business sensitive. .

Form EIA-423 (Replaced in 2008 by the Form EIA-923)

The Form EIA-423, “Monthly Cost and Quality of Fuels for Electric Plants Report,” collected the cost and quality of fossil fuels delivered to nonutility plants to produce electricity. These plants included independent power producers (including those facilities that formerly reported on the FERC Form 423) and commercial and industrial combined heat and power (CHP) producers whose total fossil-fueled nameplate generating capacity was 50 or more megawatts (MW). (CHP plants are sometimes referred to as co-generators. They produce heat, such as steam for use in a manufacturing process, along with electricity).

Instrument and Design History: The Form EIA-423[2] was implemented in January 2002 to collect monthly cost and quality data for fossil fuel receipts from owners or operators of nonutility electricity generating plants. It was terminated on January 1, 2008, and replaced by the Form EIA-923, "Power Plant Operations Report."

Issues within Historical Data Series: Natural gas values do not include blast furnace gas or other gas.

Sensitive Data: Plant fuel cost data collected on the survey are considered business sensitive. State- and national-level aggregations are published if sufficient data are available to avoid disclosure of individual company and plant level costs.

FERC Form 423 (Replaced in 2008 by Form EIA-923)

The FERC Form 423, “Monthly Report of Cost and Quality of Fuels for Electric Plants,” was administered by FERC. The data were downloaded from the Commission’s website into an EIA database. The Form was filed by approximately 600 regulated plants. To meet the criteria for filing, a plant must have had a total steam turbine electric generating capacity and/or combined-cycle (gas turbine with associated steam turbine) generating capacity of 50 or more megawatts. Only fuel delivered for use in steam-turbine and combined-cycle units was reported. Fuel received for use in gas-turbine or internal-combustion units that was not associated with a combined-cycle operation was not reported. The FERC Form 423 was replaced after 2007 by the Form EIA-923.

Instrument and Design History: On July 7, 1972, the FPC issued Order Number 453 enacting the New Code of Federal Regulations, Section 141.61, creating the FPC Form 423. Originally, the form was used to collect data only on fossil steam plants, but was amended in 1974 to include data on internal-combustion and combustion-turbine units. When DOE was formed in 1977, most of FPC became FERC. The FERC Form 423 replaced the FPC Form 423 in January 1983. The FERC Form 423 dropped stand-alone combustion turbines. In addition, the generator nameplate capacity threshold was changed from 25 megawatts to 50 megawatts. This reduction in coverage eliminated approximately 50 utilities and 250 plants. All historical FPC Form 423 data in this publication were revised to reflect the new generator-nameplate-capacity threshold of 50 or more megawatts reported on the FERC Form 423. In January 1991, the collection of data on the FERC Form 423 was extended to include combined cycle units. Historical data have not been revised to include these units. On January 1, 2008, EIA assumed responsibility for collection of these data and both the utility and nonutility plants began to report their cost and quality of fuels information on Schedule 2 of Form EIA-923, "Power Plant Operations Report.".

Issues within Historical Data Series: These data were collected by FERC for regulatory rather than statistical and publication purposes. EIA did not attempt to resolve any late filing issues in the FERC Form 423 survey. The data were quality reviewed by EIA and when possible quality issues were resolved with FERC.

Natural gas values for 2001 forward do not include blast furnace gas or other gas.

Due to the estimation procedure described below in the discussion of the Form EIA-923, 2003 and later data cannot be directly compared to previous years’ data.

Sensitive Data: Data collected on FERC Form 423 are not business sensitive.

Form EIA-767 (Replaced by Forms EIA-860 and EIA-923)

The Form EIA-767 was used to collect data annually on plant operations and equipment design, including boiler, generator, cooling system, air pollution control equipment, and stack characteristics. Data were collected from a mandatory restricted-universe census of all electric power plants with a total existing or planned organic-fueled or combustible renewable steam-electric generator nameplate rating of 10 or more megawatts. The entire form was filed by approximately 800 power plants with a nameplate capacity of 100 or more megawatts. An additional 600 power plants with a nameplate capacity under 100 megawatts submitted information only on fuel consumption and quality, boiler and generator configuration, and nitrogen oxides, mercury, particulate matter, and sulfur dioxide controls.

Instrument and Design History: The Federal Energy Administration Act of 1974 (Public Law 93-275) defines the legislative authority to collect these data. The predecessor form, FPC-67, "Steam-Electric Plant Air and Water Quality Control Data," was used to collect data from 1969 to 1980, when the form number was changed to Form EIA-767. In 1982, the form was completely redesigned and re-titled Form EIA-767, "Steam-Electric Plant Operation and Design Report." In 1986, the respondent universe of 700 plants was increased to 900 plants to include plants with nameplate capacity from 10 megawatts to 100 megawatts. In 2002, the respondent universe was increased by almost 1,370 plants with the addition of nonutility plants.

Collection of data via the form was suspended for the 2006 data year. Starting with the collection of 2007 calendar year data, most of the Form EIA-767 information is now collected on either the revised Form EIA-860, "Annual Electric Generator Report" or the new Form EIA-923, "Power Plant Operations Report."

Estimation of EIA-767 Data: No estimation of Form EIA-767 data was performed. Normally the survey had no non-response.

Issues within Historical Data Series: As noted above, no data were collected for calendar year 2006.

Sensitive Data: Latitude and longitude data collected on the Form EIA-767 were considered business sensitive.

Form EIA-861M (Formerly the EIA-826)

The Form EIA 861M, "Monthly Electric Power Industry Report," is a monthly collection of data from a sample of approximately 520 of the largest electric utilities (primarily investor and publicly owned) as well as a census of energy service providers with sales to ultimate consumers in deregulated States. Form EIA-861 (see below), with approximately 3,300 respondents, serves as a frame from which the Form 826 sample is drawn. Based on this sample, a model is used to estimate for the entire universe of U.S. electric utilities on a monthly basis.

Instrument and design history: The collection of electric power sales data and related information began in the early 1940's and was established as FPC Form 5 by FPC Order 141 in 1947. In 1980, the report was revised with only selected income items remaining and became the FERC Form 5. The Form

EIA 826, “Electric Utility Company Monthly Statement,” replaced the FERC Form 5 in January 1983. In January 1987, the “Electric Utility Company Monthly Statement” was changed to the “Monthly Electric Utility Sales and Revenue Report with State Distributions.” The title was changed again in January 2002 to “Monthly Electric Utility Sales and Revenues with State Distributions Report” to become consistent with other EIA report titles. The Form EIA 826 was revised in January 1990, and some data elements were eliminated.

In 1993, EIA for the first time used a model sample for the Form EIA 826. A stratified random sample, employing auxiliary data, was used for each of the four previous years. The sample for the Form EIA 826 was designed to obtain estimates of electricity sales and average retail price of electricity at the State level by end use sector.

Starting with data for January 2001, the restructuring of the electric power industry was taken into account by forming three schedules on the Form EIA-826. Schedule 1, Part A is for full service utilities that operate as in the past. Schedule 1, Part B is for electric service providers only, and Schedule 1, Part C is for those utilities providing distribution service for those on Schedule 1, Part B. In addition, Schedule 1 Part D is for those retail energy providers or power marketers that provide bundled service. Also, the Form EIA-826 frame was modified to include all investor-owned electric utilities and a sample of companies from other ownership classes. A new method of estimation was implemented at this same time. (See Electric Power Monthly, April 2001, p.1.)

With the October 2004 issue of the Electric Power Monthly (EPM), EIA published for the first time preliminary electricity sales data for the Transportation Sector. These data are for electricity delivered to and consumed by local, regional, and metropolitan transportation systems. The data being published for the first time in the October EPM included July 2004 data as well as year-to-date. EIA’s efforts to develop these new data have identified anomalies in several States and the District of Columbia. Some of these anomalies are caused by issues such as: 1) Some respondents have classified themselves as outside the realm of the survey. The Form EIA-826 collects retail data from those respondents providing electricity and other services to the ultimate end users. EIA has experienced specific situations where, although the respondents’ customers are the ultimate end users, particular end users qualify under wholesale rate schedules. 2) The Form EIA-826 is a cutoff sample and not intended to be a census.

Data processing and data system editing: Monthly Form EIA-861M submission is available via an Internet Data Collection (IDC) system. The completed data are due to EIA by the last calendar day of the month following the reporting month. Nonrespondents are contacted to obtain the data. The data are edited and additional checks are completed. Following verification, imputation is run, and tables and text of the aggregated data are produced for inclusion in the EPM.

Imputation: Regression prediction, or imputation, is done for entities not in the monthly sample and for any nonrespondents. Regressor data for Schedule 1, Part A is the average monthly sales or revenue from the most recent finalized data from survey Form EIA-861. Beginning with January 2008 data and the finalized 2007 data, the regressor data for Schedule 1 Parts B and C is the prior month’s data.

Formulas and methodologies: The Form EIA 861M data are collected by end-use sector (residential, commercial, industrial, and transportation) and State. Form EIA 861 (see below) data are used as the

frame from which the sample is selected and in some instances also as regressor data. Updates are made to the frame to reflect mergers that affect data processing.

With the revised definitions for the commercial and industrial sectors to include all data previously reported as 'other' data except transportation, and a separate transportation sector, all responses that would formerly have been reported under the "other" sector are now to be reported under one of the sectors that currently exist. This means there is probably a lower correlation, in general, between, say, commercial Form EIA-826 data for 2004 and commercial Form EIA-861 data for 2003 than there was between commercial Form EIA-826 data for 2003 and commercial Form EIA-861 data for 2002 or earlier years, although commercial and industrial definitions have always been somewhat nebulous due to power companies not having complete information on all customers.

Data submitted for January 2004 represent the first time respondents were to provide data specifically for the transportation end-use sector.

During 2003 transportation data were collected annually through Form EIA-861. Beginning in 2004 the transportation data were collected on a monthly basis via Form EIA-826. In order to develop an estimate of the monthly transportation data for 2003, values for both sales of electricity to ultimate customers and revenue from sales of electricity to ultimate customers were estimated using the 2004 monthly profile for the sales and revenues from the data collected via Form EIA-826. All monthly non-transportation data for 2003 (i.e. street lighting, etc.), which were previously reported in the "other" end-use sector on the Form EIA-826 have been prorated into the Commercial and Industrial end-use sectors based on the 2003 Form EIA-861 profile.

A monthly distribution factor was developed for the monthly data collected in 2004 (for the months of January through November). The transportation sales and revenues for December 2004 were assumed to be equivalent to the transportation sales and revenues for November 2004. The monthly distribution factors for January through November were applied to the annual values for transportation sales and revenues collected via Form EIA-861 to develop corresponding 2003 monthly values. The eleven month estimated totals from January through November 2003 were subtracted from the annual values obtained from Form EIA-861 in order to obtain the December 2003 values.

Data from the Form EIA-861M are used to determine estimates by sector at the State, Census division, and national level. State level sales and revenues estimates are first calculated. Then the ratio of revenue divided by sales is calculated to estimate retail price of electricity at the State level. The estimates are accumulated separately to produce the Census division and U.S. level estimates[3].

Some electric utilities provide service in more than one State. To facilitate the estimation, the State service area is actually used as the sampling unit. For each State served by each utility, there is a utility State part, or "State service area." This approach allows for an explicit calculation of estimates for sales, revenue, and average retail price of electricity by end use sector at State, Census division, and national level. Estimation procedures include imputation to account for nonresponse. Non-sampling error must also be considered. The non-sampling error is not estimated directly, although attempts are made to minimize the non-sampling error.

Average retail price of electricity represents the cost per unit of electricity sold and is calculated by dividing retail electric revenue by the corresponding sales of electricity. The average retail price of electricity is calculated for all consumers and for each end-use sector.

The electric revenue used to calculate the average retail price of electricity is the operating revenue reported by the electric utility. Operating revenue includes energy charges, demand charges, consumer service charges, environmental surcharges, fuel adjustments, and other miscellaneous charges. Electric utility operating revenues also include State and Federal income taxes and taxes other than income taxes paid by the utility.

The average retail price of electricity reported in this publication by sector represents a weighted average of consumer revenue and sales within sectors and across sectors for all consumers, and does not reflect the per kWh rate charged by the electric utility to the individual consumers. Electric utilities typically employ a number of rate schedules within a single sector. These alternative rate schedules reflect the varying consumption levels and patterns of consumers and their associated impact on the costs to the electric utility for providing electrical service.

Adjusting monthly data to annual data: As a final adjustment based on our most complete data, use is made of final Form EIA-861 data, when available. The annual totals for Form EIA-826 data by State and end-use sector are compared to the corresponding Form EIA-861 values for sales and revenue. The ratio of these two values in each case is then used to adjust each corresponding monthly value.

Sensitive data: Most of the data collected on the Form EIA-861M are not considered business sensitive. However, monthly revenue, sales, and customer data collected from energy service providers (Schedule 1, Part B), which do not also provide energy delivery, are considered business sensitive and must adhere to EIA's “Policy on the Disclosure of Individually Identifiable Energy Information in the Possession of the EIA” (45Federal Register 59812 (1980)).

Form EIA-860

The Form EIA-860 is a mandatory annual census of all existing and planned electric generating facilities in the United States with a total generator nameplate capacity of 1 or more megawatts. The survey is used to collect data on existing power plants and 10 year plans for constructing new plants, as well as generating unit additions, modifications, and retirements in existing plants. Data on the survey are collected at the individual generator level. Certain power plant environmental-related data are collected at the boiler level. These data include environmental equipment design parameters and boiler air emission standards and boiler emission controls.

Instrument and Design History: The Form EIA-860 was originally implemented in January 1985 to collect plant data on electric utilities as of year-end 1984. It was preceded by several Federal Power Commission (FPC) forms including the FPC Form 4, Form 12 and 12E, Form 67, and Form 411. In January 1999, the Form EIA-860 was renamed the Form EIA-860A and was implemented to collect data as of January 1, 1999.

In 1989, the Form EIA-867, "Annual Nonutility Power Producer Report," was initiated to collect plant data on unregulated entities with a total generator nameplate capacity of 5 or more megawatts. In

1992, the reporting threshold of the Form EIA-867 was lowered to include all facilities with a combined nameplate capacity of 1 or more megawatts. Previously, data were collected every 3 years from facilities with a nameplate capacity between 1 and 5 megawatts. In 1998, the Form EIA-867, was renamed Form EIA-860B, "Annual Electric Generator Report – Nonutility." The Form EIA-860B was a mandatory survey of all existing and planned nonutility electric generating facilities in the United States with a total generator nameplate capacity of 1 or more megawatts.

Beginning with data collected for the year 2001, the infrastructure data collected on the Form EIA-860A and the Form EIA-860B were combined into the new Form EIA-860 and the monthly and annual versions of the Form EIA-906. The Federal Energy Administration Act of 1974 (Public Law 93-275) defines the legislative authority to collect these data.

Starting with 2007, design parameters data formerly collected on Form EIA-767 were collected on Form EIA-860. These include design parameters associated with certain steam-electric plants' boilers, cooling systems, flue gas particulate collectors, flue gas desulfurization units, and stacks and flues.

Estimation of EIA-860 Data: No imputation was required for EIA-860 data.

Issues within Historical Data Series Regarding Categorization of Capacity by Business Sector: There are a small number of electric utility CHP plants, as well as a small number of industrial and commercial generating facilities that are not CHP. For the purposes of this report the data for these plants are included, respectively, in the following categories: "Electricity Generators, Electric Utilities," "Combined Heat and Power, Industrial," and "Combined Heat and Power, Commercial."

Some capacity in 2001 through 2004 is classified based on the operating company's classification as an electric utility or an independent power producer. Starting in the EPA 2006, capacity by producer type was determined at the power plant level for 2005 and all subsequent data collections. This change required revisions to the original published 2005 data.

Issues within Historical Data Series Regarding Planned Capacity: Delays and cancellations may have occurred subsequent to respondent data reporting as of December 31 of the data year.

Issues within Historical Data Series Regarding Capacity by Energy Source: Prior to the EPA 2005, the capacity for generators for which natural gas or petroleum was the most predominant energy source was presented in the following three categories: petroleum only, natural gas only, and dual-fired. The dual-fired category, which was EIA's effort to infer which generators could fuel-switch between natural gas and fuel oil, included only the capacity of generators for which the most predominant energy source and second most predominant energy source were reported as natural gas or petroleum. Beginning in 2005, capacity is assigned to energy source based solely on the most predominant (primary) energy source reported for a generator. The "dual-fired" category was eliminated. Separately, summaries of capacity associated with generators with fuel-switching capability are presented for 2005 and later years. These summaries are based on data collected from new questions added to the Form EIA-860 survey that directly address the ability of generators to switch fuels and co-fire fuels.

In the EPA 2005, certain petroleum-fired capacity was misclassified as natural gas-fired capacity for 1995 – 2003. This was corrected in the EPA 2006. Corrections were noted as revised data.

Prime Movers: The Form EIA-860 sometimes represents a generator's prime mover by using the abbreviations in the table below.

Prime Mover Code	Prime Mover Description
BA	Energy Storage, Battery
CE	Energy Storage, Compressed Air
CP	Energy Storage, Concentrated Solar Power
FW	Energy Storage, Flywheel
PS	Energy Storage, Reversible Hydraulic Turbine (Pumped Storage)
ES	Energy Storage, Other
ST	Steam Turbine, including nuclear, geothermal and solar steam (does not include combined cycle)
GT	Combustion (Gas) Turbine (including jet engine design)
IC	Internal Combustion Engine (diesel, piston, reciprocating)
CA	Combined Cycle Steam Part
CT	Combined Cycle Combustion Turbine Part
CS	Combined Cycle Single Shaft
CC	Combined Cycle Total Unit
HA	Hydrokinetic, Axial Flow Turbine
HB	Hydrokinetic, Wave Buoy
HK	Hydrokinetic, Other
HY	Hydroelectric Turbine (including turbines associated with delivery of water by pipeline)
BT	Turbines Used in a Binary Cycle (including those used for geothermal applications)
PV	Photovoltaic
WT	Wind Turbine, Onshore
WS	Wind Turbine, Offshore
FC	Fuel Cell
OT	Other

Energy Sources: The Form EIA-860 sometimes represents the energy sources associated with generators by using the abbreviations and/or groupings in the table below.

Energy Source Grouping	Energy Source Code	Energy Source Description
Coal	ANT	Anthracite Coal
	BIT	Bituminous Coal
	LIG	Lignite Coal
	SUB	Subbituminous Coal
	SGC	Coal-Derived Synthesis Gas
	WC	Waste/Other Coal (including anthracite culm, bituminous gob, fine coal, lignite waste, waste coal)
Petroleum Products	DFO	Distillate Fuel Oil (including diesel, No. 1, No. 2, and No. 4 fuel oils)
	JF	Jet Fuel
	KER	Kerosene
	PC	Petroleum Coke
	PG	Gaseous Propane
	RFO	Residual Fuel Oil (including No. 5, and No. 6 fuel oils, and bunker C fuel oil)
	SG	Synthesis Gas from Petroleum Coke
	WO	Waste/Other Oil (including crude oil, liquid butane, liquid propane, naphtha, oil waste, re-refined motor oil, sludge oil, tar oil, or other petroleum-based liquid wastes)
Natural Gas and Other Gases	BFG	Blast Furnace Gas
	NG	Natural Gas
	OG	Other Gas
Nuclear	NUC	Nuclear (including Uranium, Plutonium, and Thorium)
Hydroelectric Conventional	WAT (Prime Mover = HY)	Water at a Conventional Hydroelectric Turbine, and water used in Wave Buoy Hydrokinetic Technology, Current Hydrokinetic Technology, and Tidal Hydrokinetic Technology
Hydroelectric Pumped Storage	WAT (Prime Mover = PS)	Pumping Energy for Reversible (Pumped Storage) Hydroelectric Turbine
Wood and Wood-Derived Fuels	WDS	Wood/Wood Waste Solids (including paper pellets, railroad ties, utility poles, wood chips, bark, and wood waste solids)
	WDL	Wood Waste Liquids (excluding Black Liquor but including red liquor, sludge wood, spent sulfite liquor, and other wood-based liquids)
	BLQ	Black Liquor
Other Biomass	AB	Agricultural By-Products
	MSW	Municipal Solid Waste
	OBG	Other Biomass Gas (including digester gas, methane, and other biomass gases)
	OBL	Other Biomass Liquids
	OBS	Other Biomass Solids
	LFG	Landfill Gas
	SLW	Sludge Waste
Other Renewable Energy Sources	SUN	Solar (including solar thermal)
	WND	Wind
	GEO	Geothermal
Other Energy Sources	PUR	Purchased Steam
	WH	Waste heat not directly attributed to a fuel source
	TDF	Tire-Derived Fuels
	MWH	Electricity used for energy storage
	OTH	Other

Sensitive Data: The tested heat rate data collected on the Form EIA-860 are considered business sensitive.

Form EIA-861

The Form EIA-861 is a mandatory annual census of electric power industry participants in the United States. Prior to data year 2012, the survey was used to collect information on power sales and revenue data from approximately 3,300 respondents. About 3,100 are electric utilities, and the remainders are nontraditional entities such as energy service providers or the unregulated subsidiaries of electric utilities and power marketers.

For data year 2012 and forward, EIA modified the frame of the Form EIA-861, "Annual Electric Power Industry Report," from a census to a sample, and EIA is using model-based methods to estimate the sales, revenues, and customer counts by sector and state for those respondents that have been removed from the frame. EIA created a new Form EIA-861S, "Annual Electric Power Industry Report (Short Form)," for the respondents that have been removed from the Form EIA-861 frame. The form collects limited data such as total sales, revenues, and customer counts by state.

Transportation Sector: Prior to 2003, sales of electric power for transportation (e.g., city subway systems) were included in the Other Sector, along with sales to customers for public buildings, traffic signals and public street lighting. Beginning with the 2003 data collection, sales to the Transportation Sector were collected separately. The balance of the Other Sector was reclassified as Commercial Sector.

On the Form EIA-861, the Transportation Sector is defined as electrified rail, primarily urban transit, light rail, automated guideway, and other rail systems whose primary propulsive energy source is electricity. Electricity sales to Transportation Sector consumers whose primary propulsive energy source is not electricity (i.e., gasoline, diesel fuel, etc.) are not included.

Benchmark statistics were reviewed from outside surveys, most notably the U.S. Department of Transportation (DOT) Federal Transit Administration's National Transportation Database, a source previously used by EIA to estimate electricity transportation consumption. The DOT survey indicated the State and City locations of expected respondents. The Form EIA-861 survey methodology assumed that sales, revenue, and customer counts associated with these mass transit systems would be provided by the incumbent utilities in these areas, relying on information drawn routinely from rate schedules and classifications designed to serve the sector separately and distinctly. In 2010, 64 respondents reported transportation data in 28 States.

Data Reconciliation: The Electric Power Annual reports total sales volumes (megawatthours) of electricity to ultimate consumers and customer counts in States with deregulated markets as the sum of bundled sales reported by full-service providers and delivery reported by transmission and distribution utilities. ERUS has concluded that the sales of electricity to ultimate consumers data reported by delivery utilities are more reliable than data reported by power marketers and Energy Service Providers (ESPs).

The reporting methodology change uses sales volumes and a customer count reported by distribution utilities, and modifies only an incremental revenue value, representing revenue associated with misreported sales assumed to be attributable to the ESPs that were under-represented in the survey frame.

Instrument and Design History: The Form EIA-861 was implemented in January 1985 for collection of data as of year-end 1984. The Federal Energy Administration Act of 1974 (Public Law 93-275) defines the legislative authority to collect these data.

Average Retail Price of Electricity: This value represents the average cost per unit of electricity sold and is calculated by dividing retail electric revenue by the corresponding sales of electricity. The average retail price of electricity is calculated for all consumers and for each end-use sector.

The electric revenue used to calculate the average retail price of electricity is the operating revenue reported by the electric power industry participant. Operating revenue includes energy charges, demand charges, consumer service charges, environmental surcharges, fuel adjustments, and other miscellaneous charges. Electric power industry participant operating revenues also include ratepayer reimbursements for State and Federal income taxes and other taxes paid by the utility.

This computed average retail price of electricity reported in this publication by is a weighted average of consumer revenue and sales and does not equal the per kWh rate charged by the electric power industry participant to the individual consumers. Electric utilities typically employ a number of rate schedules within a single sector. These alternative rate schedules reflect the varying consumption levels and patterns of consumers and their associated impact on the costs of the electric power industry participant for providing electrical service.

Issues within Historical Data Series: Changes from year to year in consumer counts, sales and revenues, particularly involving the commercial and industrial consumer sectors, may result from respondent implementation of changes in the definitions of consumers, and reclassifications. Utilities and energy service providers may classify commercial and industrial customers based on either NAICS codes or demands or usage falling within specified limits by rate schedule. The number of ultimate customers is an average of the number of customers at the close of each month. Also see the discussion of the Transportation Sector, above.

Net-Metering: This section was expanded in 2011. Previously, customer count by sector was the only data collected and published. In 2010, the EIA-861 started collecting the capacity of the net-metered installations by sector and technology. The technology types are: photovoltaic (PV), wind and other. Starting with the 2016 data collection year, storage and virtual net metering were added to the PV section.

Demand-Side Management (DSM): Prior to 2011, DSM data was separated into two categories, large and small utilities. Some tables contained data for just large utilities and others contained both categories, published separately. Starting in 2011, there is no longer a division in the data. All tables now include all DSM data from utilities; this change is also reflected in the historical data.

Starting in 2011, a new category of respondents were added to the EIA-861, non-utility DSM administrators: Efficiency Maine Trust, Energy trust of Oregon, Focus on Energy, NYSERDA and Vermont Energy Investment Corporation.

The following definitions are supplied to assist in interpreting DSM data. Utility costs reflect the total cash expenditures for the year, in nominal dollars, that used to support DSM programs.

- **Actual Peak Load Reduction** is the actual reduction in annual peak load achieved by all program participants during the reporting year, at the time of annual peak load, as opposed to the installed peak load reduction capability (potential peak load reduction). Actual peak load reduction is reported by large utilities only.
- **Energy Savings** is the change in aggregate electricity use (measured in megawatthours) for consumers that participate in a utility DSM program. These savings represent changes at the consumer's meter (i.e., exclude transmission and distribution effects) and reflect only activities that are undertaken specifically in response to utility-administered programs, including those activities implemented by third parties under contract to the utility.
- **Large Utilities** are those electric utilities with annual sales to ultimate customers or sales for resale greater than or equal to 150 million kilowatthours in 1998-2009 and, for years prior, the threshold was set at 120 million kilowatthours.
- **Potential Peak Load Reduction** is the potential peak load reduction that may occur if all demand response is called and/or participates.

Advanced Metering: New in 2011, Automated Meter Reading (AMR) and Advanced Metering Infrastructure (AMI), including historical data back to 2007. From 2007-2009, the count by sector is for number of customers, for 2010-2011, the count is the actual number of meters. For example; if an industrial customer had 12 meters, in 2007-2009 the count would have been 1, in 2010-2011, the count would be 12.

In 2013, the number of standard meters (non AMR/AMI) was added to this schedule.

Sensitive Data: None.

Forms EIA-906 and EIA-920 (Replaced in 2008 by Form EIA-923)

The Form EIA-906 was used to collect plant-level data on generation, fuel consumption, stocks, and fuel heat content, from electric utilities and nonutilities. Data were collected monthly from a model-based sample of approximately 1,700 utility and nonutility electric power plants. The form was also used to collect these statistics from another 2,667 plants (i.e., all other generators 1 MW or greater) on an annual basis. The form was ended after the 2007 data collection and replaced by the Form EIA-923.

Instrument and Design History: The Bureau of Census and the U.S. Geological Survey collected, compiled, and published data on the electric power industry prior to 1936. After 1936, the FPC assumed all data collection and publication responsibilities for the electric power industry and implemented the Form FPC-4. The Federal Power Act, Section 311 and 312, and FPC Order 141 defined the legislative authority to collect power production data. The Form EIA-759 replaced the Form FPC-4 in January 1982.

In 1996, the Form EIA-900 was initiated to collect sales for resale data from unregulated entities. In 1998, the Form EIA-900 was modified to collect sales for resale, gross generation, and sales to end user data. In 1999, the form was modified to collect net generation, consumption, and ending stock data. In 2000, the form was modified to include data on the production of useful thermal output (typically process steam) by combined heat and power (CHP) plants.

In January 2001, Form EIA-906 superseded Forms EIA-759 and EIA-900. In January 2004, Form EIA-920 superseded Form EIA-906 for those plants defined as CHP plants; all other plants that generated electricity continued to report on Form EIA-906. The Federal Energy Administration Act of 1974 (Public Law 93 275) defines the legislative authority to collect these data. In January 2008, the Form EIA-923 superseded this form.

Issues within Historical Data Series: A relatively small number electric commercial- and industrial-only plants are, for the purposes of this report, are included in the CHP data categories. The small number of electric utility plants that are CHP units are reported together with other utility plants. No information on the production of useful thermal output (UTO) or fuel consumption for UTO was collected or estimated for the electric utility CHP plants.

Sensitive Data: The only business sensitive data element collected on the Forms EIA-906 and EIA-920 was fuel stocks at the end of the reporting period.

Form EIA-923

Form EIA-923, "Power Plant Operations Report," is used to collect information on receipts and cost of fossil fuels, fuel stocks, generation, consumption of fuel for generation, nonutility source and disposition of electricity, combustion by-product collection and disposal, and cooling systems, as well as operational data for flue gas desulfurization, particulates, and nitrous oxide controls. Data are collected from a monthly sample of approximately 2,350 plants, which includes a census of nuclear and pumped-storage hydroelectric plants. The plants in the monthly sample report their receipts, cost and stocks of fossil fuels, electric power generation, and the total consumption of fuels for both electric power generation and, at combined heat and power (CHP) plants, useful thermal output. At the end of the year, the monthly respondents report their annual source and disposition of electric power (nonutilities only), operational data for air emissions controls and cooling systems, and the collection and disposal of combustion by-products on the Form EIA-923 Supplemental Form (Schedules 6, 7, and 8A to 8F). Approximately 5,790 plants, representing all generators not included in the monthly sample and with a nameplate capacity of 1 MW or more, report applicable data on the entire form annually. In addition to electric power generating plants, respondents include fuel storage terminals without generating capacity that receive shipments of fossil fuel for eventual use in electric power generation. The monthly data are due by the last day of the month following the reporting period.

Receipts of fossil fuels, fuel cost and quality information, and fuel stocks at the end of the reporting period are all reported at the plant level. Fuel receipts and costs are collected from plants with a nameplate capacity of 50 MW or more and burn fossil fuels. Plants that burn organic fuels and have a steam turbine capacity of at least 10 megawatts report consumption at the boiler level and generation at the generator level for each month, regardless of whether the plant reports in the monthly sample or

reports annually. For all other plants, consumption is reported at the prime-mover level and generation is reported at the prime-mover level or, for noncombustible sources (e.g., wind, nuclear), at the prime-mover and energy source levels (including generating units for nuclear only). The source and disposition of electricity are reported annually for nonutilities at the plant level, as is revenue from sales for resale. Operational data for air emissions equipment are collected annually from facilities that have a steam turbine capacity of at least 10 megawatts, and operational data on cooling systems and data on the collection and disposal of combustion by-products are collected from facilities that have a steam turbine capacity of at least 100 megawatts.

Instrument and Design History: See discussion of predecessor forms (EIA-906, -920, -767, and -423, and FERC Form 423).

Imputation: For data collected monthly, regression prediction, or imputation, is done for all missing data including non-sampled units and any non-respondents. For data collected annually, imputation is performed for non-respondents. For gross generation and total fuel consumption, multiple regression is used for imputation (see discussion, above). Approximately 0.02 percent of the national total generation for is imputed, although this will vary by State and energy source.

When gross generation is reported and net generation is not available, or vice versa, net or gross generation is estimated by using a fixed ratio of net to gross generation by prime-mover type and installed emissions equipment. These ratios are:

Net Generation = (Factor) x Gross Generation
Prime Movers:
Combined Cycle Steam - 0.97
Combined Cycle Single Shaft - 0.97
Combined Cycle Combustion Turbine - 0.97
Compressed Air - 0.97
Fuel Cell - 0.99
Gas Turbine - 0.98
Hydroelectric Turbine - 0.99
Hydroelectric Pumped Storage - 0.99
Internal Combustion Engine - 0.98
Other - 0.97
Photovoltaic - 0.99
Steam Turbine - 0.97
Wind Turbine - 0.99
Environmental Equipment:
Flue Gas Desulfurization - 0.97
Flue Gas Particulate 0.99
All Others - 0.97

For stocks, a linear combination of the prior month's ending stocks value and the current month's consumption and receipts values is used.

Receipts of Fossil Fuels: Receipts data, including cost and quality of fuels, are collected at the plant level from selected electric generating plants and fossil-fuel storage terminals in the United States. Power plants include independent power producers, electric utilities, and commercial and industrial CHP facilities with a total fossil-fueled nameplate capacity of 50 megawatts or more. The data on cost and quality of fuel shipments are used to produce aggregates and weighted averages for each fuel type at the State, Census division, and U.S. levels.

The units for receipts are: 1) coal and petroleum coke, tons and million Btu per ton; 2) petroleum, barrels and million Btu per barrel.; and gases, thousand cubic feet (Mcf) and million Btu per thousand cubic feet.

Net and Gross Generation and Fuel Consumption and Stocks: Generation data are collected in megawatthours from all power plants with a sum of nameplate capacity at least 1 MW. The fuels consumed are collected in tons (solids), barrels (liquids) and thousand cubic feet (gases). Fuels are grouped into coal, petroleum liquids, petroleum coke, natural gas, other gases, and other miscellaneous fuels. Energy consumption is not collected for nuclear, wind, solar, geothermal or other plants that do not burn fuels. For information on fuel groupings, see the instructions to the Form EIA-923 at http://www.eia.gov/survey/form/eia_923/instructions.pdf. **Combustion By-Product Collection and Disposal:** Data are collected in thousand tons. Associated financial data for by-products (O&M and capital expenses and revenue) are collected in thousand dollars.

Air Emissions Equipment: Operational efficiencies and emission rates are collected for flue gas desulfurization, particulate matter, and nitrous oxide control equipment for steam-electric units with at least 10 MW nameplate capacity.

Cooling Systems: Operational data on water use is collected from steam-electric plants, including nuclear plants, with at least 100 MW nameplate capacity.

Methodology to Estimate Biogenic and Non-biogenic Municipal Solid Waste:[4] Municipal Solid Waste (MSW) consumption for generation of electric power is split into its biogenic and non-biogenic components beginning with 2001 data by the following methodology:

The tonnage of MSW consumed is reported on the Form EIA-923. The composition of MSW and categorization of the components were obtained from the Environmental Protection Agency (EPA) publication, *Municipal Solid Waste in the United States: 2005 Facts and Figures*. The Btu contents of the components of MSW were obtained from various sources.

In 2011, the components of MSW as a percentage of the total were updated. The updated values were applied to final 2011 data and to preliminary 2012 and 2013 data. Although updated component percentages for 2006 through 2010 were available, historical EIA data series for consumption of MSW and net generation were not revised for 2005 to 2010. The tables below are the percentages applied to the EIA data for each year.

The potential quantities of combustible MSW discards (which include all MSW material available for combustion with energy recovery, discards to landfill, and other disposal) were multiplied by their

respective Btu contents. The EPA-based categories of MSW were then classified into renewable and non-renewable groupings. From this, EIA calculated how much of the energy potentially consumed from MSW was attributed to biogenic components and how much to non-biogenic components (see Table 1 and 2, below).[5]

These values are used to allocate consumption of municipal solid waste and net generation published in the Electric Power Monthly tables. The tons of biogenic and non-biogenic components were estimated with the assumption that glass and metals were removed prior to combustion. The average Btu/ton for the biogenic and non-biogenic components is estimated by dividing the total Btu consumption by the total tons. Published net generation attributed to biogenic MSW and non-biogenic MSW is classified under Other Renewables and Other, respectively.

Table 1. Btu consumption for biogenic and non-biogenic municipal solid waste (percent)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Biogenic	57	56	55	55	56	56	56	56	56	56	51
Non-biogenic	43	44	45	45	44	44	4	44	44	44	49

Table 2. Tonnage consumption for biogenic and non-biogenic municipal solid waste (percent)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Biogenic	77	77	76	76	75	75	75	75	75	75	64
Non-biogenic	23	23	24	24	25	25	25	25	25	25	36

Useful Thermal Output (UTO): With the implementation of the Form EIA-923, "Power Plant Operations Report," in 2008, combined heat and power (CHP) plants were required to report total fuel consumed and electric power generation. Beginning with preliminary January 2008 data, EIA estimated the allocation of the total fuel consumed at CHP plants between electric power generation and UTO.

The estimated allocation methodology is summarized in the following paragraphs. The methodology was retroactively applied to 2004-2007 data. Prior to 2004, UTO was collected on the Form EIA-906 and an estimated allocation of fuel for electricity was not necessary.

First, an efficiency factor is determined for each plant and prime mover type. Based on data for electric power generation and UTO collected in 2003 (on Form EIA-906, "Power Plant Report"), efficiency was calculated for each prime mover type at a plant. The efficiency factor is the total output in Btu, including electric power and UTO, divided by the total input in Btu. Electric power is converted to Btu at 3,412 Btu per kilowatthour.

Second, to calculate the amount of fuel for electric power, the gross generation in Btu is divided by the efficiency factor. The fuel for UTO is the difference between the total fuel reported and the fuel for electric power generation. UTO is calculated by multiplying the fuel for UTO by the efficiency factor.

In addition, if the total fuel reported is less than the estimated fuel for electric power generation, then the fuel for electric power generation is equal to the total fuel consumed, and the UTO will be zero.

Beginning with 2016 Form EIA-923 data, reported efficiency factors by survey respondents replaced the previously EIA estimated efficiency factors used in the fuel allocation process. For the processing of 2016 CHP data, EIA used for each plant an average of the efficiency factors reported by the CHP plants on the 2013, 2014, and 2015 Form EIA-923, "Power Plant Operations Report" surveys. An average was used to smooth out variations in any one year's data. Once efficiency of each plant was established, the value was input into the above methodology to allocate the consumption of fuel between electric power and UTO. This update applies to the 2016 data and going forward but was not retroactively applied to previous years.

Issues within Historical Data Series for Receipts and Cost and Quality of Fossil Fuels: Values for receipts of natural gas for 2001 forward do not include blast furnace gas or other gas.

Historical data collected on FERC Form 423 and published by EIA have been reviewed for consistency between volumes and prices and for their consistency over time. However, these data were collected by FERC for regulatory rather than statistical and publication purposes. EIA did not attempt to resolve any late filing issues in the FERC Form 423 data. In 2003, EIA introduced a procedure to estimate for late or non-responding entities that were required to report on the FERC Form 423. Due to the introduction of this procedure, 2003 and later data cannot be directly compared to previous years' data.

Prior to 2008, regulated plants reported receipts data on the FERC Form 423. These plants, along with unregulated plants, now report receipts data on Schedule 2 of Form EIA-923. Because FERC issued waivers to Form 423 filing requirements to some plants who met certain criteria, and because not all types of generators were required to report (only steam turbines and combined cycle units reported), a significant number of plants either did not submit fossil fuel receipts data or submitted only a portion of their fossil fuel receipts. Since Form EIA-923 does not have exemptions based on generator type, or reporting waivers, receipts data from 2008 and later cannot be directly compared to previous years' data for the regulated sector. Also beginning with January 2008 data, tables for total receipts included imputed quantities for plants with capacity one megawatt or more, to be consistent with other electric power data. Previous published receipts data were from plants at or over a 50 megawatt threshold, which was a legacy of their original collection as information for a regulatory agency, not as a survey to provide more meaningful estimates of totals for statistical purposes. Totals appeared to become smaller as more electric production came from unregulated plants, until the Form EIA-423 was created to help fill that gap. As a further improvement, estimation of all receipts for the universe normally depicted in the Electric Power Annual (i.e., one megawatt and above), with associated relative standard errors, provides a more complete assessment of the market.

Issues within Historical Data Series for Generation and Consumption: Beginning in 2008, a new method of allocating fuel consumption between electric power generation and UTO was implemented (see above). This new methodology evenly distributes a CHP plant's losses between the two output products (electric power and UTO). In the historical data, UTO was consistently assumed to be 80 percent efficient and all other losses at the plant were allocated to electric power. This change causes

the fuel for electric power to be lower while the fuel for UTO is higher as both are given the same efficiency. This results in the appearance of an increase in efficiency of production of electric power between periods.

Sensitive Data: The total delivered cost of fuel delivered to nonutilities, the commodity cost of fossil fuels, and fuel stocks are considered business sensitive.

Average Capacity Factors

This section describes the methodology for calculating capacity factors by fuel and technology type for operating electric power plants. Capacity factor is a measure (expressed as a percent) of how often an electric generator operates over a specific period of time, using a ratio of the actual output to the maximum possible output over that time period.

The capacity factor calculation only includes operating electric generators in the Electric Power Sector (sectors 1, 2 and 3) using the net generation reported on the Form EIA-923 and the net summer capacity reported on the Form EIA-860. The capacity factor for a particular fuel/technology type is given by:

$$capacity\ factor = \frac{\sum_{x,m} generation_{x,m}}{\sum_{x,m} capacity_x * available\ time_{x,m}}$$

Where x represents generators of that fuel/technology combination and m represents the period of time (month or year). Generation and capacity are specific to a generator, and the generator is categorized by its primary fuel type as reported on the EIA-860. All generation from that generator is included, regardless of other fuels consumed. Available time is also specific to the generator in order to account for differing online and retirement dates. Therefore, these published capacity factors will differ from a simple calculation using annual generation and capacity totals from the appropriate tables in this publication.

Air Emissions

This section describes the methodology for calculating estimated emissions of carbon dioxide (CO_2) from electric generating plants for 1989 through the present, as well as the estimated emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) from electric generating plants for 2001 through the present. For a description of the methodology used for other years, see the technical notes to the EPA 2003.

Methodology Overview: Initial estimates of uncontrolled SO_2 and NOx emissions for all plants are made by applying an emissions factor to fuel consumption data collected by EIA on the Form EIA-923. An emission factor is the average quantity of a pollutant released from a power plant when a unit of fuel is burned, assuming no use of pollution control equipment. The basic relationship is:

Emissions = Quantity of Fuel Consumed x Emission Factor

Quantity is defined in physical units (e.g., tons of solid fuels, million cubic feet of gaseous fuels, and thousands of barrels of liquid fuels) for determining NO_x and SO_2 emissions. As discussed below, physical quantities are converted to millions of Btus for calculating CO_2 emissions.

For some fuels, the calculation of SO_2 emissions requires including in the formula the sulfur content of the fuel measured in percentage of weight. Examples include coal and fuel oil. In these cases the formula is:

Emissions = Quantity of Fuel Consumed x Emission Factor x Sulfur Content

The fuels that require the percent sulfur as part of the emissions calculation are indicated in Table A.1., which lists the SO_2 emission factors used for this report.

In the case of SO_2 and NO_x emissions, the factor applied to a fuel can also vary with the combustion system: a steam-producing boiler, a combustion turbine, or an internal combustion engine. In the case of boilers, NO_x emissions can also vary with the firing configuration of a boiler and whether or not the boiler is a wet-bottom or dry-bottom design.[6] These distinctions are shown in Tables A.1. and A.2.

For SO_2 and NO_x, the initial estimate of uncontrolled emissions is reduced to account for the plant's operational pollution control equipment, when data on control equipment are available from the historical Form EIA-767 survey (i.e., data for the years 2005 and earlier) and the EIA-860 and EIA-923 surveys for the years 2007 through 2010. A special case for removal of SO_2 is the fluidized bed boiler, in which the sulfur removal process is integral with the operation of the boiler. The SO_2 emission factors shown in Table A.1. for fluidized bed boilers already account for 90 percent removal of SO_2 since, in effect, the plant has no uncontrolled emissions of this pollutant.

Although SO_2 and NO_x emission estimates are made for all plants, in many cases the estimated emissions can be replaced with actual emissions data collected by the U.S. Environmental Protection Agency's (U.S. EPA's) Continuous Emissions Monitoring System (CEMS) program. (CEMS data for CO_2 are incomplete and are not used in this report.) The CEMS data account for the bulk of SO_2 and NO_x emissions from the electric power industry. For those plants for which CEMS data are available, the EIA estimates of SO_2 and NO_x emissions are employed for the limited purpose of allocating emissions by fuel, since the CEMS data itself do not provide a detailed breakdown of plant emissions by fuel. For plants for which CEMS data are unavailable, the EIA-computed values are used as the final emissions estimates.

There are a number of reasons why the historical data are periodically revised. These include data revisions, revisions in emission and technology factors, and changes in methodology. For instance, the 2008 Electric Power Annual report features a revision in historic CO_2 values. This revision occurred due to a change in the accepted methodology regarding adjustments made for the percentage combustion of fuels.

The emissions estimation methodologies are described in more detail below.

CO_2 Emissions: CO_2 emissions are estimated using the information on fuel consumption in physical units and the heat content of fuel collected on the Form EIA-923 and predecessors. Heat content information is used to convert physical units to millions of Btu (MMBtu) consumed. To estimate CO_2 emissions, the fuel-specific emission factor from Table A.3. is multiplied by the fuel consumption in MMBtu.

The estimation procedure calculates uncontrolled CO_2 emissions. CO_2 control technologies are currently in the early stages of research and there are no commercial systems installed. Therefore, no estimates of controlled CO_2 emissions are made.

SO_2 and NO_x Emissions: To comply with environmental regulations controlling SO_2 emissions, many coal-fired generating plants have installed flue gas desulfurization (FGD) units. Similarly, NO_x control regulations require many fossil-fueled plants to install low-NO_x burners, selective catalytic reduction systems, or other technologies to reduce emissions. It is common for power plants to employ two or even three NO_x control technologies; accordingly, the NO_x emissions estimation approach accounts for the combined effect of the equipment (Table A.4.). However, control equipment information is available only for plants that reported on the Form EIA-923 and for historical data from the Form EIA-767. The Form EIA-860, EIA-923, and the historical EIA-767 surveys are limited to plants with boilers fired by combustible fuels[7] with a minimum generating capacity of 10 megawatts (nameplate). Pollution control equipment data are unavailable from EIA sources for plants that did not report on the historical EIA-767 survey, or the Forms EIA-860 and EIA-923.

The following method is used to estimate SO_2 and NO_x emissions:

- For steam electric plants, uncontrolled emissions are estimated using the emission factors shown in Tables A.1. and A.2. as well as reported data on fuel consumption, sulfur content, and boiler firing configuration. Controlled emissions are then determined when pollution control equipment is present. Although information on control equipment was not collected in 2006, updates for new installations during this period were made based on EPA data. Beginning in 2007, these data were collected on the Forms EIA-860 and EIA-923. For SO_2, the reported efficiency of the plant's FGD units is used to convert uncontrolled to controlled emission estimates. For NO_x, the reduction percentages shown in Table A.4. are applied to the uncontrolled estimates.
- For plants and prime movers not reported on the historical Form EIA-767 survey or Forms EIA-860 and EIA-923, uncontrolled emissions are estimated using the Table A.1. and Table A.2. emission factors and the following data and assumptions:
    - Fuel consumption is taken from the Form EIA-923 and predecessors.
    - The sulfur content of the fuel is estimated from fuel receipts for the plant reported on the Form EIA-923. When plant-specific sulfur content data are unavailable, the national average sulfur content for the fuel, computed from the Form EIA-923 is applied to the plant.
    - As noted earlier, the emission factor for plants with boilers depends in part on the type of combustion system, including whether a boiler is wet-bottom or dry-bottom, and the boiler firing configuration. However, this boiler information is unavailable for steam electric plants that did not report on the historical Forms EIA-767 or EIA-860. For these cases, the plant is assumed to have a dry-bottom, non-cyclone boiler using a firing method that falls into the "All Other" category shown on Table A.1.[8]

      For the plants that did not report on the historical Form EIA-767 or EIA-860, pollution control equipment data are unavailable and the uncontrolled estimates are not reduced.
- If actual emissions of SO_2 or NO_x are reported in the EPA's CEMS data, the EIA estimates are replaced with the CEMS values, using the EIA estimates to allocate the CEMS plant-level data by fuel. If CEMS data are unavailable, the EIA estimates are used as the final values.

Conversion Factors for Propane, Petroleum Coke, and Synthesis Gases.

The quantity conversion for petroleum coke is 5 barrels (of 42 U.S. gallons each) per short ton (2,000 pounds), propane is 1.53 thousand cubic feet per barrel, coal-derived synthesis gas is 98.06 thousand cubic feet per ton, and petroleum coke-derived synthesis gas is 107.31 thousand cubic feet per ton.

Relative Standard Error

The relative standard error (RSE) statistic, usually given as a percent, describes the magnitude of sampling error that might reasonably be incurred. The RSE is the square root of the estimated variance, divided by the variable of interest. The variable of interest may be the ratio of two variables, or a single variable.

The sampling error may be less than the non-sampling error. In fact, large RSE estimates found in preliminary work with these data have often indicated non-sampling errors, which were then identified and corrected. Non-sampling errors may be attributed to many sources, including response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding data obtained, and other errors of collection, response, or coverage. These non-sampling errors also occur in complete censuses.

Using the Central Limit Theorem, which applies to sums and means such as are applicable here, there is approximately a 68 percent chance that the true total or mean is within one RSE of the estimated total. Note that reported RSEs are always estimates, themselves, and are usually, as here, reported as percents. As an example, suppose that a net generation from coal value is estimated to be 1,507 total million kilowatthours with an estimated RSE of 4.9 percent. This means that, ignoring any non-sampling error, there is approximately a 68 percent chance that the true million kilowatthour value is within approximately 4.9 percent of 1,507 million kilowatthours (that is, between 1,433 and 1,581 million kilowatthours). Also under the Central Limit Theorem, there is approximately a 95 percent chance that the true mean or total is within 2 RSEs of the estimated mean or total.

Note that there are times when a model may not apply, such as in the case of a substantial reclassification of sales, when the relationship between the variable of interest and the regressor data does not hold. In such a case, the new information represents only itself, and such numbers are added to model results when estimating totals. Further, there are times when sample data may be known to be in error, or are not reported. Such cases are treated as if they were never part of the model-based sample, and values are imputed.

Business Classification

Nonutility power producers consist of entities that own or operate electric generating units but are not subject to direct economic regulation of rates, such as by state utility commissions. Nonutility power producers do not have a designated franchised service area. In addition to entities whose primary business is the production and sale of electric power, entities with other primary business classifications can and do sell electric power. These can consist of, for example, manufacturing facilities and paper mills.

The EIA, in the Electric Power Annual and other data products, classifies nonutility power producers into the following categories:

- **Electric Utility (Sector 1):** All regulated plants with a primary purpose of selling electricity in the public markets (NAICS = 22).

- **Independent Power Producers (Sector 2):** All non-regulated plants with a primary purpose of electric power generation and a primary purpose of selling electricity in the public markets (NAICS = 22) with no ability to cogenerate heat and power.
- **Electric Power, Combined Heat and Power (Sector 3):** All non-regulated plants with a primary purpose of electric power generation and a primary purpose of selling electricity in the public markets (NAICS = 22) with the ability to cogenerate heat and power.
- **Commercial, Non-Combined Heat and Power (Sector 4):** All plants with a commercial primary purpose with no ability to cogenerate heat and power.
- **Commercial, Combined Heat and Power (Sector 5):** All plants with a commercial primary purpose with the ability to cogenerate heat and power.
- **Industrial, Non-Combined Heat and Power (Sector 6):** All plants with an industrial primary purpose with no ability to cogenerate heat and power.
- **Industrial, Combined Heat and Power (Sector 7):** All plants with an industrial primary purpose with the ability to cogenerate heat and power.

The following is a list of the North American Industry Classification System (NAICS) classifications used by EIA.

	Agriculture, Forestry, Fishing and Hunting
111	Crop Production
112	Animal Production
113	Forestry and Logging
114	Fishing, Hunting and Trapping
115	Support Activities for Agriculture and Forestry
	Mining, Quarrying, and Oil and Gas Extraction
211	Oil and Gas Extraction
2121	Coal Mining
2122	Metal Ore Mining
2123	Nonmetallic Mineral Mining and Quarrying
	Utilities
22	Electric Power Generation, Transmission and Distribution (other than 2212, 2213, 22131, 22132 or 22133)
2212	Natural Gas Distribution
22131	Water Supply and Irrigation Systems
22132	Sewage Treatment Facilities
22133	Steam and Air-Conditioning Supply
	Manufacturing
311	Food Manufacturing
312	Beverage and Tobacco Product Manufacturing
313	Textile Mills (Fiber, Yarn, Thread, Fabric, and Textiles)
314	Textile Product Mills
315	Apparel Manufacturing
316	Leather and Allied Product Manufacturing
321	Wood Product Manufacturing
322	Paper Manufacturing (other than 322122 or 32213)
322122	Newsprint Mills

32213	Paperboard Mills
323	Printing and Related Support Activities
324	Petroleum and Coal Products Manufacturing (other than 32411)
32411	Petroleum Refineries
325	Chemical Manufacturing (other than 32511, 32512, 325193, 325188, 3252 325211, 3253 or 325311)
32511	Petrochemical Manufacturing
32512	Industrial Gas Manufacturing
325193	Ethyl Alcohol Manufacturing (including Ethanol)
325188	Industrial Inorganic Chemicals
3252	Resin, Synthetic Rubber, and Artificial Synthetic Fibers and Filaments Manufacturing (other than 325211)
325211	Plastics Material and Resin Manufacturing
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing (other than 325311)
325311	Nitrogenous Fertilizer Manufacturing
326	Plastics and Rubber Products Manufacturing
327	Nonmetallic Mineral Product Manufacturing (other than 32731)
32731	Cement Manufacturing
331	Primary Metal Manufacturing (other than 331111 or 331312)
331111	Iron and Steel Mills
331312	Primary Aluminum Production
332	Fabricated Metal Product Manufacturing
333	Machinery Manufacturing
334	Computer and Electronic Product Manufacturing
335	Electrical Equipment, Appliance, and Component Manufacturing
336	Transportation Equipment Manufacturing
337	Furniture and Related Product Manufacturing
339	Miscellaneous Manufacturing
421	**Wholesale Trade**
441	**Retail Trade**
	Transportation and Warehousing
481	Air Transportation
482	Rail Transportation
483	Water Transportation
484	Truck Transportation
485	Transit and Ground Passenger Transportation
486	Pipeline Transportation
487	Scenic and Sightseeing Transportation
488	Support Activities for Transportation (other than 4881, 4882, 4883 or 4884)
4881	Support Activities for Air Transportation (including Airports)
4882	Support Activities for Rail Transportation (including Rail Stations)
4883	Support Activities for Water Transportation (including Marinas)
4884	Support Activities for Road Transportation
491	Postal Service
492	Couriers and Messengers
493	Warehousing and Storage
	Information
511	Publishing Industries (except Internet)
512	Motion Picture and Sound Recording Industries
515	Broadcasting (except Internet)

517	Telecommunications
518	Data Processing, Hosting, and Related Services
519	Other Information Services
521	**Finance and Insurance**
53	**Real Estate and Rental and Leasing (including Convention Centers and Office Buildings)**
541	**Professional, Scientific, and Technical Services**
55	**Management of Companies and Enterprises**
	Administrative and Support and Waste Management and Remediation Services
561	Administrative and Support Services
562	Waste Management and Remediation Services (other than 562212 or 562213)
562212	Solid Waste Landfill
562213	Solid Waste Combustors and Incinerators
611	**Educational Services**
	Health Care and Social Assistance
621	Ambulatory Health Care Services
622	Hospitals
623	Nursing and Residential Care Facilities
624	Social Assistance
	Arts, Entertainment, and Recreation
711	Performing Arts, Spectator Sports, and Related Industries
712	Museums, Historical Sites, and Similar Institutions
713	Amusement, Gambling, and Recreation Industries
	Accommodation and Food Services
721	Accommodation
722	Food Services and Drinking Places
	Other Services (except Public Administration)
811	Repair and Maintenance
812	Personal and Laundry Services
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations
814	Private Households
92	**Public Administration (other than 921, 922, 92214 or 928)**
921	Executive, Legislative, and Other General Government Services
922	Justice, Public Order and Safety Activities (other than 92214)
92214	Correctional Facilities
928	National Security and International Affairs (including Military Bases)

Multiple Survey Programs- Small Scale PV Solar Estimation of Generation

Monthly generation from small scale PV solar resources is an estimation of the generation produced from PV solar resources and not the results of a data collection effort for generation directly, with the exception of “Third Party Owned” or (TPO) solar installations which has direct data collection. TPO data

however is not comprehensive. TPOs do not operate in every state, TPO collected data is not a large portion of the estimated amount, and the data has been collected for limited period of time. The generation estimate is based on data collected for PV solar capacity.

Capacity of PV solar resources is collected directly from respondents. These data are collected on several EIA forms and from several types of respondents. Monthly data for net-metered PV solar capacity is reported on the Form EIA-826. Form EIA-826 is a cutoff sample drawn from the annual survey Form EIA-861 which collects this data from all respondents. Using data from both of these surveys we have a regression model to impute for the non-sampled monthly capacity.

The survey instruments collect solar net metering capacity from reporting utilities by state and customer class. There are four customer classes: residential, commercial, industrial and transportation. However, the estimation process included only the residential, commercial and industrial customers.[1] Data for these customer classes were further classified by U.S. Census Regions, to ensure adequate number of customer observations in for each estimation group.

Estimation Model: The total PV capacity reported by utilities in the annual EIA-861 survey is the single primary input (regressor) to the monthly estimation of PV capacity by state. The model tested for each Census Region was of the form:

$$y_{i_{2015,m}} = \beta_1 x_{i_{2013}} + w_i^{-1/2} e_i \text{, where}$$

$x_{i_{2013}}$ is the ith utility's 2013 (or the last published year) solar PV capacity

$y_{i_{2015,m}}$ is the ith utility's month m, 2015 (or the current year) reported solar PV capacity

w_i is the weight factor, which is the inverse of $x_{i_{2013}}$

β_1 is effectively the growth rate of reported month m solar PV capacity

e_i is the error term

The model checks for outliers and removes them from the regression equation inputs. The model calculates RSEs by sector, state, census region, and US total. Once we have imputed for all of the monthly net-metered PV solar capacity we add to total net metered capacity, the PV solar capacity collected on the Form EIA-861 for distributed and dispersed resources that are not net metered.

We use a second model to estimate the generation using this capacity as an input. The original methodology was developed for the "Annual Energy Outlook" based on our "NEMS" modelled projections several years ago. The original method underwent a calibration project designed to develop PV production levels for the NEMS projections consistent with simulations of a National Renewable

Energy Laboratory model called PVWatts, which is itself embedded in PC software under the umbrella of the NREL's System Advisor Model (SAM).

The PVWatts simulations require, panel azimuth orientations and tilts, something that the NEMS projections do not include. Call the combinations of azimuths and tilts "orientations." The orientation and solar insolation (specific to a location) have a direct effect on the PV production level. The calibration project selected the 100 largest population Metropolitan Statistical Areas (MSAs) and relied on weights derived from orientation data from California Solar Initiative dataset to develop typical outputs for each of the 100 MSAs. It then was expanded from an annual estimate to a monthly estimate. A further description of this model is located here. A listing of the MSAs are included in Appendix 1.

Using Form EIA-861 data for service territories, which lists the counties that each electric distribution company (EDC) provides service, and NREL solar insolation data by county a simple average of insolation values by EDC is calculated.

Using the estimation model, we produce by utility, by state and by sector an estimate of generation. All the utilities'' capacity and generation estimates are summed by state and sector and a KWh/KW rate by state and sector is calculated.

Capacity from the Form EIA-860 that is net metered is subtracted from the total capacity by state and sector as well as the capacity reported on the EIA-826 from TPOs, resulting in a new "net" capacity amount. This capacity amount is multiplied by the KWh/KW rate to produce the non-TPO generation estimate and then it is added to the TPO reported sales to ultimate customers from the EIA-826 to obtain a final estimate for generation and a blended KWh/KW rate is calculated. The estimate for generation is aggregated by US census regions and US totals. The RSEs for capacity are checked for level of error and if they pass, the summary data by state, US census region and US total are reported in the EPM.

Appendix 2 contains a flow diagram of the data inputs, data quality control checks and data analysis required to perform this estimation.

Appendix 1- MSAs

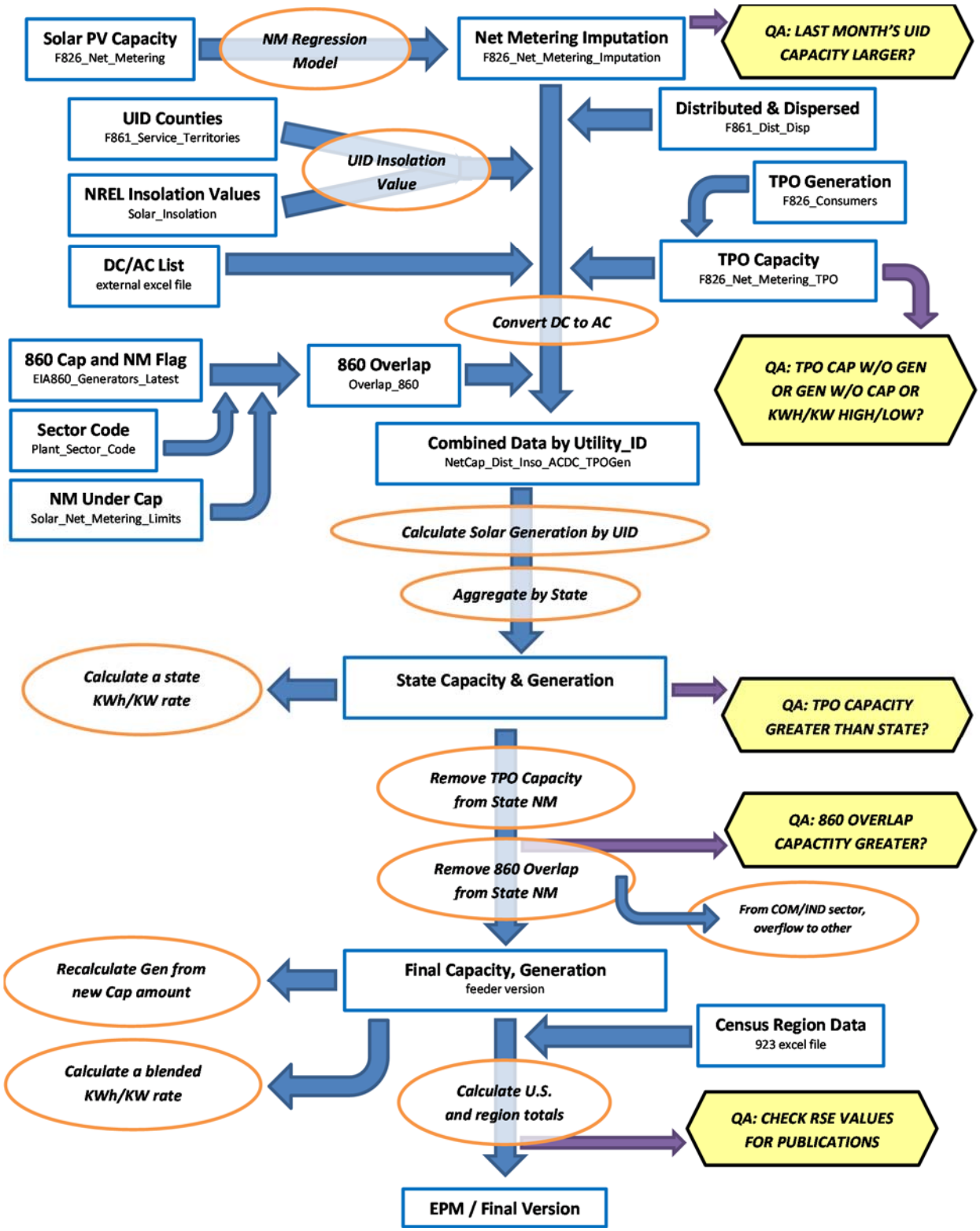
TMY3 (1991-2005) Weather Stations by MSA

Site	Weather Location	MSA
1	USA NY New York Central Park Obs.	New York-Newark-Jersey City, NY-NJ-PA MSA
2	USA CA Los Angeles Intl Airport	Los Angeles-Long Beach-Anaheim, CA MSA
3	USA IL Chicago Midway Airport	Chicago-Naperville-Elgin, IL-IN-WI MSA
4	USA TX Dallas-fort Worth Intl Airport	Dallas-Fort Worth-Arlington, TX MSA
5	USA TX Houston Bush Intercontinental	Houston-The Woodlands-Sugar Land, TX MSA
6	USA PA Philadelphia Int'l Airport	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA
7	USA VA Washington Dc Reagan Airport	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA
8	USA FL Miami Intl Airport	Miami-Fort Lauderdale-West Palm Beach, FL MSA
9	USA GA Atlanta Hartsfield Intl Airport	Atlanta-Sandy Springs-Roswell, GA MSA
10	USA MA Boston Logan Int'l Airport	Boston-Cambridge-Newton, MA-NH MSA
11	USA CA San Francisco Intl Airport	San Francisco–Oakland–Hayward, CA MSA
12	USA AZ Phoenix Sky Harbor Intl Airport	Phoenix-Mesa-Scottsdale, AZ MSA
13	USA CA Riverside Municipal Airport	Riverside-San Bernardino-Ontario, CA MSA
14	USA MI Detroit City Airport	Detroit-Warren-Dearborn, MI MSA
15	USA WA Seattle Seattle-Tacoma Intl Airport	Seattle-Tacoma-Bellevue, WA MSA
16	USA MN Minneapolis-St. Paul Int'l Arp	Minneapolis-St. Paul-Bloomington, MN-WI MSA
17	USA CA San Diego Lindbergh Field	San Diego-Carlsbad, CA MSA
18	USA FL Tampa Int'l Airport	Tampa-St. Petersburg-Clearwater, FL MSA
19	USA MO St Louis Lambert Int'l Airport	St. Louis, MO-IL MSA
20	USA MD Baltimore-Washington Int'l Airport	Baltimore-Columbia-Towson, MD MSA
21	USA CO Denver Centennial [Golden - NREL]	Denver-Aurora-Lakewood, CO MSA
22	USA PA Pittsburgh Allegheny Co Airport	Pittsburgh, PA MSA
23	USA NC Charlotte Douglas Intl Airport	Charlotte-Concord-Gastonia, NC-SC MSA
24	USA OR Portland Hillsboro	Portland-Vancouver-Hillsboro, OR-WA MSA
25	USA TX San Antonio Intl Airport	San Antonio-New Braunfels, TX MSA
26	USA FL Orlando Intl Airport	Orlando-Kissimmee-Sanford, FL MSA
27	USA CA Sacramento Executive Airport	Sacramento–Roseville–Arden-Arcade, CA MSA
28	USA OH Cincinnati Municipal Airport	Cincinnati, OH-KY-IN MSA
29	USA OH Cleveland Hopkins Intl Airport	Cleveland-Elyria, OH MSA
30	USA MO Kansas City Int'l Airport	Kansas City, MO-KS MSA
31	USA NV Las Vegas McCarran Intl Airport	Las Vegas-Henderson-Paradise, NV MSA
32	USA OH Columbus Port Columbus Intl A	Columbus, OH MSA
33	USA IN Indianapolis Intl Airport	Indianapolis-Carmel-Anderson, IN MSA
34	USA CA San Jose Intl Airport	San Jose-Sunnyvale-Santa Clara, CA MSA
35	USA TX Austin Mueller Municipal Airport	Austin-Round Rock, TX MSA
36	USA TN Nashville Int'l Airport	Nashville-Davidson–Murfreesboro–Franklin, TN MSA

37	USA VA Norfolk Int'l Airport	Virginia Beach-Norfolk-Newport News, VA-NC MSA
38	USA RI Providence T F Green State	Providence-Warwick, RI-MA MSA
39	USA WI Milwaukee Mitchell Intl Airport	Milwaukee-Waukesha-West Allis, WI MSA
40	USA FL Jacksonville Craig	Jacksonville, FL MSA
41	USA TN Memphis Int'l Airport	Memphis, TN-MS-AR MSA
42	USA OK Oklahoma City Will Rogers	Oklahoma City, OK MSA
43	USA KY Louisville Bowman Field	Louisville/Jefferson County, KY-IN MSA
44	USA VA Richmond Int'l Airport	Richmond, VA MSA
45	USA LA New Orleans Alvin Callender	New Orleans-Metairie, LA MSA
46	USA CT Hartford Bradley Intl Airport	Hartford-West Hartford-East Hartford, CT MSA
47	USA NC Raleigh Durham Int'l	Raleigh, NC MSA
48	USA UT Salt Lake City Int'l Airport	Salt Lake City, UT MSA
49	USA AL Birmingham Municipal Airport	Birmingham-Hoover, AL MSA
50	USA NY Buffalo Niagara Intl Airport	Buffalo-Cheektowaga-Niagara Falls, NY MSA
51	USA NY Rochester Greater Rochester	Rochester, NY MSA
52	USA MI Grand Rapids Kent County Int'l Airport	Grand Rapids-Wyoming, MI MSA
53	USA AZ Tucson Int'l Airport	Tucson, AZ MSA
54	USA HI Honolulu Intl Airport	Urban Honolulu, HI MSA
55	USA OK Tulsa Int'l Airport	Tulsa, OK MSA
56	USA CA Fresno Yosemite Intl Airport	Fresno, CA MSA
57	USA CT Bridgeport Sikorsky Memorial	Bridgeport-Stamford-Norwalk, CT MSA
58	USA MA Worchester Regional Airport	Worcester, MA-CT MSA
59	USA NM Albuquerque Intl Airport	Albuquerque, NM MSA
60	USA NE Omaha Eppley Airfield	Omaha-Council Bluffs, NE-IA MSA
61	USA NY Albany County Airport	Albany-Schenectady-Troy, NY MSA
62	USA CA Bakersfield Meadows Field	Bakersfield, CA MSA
63	USA CT New Haven Tweed Airport	New Haven-Milford, CT MSA
64	USA TN Knoxville McGhee Tyson Airport	Knoxville, TN MSA
65	USA SC Greenville Downtown Airport	Greenville-Anderson-Mauldin, SC MSA
66	USA CA Oxnard Airport	Oxnard-Thousand Oaks-Ventura, CA MSA
67	USA TX El Paso Int'l Airport	El Paso, TX MSA
68	USA PA Allentown Lehigh Valley Intl	Allentown-Bethlehem-Easton, PA-NJ MSA
69	USA LA Baton Rouge Ryan Airport	Baton Rouge, LA MSA
70	USA TX McCallen Miller Intl Airport	McAllen-Edinburg-Mission, TX MSA
71	USA OH Dayton Int'l Airport	Dayton, OH MSA
72	USA SC Columbia Metro Airport	Columbia, SC MSA
73	USA NC Greensboro Piedmont Triad Int'l Airport	Greensboro-High Point, NC MSA
74	USA FL Sarasota Bradenton	North Port-Sarasota-Bradenton, FL MSA
75	USA AR Little Rock Adams Field	Little Rock-North Little Rock-Conway, AR MSA
76	USA SC Charleston Intl Airport	Charleston-North Charleston, SC MSA
77	USA OH Akron Akron-canton Reg. Airport	Akron, OH MSA
78	USA CA Stockton Metropolitan Airport	Stockton-Lodi, CA MSA

79	USA CO Colorado Springs Muni Airport	Colorado Springs, CO MSA
80	USA NY Syracuse Hancock Int'l Airport	Syracuse, NY MSA
81	USA FL Fort Myers Page Field	Cape Coral-Fort Myers, FL MSA
82	USA NC Winston-Salem Reynolds Airport	Winston-Salem, NC MSA
83	USA ID Boise Air Terminal	Boise City, ID MSA
84	USA KS Wichita Mid-continent Airport	Wichita, KS MSA
85	USA WI Madison Dane Co Regional Airport	Madison, WI MSA
86	USA MA Worchester Regional Airport	Springfield, MA MSA
87	USA FL Lakeland Linder Regional Airport	Lakeland-Winter Haven, FL MSA
88	USA UT Ogden Hinkley Airport	Ogden-Clearfield, UT MSA
89	USA OH Toledo Express Airport	Toledo, OH MSA
90	USA FL Daytona Beach Intl Airport	Deltona-Daytona Beach-Ormond Beach, FL MSA
91	USA IA Des Moines Intl Airport	Des Moines-West Des Moines, IA MSA
92	USA GA Augusta Bush Field	Augusta-Richmond County, GA-SC MSA
93	USA MS Jackson Int’l Airport	Jackson, MS MSA
94	USA UT Provo Muni	Provo-Orem, UT MSA
95	USA PA Wilkes-Barre Scranton Intl Airport	Scranton–Wilkes-Barre–Hazleton, PA MSA
96	USA PA Harrisburg Capital City Airport	Harrisburg-Carlisle, PA MSA
97	USA OH Youngstown Regional Airport	Youngstown-Warren-Boardman, OH-PA MSA
98	USA FL Melbourne Regional Airport	Palm Bay-Melbourne-Titusville, FL MSA
99	USA TN Chattanooga Lovell Field Airport	Chattanooga, TN-GA MSA
100	USA WA Spokane Int’l Airport	Spokane-Spokane Valley, WA MSA

Appendix 2 – Flow diagram of data sources and analysis



[1] The basic technique employed is described in the paper "Model-Based Sampling and Inference," on the EIA website. Additional references can be found on the InterStat website (http://interstat.statjournals.net/). See the following sources: Knaub, J.R., Jr. (1999a), "Using Prediction-Oriented Software for Survey Estimation," InterStat, August 1999, http://interstat.statjournals.net/; Knaub, J.R. Jr. (1999b), "Model-Based Sampling, Inference and Imputation," EIA web site: http://www.eia.gov/cneaf/electricity/forms/eiawebme.pdf; Knaub, J.R., Jr. (2005), "Classical Ratio Estimator," InterStat, October 2005, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2007a), "Cutoff Sampling and Inference," InterStat, April 2007, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2008), "Cutoff Sampling." Definition in Encyclopedia of Survey Research Methods, Editor: Paul J. Lavrakas, Sage, to appear; Knaub, J.R., Jr. (2000), "Using Prediction-Oriented Software for Survey Estimation - Part II: Ratios of Totals," InterStat, June 2000, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2001), "Using Prediction-Oriented Software for Survey Estimation - Part III: Full-Scale Study of Variance and Bias," InterStat, June 2001, http://interstat.statjournals.net/.

[2] Due to the restructuring of the electric power industry, many plants which had historically submitted this information for utility plants on the FERC Form 423 (see subsequent section) were being transferred to the nonutility sector. As a result, a large percentage of fossil fuel receipts were no longer being reported. The Form EIA-423 was implemented to fill this void and to capture the data associated with existing nonregulated power producers. Its design closely follows that of the FERC Form 423.

[3] The basic technique employed is described in the paper "Model-Based Sampling and Inference," on the EIA website. Additional references can be found on the InterStat website (http://interstat.statjournals.net/). See the following sources: Knaub, J.R., Jr. (1999a), "Using Prediction-Oriented Software for Survey Estimation," InterStat, August 1999, http://interstat.statjournals.net/; Knaub, J.R. Jr. (1999b), "Model-Based Sampling, Inference and Imputation," EIA web site: http://www.eia.gov/cneaf/electricity/forms/eiawebme.pdf; Knaub, J.R., Jr. (2005), "Classical Ratio Estimator," InterStat, October 2005, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2007a), "Cutoff Sampling and Inference," InterStat, April 2007, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2008), "Cutoff Sampling." Definition in Encyclopedia of Survey Research Methods, Editor: Paul J. Lavrakas, Sage, to appear; Knaub, J.R., Jr. (2000), "Using Prediction-Oriented Software for Survey Estimation - Part II: Ratios of Totals," InterStat, June 2000, http://interstat.statjournals.net/; Knaub, J.R., Jr. (2001), "Using Prediction-Oriented Software for Survey Estimation - Part III: Full-Scale Study of Variance and Bias," InterStat, June 2001, http://interstat.statjournals.net/.

[4] See the following sources: Bahillo, A. et al. Journal of Energy Resources Technology, "NOx and N2O Emissions During Fluidized Bed Combustion of Leather Wastes." Volume 128, Issue 2, June 2006. pp. 99-103; U.S. Energy Information Administration. *Renewable Energy Annual 2004*. "Average Heat Content of Selected Biomass Fuels." Washington, DC, 2005; Penn State Agricultural College Agricultural and Biological Engineering and Council for Solid Waste Solutions. Garth, J. and Kowal, P. Resource Recovery, Turning Waste into Energy, University Park, PA, 1993; Utah State University Recycling Center Frequently Asked Questions

[5] Biogenic components include newsprint, paper, containers and packaging, leather, textiles, yard trimmings, food wastes, and wood. Non-biogenic components include plastics, rubber and other miscellaneous non-biogenic waste.

[6] A boiler's firing configuration relates to the arrangement of the fuel burners in the boiler, and whether the boiler is of conventional or cyclone design. Wet- and dry-bottom boilers use different methods to collect a portion of the ash that results from burning coal. For information on wet- and dry-bottom boilers, see the EIA Glossary at http://www.eia.gov/glossary/index.html. Additional information on wet- and dry-bottom boilers and on other aspects of boiler design and operation, including the differences between conventional and cyclone designs, can be found in Babcock and Wilcox, *Steam: Its Generation and Use*, 41st Edition, 2005.

[7] Boilers that rely entirely on waste heat to create steam, including the heat recovery portion of most combined cycle plants, did not report on the historical Form EIA-767 or EIA-923.

[8] The "All Other" firing configuration category includes, for example, arch firing and concentric firing. For a full list of firing method options for reporting on the historical Form EIA-767, see the form instructions, page xi, at http://www.eia.gov/survey/form/eia_767/instructions_form.pdf.